

Section Properties of Structural Glued Laminated Timber

American Institute of Timber Construction

Southern Pine (Based on 1-3/8 in. Thick Laminations)

Beam Size				A Area in. ²	x-x Axis		y-y Axis		SP Weight per foot (based on 36 lb/ft ³) lb/ft
b Width in.	X	d Depth in.	S _x Section Modulus in. ³		I _x Moment of Inertia in. ⁴	S _y Section Modulus in. ³	I _y Moment of Inertia in. ⁴		
2	1/8	X	2 3/4	5.844	2.678	3.683	2.070	2.199	1.5
2	1/8	X	4 1/8	8.766	6.026	12.43	3.104	3.299	2.2
2	1/8	X	5 1/2	11.69	10.71	29.46	4.139	4.398	2.9
2	1/8	X	6 7/8	14.61	16.74	57.54	5.174	5.498	3.7
2	1/8	X	8 1/4	17.53	24.11	99.44	6.209	6.597	4.4
2	1/8	X	9 5/8	20.45	32.81	157.9	7.244	7.697	5.1
2	1/8	X	11	23.38	42.85	235.7	8.279	8.796	5.8
2	1/8	X	12 3/8	26.30	54.24	335.6	9.313	9.896	6.6
2	1/8	X	13 3/4	29.22	66.96	460.3	10.35	11.00	7.3
2	1/8	X	15 1/8	32.14	81.02	612.7	11.38	12.09	8.0
2	1/8	X	16 1/2	35.06	96.42	795.5	12.42	13.19	8.8
2	1/8	X	17 7/8	37.98	113.2	1011	13.45	14.29	9.5
2	1/2	X	2 3/4	6.875	3.151	4.333	2.865	3.581	1.7
2	1/2	X	4 1/8	10.31	7.090	14.62	4.297	5.371	2.6
2	1/2	X	5 1/2	13.75	12.60	34.66	5.729	7.161	3.4
2	1/2	X	6 7/8	17.19	19.69	67.70	7.161	8.952	4.3
2	1/2	X	8 1/4	20.63	28.36	117.0	8.594	10.74	5.2
2	1/2	X	9 5/8	24.06	38.60	185.8	10.03	12.53	6.0
2	1/2	X	11	27.50	50.42	277.3	11.46	14.32	6.9
2	1/2	X	12 3/8	30.94	63.81	394.8	12.89	16.11	7.7
2	1/2	X	13 3/4	34.38	78.78	541.6	14.32	17.90	8.6
2	1/2	X	15 1/8	37.81	95.32	720.9	15.76	19.69	9.5
2	1/2	X	16 1/2	41.25	113.4	935.9	17.19	21.48	10.3
2	1/2	X	17 7/8	44.69	133.1	1190	18.62	23.27	11.2
3	X	2 3/4	8.250	3.781	5.199	4.125	6.188	2.1	
3	X	4 1/8	12.38	8.508	17.55	6.188	9.281	3.1	
3	X	5 1/2	16.50	15.13	41.59	8.250	12.38	4.1	
3	X	6 7/8	20.63	23.63	81.24	10.31	15.47	5.2	
3	X	8 1/4	24.75	34.03	140.4	12.38	18.56	6.2	
3	X	9 5/8	28.88	46.32	222.9	14.44	21.66	7.2	
3	X	11	33.00	60.50	332.8	16.50	24.75	8.3	
3	X	12 3/8	37.13	76.57	473.8	18.56	27.84	9.3	
3	X	13 3/4	41.25	94.53	649.9	20.63	30.94	10.3	
3	X	15 1/8	45.38	114.4	865.0	22.69	34.03	11.3	
3	X	16 1/2	49.50	136.1	1123	24.75	37.13	12.4	
3	X	17 7/8	53.63	159.8	1428	26.81	40.22	13.4	
3	X	19 1/4	57.75	185.3	1783	28.88	43.31	14.4	
3	X	20 5/8	61.88	212.7	2193	30.94	46.41	15.5	
3	X	22	66.00	242.0	2662	33.00	49.50	16.5	
3	X	23 3/8	70.13	273.2	3193	35.06	52.59	17.5	
3	X	24 3/4	74.25	306.3	3790	37.13	55.69	18.6	
3	X	26 1/8	78.38	341.3	4458	39.19	58.78	19.6	
3	X	27 1/2	82.50	378.1	5199	41.25	61.88	20.6	
3 1/8	X	2 3/4	8.594	3.939	5.416	4.476	6.994	2.1	
3 1/8	X	4 1/8	12.89	8.862	18.28	6.714	10.49	3.2	
3 1/8	X	5 1/2	17.19	15.76	43.33	8.952	13.99	4.3	
3 1/8	X	6 7/8	21.48	24.62	84.62	11.19	17.48	5.4	
3 1/8	X	8 1/4	25.78	35.45	146.2	13.43	20.98	6.4	
3 1/8	X	9 5/8	30.08	48.25	232.2	15.67	24.48	7.5	
3 1/8	X	11	34.38	63.02	346.6	17.90	27.97	8.6	
3 1/8	X	12 3/8	38.67	79.76	493.5	20.14	31.47	9.7	

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Southern Pine (Based on 1-3/8 in. Thick Laminations)

