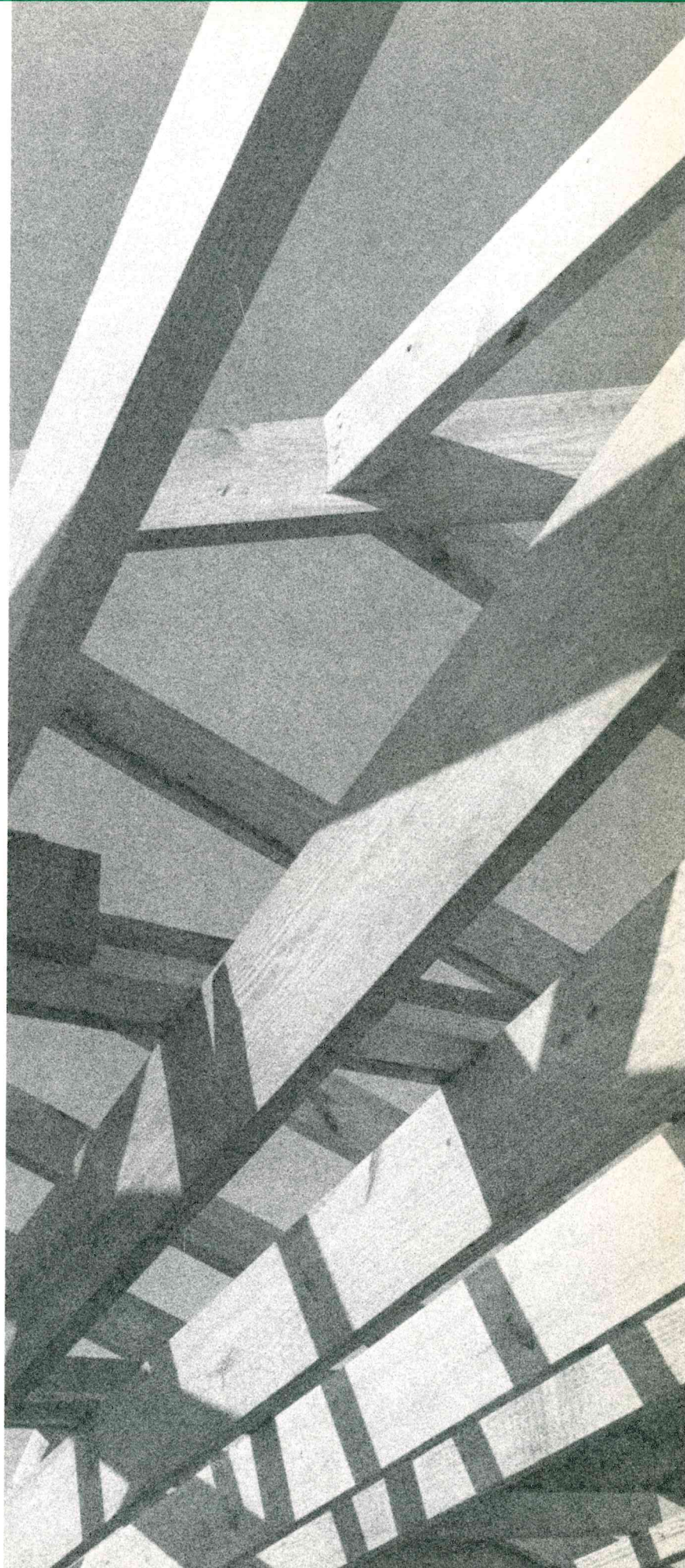


MAXIMUM SPANS

Southern Pine Joists & Rafters



FOR DIMENSION LUMBER
Based on full-size In-Grade test results



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The Southern Pine Marketing Council (SPMC) is a joint promotional body coordinated and supported by members of the Southern Forest Products Association (SFPA) and Southeastern Lumber Manufacturers Association (SLMA). For more information, contact either association.

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Acknowledgment

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Table Number	Live Load (psf)	Dead Load (psf)	Deflection Limit	See Page
Floor Joists				
1	30	10	360	8
2	40	10	360	8
3	50	10	360	9
4	60	10	360	9
5	40	20	360	10
6	50	20	360	10
7	60	20	360	11

Ceiling Joists				
8	10	5	240	12
9	20	10	240	12

Rafters (Snow Load, $C_D = 1.15$)				
10	20	10	240	13
11	30	10	240	13
12	40	10	240	14
13	50	10	240	14
14	20	15	240	15
15	30	15	240	15
16	40	15	240	16
17	50	15	240	16
18	20	20	240	17
19	30	20	240	17
20	40	20	240	18
21	50	20	240	18
22	20	10	180	19
23	30	10	180	19
24	40	10	180	20
25	50	10	180	20
26	20	15	180	21
27	30	15	180	21
28	40	15	180	22
29	50	15	180	22
30	20	20	180	23
31	30	20	180	23
32	40	20	180	24
33	50	20	180	24

Rafters (Construction Load, $C_D = 1.25$)				
34	20	10	240	25
35	20	15	240	25
36	20	20	240	26
37	20	10	180	26
38	20	15	180	27
39	20	20	180	27

Wet-Service Floor Joists (MC > 19%)				
40	40	10	360	28
41	60	10	360	28

Heavy Live-Load Floor Joists				
42	75	10	360	29
43	80	10	360	29
44	90	10	360	30
45	100	10	360	30
46	125	10	360	31
47	150	10	360	31

The Southern Pine Marketing 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 *SPIB Standard Grading Rules for Southern Pine Lumber, 1991 Edition*, published by the Southern Pine Inspection Bureau, and modified as required by the *1991 National Design Specification® (NDS®) for Wood Construction* published by the American Forest & Paper Association (AFPA), formerly NFPA.

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 *Span Tables for Joists and Rafters, 1993 Edition*, published by AFPA. Accordingly, the Southern Pine Marketing 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 quality of the lumber and workmanship. Neither the Southern Pine Marketing Council, nor its principals and/or members, have any knowledge of the construction methods, quality of materials and workmanship used on any construction project; and accordingly, cannot and do not, warrant the performance of the lumber used in completed structures.

Southern Pine—An Abundant Resource

Southern Pine is a general group of four principal species: longleaf, shortleaf, slash, and loblolly grown in a region that stretches from Virginia through eastern Texas. With nearly 200 million acres of forestland, the southern United States offers a potential for timber growth uncommon to other regions. And the continued practice of wise forest management, including prolific reforestation efforts, assures a bountiful supply of quality wood for generations to come.

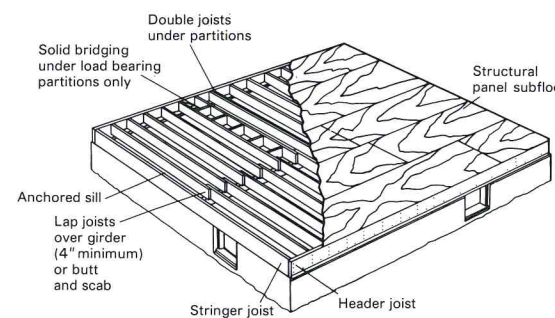
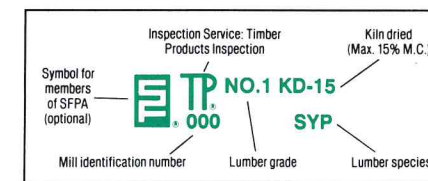
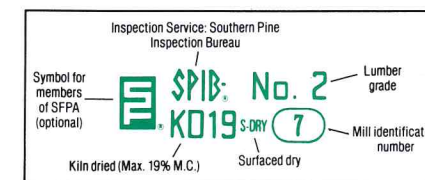
Today's Versatile Building Material

Southern Pine has long been a preferred species for residential and nonresidential structures, because of its high strength, durability, and fastener holding power. Kiln-dried Southern Pine lumber is ideal for joists and rafters. New, empirical design values for Southern Pine dimension lumber, published in the *SPIB Standard Grading Rules for Southern Pine Lumber, 1991 Edition*, confirm Southern Pine's stature as the strongest structural lumber species for engineered and framing applications. This booklet presents a simplified system for determining allowable spans for joists and rafters, using Southern Pine lumber under a variety of loading conditions.

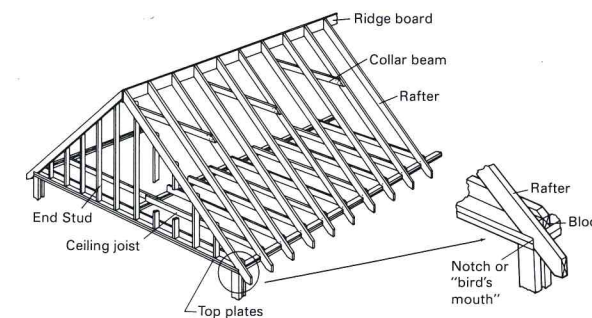
Lumber Identification

The maximum spans in these tables apply to lumber identified by the grade mark of an agency certified by the Board of Review of the American Lumber Standards Committee, and manufactured in accordance with *Product Standard PS 20-70* published by the U.S. Department of Commerce. A certified grade mark on Southern Pine lumber (2" or less in thickness) indicates that the lumber has been properly seasoned and that it meets the structural and appearance requirements established for the grade.

Two Typical Lumber Grade Marks:



Typical floor joist construction



Typical rafter framing for pitched roof

SPAN COMPARISONS BY SPECIES*

Maximum Spans
given in feet and inches

Size	Grade	Southern Pine	Douglas Fir-Larch	Hem-Fir	Spruce-Pine-Fir	Spruce-Pine-Fir South
2 x 10s 16" o.c.	No. 1	16-9	16-5	16-0	15-4	14-11
	No. 2	16-1	15-4	15-2	15-4	14-3
	No. 3	12-2	11-8	11-8	11-8	10-9
2 x 12s 16" o.c.	No. 1	20-4	19-1	18-7	17-10	17-7
	No. 2	18-10	17-10	17-7	17-10	16-7
	No. 3	14-5	13-6	13-6	13-6	12-5

*Based on a 40 psf live load, 10 psf dead load and $L/360$ deflection limitation. These spans were calculated using published design values and are for comparison purposes only. They include the repetitive member factor, $C_r = 1.15$, but do not include composite action of adhesive and sheathing. Spans may be slightly different than other published spans due to rounding.

PROPER LUMBER STORAGE

Using proper storage techniques is essential to the efficient and economical use of lumber. Proper storage also:

- Protects lumber from fungi and insects.
- Prevents defects that may result from alternate wetting and drying.
- Helps maintain appearance and dimensional stability.
- Helps to safeguard against costly callbacks for builders.

Dimensional Stability

Proper seasoning and storage helps provide optimal dimensional stability of lumber in service. The cellular structure of wood has a sponge-like effect. The material absorbs or loses moisture depending on the humidity and temperature of the surrounding air.

To minimize shrinkage, Southern Pine grading rules require that dimension lumber 2" or less in thickness be kiln-dried or seasoned to a moisture content not exceeding 19%. This will result in an average moisture content of 15%. Additional conditioning will take place as lumber is stored, or used where it will reach equilibrium moisture content. For interior items such as flooring, millwork and furniture, the moisture content will average between 6% and 11%. (See U.S. map.) For exterior items such as framing, siding and sheathing, the moisture content will average 12% in most areas of the U.S., with a range of 7% to 14%.

Proper storage helps maintain dimensional stability before and after delivery to the job site. It is a safeguard against costly and unsightly problems such as:

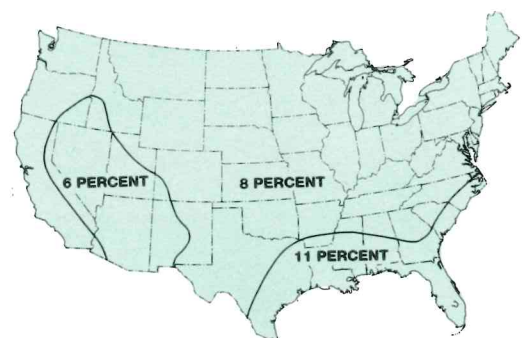
- *Warp, etc.* – it reduces warp, twist, stain and crook.
- *Nail Popping* – which results when wood shrinks, causing the heads of nails to protrude. Spiral shank and annularly grooved nails also help to prevent this problem.
- *Baseboard Pull-Away* – which occurs when floor or ceiling joists are installed with excessive moisture content. As the lumber shrinks, the floor or ceiling is pulled away from mouldings.

Job Site Storage

Regardless of where lumber is stored at the job site, a few simple precautions should be observed:

- Lumber should be unloaded in a dry place – not in water or muddy areas.
- Lumber should not be in direct contact with the ground. It should be elevated on stringers to allow air circulation.
- Lumber stored in an open area should be covered with a material that will give protection from the elements but be porous enough to allow moisture to escape. Polyethylene or similar covers may not allow the passage of moisture.
- Framing lumber should be enclosed and under roof as soon as possible for protection from the elements.
- Exterior siding and finish should be stored in a closed unheated area.
- Interior items such as millwork, flooring, and cabinet work should be stored in a closed area where heat can be applied during damp weather to maintain the desired moisture content.
- Stock rotation is important when dealing with large deliveries. Lumber should be used in the order in which it is received.

The builder, building contractor, licensed contractor, erector or erection contractor is responsible for the proper unloading, receiving, storage, handling, installation and bracing of lumber at the job site.



Average moisture content for interior wood products

PRESSURE-TREATED LUMBER

Southern Pine has long been a preferred species when pressure treatment with preservatives is required, because of its ease of treatability. The unique cellular structure of Southern Pine permits deep, uniform penetration of preservatives, rendering the wood useless as a food source for fungi, termites and microorganisms.

Most wood species do not readily accept preservatives, and must first be "incised", or perforated with a series of small slits along the grain of the wood's surface. Southern Pine is one of the few wood species that does not require incising to meet American Wood Preservers' Association (AWPA) standards.

Waterborne preservatives are preferred for most framing applications. These treatments are clean, odorless and paintable, plus they are approved by the Environmental Protection Agency (EPA) for both interior and exterior use without a sealer. The most commonly used waterborne preservative is known as CCA, or Chromated Copper Arsenate.

Generally, building codes require pressure-treated or naturally durable wood for the following applications:

- Wood joists or the bottom of structural floors without joists closer than 18 inches to exposed soil.
- Wood girders closer than 12 inches to exposed soil.
- Plates, sills and sleepers on concrete or masonry which is in direct contact with soil.
- Wood in permanent structures closer than 6 inches to soil.
- Wood supporting moisture-permeable roofs and floors exposed to weather unless separated by an impervious moisture barrier.
- Wood framing members including sheathing which rest on foundation walls and are less than 8 inches from soil.

Note: When used in enclosed locations, wood moisture content shall be 19% or less at time of permanent enclosure.

Observing the following points will aid in the successful use of CCA-treated Southern Pine.

Retentions (lbs./cu. ft.)	Uses/ Exposure
.25	Above ground
.40	Ground contact and fresh water
.60	Wood foundation and sawn timber building posts
2.50	Salt water

- Published design values apply to treated lumber, but must be multiplied by the appropriate wet service factor, C_M , when the moisture content will exceed 19% for an extended period of time.
- Hot-dipped galvanized or stainless steel 304 or 316 nails and fasteners should be used to resist corrosion.

- Treated lumber should be stacked and stored in the same manner as untreated wood. Treating does not prevent normal shrinking and swelling of wood.
- Where possible, all cuts and holes should be completed before treatment. However, when on-site fabrication is necessary, all cuts and holes should be liberally brushed with a solution of copper naphthenate.

Special Applications

PWF – The Permanent Wood Foundation, or PWF, is a load-bearing lumber-framed foundation wall sheathed with plywood. All lumber and plywood used in the PWF is specially pressure treated to withstand decay from moisture and termite attack. Southern Pine lumber used in a PWF is CCA-treated to a retention level of .60 lbs./cu.ft., in accordance with AWPA Standard C22. Pressure treated lumber to be used for PWF's should be stamped "FDN," or "PWF Foundation."

Once the foundation walls are in place, standard framing construction practices are followed for the structure above. Typically, floor joists are installed on the top plate of the foundation wall. Subflooring and wall framing follow.

Construction of the PWF involves special fastener requirements. Refer to the *PWF Design Manual*, available from SPMC, for details.

Plen-Wood – The Plen-Wood system utilizes a sealed, insulated cavity to create an underfloor plenum. This system provides uniform, efficient distribution of warm or cool air from a centrally located HVAC unit. Plen-Wood walls are basically crawl space versions of the PWF.

PIRF – The Perimeter-Insulated Raised Floor, or PIRF, is another engineered foundation floor system for crawl space construction. Insulation is applied only to the inside of the perimeter foundation wall, eliminating the need for under-floor insulation. This configuration allows the thermal mass of the earth to assist in heating and cooling.

High Moisture Areas – Although not required by code, treated Southern Pine is ideal for bath, kitchen and utility areas where the possibility of decay due to water leakage exists. Using treated wood in these areas will provide a framing system that meets or exceeds the buyer's expectations for long-term, solid performance. Treated Southern Pine also provides extra protection for high-moisture exterior applications, such as soffits and fascia.

Southern Pine lumber properly treated with CCA in accordance with AWPA standards and used within the guidelines of the EPA is safe to use and poses no threat to people or pets.

For more detailed pressure-treated information, see *Pressure Treated Southern Pine*.

USING THESE TABLES

The primary purpose of this publication is to provide a convenient reference of joist and rafter spans for specific grades of Southern Pine lumber. The maximum spans provided in these tables were determined on the same basis as those given in the code-recognized *Span Tables for Joists and Rafters, 1993 Edition*, published by the American Forest & Paper Association (AFPA), formerly National Forest Products Association (NFPA). Southern Pine design values used in the calculations are based on the *SPIB Standard Grading Rules for Southern Pine Lumber, 1991 Edition*, published by the Southern Pine Inspection Bureau (SPIB).

