



a.b.e.[®] Construction Chemicals CONVERSION TABLES

| DECIMAL MULTIPLES AND FRACTIONS OF UNITS | | | | | |
|--|-------|------------------|---|-------|-------------------|
| da | deca | 10 ¹ | d | deci | 10 ⁻¹ |
| h | hecto | 10 ² | c | centi | 10 ⁻² |
| k | kilo | 10 ³ | m | milli | 10 ⁻³ |
| M | mega | 10 ⁶ | μ | micro | 10 ⁻⁶ |
| G | giga | 10 ⁹ | n | nano | 10 ⁻⁹ |
| T | terra | 10 ¹² | p | pico | 10 ⁻¹² |
| | | | f | femto | 10 ⁻¹⁵ |
| | | | a | atto | 10 ⁻¹⁸ |

| UNITS OF LENGTH | | | | | | |
|-----------------|-------------------|------------------|------------------|------------------|------------------|------------------|
| | m | μm | mm | cm | dm | km |
| 1 m | 1 | 10 ⁶ | 10 ³ | 10 ² | 10 | 10 ⁻³ |
| 1 μm | 10 ⁻⁶ | 1 | 10 ⁻³ | 10 ⁻⁴ | 10 ⁻⁵ | 10 ⁻⁹ |
| 1 mm | 10 ⁻³ | 10 ³ | 1 | 10 ⁻¹ | 10 ⁻² | 10 ⁻⁶ |
| 1 cm | 10 ⁻² | 10 ⁴ | 10 | 1 | 10 ⁻¹ | 10 ⁻⁵ |
| 1 dm | 10 ⁻¹ | 10 ⁵ | 10 ² | 10 | 1 | 10 ⁻⁴ |
| 1 km | 10 ³ | 10 ⁹ | 10 ⁶ | 10 ⁵ | 10 ⁴ | 1 |
| 1 mm | 1 | 10 ³ | 10 ⁶ | 10 ⁷ | 10 ⁹ | 10 ¹⁰ |
| 1 μm | 10 ⁻³ | 1 | 10 ³ | 10 ⁴ | 10 ⁶ | 10 ⁷ |
| 1 nm | 10 ⁻⁶ | 10 ⁻³ | 1 | 10 | 10 ³ | 10 ⁴ |
| 1 Å | 10 ⁻⁷ | 10 ⁻⁴ | 10 | 1 | 10 ² | 10 ³ |
| 1 pm | 10 ⁻⁹ | 10 ⁻⁶ | 10 ⁻³ | 10 ⁻² | 1 | 10 |
| 1 mÅ | 10 ⁻¹⁰ | 10 ⁻⁷ | 10 ⁻⁴ | 10 ⁻³ | 10 ⁻¹ | 1 |

| UNITS OF AREA | | | | | | |
|-------------------|-------------------|------------------|------------------|------------------|-------------------|-------------------|
| | m ² | μm ² | mm ² | cm ² | dm ² | km ² |
| 1 m ² | 1 | 10 ¹² | 10 ⁶ | 10 ⁴ | 10 ² | 10 ⁻⁶ |
| 1 μm ² | 10 ⁻¹² | 1 | 10 ⁻⁶ | 10 ⁻⁸ | 10 ⁻¹⁰ | 10 ⁻¹⁸ |
| 1 mm ² | 10 ⁻⁶ | 10 ⁶ | 1 | 10 ⁻² | 10 ⁻⁴ | 10 ⁻¹² |
| 1 cm ² | 10 ⁻⁴ | 10 ⁸ | 10 ² | 1 | 10 ⁻² | 10 ⁻¹⁰ |
| 1 dm ² | 10 ⁻² | 10 ¹⁰ | 10 ⁴ | 10 ² | 1 | 10 ⁻⁸ |
| 1 km ² | 10 ⁶ | 10 ¹⁸ | 10 ¹² | 10 ¹⁰ | 10 ⁸ | 1 |