Beam Size				A	x-x Axis		y-y Axis		SP Weight per foot (based on 36 lb/ft ³)	
b	Width	X	d		Area	S _x	I _x	S _y		I _y
						in. ³	in. ⁴	in. ³		in. ⁴
3	1/8	X	13 3/4	42.97	98.47	677.0	22.38	34.97	10.7	
3	1/8	X	15 1/8	47.27	119.1	901.1	24.62	38.46	11.8	
3	1/8	X	16 1/2	51.56	141.8	1170	26.86	41.96	12.9	
3	1/8	X	17 7/8	55.86	166.4	1487	29.09	45.46	14.0	
3	1/8	X	19 1/4	60.16	193.0	1858	31.33	48.96	15.0	
3	1/8	X	20 5/8	64.45	221.6	2285	33.57	52.45	16.1	
3	1/8	X	22	68.75	252.1	2773	35.81	55.95	17.2	
3	1/8	X	23 3/8	73.05	284.6	3326	38.05	59.45	18.3	
3	1/8	X	24 3/4	77.34	319.0	3948	40.28	62.94	19.3	
3	1/8	X	26 1/8	81.64	355.5	4643	42.52	66.44	20.4	
3	1/8	X	27 1/2	85.94	393.9	5416	44.76	69.94	21.5	
3	1/2	X	2 3/4	9.625	4.411	6.066	5.615	9.826	2.4	
3	1/2	X	4 1/8	14.44	9.926	20.47	8.422	14.74	3.6	
3	1/2	X	5 1/2	19.25	17.65	48.53	11.23	19.65	4.8	
3	1/2	X	6 7/8	24.06	27.57	94.78	14.04	24.56	6.0	
3	1/2	X	8 1/4	28.88	39.70	163.8	16.84	29.48	7.2	
3	1/2	X	9 5/8	33.69	54.04	260.1	19.65	34.39	8.4	
3	1/2	X	11	38.50	70.58	388.2	22.46	39.30	9.6	
3	1/2	X	12 3/8	43.31	89.33	552.7	25.27	44.21	10.8	
3	1/2	X	13 3/4	48.13	110.3	758.2	28.07	49.13	12.0	
3	1/2	X	15 1/8	52.94	133.4	1009	30.88	54.04	13.2	
3	1/2	X	16 1/2	57.75	158.8	1310	33.69	58.95	14.4	
3	1/2	X	17 7/8	62.56	186.4	1666	36.49	63.87	15.6	
3	1/2	X	19 1/4	67.38	216.2	2081	39.30	68.78	16.8	
3	1/2	X	20 5/8	72.19	248.1	2559	42.11	73.69	18.0	
3	1/2	X	22	77.00	282.3	3106	44.92	78.60	19.3	
3	1/2	X	23 3/8	81.81	318.7	3725	47.72	83.52	20.5	
3	1/2	X	24 3/4	86.63	357.3	4422	50.53	88.43	21.7	
3	1/2	X	26 1/8	91.44	398.1	5201	53.34	93.34	22.9	
3	1/2	X	27 1/2	96.25	441.1	6066	56.15	98.26	24.1	
5	X	2 3/4	13.75	6.302	8.665	11.46	28.65	3.4		
5	X	4 1/8	20.63	14.18	29.25	17.19	42.97	5.2		
5	X	5 1/2	27.50	25.21	69.32	22.92	57.29	6.9		
5	X	6 7/8	34.38	39.39	135.4	28.65	71.61	8.6		
5	X	8 1/4	41.25	56.72	234.0	34.38	85.94	10.3		
5	X	9 5/8	48.13	77.20	371.5	40.10	100.3	12.0		
5	X	11	55.00	100.8	554.6	45.83	114.6	13.8		
5	X	12 3/8	61.88	127.6	789.6	51.56	128.9	15.5		
5	X	13 3/4	68.75	157.6	1083	57.29	143.2	17.2		
5	X	15 1/8	75.63	190.6	1442	63.02	157.6	18.9		
5	X	16 1/2	82.50	226.9	1872	68.75	171.9	20.6		
5	X	17 7/8	89.38	266.3	2380	74.48	186.2	22.3		
5	X	19 1/4	96.25	308.8	2972	80.21	200.5	24.1		
5	X	20 5/8	103.1	354.5	3656	85.94	214.8	25.8		
5	X	22	110.0	403.3	4437	91.67	229.2	27.5		
5	X	23 3/8	116.9	455.3	5322	97.40	243.5	29.2		
5	X	24 3/4	123.8	510.5	6317	103.1	257.8	31.0		
5	X	26 1/8	130.6	568.8	7429	108.9	272.1	32.7		
5	X	27 1/2	137.5	630.2	8665	114.6	286.5	34.4		
5	X	28 7/8	144.4	694.8	10030	120.3	300.8	36.1		
5	X	30 1/4	151.3	762.6	11530	126.0	315.1	37.8		
5	X	31 5/8	158.1	833.5	13180	131.8	329.4	39.5		