There are three general categories of span tables:

Floor Joists

Conventional loads	Tables 1-7	pages 8-11
Wet-service conditions	Tables 40-41	page 28
Heavy live loads	Tables 42-47	pages 29-31

Ceiling Joists

Conventional loads	Tables 8-9	page 12
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Rafters

Snow loads ($C_D = 1.15$)	Tables 10-33	pages 13-24
Construction loads ($C_D = 1.25$)	Tables 34-39	pages 25-27

General Requirements

The quality of wood products and fasteners and the design of load-supporting wood members and connections shall conform to the *National Design Specification® (NDS®)* published by AFPA (NFPA). All members shall be so framed, anchored, tied, and braced to have the necessary strength and rigidity. Adequate bracing and bridging to resist wind and other lateral forces shall be provided.

Design Loads

Assumed loading conditions are stated in the heading for each table. Live and dead loads are shown in psf (pounds per square foot). The provided range of loads accommodates the most common design loads used. Structures in heavy snow load areas should be analyzed thoroughly using accepted engineering practice. For rafters with roof live loads less than 20 psf, see AFPA's *Span Tables for Joists and Rafters* for adjustments.

The estimated dead loads for rafters are based on the type or amount of roof covering material. Tables are included for three common coverings:

Light roofing (10 psf dead load)

Up to 2 courses of asphalt shingles, or wood shakes/shingles

Medium roofing (15 psf dead load)

2" clay book tile

Heavy roofing (20 psf dead load)

3" clay book tile

All listed dead loads include the weight of the framing members.

Lumber Sizes

Computations for these span tables are based on net lumber dimensions (actual sizes), provided by the *American Softwood Lumber Standard PS 20-70*:

Nominal Size, inches	Actual Dry Size, inches
2 x 4	1-1/2 x 3-1/2
2 x 6	1-1/2 x 5-1/2
2 x 8	1-1/2 x 7-1/4
2 x 10	1-1/2 x 9-1/4
2 x 12	1-1/2 x 11-1/4

Spans

The maximum spans in these tables were computed using standard engineering design formulas for simple span beams with uniform loads. They assume installation of at least three joists or rafters spaced not more than 24" on center. The calculated spans assume fully supported members, properly sheathed and nailed on the top edge of the joist or rafter. They do not, however, include composite action of adhesive and sheathing.

Tabulated maximum spans are the distance from face to face of supports, and are given in feet and inches of horizontal projection of the member. This represents the actual length of horizontal members such as floor and ceiling joists. For sloping rafters, the span is also measured along the horizontal projection, with the chart on page 32 providing a convenient tool for calculating the corresponding sloping rafter length.

These span tables were calculated considering three design conditions:

Bending (flexure)

Deflection

Compression perpendicular-to-grain.

For live loads greater than 60 psf, an additional check for **shear parallel-to-grain** (horizontal shear) was included. Only the controlling length rounded to the nearest inch is shown in the tables. Listed spans in this publication have been limited to 26'-0" based on material availability. Southern Pine is commonly available in lengths up to 20'. Check sources of supply for longer lengths.

Almost all of the spans in these tables are intended for use in covered structures or where the moisture content in use does not exceed 19% for an extended period of time. Two wet-service floor joist tables, tables 40 and 41, are included for structures where the moisture content exceeds 19%.

Load Duration

Wood has the ability to carry substantially greater maximum loads for short durations than for long durations. Tabulated design values apply to normal loading conditions, and may be multiplied by a load duration factor, C_D , permitted by established engineering design criteria and building code regulations. This factor is covered in detail in the *NDS*, and summarized in the *Southern Pine Use Guide* available from the Southern Pine Marketing Council.

Floor and ceiling joists are based on the normal ten-year load duration which implies a load duration factor, C_D , of 1.0. For rafters, the load duration factor, C_D , is typically either 1.15 for two-month snow loads, or 1.25 for 7-day construction loads. Snow loads are presented in rafter tables 10-33, while construction loads are presented in rafter tables 34-39. All of these rafter tables are labeled to indicate the load duration factor used.

Deflection

Deflection may be the controlling factor in determining the member size required when appearance or rigidity is important. Control of floor vibration is another important reason to limit deflection.

Deflection limits are expressed as a fraction of the span length in inches, and consider only the live load in accordance with established engineering practice for the design of joists and rafters. The most generally used deflection limits are summarized below:

Application	Deflection Limit
Floor joists	$L/360$
Ceiling joists	$L/240$
Rafters: Drywall ceiling	$L/240$
Rafters: No finished ceiling	$L/180$

In cases where a stricter deflection limit is desired, and the length is controlled by the $L/360$ deflection limit, the tabulated span lengths may be multiplied by the factors shown below.

Deflection Limit	Adjustment Factor
$L/480$	0.91
$L/600$	0.84

Bending

Bending design values used assume a fully supported member, properly sheathed and nailed on one edge of the joist or rafter. The repetitive member use factor, C_r , of 1.15 was included, as allowed in the *NDS*. The load duration factor, C_D , was also applied as appropriate.

Compression Perpendicular-to-Grain

The compression perpendicular-to-grain check assumed a 2.0" bearing length and rarely controlled the maximum spans. An additional check should be made for shorter bearing lengths, such as for 1.5" ledgers.

Shear Parallel-to-Grain

For live loads greater than 60 psf, an additional check for shear parallel-to-grain was included. All loads within a distance from supports equal to the depth of the members were neglected when calculating the shear force, as allowed in the *NDS*.

Design Values

Spans in this publication are based on Southern Pine design values published in the *SPIB Standard Grading Rules for Southern Pine Lumber, 1991 Edition*. The stress values and modulus of elasticity values assigned to dimension lumber in those rules are based on tests of full-size lumber conducted by SPIB in cooperation with the U.S. Forest Products Laboratory. The procedures set forth in the listed ASTM standards were followed in assigning these design values:

Standard Practice for Establishing Properties for Visually Graded Dimension Lumber from In-Grade Tests of Full Size Specimens, ASTM D1990-91.

Standard Test Methods for Establishing Clear Wood Strength Values, ASTM D2555-88.

Standard Practice for Establishing Structural Grades and Related Allowable Properties for Visually Graded Lumber, ASTM D245-88.

Adjustment Factors

Tabulated SPIB design values were multiplied by appropriate adjustment factors to determine allowable design values. Adjustment factors used for these tables are:

Repetitive Member Factor, C_r : The bending design value, F_b , for dimension lumber 2" to 4" thick shall be multiplied by the repetitive member factor, $C_r = 1.15$, when such members are used as joists, truss chords, rafters, studs, planks, decking or similar members which are in contact or spaced not more than 24" on centers, are not less than 3 in number and are joined by floor, roof or other load distributing element adequate to support the design load.

Load Duration Factor, C_D : Tabulated design values apply to normal load duration. Normal load duration contemplates a load that fully stresses a member to its allowable design value by the application of the full design load for a cumulative duration of approximately ten years. When the cumulative duration of the full maximum load does not exceed the specified time period, all tabulated design values except modulus of elasticity, E , and compression perpendicular-to-grain, $F_{c\perp}$, based on a deformation limit shall be multiplied by the appropriate load duration factor.

Wet Service Factor, C_M : When dimension lumber is used where moisture content will exceed 19 percent for an extended time period, design values shall be multiplied by the appropriate wet service factors.

The resulting allowable design values used to determine these Southern Pine maximum spans are listed in the table on page 7.

Allowable Southern Pine Design Values Used to Calculate Maximum Spans¹

Based on 1991 SPIB Grading Rules • Values in pounds per square inch (psi)

Property	Size	Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1 NonDense	No. 2 Dense	No. 2 NonDense	No. 3	Standard		
Floor and Ceiling Joists Tables 1 to 9 and 42 to 47												
F_b^2	2 x 4	3510	3280	3050	2300	2130	1950	1960	1720	1550	980	720
	2 x 6	3100	2930	2700	2010	1900	1720	1670	1440	1320	865	
	2 x 8	2820	2650	2420	1900	1730	1550	1610	1380	1260	805	
	2 x 10	2470	2360	2130	1670	1500	1380	1380	1210	1090	690	
	2 x 12	2360	2190	2010	1550	1440	1320	1320	1120	1040	660	
E	All	1,900,000	1,800,000	1,700,000	1,800,000	1,700,000	1,600,000	1,700,000	1,600,000	1,400,000	1,400,000	1,300,000
$F_{c\perp}$	All	660	565	480	660	565	480	660	565	480	565	565
F_v	All	90	90	90	90	90	90	90	90	90	90	90
	(except 2 x 4)	100	100	100	100	100	100	90	90	90	90	90
Rafters: Snow Load ($C_D = 1.15$) Tables 10 to 33												
F_b^3	2 x 4	4030	3770	3500	2650	2450	2250	2250	1980	1790	1120	825
	2 x 6	3570	3370	3110	2310	2180	1980	1920	1650	1520	990	
	2 x 8	3240	3040	2780	2180	1980	1790	1850	1590	1450	925	
	2 x 10	2840	2710	2450	1920	1720	1590	1590	1390	1260	795	
	2 x 12	2710	2510	2310	1790	1650	1520	1520	1290	1190	760	
E	All	1,900,000	1,800,000	1,700,000	1,800,000	1,700,000	1,600,000	1,700,000	1,600,000	1,400,000	1,400,000	1,300,000
$F_{c\perp}$	All	660	565	480	660	565	480	660	565	480	565	565
Rafters: Construction Load ($C_D = 1.25$) Tables 34 to 39												
F_b^4	2 x 4	4380	4100	3810	2880	2660	2440	2440	2160	1940	1220	900
	2 x 6	3880	3670	3380	2520	2370	2160	2080	1800	1650	1080	
	2 x 8	3520	3310	3020	2370	2160	1940	2010	1720	1580	1010	
	2 x 10	3090	2950	2660	2080	1870	1730	1730	1510	1370	865	
	2 x 12	2950	2730	2520	1940	1800	1650	1650	1400	1290	825	
E	All	1,900,000	1,800,000	1,700,000	1,800,000	1,700,000	1,600,000	1,700,000	1,600,000	1,400,000	1,400,000	1,300,000
$F_{c\perp}$	All	660	565	480	660	565	480	660	565	480	565	565
Wet-Service Floor Joists ($MC > 19\%$) Tables 40 & 41												
F_b^5	2 x 6	2640	2490	2300	1710	1610	1470	1420	1220	1320	865	
	2 x 8	2390	2250	2050	1610	1470	1320	1370	1170	1270	805	
	2 x 10	2100	2000	1810	1420	1270	1170	1170	1090	1090	690	
	2 x 12	2000	1860	1710	1320	1220	1320	1320	1120	1040	660	
E ⁶	All	1,710,000	1,620,000	1,530,000	1,620,000	1,530,000	1,440,000	1,530,000	1,440,000	1,260,000	1,260,000	
$F_{c\perp}^7$	All	440	380	320	440	380	320	440	380	320	380	

¹ Listed allowable bending, F_b , and modulus of elasticity, E, design values are from AFPA's Span Tables for Joists and Rafters supplement on design values. The allowable shear parallel-to-grain, F_v , and compression perpendicular-to-grain, $F_{c\perp}$, design values are from AFPA's National Design Specification supplement on design values. The general procedure followed was to multiply tabulated design values by appropriate adjustment factors (i.e. repetitive members, load duration, and/or wet service uses), and then round to the nearest 5 or 10 psi.

² Bending values were multiplied by the repetitive member use factor, $C_r = 1.15$, and by the seven-day load duration factor for construction, $C_D = 1.25$. ($F_b \times 1.15 \times 1.25$). The repetitive member use factor assumes installation of at least three members spaced not more than 24" on center, and joined by sheathing adequate to support the design load.

³ Bending values were multiplied by the repetitive member use factor, $C_r = 1.15$, and by the two-month load duration factor for snow, $C_D = 1.15$. ($F_b \times 1.15 \times 1.15$). The load duration factor recognizes wood's ability to carry substantially greater maximum loads for short durations than for long durations.

⁴ Bending values were multiplied by the repetitive member use factor, $C_r = 1.15$, and by the seven-day load duration factor for construction, $C_D = 1.25$. ($F_b \times 1.15 \times 1.25$).

⁵ Bending values were multiplied by the repetitive member use factor, $C_r = 1.15$, and by the wet service factor, $C_M = 0.85$, except if $F_b \leq 1150$ psi, then $C_M = 1.0$. ($F_b \times 1.15 \times 0.85$ or 1.0). The wet service factor assumes lumber is used where the moisture content will exceed 19% for an extended period of time.

⁶ Modulus of elasticity values were multiplied by the wet service factor, $C_M = 0.90$. ($E \times 0.90$).

⁷ Compression perpendicular-to-grain values were multiplied by the wet service factor, $C_M = 0.67$. ($F_{c\perp} \times 0.67$).

SOUTHERN PINE SPAN TABLES

Maximum Spans given in feet and inches

Table 1 Floor Joists – 30 psf live load, 10 psf dead load, $\ell/360$

Sleeping rooms and attic floors

Size	Spacing	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1 NonDense	No. 2 Dense	No. 2 NonDense	No. 3		
2 x 6	12	12-6	12-3	12-0	12-3	12-0	11-10	12-0	11-10	11-3	10-5
	16	11-4	11-2	10-11	11-2	10-11	10-9	10-11	10-9	10-3	9-1
	24	9-11	9-9	9-7	9-9	9-7	9-4	9-7	9-4	8-11	7-5
2 x 8	12	16-6	16-2	15-10	16-2	15-10	15-7	15-10	15-7	14-11	13-3
	16	15-0	14-8	14-5	14-8	14-5	14-2	14-5	14-2	13-6	11-6
	24	13-1	12-10	12-7	12-10	12-7	12-4	12-7	12-4	11-9	9-5
2 x 10	12	21-0	20-8	20-3	20-8	20-3	19-10	20-3	19-10	19-0	15-8
	16	19-1	18-9	18-5	18-9	18-5	18-0	18-5	18-0	17-1	13-7
	24	16-8	16-5	16-1	16-5	16-1	15-8	15-8	14-8	13-11	11-1
2 x 12	12	25-7	25-1	24-8	25-1	24-8	24-2	24-8	24-2	23-1	18-8
	16	23-3	22-10	22-5	22-10	22-5	21-11	22-5	21-1	20-3	16-2
	24	20-3	19-11	19-7	19-11	19-6	18-8	18-8	17-2	16-7	13-2

Table 2 Floor Joists – 40 psf live load, 10 psf dead load, $\ell/360$

All rooms except sleeping rooms and attic floors

Size	Spacing	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1 NonDense	No. 2 Dense	No. 2 NonDense	No. 3		
2 x 6	12	11-4	11-2	10-11	11-2	10-11	10-9	10-11	10-9	10-3	9-4
	16	10-4	10-2	9-11	10-2	9-11	9-9	9-11	9-9	9-4	8-1
	24	9-0	8-10	8-8	8-10	8-8	8-6	8-8	8-6	8-2	6-7
2 x 8	12	15-0	14-8	14-5	14-8	14-5	14-2	14-5	14-2	13-6	11-11
	16	13-7	13-4	13-1	13-4	13-1	12-10	13-1	12-10	12-3	10-3
	24	11-11	11-8	11-5	11-8	11-5	11-3	11-5	11-0	10-6	8-5
2 x 10	12	19-1	18-9	18-5	18-9	18-5	18-0	18-5	18-0	17-3	14-0
	16	17-4	17-0	16-9	17-0	16-9	16-5	16-9	16-1	15-3	12-2
	24	15-2	14-11	14-7	14-11	14-7	14-0	14-0	13-2	12-6	9-11
2 x 12	12	23-3	22-10	22-5	22-10	22-5	21-11	22-5	21-9	20-11	16-8
	16	21-1	20-9	20-4	20-9	20-4	19-11	20-4	18-10	18-2	14-5
	24	18-5	18-1	17-9	18-1	17-5	16-8	16-8	15-4	14-10	11-10

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 360 and is based on live load only. Check sources of supply for availability of lumber in lengths greater than 20'-0".

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 3 Floor Joists – 50 psf live load, 10 psf dead load, $\ell/360$

Office space (concentrated load checks may be required)

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	10-6	10-4	10-2	10-4	10-2	9-11	10-2	9-11	9-6	8-6
	16	9-7	9-5	9-3	9-5	9-3	9-1	9-3	9-1	8-8	7-5
	24	8-4	8-3	8-1	8-3	8-1	7-11	8-1	7-9	7-5	6-0
2 x 8	12	13-11	13-8	13-5	13-8	13-5	13-1	13-5	13-1	12-7	10-10
	16	12-7	12-5	12-2	12-5	12-2	11-11	12-2	11-11	11-5	9-5
	24	11-0	10-10	10-8	10-10	10-8	10-5	10-8	10-0	9-7	7-8
2 x 10	12	17-9	17-5	17-1	17-5	17-1	16-9	17-1	16-9	16-0	12-10
	16	16-1	15-10	15-6	15-10	15-6	15-2	15-6	14-8	13-11	11-1
	24	14-1	13-10	13-7	13-10	13-4	12-10	12-10	12-0	11-5	9-1
2 x 12	12	21-7	21-2	20-9	21-2	20-9	20-4	20-9	19-10	19-1	15-3
	16	19-7	19-3	18-10	19-3	18-10	18-6	18-8	17-2	16-7	13-2
	24	17-1	16-10	16-6	16-6	15-11	15-3	15-3	14-0	13-6	10-9

Table 4 Floor Joists – 60 psf live load, 10 psf dead load, $\ell/360$

Corridors

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	9-11	9-9	9-7	9-9	9-7	9-4	9-7	9-4	8-11	7-11
	16	9-0	8-10	8-8	8-10	8-8	8-6	8-8	8-6	8-2	6-10
	24	7-10	7-9	7-7	7-9	7-7	7-5	7-7	7-2	6-11	5-7
2 x 8	12	13-1	12-10	12-7	12-10	12-7	12-4	12-7	12-4	11-10	10-0
	16	11-11	11-8	11-5	11-8	11-5	11-3	11-5	11-3	10-9	8-8
	24	10-5	10-2	10-0	10-2	10-0	9-10	10-0	9-4	8-11	7-1
2 x 10	12	16-8	16-5	16-1	16-5	16-1	15-9	16-1	15-8	14-11	11-10
	16	15-2	14-11	14-7	14-11	14-7	14-4	14-6	13-7	12-11	10-3
	24	13-3	13-0	12-9	13-0	12-4	11-10	11-10	11-1	10-6	8-5
2 x 12	12	20-3	19-11	19-7	19-11	19-7	19-2	19-7	18-4	17-8	14-1
	16	18-5	18-1	17-9	18-1	17-9	17-3	17-3	15-11	15-4	12-3
	24	16-1	15-10	15-6	15-3	14-9	14-1	14-1	13-0	12-6	10-0

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 360 and is based on live load only. Check sources of supply for availability of lumber in lengths greater than 20'-0".

