

CONCRETE PIPE METRIC CONVERSION

Any business that provides services or products to the Federal Government must convert to metric dimensions on or before September 30, 1996. The 1975 Metric Conversion Act, as amended by the 1988 Omnibus Trade and Competitiveness Act, mandates metric conversion so that the United States can be more competitive worldwide.

Currently, ASTM Standards for concrete pipe, precast boxes, manholes, etc. are published in both U.S. Customary Units and the International System of Units (SI).

These products have had metric equivalents for many years.

SOFT AND HARD CONVERSIONS

Dimensions can be shown in two different ways: hard conversion or soft conversion.

"A **hard** conversion is a statement of a previous dimension in convenient, rounded metric units." For example, a 36-inch diameter pipe can be stated as 900 millimeters (mm) when the exact conversion would be 914.4 mm.

"A **soft** conversion is an exact re-stating of a conventional U.S. measurement in metric terms." For example, a 36-inch diameter pipe would be noted as 914.4 mm.

(Many people misinterpret the "hard-soft" definition, thinking a soft conversion should be the approximate dimension, and the hard conversion should be the exact dimension, but that is not the case).

Concrete pipe diameters are shown as the approximate diameters (hard conversion in Table 1).

Table 1

Diameter of Pipe			
Inches	Millimeters	Inches	Millimeters
6	150	60	1500
8	200	66	1650
10	250	72	1800
12	300	78	1950
15	375	84	2100

Inches	Millimeters	Inches	Millimeters
18	450	90	2250
21	525	96	2400
24	600	102	2550
27	675	108	2700
30	750	114	2850
33	825	120	3000
36	900	126	3150
42	1050	132	3300
48	1200	136	3450
54	1350	144	3600

Table 2

Common Metric Conversion Factors for Concrete

To Convert	To	Multiply By
inches	meters (m)	0.0254
feet	meters (m)	0.3048
pounds	kilograms (kg)	0.4535924
fluid ounces	milliliters (ml)	29.57353
gallons	liters (L)	3.7854118
psi	megapascals (MPa)	0.00689476
cubic yards	cubic meters (m ³)	0.7645549
pounds per cubic yard	kilograms per cubic meter (kg/m ³)	0.5933
pounds per cubic feet	kilograms per cubic meter (kg/m ³)	16.01846
farhrenheit (F)	celsius (C)	5/9 x (°F - 32)
pound force	newton (N)	4.448222

NOTE: To convert from metric units to inch-pound units, divide instead of multiply by the factors in the third column.