

APPENDIX 1

Conversion of British and US Units to SI Units

Length

1 inch	= 0.0254 m
1 foot	= 0.3048 m

Force

1 lbf	= 4.448 N
1 ton f (UK)	= 9.964 kN

Area

1 in ²	= 6.452×10^{-4} m ²
1 ft ²	= 0.09290 m ²

Pressure

1 lbf/in ²	= 6.895 kPa
1 ft H ₂ O	= 2.989 kPa
1 in Hg	= 3.386 kPa
1 bar	= 100.0 kPa
1 atm	= 101.3 kPa

Volume

1 in ³	= 16.39 cm ³
1 ft ³	= 28.32 dm ³
	= 0.02832 m ³
1 gall (UK)	= 4.546 dm ³
1 gall (US)	= 3.785 dm ³

Energy

1 ft lbf	= 1.356 J
1 Btu	= 1.055 kJ

Velocity

1 ft/s	= 0.3048 m/s
1 mile/h	= 0.447 m/s

Specific energy

1 ft lbf/lb	= 2.989 J/kg
1 Btu/lb	= 2.326 kJ/kg

Mass

1 lb	= 0.4536 kg
1 ton (UK)	= 1016 kg
1 ton (US)	= 907.2 kg

Specific heat capacity

1 ft lbf/(lb °F)	= 5.38 J/(kg °C)
1 ft lbf/(slug °F)	= 0.167 J/(kg °C)
1 Btu/(lb °F)	= 4.188 kJ/(kg °C)

Density

1 lb/ft ³	= 16.02 kg/m ³
1 slug/ft ³	= 515.4 kg/m ³

Power

1 hp	= 0.7457 kW
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Some other units in use

1 tonne	= 1000 kg	1 TWh	= 10 ⁶ MWh
			= 3.6 × 10 ⁹ MJ