| UNITS OF VOLUME | | | | | |
|-----------------------------|----------------------|-----------------------|-----------------------|-----------------------------------|-----------------------|
| | m³ | mm³ | cm³ | 1 dm³ = 1 litre | km³ |
| 1 m ³ | 1 | 10 ⁹ | 10 ⁶ | 10 ³ | 10 ⁻⁹ |
| 1 mm ³ | 10 ⁻⁹ | 1 | 10 ⁻³ | 10 ⁻⁶ | 10 ⁻¹⁸ |
| 1 cm ³ | 10 ⁻⁶ | 10 ³ | 1 | 10 ⁻³ | 10 ⁻¹⁵ |
| 1 dm ³ = 1 litre | 10 ⁻³ | 10 ⁶ | 10 ³ | 1 | 10 ⁻¹² |
| 1 km ³ | 10 ⁹ | 10 ¹⁸ | 10 ¹⁵ | 10 ¹² | 1 |

| UNITS OF MASS | | | | | |
|---------------|------------------|-----------------|------------------|------------------|------------------|
| | kg | mg | g | dt | t = Mg |
| 1 kg | 1 | 10 ⁶ | 10 ³ | 10 ⁻² | 10 ⁻³ |
| 1 mg | 10 ⁻⁶ | 1 | 10 ⁻³ | 10 ⁻⁸ | 10 ⁻⁹ |
| 1 g | 10 ⁻³ | 10 ³ | 1 | 10 ⁻⁵ | 10 ⁻⁶ |
| 1 dt | 10 ² | 10 ⁸ | 10 ⁵ | 1 | 10 ⁻¹ |
| 1 t = Mg | 10 ³ | 10 ⁹ | 10 ⁶ | 10 | 1 |

| UNITS OF TIME | | | | | |
|---------------|------------------|----------------------|----------------------|----------------------|---------------------------|
| | s | ns | µs | ms | min |
| 1 s | 1 | 10 ⁹ | 10 ⁶ | 10 ³ | 16.66 x 10 ⁻³ |
| 1 ns | 10 ⁻⁹ | 1 | 10 ⁻³ | 10 ⁻⁶ | 16.66 x 10 ⁻¹² |
| 1 µs | 10 ⁻⁶ | 10 ³ | 1 | 10 ⁻³ | 16.66 x 10 ⁻⁹ |
| 1 ms | 10 ⁻³ | 10 ⁶ | 10 ³ | 1 | 16.66 x 10 ⁻⁶ |
| 1 min | 60 | 60 x 10 ⁹ | 60 x 10 ⁶ | 60 x 10 ³ | 1 |

| UNITS OF FORCE | | | | | |
|----------------|------------------|-----------------------|-----------------------|------------------------|----------------------|
| | N* | kN | MN | kgf | dyn |
| 1 N | 1 | 10 ⁻³ | 10 ⁻⁶ | 0.102 | 10 ⁵ |
| 1 kN | 10 ³ | 1 | 10 ⁻³ | 0.102x10 ³ | 10 ⁸ |
| 1 MN | 10 ⁶ | 10 ³ | 1 | 0.102x10 ⁶ | 10 ¹¹ |
| 1 kgf | 9.81 | 9.81x10 ⁻³ | 9.81x10 ⁻⁶ | 1 | 9.81x10 ⁵ |
| 1 dyn | 10 ⁻⁵ | 10 ⁻⁸ | 10 ⁻¹¹ | 0.102x10 ⁻⁵ | 1 |

1 N* = 1 kg m/s²



| UNITS OF PRESSURE | | | | | |
|--------------------------------|---------------------|------------------------|-----------------------|-------------------------------|---------------------|
| | Pa=N/m ² | N/mm ² | bar | kgf/cm ² = 1 atmos | torr |
| 1 Pa = 1 N/m ² | 1 | 10 ⁻⁶ | 10 ⁻⁵ | 1.02x10 ⁻⁵ | 0.0075 |
| 1 N/mm ² | 10 ⁶ | 0.1 | 10 | 10.2 | 7.5x10 ³ |
| 1 bar | 10 ⁵ | 10 ³ | 1 | 1.02 | 750 |
| 1 kgf/cm ² =1 atmos | 98100 | 9.81x10 ⁻² | 0.981 | 1 | 736 |
| 1 torr | 133 | 0.133x10 ⁻³ | 1.33x10 ⁻³ | 1.36x10 ⁻³ | 1 |

