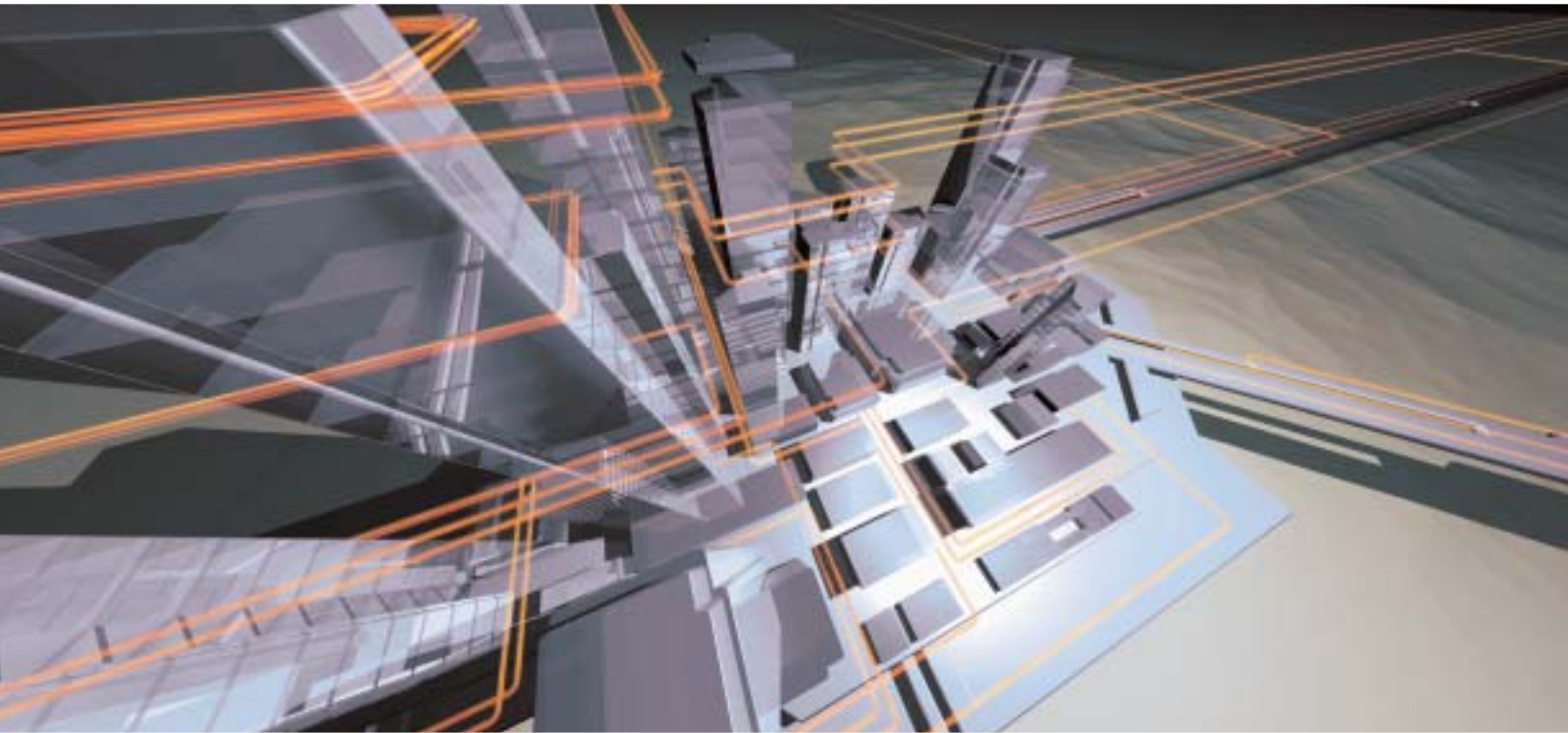


magnet wire / winding wire
engineering data
handbook



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Contents of this book have been revised to reflect NEMA's publishing of ANSI/NEMA MW 1000-2008, Revision 1-2009 *Magnet Wire*. Please contact NEMA for information regarding the specific changes to the NEMA MW 1000 publication.

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CONDUCTOR PROPERTIES

Copper and Aluminum

AREA, WEIGHT AND RESISTANCE

CROSS-SECTIONAL AREA

Round Wire

Circular Mil Area = D^2
 Square Mil Area = $\pi/4 D^2 = 0.7854 D^2$
 Square Inch Area = $0.7854 \times 10^{-6} D^2$
 Where: D = Diameter of bare conductor in mils (1/1000 inches),
 i.e. 0.0403" Diam. = 40.3 mils

Square and Rectangular Wire

Circular Mil Area = $1.2732 (WT - 0.8584R^2)$
 Square Mil Area = $WT - 0.8584R^2$
 Square Inch Area = $1 \times 10^{-6} (WT - 0.8584R^2)$, or
 = $wt - 0.8584r^2$, when w, t and r are
 expressed in inches.