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 5 Floor Joists – 40 psf live load, 20 psf dead load, $\ell/360$

All rooms except sleeping rooms and attic floors (maximum 1.5" lightweight concrete)

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	11-4	11-2	10-11	11-2	10-11	10-9	10-11	10-9	10-3	8-6
	16	10-4	10-2	9-11	10-2	9-11	9-9	9-11	9-6	9-1	7-5
	24	9-0	8-10	8-8	8-10	8-8	8-6	8-5	7-9	7-5	6-0
2 x 8	12	15-0	14-8	14-5	14-8	14-5	14-2	14-5	14-2	13-6	10-10
	16	13-7	13-4	13-1	13-4	13-1	12-10	13-1	12-4	11-9	9-5
	24	11-11	11-8	11-5	11-8	11-3	10-8	10-10	10-0	9-7	7-8
2 x 10	12	19-1	18-9	18-5	18-9	18-5	18-0	18-1	17-0	16-1	12-10
	16	17-4	17-0	16-9	17-0	16-4	15-8	15-8	14-8	13-11	11-1
	24	15-2	14-11	14-7	14-1	13-4	12-10	12-10	12-0	11-5	9-1
2 x 12	12	23-3	22-10	22-5	22-10	22-5	21-7	21-7	19-10	19-1	15-3
	16	21-1	20-9	20-4	20-3	19-6	18-8	18-8	17-2	16-7	13-2
	24	18-5	18-1	17-9	16-6	15-11	15-3	15-3	14-0	13-6	10-9

Table 6 Floor Joists – 50 psf live load, 20 psf dead load, $\ell/360$

Office space (concentrated load checks may be required; maximum 1.5" lightweight concrete)

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	10-6	10-4	10-2	10-4	10-2	9-11	10-2	9-11	9-6	7-11
	16	9-7	9-5	9-3	9-5	9-3	9-1	9-3	8-10	8-5	6-10
	24	8-4	8-3	8-1	8-3	8-1	7-10	7-9	7-2	6-11	5-7
2 x 8	12	13-11	13-8	13-5	13-8	13-5	13-1	13-5	13-1	12-7	10-0
	16	12-7	12-5	12-2	12-5	12-2	11-11	12-2	11-5	10-11	8-8
	24	11-0	10-10	10-8	10-10	10-5	9-10	10-0	9-4	8-11	7-1
2 x 10	12	17-9	17-5	17-1	17-5	17-1	16-9	16-9	15-8	14-11	11-10
	16	16-1	15-10	15-6	15-10	15-2	14-6	14-6	13-7	12-11	10-3
	24	14-1	13-10	13-7	13-1	12-4	11-10	11-10	11-1	10-6	8-5
2 x 12	12	21-7	21-2	20-9	21-2	20-9	19-11	19-11	18-4	17-8	14-1
	16	19-7	19-3	18-10	18-9	18-0	17-3	17-3	15-11	15-4	12-3
	24	17-1	16-10	16-6	15-3	14-9	14-1	14-1	13-0	12-6	10-0

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 360 and is based on live load only. Check sources of supply for availability of lumber in lengths greater than 20'-0".

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 7 Floor Joists – 60 psf live load, 20 psf dead load, $\ell/360$

Corridors (maximum 1.5" lightweight concrete)

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1 NonDense	No. 2 Dense	No. 2 NonDense	No. 3	No. 3	No. 3
2 x 6	12	9-11	9-9	9-7	9-9	9-7	9-4	9-7	9-4	8-11	7-5
	16	9-0	8-10	8-8	8-10	8-8	8-6	8-8	8-3	7-11	6-5
	24	7-10	7-9	7-7	7-9	7-7	7-4	7-3	6-9	6-5	5-3
2 x 8	12	13-1	12-10	12-7	12-10	12-7	12-4	12-7	12-4	11-9	9-5
	16	11-11	11-8	11-5	11-8	11-5	11-3	11-5	10-8	10-2	8-2
	24	10-5	10-2	10-0	10-2	9-9	9-3	9-5	8-8	8-4	6-8
2 x 10	12	16-8	16-5	16-1	16-5	16-1	15-8	15-8	14-8	13-11	11-1
	16	15-2	14-11	14-7	14-11	14-2	13-7	13-7	12-9	12-1	9-7
	24	13-3	13-0	12-9	12-2	11-7	11-1	11-1	10-5	9-10	7-10
2 x 12	12	20-3	19-11	19-7	19-11	19-6	18-8	18-8	17-2	16-7	13-2
	16	18-5	18-1	17-9	17-6	16-11	16-2	16-2	14-11	14-4	11-5
	24	16-1	15-10	15-6	14-4	13-9	13-2	13-2	12-2	11-9	9-4

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 360 and is based on live load only. Check sources of supply for availability of lumber in lengths greater than 20'-0".

These grades are the most commonly available.



Maximum Spans: Southern Pine Joists & Rafters

Southern Pine Marketing Council

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 8 Ceiling Joists – 10 psf live load, 5 psf dead load, $\ell/240$

Drywall ceiling; No attic storage

Size inches	Spacing inches on center	Grade										
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1 NonDense	No. 2 Dense	No. 2 NonDense	No. 3	No. 3	No. 3	Standard
2 x 4	12	13-2	12-11	12-8	12-11	12-8	12-5	12-8	12-5	11-10	11-7	9-11
	16	11-11	11-9	11-6	11-9	11-6	11-3	11-6	11-3	10-9	10-0	8-7
	24	10-5	10-3	10-0	10-3	10-0	9-10	10-0	9-10	9-5	8-2	7-0
2 x 6	12	20-8	20-3	19-11	20-3	19-11	19-6	19-11	19-6	18-8	17-1	
	16	18-9	18-5	18-1	18-5	18-1	17-8	18-1	17-8	16-11	14-9	
	24	16-4	16-1	15-9	16-1	15-9	15-6	15-9	15-6	14-9	12-1	
2 x 8	12	26-0*	26-0*	26-0*	26-0*	26-0*	25-8	26-0*	25-8	24-7	21-8	
	16	24-8	24-3	23-10	24-3	23-10	23-4	23-10	23-4	22-4	18-9	
	24	21-7	21-2	20-10	21-2	20-10	20-5	20-10	20-1	19-2	15-4	
2 x 10	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	25-7	
	16	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	22-2	
	24	26-0*	26-0*	26-0*	26-0*	26-0*	25-7	25-7	24-0	22-9	18-1	

Table 9 Ceiling Joists – 20 psf live load, 10 psf dead load, $\ell/240$

Drywall ceiling; No future room development, but limited attic storage available

Size inches	Spacing inches on center	Grade										
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1 NonDense	No. 2 Dense	No. 2 NonDense	No. 3	No. 3	No. 3	Standard
2 x 4	12	10-5	10-3	10-0	10-3	10-0	9-10	10-0	9-10	9-5	8-2	7-0
	16	9-6	9-4	9-1	9-4	9-1	8-11	9-1	8-11	8-7	7-1	6-1
	24	8-3	8-1	8-0	8-1	8-0	7-10	8-0	7-8	7-3	5-9	4-11
2 x 6	12	16-4	16-1	15-9	16-1	15-9	15-6	15-9	15-6	14-9	12-1	
	16	14-11	14-7	14-4	14-7	14-4	14-1	14-4	13-6	12-11	10-5	
	24	13-0	12-9	12-6	12-9	12-6	12-0	11-10	11-0	10-6	8-6	
2 x 8	12	21-7	21-2	20-10	21-2	20-10	20-5	20-10	20-1	19-2	15-4	
	16	19-7	19-3	18-11	19-3	18-11	18-5	18-9	17-5	16-7	13-3	
	24	17-2	16-10	16-6	16-8	15-11	15-1	15-4	14-2	13-7	10-10	
2 x 10	12	26-0*	26-0*	26-0*	26-0*	26-0*	25-7	25-7	24-0	22-9	18-1	
	16	25-0	24-7	24-1	24-5	23-2	22-2	22-2	20-9	19-9	15-8	
	24	21-10	21-6	21-1	19-11	18-11	18-1	18-1	17-0	16-1	12-10	

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 240 and is based on live load only. Check sources of supply for availability of lumber in lengths greater than 20'-0".

*The listed maximum span has been limited to 26'-0" based on material availability.

These grades are the most commonly available.

Maximum Spans: Southern Pine Joists & Rafters

Southern Pine Marketing Council

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 10 Rafters – 20 psf live load, 10 psf dead load, $\ell/240$, $C_D=1.15$

Light roofing; Drywall ceiling; Snow load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1 NonDense	No. 1 NonDense	No. 2 Dense	No. 2 NonDense	No. 2 NonDense	No. 3
2 x 6	12	16-4	16-1	15-9	16-1	15-9	15-6	15-9	15-6	14-9	12-11
	16	14-11	14-7	14-4	14-7	14-4	14-1	14-4	14-1	13-5	11-2
	24	13-0	12-9	12-6	12-9	12-6	12-3	12-6	11-9	11-4	9-1
2 x 8	12	21-7	21-2	20-10	21-2	20-10	20-5	20-10	20-5	19-6	16-5
	16	19-7	19-3	18-11	19-3	18-11	18-6	18-11	18-6	17-9	14-3
	24	17-2	16-10	16-6	16-10	16-6	16-2	16-5	15-3	14-7	11-7
2 x 10	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0	26-0*	25-8	24-6	19-5
	16	25-0	24-7	24-1	24-7	24-1	23-8	23-10	22-3	21-2	16-10
	24	21-10	21-6	21-1	21-4	20-3	19-5	19-5	18-2	17-4	13-9
2 x 12	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	23-1
	16	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	25-1	20-0
	24	26-0*	26-0*	25-7	25-1	24-1	23-1	23-1	21-4	20-5	16-4

Table 11 Rafters – 30 psf live load, 10 psf dead load, $\ell/240$, $C_D=1.15$

Light roofing; Drywall ceiling; Snow load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1 NonDense	No. 1 NonDense	No. 2 Dense	No. 2 NonDense	No. 2 NonDense	No. 3
2 x 6	12	14-4	14-1	13-9	14-1	13-9	13-6	13-9	13-6	12-11	11-2
	16	13-0	12-9	12-6	12-9	12-6	12-3	12-6	12-3	11-9	9-8
	24	11-4	11-2	10-11	11-2	10-11	10-9	10-11	10-2	9-9	7-11
2 x 8	12	18-10	18-6	18-2	18-6	18-2	17-10	18-2	17-10	17-0	14-3
	16	17-2	16-10	16-6	16-10	16-6	16-2	16-6	16-2	15-5	12-4
	24	15-0	14-8	14-5	14-8	14-5	14-0	14-3	13-2	12-7	10-1
2 x 10	12	24-1	23-8	23-2	23-8	23-2	22-9	23-2	22-3	21-2	16-10
	16	21-10	21-6	21-1	21-6	21-1	20-7	20-7	19-3	18-4	14-7
	24	19-1	18-9	18-5	18-6	17-6	16-10	16-10	15-9	15-0	11-11
2 x 12	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	25-1	20-0
	16	26-0*	26-0*	25-7	26-0*	25-7	24-6	24-6	22-7	21-8	17-4
	24	23-3	22-10	22-5	21-9	20-10	20-0	20-0	18-5	17-9	14-2

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 240 and is based on live load only. The load duration factor, C_D , is 1.15 for snow loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

*The listed maximum span has been limited to 26'-0" based on material availability.

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 12 Rafters – 40 psf live load, 10 psf dead load, $\ell/240$, $C_D=1.15$

Light roofing; Drywall ceiling; Snow load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1 NonDense	No. 1 NonDense	No. 2 Dense	No. 2 NonDense	No. 2 NonDense	No. 3
2 x 6	12	13-0	12-9	12-6	12-9	12-6	12-3	12-6	12-3	11-9	10-0
	16	11-10	11-7	11-5	11-7	11-5	11-2	11-5	11-2	10-8	8-8
	24	10-4	10-2	9-11	10-2	9-11	9-9	9-10	9-1	8-9	7-1
2 x 8	12	17-2	16-10	16-6	16-10	16-6	16-2	16-6	16-2	15-6	12-9
	16	15-7	15-3	15-0	15-3	15-0	14-8	15-0	14-5	13-10	11-0
	24	13-7	13-4	13-1	13-4	13-1	12-6	12-9	11-10	11-3	9-0
2 x 10	12	21-10	21-6	21-1	21-6	21-1	20-8	21-1	19-11	18-11	15-1
	16	19-10	19-6	19-2	19-6	19-2	18-5	18-5	17-3	16-5	13-0
	24	17-4	17-0	16-9	16-7	15-8	15-1	15-1	14-1	13-5	10-8
2 x 12	12	26-0*	26-0*	25-7	26-0*	25-7	25-1	25-4	23-4	22-5	17-11
	16	24-2	23-9	23-3	23-9	22-10	21-11	21-11	20-2	19-5	15-6
	24	21-1	20-9	20-4	19-5	18-8	17-11	17-11	16-6	15-10	12-8

Table 13 Rafters – 50 psf live load, 10 psf dead load, $\ell/240$, $C_D=1.15$

Light roofing; Drywall ceiling; Snow load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1 NonDense	No. 1 NonDense	No. 2 Dense	No. 2 NonDense	No. 2 NonDense	No. 3
2 x 6	12	12-1	11-10	11-8	11-10	11-8	11-5	11-8	11-5	10-11	9-1
	16	11-0	10-9	10-7	10-9	10-7	10-4	10-7	10-2	9-9	7-11
	24	9-7	9-5	9-3	9-5	9-3	9-1	9-0	8-4	8-0	6-5
2 x 8	12	15-11	15-7	15-4	15-7	15-4	15-0	15-4	15-0	14-4	11-7
	16	14-5	14-2	13-11	14-2	13-11	13-8	13-11	13-2	12-7	10-1
	24	12-7	12-5	12-2	12-5	12-0	11-5	11-7	10-9	10-3	8-3
2 x 10	12	20-3	19-11	19-7	19-11	19-7	19-2	19-5	18-2	17-4	13-9
	16	18-5	18-1	17-9	18-1	17-6	16-10	16-10	15-9	15-0	11-11
	24	16-1	15-10	15-6	15-1	14-4	13-9	13-9	12-10	12-3	9-9
2 x 12	12	24-8	24-3	23-9	24-3	23-9	23-1	23-1	21-4	20-5	16-4
	16	22-5	22-0	21-7	21-9	20-10	20-0	20-0	18-5	17-9	14-2
	24	19-7	19-3	18-10	17-9	17-0	16-4	16-4	15-1	14-6	11-7

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 240 and is based on live load only. The load duration factor, C_D , is 1.15 for snow loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

*The listed maximum span has been limited to 26'-0" based on material availability.

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 14 Rafters – 20 psf live load, 15 psf dead load, $L/240$, $C_D=1.15$

Medium roofing; Drywall ceiling; Snow load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	16-4	16-1	15-9	16-1	15-9	15-6	15-9	15-5	14-9	11-11
	16	14-11	14-7	14-4	14-7	14-4	14-1	14-4	13-4	12-10	10-4
	24	13-0	12-9	12-6	12-9	12-6	11-11	11-9	10-11	10-6	8-5
2 x 8	12	21-7	21-2	20-10	21-2	20-10	20-5	20-10	19-11	19-1	15-3
	16	19-7	19-3	18-11	19-3	18-11	18-4	18-8	17-3	16-6	13-2
	24	17-2	16-10	16-6	16-6	15-9	15-0	15-3	14-1	13-6	10-9
2 x 10	12	26-0*	26-0*	26-0*	26-0*	26-0*	25-5	25-5	23-10	22-8	18-0
	16	25-0	24-7	24-1	24-3	22-11	22-1	22-1	20-7	19-7	15-7
	24	21-10	21-6	21-1	19-9	18-9	18-0	18-0	16-10	16-0	12-9
2 x 12	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	21-5
	16	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	24-2	23-2	18-6
	24	26-0*	26-0*	25-7	23-3	22-4	21-5	21-5	19-9	18-11	15-2

Table 15 Rafters – 30 psf live load, 15 psf dead load, $L/240$, $C_D=1.15$

Medium roofing; Drywall ceiling; Snow load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	14-4	14-1	13-9	14-1	13-9	13-6	13-9	13-6	12-11	10-6
	16	13-0	12-9	12-6	12-9	12-6	12-3	12-6	11-9	11-4	9-1
	24	11-4	11-2	10-11	11-2	10-11	10-6	10-4	9-7	9-3	7-5
2 x 8	12	18-10	18-6	18-2	18-6	18-2	17-10	18-2	17-7	16-10	13-5
	16	17-2	16-10	16-6	16-10	16-6	16-2	16-5	15-3	14-7	11-7
	24	15-0	14-8	14-5	14-7	13-11	13-2	13-5	12-5	11-11	9-6
2 x 10	12	24-1	23-8	23-2	23-8	23-2	22-5	22-5	21-0	20-0	15-10
	16	21-10	21-6	21-1	21-4	20-3	19-5	19-5	18-2	17-4	13-9
	24	19-1	18-9	18-5	17-5	16-6	15-10	15-10	14-10	14-2	11-3
2 x 12	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	24-7	23-7	18-10
	16	26-0*	26-0*	25-7	25-1	24-1	23-1	23-1	21-4	20-5	16-4
	24	23-3	22-10	22-5	20-6	19-8	18-10	18-10	17-5	16-8	13-4

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 240 and is based on live load only. The load duration factor, C_D , is 1.15 for snow loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

*The listed maximum span has been limited to 26'-0" based on material availability.