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Beam Size			A	x-x Axis		y-y Axis		SP Weight per foot (based on 36 lb/ft ³)
b		d		S _x	I _x	S _y	I _y	
Width		Depth	Area	Section Modulus	Moment of Inertia	Section Modulus	Moment of Inertia	lb/ft
in.		in.	in. ²	in. ³	in. ⁴	in. ³	in. ⁴	
5	X	33	165.0	907.5	14970	137.5	343.8	41.3
5	X	34 3/8	171.9	984.7	16920	143.2	358.1	43.0
5	X	35 3/4	178.8	1065	19040	149.0	372.4	44.7
5	X	37 1/8	185.6	1149	21320	154.7	386.7	46.4
5	X	38 1/2	192.5	1235	23780	160.4	401	48.1
5	X	39 7/8	199.4	1325	26420	166.1	415.4	49.9
5	X	41 1/4	206.3	1418	29250	171.9	429.7	51.6
5	X	42 5/8	213.1	1514	32270	177.6	444	53.3
5	X	44	220.0	1613	35490	183.3	458.3	55.0
5	1/8 X	2 3/4	14.09	6.460	8.882	12.04	30.85	3.5
5	1/8 X	4 1/8	21.14	14.53	29.98	18.06	46.27	5.3
5	1/8 X	5 1/2	28.19	25.84	71.06	24.08	61.70	7.0
5	1/8 X	6 7/8	35.23	40.37	138.8	30.10	77.12	8.8
5	1/8 X	8 1/4	42.28	58.14	239.8	36.12	92.55	10.6
5	1/8 X	9 5/8	49.33	79.13	380.8	42.13	108.0	12.3
5	1/8 X	11	56.38	103.4	568.4	48.15	123.4	14.1
5	1/8 X	12 3/8	63.42	130.8	809.4	54.17	138.8	15.9
5	1/8 X	13 3/4	70.47	161.5	1110	60.19	154.2	17.6
5	1/8 X	15 1/8	77.52	195.4	1478	66.21	169.7	19.4
5	1/8 X	16 1/2	84.56	232.5	1919	72.23	185.1	21.1
5	1/8 X	17 7/8	91.61	272.9	2439	78.25	200.5	22.9
5	1/8 X	19 1/4	98.66	316.5	3047	84.27	215.9	24.7
5	1/8 X	20 5/8	105.7	363.4	3747	90.29	231.4	26.4
5	1/8 X	22	112.8	413.4	4548	96.31	246.8	28.2
5	1/8 X	23 3/8	119.8	466.7	5455	102.3	262.2	30.0
5	1/8 X	24 3/4	126.8	523.2	6475	108.3	277.6	31.7
5	1/8 X	26 1/8	133.9	583.0	7615	114.4	293.1	33.5
5	1/8 X	27 1/2	140.9	646.0	8882	120.4	308.5	35.2
5	1/8 X	28 7/8	148.0	712.2	10280	126.4	323.9	37.0
5	1/8 X	30 1/4	155.0	781.6	11820	132.4	339.3	38.8
5	1/8 X	31 5/8	162.1	854.3	13510	138.4	354.8	40.5
5	1/8 X	33	169.1	930.2	15350	144.5	370.2	42.3
5	1/8 X	34 3/8	176.2	1009	17350	150.5	385.6	44.1
5	1/8 X	35 3/4	183.2	1092	19510	156.5	401.0	45.8
5	1/8 X	37 1/8	190.3	1177	21850	162.5	416.5	47.6
5	1/8 X	38 1/2	197.3	1266	24370	168.5	431.9	49.3
5	1/8 X	39 7/8	204.4	1358	27080	174.6	447.3	51.1
5	1/8 X	41 1/4	211.4	1453	29980	180.6	462.7	52.9
5	1/8 X	42 5/8	218.5	1552	33080	186.6	478.2	54.6
5	1/8 X	44	225.5	1654	36380	192.6	493.6	56.4
5	1/2 X	2 3/4	15.13	6.932	9.532	13.86	38.13	3.8
5	1/2 X	4 1/8	22.69	15.60	32.17	20.80	57.19	5.7
5	1/2 X	5 1/2	30.25	27.73	76.26	27.73	76.26	7.6
5	1/2 X	6 7/8	37.81	43.33	148.9	34.66	95.32	9.5
5	1/2 X	8 1/4	45.38	62.39	257.4	41.59	114.4	11.3
5	1/2 X	9 5/8	52.94	84.92	408.7	48.53	133.4	13.2
5	1/2 X	11	60.50	110.9	610.0	55.46	152.5	15.1
5	1/2 X	12 3/8	68.06	140.4	868.6	62.39	171.6	17.0
5	1/2 X	13 3/4	75.63	173.3	1191	69.32	190.6	18.9
5	1/2 X	15 1/8	83.19	209.7	1586	76.26	209.7	20.8
5	1/2 X	16 1/2	90.75	249.6	2059	83.19	228.8	22.7
5	1/2 X	17 7/8	98.31	292.9	2618	90.12	247.8	24.6