Note: 1 sq. mil = 10^{-6} sq. inches.

Where: T = Thickness in mils. W = Width in mils.
 R = Corner Radius in mils.

For square wire: $W = T$.

For rectangular wire with full round edges:

$$R = \frac{T}{2}$$

Note: When calculations involve any of the following
 standard ASTM corner radii, the values for Corner
 Area Loss listed below may be substituted for the
 term "0.8584R²" in the above formulas.

| Nominal ASTM* Corner Radii (Inches) | Corner Area Loss Factors |
|--|-----------------------------|
| 0.094 | 7585.0 |
| 0.063 | 3407.0 |
| 0.040 | 1373.0 |
| 0.032 | 879.0 |
| 0.026 | 580.3 |
| 0.020 | 343.4 |
| 0.016 | 219.8 |

* ASTM Standard B 48 for Copper and
 ASTM Standard B 324 for Aluminum.

WEIGHT OF BARE CONDUCTOR

Pounds Per 1000 Feet

General Formula: Lbs./1000 Ft. = $0.000433526 (d) (A)$
 Copper: Lbs./1000 Ft. = 0.0038540A
 Aluminum: Lbs./1000 Ft. = 0.0011718A
 Where: A = Bare conductor cross-sectional area in square mils.
 d = Density of conductor, grams/cm³

WEIGHT OF BARE CONDUCTOR (cont'd)

For round conductor, where the cross-sectional area may be more
 conveniently expressed in Circular Mills, the following formulas are
 useful:

General Formula: Lbs./1000 Ft. = $0.00034047 (d) (D^2)$

Copper: Lbs./1000 Ft. = $0.003027 D^2$

Aluminum: Lbs./1000 Ft. = $0.0009203 D^2$

Where: D = Diameter of bare conductor, mils.
 d = Density of conductor metal, grams/cm³.

Formulas for weight are based on density of 8.89 for copper
 and 2.703 for aluminum.

CONDUCTOR RESISTANCE:

Ohms Per 1000 Feet

Round Conductor:

General Formula: Ohms/1000 Ft. = $\frac{1000 R}{D^2}$

Copper: Ohms/1000 Ft. = $\frac{10371}{D^2}$

Aluminum: Ohms/1000 Ft. = $\frac{16782}{D^2}$

Where: R = Volume resistivity, ohm x circ.mil / ft.
 D = Bare conductor diameter, mils.

Square and Rectangular Conductor:

General Formula: Ohms/1000 Ft. = $\frac{785.4 R}{A}$

Copper: Ohms/1000 Ft. = $\frac{8145.5}{A}$

Aluminum: Ohms/1000 Ft. = $\frac{13180}{A}$

Where: R = Volume resistivity, ohm x circ. mil / ft.¹

Copper = 10.371 ohm x circ. mil / ft.

Aluminum = 16.782 ohm x circ. mil / ft.

A = Cross-sectional area, square mils.

Ohms Per Pound

For any conductor, Ohms/Lb. = $\frac{\text{Ohms/1000 Ft.}}{\text{Lbs./1000 Ft.}}$

Feet Per Ohm

For any conductor, Feet/Ohm = $\frac{1000}{\text{Ohms/1000 Ft.}}$

¹The volume resistivity factors at 20°C are based on conductivities of 100%
 copper, and 61.8% aluminum IACS for soft, annealed conductors. Conductivities
 for hard drawn conductors are: Copper 97% and Aluminum 61%.

CONDUCTOR PROPERTIES

Copper & Aluminum

PHYSICAL AND ELECTRICAL PROPERTIES

| Physical Properties | Copper | Aluminum | Electrical Properties | Copper | Aluminum |
|--|-------------------------|-------------------------|--|----------|----------|
| Density, 20°C (68°F) | | | IACS Volume Conductivity, Minimum %, 20°C (68°F) | 100.0 | 61.8 |
| Pounds/Inch ³ | 0.3212 | 0.09765 | Volume Resistivity, Maximum 20°C (68°F) | | |
| Grams/Centimeter ³ | 8.89 | 2.703 | (Ohm) x (circular mil) / foot | 10.371 | 16.782 |
| Thermal Capacity, 20°C (68°F) | | | (Ohm) x (millimeter ²) / meter | 0.017241 | 0.027899 |
| BTU/Pound/°F | 0.0921 | 0.214 | Weight Resistivity, Maximum 20°C (68°F) | | |
| Thermal Conductivity, 20°C (68°F) | | | (Ohm) x (pound) / mile ² | 875.20 | 430.59 |
| BTU/Foot ² /Sec/°F/Inch | 1.15 | 0.66 | (Ohm) x (gram) / meter ² | 0.15328 | 0.075410 |
| Gram-calories/mm ² /Sec/°C/cm | 0.93 | 0.53 | Thermal Coefficient of Resistance, 20°C (68°F) | | |
| Thermal Coefficient of Expansion, Linear | | | Change in Unit Resistance at 20°C/°C | 0.00393 | 0.00408 |
| Change in Unit Length at 0°C/°C | 16.8 x 10 ⁻⁶ | 23.8 x 10 ⁻⁶ | | | |
| Melting Point | | | | | |
| °C | 1083 | 660 | | | |
| °F | 1980 | 1220 | | | |
| Tensile Characteristics, Annealed, 20°C (68°F) | | | | | |
| Ultimate Strength | | | | | |
| Pounds/Inch ² | 36,000 - 40,000 | 9,000 - 14,000 | | | |
| Kilograms Force/mm ² | 25.3 - 28.1 | 6.3 - 9.8 | | | |
| Yield Strength, 0.2% Off-Set | | | | | |
| Pounds/Inch ² | 9,000 - 12,000 | 4,000 - 7,000 | | | |
| Kilograms Force/mm ² | 6.3 - 8.4 | 2.8 - 4.9 | | | |