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 16 Rafters – 40 psf live load, 15 psf dead load, $L/240$, $C_D=1.15$

Medium roofing; Drywall ceiling; Snow load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	13-0	12-9	12-6	12-9	12-6	12-3	12-6	12-3	11-9	9-6
	16	11-10	11-7	11-5	11-7	11-5	11-2	11-5	10-8	10-3	8-3
	24	10-4	10-2	9-11	10-2	9-11	9-6	9-5	8-8	8-4	6-9
2 x 8	12	17-2	16-10	16-6	16-10	16-6	16-2	16-6	15-11	15-2	12-2
	16	15-7	15-3	15-0	15-3	15-0	14-7	14-10	13-9	13-2	10-6
	24	13-7	13-4	13-1	13-2	12-7	11-11	12-2	11-3	10-9	8-7
2 x 10	12	21-10	21-6	21-1	21-6	21-1	20-4	20-4	19-0	18-1	14-4
	16	19-10	19-6	19-2	19-4	18-3	17-7	17-7	16-5	15-8	12-5
	24	17-4	17-0	16-9	15-9	14-11	14-4	14-4	13-5	12-9	10-2
2 x 12	12	26-0*	26-0*	25-7	26-0*	25-2	24-2	24-2	22-3	21-4	17-1
	16	24-2	23-9	23-3	22-8	21-9	20-11	20-11	19-3	18-6	14-9
	24	21-1	20-9	20-4	18-6	17-9	17-1	17-1	15-9	15-1	12-1

Table 17 Rafters – 50 psf live load, 15 psf dead load, $L/240$, $C_D=1.15$

Medium roofing; Drywall ceiling; Snow load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	12-1	11-10	11-8	11-10	11-8	11-5	11-8	11-4	10-10	8-9
	16	11-0	10-9	10-7	10-9	10-7	10-4	10-7	9-10	9-5	7-7
	24	9-7	9-5	9-3	9-5	9-2	8-9	8-8	8-0	7-8	6-2
2 x 8	12	15-11	15-7	15-4	15-7	15-4	15-0	15-4	14-8	14-0	11-2
	16	14-5	14-2	13-11	14-2	13-11	13-5	13-8	12-8	12-1	9-8
	24	12-7	12-5	12-2	12-1	11-7	11-0	11-2	10-4	9-11	7-11
2 x 10	12	20-3	19-11	19-7	19-11	19-5	18-8	18-8	17-6	16-8	13-2
	16	18-5	18-1	17-9	17-9	16-10	16-2	16-2	15-1	14-5	11-5
	24	16-1	15-10	15-6	14-6	13-9	13-2	13-2	12-4	11-9	9-4
2 x 12	12	24-8	24-3	23-9	24-1	23-2	22-3	22-3	20-6	19-8	15-8
	16	22-5	22-0	21-7	20-10	20-0	19-3	19-3	17-9	17-0	13-7
	24	19-7	19-3	18-10	17-1	16-4	15-8	15-8	14-6	13-11	11-1

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 240 and is based on live load only. The load duration factor, C_D , is 1.15 for snow loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

*The listed maximum span has been limited to 26'-0" based on material availability.

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 18 Rafters – 20 psf live load, 20 psf dead load, $\ell/240$, $C_D=1.15$

Heavy roofing; Drywall ceiling; Snow load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	16-4	16-1	15-9	16-1	15-9	15-6	15-7	14-5	13-10	11-2
	16	14-11	14-7	14-4	14-7	14-4	13-8	13-6	12-6	12-0	9-8
	24	13-0	12-9	12-6	12-1	11-9	11-2	11-0	10-2	9-9	7-11
2 x 8	12	21-7	21-2	20-10	21-2	20-10	19-10	20-2	18-8	17-10	14-3
	16	19-7	19-3	18-11	18-11	18-0	17-2	17-5	16-2	15-5	12-4
	24	17-2	16-10	16-6	15-5	14-9	14-0	14-3	13-2	12-7	10-1
2 x 10	12	26-0*	26-0*	26-0*	26-0*	24-9	23-10	23-10	22-3	21-2	16-10
	16	25-0	24-7	24-1	22-8	21-5	20-7	20-7	19-3	18-4	14-7
	24	21-10	21-6	20-11	18-6	17-6	16-10	16-10	15-9	15-0	11-11
2 x 12	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	25-1	20-0
	16	26-0*	26-0*	26-0*	26-0*	25-7	24-6	24-6	22-7	21-8	17-4
	24	26-0*	25-9	24-8	21-9	20-10	20-0	20-0	18-5	17-9	14-2

Table 19 Rafters – 30 psf live load, 20 psf dead load, $\ell/240$, $C_D=1.15$

Heavy roofing; Drywall ceiling; Snow load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	14-4	14-1	13-9	14-1	13-9	13-6	13-9	12-11	12-5	10-0
	16	13-0	12-9	12-6	12-9	12-6	12-3	12-1	11-2	10-9	8-8
	24	11-4	11-2	10-11	10-10	10-6	10-0	9-10	9-1	8-9	7-1
2 x 8	12	18-10	18-6	18-2	18-6	18-2	17-9	18-0	16-8	15-11	12-9
	16	17-2	16-10	16-6	16-10	16-2	15-4	15-7	14-5	13-10	11-0
	24	15-0	14-8	14-5	13-10	13-2	12-6	12-9	11-10	11-3	9-0
2 x 10	12	24-1	23-8	23-2	23-5	22-2	21-4	21-4	19-11	18-11	15-1
	16	21-10	21-6	21-1	20-3	19-2	18-5	18-5	17-3	16-5	13-0
	24	19-1	18-9	18-5	16-7	15-8	15-1	15-1	14-1	13-5	10-8
2 x 12	12	26-0*	26-0*	26-0*	26-0*	26-0*	25-4	25-4	23-4	22-5	17-11
	16	26-0*	26-0*	25-7	23-10	22-10	21-11	21-11	20-2	19-5	15-6
	24	23-3	22-10	22-1	19-5	18-8	17-11	17-11	16-6	15-10	12-8

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 240 and is based on live load only. The load duration factor, C_D , is 1.15 for snow loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

*The listed maximum span has been limited to 26'-0" based on material availability.

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 20 Rafters – 40 psf live load, 20 psf dead load, $\ell/240$, $C_D=1.15$

Heavy roofing; Drywall ceiling; Snow load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	13-0	12-9	12-6	12-9	12-6	12-3	12-6	11-9	11-4	9-1
	16	11-10	11-7	11-5	11-7	11-5	11-2	11-0	10-2	9-9	7-11
	24	10-4	10-2	9-11	9-10	9-7	9-1	9-0	8-4	8-0	6-5
2 x 8	12	17-2	16-10	16-6	16-10	16-6	16-2	16-5	15-3	14-7	11-7
	16	15-7	15-3	15-0	15-3	14-9	14-0	14-3	13-2	12-7	10-1
	24	13-7	13-4	13-1	12-7	12-0	11-5	11-7	10-9	10-3	8-3
2 x 10	12	21-10	21-6	21-1	21-4	20-3	19-5	19-5	18-2	17-4	13-9
	16	19-10	19-6	19-2	18-6	17-6	16-10	16-10	15-9	15-0	11-11
	24	17-4	17-0	16-9	15-1	14-4	13-9	13-9	12-10	12-3	9-9
2 x 12	12	26-0*	26-0*	25-7	25-1	24-1	23-1	23-1	21-4	20-5	16-4
	16	24-2	23-9	23-3	21-9	20-10	20-0	20-0	18-5	17-9	14-2
	24	21-1	20-9	20-2	17-9	17-0	16-4	16-4	15-1	14-6	11-7

Table 21 Rafters – 50 psf live load, 20 psf dead load, $\ell/240$, $C_D=1.15$

Heavy roofing; Drywall ceiling; Snow load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	12-1	11-10	11-8	11-10	11-8	11-5	11-8	10-11	10-6	8-5
	16	11-0	10-9	10-7	10-9	10-7	10-4	10-2	9-5	9-1	7-4
	24	9-7	9-5	9-3	9-1	8-10	8-5	8-4	7-9	7-5	6-0
2 x 8	12	15-11	15-7	15-4	15-7	15-4	15-0	15-3	14-1	13-6	10-9
	16	14-5	14-2	13-11	14-2	13-8	13-0	13-2	12-3	11-8	9-4
	24	12-7	12-5	12-2	11-8	11-2	10-7	10-9	10-0	9-6	7-7
2 x 10	12	20-3	19-11	19-7	19-9	18-9	18-0	18-0	16-10	16-0	12-9
	16	18-5	18-1	17-9	17-2	16-3	15-7	15-7	14-7	13-11	11-0
	24	16-1	15-10	15-6	14-0	13-3	12-9	12-9	11-11	11-4	9-0
2 x 12	12	24-8	24-3	23-9	23-3	22-4	21-5	21-5	19-9	18-11	15-2
	16	22-5	22-0	21-7	20-1	19-4	18-6	18-6	17-1	16-5	13-1
	24	19-7	19-3	18-8	16-5	15-9	15-2	15-2	13-11	13-5	10-8

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 240 and is based on live load only. The load duration factor, C_D , is 1.15 for snow loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

*The listed maximum span has been limited to 26'-0" based on material availability.

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 22 Rafters – 20 psf live load, 10 psf dead load, $\ell/180$, $C_D=1.15$

Light roofing; No finished ceiling; Snow load

Size inches	Spacing inches on center	Grade										
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3	Standard
2 x 4	12	11-6	11-3	11-1	11-3	11-1	10-10	11-1	10-10	10-4	8-9	7-6
	16	10-5	10-3	10-0	10-3	10-0	9-10	10-0	9-10	9-5	7-7	6-6
	24	9-1	8-11	8-9	8-11	8-9	8-7	8-9	8-3	7-10	6-2	5-4
2 x 6	12	18-0	17-8	17-4	17-8	17-4	17-0	17-4	16-8	16-0	12-11	
	16	16-4	16-1	15-9	16-1	15-9	15-6	15-7	14-5	13-10	11-2	
	24	14-4	14-1	13-9	13-11	13-6	12-11	12-8	11-9	11-4	9-1	
2 x 8	12	23-9	23-4	22-11	23-4	22-11	22-5	22-11	21-7	20-7	16-5	
	16	21-7	21-2	20-10	21-2	20-10	19-10	20-2	18-8	17-10	14-3	
	24	18-10	18-6	18-2	17-10	17-0	16-2	16-5	15-3	14-7	11-7	
2 x 10	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	25-8	24-6	19-5	
	16	26-0*	26-0*	26-0*	26-0*	24-9	23-10	23-10	22-3	21-2	16-10	
	24	24-1	23-8	23-2	21-4	20-3	19-5	19-5	18-2	17-4	13-9	

Table 23 Rafters – 30 psf live load, 10 psf dead load, $\ell/180$, $C_D=1.15$

Light roofing; No finished ceiling; Snow load

Size inches	Spacing inches on center	Grade										
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3	Standard
2 x 4	12	10-0	9-10	9-8	9-10	9-8	9-6	9-8	9-6	9-1	7-7	6-6
	16	9-1	8-11	8-9	8-11	8-9	8-7	8-9	8-7	8-3	6-7	5-7
	24	7-11	7-10	7-8	7-10	7-8	7-6	7-7	7-1	6-9	5-4	4-7
2 x 6	12	15-9	15-6	15-2	15-6	15-2	14-10	15-2	14-5	13-10	11-2	
	16	14-4	14-1	13-9	14-1	13-9	13-6	13-6	12-6	12-0	9-8	
	24	12-6	12-3	12-0	12-1	11-9	11-2	11-0	10-2	9-9	7-11	
2 x 8	12	20-9	20-5	20-0	20-5	20-0	19-7	20-0	18-8	17-10	14-3	
	16	18-10	18-6	18-2	18-6	18-0	17-2	17-5	16-2	15-5	12-4	
	24	16-6	16-2	15-10	15-5	14-9	14-0	14-3	13-2	12-7	10-1	
2 x 10	12	26-0*	26-0	25-6	26-0	24-9	23-10	23-10	22-3	21-2	16-10	
	16	24-1	23-8	23-2	22-8	21-5	20-7	20-7	19-3	18-4	14-7	
	24	21-0	20-8	20-3	18-6	17-6	16-10	16-10	15-9	15-0	11-11	

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 180 and is based on live load only. The load duration factor, C_D , is 1.15 for snow loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

*The listed maximum span has been limited to 26'-0" based on material availability.

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 24 Rafters – 40 psf live load, 10 psf dead load, $\ell/180$, $C_D=1.15$

Light roofing; No finished ceiling; Snow load

Size inches	Spacing inches on center	Grade										
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3	Standard
2 x 4	12	9-1	8-11	8-9	8-11	8-9	8-7	8-9	8-7	8-3	6-9	5-10
	16	8-3	8-1	8-0	8-1	8-0	7-10	8-0	7-9	7-5	5-10	5-0
	24	7-3	7-1	7-0	7-1	7-0	6-9	6-9	6-4	6-1	4-9	4-1
2 x 6	12	14-4	14-1	13-9	14-1	13-9	13-6	13-9	12-11	12-5	10-0	
	16	13-0	12-9	12-6	12-9	12-6	12-3	12-1	11-2	10-9	8-8	
	24	11-4	11-2	10-11	10-10	10-6	10-0	9-10	9-1	8-9	7-1	
2 x 8	12	18-10	18-6	18-2	18-6	18-2	17-9	18-0	16-8	15-11	12-9	
	16	17-2	16-10	16-6	16-10	16-2	15-4	15-7	14-5	13-10	11-0	
	24	15-0	14-8	14-5	13-10	13-2	12-6	12-9	11-10	11-3	9-0	
2 x 10	12	24-1	23-8	23-2	23-5	22-2	21-4	21-4	19-11	18-11	15-1	
	16	21-10	21-6	21-1	20-3	19-2	18-5	18-5	17-3	16-5	13-0	
	24	19-1	18-9	18-5	16-7	15-8	15-1	15-1	14-1	13-5	10-8	

Table 25 Rafters – 50 psf live load, 10 psf dead load, $\ell/180$, $C_D=1.15$

Light roofing; No finished ceiling; Snow load

Size inches	Spacing inches on center	Grade										
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3	Standard
2 x 4	12	8-5	8-4	8-2	8-4	8-2	8-0	8-2	8-0	7-8	6-2	5-4
	16	7-8	7-6	7-5	7-6	7-5	7-3	7-5	7-1	6-9	5-4	4-7
	24	6-8	6-7	6-6	6-7	6-5	6-2	6-2	5-10	5-6	4-4	3-9
2 x 6	12	13-3	13-1	12-10	13-1	12-10	12-6	12-8	11-9	11-4	9-1	
	16	12-1	11-10	11-8	11-10	11-8	11-2	11-0	10-2	9-9	7-11	
	24	10-6	10-4	10-2	9-10	9-7	9-1	9-0	8-4	8-0	6-5	
2 x 8	12	17-6	17-2	16-10	17-2	16-10	16-2	16-5	15-3	14-7	11-7	
	16	15-11	15-7	15-4	15-5	14-9	14-0	14-3	13-2	12-7	10-1	
	24	13-11	13-8	13-5	12-7	12-0	11-5	11-7	10-9	10-3	8-3	
2 x 10	12	22-4	21-11	21-6	21-4	20-3	19-5	19-5	18-2	17-4	13-9	
	16	20-3	19-11	19-7	18-6	17-6	16-10	16-10	15-9	15-0	11-11	
	24	17-9	17-5	17-1	15-1	14-4	13-9	13-9	12-10	12-3	9-9	

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 180 and is based on live load only. The load duration factor, C_D , is 1.15 for snow loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 26 Rafters – 20 psf live load, 15 psf dead load, $\ell/180$, $C_D=1.15$

Medium roofing; No finished ceiling; Snow load

Size inches	Spacing inches on center	Grade										Standard
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3	
2 x 4	12	11-6	11-3	11-1	11-3	11-1	10-10	11-1	10-9	10-3	8-1	6-11
	16	10-5	10-3	10-0	10-3	10-0	9-10	9-11	9-4	8-10	7-0	6-0
	24	9-1	8-11	8-9	8-10	8-5	8-1	8-1	7-7	7-3	5-9	4-11
2 x 6	12	18-0	17-8	17-4	17-8	17-4	16-11	16-8	15-5	14-10	11-11	
	16	16-4	16-1	15-9	15-10	15-4	14-8	14-5	13-4	12-10	10-4	
	24	14-4	14-1	13-9	12-11	12-6	11-11	11-9	10-11	10-6	8-5	
2 x 8	12	23-9	23-4	22-11	23-4	22-3	21-2	21-6	19-11	19-1	15-3	
	16	21-7	21-2	20-10	20-3	19-3	18-4	18-8	17-3	16-6	13-2	
	24	18-10	18-6	18-2	16-6	15-9	15-0	15-3	14-1	13-6	10-9	
2 x 10	12	26-0*	26-0*	26-0*	26-0*	26-0*	25-5	25-5	23-10	22-8	18-0	
	16	26-0*	26-0*	26-0*	24-3	22-11	22-1	22-1	20-7	19-7	15-7	
	24	24-1	23-6	22-4	19-9	18-9	18-0	18-0	16-10	16-0	12-9	

Table 27 Rafters – 30 psf live load, 15 psf dead load, $\ell/180$, $C_D=1.15$

Medium roofing; No finished ceiling; Snow load

Size inches	Spacing inches on center	Grade										Standard
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3	
2 x 4	12	10-0	9-10	9-8	9-10	9-8	9-6	9-8	9-6	9-0	7-2	6-1
	16	9-1	8-11	8-9	8-11	8-9	8-7	8-9	8-3	7-10	6-2	5-4
	24	7-11	7-10	7-8	7-9	7-5	7-2	7-2	6-8	6-4	5-0	4-4
2 x 6	12	15-9	15-6	15-2	15-6	15-2	14-10	14-8	13-7	13-1	10-6	
	16	14-4	14-1	13-9	13-11	13-6	12-11	12-8	11-9	11-4	9-1	
	24	12-6	12-3	12-0	11-5	11-1	10-6	10-4	9-7	9-3	7-5	
2 x 8	12	20-9	20-5	20-0	20-5	19-8	18-8	19-0	17-7	16-10	13-5	
	16	18-10	18-6	18-2	17-10	17-0	16-2	16-5	15-3	14-7	11-7	
	24	16-6	16-2	15-10	14-7	13-11	13-2	13-5	12-5	11-11	9-6	
2 x 10	12	26-0*	26-0	25-6	24-8	23-4	22-5	22-5	21-0	20-0	15-10	
	16	24-1	23-8	23-2	21-4	20-3	19-5	19-5	18-2	17-4	13-9	
	24	21-0	20-8	19-8	17-5	16-6	15-10	15-10	14-10	14-2	11-3	

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 180 and is based on live load only. The load duration factor, C_D , is 1.15 for snow loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

*The listed maximum span has been limited to 26'-0" based on material availability.

