BOARD FOOTAGE TABLE

CONVERSIONS FROM LINEAL FEET TO BOARD FEET IN STANDARD SIZES OF WESTERN LUMBER

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Board Measure Equivalents

This table, based on Standard Nominal Sizes (from 1 x 2 to 8 x 24) has been developed by Western Wood Products Association as an aid to:

a. determine lineal (linear) feet per 1000 board feet, and
b. find the equivalents between lineal and board feet.

The common lengths between 6' and 16' are tabulated in the table; a formula is provided for calculating other lengths.

The table can be used when dollar amounts are added, as the basis of converting:

a. cost per 1000 board feet to cost per lineal foot, or
b. cost per piece.

Refer to the other side of this sheet for additional information and examples of how to use the table to solve problems.

Actual dressed (surfaced), green and dry sizes are included for reference; however, **nominal sizes are always used for board footage calculations.**

When using this table start with the NOMINAL SIZES column. Read to the left for lineal foot information. Read to the right for board foot information.

For lengths, other than those tabulated, the formula for converting lineal feet to board feet is:

$$\frac{T \times W \times L}{12} = \text{Board Feet}$$

	Lineal Feet per 1000 Board Feet	Lineal Feet per Board Foot	Green Surfaced Size for more than 19% moist. content	NOMINAL SIZE	Dry Surfaced Size for 19% or less moisture content	Board Feet per Lineal Foot	BOARD FEET (rounded to the nearest 100th) LENGTHS 6'	8'	10'	12'	14'	16'	
BOARDS	6000	6.0000	Surfaced Dry Only	1 x 2	¾ x 1½	0.1667	1	1.33	1.67	2	2.33	2.67	BOARD FEET
	4000	4.0000		1 x 3	¾ x 2½	0.2500	1.50	2	2.50	3	3.50	4	
	3000	3.0000		1 x 4	¾ x 3½	0.3333	2	2.67	3.33	4	4.67	5.33	
	2000	2.0000		1 x 6	¾ x 5½	0.5000	3	4	5	6	7	8	
	1500	1.5000		1 x 8	¾ x 7¼	0.6667	4	5.33	6.67	8	9.33	10.67	
	1200	1.2000		1 x 10	¾ x 9¼	0.8333	5	6.67	8.33	10	11.67	13.33	
	1000	1.0000		1 x 12	¾ x 11¼	1.0000	6	8	10	12	14	16	
	857	0.8571		1 x 14	¾ x 13¼	1.1667	7	9.33	11.67	14	16.33	18.67	
DIMENSION LUMBER	3000	3.0000	1⁹/₁₆ x 1⁹/₁₆	2 x 2	1½ x 1½	0.3333	2	2.67	3.33	4	4.67	5.33	
	2000	2.0000	1⁹/₁₆ x 2⁹/₁₆	2 x 3	1½ x 2½	0.5000	3	4	5	6	7	8	
	1500	1.5000	1⁹/₁₆ x 3⁹/₁₆	2 x 4	1½ x 3½	0.6667	4	5.33	6.67	8	9.33	10.67	
	1000	1.0000	1⁹/₁₆ x 5⅛	2 x 6	1½ x 5½	1.0000	6	8	10	12	14	16	
	750	0.7500	1⁹/₁₆ x 7½	2 x 8	1½ x 7¼	1.3333	8	10.67	13.33	16	18.67	21.33	
	600	0.6000	1⁹/₁₆ x 9½	2 x 10	1½ x 9¼	1.6667	10	13.33	16.67	20	23.33	26.67	