equivalent resistivity values

| Material | Volume Conductivity at 20°C (68°F) Percent IACS | RESISTIVITY CONSTANTS AT 20°C (68°F) | | | | | |
|----------|---|--------------------------------------|-------------------------------|--------------|--------------------|---------------------------------|---------------------------------|
| | | Volume | | | | Weight | |
| | | Ohm-circ. mil per foot | Ohm-mm ² per meter | Microhm-inch | Microhm-centimeter | Ohm-pound per mile ² | Ohm-gram per meter ² |
| Copper | 100.0 | 10.371 | 0.017241 | 0.67879 | 1.7241 | 875.20 | 0.15328 |
| Aluminum | 61.8 | 16.782 | 0.027899 | 1.0983 | 2.7899 | 430.59 | 0.075410 |

CONDUCTOR PROPERTIES

Copper & Aluminum

RESISTANCE CORRECTION FACTORS

| Temperature °C | To Reduce Known R _T to R ₂₀ , Multiply R _T By: | | To Convert Known R ₂₀ to R _T Multiply R ₂₀ By: | |
|----------------|---|----------|---|----------|
| | Copper | Aluminum | Copper | Aluminum |
| 10 | 1.04091 | 1.04254 | 0.9607 | 0.95920 |
| 11 | 1.03667 | 1.03812 | 0.9646 | 0.96328 |
| 12 | 1.03246 | 1.03374 | 0.9686 | 0.96736 |
| 13 | 1.02829 | 1.02940 | 0.9725 | 0.97144 |
| 14 | 1.02415 | 1.02509 | 0.9764 | 0.97552 |
| 15 | 1.02004 | 1.02082 | 0.9804 | 0.97960 |
| 16 | 1.01597 | 1.01659 | 0.9843 | 0.98368 |
| 17 | 1.01193 | 1.01239 | 0.9882 | 0.98776 |
| 18 | 1.00792 | 1.00823 | 0.9921 | 0.99184 |
| 19 | 1.00395 | 1.00410 | 0.9961 | 0.99592 |
| 20 | 1.00000 | 1.00000 | 1.00000 | 1.00000 |
| 21 | 0.99609 | 0.99594 | 1.00393 | 1.00408 |
| 22 | 0.99220 | 0.99191 | 1.00786 | 1.00816 |
| 23 | 0.98835 | 0.98791 | 1.01179 | 1.01224 |
| 24 | 0.98452 | 0.98394 | 1.01572 | 1.01632 |
| 25 | 0.98073 | 0.98001 | 1.01965 | 1.02040 |
| 26 | 0.97696 | 0.97610 | 1.02358 | 1.02448 |
| 27 | 0.97323 | 0.97223 | 1.02751 | 1.02856 |
| 28 | 0.96952 | 0.96839 | 1.03144 | 1.03264 |
| 29 | 0.96584 | 0.96458 | 1.03537 | 1.03672 |
| 30 | 0.96219 | 0.96080 | 1.03930 | 1.04080 |
| 31 | 0.95856 | 0.95705 | 1.04323 | 1.04488 |
| 32 | 0.95496 | 0.95335 | 1.04716 | 1.04896 |
| 33 | 0.95139 | 0.94963 | 1.05109 | 1.05304 |
| 34 | 0.94785 | 0.94597 | 1.05502 | 1.05712 |
| 35 | 0.94433 | 0.94233 | 1.05895 | 1.06120 |

Based on Temperature Coefficient of Resistance (α_{20})

Copper (100% IACS), $\alpha_{20} = 0.00393$

Aluminum (61.8% IACS), $\alpha_{20} = 0.00408$

Note: Wire resistance corrections outside the range of the above table may be calculated using the following formulas:

$$(1) R_{20} = \frac{R_T}{1 + \alpha_{20} (T-20)} \quad \text{or}$$

$$(2) R_T = R_{20} \{1 + \alpha_{20} (T-20)\}$$

Where:

R₂₀ = Resistance at reference temperature, 20°C

R_T = Resistance at other temperature, T°C

T = The temperature at which measurement is made (Eq. #1)
or to which reference resistance is to be converted (Eq. #2).