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 28 Rafters – 40 psf live load, 15 psf dead load, $\ell/180$, $C_D=1.15$

Medium roofing; No finished ceiling; Snow load

Size inches	Spacing inches on center	Grade										Standard
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3	
2 x 4	12	9-1	8-11	8-9	8-11	8-9	8-7	8-9	8-7	8-2	6-5	5-6
	16	8-3	8-1	8-0	8-1	8-0	7-10	7-11	7-5	7-1	5-7	4-10
	24	7-3	7-1	7-0	7-0	6-9	6-6	6-6	6-1	5-9	4-7	3-11
2 x 6	12	14-4	14-1	13-9	14-1	13-9	13-6	13-3	12-4	11-10	9-6	
	16	13-0	12-9	12-6	12-7	12-3	11-8	11-6	10-8	10-3	8-3	
	24	11-4	11-2	10-11	10-3	10-0	9-6	9-5	8-8	8-4	6-9	
2 x 8	12	18-10	18-6	18-2	18-6	17-9	16-11	17-2	15-11	15-2	12-2	
	16	17-2	16-10	16-6	16-2	15-5	14-7	14-10	13-9	13-2	10-6	
	24	15-0	14-8	14-5	13-2	12-7	11-11	12-2	11-3	10-9	8-7	
2 x 10	12	24-1	23-8	23-2	22-4	21-1	20-4	20-4	19-0	18-1	14-4	
	16	21-10	21-6	21-1	19-4	18-3	17-7	17-7	16-5	15-8	12-5	
	24	19-1	18-9	17-10	15-9	14-11	14-4	14-4	13-5	12-9	10-2	

Table 29 Rafters – 50 psf live load, 15 psf dead load, $\ell/180$, $C_D=1.15$

Medium roofing; No finished ceiling; Snow load

Size inches	Spacing inches on center	Grade										Standard
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3	
2 x 4	12	8-5	8-4	8-2	8-4	8-2	8-0	8-2	7-11	7-6	5-11	5-1
	16	7-8	7-6	7-5	7-6	7-5	7-3	7-3	6-10	6-6	5-2	4-5
	24	6-8	6-7	6-6	6-5	6-2	5-11	5-11	5-7	5-4	4-2	3-7
2 x 6	12	13-3	13-1	12-10	13-1	12-10	12-5	12-2	11-4	10-10	8-9	
	16	12-1	11-10	11-8	11-7	11-3	10-9	10-7	9-10	9-5	7-7	
	24	10-6	10-4	10-2	9-6	9-2	8-9	8-8	8-0	7-8	6-2	
2 x 8	12	17-6	17-2	16-10	17-2	16-4	15-6	15-9	14-8	14-0	11-2	
	16	15-11	15-7	15-4	14-10	14-2	13-5	13-8	12-8	12-1	9-8	
	24	13-11	13-8	13-5	12-1	11-7	11-0	11-2	10-4	9-11	7-11	
2 x 10	12	22-4	21-11	21-6	20-6	19-5	18-8	18-8	17-6	16-8	13-2	
	16	20-3	19-11	19-7	17-9	16-10	16-2	16-2	15-1	14-5	11-5	
	24	17-8	17-3	16-5	14-6	13-9	13-2	13-2	12-4	11-9	9-4	

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 180 and is based on live load only. The load duration factor, C_D , is 1.15 for snow loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 30 Rafters – 20 psf live load, 20 psf dead load, $\ell/180$, $C_D=1.15$

Heavy roofing; No finished ceiling; Snow load

Size inches	Spacing inches on center	Grade										
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1 NonDense	No. 1 Dense	No. 2 Dense	No. 2 NonDense	No. 2 Dense	No. 2 NonDense	No. 3
2 x 4	12	11-6	11-3	11-1	11-3	11-1	10-9	10-9	10-1	9-7	7-7	6-6
	16	10-5	10-3	10-0	10-1	9-8	9-3	9-3	8-8	8-3	6-7	5-7
	24	9-1	8-11	8-9	8-3	7-11	7-7	7-7	7-1	6-9	5-4	4-7
2 x 6	12	18-0	17-8	17-4	17-1	16-7	15-10	15-7	14-5	13-10	11-2	
	16	16-4	16-1	15-9	14-9	14-4	13-8	13-6	12-6	12-0	9-8	
	24	14-4	14-1	13-9	12-1	11-9	11-2	11-0	10-2	9-9	7-11	
2 x 8	12	23-9	23-4	22-11	21-10	20-10	19-10	20-2	18-8	17-10	14-3	
	16	21-7	21-2	20-10	18-11	18-0	17-2	17-5	16-2	15-5	12-4	
	24	18-10	18-3	17-5	15-5	14-9	14-0	14-3	13-2	12-7	10-1	
2 x 10	12	26-0*	26-0*	26-0*	26-0*	24-9	23-10	23-10	22-3	21-2	16-10	
	16	26-0*	26-0*	25-7	22-8	21-5	20-7	20-7	19-3	18-4	14-7	
	24	22-6	22-0	20-11	18-6	17-6	16-10	16-10	15-9	15-0	11-11	

Table 31 Rafters – 30 psf live load, 20 psf dead load, $\ell/180$, $C_D=1.15$

Heavy roofing; No finished ceiling; Snow load

Size inches	Spacing inches on center	Grade										
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1 NonDense	No. 1 Dense	No. 2 Dense	No. 2 NonDense	No. 2 Dense	No. 2 NonDense	No. 3
2 x 4	12	10-0	9-10	9-8	9-10	9-8	9-6	9-7	9-0	8-7	6-9	5-10
	16	9-1	8-11	8-9	8-11	8-8	8-4	8-4	7-9	7-5	5-10	5-0
	24	7-11	7-10	7-8	7-4	7-1	6-9	6-9	6-4	6-1	4-9	4-1
2 x 6	12	15-9	15-6	15-2	15-3	14-10	14-2	13-11	12-11	12-5	10-0	
	16	14-4	14-1	13-9	13-3	12-10	12-3	12-1	11-2	10-9	8-8	
	24	12-6	12-3	12-0	10-10	10-6	10-0	9-10	9-1	8-9	7-1	
2 x 8	12	20-9	20-5	20-0	19-7	18-8	17-9	18-0	16-8	15-11	12-9	
	16	18-10	18-6	18-2	16-11	16-2	15-4	15-7	14-5	13-10	11-0	
	24	16-6	16-2	15-7	13-10	13-2	12-6	12-9	11-10	11-3	9-0	
2 x 10	12	26-0*	26-0	25-6	23-5	22-2	21-4	21-4	19-11	18-11	15-1	
	16	24-1	23-8	22-11	20-3	19-2	18-5	18-5	17-3	16-5	13-0	
	24	20-1	19-8	18-8	16-7	15-8	15-1	15-1	14-1	13-5	10-8	

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 180 and is based on live load only. The load duration factor, C_D , is 1.15 for snow loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

*The listed maximum span has been limited to 26'-0" based on material availability.

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 32 Rafters – 40 psf live load, 20 psf dead load, $\ell/180$, $C_D=1.15$

Heavy roofing; No finished ceiling; Snow load

Size inches	Spacing inches on center	Grade										
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1 NonDense	No. 1 Dense	No. 2 Dense	No. 2 NonDense	No. 2 Dense	No. 2 NonDense	No. 3
2 x 4	12	9-1	8-11	8-9	8-11	8-9	8-7	8-9	8-3	7-10	6-2	5-4
	16	8-3	8-1	8-0	8-1	7-11	7-7	7-7	7-1	6-9	5-4	4-7
	24	7-3	7-1	7-0	6-9	6-5	6-2	6-2	5-10	5-6	4-4	3-9
2 x 6	12	14-4	14-1	13-9	13-11	13-6	12-11	12-8	11-9	11-4	9-1	
	16	13-0	12-9	12-6	12-1	11-9	11-2	11-0	10-2	9-9	7-11	
	24	11-4	11-2	10-11	9-10	9-7	9-1	9-0	8-4	8-0	6-5	
2 x 8	12	18-10	18-6	18-2	17-10	17-0	16-2	16-5	15-3	14-7	11-7	
	16	17-2	16-10	16-6	15-5	14-9	14-0	14-3	13-2	12-7	10-1	
	24	15-0	14-8	14-3	12-7	12-0	11-5	11-7	10-9	10-3	8-3	
2 x 10	12	24-1	23-8	23-2	21-4	20-3	19-5	19-5	18-2	17-4	13-9	
	16	21-10	21-6	20-11	18-6	17-6	16-10	16-10	15-9	15-0	11-11	
	24	18-4	17-11	17-1	15-1	14-4	13-9	13-9	12-10	12-3	9-9	

Table 33 Rafters – 50 psf live load, 20 psf dead load, $\ell/180$, $C_D=1.15$

Heavy roofing; No finished ceiling; Snow load

Size inches	Spacing inches on center	Grade										
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1 NonDense	No. 1 Dense	No. 2 Dense	No. 2 NonDense	No. 2 Dense	No. 2 NonDense	No. 3
2 x 4	12	8-5	8-4	8-2	8-4	8-2	8-0	8-1	7-7	7-3	5-9	4-11
	16	7-8	7-6	7-5	7-6	7-4	7-0	7-0	6-7	6-3	4-11	4-3
	24	6-8	6-7	6-6	6-3	6-0	5-9	5-9	5-4	5-1	4-1	3-6
2 x 6	12	13-3	13-1	12-10	12-11	12-6	11-11	11-9	10-11	10-6	8-5	
	16	12-1	11-10	11-8	11-2	10-10	10-4	10-2	9-5	9-1	7-4	
	24	10-6	10-4	10-2	9-1	8-10	8-5	8-4	7-9	7-5	6-0	
2 x 8	12	17-6	17-2	16-10	16-6	15-9	15-0	15-3	14-1	13-6	10-9	
	16	15-11	15-7	15-4	14-4	13-8	13-0	13-2	12-3	11-8	9-4	
	24	13-11	13-8	13-2	11-8	11-2	10-7	10-9	10-0	9-6	7-7	
2 x 10	12	22-4	21-11	21-6	19-9	18-9	18-0	18-0	16-10	16-0	12-9	
	16	20-3	19-11	19-4	17-2	16-3	15-7	15-7	14-7	13-11	11-0	
	24	17-0	16-7	15-10	14-0	13-3	12-9	12-9	11-11	11-4	9-0	

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 180 and is based on live load only. The load duration factor, C_D , is 1.15 for snow loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 34 Rafters – 20 psf live load, 10 psf dead load, $\ell/240$, $C_D=1.25$

Light roofing; Drywall ceiling; Construction load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	16-4	16-1	15-9	16-1	15-9	15-6	15-9	15-6	14-9	13-6
	16	14-11	14-7	14-4	14-7	14-4	14-1	14-4	14-1	13-5	11-8
	24	13-0	12-9	12-6	12-9	12-6	12-3	12-6	12-3	11-9	9-6
2 x 8	12	21-7	21-2	20-10	21-2	20-10	20-5	20-10	20-5	19-6	17-2
	16	19-7	19-3	18-11	19-3	18-11	18-6	18-11	18-6	17-9	14-10
	24	17-2	16-10	16-6	16-10	16-6	16-2	16-6	15-10	15-2	12-2
2 x 10	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0	26-0*	26-0	24-10	20-3
	16	25-0	24-7	24-1	24-7	24-1	23-8	24-1	23-2	22-1	17-7
	24	21-10	21-6	21-1	21-6	21-1	20-3	20-3	18-11	18-1	14-4
2 x 12	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	24-1
	16	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	20-10
	24	26-0*	26-0*	25-7	26-0*	25-2	24-1	24-1	22-2	21-4	17-0

Table 35 Rafters – 20 psf live load, 15 psf dead load, $\ell/240$, $C_D=1.25$

Medium roofing; Drywall ceiling; Construction load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	16-4	16-1	15-9	16-1	15-9	15-6	15-9	15-6	14-9	12-6
	16	14-11	14-7	14-4	14-7	14-4	14-1	14-4	13-11	13-4	10-10
	24	13-0	12-9	12-6	12-9	12-6	12-3	12-3	11-5	10-11	8-10
2 x 8	12	21-7	21-2	20-10	21-2	20-10	20-5	20-10	20-5	19-6	15-11
	16	19-7	19-3	18-11	19-3	18-11	18-6	18-11	18-0	17-3	13-9
	24	17-2	16-10	16-6	16-10	16-5	15-7	15-10	14-8	14-1	11-3
2 x 10	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0	26-0*	24-10	23-8	18-9
	16	25-0	24-7	24-1	24-7	23-11	23-0	23-0	21-6	20-6	16-3
	24	21-10	21-6	21-1	20-7	19-6	18-9	18-9	17-6	16-8	13-3
2 x 12	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	22-4
	16	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	25-2	24-2	19-4
	24	26-0*	26-0*	25-7	24-2	23-3	22-4	22-4	20-6	19-9	15-9

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 240 and is based on live load only. The load duration factor, C_D , is 1.25 for construction loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

*The listed maximum span has been limited to 26'-0" based on material availability.

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 36 Rafters – 20 psf live load, 20 psf dead load, $\ell/240$, $C_D=1.25$

Heavy roofing; Drywall ceiling; Construction load

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	16-4	16-1	15-9	16-1	15-9	15-6	15-9	15-6	14-9	11-8
	16	14-11	14-7	14-4	14-7	14-4	14-1	14-4	14-1	13-5	10-1
	24	13-0	12-9	12-6	12-9	12-6	12-3	12-6	12-3	11-9	8-3
2 x 8	12	21-7	21-2	20-10	21-2	20-10	20-5	20-10	20-5	19-6	14-10
	16	19-7	19-3	18-11	19-3	18-11	18-6	18-11	18-6	17-9	12-11
	24	17-2	16-10	16-6	16-10	16-6	16-2	16-6	15-10	15-2	10-6
2 x 10	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0	26-0*	26-0	25-10	17-7
	16	25-0	24-7	24-1	24-7	24-1	23-8	24-1	23-2	22-4	15-2
	24	21-10	21-6	21-1	21-6	21-1	20-3	20-3	18-11	18-3	12-5
2 x 12	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	20-10
	16	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	18-1
	24	26-0*	26-0*	25-7	26-0*	25-2	24-1	24-1	22-2	21-9	14-9

Table 37 Rafters – 20 psf live load, 10 psf dead load, $\ell/180$, $C_D=1.25$

Light roofing; No finished ceiling; Construction load

Size inches	Spacing inches on center	Grade										Standard
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3	
2 x 4	12	11-6	11-3	11-1	11-3	11-1	10-10	11-1	10-10	10-4	9-1	7-10
	16	10-5	10-3	10-0	10-3	10-0	9-10	10-0	9-10	9-5	7-11	6-9
	24	9-1	8-11	8-9	8-11	8-9	8-7	8-9	8-7	8-2	6-5	5-6
2 x 6	12	18-0	17-8	17-4	17-8	17-4	17-0	17-4	17-0	16-3	13-6	
	16	16-4	16-1	15-9	16-1	15-9	15-6	15-9	15-1	14-5	11-8	
	24	14-4	14-1	13-9	14-1	13-9	13-6	13-3	12-4	11-9	9-6	
2 x 8	12	23-9	23-4	22-11	23-4	22-11	22-5	22-11	22-5	21-5	17-2	
	16	21-7	21-2	20-10	21-2	20-10	20-5	20-10	19-5	18-7	14-10	
	24	18-10	18-6	18-2	18-6	17-9	16-10	17-2	15-10	15-2	12-2	
2 x 10	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	25-6	20-3	
	16	26-0*	26-0*	26-0*	26-0*	25-10	24-10	24-10	23-2	22-1	17-7	
	24	24-1	23-8	23-2	22-3	21-1	20-3	20-3	18-11	18-1	14-4	

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 240 or 180 and is based on live load only. The load duration factor, C_D , is 1.25 for construction loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

*The listed maximum span has been limited to 26'-0" based on material availability.

