

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

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					
							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
	4000	4.0000		1 x 3	¾ x 2½	0.2550	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	1⅞ x 1⅞"	2 x 2	1½ x 1½	0.3333	2	2.67	3.33	4	4.67	5.33
	2000	2.0000	1⅞ x 2⅞	2 x 3	1½ x 2½	0.5000	3	4	5	6	7	8
	1500	1.5000	1⅞ x 3⅞	2 x 4	1½ x 3½	0.6667	4	5.33	6.67	8	9.33	10.67
	1000	1.0000	1⅞ x 5⅞	2 x 6	1½ x 5½	1.0000	6	8	10	12	14	16
	750	0.7500	1⅞ x 7½	2 x 8	1½ x 7¼	1.3333	8	10.67	13.33	16	18.67	21.33
	600	0.6000	1⅞ x 9½	2 x 10	1½ x 9¼	1.6667	10	13.33	16.67	20	23.33	26.67
	500	0.5000	1⅞ x 11½	2 x 12	1½ x 11¼	2.0000	12	16	20	24	28	32
	429	0.4286	1⅞ x 13½	2 x 14	1½ x 13¼	2.3333	14	18.67	23.33	28	32.67	37.33
	1333	1.3333	2⅞ x 2⅞	3 x 3	2½ x 2½	0.7500	4.50	6	7.50	9	10.50	12
	1000	1.0000	2⅞ x 3⅞	3 x 4	2½ x 3½	1.0000	6	8	10	12	14	16
667	0.6667	2⅞ x 5⅞	3 x 6	2½ x 5½	1.5000	9	12	15	18	21	24	
500	0.5000	2⅞ x 7½	3 x 8	2½ x 7¼	2.0000	12	16	20	24	28	32	
400	0.4000	2⅞ x 9½	3 x 10	2½ x 9¼	2.5000	15	20	25	30	35	40	
333	0.3333	2⅞ x 11½	3 x 12	2½ x 11¼	3.0000	18	24	30	36	42	48	
286	0.2857	2⅞ x 13½	3 x 14	2½ x 13¼	3.5000	21	28	35	42	49	56	
250	0.2500	2⅞ x 15½	3 x 16	2½ x 15¼	4.0000	24	32	40	48	56	64	
DIMENSION LUMBER	750	0.7500	3⅞ x 3⅞	4 x 4	Surfaced Green Only	1.3333	8	10.67	13.33	16	18.67	21.33
	500	0.5000	3⅞ x 5⅞	4 x 6		2.0000	12	16	20	24	28	32
	375	0.3750	3⅞ x 7½	4 x 8		2.6667	16	21.33	26.67	32	37.33	42.67
	300	0.3000	3⅞ x 9½	4 x 10		3.3333	20	26.67	33.33	40	46.67	53.33
	250	0.2500	3⅞ x 11½	4 x 12		4.0000	24	32	40	48	56	64
	214	0.2143	3⅞ x 13½	4 x 14		4.6667	28	37.33	46.67	56	65.33	74.67
	188	0.1875	3⅞ x 15½	4 x 16		5.3333	32	42.67	53.33	64	74.67	85.33
	TIMBERS	333	0.3333	5½ x 5½		6 x 6	Surfaced Green Only	3.0000	18	24	30	36
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
HEAVY	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

BOARD FOOTAGE TABLE



ADDITIONAL INFORMATION

Three basic units of measure are used for lumber:

- 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 normal width in inches (W) by the actual length in feet (L) and dividing by 12. The formula is:

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

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

- 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:

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

- 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:

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

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

Example: A lineal foot of 3x5 = 1.25bf

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

- use the board footage formula, or
- 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)

Example: 17' of 3x5 = 1.25bf x 17 = 21.25bf
17' of 3x6 = 1.5bf x 17 = 21.5bf

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

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)					
						6'	8'	10'	12'	14'	16'

⑤

④

②

①

③

⑥

⑦

- NOMINAL SIZE** — is the standard size designation for lumber, used for convenience.
- 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%.
- Dry Surface 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.
- Lineal Feet per Board Foot** — the lineal feet, in a given size piece, needed to equal one board foot.
- Lineal Feet per 1000 Board Feet** — lineal feet, in given size pieces, needed to equal 1000 board feet.
- Board Feet per Lineal Foot** — the number of board feet per one foot of length, in a given size.
- 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 SIZE** column in the middle of the table.

Sample Problems

- 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.

$$8 \text{ bf} \times 8 \text{ pieces} = 64 \text{ bf}$$

- 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.

$$2.6667 \times 20 \times 10 = 533.34 \text{ bf}$$

- 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

$$\frac{\$225}{750} = 30^c \text{ per lineal foot}$$

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

Example: \$225.00/1000 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.

$$\frac{\$225}{1000 \text{ bf}} = .255$$

$$20 \text{ bf} \times .255 = \$5.10 \text{ (price for 10' of 2x12)}$$

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