

FOR EQUATIONS SEE NATIONAL DESIGN STANDARD

``SPAN OF FLOOR JOIST`` EXAMPLE

Southern Yellow Pine Reference Design Values:

wood = No 1 Standard Southern Pine

load duration factor (CD) = 1.6 for 10 minute loads

Possible Values: 1.6 for ten minutes
1.25 for seven days
0.9 for dead load

deflection limit = span/240

defined bearing length = 1.5 inches

TO GET ALLOWED WEIGHT PER SQUARE FOOT,
TAKE ALLOWED WEIGHT FOR ONE STRINGER PER FOOT,
MULTIPLY BY THE NUMBER OF STRINGERS,
AND DIVIDE BY THE LENGTH OF THE TREAD IN FEET.

- (1) ALLOWED WEIGHT IN LBF/FT BY MOMENT CAPACITY
(might not apply to our boardwalks and bridges)
- (2) ALLOWED WEIGHT IN LBF/FT BY SHEAR
- (3) ALLOWED WEIGHT IN LBF/FT BY DEFLECTION
- (4) ALLOWED WEIGHT IN LBF/FT FOR 1.5 INCH BEARING
- (5) MINIMUM OF ABOVE ALLOWED WEIGHTS IN LBF/FT

Allowable weights (1) and (2) are proportional to CD.
Allowable weight (4) is proportional to
designed bearing length.

SPAN FT		4x4	2x6	4x6	2x8	2x10	2x12
6	(1)	269.95	257.12	599.96	413.69	665.49	937.50
	(2)	739.36	497.93	1161.84	656.37	837.43	1018.50
	(3)	185.26	308.10	718.90	705.70	1465.65	2636.72
	(4)	662.46	283.91	662.46	283.91	283.91	283.91
	(5)	185.26	257.12	599.96	283.91	283.91	283.91
8	(1)	151.85	144.63	337.48	232.70	374.34	527.34
	(2)	554.52	373.45	871.38	492.28	628.08	763.88
	(3)	78.16	129.98	303.29	297.72	618.32	1112.37
	(4)	496.85	212.93	496.85	212.93	212.93	212.93
	(5)	78.16	129.98	303.29	212.93	212.93	212.93
10	(1)	97.18	92.56	215.98	148.93	239.57	337.50
	(2)	443.61	298.76	697.11	393.82	502.46	611.10
	(3)	40.02	66.55	155.28	152.43	316.58	569.53
	(4)	397.48	170.35	397.48	170.35	170.35	170.35
	(5)	40.02	66.55	155.28	148.93	170.35	170.35
12	(1)	67.49	64.28	149.99	103.42	166.37	234.38
	(2)	369.68	248.97	580.92	328.18	418.72	509.25
	(3)	23.16	38.51	89.86	88.21	183.21	329.59
	(4)	331.23	141.96	331.23	141.96	141.96	141.96
	(5)	23.16	38.51	89.86	88.21	141.96	141.96
14	(1)	49.58	47.23	110.20	75.98	122.23	172.19
	(2)	316.87	213.40	497.93	281.30	358.90	436.50
	(3)	14.58	24.25	56.59	55.55	115.37	207.56
	(4)	283.91	121.68	283.91	121.68	121.68	121.68
	(5)	14.58	24.25	56.59	55.55	115.37	121.68
16	(1)	37.96	36.16	84.37	58.17	93.58	131.84
	(2)	277.26	186.73	435.69	246.14	314.04	381.94
	(3)	9.77	16.25	37.91	37.21	77.29	139.05
	(4)	248.42	106.47	248.42	106.47	106.47	106.47
	(5)	9.77	16.25	37.91	37.21	77.29	106.47

SPAN FT	4x4	2x6	4x6	2x8	2x10	2x12
18 (1)	29.99	28.57	66.66	45.97	73.94	104.17
(2)	246.45	165.98	387.28	218.79	279.14	339.50
(3)	6.86	11.41	26.63	26.14	54.28	97.66
(4)	220.82	94.64	220.82	94.64	94.64	94.64
(5)	6.86	11.41	26.63	26.14	54.28	94.64
20 (1)	24.30	23.14	54.00	37.23	59.89	84.38
(2)	221.81	149.38	348.55	196.91	251.23	305.55
(3)	5.00	8.32	19.41	19.05	39.57	71.19
(4)	198.74	85.17	198.74	85.17	85.17	85.17
(5)	5.00	8.32	19.41	19.05	39.57	71.19
22 (1)	20.08	19.12	44.62	30.77	49.50	69.73
(2)	201.64	135.80	316.87	179.01	228.39	277.77
(3)	3.76	6.25	14.58	14.32	29.73	53.49
(4)	180.67	77.43	180.67	77.43	77.43	77.43
(5)	3.76	6.25	14.58	14.32	29.73	53.49
24 (1)	16.87	16.07	37.50	25.86	41.59	58.59
(2)	184.84	124.48	290.46	164.09	209.36	254.62
(3)	2.89	4.81	11.23	11.03	22.90	41.20
(4)	165.62	70.98	165.62	70.98	70.98	70.98
(5)	2.89	4.81	11.23	11.03	22.90	41.20