	500	0.5000	1⁹/₁₆ x 11½	2 x 12	1½ x 11¼	2.0000	12	16	20	24	28	32	
	429	0.4286	1⁹/₁₆ x 13½	2 x 14	1½ x 13¼	2.3333	14	18.67	23.33	28	32.67	37.33	
	1333	1.3333	2⁹/₁₆ x 2⁹/₁₆	3 x 3	2½ x 2½	0.7500	4.50	6	7.50	9	10.50	12	
	1000	1.0000	2⁹/₁₆ x 3⁹/₁₆	3 x 4	2½ x 3½	1.0000	6	8	10	12	14	16	
	667	0.6667	2⁹/₁₆ x 5⅛	3 x 6	2½ x 5½	1.5000	9	12	15	18	21	24	
	500	0.5000	2⁹/₁₆ x 7½	3 x 8	2½ x 7¼	2.0000	12	16	20	24	28	32	
	400	0.4000	2⁹/₁₆ x 9½	3 x 10	2½ x 9¼	2.5000	15	20	25	30	35	40	
	333	0.3333	2⁹/₁₆ x 11½	3 x 12	2½ x 11¼	3.0000	18	24	30	36	42	48	
	286	0.2857	2⁹/₁₆ x 13½	3 x 14	2½ x 13¼	3.5000	21	28	35	42	49	56	
	250	0.2500	2⁹/₁₆ x 15½	3 x 16	2½ x 15¼	4.0000	24	32	40	48	56	64	
	750	0.7500	3⁹/₁₆ x 3⁹/₁₆	4 x 4	Surfaced Green Only	1.3333	8	10.67	13.33	16	18.67	21.33	
	500	0.5000	3⁹/₁₆ x 5⅛	4 x 6		2.0000	12	16	20	24	28	32	
	375	0.3750	3⁹/₁₆ x 7½	4 x 8		2.6667	16	21.33	26.67	32	37.33	42.67	
	300	0.3000	3⁹/₁₆ x 9½	4 x 10		3.3333	20	26.67	33.33	40	46.67	53.33	
	250	0.2500	3⁹/₁₆ x 11½	4 x 12		4.0000	24	32	40	48	56	64	
	214	0.2143	3⁹/₁₆ x 13½	4 x 14		4.6667	28	37.33	46.67	56	65.33	74.67	
	188	0.1875	3⁹/₁₆ x 15½	4 x 16		5.3333	32	42.67	53.33	64	74.67	85.33	
HEAVY TIMBERS	333	0.3333	5½ x 5½	6 x 6	Surfaced Green Only	3.0000	18	24	30	36	42	48	
	250	0.2500	5½ x 7½	6 x 8		4.0000	24	32	40	48	56	64	
	200	0.2080	5½ x 9½	6 x 10		5.0000	30	40	50	60	70	80	
	167	0.1667	5½ x 11½	6 x 12		6.0000	36	48	60	72	84	96	
	143	0.1429	5½ x 13½	6 x 14		7.0000	42	56	70	84	98	112	
	125	0.1250	5½ x 15½	6 x 16		8.0000	48	64	80	96	112	128	
	111	0.1111	5½ x 17½	6 x 18		9.0000	54	72	90	108	126	144	
	100	0.1000	5½ x 19½	6 x 20		10.0000	60	80	100	120	140	160	
	188	0.1875	7½ x 7½	8 x 8	Surfaced Green Only	5.3333	32	42.67	53.33	64	74.67	85.33	
	150	0.1500	7½ x 9½	8 x 10		6.6667	40	53.33	66.67	80	99.33	106.67	
	125	0.1250	7½ x 11½	8 x 12		8.0000	48	64	80	96	112	128	
	107	0.1071	7½ x 13½	8 x 14		9.3333	56	74.67	93.33	112	130.67	149.33	
	94	0.0938	7½ x 15½	8 x 16		10.6667	64	85.33	106.67	128	149.33	170.67	
	83	0.0833	7½ x 17½	8 x 18		12.0000	72	96	120	144	168	192	
	75	0.0750	7½ x 19½	8 x 20		13.3333	80	106.67	133.33	160	186.67	213.33	
	68	0.0682	7½ x 21½	8 x 22		14.6667	88	117.33	146.67	176	205.33	234.67	
	63	0.0625	7½ x 23½	8 x 24		16.0000	96	128	160	192	224	256	

ADDITIONAL INFORMATION

Three basic units of measure are used for lumber:

1. **Board Measure** — is the term to indicate that **board foot** is the unit of measurement for most lumber items.

