

# Metric Measurement Conversions

Superior Essex uses the U.S. customary system of weights and measures as well as the metric equivalents. If you need help calculating these figures, please consult the conversion charts below.

| Into Metric            |                                  |                                    |                                    |
|------------------------|----------------------------------|------------------------------------|------------------------------------|
|                        | If You Know                      | Multiply By                        | To Get                             |
| <b>Length</b>          | milli-inch (mil)                 | 25.40                              | microns (µm)                       |
|                        | inches (in)                      | 25.40                              | millimeters (mm)                   |
|                        | inches (in)                      | 2.54                               | centimeters (cm)                   |
|                        | feet (ft)                        | 30.48                              | centimeters (cm)                   |
|                        | yards (yd)                       | 0.91                               | meters (m)                         |
|                        | miles (mi)                       | 1.61                               | kilometers (km)                    |
| <b>Area</b>            | sq. inches (in <sup>2</sup> )    | 6.45                               | sq. centimeters (cm <sup>2</sup> ) |
|                        | sq. feet (ft <sup>2</sup> )      | 0.09                               | sq. meters (m <sup>2</sup> )       |
|                        | sq. yards (yd <sup>2</sup> )     | 0.84                               | sq. meters (m <sup>2</sup> )       |
|                        | sq. miles (mi <sup>2</sup> )     | 2.59                               | sq. kilometers (km <sup>2</sup> )  |
|                        | acres                            | 0.40                               | hectares (ha)                      |
| <b>Mass (Weight)</b>   | ounces (oz)                      | 28.35                              | grams (g)                          |
|                        | pounds (lb)                      | 0.45                               | kilograms (kg)                     |
|                        | short tons                       | 0.91                               | tons (t)                           |
| <b>Temperature</b>     | Fahrenheit (°F)                  | Subtract 32, then multiply by 0.56 | Celsius (°C)                       |
| <b>Mass per Length</b> | pounds per 1,000 feet (lbs/kft)  | 1.49                               | kilograms per kilometers (kg/km)   |
| <b>Force</b>           | pounds force (lbf)               | 4.45                               | newtons (N)                        |
|                        | foot-pounds (ft-lb)              | 1.36                               | newtons-meters (N-m)               |
|                        | pounds force per inches (lbf/in) | 1.75                               | newtons per centimeters (N/cm)     |
|                        | pounds per sq. inches (PSI)      | 6.89                               | kiloPascals (kPa)                  |

| Out of Metric                 |                                    |                               |                                  |
|-------------------------------|------------------------------------|-------------------------------|----------------------------------|
|                               | If You Know                        | Multiply By                   | To Get                           |
| <b>Length</b>                 | microns (µm)                       | 0.04                          | milli-inch (mil)                 |
|                               | millimeters (mm)                   | 0.04                          | inches (in)                      |
|                               | centimeters (cm)                   | 0.39                          | inches (in)                      |
|                               | meters (m)                         | 3.28                          | feet (ft)                        |
|                               | meters (m)                         | 1.09                          | yards (yd)                       |
|                               | kilometers (km)                    | 3,280.84                      | feet (ft)                        |
|                               | kilometers (km)                    | 0.62                          | miles (mi)                       |
| <b>Area</b>                   | sq. centimeters (cm <sup>2</sup> ) | 0.16                          | sq. inches (in <sup>2</sup> )    |
|                               | sq. meters (m <sup>2</sup> )       | 1.20                          | sq. yards (yd <sup>2</sup> )     |
|                               | sq. kilometers (km <sup>2</sup> )  | 0.39                          | sq. miles (mi <sup>2</sup> )     |
|                               | hectares (ha)                      | 2.47                          | acres                            |
| <b>Weight</b>                 | grams (g)                          | 0.04                          | ounces (oz)                      |
|                               | kilograms (kg)                     | 2.20                          | pounds (lb)                      |
|                               | tons (t)                           | 1.10                          | short tons                       |
| <b>Temperature</b>            | Celsius (°C)                       | Multiply by 1.80, then add 32 | Fahrenheit (°F)                  |
| <b>Weight per Unit Length</b> | kilograms per kilometers (kg/km)   | 0.67                          | pounds per 1,000 feet (lbs/kft)  |
| <b>Force</b>                  | newtons (N)                        | 0.22                          | pounds force (lbf)               |
|                               | newtons-meters (N-m)               | 0.74                          | foot-pounds (ft-lb)              |
|                               | newtons per centimeters (N/cm)     | 0.57                          | pounds force per inches (lbf/in) |
|                               | kiloPascals (kPa)                  | 0.15                          | pounds per sq. inches (PSI)      |

