

**TABLE 39 RAFTERS – 40 PSF LIVE LOAD, 20 PSF DEAD LOAD, 180 DEFLECTION,  $C_D = 1.15$  (SNOW)**

Size inches	Spacing inches on center	Grade									
		Visually Graded				Machine Stress Rated (MSR)			Machine Evaluated Lumber (MEL)		
		SS	No.1	No.2	No.3	2400f - 2.0E	2250f - 1.9E	1950f - 1.7E	M-23	M-14	M-12
<b>2 x 4</b>	<b>12.0</b>	8-11	8-9	8-3	6-2	9-3	9-1	8-9	8-11	8-9	8-6
	<b>16.0</b>	8-1	7-11	7-1	5-4	8-5	8-3	8-0	8-1	7-10	7-4
	<b>19.2</b>	7-8	7-3	6-6	4-11	7-11	7-9	7-5	7-8	7-1	6-9
	<b>24.0</b>	7-1	6-5	5-10	4-4	7-4	7-1	6-7	7-1	6-4	6-0
<b>2 x 6</b>	<b>12.0</b>	14-1	13-6	11-9	9-2	14-7	14-4	13-9	14-1	13-9	13-4
	<b>16.0</b>	12-9	11-9	10-2	7-11	13-3	13-0	12-6	12-9	12-3	11-7
	<b>19.2</b>	12-0	10-8	9-4	7-3	12-5	12-3	11-8	12-0	11-2	10-7
	<b>24.0</b>	11-2	9-7	8-4	6-5	11-7	11-2	10-5	11-2	10-0	9-5
<b>2 x 8</b>	<b>12.0</b>	18-6	17-0	15-3	11-8	19-2	18-10	18-2	18-6	18-2	17-7
	<b>16.0</b>	16-10	14-9	13-2	10-1	17-5	17-2	16-6	16-10	16-2	15-3
	<b>19.2</b>	15-10	13-5	12-0	9-2	16-5	16-1	15-4	15-10	14-9	13-11
	<b>24.0</b>	14-8	12-0	10-9	8-3	15-3	14-9	13-9	14-8	13-2	12-5
<b>2 x 10</b>	<b>12.0</b>	23-8	20-3	18-2	13-9	24-6	24-1	23-2	23-8	23-2	22-5
	<b>16.0</b>	21-6	17-6	15-9	11-11	22-3	21-10	21-1	21-6	20-7	19-5
	<b>19.2</b>	20-1	16-0	14-4	10-10	20-11	20-7	19-7	20-2	18-10	17-9
	<b>24.0</b>	17-11	14-4	12-10	9-9	19-5	18-10	17-6	18-9	16-10	15-10

Based on the code-recognized *Span Tables for Joists and Rafters* and *Wood Structural Design Data*, both published by the American Forest & Paper Association. Listed spans do not include checks for concentrated or partition loads that may be required by building codes for specific occupancy or use categories. Unless the table is labeled Wet-Service, these spans are intended for use in enclosed structures or where the moisture content in use does not exceed 19 percent for an extended time. Applied loads are given in psf (pounds per square foot). Deflection is limited to the span in inches divided by 360, 240, or 180 and is based on live load only. The load duration factor,  $C_D$ , is 1.0 unless shown as 1.15 for snow loads or 1.25 for construction loads. An asterisk (\*) indicates the listed span has been limited to 26'-0" based on availability; check sources of supply for lumber longer than 20'. Highlighted sizes/grades are NOT commonly produced. Contact the Wood Products Help Desk for span assistance on grades, on-center spacings, or loads not included in these tables.

The primary purpose of this publication is to provide a convenient reference for joist and rafter spans for specific grades of Southern Pine lumber. The maximum spans provided herein were determined on the same basis as those in the code-recognized *Span Tables for Joists and Rafters (2005 edition)* and *Wood Structural Design Data (1986 with 1992 revisions)*, both published by the American Forest & Paper Association (AF&PA).

The Southern Pine Council does not grade or test lumber, and accordingly, does not assign design values to Southern Pine lumber. The design values contained herein are based on the Southern Pine Inspection Bureau's *Standard Grading Rules for Southern Pine Lumber (2002 edition)* and modified as required by AF&PA's *National Design Specification® (NDS®) for Wood Construction (2005 edition)*. Accordingly, the Southern Pine Council, its principals and/or members, do not warrant in any way that the design values on which the span tables for Southern Pine lumber contained herein are based are correct and specifically disclaim any liability for injury or damage resulting from the use of such span tables.

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