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Beam Size				A Area in. ²	x-x Axis		y-y Axis		SP Weight per foot (based on 36 lb/ft ³) lb/ft
b Width in.	X	d Depth in.	S _x Section Modulus in. ³		I _x Moment of Inertia in. ⁴	S _y Section Modulus in. ³	I _y Moment of Inertia in. ⁴		
5	1/2	X	19 1/4	105.9	339.7	3269	97.05	266.9	26.5
5	1/2	X	20 5/8	113.4	389.9	4021	104.0	286.0	28.4
5	1/2	X	22	121.0	443.7	4880	110.9	305.0	30.3
5	1/2	X	23 3/8	128.6	500.9	5854	117.8	324.1	32.2
5	1/2	X	24 3/4	136.1	561.5	6949	124.8	343.1	34.0
5	1/2	X	26 1/8	143.7	625.6	8172	131.7	362.2	35.9
5	1/2	X	27 1/2	151.3	693.2	9532	138.6	381.3	37.8
5	1/2	X	28 7/8	158.8	764.3	11030	145.6	400.3	39.7
5	1/2	X	30 1/4	166.4	838.8	12690	152.5	419.4	41.6
5	1/2	X	31 5/8	173.9	916.8	14500	159.4	438.5	43.5
5	1/2	X	33	181.5	998.3	16470	166.4	457.5	45.4
5	1/2	X	34 3/8	189.1	1083	18620	173.3	476.6	47.3
5	1/2	X	35 3/4	196.6	1172	20940	180.2	495.7	49.2
5	1/2	X	37 1/8	204.2	1263	23450	187.2	514.7	51.1
5	1/2	X	38 1/2	211.8	1359	26160	194.1	533.8	53.0
5	1/2	X	39 7/8	219.3	1458	29060	201.0	552.9	54.8
5	1/2	X	41 1/4	226.9	1560	32170	208.0	571.9	56.7
5	1/2	X	42 5/8	234.4	1665	35500	214.9	591.0	58.6
5	1/2	X	44	242.0	1775	39040	221.8	610.0	60.5
6	3/4	X	2 3/4	18.56	8.508	11.70	20.88	70.48	4.6
6	3/4	X	4 1/8	27.84	19.14	39.48	31.32	105.7	7.0
6	3/4	X	5 1/2	37.13	34.03	93.59	41.77	141.0	9.3
6	3/4	X	6 7/8	46.41	53.17	182.8	52.21	176.2	11.6
6	3/4	X	8 1/4	55.69	76.57	315.9	62.65	211.4	13.9
6	3/4	X	9 5/8	64.97	104.2	501.6	73.09	246.7	16.2
6	3/4	X	11	74.25	136.1	748.7	83.53	281.9	18.6
6	3/4	X	12 3/8	83.53	172.3	1066	93.97	317.2	20.9
6	3/4	X	13 3/4	92.81	212.7	1462	104.4	352.4	23.2
6	3/4	X	15 1/8	102.1	257.4	1946	114.9	387.6	25.5
6	3/4	X	16 1/2	111.4	306.3	2527	125.3	422.9	27.9
6	3/4	X	17 7/8	120.7	359.5	3213	135.7	458.1	30.2
6	3/4	X	19 1/4	129.9	416.9	4012	146.2	493.4	32.5
6	3/4	X	20 5/8	139.2	478.6	4935	156.6	528.6	34.8
6	3/4	X	22	148.5	544.5	5990	167.1	563.8	37.1
6	3/4	X	23 3/8	157.8	614.7	7184	177.5	599.1	39.5
6	3/4	X	24 3/4	167.1	689.1	8528	187.9	634.3	41.8
6	3/4	X	26 1/8	176.3	767.8	10030	198.4	669.6	44.1
6	3/4	X	27 1/2	185.6	850.8	11700	208.8	704.8	46.4
6	3/4	X	28 7/8	194.9	938.0	13540	219.3	740.0	48.7
6	3/4	X	30 1/4	204.2	1029	15570	229.7	775.3	51.1
6	3/4	X	31 5/8	213.5	1125	17790	240.2	810.5	53.4
6	3/4	X	33	222.8	1225	20210	250.6	845.8	55.7
6	3/4	X	34 3/8	232.0	1329	22850	261.0	881.0	58.0
6	3/4	X	35 3/4	241.3	1438	25700	271.5	916.2	60.3
6	3/4	X	37 1/8	250.6	1551	28780	281.9	951.5	62.7
6	3/4	X	38 1/2	259.9	1668	32100	292.4	986.7	65.0
6	3/4	X	39 7/8	269.2	1789	35660	302.8	1022	67.3
6	3/4	X	41 1/4	278.4	1914	39480	313.2	1057	69.6
6	3/4	X	42 5/8	287.7	2044	43560	323.7	1092	71.9
6	3/4	X	44	297.0	2178	47920	334.1	1128	74.3
6	3/4	X	45 3/8	306.3	2316	52550	344.6	1163	76.6
6	3/4	X	46 3/4	315.6	2459	57470	355.0	1198	78.9