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 38 Rafters – 20 psf live load, 15 psf dead load, $\ell/180$, $C_D=1.25$

Medium roofing; No finished ceiling; Construction load

Size inches	Spacing inches on center	Grade										
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3	Standard
2 x 4	12	11-6	11-3	11-1	11-3	11-1	10-10	11-1	10-10	10-4	8-5	7-3
	16	10-5	10-3	10-0	10-3	10-0	9-10	10-0	9-9	9-3	7-4	6-3
	24	9-1	8-11	8-9	8-11	8-9	8-5	8-5	7-11	7-6	6-0	5-1
2 x 6	12	18-0	17-8	17-4	17-8	17-4	17-0	17-4	16-1	15-5	12-6	
	16	16-4	16-1	15-9	16-1	15-9	15-3	15-0	13-11	13-4	10-10	
	24	14-4	14-1	13-9	13-6	13-1	12-6	12-3	11-5	10-11	8-10	
2 x 8	12	23-9	23-4	22-11	23-4	22-11	22-0	22-5	20-9	19-11	15-11	
	16	21-7	21-2	20-10	21-1	20-2	19-1	19-5	18-0	17-3	13-9	
	24	18-10	18-6	18-2	17-3	16-5	15-7	15-10	14-8	14-1	11-3	
2 x 10	12	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	26-0*	24-10	23-8	18-9	
	16	26-0*	26-0*	26-0*	25-3	23-11	23-0	23-0	21-6	20-6	16-3	
	24	24-1	23-8	23-2	20-7	19-6	18-9	18-9	17-6	16-8	13-3	

Table 39 Rafters – 20 psf live load, 20 psf dead load, $\ell/180$, $C_D=1.25$

Heavy roofing; No finished ceiling; Construction load

Size inches	Spacing inches on center	Grade										
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3	Standard
2 x 4	12	11-6	11-3	11-1	11-3	11-1	10-10	11-1	10-6	9-11	7-11	6-9
	16	10-5	10-3	10-0	10-3	10-0	9-8	9-8	9-1	8-7	6-10	5-10
	24	9-1	8-11	8-9	8-7	8-3	7-11	7-11	7-5	7-0	5-7	4-10
2 x 6	12	18-0	17-8	17-4	17-8	17-3	16-6	16-2	15-1	14-5	11-8	
	16	16-4	16-1	15-9	15-5	15-0	14-3	14-0	13-1	12-6	10-1	
	24	14-4	14-1	13-9	12-7	12-3	11-8	11-5	10-8	10-2	8-3	
2 x 8	12	23-9	23-4	22-11	22-9	21-9	20-7	21-0	19-5	18-7	14-10	
	16	21-7	21-2	20-10	19-9	18-10	17-10	18-2	16-10	16-1	12-11	
	24	18-10	18-6	18-2	16-1	15-5	14-7	14-10	13-9	13-2	10-6	
2 x 10	12	26-0*	26-0*	26-0*	26-0*	25-10	24-10	24-10	23-2	22-1	17-7	
	16	26-0*	26-0*	26-0*	23-7	22-4	21-6	21-6	20-1	19-2	15-2	
	24	23-6	22-11	21-9	19-3	18-3	17-7	17-7	16-5	15-8	12-5	

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 180 and is based on live load only. The load duration factor, C_D , is 1.25 for construction loads. Check sources of supply for availability of lumber in lengths greater than 20'-0".

*The listed maximum span has been limited to 26'-0" based on material availability.

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 40 Wet-Service Floor Joists – 40 psf live load, 10 psf dead load, $\ell/360$

Decks; Moisture content exceeds 19%

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	11-0	10-9	10-7	10-9	10-7	10-4	10-7	10-4	9-11	9-4
	16	10-0	9-9	9-7	9-9	9-7	9-5	9-7	9-5	9-0	8-1
	24	8-8	8-7	8-5	8-7	8-5	8-3	8-5	7-10	7-10	6-7
2 x 8	12	14-5	14-2	13-11	14-2	13-11	13-8	13-11	13-8	13-1	11-11
	16	13-2	12-11	12-8	12-11	12-8	12-5	12-8	12-5	11-10	10-3
	24	11-6	11-3	11-1	11-3	11-1	10-9	10-11	10-1	10-4	8-5
2 x 10	12	18-5	18-1	17-9	18-1	17-9	17-5	17-9	17-5	16-8	14-0
	16	16-9	16-5	16-2	16-5	16-2	15-10	15-10	15-10	15-2	12-2
	24	14-8	14-4	14-1	14-3	13-5	12-11	12-11	13-2	12-6	9-11
2 x 12	12	22-5	22-0	21-7	22-0	21-7	21-2	21-7	21-2	20-3	16-8
	16	20-4	20-0	19-8	20-0	19-8	19-3	19-8	18-10	18-2	14-5
	24	17-10	17-6	17-2	16-8	16-1	16-8	16-8	15-4	14-10	11-10

Table 41 Wet-Service Floor Joists – 60 psf live load, 10 psf dead load, $\ell/360$

Decks; Moisture content exceeds 19%

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	9-7	9-5	9-3	9-5	9-3	9-1	9-3	9-1	8-8	7-11
	16	8-8	8-7	8-5	8-7	8-5	8-3	8-5	8-1	7-10	6-10
	24	7-7	7-6	7-4	7-6	7-4	7-2	7-2	6-8	6-10	5-7
2 x 8	12	12-7	12-5	12-2	12-5	12-2	11-11	12-2	11-11	11-5	10-0
	16	11-6	11-3	11-1	11-3	11-1	10-10	11-1	10-6	10-4	8-8
	24	10-0	9-10	9-8	9-10	9-7	9-1	9-3	8-7	8-11	7-1
2 x 10	12	16-1	15-10	15-6	15-10	15-6	15-2	15-5	15-2	14-7	11-10
	16	14-8	14-4	14-1	14-4	13-11	13-4	13-4	13-7	12-11	10-3
	24	12-9	12-7	12-4	12-0	11-4	10-11	10-11	11-1	10-6	8-5
2 x 12	12	19-7	19-3	18-10	19-3	18-10	18-6	18-10	18-4	17-8	14-1
	16	17-10	17-6	17-2	17-3	16-7	16-10	17-2	15-11	15-4	12-3
	24	15-7	15-3	13-9	14-1	13-7	13-9	14-1	13-0	12-6	10-0

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules. They are intended to apply where the moisture content in use will exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 360 and is based on live load only. Check sources of supply for availability of lumber in lengths greater than 20'-0".

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 42 Floor Joists – 75 psf live load, 10 psf dead load, $\ell/360$

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	9-2	9-1	8-10	9-1	8-10	8-8	8-10	8-8	8-4	7-2
	16	8-4	8-3	8-1	8-3	8-1	7-11	8-1	7-11	7-7	6-2
	24	6-9	6-9	6-9	6-9	6-9	6-9	6-9	6-6	6-3	5-1
2 x 8	12	12-2	11-11	11-8	11-11	11-8	11-6	11-8	11-6	11-0	9-1
	16	11-0	10-10	10-8	10-10	10-8	10-5	10-8	10-4	9-10	7-11
	24	8-11	8-11	8-11	8-11	8-11	8-11	8-11	8-5	8-1	6-5
2 x 10	12	15-6	15-2	14-11	15-2	14-11	14-7	14-11	14-3	13-6	10-9
	16	14-1	13-10	13-7	13-10	13-7	13-2	13-2	12-4	11-9	9-4
	24	11-4	11-4	11-4	11-4	11-3	10-9	10-9	10-1	9-7	7-7
2 x 12	12	18-10	18-6	18-2	18-6	18-2	17-9	18-1	16-8	16-1	12-10
	16	17-1	16-10	16-6	16-10	16-4	15-8	15-8	14-5	13-11	11-1
	24	13-9	13-9	13-9	13-9	13-4	12-10	12-10	11-9	11-4	9-1

Table 43 Floor Joists – 80 psf live load, 10 psf dead load, $\ell/360$

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	9-0	8-10	8-8	8-10	8-8	8-6	8-8	8-6	8-2	7-0
	16	8-2	8-0	7-11	8-0	7-11	7-9	7-11	7-9	7-5	6-0
	24	6-5	6-5	6-5	6-5	6-5	6-5	6-5	6-4	6-1	4-11
2 x 8	12	11-11	11-8	11-5	11-8	11-5	11-3	11-5	11-3	10-9	8-10
	16	10-10	10-7	10-5	10-7	10-5	10-2	10-5	10-0	9-7	7-8
	24	8-5	8-5	8-5	8-5	8-5	8-5	8-5	8-2	7-10	6-3
2 x 10	12	15-2	14-11	14-7	14-11	14-7	14-4	14-7	13-10	13-2	10-5
	16	13-9	13-6	13-3	13-6	13-3	12-10	12-10	12-0	11-5	9-1
	24	10-9	10-9	10-9	10-9	10-9	10-5	10-5	9-9	9-4	7-5
2 x 12	12	18-5	18-1	17-9	18-1	17-9	17-5	17-7	16-2	15-7	12-5
	16	16-9	16-5	16-2	16-5	15-11	15-3	15-3	14-0	13-6	10-9
	24	13-1	13-1	13-1	13-1	13-0	12-5	12-5	11-5	11-0	8-10

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules, but include an additional check for shear. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 360 and is based on live load only.

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 44 Floor Joists – 90 psf live load, 10 psf dead load, $\ell/360$

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	8-8	8-6	8-4	8-6	8-4	8-2	8-4	8-2	7-10	6-7
	16	7-10	7-9	7-7	7-9	7-7	7-5	7-7	7-5	7-1	5-9
	24	5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-10	5-9	4-8
2 x 8	12	11-5	11-3	11-0	11-3	11-0	10-9	11-0	10-9	10-4	8-5
	16	10-5	10-2	10-0	10-2	10-0	9-10	10-0	9-6	9-1	7-3
	24	7-9	7-9	7-9	7-9	7-9	7-9	7-9	7-9	7-5	5-11
2 x 10	12	14-7	14-4	14-0	14-4	14-0	13-9	14-0	13-2	12-6	9-11
	16	13-3	13-0	12-9	13-0	12-8	12-2	12-2	11-5	10-10	8-7
	24	9-10	9-10	9-10	9-10	9-10	9-10	9-10	9-3	8-10	7-0
2 x 12	12	17-9	17-5	17-1	17-5	17-1	16-8	16-8	15-4	14-10	11-10
	16	16-1	15-10	15-6	15-8	15-1	14-5	14-5	13-4	12-10	10-3
	24	12-0	12-0	12-0	12-0	12-0	11-10	11-10	10-10	10-6	8-4

Table 45 Floor Joists – 100 psf live load, 10 psf dead load, $\ell/360$

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	8-4	8-3	8-1	8-3	8-1	7-11	8-1	7-11	7-7	6-4
	16	7-7	7-6	7-4	7-6	7-4	7-2	7-4	7-0	6-9	5-5
	24	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	5-5	4-5
2 x 8	12	11-0	10-10	10-8	10-10	10-8	10-5	10-8	10-5	10-0	8-0
	16	10-0	9-10	9-8	9-10	9-8	9-6	9-8	9-1	8-8	6-11
	24	7-2	7-2	7-2	7-2	7-2	7-2	7-2	7-2	7-1	5-8
2 x 10	12	14-1	13-10	13-7	13-10	13-7	13-3	13-5	12-6	11-11	9-5
	16	12-9	12-7	12-4	12-7	12-1	11-7	11-7	10-10	10-4	8-2
	24	9-1	9-1	9-1	9-1	9-1	9-1	9-1	8-10	8-5	6-8
2 x 12	12	17-1	16-10	16-6	16-10	16-6	15-11	15-11	14-8	14-1	11-3
	16	15-7	15-3	15-0	14-11	14-5	13-9	13-9	12-8	12-3	9-9
	24	11-1	11-1	11-1	11-1	11-1	11-1	11-1	10-4	10-0	7-11

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules, but include an additional check for shear. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 360 and is based on live load only.

These grades are the most commonly available.

SOUTHERN PINE SPAN TABLES

Maximum Spans
given in feet and inches

Table 46 Floor Joists – 125 psf live load, 10 psf dead load, $\ell/360$

Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	7-9	7-8	7-6	7-8	7-6	7-4	7-6	7-4	7-0	5-8
	16	6-5	6-5	6-5	6-5	6-5	6-5	6-5	6-4	6-1	4-11
	24	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-0
2 x 8	12	10-3	10-1	9-10	10-1	9-10	9-8	9-10	9-6	9-1	7-3
	16	8-5	8-5	8-5	8-5	8-5	8-5	8-5	8-2	7-10	6-3
	24	6-0	6-0	6-0	6-0	6-0	6-0	6-0	6-0	6-0	5-1
2 x 10	12	13-1	12-10	12-7	12-10	12-7	12-1	12-1	11-4	10-9	8-6
	16	10-9	10-9	10-9	10-9	10-9	10-5	10-5	9-9	9-4	7-5
	24	7-8	7-8	7-8	7-8	7-8	7-8	7-8	7-8	7-7	6-0
2 x 12	12	15-11	15-7	15-4	15-7	15-0	14-4	14-4	13-3	12-9	10-2
	16	13-1	13-1	13-1	13-1	13-0	12-5	12-5	11-5	11-0	8-10
	24	9-4	9-4	9-4	9-4	9-4	9-4	9-4	9-4	9-0	7-2

Table 47 Floor Joists – 150 psf live load, 10 psf dead load, $\ell/360$

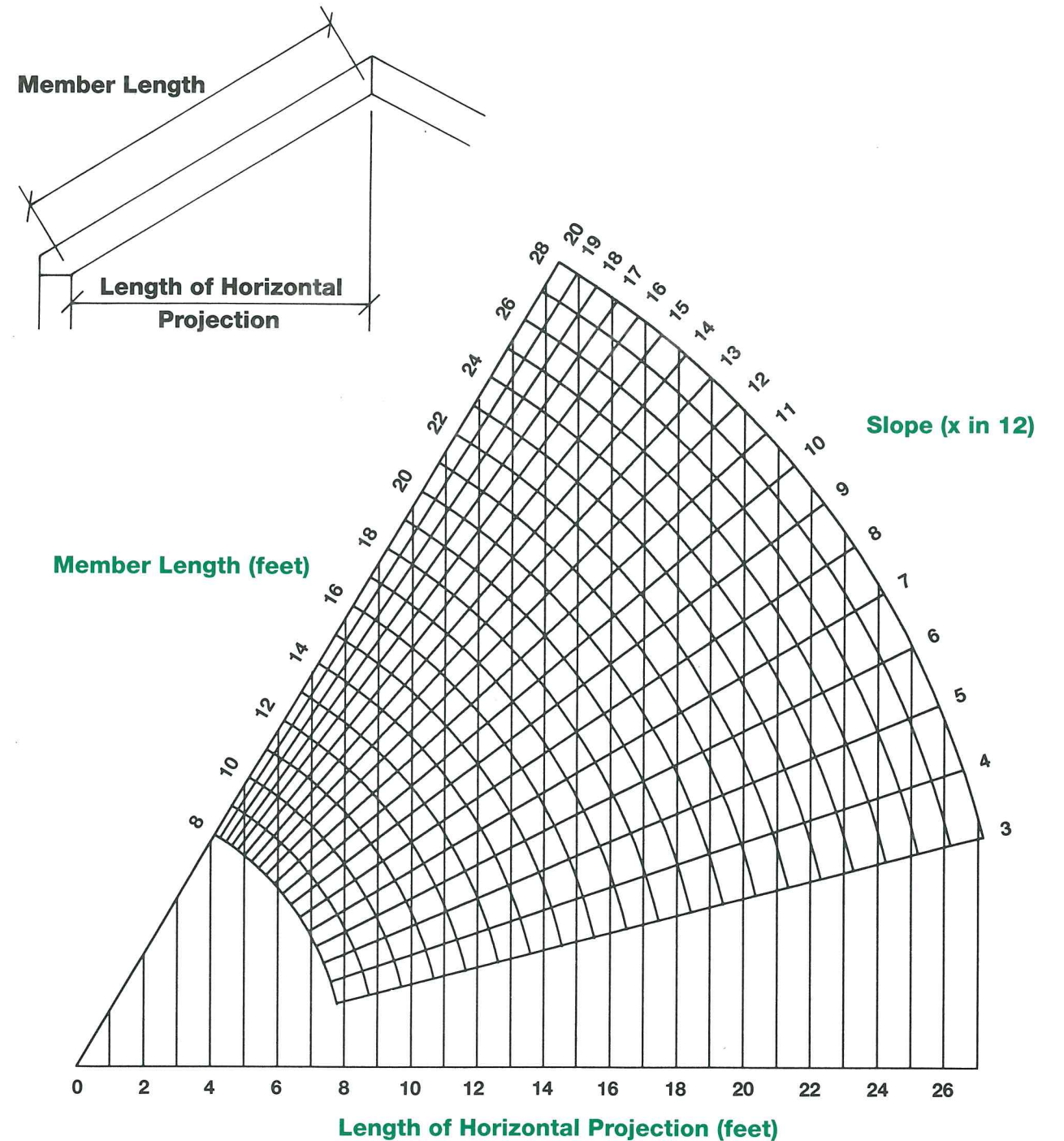
Size inches	Spacing inches on center	Grade									
		Dense Select Structural	Select Structural	NonDense Select Structural	No. 1 Dense	No. 1	No. 1 NonDense	No. 2 Dense	No. 2	No. 2 NonDense	No. 3
2 x 6	12	7-1	7-1	7-1	7-1	7-1	6-11	7-1	6-9	6-5	5-3
	16	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	5-7	4-6
	24	4-0	4-0	4-0	4-0	4-0	4-0	4-0	4-0	4-0	3-8
2 x 8	12	9-4	9-4	9-3	9-4	9-3	9-1	9-3	8-8	8-4	6-8
	16	7-4	7-4	7-4	7-4	7-4	7-4	7-4	7-4	7-2	5-9
	24	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	5-3	4-8
2 x 10	12	11-11	11-11	11-10	11-11	11-7	11-1	11-1	10-5	9-10	7-10
	16	9-4	9-4	9-4	9-4	9-4	9-4	9-4	9-0	8-6	6-9
	24	6-9	6-9	6-9	6-9	6-9	6-9	6-9	6-9	6-9	5-7
2 x 12	12	14-6	14-6	14-5	14-4	13-9	13-2	13-2	12-2	11-9	9-4
	16	11-4	11-4	11-4	11-4	11-4	11-4	11-4	10-6	10-2	8-1
	24	8-2	8-2	8-2	8-2	8-2	8-2	8-2	8-2	8-2	6-7

These spans are based on the 1993 AFPA (formerly NFPA) Span Tables for Joists and Rafters and the 1991 SPIB Grading Rules, but include an additional check for shear. They are intended for use in covered structures or where the moisture content in use does not exceed 19 percent for an extended period of time. Loading conditions are expressed in psf (pounds per square foot). Deflection is limited to span in inches divided by 360 and is based on live load only.