α_{20} = Temperature Coefficient of Resistance at reference temperature for conductor metal used.

ROUND, CONDUCTOR PROPERTIES

Copper & Aluminum

AWG SYSTEM

Although there is a world-wide trend to the International System (SI) or metric measurement, the current practice in wire measurement in the United States is generally the use of the customary English units. The current practice of the National Institute of Standards and Technology (NIST), The Institute of Electrical and Electronics Engineers (IEEE) and The American Society for Testing and Materials (ASTM) is to reflect American Wire Gauge in parallel with the metric units of measurement. In the technical tables of this publication, this parallel practice is reflected.

The American Wire Gauge, like some other gauge systems, does generally represent steps in the wire drawing process. In addition to that, the numbers are retrogressive to the wire size - that is, the larger the number the smaller the wire. These gauge sizes are not arbitrary, but are a geometric progression. With the definition of two sizes in the series of gauge sizes, all size related properties of any gauge in the series is defined by that relationship. With AWG 0000 as 0.4600 inch and AWG 36 as 0.0050 and 38 gauge sizes between these two, the ratio of any diameter to the next larger diameter can be determined as follows:

$$\sqrt[39]{\frac{0.4600}{0.0050}} = \sqrt[39]{92} = 1.1229322$$

The square of this ratio is: 1.2610

This square of the ratio between sizes can be used as a means of obtaining the resistance, mass and cross-section of any wire size if one has memorized these values for only one size. This conversion number can be easily remembered as 1.25.

Therefore:

Knowing 20 AWG has a cross-section of 1020 circular mils tells us 19 AWG will have $1 \frac{1}{4} \times 1020$ or approximately 1250 circular mils. If we had memorized the resistance of 20 AWG as 10 ohms/1000 feet, 19 AWG would have less resistance by $10 \div 1 \frac{1}{4}$ or approximately 8 ohms/1000 feet.

Since the function is geometric, the cube of this $1 \frac{1}{4}$ is approximately 2. This allows you to easily calculate the dimensional functions in 3 gauge increments. Every three gauge sizes the resistance, mass per unit length, and cross-section will double or halve.

Then with a 20 AWG cross-section of 1020 circular mils, 17 AWG will be approximately 2040 mils and 23 AWG will be approximately 510 circular mils.

Using this relationship, with the commitment to memory of the cross-sectional area, resistance and mass per unit length for any one size, you can move quickly to the value for any other wire size.

For diameter calculation, remembering one diameter, the diameter will double or halve every six gauges and for each gauge the next larger gauge diameter is 120% or 1.2 times the smaller gauge. If you remember six contiguous gauges in mils, e.g. 39-44 AWG, you would know all diameters by this rule. Actually, if you just remember 39 AWG as 3.5 mils and the spread between these gauges is .3 mil except between 39 and 40 where it is .4 mil and 43 and 44 is .2 mil, you will have quick access to all gauge diameters.

ROUND, CONDUCTOR PROPERTIES

Copper & Aluminum

WINDING TENSIONS

| WHOLE AWG SIZE | COPPER | | ALUMINUM | | WHOLE AWG SIZE | COPPER | | ALUMINUM | |
|----------------------|----------------------------|--|----------------------------|--|----------------------|-----------------------------|--|-----------------------------|--|
| | Recommended | | Recommended | | | Recommended | | Recommended | |
| | Maximum* Tension (Lbs.) | | Maximum* Tension (Lbs.) | | | Maximum* Tension (Grams) | | Maximum* Tension (Grams) | |
| 4 | 393.4 | | 209.8 | | 29 | 546 | | 291 | |
| 5 | 311.8 | | 166.3 | | 30 | 427 | | 228 | |
| 6 | 247.3 | | 131.9 | | 31 | 339 | | *** | |
| 7 | 196.2 | | 104.7 | | 32 | 274 | | *** | |
| 8 | 155.6 | | 83.0 | | 33 | 216 | | *** | |
| 9 | 123.3 | | 65.8 | | 34 | 170 | | *** | |
| 10 | 97.9 | | 52.2 | | 35 | 134 | | *** | |
| 11 | 77.5 | | 41.4 | | 36 | 107 | | *** | |
| 12 | 61.5 | | 32.8 | | 37 | 87 | | *** | |
| 13 | 48.9 | | 26.1 | | 38 | 68 | | *** | |
| 14 | 38.7 | | 20.7 | | 39 | 52 | | *** | |
| 15 | 30.7 | | 16.4 | | 40 | 41 | | *** | |
| 16 | 24.3 | | 13.0 | | 41 | 34 | | *** | |
| 17 | 19.3 | | 10.3 | | 42 | 27 | | *** | |
| 18 | 15.3 | | 8.2 | | 43 | 21 | | *** | |
| 19 | 12.1 | | 6.5 | | 44 | 17 | | *** | |
| 20 | 9.7 | | 5.1 | | 45 | 13 | | *** | |
| 21 | 7.7 | | 4.1 | | 46 | 11 | | *** | |
| 22 | 6.0 | | 3.2 | | | | | | |
| 23 | 4.8 | | 2.6 | | | | | | |
| 24 | 3.8 | | 2.0 | | | | | | |
| 25 | 3.0 | | 731 Grams | | | | | | |
| 26 | 2.4 | | 576 Grams | | | | | | |
| 27 | 1.9 | | 460 Grams | | | | | | |
| 28 | 1.5 | | 362 Grams | | | | | | |