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Beam Size				A	x-x Axis		y-y Axis		SP Weight per foot (based on 36 lb/ft ³)	
					S _x	I _x	S _y	I _y		
b	d	Area		Section	Moment of	Section	Moment of	lb/ft		
Width	Depth	in. ²		Modulus	Inertia	Modulus	Inertia			
in.	in.	in. ²		in. ³	in. ⁴	in. ³	in. ⁴			
6	3/4	X	48	1/8	324.8	2606	62700	365.4	1233	81.2
6	3/4	X	49	1/2	334.1	2757	68220	375.9	1269	83.5
6	3/4	X	50	7/8	343.4	2912	74070	386.3	1304	85.9
6	3/4	X	52	1/4	352.7	3071	80240	396.8	1339	88.2
6	3/4	X	53	5/8	362.0	3235	86740	407.2	1374	90.5
6	3/4	X	55		371.3	3403	93590	417.7	1410	92.8
8	1/2	X	2	3/4	23.38	10.71	14.73	33.11	140.7	5.8
8	1/2	X	4	1/8	35.06	24.11	49.72	49.67	211.1	8.8
8	1/2	X	5	1/2	46.75	42.85	117.8	66.23	281.5	11.7
8	1/2	X	6	7/8	58.44	66.96	230.2	82.79	351.8	14.6
8	1/2	X	8	1/4	70.13	96.42	397.7	99.34	422.2	17.5
8	1/2	X	9	5/8	81.81	131.2	631.6	115.9	492.6	20.5
8	1/2	X	11		93.50	171.4	942.8	132.5	562.9	23.4
8	1/2	X	12	3/8	105.2	216.9	1342	149.0	633.3	26.3
8	1/2	X	13	3/4	116.9	267.8	1841	165.6	703.7	29.2
8	1/2	X	15	1/8	128.6	324.1	2451	182.1	774.1	32.2
8	1/2	X	16	1/2	140.3	385.7	3182	198.7	844.4	35.1
8	1/2	X	17	7/8	151.9	452.6	4046	215.2	914.8	38.0
8	1/2	X	19	1/4	163.6	525.0	5053	231.8	985.2	40.9
8	1/2	X	20	5/8	175.3	602.6	6215	248.4	1056	43.8
8	1/2	X	22		187.0	685.7	7542	264.9	1126	46.8
8	1/2	X	23	3/8	198.7	774.1	9047	281.5	1196	49.7
8	1/2	X	24	3/4	210.4	867.8	10740	298.0	1267	52.6
8	1/2	X	26	1/8	222.1	966.9	12630	314.6	1337	55.5
8	1/2	X	27	1/2	233.8	1071	14730	331.1	1407	58.5
8	1/2	X	28	7/8	245.4	1181	17050	347.7	1478	61.4
8	1/2	X	30	1/4	257.1	1296	19610	364.3	1548	64.3
8	1/2	X	31	5/8	268.8	1417	22400	380.8	1618	67.2
8	1/2	X	33		280.5	1543	25460	397.4	1689	70.1
8	1/2	X	34	3/8	292.2	1674	28770	413.9	1759	73.1
8	1/2	X	35	3/4	303.9	1811	32360	430.5	1830	76.0
8	1/2	X	37	1/8	315.6	1953	36240	447.0	1900	78.9
8	1/2	X	38	1/2	327.3	2100	40420	463.6	1970	81.8
8	1/2	X	39	7/8	338.9	2253	44910	480.2	2041	84.7
8	1/2	X	41	1/4	350.6	2411	49720	496.7	2111	87.7
8	1/2	X	42	5/8	362.3	2574	54860	513.3	2181	90.6
8	1/2	X	44		374.0	2743	60340	529.8	2252	93.5
8	1/2	X	45	3/8	385.7	2917	66170	546.4	2322	96.4
8	1/2	X	46	3/4	397.4	3096	72370	562.9	2393	99.4
8	1/2	X	48	1/8	409.1	3281	78950	579.5	2463	102.3
8	1/2	X	49	1/2	420.8	3471	85910	596.1	2533	105.2
8	1/2	X	50	7/8	432.4	3667	93270	612.6	2604	108.1
8	1/2	X	52	1/4	444.1	3868	101000	629.2	2674	111.0
8	1/2	X	53	5/8	455.8	4074	109200	645.7	2744	114.0
8	1/2	X	55		467.5	4285	117800	662.3	2815	116.9
8	1/2	X	56	3/8	479.2	4502	126900	678.8	2885	119.8
8	1/2	X	57	3/4	490.9	4725	136400	695.4	2955	122.7
8	1/2	X	59	1/8	502.6	4952	146400	712.0	3026	125.7
8	1/2	X	60	1/2	514.3	5185	156900	728.5	3096	128.6
8	1/2	X	61	7/8	525.9	5424	167800	745.1	3167	131.5
8	1/2	X	63	1/4	537.6	5667	179200	761.6	3237	134.4
8	1/2	X	64	5/8	549.3	5917	191200	778.2	3307	137.3

Section Properties of Structural Glued Laminated Timber

American Institute of Timber Construction

Southern Pine (Based on 1-3/8 in. Thick Laminations)

Beam Size				A	x-x Axis		y-y Axis		SP Weight per foot (based on 36 lb/ft ³)
					S _x	I _x	S _y	I _y	
b		d		Area	Section Modulus	Moment of Inertia	Section Modulus	Moment of Inertia	lb/ft
Width		Depth		in. ²	in. ³	in. ⁴	in. ³	in. ⁴	
in.		in.							
8	1/2	X	66	561.0	6171	203600	794.8	3378	140.3
8	1/2	X	67 3/8	572.7	6431	216600	811.3	3448	143.2
8	1/2	X	68 3/4	584.4	6696	230200	827.9	3518	146.1
10	1/2	X	2 3/4	28.88	13.23	18.20	50.53	265.3	7.2
10	1/2	X	4 1/8	43.31	29.78	61.42	75.80	397.9	10.8
10	1/2	X	5 1/2	57.75	52.94	145.6	101.1	530.6	14.4
10	1/2	X	6 7/8	72.19	82.71	284.3	126.3	663.2	18.0
10	1/2	X	8 1/4	86.63	119.1	491.3	151.6	795.9	21.7
10	1/2	X	9 5/8	101.1	162.1	780.2	176.9	928.5	25.3
10	1/2	X	11	115.5	211.8	1165	202.1	1061	28.9
10	1/2	X	12 3/8	129.9	268.0	1658	227.4	1194	32.5
10	1/2	X	13 3/4	144.4	330.9	2275	252.7	1326	36.1
10	1/2	X	15 1/8	158.8	400.3	3028	277.9	1459	39.7
10	1/2	X	16 1/2	173.3	476.4	3931	303.2	1592	43.3
10	1/2	X	17 7/8	187.7	559.2	4997	328.5	1724	46.9
10	1/2	X	19 1/4	202.1	648.5	6242	353.7	1857	50.5
10	1/2	X	20 5/8	216.6	744.4	7677	379.0	1990	54.2
10	1/2	X	22	231.0	847.0	9317	404.3	2122	57.8
10	1/2	X	23 3/8	245.4	956.2	11180	429.5	2255	61.4
10	1/2	X	24 3/4	259.9	1072	13270	454.8	2388	65.0
10	1/2	X	26 1/8	274.3	1194	15600	480.0	2520	68.6
10	1/2	X	27 1/2	288.8	1323	18200	505.3	2653	72.2
10	1/2	X	28 7/8	303.2	1459	21070	530.6	2786	75.8
10	1/2	X	30 1/4	317.6	1601	24220	555.8	2918	79.4
10	1/2	X	31 5/8	332.1	1750	27680	581.1	3051	83.0
10	1/2	X	33	346.5	1906	31440	606.4	3183	86.6
10	1/2	X	34 3/8	360.9	2068	35540	631.6	3316	90.2
10	1/2	X	35 3/4	375.4	2237	39980	656.9	3449	93.9
10	1/2	X	37 1/8	389.8	2412	44770	682.2	3581	97.5
10	1/2	X	38 1/2	404.3	2594	49930	707.4	3714	101.1
10	1/2	X	39 7/8	418.7	2783	55480	732.7	3847	104.7
10	1/2	X	41 1/4	433.1	2978	61420	758.0	3979	108.3
10	1/2	X	42 5/8	447.6	3180	67760	783.2	4112	111.9
10	1/2	X	44	462.0	3388	74540	808.5	4245	115.5
10	1/2	X	45 3/8	476.4	3603	81740	833.8	4377	119.1
10	1/2	X	46 3/4	490.9	3825	89400	859.0	4510	122.7
10	1/2	X	48 1/8	505.3	4053	97530	884.3	4643	126.3
10	1/2	X	49 1/2	519.8	4288	106100	909.6	4775	130.0
10	1/2	X	50 7/8	534.2	4529	115200	934.8	4908	133.6
10	1/2	X	52 1/4	548.6	4778	124800	960.1	5040	137.2
10	1/2	X	53 5/8	563.1	5032	134900	985.4	5173	140.8
10	1/2	X	55	577.5	5294	145600	1011	5306	144.4
10	1/2	X	56 3/8	591.9	5562	156800	1036	5438	148.0
10	1/2	X	57 3/4	606.4	5836	168500	1061	5571	151.6
10	1/2	X	59 1/8	620.8	6118	180900	1086	5704	155.2
10	1/2	X	60 1/2	635.3	6405	193800	1112	5836	158.8
10	1/2	X	61 7/8	649.7	6700	207300	1137	5969	162.4
10	1/2	X	63 1/4	664.1	7001	221400	1162	6102	166.0
10	1/2	X	64 5/8	678.6	7309	236200	1187	6234	169.7
10	1/2	X	66	693.0	7623	251600	1213	6367	173.3
10	1/2	X	67 3/8	707.4	7944	267600	1238	6500	176.9
10	1/2	X	68 3/4	721.9	8271	284300	1263	6632	180.5

