Conversion Tables

Pressure		
1 Atmosphere	=	14.7 PSI
1 Atmosphere	=	1.033 kg/cm2
1 Bar	=	100000 N/mtr2 or 100 KPa
1 Bar	=	0.1 N/mm2
1 Bar	=	1.02 kg/cm2
1 Bar	=	14.504 PSI
1 kg/cm2	=	0.9804 Bar
1 kg/cm2	=	14.22 PSI
1 Kg/mm2	=	9.81 MPa
1 PSI	=	0.0703 kg/cm2
1 PSI	=	0.0689 Bar
1 PSI	=	6.895 KPa
1 PSI	=	0.006895 MPa
1 MPa	=	145.032 PSI
1 MPa	=	10.1992 kg/cm2
1 MPa	=	9.9992 Bar
1 MPa	=	1000 KPa
1 MPa	=	1 N/mm2
1 MPa	=	0.102 kg/mm2
1 KPa	=	0.145032 PSI
1 KPa	=	0.001 MPA
1 KPa	=	0.01 Bar
1 N/mm2	=	10 Bar
1 N/mm2	=	10.2 Kg/cm2
1 N/mm2	=	145.032 PSI
1 N/mm2	=	1 MPa
1 N/mm2	=	0.102 Kg/mm2
1 Ton/inch2	=	1.575 Kg/mm2

Weight		
1 Kg.	=	2.205 pounds (Lb)
1 Pound	=	0.45359 kg.
1 Pound	=	16 ounches
1 Pound/foot	=	1.48822 kg/mtr
1 kg/mtr	=	0.6714 pound/foot
1 kg	=	9.81 Newton
1 Newton	=	0.102 Kg

Energy		
1 foot - pound (Ft-Lb)	=	1.3558 Joules for Impact Energy
1 Joules	=	0.736 foot - pound
1 foot - pound	=	4.448222 Newton
1 foot - pound	=	0.1383 Kg - mtr
1 foot - pound	=	1.3558 Newton Meter (for Torque)
1 Horse Power	=	746 Watt
1 Watt	=	0.00134 Horse Power

Length		
1 Kilometer	=	1000 meter
1 Meter	=	100 centimeter
1 Meter	=	1000 mm
1 Meter	=	3.28 foot
1 foot	=	0.3048 meter
1 foot	=	304.8 mm
1 foot	=	12 inch
1 inch	=	25.4 mm
1 mm	=	0.0394 inch
1 Thou	=	0.001 inch
1 Micron	=	0.001 mm
1 Yard	=	0.9144 meter
1 Meter	=	1.0936 yard
1 Yard	=	3 feet
1 Mile	=	5280 feet
1 Mile	=	1760 yard

Area		
1 Square Yard	=	0.8361274 Square meter
1 Square yard	=	9 Square feet
1 Square inch	=	645.16 Square millimeter
1 Square Feet	=	0.0929 Square meter
1 acre	=	4840 Square yards
1 Square mile	=	640 acres

Temperature

i) C = 5 (F-32) / 9

ii) F = 32 + 9 C / 5

iii) C / 5 = (F - 32) / 9

C = Temperature in deg. Celsius

F = Temperature in deg. Fahrenheit

Formulas

1 Test Pressure (Ref. API 5C3)

a) Hydrostatic Test Pressure

Hydrostatic test pressure for plain - end pipe, extreme - line casing and integral - joint tubing are calculated by using the following formula

$$P = \frac{2St}{D}$$

b) Internal Yield (Burst) Pressure

Pi = 0.875 (2 x Yp x t / D)

Where;

P = Hydrostatic test pressure in PSI

Pi = Min. Internal Yield Pressure in PSI

S = Fiber stress corresponding to the percent of specified yield strength

t = Specified wall thickness in inches

D = Specified outside diameter in inches

Yp = Specified Min. Yield Strength in PSI

2 Weight for Plain End Pipes (Ref. API 5L/ASTM)

The plain end linear mass in SI Units is calculated by using the following formula

Wpe = 0.02466 (D - t) t

Where;

Wpe is the plain end linear mass, expressed in Kg/Mtr and rounded to nearest 0.01 Kg/Mtr

D is the specified outside diameter, expressed in millimetres

t is the specified wall thickness, expressed in millimetres

3 Weight for Full Length Pipe

WL = (W**pe** x L) + e**w**

Where;

WL = Calculated weight of full length pipe (kg.)

W**pe** is the plain end linear mass, expressed in Kg/Mtr and rounded to nearest 0.01 Kg/Mtr

L = Length of Pipe (mtr)

e**w** = Weight gain or loss due to end finish (Kg)

Note : For Plain End Pipe e**w** = 0

4 Weight of Billet

Weight of Billet (Kg/Mtr) : $0.0061654 \times (\text{Dia. mm})^2$

5 Standard Drift Size (Ref. API 5CT)

Product	Drift Mandrel Size(Min.)	
	Length (mm)	Diameter (mm)
Casing		
< 9 5/8	152	d - 3.18
≥ 9 5/8 to ≤ 13 3/8	305	d - 3.97
> 13 3/8	305	d - 4.76
Tubing		
≤ 2 7/8	1067	d - 2.38
> 2 7/8	1067	d - 3.18

Where; d is inside diameter expressed in millimetres.