

BRC

IMPERIAL/METRIC CONVERSION TABLES

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Conversion Factors

Imperial to S.I. Metric				S.I. Metric to Imperial			
1. Length				1m = 1.093 61 yd			
1 yd	=	0.9144 m		1 m	=	3.280 84 ft	
1 ft	=	0.3048 m			=	39.3701 in	
1 in	=	25.4 mm		1 mm	=	0.039 37 in	
2. Area				1 m ² = 1.195 99 yd ²			
1 yd ²	=	0.836 127 m ²			=	10.7639 ft ²	
1 ft ²	=	0.092 903 m ²		1 mm ²	=	0.001 550 in ²	
1 in ²	=	645.16 mm ²					
3. Area/Unit Width				1 mm ² /m = 0.4724 x 10 ⁻³ in ² /ft			
1 in ² /ft	=	2116.7mm ² /m					
4. Volume. Modulus of Section				1 m ³ = 1.308 yd ³			
1 yd ³	=	0.7646 m ³			=	35.315 ft ³	
1 ft ³	=	0.0283 m ³		1 litre	=	0.0353 ft ³	
	=	28.317 litre			=	0.2200 gal (0.264 U.S gal)	
1 gal [†]	=	4.546 litre					
1 in ³	=	16.387 x 10 ³ mm ³					
5. Mass				1 t = 0.984 207 tonne			
1 tonne*	=	1.016 05 t		1 t	=	2.204 62 lb	
1 lb	=	0.453 592 37 kg		1 kg	=		
6. Mass/Unit Length				1 kg/m = 0.671 969 lb/ft			
1 lb/ft	=	1.488 16 kg/m					
7. Mass/Unit Area				1 kg/m ² = 0.204 816 lb/ft ²			
1 lb/ft ²	=	4.882 43 kg/m ²					
8. Density (Mass/Unit Volume)				1 kg/m ³ = 0.062 428 lb/ft ³			
1 lb/ft ³	=	16.0185 kg/m ³					
9. Force (load or weight)				1 N = 0.2248 lbf			
1 lbf	=	4.448 N		1 N	=	0.2248 kip	
1 kip	=	4.448 kN		1 kN	=	0.1004 tonf	
1 tonf	=	9.964 kN					
10. Force (load or weight)/Unit Length				1 N/m = 0.0685 lbf/ft			
1 lbf/ft	=	14.59 N/m		1 N/m	=	68.52 lbf/ft	
	=	0.0146 kN/m		1 kN/m	=	0.0685 kip/ft	
1kip/ft	=	14.59 kN/m			=	0.0306 tonf/ft	
1ton/ft	=	32.69 kN/m			=		

* 1 tonne (metric)= 2240 lbs

* 1 tonne (imperial)= 2000 lbs

† 1 Imp gal. = 1.20095 U.S. gal

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Conversion Factors

Imperial to S.I. Metric			S.I. Metric to Imperial		
11. Force (load/unit area)					
1 lbf/ft ²	=	47.88 N/m ² (Pa)	1kPa	=	20.9 lbf/ft ²
	=	0.047 88 kN/m ² (kPa)			
1 kip/ft ²	=	47.88 kN/m ² (kPa)	1 kPa	=	0.0209 kip/ft ²
	=	0.047 88 MN/m ² (MPa)			
1 tonf/ft ²	=	107.3 kPa	1 MPa	=	20.9 kip/ft ²
	=	0.1073 MPa		=	9.324 tonf/ft ²
12. Moment of Force					
1 lbf.in	=	0.113 N m	1N.m	=	8.851 lbf.in
	=	0.000 113 kNm		=	0.7376lbf.ft
1 lbf.ft	=	1.356 Nm	1kN.m	=	8851 lbf.in
	=	0.001 356 kNm		=	737.6 lbf.ft
1 kip.in	=	0.113 kNm		=	8.851 kip.in
1 kip.ft	=	1.356 kNm		=	0.7376 kip.ft
1 ton.ft	=	3.037kNm		=	0.3293 tonf.ft
13. Moment of Force					
1 lbf.in/ft	=	0.371 Nm/m	1kN.m/m	=	2.698 lbf.in/ft
	=	0.000 371 kN/m/m		=	0.2248 lbf.ft/ft
1 lbf.ft/ft	=	4.448 Nm/m	1kN.m/m	=	2698 lbf.in/ft
	=	0.004 448 kNm/m		=	224.8 lbf.ft/ft
1 kip.ft/ft	=	4.448 kNm/m		=	0.2248 kip.ft/ft
1 tonf.ft/ft	=	9.964 kNm/m		=	0.1004 tonf.ft/ft
14. Stress & Modulus of Elasticity					
1 lbf/in ²	=	6.895 kPa	1kPa	=	0.1450 lbf/in ²
	=	0.006 895 MPa	1 MPa	=	145.0lbf/in ²
1 kip/in ²	=	6.895 MPa		=	0.1450 kip/in ²
1 tonf.ft/ft	=	15.444 MPa		=	0.064 75tonf/in ²
15. Properties of Sections					
(a) Section Modulus Z					
1 in ³	=	16.4 x 10 ³ mm ³	1 mm ³	=	0.061 x 10 ⁻³ in ³
(b) Second Moment of Area I					
1 in ⁴	=	0.4162 x 10 ⁶ mm ⁴	1 mm ⁴	=	2.403 x 10 ⁻⁶ in ⁴
16. Thickness					
1 micron	=	0.001 mm			
1 mil	=	0.001 in			