Section Properties of Structural Glued Laminated Timber

American Institute of Timber Construction

Southern Pine (Based on 1-3/8 in. Thick Laminations)

Beam Size				A Area in. ²	x-x Axis		y-y Axis		SP Weight per foot (based on 36 lb/ft ³) lb/ft
b	d		S _x Section Modulus in. ³		I _x Moment of Inertia in. ⁴	S _y Section Modulus in. ³	I _y Moment of Inertia in. ⁴		
Width in.	Depth in.								
10	1/2	X	70 1/8	736.3	8606	301700	1289	6765	184.1
10	1/2	X	71 1/2	750.8	8946	319800	1314	6898	187.7
10	1/2	X	72 7/8	765.2	9294	338600	1339	7030	191.3
10	1/2	X	74 1/4	779.6	9648	358200	1364	7163	194.9
10	1/2	X	75 5/8	794.1	10010	378400	1390	7295	198.5
10	1/2	X	77	808.5	10380	399500	1415	7428	202.1
10	1/2	X	78 3/8	822.9	10750	421300	1440	7561	205.7
10	1/2	X	79 3/4	837.4	11130	443800	1465	7693	209.4
10	1/2	X	81 1/8	851.8	11520	467200	1491	7826	213.0
10	1/2	X	82 1/2	866.3	11910	491300	1516	7959	216.6
12		X	2 3/4	33.00	15.13	20.80	66.00	396.0	8.3
12		X	4 1/8	49.50	34.03	70.19	99.00	594.0	12.4
12		X	5 1/2	66.00	60.50	166.4	132.0	792.0	16.5
12		X	6 7/8	82.50	94.53	325.0	165.0	990.0	20.6
12		X	8 1/4	99.00	136.1	561.5	198.0	1188	24.8
12		X	9 5/8	115.5	185.3	891.7	231.0	1386	28.9
12		X	11	132.0	242.0	1331	264.0	1584	33.0
12		X	12 3/8	148.5	306.3	1895	297.0	1782	37.1
12		X	13 3/4	165.0	378.1	2600	330.0	1980	41.3
12		X	15 1/8	181.5	457.5	3460	363.0	2178	45.4
12		X	16 1/2	198.0	544.5	4492	396.0	2376	49.5
12		X	17 7/8	214.5	639.0	5711	429.0	2574	53.6
12		X	19 1/4	231.0	741.1	7133	462.0	2772	57.8
12		X	20 5/8	247.5	850.8	8774	495.0	2970	61.9
12		X	22	264.0	968.0	10650	528.0	3168	66.0
12		X	23 3/8	280.5	1093	12770	561.0	3366	70.1
12		X	24 3/4	297.0	1225	15160	594.0	3564	74.3
12		X	26 1/8	313.5	1365	17830	627.0	3762	78.4
12		X	27 1/2	330.0	1513	20800	660.0	3960	82.5
12		X	28 7/8	346.5	1668	24070	693.0	4158	86.6
12		X	30 1/4	363.0	1830	27680	726.0	4356	90.8
12		X	31 5/8	379.5	2000	31630	759.0	4554	94.9
12		X	33	396.0	2178	35940	792.0	4752	99.0
12		X	34 3/8	412.5	2363	40620	825.0	4950	103.1
12		X	35 3/4	429.0	2556	45690	858.0	5148	107.3
12		X	37 1/8	445.5	2757	51170	891.0	5346	111.4
12		X	38 1/2	462.0	2965	57070	924.0	5544	115.5
12		X	39 7/8	478.5	3180	63400	957.0	5742	119.6
12		X	41 1/4	495.0	3403	70190	990.0	5940	123.8
12		X	42 5/8	511.5	3634	77440	1023	6138	127.9
12		X	44	528.0	3872	85180	1056	6336	132.0
12		X	45 3/8	544.5	4118	93420	1089	6534	136.1
12		X	46 3/4	561.0	4371	102200	1122	6732	140.3
12		X	48 1/8	577.5	4632	111500	1155	6930	144.4
12		X	49 1/2	594.0	4901	121300	1188	7128	148.5
12		X	50 7/8	610.5	5177	131700	1221	7326	152.6
12		X	52 1/4	627.0	5460	142600	1254	7524	156.8
12		X	53 5/8	643.5	5751	154200	1287	7722	160.9
12		X	55	660.0	6050	166400	1320	7920	165.0
12		X	56 3/8	676.5	6356	179200	1353	8118	169.1
12		X	57 3/4	693.0	6670	192600	1386	8316	173.3
12		X	59 1/8	709.5	6992	206700	1419	8514	177.4

