


AMERICAN FOREST & PAPER ASSOCIATION
American Wood Council
Engineered and Traditional Wood Products

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Metric Measure for Wood Products




Wood Products
Metric Planning Package

2 1
kg/m³ 8

American Wood Council

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AF&PA®



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Welcome to eCourse MAT120 entitled Metric Measure for wood products.



Metric Planning Package

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Wood Products Metric Planning Package



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AF&PA published a Wood Products Metric Planning Package (MPP) in 1994 to assist designers in converting to metric as the need arises.



Metric Planning Package

- for Lumber and Wood Products
 - prepared by Metrification Task Group of the American Wood Council Technical Committee

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AWC's Technical Committee formed a metric task group in response to a 1991 federal mandate that all government programs be in metric by September 1992. The Task Group revised a 1970 NFPA metric planning package to address current needs.



Metric Lumber Sizes

Nominal	Actual	Metric
2x4	1.5" x 3.5"	38x89
2x6	1.5" x 5.5"	38x140
2x8	1.5" x 7.25"	38x184
2x10	1.5" x 9.25"	38x235
2x12	1.5" x 11.25"	38x286

soft converted

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ACTUAL lumber sizes (NOT nominals) will be *soft converted*. Soft conversion is conversion to metric with little rounding versus hard conversion where new metric numbers are rounded to rational values.

Example: 38x89 hard conversion would be 40x90.



Metric Panel Sizes

Nominal feet	Actual inches	Soft	Metric Hard
4x8	48 x 96	1220 x 2440	1200 x 2400

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Panel sizes are either soft converted or hard converted depending on the need.



Civil and Structural Engineering Metric Conversion Factors

Quantity	From inch / lb	To Metric	Multiply by
Length	in	mm	25.4
Section Modulus	in ³	mm ³	16 387.064
Moment of inertia	in ⁴	mm ⁴	416 231
Mass	lb	kg	0.453 592
Mass Density	pcf	kg/m ³	16.018 5
Force	lb	N	4.448 22
Force / unit length	plf	N/m	14.593 9
Force / unit area	psf	N/m ² ; Pa	47.880 26
Pressure; Stress	psi	kPa	6.894 76
Bending moment	ft-lb	N.m	1.355 82
Temperature	deg F	deg C	(t _F -32)/1.8

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This is a table of engineering conversion factors found in the MPP or ASTM E380 metric standard. LRFD and NDS will contain metric conversions when the need is apparent either parenthetically, or in appendices. No separate metric versions are planned at this time.



Status of US Metric Conversion

Little incentive exists for the wood industry or wood products users to change to metric in the US.

Industry product sizes are now efficient and working, and conversion to metric holds advantages for very exceptional situations.

Few segments of the industry are expected to convert before major consumers require metric products.

Prepared conversion package to permit industry to make constructive change at the appropriate time.

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The wood industry is ready when there is a demand for metric products. Currently, federal construction accounts for only 10% of the wood industry market. The US domestic residential market will not convert in the near future, and they are the wood industries' major customers.