   A board foot is defined as a piece one inch thick (nominal) by one foot wide (nominal) by one foot long (actual or its equivalent. For instance, a 2x6 also equals one board foot for each foot of length.

   Board footage is calculated by multiplying the nominal thickness in inches (T) by the nominal width in inches (W) by the actual length in feet (L) and dividing by 12. The formula is:

$$\frac{T \times W \times L}{12} = \textbf{Board Feet}$$

   Where **T** = nominal thickness in inches
   W = nominal width in inches
   L = length in feet

2. **Surface Measure** — is the square feet on the surface of a piece of lumber. Surface measure is calculated without regard to thickness of the piece i.e. a 2x12 board, one foot long equals **one square foot.** The formula is:

$$\frac{W \times L}{12} = \textbf{Surface Measure}$$

3. **Lineal Measure** — is the total **length** in feet of a board, regardless of its thickness or width, i.e. a 2x14 one foot long is one lineal foot.

To calculate the board footage for sizes and lengths other than those given in the table:

1. To calculate the **board feet per lineal foot** of an uncommon size:

$$\frac{T \times W}{12} = \textbf{Board Feet per Lineal Foot}$$

Example: A lineal foot of 3x5 = 1.25bf

2. To calculate the **total board feet in an uncommon length** of a particular size:

   a. use the board footage formula, or

   b. use the board feet per lineal foot (either from your calculation, i.e. 1.25 bf for a 3x5, or from column ⑥ in the table times the length).

Examples: 17' of 3x5 = 1.25bfx17 = 21.25bf
17' of 3x6 = 1.5bfx17 = 25.5bf

Note: For multiple pieces; multiply the board feet in one piece times the number of pieces (as in Problem 2 opposite).

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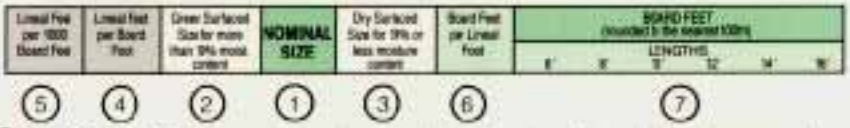
USING THE TABLE

Explanation of Table Headings



① **NOMINAL SIZE** — is the standard size designation for lumber, used for convenience.

② **Green Surfaced Size for more than 19% moisture content** — this is the actual (surfaced) size of unseasoned lumber which, by definition, has a moisture content in excess of 19%.

③ **Dry Surfaced Size for 19% or less moisture content** — this is the actual (surfaced) size of air- or kiln-dried, seasoned lumber which, by definition, has a moisture content of 19% or less.

④ **Lineal Feet per Board Foot** — the lineal feet, in a given size piece, needed to equal one board foot.

⑤ **Lineal Feet per 1000 Board Feet** — lineal feet, in given size pieces, needed to equal 1000 board feet.

⑥ **Board Feet per Lineal Foot** — the number of board feet per one foot of length, in a given size.

⑦ **Board Feet** — the columns in this section give board footages for corresponding lengths and sizes. Lengths are given from 6' to 16', in 2' increments. Sizes are read from the **NOMINAL SIZES** column in the middle of the table.

Sample Problems

1. How to use the **tabulated values for lengths** given in the table.

   Problem: How many board feet (bf) in 8, 2x4s, 12' long?
   Solution: Find 2x4 nominal size on chart. Read across the column, under the 12' heading and find 8 bf.
   8 bf x 8 pieces = 64 bf

2. How to find the **total board footage for multiples of uncommon lengths** of standard sizes.

   Problem: How many bf are in 10, 4x8s, 20' long?
   Solution: Find the board feet per lineal foot (column ⑥) for 4x8; it's 2.6667. Multiply times 20' in length, times 10 pieces.
   2.6667 x 20 x 10 = 533.34 bf

