

CONDENSED METRIC PRACTICE GUIDE FOR CORROSION^{A,B}

Multiply	By	To Convert to SI Units:
AREA		
inch ²	645.2	millimetre ² (mm ²)
inch ²	6.452	centimetre ² (cm ²)
foot ²	0.092 90	metre ² (m ²)
foot ²	929.0	centimetre ² (cm ²)
yard ²	0.836 1	metre ² (m ²)
BENDING MOMENT (TORQUE)		
dyne centimetre	0.000 000 1	newton metre (N·m)
pound-force inch	0.113 0	newton metre (N·m)
pound-force foot	1.356	newton metre (N·m)
CORROSION RATE		
mil per year (mpy)	0.025 40	millimetre per year (mm/y) ^A
mil per year	25.40	micrometre per year (µm/y)
inch per year (ipy)	25.40	millimetre per year (mm/y)
inch per month (ipm)	304.8	millimetre per year (mm/y)
milligram per decimetre ² day (mdd)	0.100 0	gram per metre ² day (g/m ² ·d) ^A
milligram per decimetre ² day	0.004 167	gram per metre ² hour (g/m ² ·h)
milligram per decimetre ² day	100.0	milligram per metre ² day (mg/m ² ·d)
CURRENT DENSITY		
milliampere per millimetre ²	1000.	ampere per metre ² (A/m ²)
milliampere per centimetre ²	10.00	ampere per metre ² (A/m ²)
microampere per centimetre ²	0.010 00	ampere per metre ² (A/m ²)
milliampere per metre ²	0.001 000	ampere per metre ² (A/m ²)
milliampere per millimetre ²	1.000	ampere per metre ² (A/m ²)
milliampere per foot ²	10.76	milliampere per metre ² (mA/m ²)
ampere per inch ²	1 550.	ampere per metre ² (A/m ²)
ampere per foot ²	10.76	ampere per metre ² (A/m ²)
ampere per centimetre ²	10 000.	ampere per metre ² (A/m ²)
ampere per decimetre ²	100.0	ampere per metre ² (A/m ²)
ENERGY		
British thermal unit (Btu) (60°F)	1055.	joule (J)
calorie (mean)	4.190	joule (J)
foot-pound-force	1.356	joule (J)
kilocalorie (mean)	4190.	joule (J)
kilowatt hour	3.600	megajoule (MJ)
FLOW, VOLUME PER UNIT TIME		
foot ³ per second	0.028 32	metre ³ per second (m ³ /s)
foot ³ per second	2445.	metre ³ per day (m ³ /d)
foot ³ per minute	40.78	metre ³ per day (m ³ /d)
gallon (U. S. liquid) per minute	5.451	metre ³ per day(m ³ /d)
gallon (U. S. liquid) per hour	0.090 85	metre ³ per day (m ³ /d)
gallon (U. S. liquid) per day	0.003 785	metre ³ per day (m ³ /d)
FORCE		
dyne	0.000 01	newton (N)
kilogram-force	9.807	newton (N)
ounce-force	0.278 0	newton (N)
pound-force	4.448	newton (N)
LENGTH		
angstrom	1 × 10 ⁻¹⁰	metre (m)
angstrom	0.100 0	nanometre (nm)
micron	0.001 0	millimetre (mm)
micron	1.000	micrometre (µm)
mil	0.025 40	millimetre (mm)
mil	25.40	micrometre (µm)
inch	2.540	centimetre (cm)
inch	25.40	millimetre (mm)
inch	25 400.	micrometre (µm)
foot	0.304 8	metre (m)
yard	0.914 4	metre (m)
mile	1.609	kilometre (km)

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MASS		
grain	64.80	milligram (mg)
ounce	28.35	gram (g)
pound	0.453 6	kilogram (kg)
pound	453.6	gram (g)
ton (short, 2000 lb)	907.2	kilogram (kg)
MASS PER UNIT AREA		
ounce-mass per foot ²	305.1	gram per metre ² (g/m ²)
pound-mass per foot ²	4.882	kilogram per metre ² (kg/m ²)
pound-mass per foot ²	4882.	gram per metre ² (g/m ²)
pound-mass per inch ²	703.1	kilogram per metre ² (kg/m ²)
MASS PER UNIT VOLUME (DENSITY)		
gram per centimetre ³	1000.	kilogram per metre ³ (kg/m ³)
ounce (mass) per inch ³	1730.	kilogram per metre ³ (kg/m ³)
ounce (mass) per gallon (U. S. liquid)	7.489	kilogram per metre ³ (kg/m ³)
ounce (mass) per gallon (U. S. liquid)	7.489	gram per litre (g/l)
pound (mass) per foot ³	16.02	kilogram per metre ³ (kg/m ³)
pound (mass) per gallon (U. S. liquid)	119.8	kilogram per metre ³ (kg/m ³)
POWER		
Btu (thermochemical) per second	1054.	watt (W)
horsepower (electric)	746.0	watt (W)
kilocalorie (thermochemical) per second	4184.	watt (W)
PRESSURE OR STRESS		
atmosphere (normal = 760 torr)	101 300.	pascal (Pa)
centimetre of mercury (0°C)	1 333.	pascal (Pa)
dyne per centimetre ²	0.100 0	pascal (Pa)
inch of mercury (60°F)	3377.	pascal (Pa)
inch of water (60°F)	248.8	pascal (Pa)
kilogram-force per metre ²	9.807	pascal (Pa)
kip per inch ²	6.895	megapascal (MPa)
pound-force per inch ²	6.895	kilopascal (kPa)
pound-force per foot ²	47.88	pascal (Pa)
STRESS INTENSITY		
(pound-force per inch ²) inch ^{1/2}	0.034 75	newton per millimetre ^{3/2} (N/mm ^{3/2})
(kip per inch ²) inch ^{1/2}	34.75	newton per millimetre ^{3/2} (N/mm ^{3/2})
(pound-force per inch ²) inch ^{1/2}	0.001 099	megapascal metre ^{1/2} (MPa·m ^{1/2}) ^C
(kip per inch ²) inch ^{1/2}	1.099	megapascal metre ^{1/2} (MPa·m ^{1/2}) ^A
TEMPERATURE		
degree Celsius	$T_K = T^{\circ}_C + 273.15$	kelvin (K)
degree Fahrenheit	$T^{\circ}_C = (T^{\circ}_F - 32)/1.8$	degree Celsius (°C)
TIME		
hour (mean solar)	3600.	second (s)
day (mean solar)	86 400.	second (s)
month (calendar)	2.628	megasecond (Ms)
year (calendar)	31.54	megasecond (Ms)
VELOCITY (SPEED)		
inch per second	25.40	millimetre per second (mm/s)
foot per second	0.304 8	metre per second (m/s)
inch per minute	0.423 3	millimetre per second (mm/s)
mile per hour	1.609	kilometre per hour (km/h)
mile per hour	0.447 0	metre per second (m/s)
VOLUME		
inch ³	16.39	centimetre ³ (cm ³)
fluid ounce (U. S.)	29.57	centimetre ³ (cm ³)
pint (U. S. liquid)	473.2	centimetre ³ (cm ³)
quart (U. S. liquid)	946.4	centimetre ³ (cm ³)
gallon (U. S. liquid)	0.003 785	metre ³ (m ³)
gallon (U. S. liquid)	3.785	litre (l)

^AThis condensed guide is under the jurisdiction of ASTM Committee G-1 on Corrosion of Metals.

^BThis guide is based on ASTM E 380 – 84, Standard for Metric Practice.

^CPreferred units.