This table contains the maximum recommended winding tensions and is offered as a guide to establishing effective winding tensions. Use the minimum winding tension that produces a good winding. The type of winder, payoff device, and type of coil will vary the tensions used. Some minor variations in the softness of the wire from one lot to another may also dictate minor adjustments.

Note: Start-up acceleration surge can produce tensions well in excess of running tensions and need to be taken into consideration.

* Maximum recommended tensions are based upon 12,000 p.s.i. for copper and 6,400 p.s.i. for aluminum. The units are listed in Lbs. unless indicated by "Grams".

ROUND, BARE WIRE

Copper & Aluminum

DIMENSIONS

| Whole AWG Size | Bare Wire Diameter | | | | | | Whole AWG Size | Half AWG Size | Bare Wire Diameter | | | | | | Half AWG Size |
|----------------------|--------------------|--------|---------|--------|---------|--------|----------------------|---------------------|--------------------|-------|---------|-------|---------|-------|------------------|
| | Minimum | | Nominal | | Maximum | | | | Minimum | | Nominal | | Maximum | | |
| | Inches | mm | Inches | mm | Inches | mm | | | Inches | mm | Inches | mm | Inches | mm | |
| 4/0 | 0.4454 | 11.313 | 0.4600 | 11.684 | 0.4646 | 11.801 | 4/0 | | | | | | | | |
| 3/0 | 0.4055 | 10.300 | 0.4096 | 10.404 | 0.4137 | 10.508 | 3/0 | | | | | | | | |
| 2/0 | 0.3612 | 9.174 | 0.3648 | 9.266 | 0.3684 | 9.357 | 2/0 | | | | | | | | |
| 1/0 | 0.3170 | 8.052 | 0.3249 | 8.252 | 0.3281 | 8.334 | 1/0 | | | | | | | | |
| 1 | 0.2864 | 7.275 | 0.2893 | 7.348 | 0.2922 | 7.422 | 1 | 1 ½ | 0.2703 | 6.866 | 0.2730 | 6.934 | 0.2749 | 6.982 | 1 ½ |
| 2 | 0.2550 | 6.477 | 0.2576 | 6.543 | 0.2602 | 6.609 | 2 | 2 ½ | 0.2407 | 6.114 | 0.2431 | 6.175 | 0.2448 | 6.218 | 2 ½ |
| 3 | 0.2271 | 5.768 | 0.2294 | 5.827 | 0.2317 | 5.885 | 3 | 3 ½ | 0.2143 | 5.443 | 0.2165 | 5.499 | 0.2180 | 5.538 | 3 ½ |
| 4 | 0.2023 | 5.138 | 0.2043 | 5.189 | 0.2057 | 5.225 | 4 | 4 ½ | 0.1909 | 4.849 | 0.1928 | 4.897 | 0.1941 | 4.931 | 4 ½ |
| 5 | 0.1801 | 4.575 | 0.1819 | 4.620 | 0.1832 | 4.666 | 5 | 5 ½ | 0.1700 | 4.318 | 0.1717 | 4.361 | 0.1729 | 4.392 | 5 ½ |
| 6 | 0.1604 | 4.074 | 0.1620 | 4.115 | 0.1631 | 4.155 | 6 | 6 ½ | 0.1514 | 3.846 | 0.1529 | 3.884 | 0.1540 | 3.911 | 6 ½ |
| 7 | 0.1429 | 3.630 | 0.1443 | 3.665 | 0.1453 | 3.701 | 7 | 7 ½ | 0.1348 | 3.424 | 0.1362 | 3.459 | 0.1372 | 3.484 | 7 ½ |