3. How to **convert price per 1000 bf** to **price per lineal foot.**

   Example: $225.00/1000 bf for 2x8s
   Problem: What is the price per lineal foot?
   Solution: Find lineal feet per 1000 bf for 2x8s in the far left column of the table; it's 750.
   $225 ÷ 750 = 30¢ per lineal foot

4. How to **convert price per 1000 bf** to **price per piece.**

   Example: $255.00/1000 bf for 2x12s
   Problem: What is the price for 10' of 2x12s?
   Solution: Find bf for 10' of 2x12 in the table; it's 20 bf.
   $255 ÷ 1000 bf = .255
   20 bf x .255 = $5.10 (price for 10' of 2x12)

WWPA positions 13 professional field representatives throughout the country. Employee training seminars for retailers are one of the many services offered by the Association. Call the Field Services department in the home office (Portland, OR 503/224-3930) for additional information.

Common Lumber Terminology

Price/ Unit Measurements

BF-Board Foot or Feet

The unit of measurement used for most lumber items. A board foot is defined as a piece one inch thick and 12 inches square or its nominal equivalent. For instance, a piece of lumber two inches thick by six inches wide equals one board foot of length.

LF- Lineal Feet

The unit of measurement referring to the running length.

MBF- Per Thousand Board Feet

Description of the unit of measurement expressed by the thousands or in the thousands. M is an arithmetical sum, the Roman numeral “M” means 1,000.

R/L- Random Length

Lumber containing an assortment of widths.

Freight Terms

F.O.B.- Free On Board

This refers to the named point to which a seller will load lumber on board transportation equipment at no additional charge to the buyer. That buyer pays for all other charges beyond that point.

Grading Terms

Grade

The designation of the quality of the wood; applied to lumber, plywood and logs. Grades run from Economy (the lowest) to Vertical Grain Clear (the highest).

TK- Tight Knot

A knot that may be red or black, and is so fixed by growth, shape or position that it retains its place in the piece of lumber.

CLR- Clear

A term including the higher grades of lumber; sound, relatively free of knots.

Btr.-Better

A term usually used to indicate that a lumber shipment contains a percentage of pieces that are of a higher grade than the lower grade stated. Thus, 32 and Better would contain pieces of #2 grade and some pieces of a higher grade such as a #1 and/ or Select Structural.

KD- Kiln Dried

Lumber which has been dried under controlled temperatures and humidities in a dry kiln.

P.A.D.- Partially Air Dried

Lumber which has been air dried to a relative degree of kiln drying.

Species Abbreviations:

WRC- Western Red Cedar
AYC- Alaskan Yellow Cedar
POC-Port Orford Cedar
RWD-Redwood
SPF- Spruce Pine Fir
DF- Douglas Fir
DF/L- Douglas Fir/ Larch
PP- Ponderosa Pine

Milling Terms

R/S- Resawn

A process that reduces the thicknesses of the boards, dimensions, planks or other materials by cutting it into two or more thinner pieces on a resaw or circular or band saw.

Patt.-Pattern

How the board is cut to fit together with other boards, such as siding and paneling.

T&G- Tongue and Groove

Lumber that has been worked with a tongue on one edge of each piece and a groove on the opposite edge to provide a close joint by fitting the two pieces together.

E & CB- Edge and Center Bead

A pattern where the lumber is shaped to form a narrow half circle along the center of its length, with a tongue and groove pattern on its side.

E-Eased Edge

A slightly rounded surfacing on pieces of lumber to remove the sharp corners.

Saw Texture

A rough sawn appearance put on the face of a piece to give it a textured look.

Rough cut

Lumber which has not been surfaced, but which has been sawn, edged and trimmed at least to the extent of showing saw marks in the wood on the four longitudinal surfaces of each piece.

Surfaced Lumber

Lumber that has been surfaced by planing or sanding to attain smoothness of surface and uniformity of size. Examples : Surfaced Four Sides (S4S), Surfaced Two Sides (S2S), Surfaced One Edge (S1E) or a combination such as Surfaced One Side and Two Edges (S1S2E).