



**SOUTHERN
PINE
COUNCIL**

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Southern Pine Span Tables

Tables 1 through 4 are abbreviated span tables for the most commonly available grades of Southern Pine lumber. For other grades, loading conditions and spacings, refer to *Maximum Spans for Southern Pine Joists & Rafters* published by the Southern Pine Council.

These spans are based on the American Forest & Paper Association's *Span Tables for Joists & Rafters*, and the Southern Pine Inspection Bureau's *Standard Grading Rules for Southern Pine Lumber*. They are intended for use in covered structures or where the moisture content in use does not exceed 19% for an extended period of time.

The maximum spans provided in these tables are given in feet and inches of horizontal projection of the clear distance between member supports. For sloped members such as roof rafters, the horizontal projected span can be converted into a distance measured parallel to the member in order to determine the required member length.

Each piece of lumber should be identified by the grade mark of an agency certified by the Board of Review of the American Lumber Standard Committee, and manufactured in accordance with *Product Standard PS 20* published by the U.S. Department of Commerce.

Typical Lumber Grade Marks:



The conditions under which lumber is used in construction may vary widely, as does the quality of the workmanship. Neither the Southern Pine Council nor its members have knowledge of the quality of the workmanship or construction methods used on any construction project and, accordingly, do not warrant the design or performance of the lumber in completed structures.

Table 1 Floor Joists

30 or 40 psf live load; 10 psf dead load; $l/360$ deflection limit¹

Grade	No. 1		No. 2		No. 3		
	30	40	30	40	30	40	
2x6	12	12-0	10-11	11-10	10-9	10-5	9-4
	16	10-11	9-11	10-9	9-9	9-0	8-1
	24	9-7	8-8	9-4	8-6	7-4	6-7
2x8	12	15-10	14-5	15-7	14-2	13-3	11-11
	16	14-5	13-1	14-2	12-10	11-6	10-3
	24	12-7	11-5	12-4	11-0	9-5	8-5
2x10	12	20-3	18-5	19-10	18-0	15-8	14-0
	16	18-5	16-9	18-0	16-1	13-7	12-2
	24	16-1	14-7	14-8	13-1	11-1	9-11
2x12	12	24-8	22-5	24-2	21-9	18-8	16-8
	16	22-5	20-4	21-1	18-10	16-2	14-6
	24	19-6	17-5	17-2	15-5	13-2	11-10



Table 2 Ceiling Joists – Drywall ceiling

10 psf live load; 5 psf dead load; $L/240$ deflection limit¹
 20 psf live load; 10 psf dead load; $L/240$ deflection limit¹

Grade		No. 1		No. 2		No. 3	
Size & Spacing (inches)	Live Load (psf)						
		10	20	10	20	10	20
2x4	12	12-8	10-0	12-5	9-10	11-6	8-2
	16	11-6	9-1	11-3	8-11	10-0	7-1
	24	10-0	8-0	9-10	7-8	8-2	5-9
2x6	12	19-11	15-9	19-6	15-6	17-0	12-0
	16	18-1	14-4	17-8	13-6	14-9	10-5
	24	15-9	12-6	15-6	11-0	12-0	8-6
2x8	12	26-0*	20-10	25-8	20-1	21-8	15-4
	16	23-10	18-11	23-4	17-5	18-9	13-3
	24	20-10	15-10	20-1	14-2	15-4	10-10
2x10	12	26-0*	26-0*	26-0*	23-11	25-7	18-1
	16	26-0*	23-1	26-0*	20-9	22-2	15-8
	24	26-0*	18-10	23-11	16-11	18-1	12-10

Table 3 Rafters – Medium roofing; Drywall ceiling; Snow load

20, 30, or 40 psf live load; 15 psf dead load; $L/240$ deflection limit¹
 Load duration factor = 1.15 for snow loads²

Grade		No. 1			No. 2			No. 3		
Size & Spacing (inches)	Live Load (psf)									
		20	30	40	20	30	40	20	30	40
2x6	12	15-9	13-9	12-6	15-5	13-6	12-3	11-11	10-7	9-6
	16	14-4	12-6	11-5	13-4	11-9	10-8	10-4	9-2	8-3
	24	12-6	10-11	9-11	10-11	9-7	8-8	8-5	7-5	6-9
2x8	12	20-10	18-2	16-6	19-11	17-7	15-11	15-3	13-5	12-2
	16	18-11	16-6	15-0	17-3	15-3	13-9	13-2	11-8	10-6
	24	15-9	13-11	12-7	14-1	12-5	11-3	10-9	9-6	8-7
2x10	12	26-0*	23-2	21-1	23-9	21-0	19-0	18-0	15-10	14-4
	16	22-11	20-3	18-3	20-7	18-2	16-5	15-7	13-9	12-5
	24	18-9	16-6	14-11	16-10	14-10	13-5	12-9	11-3	10-2
2x12	12	26-0*	26-0*	25-2	26-0*	24-7	22-3	21-5	18-11	17-1
	16	26-0*	24-1	21-10	24-2	21-3	19-3	18-6	16-4	14-9
	24	22-4	19-8	17-10	19-9	17-5	15-9	15-2	13-4	12-1

Table 4 Rafters – Drywall or No Finished ceiling; Construction load

20 psf live load; 10 psf dead load; $L/240$ or $L/180$ deflection limit¹
 Load duration factor = 1.25 for construction loads²

Grade		No. 1		No. 2		No. 3	
Size & Spacing (inches)	Deflection Limit						
		240	180	240	180	240	180
2x4	12	10-0	11-1	9-10	10-10	9-1	9-1
	16	9-1	10-0	8-11	9-10	7-11	7-11
	24	8-0	8-9	7-10	8-7	6-5	6-5
2x6	12	15-9	17-4	15-6	17-0	13-6	13-6
	16	14-4	15-9	14-1	15-1	11-8	11-8
	24	12-6	13-9	12-3	12-3	9-6	9-6
2x8	12	20-10	22-11	20-5	22-5	17-2	17-2
	16	18-11	20-10	18-6	19-5	14-10	14-10
	24	16-6	17-9	15-10	15-10	12-1	12-1
2x10	12	26-0*	26-0*	26-0	26-0*	20-3	20-3
	16	24-1	25-10	23-2	23-2	17-6	17-6
	24	21-1	21-1	18-11	18-11	14-4	14-4

*The listed maximum span has been limited to 26'-0" based on material availability. Check sources of supply for availability of lumber in lengths greater than 20'-0".

(1) Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by a constant and is based on live load only. (2) Allowable bending values used in calculations include a load duration factor as permitted in AF&PA's *National Design Specification*.®