| 8 | 0.1272 | 3.231 | 0.1285 | 3.264 | 0.1294 | 3.297 | 8 | 8 ½ | 0.1201 | 3.051 | 0.1213 | 3.081 | 0.1221 | 3.103 | 8 ½ |
| 9 | 0.1133 | 2.878 | 0.1144 | 2.906 | 0.1153 | 2.929 | 9 | 9 ½ | 0.1069 | 2.715 | 0.1080 | 2.743 | 0.1089 | 2.765 | 9 ½ |
| 10 | 0.1009 | 2.563 | 0.1019 | 2.588 | 0.1027 | 2.609 | 10 | 10 ½ | 0.0952 | 2.418 | 0.0962 | 2.443 | 0.0970 | 2.463 | 10 ½ |
| 11 | 0.0898 | 2.281 | 0.0907 | 2.304 | 0.0914 | 2.322 | 11 | 11 ½ | 0.0847 | 2.151 | 0.0856 | 2.174 | 0.0863 | 2.192 | 11 ½ |
| 12 | 0.0800 | 2.032 | 0.0808 | 2.052 | 0.0814 | 2.069 | 12 | 12 ½ | 0.0755 | 1.918 | 0.0763 | 1.938 | 0.0769 | 1.954 | 12 ½ |
| 13 | 0.0713 | 1.811 | 0.0720 | 1.829 | 0.0726 | 1.843 | 13 | 13 ½ | 0.0672 | 1.707 | 0.0679 | 1.725 | 0.0684 | 1.738 | 13 ½ |
| 14 | 0.0635 | 1.613 | 0.0641 | 1.628 | 0.0647 | 1.643 | 14 | 14 ½ | 0.0599 | 1.521 | 0.0605 | 1.537 | 0.0611 | 1.552 | 14 ½ |
| 15 | 0.0565 | 1.435 | 0.0571 | 1.450 | 0.0577 | 1.466 | 15 | 15 ½ | 0.0534 | 1.356 | 0.0539 | 1.369 | 0.0544 | 1.382 | 15 ½ |
| 16 | 0.0503 | 1.278 | 0.0508 | 1.290 | 0.0513 | 1.303 | 16 | 16 ½ | 0.0475 | 1.207 | 0.0480 | 1.219 | 0.0485 | 1.232 | 16 ½ |
| 17 | 0.0448 | 1.138 | 0.0453 | 1.151 | 0.0458 | 1.163 | 17 | 17 ½ | 0.0423 | 1.074 | 0.0427 | 1.085 | 0.0431 | 1.095 | 17 ½ |
| 18 | 0.0399 | 1.013 | 0.0403 | 1.024 | 0.0407 | 1.034 | 18 | 18 ½ | 0.0376 | 0.955 | 0.0380 | 0.965 | 0.0384 | 0.975 | 18 ½ |
| 19 | 0.0355 | 0.902 | 0.0359 | 0.912 | 0.0363 | 0.922 | 19 | 19 ½ | 0.0336 | 0.853 | 0.0339 | 0.861 | 0.0342 | 0.869 | 19 ½ |
| 20 | 0.0317 | 0.805 | 0.0320 | 0.813 | 0.0323 | 0.820 | 20 | 20 ½ | 0.0299 | 0.759 | 0.0302 | 0.767 | 0.0305 | 0.775 | 20 ½ |
| 21 | 0.0282 | 0.716 | 0.0285 | 0.724 | 0.0288 | 0.732 | 21 | 21 ½ | 0.0266 | 0.676 | 0.0269 | 0.683 | 0.0272 | 0.691 | 21 ½ |
| 22 | 0.0250 | 0.635 | 0.0253 | 0.643 | 0.0256 | 0.650 | 22 | 22 ½ | 0.0237 | 0.602 | 0.0239 | 0.607 | 0.0241 | 0.612 | 22 ½ |
| 23 | 0.0224 | 0.569 | 0.0226 | 0.574 | 0.0228 | 0.579 | 23 | 23 ½ | 0.0211 | 0.536 | 0.0213 | 0.541 | 0.0215 | 0.546 | 23 ½ |
| 24 | 0.0199 | 0.505 | 0.0201 | 0.511 | 0.0203 | 0.516 | 24 | 24 ½ | 0.0188 | 0.478 | 0.0190 | 0.483 | 0.0192 | 0.488 | 24 ½ |
| 25 | 0.0177 | 0.450 | 0.0179 | 0.455 | 0.0181 | 0.460 | 25 | 25 ½ | 0.0167 | 0.424 | 0.0169 | 0.429 | 0.0171 | 0.434 | 25 ½ |
| 26 | 0.0157 | 0.399 | 0.0159 | 0.404 | 0.0161 | 0.409 | 26 | 26 ½ | 0.0149 | 0.378 | 0.0150 | 0.381 | 0.0152 | 0.386 | 26 ½ |