Section Properties of Structural Glued Laminated Timber

American Institute of Timber Construction

Southern Pine (Based on 1-3/8 in. Thick Laminations)

Beam Size				x-x Axis			y-y Axis		SP
				A	S _x	I _x	S _y	I _y	Weight per foot
b	d	Area	Section Modulus	Moment of Inertia	Section Modulus	Moment of Inertia	(based on 36 lb/ft ³)		
Width	Depth	in. ²	in. ³	in. ⁴	in. ³	in. ⁴	lb/ft		
in.	in.								
12	X	60	1/2	726.0	7321	221400	1452	8712	181.5
12	X	61	7/8	742.5	7657	236900	1485	8910	185.6
12	X	63	1/4	759.0	8001	253000	1518	9108	189.8
12	X	64	5/8	775.5	8353	269900	1551	9306	193.9
12	X	66		792.0	8712	287500	1584	9504	198.0
12	X	67	3/8	808.5	9079	305800	1617	9702	202.1
12	X	68	3/4	825.0	9453	325000	1650	9900	206.3
12	X	70	1/8	841.5	9835	344800	1683	10100	210.4
12	X	71	1/2	858.0	10220	365500	1716	10300	214.5
12	X	72	7/8	874.5	10620	387000	1749	10490	218.6
12	X	74	1/4	891.0	11030	409300	1782	10690	222.8
12	X	75	5/8	907.5	11440	432500	1815	10890	226.9
12	X	77		924.0	11860	456500	1848	11090	231.0
12	X	78	3/8	940.5	12290	481400	1881	11290	235.1
12	X	79	3/4	957.0	12720	507200	1914	11480	239.3
12	X	81	1/8	973.5	13160	533900	1947	11680	243.4
12	X	82	1/2	990.0	13610	561500	1980	11880	247.5
12	X	83	7/8	1007	14070	590100	2013	12080	251.8
12	X	85	1/4	1023	14540	619600	2046	12280	255.8
12	X	86	5/8	1040	15010	650000	2079	12470	260.0
12	X	88		1056	15490	681500	2112	12670	264.0
12	X	89	3/8	1073	15980	713900	2145	12870	268.3
12	X	90	3/4	1089	16470	747400	2178	13070	272.3
12	X	92	1/8	1106	16970	781900	2211	13270	276.5
12	X	93	1/2	1122	17480	817400	2244	13460	280.5
12	X	94	7/8	1139	18000	854000	2277	13660	284.8
12	X	96	1/4	1155	18530	891700	2310	13860	288.8
12	X	97	5/8	1172	19060	930400	2343	14060	293.0
12	X	99		1188	19600	970300	2376	14260	297.0
12	X	100	3/8	1205	20150	1011000	2409	14450	301.3
12	X	101	3/4	1221	20710	1053000	2442	14650	305.3
12	X	103	1/8	1238	21270	1097000	2475	14850	309.5
14	X	2	3/4	38.50	17.65	24.26	89.83	628.8	9.6
14	X	4	1/8	57.75	39.70	81.89	134.8	943.3	14.4
14	X	5	1/2	77.00	70.58	194.1	179.7	1258	19.3
14	X	6	7/8	96.25	110.3	379.1	224.6	1572	24.1
14	X	8	1/4	115.5	158.8	655.1	269.5	1887	28.9
14	X	9	5/8	134.8	216.2	1040	314.4	2201	33.7
14	X	11		154.0	282.3	1553	359.3	2515	38.5
14	X	12	3/8	173.3	357.3	2211	404.3	2830	43.3
14	X	13	3/4	192.5	441.1	3033	449.2	3144	48.1
14	X	15	1/8	211.8	533.8	4037	494.1	3459	53.0
14	X	16	1/2	231.0	635.3	5241	539.0	3773	57.8
14	X	17	7/8	250.3	745.5	6663	583.9	4087	62.6
14	X	19	1/4	269.5	864.6	8322	628.8	4402	67.4
14	X	20	5/8	288.8	992.6	10240	673.8	4716	72.2
14	X	22		308.0	1129	12420	718.7	5031	77.0
14	X	23	3/8	327.3	1275	14900	763.6	5345	81.8
14	X	24	3/4	346.5	1429	17690	808.5	5660	86.6
14	X	26	1/8	365.8	1593	20800	853.4	5974	91.5
14	X	27	1/2	385.0	1765	24260	898.3	6288	96.3
14	X	28	7/8	404.3	1945	28090	943.3	6603	101.1

Section Properties of Structural Glued Laminated Timber

American Institute of Timber Construction

Southern Pine (Based on 1-3/8 in. Thick Laminations)