# American Wire Gauge (AWG) Sizes

The table below shows various data including both the resistance of the various wire gauges and the resistance (Ω) per unit length. The diameter information in the table applies to solid wires. Stranded wires are calculated by determining the equivalent cross sectional copper area. The table below assumes DC, or AC frequencies equal to or less than 60 Hz, and does not take skin effect into account.

| AWG        | Diameter |        | Copper Resistance* |         |
|------------|----------|--------|--------------------|---------|
|            | in       | mm     | (Ω/km)             | (Ω/kft) |
| 0000 (4/0) | 0.4600   | 11.684 | 0.1608             | 0.04901 |
| 000 (3/0)  | 0.4096   | 10.404 | 0.2028             | 0.06180 |
| 00 (2/0)   | 0.3648   | 9.266  | 0.2557             | 0.07793 |
| 0 (1/0)    | 0.3249   | 8.252  | 0.3224             | 0.09827 |
| 1          | 0.2893   | 7.348  | 0.4066             | 0.1239  |
| 2          | 0.2576   | 6.544  | 0.5127             | 0.1563  |
| 3          | 0.2294   | 5.827  | 0.6465             | 0.1970  |
| 4          | 0.2043   | 5.189  | 0.8152             | 0.2485  |
| 5          | 0.1819   | 4.621  | 1.028              | 0.3133  |
| 6          | 0.1620   | 4.115  | 1.296              | 0.3951  |
| 7          | 0.1443   | 3.665  | 1.634              | 0.4982  |
| 8          | 0.1285   | 3.264  | 2.061              | 0.6282  |
| 9          | 0.1144   | 2.906  | 2.599              | 0.7921  |
| 10         | 0.1019   | 2.588  | 3.277              | 0.9989  |
| 11         | 0.0907   | 2.305  | 4.132              | 1.260   |
| 12         | 0.0808   | 2.053  | 5.211              | 1.588   |
| 13         | 0.0720   | 1.828  | 6.571              | 2.003   |
| 14         | 0.0641   | 1.628  | 8.286              | 2.525   |
| 15         | 0.0571   | 1.450  | 10.45              | 3.184   |
| 16         | 0.0508   | 1.291  | 13.17              | 4.016   |
| 17         | 0.0453   | 1.150  | 16.61              | 5.064   |
| 18         | 0.0403   | 1.024  | 20.95              | 6.385   |
| 19         | 0.0359   | 0.912  | 26.42              | 8.051   |
| 20         | 0.0320   | 0.812  | 33.31              | 10.15   |
| 21         | 0.0285   | 0.723  | 42.00              | 12.80   |
| 22         | 0.0253   | 0.644  | 52.96              | 16.14   |
| 23         | 0.0226   | 0.573  | 66.79              | 20.36   |
| 24         | 0.0201   | 0.511  | 84.22              | 25.67   |
| 25         | 0.0179   | 0.455  | 106.2              | 32.37   |
| 26         | 0.0159   | 0.405  | 133.9              | 40.81   |
| 27         | 0.0142   | 0.361  | 168.9              | 51.47   |
| 28         | 0.0126   | 0.321  | 212.9              | 64.90   |

\*Figure for solid copper wire at 68°F, computed based on 100% IACS conductivity of 58.0 MS/m.