1 torr = 1/760 atm = 1.33322 mbar = 1 mm Hg at t = 0°C

| UNITS OF WORK | | | | | |
|---------------|------------------------|--------------------------|------------------------|--------------------------|--------------------------|
| | J | kW h | kgf m | kcal | hp h |
| 1 J | 1 | 0.278 x 10 ⁻⁶ | 0.102 | 0.239 x 10 ⁻³ | 0.373 x 10 ⁻⁶ |
| 1 kW h | 3.60 x 10 ⁶ | 1 | 367 x 10 ³ | 860 | 1.34 |
| 1 kgf m | 9.81 | 2.72 x 10 ⁻⁶ | 1 | 2.345 x 10 ⁻³ | 3.65 x 10 ⁻⁶ |
| 1 kcal | 4186.8 | 1.16 x 10 ⁻³ | 426.9 | 1 | 1.56 x 10 ⁻³ |
| 1 hp h | 2.69 x 10 ⁶ | 0.746 | 0.28 x 10 ⁶ | 641 | 1 |

1 J = 1 Nm = 1 Ws & 1 W = 1 J/s = 1 Nm/s

| UNITS OF POWER | | | | | |
|----------------|------|-------------------------|---------|--------|-------------------------|
| | W | kW | kgf m/s | kcal/h | hp |
| 1 W | 1 | 10 ⁻³ | 0.102 | 0.86 | 1.34 x 10 ⁻³ |
| 1 kW | 1000 | 1 | 102 | 860 | 1.34 |
| 1 kgf m/s | 9.81 | 9.81 x 10 ⁻³ | 1 | 8.43 | 13.2 x 10 ⁻³ |
| 1 kcal/h | 1.16 | 1.16 x 10 ⁻³ | 0.119 | 1 | 1.55 x 10 ⁻³ |
| 1 hp | 746 | 0.746 | 76 | 643 | 1 |



| OTHER USEFUL UNITS | | |
|--|--|--|
| From | Factor | Equals |
| 1 m ³ | x 1000 | 1000 litres |
| 1 m ² | Per mm thick | 1 litre |
| Litres/m ² | Area (m ²) x depth (mm) | Litres/m ² |
| Product requirements | Area (m ²) x depth (m) x 1000 divided by the Yield Per Pack (litres) | No. of Packs required |
| Theoretical coverage rate | Area (m ²) x film thickness (m) x 1000 x by sg | kgs/m ² |
| Theoretical coverage rate (100% Solids) | Area (m ²) x film thickness (m) x 1000 | Litres/m ² |
| Theoretical coverage rate (eg. 40% Solids) WFT to achieve dft required | Area (m ²) x film thickness (m) x 1000 divided 0.40 | Litres/m ² |
| Atmosphere | | 101,325kPa |
| Atmosphere (tech = 1 kgf/cm ²) | | 98,0665 kPa 10m H ₂ O @ 4°C |
| 100 metre water head @ 4°C | | 1 MPa |
| Bar | | 100 kPa |
| Centimetre of mercury @ 0°C | | 1,333224 kPa |
| Centimetre of water @ 4°C | | 98,0638 kPa |
| Millimetre of mercury @ 0°C | | 133,322 Pa |
| Millimetre of water @ 4°C | | 9,8064 Pa |
| Inch of mercury @ °C | | 3,3864 kPa |
| Inch of water @ 4°C | | 249,082 kPa |
| Poise | | 100m Pa.s |
| Centipoise | | 1 mPa.s |
| Gallon (UK) | | 4,5461 litres |
| Gallon (USA) | | 3,7851 litres |
| Kilogram-force | | 9,8067 N |
| Kilogram-force-metre | | 9,8067 Nm |
| Kilogram-force per cm ² | | 98,067 kPa |
| Mil (milli-inch) (thou) | | 25,4µm |
| Millibar | | 100 Pa |
| °C | + 273 | Kelvin (K) |
| °C | (°C x 1.8) + 32 | °F |
| °F | (°F - 32)/1.8 | °C |
| Litre | x SG | kgs |
| kgs | Divide by SG | litres |
| Water @ 4°C | SG | 1 |

WFT = wet film thickness & dft = dry film thickness & SG = specific gravity of mixed product