These grades are the most commonly available.

CONVERSION DIAGRAM FOR RAFTERS

Courtesy of the American Forest & Paper Association

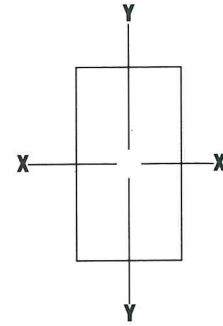
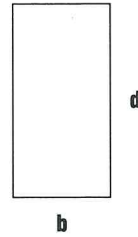


To use the diagram, select the known horizontal distance and follow the vertical line to its intersection with the radial line of the specified slope. Then proceed along the arc to read the sloping distance. In some cases it may be desirable to interpolate between the one-foot separations. The diagram also may be used to

find the horizontal distance corresponding to a given sloping distance, or to find the slope when the horizontal and sloping distances are known.

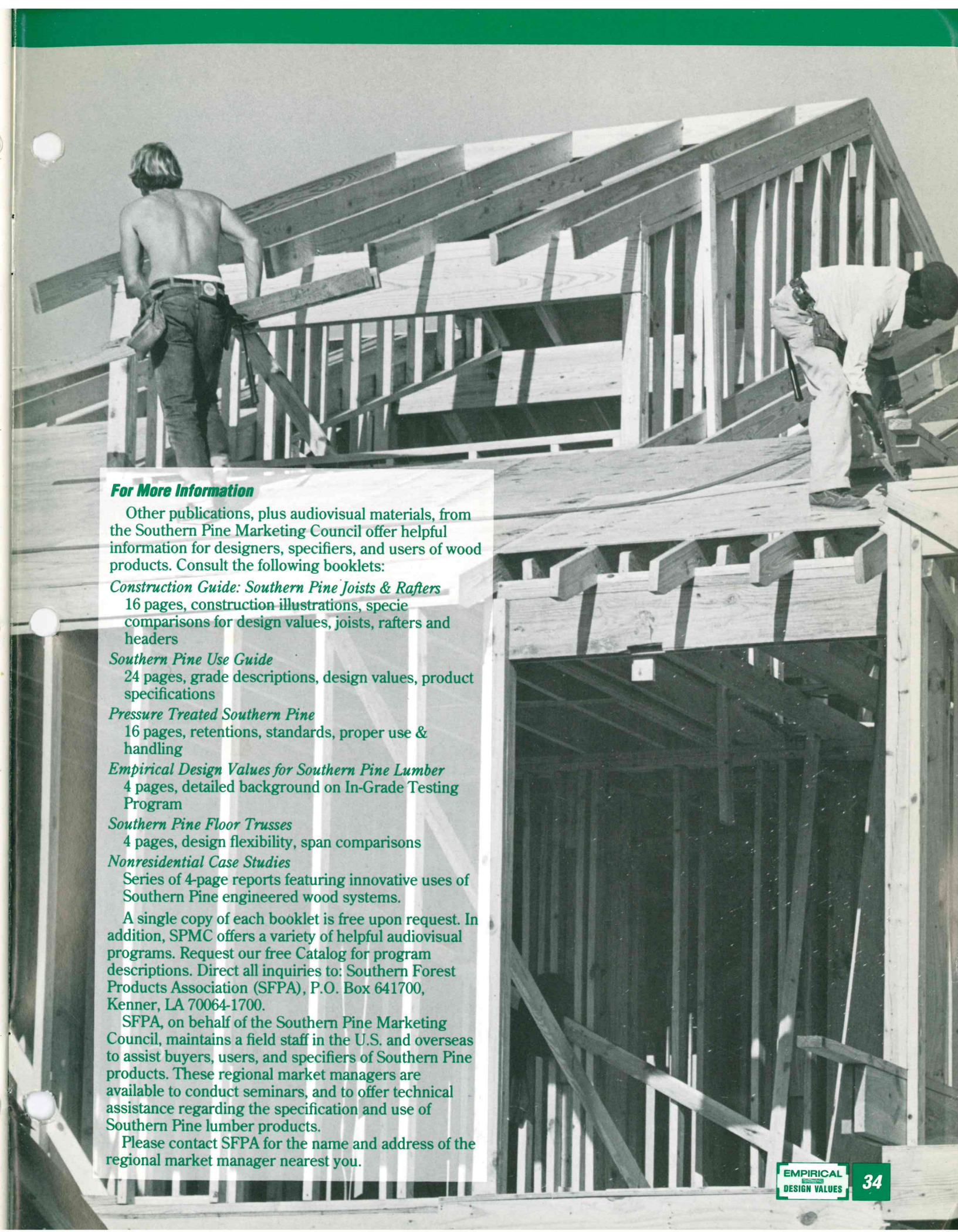
Example: With a roof slope of 8 in 12, and a horizontal distance of 20 feet, the sloping distance may be read as 24 feet.

PROPERTIES OF SECTIONS



Nominal Size (inches)	Actual Size (inches)		Area (in ²)	AXIS XX		AXIS YY		Board Measure per Lineal Foot	Weight per Lineal Foot (lbs.)
	b	d		S	I	S	I		
2 x 2	1-1/2	1-1/2	2.250	0.563	0.422	0.563	0.422	0.33	0.73
3	2-1/2	2-1/2	3.750	1.563	1.953	0.938	0.703	0.50	1.10
4	3-1/2	3-1/2	5.250	3.063	5.359	1.313	0.984	0.67	1.47
5	4-1/2	4-1/2	6.750	5.063	11.391	1.688	1.266	0.83	1.83
6	5-1/2	5-1/2	8.250	7.563	20.797	2.063	1.547	1.00	2.20
8	7-1/4	7-1/4	10.875	13.141	47.635	2.719	2.039	1.33	2.93
10	9-1/4	9-1/4	13.875	21.391	98.932	3.469	2.602	1.67	3.84
12	11-1/4	11-1/4	16.875	31.641	177.979	4.219	3.164	2.00	4.60
14	13-1/4	13-1/4	19.875	43.891	290.775	4.969	3.727	2.33	5.59
3 x 3	2-1/2	2-1/2	6.250	2.604	3.255	2.604	3.255	0.75	1.80
4	3-1/2	3-1/2	8.750	5.104	8.932	3.646	4.557	1.00	2.30
6	5-1/2	5-1/2	13.750	12.604	34.661	5.729	7.161	1.50	3.45
8	7-1/4	7-1/4	18.125	21.901	79.391	7.552	9.440	2.00	4.60
10	9-1/4	9-1/4	23.125	35.651	164.886	9.635	12.044	2.50	6.00
12	11-1/4	11-1/4	28.125	52.734	296.631	11.719	14.648	3.00	7.20
14	13-1/4	13-1/4	33.125	73.151	484.626	13.802	17.253	3.50	8.40
4 x 4	3-1/2	3-1/2	12.250	7.146	12.505	7.146	12.505	1.33	3.19
6	5-1/2	5-1/2	19.250	17.646	48.526	11.229	19.651	2.00	5.00
8	7-1/4	7-1/4	25.375	30.661	111.148	14.802	25.904	2.67	6.68
10	9-1/4	9-1/4	32.375	49.911	230.840	18.885	33.049	3.33	8.33
12	11-1/4	11-1/4	39.375	73.828	415.283	22.969	40.195	4.00	10.00
14	13-1/4	13-1/4	46.375	102.411	678.476	27.052	47.341	4.67	11.68
* 6 x 6	5-1/2	5-1/2	30.250	27.729	76.255	27.729	76.255	3.00	11.40
8	7-1/2	7-1/2	41.250	51.563	193.359	37.813	103.984	4.00	15.20
10	9-1/2	9-1/2	52.250	82.729	392.964	47.896	131.714	5.00	19.00
12	11-1/2	11-1/2	63.250	121.229	697.068	57.979	159.443	6.00	22.80
14	13-1/2	13-1/2	74.250	167.063	1127.672	68.063	187.172	7.00	26.60
* 8 x 8	7-1/2	7-1/2	56.250	70.313	263.672	70.313	263.672	5.33	20.25
10	9-1/2	9-1/2	71.250	112.813	535.859	89.063	333.984	6.67	25.35
12	11-1/2	11-1/2	86.250	165.313	950.547	107.813	404.297	8.00	30.40
14	13-1/2	13-1/2	101.250	227.813	1537.734	126.563	474.609	9.33	35.45
* 10x10	9-1/2	9-1/2	90.250	142.896	678.755	142.896	678.755	8.33	31.65
12	11-1/2	11-1/2	109.250	209.396	1204.026	172.979	821.651	10.00	38.00
14	13-1/2	13-1/2	128.250	288.563	1947.797	203.063	964.547	11.67	44.35
* 12x12	11-1/2	11-1/2	132.250	253.479	1457.505	253.479	1457.505	12.00	45.60
14	13-1/2	13-1/2	155.250	349.313	2357.859	297.563	1710.984	14.00	53.20
* 14x14	13-1/2	13-1/2	182.250	410.063	2767.922	410.063	2767.922	16.33	62.05

*Note: Properties are based on minimum dressed green size which is 1/2 inch off nominal in both b and d dimensions.



For More Information

Other publications, plus audiovisual materials, from the Southern Pine Marketing Council offer helpful information for designers, specifiers, and users of wood products. Consult the following booklets:

Construction Guide: Southern Pine Joists & Rafters

16 pages, construction illustrations, specie comparisons for design values, joists, rafters and headers

Southern Pine Use Guide

24 pages, grade descriptions, design values, product specifications

Pressure Treated Southern Pine

16 pages, retentions, standards, proper use & handling

Empirical Design Values for Southern Pine Lumber

4 pages, detailed background on In-Grade Testing Program

Southern Pine Floor Trusses

4 pages, design flexibility, span comparisons

Nonresidential Case Studies

Series of 4-page reports featuring innovative uses of Southern Pine engineered wood systems.

A single copy of each booklet is free upon request. In addition, SPMC offers a variety of helpful audiovisual programs. Request our free Catalog for program descriptions. Direct all inquiries to: Southern Forest Products Association (SFPA), P.O. Box 641700, Kenner, LA 70064-1700.

SFPA, on behalf of the Southern Pine Marketing Council, maintains a field staff in the U.S. and overseas to assist buyers, users, and specifiers of Southern Pine products. These regional market managers are available to conduct seminars, and to offer technical assistance regarding the specification and use of Southern Pine lumber products.

Please contact SFPA for the name and address of the regional market manager nearest you.

WELDED WIRE FABRIC (WWF)

TABLE 2-2(a) UNIT WEIGHT OF LONGITUDINAL WIRES FOR WELDED WIRE FABRIC (INCH-POUND)

Wire Size, W or D	Nom. Diam. (in.)	Weight (lb/100 ft ²)* of Longitudinal Wires Per Spacing (in.)								
		2	3	4	5	6	8	9	10	12
45	0.757	948.60	642.60	489.60	397.80	336.60	260.10	234.40	214.20	183.60
31	0.628	653.40	442.68	337.28	274.04	231.88	179.18	161.68	147.56	126.48
30	0.618	632.40	428.40	326.40	265.20	224.40	173.40	156.46	142.80	122.40
28	0.597	590.24	399.84	304.64	247.52	209.44	161.84	146.03	133.28	114.24
26	0.575	548.08	371.28	282.88	229.84	194.48	150.28	135.60	123.76	106.08
24	0.553	505.92	342.72	261.12	212.16	179.52	138.72	125.17	114.24	97.92
22	0.529	463.76	314.16	239.36	194.48	164.56	127.16	114.74	104.72	89.76
20	0.505	421.60	285.60	217.60	176.80	149.60	115.60	104.31	95.20	81.60
18	0.479	379.44	257.04	195.84	159.12	134.64	104.04	93.88	85.68	73.44
16	0.451	337.28	228.48	174.48	141.44	119.68	92.48	83.45	76.16	65.28
14	0.422	295.12	199.92	152.32	123.76	104.72	80.92	73.01	66.64	57.12
12	0.391	252.96	171.36	130.56	106.08	89.76	69.36	62.58	57.12	48.96
11	0.374	231.88	157.08	119.68	97.24	82.28	63.58	57.37	52.36	44.88
10.5	0.366	221.34	149.94	114.24	92.82	78.54	60.69	54.76	49.98	42.84
10	0.357	210.80	142.80	108.80	88.40	74.80	57.80	52.15	47.60	40.80
9.5	0.348	200.26	135.66	103.36	83.98	71.06	54.91	49.55	45.22	38.76
9	0.339	189.72	128.52	97.92	79.56	67.32	52.02	46.94	42.84	36.72
8.5	0.329	179.18	121.38	92.48	75.14	63.58	49.13	44.33	40.46	34.68
8	0.319	168.64	114.24	87.04	70.72	59.84	46.24	41.73	38.08	32.64
7.5	0.309	158.10	107.10	81.60	66.30	56.10	43.35	39.11	35.70	30.60
7	0.299	147.56	99.96	76.16	61.88	52.36	40.46	36.51	33.32	28.56
6.5	0.288	137.02	92.82	70.72	57.46	48.62	37.57	33.90	30.94	26.52
6	0.276	126.48	85.68	65.28	53.04	44.88	34.68	31.29	28.56	24.48
5.5	0.265	115.94	78.54	69.84	48.62	41.14	31.79	28.69	26.18	22.44
5	0.252	105.40	71.40	54.40	44.20	37.40	28.90	26.08	23.80	20.40
4.5	0.239	94.86	64.26	48.96	39.78	33.66	26.01	23.47	21.42	18.36
4	0.226	84.32	57.12	43.52	35.36	29.92	23.12	20.87	19.04	16.32
3.5	0.211	73.78	49.98	38.08	30.94	26.18	20.23	18.26	16.66	14.28
3	0.195	63.24	42.84	32.64	26.52	22.44	17.34	15.65	14.28	12.24
2.9	0.192	61.13	41.41	31.55	25.64	21.69	16.76	15.11	13.80	11.83
2.5	0.178	52.70	35.70	27.20	22.10	18.70	14.45	13.04	11.90	10.20
2	0.160	42.16	28.56	21.76	17.68	14.96	11.56	10.44	9.52	8.16
1.4	0.134	29.51	19.99	15.23	12.38	10.47	8.09	7.29	6.66	5.71

*Weight based on standard end overhang.

Note: This table should be used for estimating purposes only. Actual weights of welded wire fabric will vary from those shown above, depending upon the width of rolls or sheets and lengths of overhangs. No allowance is made in this table for the extra weight of fabric required for lap splices.

WELDED WIRE FABRIC (WWF)

TABLE 2-2(c) UNIT WEIGHT OF TRANSVERSE WIRES FOR WELDED WIRE FABRIC (INCH-POUND)

Wire Size, W or D	Nom. Diam. (in.)	Weight (lb/100 ft ²)* of Transverse Wires Per Spacing (in.)									
		2	3	4	5	6	8	9	10	12	
45	0.757	948.57	632.38	474.29	379.43	316.19	237.14	210.79	189.72	158.10	
31	0.628	653.48	435.65	326.74	261.39	217.83	163.37	145.22	130.70	108.91	
30	0.618	632.40	421.40	316.20	252.96	210.80	158.10	140.53	126.48	105.40	
28	0.597	590.24	393.49	295.12	236.10	196.75	147.56	131.17	118.05	98.37	
26	0.575	548.08	365.38	274.04	219.23	182.70	137.02	121.80	109.62	91.34	
24	0.553	505.92	337.28	252.96	202.37	168.64	126.48	112.43	101.18	84.32	
22	0.529	463.76	309.17	231.88	185.50	154.59	115.94	103.06	92.75	77.29	
20	0.505	421.60	281.06	210.80	168.64	140.53	105.40	93.69	84.32	70.26	
18	0.479	379.44	252.96	189.72	151.78	126.48	94.86	84.32	75.89	63.24	
16	0.451	337.28	224.85	168.64	134.91	112.43	84.32	74.95	67.46	56.21	
14	0.422	295.12	196.76	147.56	118.05	98.37	73.78	65.58	59.02	49.19	
12	0.391	252.96	168.64	126.48	101.18	84.32	63.24	56.21	50.59	42.16	
11	0.374	231.88	154.59	115.94	92.75	77.29	57.97	51.53	46.38	38.65	
10.5	0.366	221.34	147.56	110.67	88.54	73.78	55.34	49.19	44.27	36.89	
10	0.357	210.80	140.53	105.40	84.32	70.27	52.70	46.84	42.16	35.13	
9.5	0.348	200.28	133.51	100.13	80.11	66.76	50.07	44.50	40.05	33.38	
9	0.339	189.72	126.48	94.86	75.89	63.24	47.43	42.16	37.94	31.62	
8.5	0.329	179.18	119.45	89.59	71.67	59.73	44.80	39.82	35.84	29.86	
8	0.319	168.64	112.43	84.32	67.46	56.21	42.16	37.48	33.73	28.11	
7.5	0.309	158.10	105.40	79.05	63.24	52.70	39.53	35.14	31.62	26.35	
7	0.299	147.56	98.37	73.78	59.02	49.19	36.89	32.79	29.51	24.59	
6.5	0.288	137.02	91.35	68.51	54.81	45.68	34.26	30.45	27.41	22.84	
6	0.276	126.48	84.32	63.24	50.59	42.16	31.62	28.11	25.30	21.08	
5.5	0.265	115.94	77.30	57.97	46.38	38.65	28.99	25.77	23.19	19.33	
5	0.252	105.40	70.27	52.70	42.16	35.13	26.35	23.42	21.08	17.57	
4.5	0.239	94.86	63.24	47.43	37.95	31.62	23.72	21.08	18.97	15.81	
4	0.226	84.32	56.21	42.16	33.73	28.11	21.08	18.74	16.86	14.05	
3.5	0.211	73.78	49.19	36.89	29.51	24.60	18.45	16.40	14.76	12.30	
3	0.195	63.24	42.16	31.62	25.30	21.08	15.81	14.05	12.65	10.54	
2.9	0.192	61.13	40.75	30.56	24.45	20.38	15.28	13.58	12.23	10.19	
2.5	0.178	52.70	35.13	26.35	21.08	17.57	13.18	11.71	10.54	8.78	
2	0.160	42.16	28.11	21.08	16.86	14.05	10.54	9.37	8.43	7.03	
1.4	0.134	29.51	19.67	14.76	11.80	9.84	7.38	6.56	5.90	4.92	

* Weight based on 60-in. wide sheets (c.-c.) with 1-in. side overhang.