| 27 | 0.0141 | 0.358 | 0.0142 | 0.361 | 0.0143 | 0.363 | 27 | 27 ½ | 0.0133 | 0.338 | 0.0134 | 0.340 | 0.0135 | 0.343 | 27 ½ |
| 28 | 0.0125 | 0.318 | 0.0126 | 0.320 | 0.0127 | 0.323 | 28 | 28 ½ | 0.0118 | 0.300 | 0.0119 | 0.302 | 0.0120 | 0.305 | 28 ½ |
| 29 | 0.0112 | 0.284 | 0.0113 | 0.287 | 0.0114 | 0.290 | 29 | 29 ½ | 0.0105 | 0.267 | 0.0106 | 0.269 | 0.0107 | 0.272 | 29 ½ |
| 30 | 0.0099 | 0.251 | 0.0100 | 0.254 | 0.0101 | 0.257 | 30 | 30 ½ | 0.0094 | 0.239 | 0.0095 | 0.241 | 0.0096 | 0.244 | 30 ½ |
| 31 | 0.0088 | 0.224 | 0.0089 | 0.226 | 0.0090 | 0.229 | 31 | 31 ½ | 0.0083 | 0.211 | 0.0084 | 0.213 | 0.0085 | 0.216 | 31 ½ |
| 32 | 0.0079 | 0.201 | 0.0080 | 0.203 | 0.0081 | 0.206 | 32 | 32 ½ | 0.0074 | 0.188 | 0.0075 | 0.191 | 0.0076 | 0.193 | 32 ½ |
| 33 | 0.0070 | 0.178 | 0.0071 | 0.180 | 0.0072 | 0.183 | 33 | 33 ½ | 0.0066 | 0.168 | 0.0067 | 0.170 | 0.0068 | 0.173 | 33 ½ |
| 34 | 0.0062 | 0.157 | 0.0063 | 0.160 | 0.0064 | 0.163 | 34 | 34 ½ | 0.0058 | 0.147 | 0.0059 | 0.150 | 0.0060 | 0.152 | 34 ½ |
| 35 | 0.0055 | 0.140 | 0.0056 | 0.142 | 0.0057 | 0.145 | 35 | 35 ½ | 0.0052 | 0.132 | 0.0053 | 0.135 | 0.0054 | 0.137 | 35 ½ |
| 36 | 0.0049 | 0.124 | 0.0050 | 0.127 | 0.0051 | 0.130 | 36 | 36 ½ | 0.0046 | 0.117 | 0.0047 | 0.119 | 0.0048 | 0.122 | 36 ½ |
| 37 | 0.0044 | 0.112 | 0.0045 | 0.114 | 0.0046 | 0.117 | 37 | 37 ½ | 0.0041 | 0.104 | 0.0042 | 0.107 | 0.0043 | 0.109 | 37 ½ |
| 38 | 0.0039 | 0.099 | 0.0040 | 0.102 | 0.0041 | 0.104 | 38 | 38 ½ | 0.0036 | 0.091 | 0.0037 | 0.094 | 0.0038 | 0.097 | 38 ½ |
| 39 | 0.0034 | 0.086 | 0.0035 | 0.089 | 0.0036 | 0.091 | 39 | 39 ½ | 0.0032 | 0.081 | 0.0033 | 0.084 | 0.0034 | 0.086 | 39 ½ |
| 40 | 0.0030 | 0.076 | 0.0031 | 0.079 | 0.0032 | 0.081 | 40 | 40 ½ | 0.0029 | 0.074 | 0.0030 | 0.076 | 0.0031 | 0.079 | 40 ½ |
| 41 | 0.0027 | 0.069 | 0.0028 | 0.071 | 0.0029 | 0.074 | 41 | 41 ½ | 0.0025 | 0.064 | 0.0026 | 0.066 | 0.0027 | 0.069 | 41 ½ |
| 42 | 0.0024 | 0.061 | 0.0025 | 0.064 | 0.0026 | 0.066 | 42 | 42 ½ | 0.0023 | 0.058 | 0.0024 | 0.061 | 0.0025 | 0.064 | 42 ½ |
| 43 | 0.0021 | 0.053 | 0.0022 | 0.056 | 0.0023 | 0.058 | 43 | 43 ½ | 0.0020 | 0.051 | 0.0021 | 0.053 | 0.0022 | 0.056 | 43 ½ |
| 44 | 0.0019 | 0.048 | 0.0020 | 0.051 | 0.0021 | 0.053 | 44 | 44 ½ | 0.0018 | 0.046 | 0.0019 | 0.048 | 0.0020 | 0.051 | 44 ½ |
| 45 | 0.00169 | 0.0429 | 0.00176 | 0.0447 | 0.00183 | 0.0465 | 45 | | | | | | | | |
| 46 | 0.00151 | 0.0384 | 0.00157 | 0.0399 | 0.00163 | 0.0414 | 46 | | | | | | | | |