Beam Size				x-x Axis			y-y Axis		SP
				A	S _x	I _x	S _y	I _y	Weight per foot
b	d	Area	Section Modulus	Moment of Inertia	Section Modulus	Moment of Inertia	(based on 36 lb/ft ³)		
Width	Depth	in. ²	in. ³	in. ⁴	in. ³	in. ⁴	lb/ft		
in.	in.								
14	X	30	1/4	423.5	2135	32290	988.2	6917	105.9
14	X	31	5/8	442.8	2334	36900	1033	7232	110.7
14	X	33		462.0	2541	41930	1078	7546	115.5
14	X	34	3/8	481.3	2757	47390	1123	7860	120.3
14	X	35	3/4	500.5	2982	53310	1168	8175	125.1
14	X	37	1/8	519.8	3216	59700	1213	8489	130.0
14	X	38	1/2	539.0	3459	66580	1258	8804	134.8
14	X	39	7/8	558.3	3710	73970	1303	9118	139.6
14	X	41	1/4	577.5	3970	81890	1348	9433	144.4
14	X	42	5/8	596.8	4239	90350	1392	9747	149.2
14	X	44		616.0	4517	99380	1437	10060	154.0
14	X	45	3/8	635.3	4804	109000	1482	10380	158.8
14	X	46	3/4	654.5	5100	119200	1527	10690	163.6
14	X	48	1/8	673.8	5404	130000	1572	11000	168.5
14	X	49	1/2	693.0	5717	141500	1617	11320	173.3
14	X	50	7/8	712.3	6039	153600	1662	11630	178.1
14	X	52	1/4	731.5	6370	166400	1707	11950	182.9
14	X	53	5/8	750.8	6710	179900	1752	12260	187.7
14	X	55		770.0	7058	194100	1797	12580	192.5
14	X	56	3/8	789.3	7416	209000	1842	12890	197.3
14	X	57	3/4	808.5	7782	224700	1887	13210	202.1
14	X	59	1/8	827.8	8157	241100	1931	13520	207.0
14	X	60	1/2	847.0	8541	258400	1976	13830	211.8
14	X	61	7/8	866.3	8933	276400	2021	14150	216.6
14	X	63	1/4	885.5	9335	295200	2066	14460	221.4
14	X	64	5/8	904.8	9745	314900	2111	14780	226.2
14	X	66		924.0	10160	335400	2156	15090	231.0
14	X	67	3/8	943.3	10590	356800	2201	15410	235.8
14	X	68	3/4	962.5	11030	379100	2246	15720	240.6
14	X	70	1/8	981.8	11470	402300	2291	16040	245.5
14	X	71	1/2	1001	11930	426400	2336	16350	250.3
14	X	72	7/8	1020	12390	451500	2381	16660	255.0
14	X	74	1/4	1040	12860	477600	2426	16980	260.0
14	X	75	5/8	1059	13340	504600	2470	17290	264.8
14	X	77		1078	13830	532600	2515	17610	269.5
14	X	78	3/8	1097	14330	561700	2560	17920	274.3
14	X	79	3/4	1117	14840	591800	2605	18240	279.3
14	X	81	1/8	1136	15360	622900	2650	18550	284.0
14	X	82	1/2	1155	15880	655100	2695	18870	288.8
14	X	83	7/8	1174	16420	688400	2740	19180	293.5
14	X	85	1/4	1194	16960	722800	2785	19490	298.5
14	X	86	5/8	1213	17510	758400	2830	19810	303.3
14	X	88		1232	18070	795100	2875	20120	308.0
14	X	89	3/8	1251	18640	832900	2920	20440	312.8
14	X	90	3/4	1271	19220	871900	2965	20750	317.8
14	X	92	1/8	1290	19800	912200	3009	21070	322.5
14	X	93	1/2	1309	20400	953600	3054	21380	327.3
14	X	94	7/8	1328	21000	996300	3099	21690	332.0
14	X	96	1/4	1348	21620	1040000	3144	22010	337.0
14	X	97	5/8	1367	22240	1086000	3189	22320	341.8
14	X	99		1386	22870	1132000	3234	22640	346.5
14	X	100	3/8	1405	23510	1180000	3279	22950	351.3

Section Properties of Structural Glued Laminated Timber
American Institute of Timber Construction
***Southern Pine* (Based on 1-3/8 in. Thick Laminations)**

Beam Size				A	x-x Axis		y-y Axis		SP Weight per foot (based on 36 lb/ft ³) lb/ft
b		d			S _x	I _x	S _y	I _y	
Width		Depth		Area	Section Modulus	Moment of Inertia	Section Modulus	Moment of Inertia	
in.		in.		in. ²	in. ³	in. ⁴	in. ³	in. ⁴	
14	X	101	3/4	1425	24160	1229000	3324	23270	356.3
14	X	103	1/8	1444	24810	1279000	3369	23580	361.0
14	X	104	1/2	1463	25480	1331000	3414	23900	365.8
14	X	105	7/8	1482	26160	1385000	3459	24210	370.5
14	X	107	1/4	1502	26840	1439000	3504	24520	375.5
14	X	108	5/8	1521	27530	1495000	3548	24840	380.3
14	X	110		1540	28230	1553000	3593	25150	385.0
14	X	111	3/8	1559	28940	1612000	3638	25470	389.8
14	X	112	3/4	1579	29660	1672000	3683	25780	394.8
14	X	114	1/8	1598	30390	1734000	3728	26100	399.5
14	X	115	1/2	1617	31130	1798000	3773	26410	404.3
14	X	116	7/8	1636	31870	1863000	3818	26730	409.0
14	X	118	1/4	1656	32630	1929000	3863	27040	414.0
14	X	119	5/8	1675	33390	1997000	3908	27350	418.8

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