Note: This table should be used for estimating purposes only. Actual weights of welded wire fabric will vary from those shown above, depending upon the width of rolls or sheets and lengths of overhangs. No allowance is made in this table for the extra weight of fabric required for lap splices.

WELDED WIRE FABRIC (WWF)

TABLE 2-3(a) CROSS-SECTIONAL AREA AND WEIGHT OF WELDED WIRE FABRIC (INCH-POUND)

Wire Size, W or D	Nom. Diam. (in.)	Nom. Weight (lb/ft)	Area of Steel (in. ² /ft) Per Wire Spacing (in.)						
			2	3	4	6	8	10	12
45	0.757	1.530	2.700	1.800	1.350	0.900	0.675	0.540	0.450
31	0.628	1.054	1.860	1.240	0.930	0.620	0.465	0.372	0.310
30	0.618	1.020	1.800	1.200	0.900	0.600	0.450	0.360	0.300
28	0.597	0.952	1.680	1.120	0.840	0.560	0.420	0.336	0.280
26	0.575	0.884	1.560	1.040	0.780	0.520	0.390	0.312	0.260
24	0.553	0.816	1.440	0.960	0.720	0.480	0.360	0.288	0.240
22	0.529	0.748	1.320	0.880	0.660	0.440	0.330	0.264	0.220
20	0.505	0.680	1.200	0.800	0.600	0.400	0.300	0.240	0.200
18	0.479	0.612	1.080	0.720	0.540	0.360	0.270	0.216	0.180
16	0.451	0.544	0.960	0.640	0.480	0.320	0.240	0.192	0.160
14	0.422	0.476	0.840	0.560	0.420	0.280	0.210	0.168	0.140
12	0.391	0.408	0.720	0.480	0.360	0.240	0.180	0.144	0.120
11	0.374	0.374	0.660	0.440	0.330	0.220	0.165	0.132	0.110
10.5	0.366	0.357	0.630	0.420	0.315	0.210	0.158	0.126	0.105
10	0.357	0.340	0.600	0.400	0.300	0.200	0.150	0.120	0.100
9.5	0.348	0.323	0.570	0.380	0.285	0.190	0.143	0.114	0.095
9	0.339	0.306	0.540	0.360	0.270	0.180	0.135	0.108	0.090
8.5	0.329	0.289	0.510	0.340	0.255	0.170	0.128	0.102	0.085
8	0.319	0.272	0.480	0.320	0.240	0.160	0.120	0.096	0.080
7.5	0.309	0.255	0.450	0.300	0.225	0.150	0.113	0.090	0.075
7	0.299	0.238	0.420	0.280	0.210	0.140	0.105	0.084	0.070
6.5	0.288	0.221	0.390	0.260	0.195	0.130	0.098	0.078	0.065
6	0.276	0.204	0.360	0.240	0.180	0.120	0.090	0.072	0.060
5.5	0.265	0.187	0.330	0.220	0.165	0.110	0.083	0.066	0.055
5	0.252	0.170	0.300	0.200	0.150	0.100	0.075	0.060	0.050
4.5	0.239	0.153	0.270	0.180	0.135	0.090	0.068	0.054	0.045
4	0.226	0.136	0.240	0.160	0.120	0.080	0.060	0.048	0.040
3.5	0.211	0.119	0.210	0.140	0.105	0.070	0.053	0.042	0.035
3	0.195	0.102	0.180	0.120	0.090	0.060	0.045	0.036	0.030
2.9	0.192	0.099	0.174	0.116	0.087	0.058	0.044	0.035	0.029
2.5	0.178	0.085	0.150	0.100	0.075	0.050	0.038	0.030	0.025
2	0.160	0.068	0.120	0.080	0.060	0.040	0.030	0.024	0.020
1.4	0.134	0.048	0.084	0.056	0.042	0.028	0.021	0.017	0.014

Notes:

1. The above listing of plain and deformed wire sizes represents wires normally selected to manufacture welded wire fabric to specific areas of reinforcement. Wire sizes other than those listed above, including larger sizes, may be available if the quantity required is sufficient to justify manufacture.
2. The nominal diameter of a deformed wire is equivalent to the diameter of a plain wire having the same weight per foot as the deformed wire.
3. The ACI Building Code requirements for tension development lengths and tension lap splice lengths of welded wire fabric are not included in this chapter. These design requirements are covered in *Reinforcement Anchorages and Splices* available from CRSI. For additional information, see *Manual of Standard Practice—Structural Welded Wire Fabric* and *Structural Detailing Manual*, both published by the Wire Reinforcement Institute.

WELDED WIRE FABRIC (WWF)

2.7. Handling, Shipping and Unloading Welded Wire Fabric

Welded wire fabric is shipped in two forms—rolls or sheets. If shipped in roll form, several rolls may be bundled together for efficient handling. Individual rolls are securely tied, so uncoiling will not occur when the bundles are cut.

Sheets are bundled in quantities depending on size and weight [mass] of sheets. Generally, bundles of rolls or sheets will weigh between 2,000 and 5,000 pounds [900 to 2300 kg]. Banding is used for shipping stability only. Bundles should never be lifted by the steel banding.

If required by the Buyer, bundles can be assembled by flipping alternate sheets, allowing the sheets to "nest."

This arrangement allows for a greater number of sheets to be stacked in a given height and provides some benefit in added stability. Unless required by the Buyer, sheets are not flipped.

At the shipping destination (either job-site or storage facility), the bundles are unloaded with a forklift, or a front end loader equipped with lifting chains, or a crane.

Sheet bundles are usually placed on dunnage spaced every 3 to 4 feet [900 to 1200 mm] for unloading with either a forklift (from beneath the bundle) or a crane (with a sling chain hooked or threaded through the bundle).

At all times during unloading of materials, caution must be exercised and all safety regulations and practices must be observed.

TABLE 2-4 WIRE SIZE CONVERSION *

W or D	Inch-Pound Units			Metric Units			
	Area (in. ²)	Diam. (in.)	Weight (lb/ft)	MW or MD	Area (mm ²)	Diam. (mm)	Mass (kg/m)
45	0.450	0.757	1.530	290	290	19.23	2.277
31	0.310	0.628	1.054	200	200	15.96	1.569
30	0.300	0.618	1.020	194	194	15.70	1.518
28	0.280	0.597	0.952	181	181	15.17	1.417
26	0.260	0.575	0.884	168	168	14.61	1.316
24	0.240	0.553	0.816	155	155	14.04	1.214
22	0.220	0.529	0.748	142	142	13.44	1.113
20	0.200	0.505	0.680	129	129	12.82	1.012
18	0.180	0.479	0.612	116	116	12.16	0.911
16	0.160	0.451	0.544	103	103	11.46	0.810
14	0.140	0.422	0.476	90	90	10.72	0.708
12	0.120	0.391	0.408	77	77	9.93	0.607
11	0.110	0.374	0.374	71	71	9.51	0.557
10.5	0.105	0.366	0.357	68	68	9.29	0.531
10	0.100	0.357	0.340	65	65	9.06	0.506
9.5	0.095	0.348	0.323	61	61	8.83	0.481
9	0.090	0.339	0.306	58	58	8.60	0.455
8.5	0.085	0.329	0.289	55	55	8.36	0.430
8	0.080	0.319	0.272	52	52	8.11	0.405
7.5	0.075	0.309	0.255	48	48	7.85	0.379
7	0.070	0.299	0.238	45	45	7.58	0.354
6.5	0.065	0.288	0.221	42	42	7.31	0.329
6	0.060	0.276	0.204	39	39	7.02	0.304
5.5	0.055	0.265	0.187	35	35	6.72	0.278
5	0.050	0.252	0.170	32	32	6.41	0.253
4.5	0.045	0.239	0.153	29	29	6.08	0.228
4	0.040	0.226	0.136	26	26	5.73	0.202
3.5	0.035	0.211	0.119	23	23	5.36	0.177
3	0.030	0.195	0.102	19.4	19.4	4.96	0.152
2.9	0.029	0.192	0.099	18.7	18.7	4.88	0.147
2.5	0.025	0.178	0.085	16	16	4.53	0.126
2	0.020	0.160	0.068	13	13	4.05	0.101
1.4	0.014	0.134	0.048	9	9	3.39	0.071

* Inch-Pound wire sizes were soft-metricated.

TABLE II—SCHEDULED UNIT WEIGHTS FOR ESTIMATING WELDED WIRE FABRIC*
(Approximate weights in pounds per 100 square feet)

Wire Size Number		Nominal Diameter, Inches.	Spacing and Weight of Longitudinal Wires					Spacing and Weight of Transverse Wires					
Plain	Deformed		2"	3"	4"	6"	12"	3"	4"	6"	8"	10"	12"
W20	D20	0.505	422	286	218	150	82	281	211	141	105	84	70
W18	D18	0.479	379	257	196	135	73	253	190	126	95	76	63
W16	D16	0.451	337	228	174	120	65	225	169	112	84	67	56
W14	D14	0.422	295	200	152	105	57	197	148	98	74	59	49
W12	D12	0.391	253	171	131	90	49	169	126	84	63	51	42
W11	D11	0.374	232	157	120	82	45	155	116	77	58	46	39
W10.5		0.366	221	150	114	79	43	148	111	74	55	44	37
W10	D10	0.357	211	143	109	75	41	141	105	70	53	42	35
W9.5		0.348	200	136	103	71	39	134	100	67	50	40	33
W9	D9	0.338	190	129	98	67	37	126	95	63	47	38	32
W8.5		0.329	179	121	92	64	35	119	90	60	45	36	30
W8	D8	0.319	169	114	87	60	33	112	84	56	42	34	28
W7.5		0.309	158	107	82	56	31	105	79	53	40	32	26
W7	D7	0.299	148	100	76	52	29	98	74	49	37	30	25
W6.5		0.288	137	93	71	49	27	91	69	46	34	27	23
W6	D6	0.276	126	86	65	45	24	84	63	42	32	25	21
W5.5		0.265	116	79	60	41	22	77	58	39	29	23	19
W5	D5	0.252	105	71	54	37	20	70	53	35	26	21	18
W4.5		0.239	95	64	49	34	18	63	47	32	24	19	16
W4	D4	0.226	84	57	44	30	16	56	42	28	21	17	14
W3.5		0.211	74	50	38	26	14	49	37	25	18	15	12
W3		0.195	63	43	33	22	12	42	32	21	16	13	11
W2.9	$\rightarrow + \frac{3}{16}$	0.192	61	41	32	22	12	41	30	20	15	12	10
W2.5		0.178	53	36	27	19	10	35	26	18	13	11	9
W2.1		0.162	43	29	22	15	8	29	22	15	11	9	7
W2		0.160	42	29	22	15	8	28	21	14	11	8	7
W1.5		0.138	32	21	16	11	6	21	16	11	8	6	5
W1.4	$\rightarrow + \frac{1}{8}$	0.134	30	21	16	11	6	20	15	10	7	6	5

*Based on 60" width, 1" side overhang each side (62" overall width), and standard end overhangs.

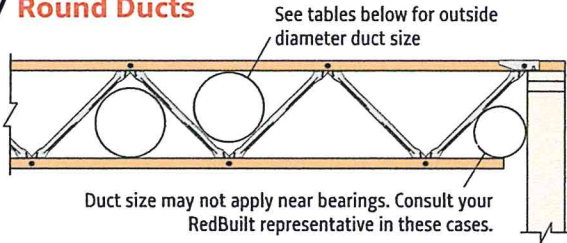
Note: This table is to be used for estimating purposes only. Exact weights of welded wire fabric will vary from those shown above, depending upon width of rolls or sheets and lengths of overhangs. No allowance is made in this table for the extra weight of fabric required for laps or splices.

EXAMPLE: Approximate weight of 6x6 — W4xW4
 Longitudinal = 30
 Transverse = 28

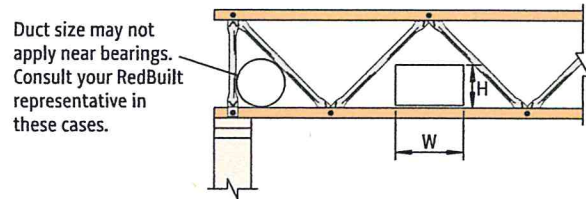
58 lbs. per 100 sq. ft.

6x6 lbs/sqft
 $10/10 = 21$
 $8/8 = 30$
 $6/6 = 42$
 $4/4 = 58$

77 Round Ducts



78 Rectangular Ducts



Red-L™ and Red-W™ Trusses

Truss Depth	Round Duct Size	Rectangular Duct Height			
		4"	6"	8"	10"
14"	8"	9"	7"	4"	-
16"	8"	10"	8"	5"	3"
18"	9"	11"	9"	7"	5"
20"	10"	12"	10"	8"	6"
22"	10"	12"	10"	9"	7"
24"	10"	12"	11"	9"	8"
26"	11"	13"	11"	10"	8"
28"	12"	14"	12"	11"	9"
30"	13"	15"	14"	12"	11"
32"	14"	17"	15"	14"	12"
34"	15"	18"	17"	15"	14"
36"	16"	19"	18"	17"	15"
38"	17"	21"	19"	18"	17"
40"	18"	22"	21"	19"	18"

Red-M™ Trusses

Truss Depth	Round Duct Size	Rectangular Duct Height			
		4"	6"	8"	10"
20"	7"	8"	6"	5"	3"
22"	8"	8"	7"	5"	4"
24"	8"	8"	7"	6"	5"
26"	8"	9"	8"	6"	5"
28"	9"	9"	8"	7"	6"
30"	9"	10"	9"	8"	7"
32"	10"	11"	10"	9"	8"
34"	11"	12"	11"	10"	9"
36"	12"	13"	12"	11"	10"
38"	13"	14"	13"	12"	11"
40"	13"	16"	14"	13"	12"
42"	14"	17"	16"	14"	13"
44"	15"	18"	17"	16"	14"
46"	16"	19"	18"	17"	16"
48"	17"	20"	19"	18"	17"
50"	18"	21"	20"	19"	18"
52"	18"	22"	21"	20"	19"

Red-S™ Trusses

Truss Depth	Round Duct Size	Rectangular Duct Height			
		4"	6"	8"	10"
16"	7"	7"	5"	3"	2"
18"	7"	8"	6"	4"	3"
20"	8"	8"	7"	5"	4"
22"	8"	9"	7"	6"	5"
24"	9"	10"	9"	7"	6"
26"	10"	12"	10"	9"	7"
28"	11"	13"	12"	10"	9"
30"	12"	14"	13"	12"	10"
32"	13"	16"	14"	13"	12"
34"	14"	17"	16"	14"	13"
36"	15"	18"	17"	16"	14"
38"	16"	20"	18"	17"	16"
40"	17"	21"	20"	18"	17"
42"	18"	23"	21"	20"	18"
44"	19"	24"	23"	21"	20"
46"	20"	25"	24"	23"	21"
48"	21"	27"	25"	24"	23"

Red-H™ Trusses

Truss Depth	Round Duct Size	Rectangular Duct Height			
		4"	6"	8"	10"
24"	7"	7"	6"	5"	4"
26"	7"	8"	7"	5"	4"
28"	8"	8"	7"	6"	5"
30"	9"	9"	8"	7"	6"
32"	9"	10"	9"	8"	7"
34"	10"	11"	10"	9"	8"
36"	11"	12"	11"	10"	9"
38"	12"	14"	12"	11"	10"
40"	13"	15"	14"	12"	11"
42"	14"	16"	15"	14"	12"
44"	14"	17"	16"	15"	14"
46"	15"	18"	17"	16"	15"
48"	16"	19"	18"	17"	16"
50"	17"	20"	19"	18"	17"
52"	18"	21"	20"	19"	18"
54"	18"	22"	21"	20"	19"
56"	19"	23"	22"	21"	20"
58"	20"	24"	23"	22"	21"
60"	21"	25"	24"	23"	22"
62"	22"	26"	25"	24"	23"
64"	23"	27"	26"	25"	24"
66"	23"	29"	27"	26"	25"
68"	24"	30"	29"	27"	26"
70"	25"	31"	30"	29"	27"
72"	26"	32"	31"	30"	29"

General Notes

- Widths shown are the minimum allowable openings based on heaviest loads (shortest panels). Check with your RedBuilt representative for more precise sizing, including larger openings.
- Tables are applicable only for uniform loads.

For trusses designed for office floor conditions requiring concentrated loads, or for any other non-uniform loads, contact your RedBuilt representative.