

Conversions for Common Welding Terms* (Source ANSI/AWS A1.1-)

| Property | To Convert From | To | Multiply by |
|---|-------------------------|-------------------------|------------------------------|
| area dimensions (mm ²) | in ² | mm ² | 6.451 600 x 10 ² |
| | mm ² | in ² | 1.550 003 x 10 ⁻³ |
| current density (A/mm ²) | A/in ² | A/mm ² | 1.550 003 x 10 ⁻³ |
| | A/mm ² | A/in ² | 6.451 600 x 10 ² |
| deposition rate** (kg/h) | lb/h | kg/h | 0.45** |
| | kg/h | lb/h | 2.2** |
| electrical resistivity (Ω · m) | Ω · cm | Ω · m | 1.000 000 x 10 ⁻² |
| | Ω · m | Ω · cm | 1.000 000 x 10 ² |
| electrode force (N) | pound-force | N | 4.448 222 |
| | kilogram-force | N | 9.806 650 |
| | N | lbf | 2.248 089 x 10 ⁻¹ |
| flow rate (L/min) | ft ³ /h | L/min | 4.719 475 x 10 ⁻¹ |
| | gallon per hour | L/min | 6.309 020 x 10 ⁻² |
| | gallon per minute | L/min | 3.785 412 |
| fracture toughness (MN · m ^{-3/2}) | ksi · in ^{1/2} | MN · m ^{-3/2} | 1.098 855 |
| | MN · m ^{-3/2} | ksi · in ^{1/2} | 0.910 038 |
| heat input (J/m) | J/in | J/m | 3.937.008 x 10 |
| | J/m | J/in | 2.540 000 x 10 ⁻² |
| impact energy | foot pound force | J | 1.355 818 |
| linear measurements (mm) | in. | mm | 2.540 000 x 10 |
| | ft | mm | 3.048 000 x 10 ² |
| | mm | in. | 3.937 008 x 10 ⁻² |
| | mm | ft | 3.280 840 x 10 ⁻³ |
| mass (grams) | lb | kg | 0.454** |
| | kg | lb | 2.205** |
| power density (W/m ²) | W/in ² | W/mm ² | 1.550 003 x 10 ³ |
| | W/m ² | W/in ² | 6.451 600 x 10 ⁻⁴ |
| pressure (gas and liquid) (kPa) | psi | kPa | 6.894 757 |
| | lb/ft ² | kPa | 4.788 026 x 10 ⁻² |
| | N/mm ² | kPa | 1.000 000 x 10 ³ |
| pressure (gas and liquid) (kPa) | kPa | psi | 1.450 377 x 10 ⁻¹ |
| | kPa | lb/ft ² | 2.088 543 x 10 |
| | kPa | N/mm ² | 1.000 000 x 10 ⁻³ |
| pressure (vacuum) (Pa) | torr (mm Hg at 0°C) | Pa | 1.333 220 x 10 ² |
| | micron (μ m Hg at 0°C) | Pa | 1.333 220 x 10 ⁻¹ |
| | Pa | torr | 7.500 640 x 10 ⁻³ |
| | Pa | micron | 7.500 640 |
| | bar | psi | 1.450 377 x 10 ¹ |
| tensile strength (MPa) | psi | MPa | 6.894 757 x 10 ⁻³ |
| | lb/ft ² | MPa | 4.788 026 x 10 ⁻⁵ |
| | N/mm ² | MPa | 1.000 000 |
| | MPa | psi | 1.450 377 x 10 ² |
| | MPa | lb/ft ² | 2.088 543 x 10 ⁴ |
| | MPa | N/mm ² | 1.000 000 |
| thermal conductivity (W/[m · K]) | cal/(cm · s° · C) | W/(m · K) | 4.184 000 x 10 ² |
| travel speed | in./min | mm/s | 4.233 333 x 10 ⁻¹ |
| wire feed speed (mm/s) | mm/s | in/min | 2.362 205 |

* Preferred units are given in parenthesis

** Approximate conversion