Nominal AWG Size

The nominal AWG bare wire diameters, in inches, in this table are calculated using the basic mathematical characteristics of the American Wire Gauge:

$$X = (0.0050)(1.1229322)^{(36-N)}$$

Where: X = nominal bare wire diameter in inches to be determined

0.0050 = nominal base diameter in inches for 36 AWG

1.1229322 = $\sqrt[39]{92}$ = the ratio of the diameter of any AWG size to the (smaller) diameter of the next larger AWG size.

36 = the AWG number of the base diameter

N = the equivalent AWG number of X, where N is normally a whole number

For sizes 4/0 to 2/0 AWG, N is a negative number from -3 to -1.

ROUND, BARE WIRE

Copper & Aluminum

CROSS-SECTIONAL AREA

| Whole AWG Size | Minimum | | | | Nominal | | | | Maximum | | | | Whole AWG Size |
|----------------------|------------|----------|-----------|-----------|------------|----------|-----------|-----------|------------|----------|-----------|-----------|----------------------|
| | Circ. Mils | Sq. mm. | Sq. Mils. | Sq. In. | Circ. Mils | Sq. mm. | Sq. Mils. | Sq. In. | Circ. Mils | Sq. mm. | Sq. Mils. | Sq. In. | |
| 1 | 82025 | 41.5628 | 64422 | 6.442E-02 | 83694 | 42.4087 | 65734 | 6.573E-02 | 85381 | 43.26 | 67058 | 6.706E-02 | 1 |
| 2 | 65025 | 32.9487 | 51071 | 5.107E-02 | 66358 | 33.6241 | 52117 | 5.212E-02 | 67288 | 34.10 | 52848 | 5.285E-02 | 2 |
| 3 | 51574 | 26.1332 | 40507 | 4.051E-02 | 52624 | 26.6652 | 41331 | 4.133E-02 | 53361 | 27.04 | 41910 | 4.191E-02 | 3 |
| 4 | 40925 | 20.7372 | 32143 | 3.214E-02 | 41738 | 21.1493 | 32781 | 3.278E-02 | 42312 | 21.44 | 33232 | 3.323E-02 | 4 |
| 5 | 32436 | 16.4356 | 25475 | 2.548E-02 | 33088 | 16.7658 | 25987 | 2.599E-02 | 33562 | 17.01 | 26360 | 2.636E-02 | 5 |
| 6 | 25728 | 13.0367 | 20207 | 2.021E-02 | 26244 | 13.2981 | 20612 | 2.061E-02 | 26602 | 13.48 | 20893 | 2.089E-02 | 6 |
| 7 | 20420 | 10.3472 | 16038 | 1.604E-02 | 20822 | 10.5509 | 16354 | 1.635E-02 | 21112 | 10.70 | 16581 | 1.658E-02 | 7 |
| 8 | 16180 | 8.1985 | 12708 | 1.271E-02 | 16512 | 8.3669 | 12969 | 1.297E-02 | 16744 | 8.48 | 13151 | 1.315E-02 | 8 |
| 9 | 12837 | 6.5046 | 10082 | 1.008E-02 | 13087 | 6.6315 | 10279 | 1.028E-02 | 13294 | 6.74 | 10441 | 1.044E-02 | 9 |
| 10 | 10181 | 5.1587 | 7996 | 7.996E-03 | 10384 | 5.2615 | 8155 | 8.155E-03 | 10547 | 5.34 | 8284 | 8.284E-03 | 10 |
| 11 | 8064 | 4.0861 | 6333 | 6.333E-03 | 8226 | 4.1684 | 6461 | 6.461E-03 | 8354 | 4.23 | 6561 | 6.561E-03 | 11 |
| 12 | 6400 | 3.2429 | 5027 | 5.027E-03 | 6529 | 3.3081 | 5128 | 5.128E-03 | 6626 | 3.36 | 5204 | 5.204E-03 | 12 |
| 13 | 5084 | 2.5759 | 3993 | 3.993E-03 | 5184 | 2.6268 | 4072 | 4.072E-03 | 5271 | 2.67 | 4140 | 4.140E-03 | 13 |
| 14 | 4032 | 2.0432 | 3167 | 3.167E-03 | 4109 | 2.0820 | 3227 | 3.227E-03 | 4186 | 2.12 | 3288 | 3.288E-03 | 14 |
| 15 | 3192 | 1.6175 | 2507 | 2.507E-03 | 3260 | 1.6521 | 2561 | 2.561E-03 | 3329 | 1.69 | 2615 | 2.615E-03 | 15 |
| 16 | 2530 | 1.2820 | 1987 | 1.987E-03 | 2581 | 1.3076 | 2027 | 2.027E-03 | 2632 | 1.33 | 2067 | 2.067E-03 | 16 |
| 17 | 2007 | 1.0170 | 1576 | 1.576E-03 | 2052 | 1.0398 | 1612 | 1.612E-03 | 2098 | 1.06 | 1647 | 1.647E-03 | 17 |
| 18 | 1592 | 0.8067 | 1250 | 1.250E-03 | 1624 | 0.8229 | 1276 | 1.276E-03 | 1656 | 0.84 | 1301 | 1.301E-03 | 18 |
| 19 | 1260 | 0.6386 | 989.8 | 9.898E-04 | 1289 | 0.6531 | 1012 | 1.012E-03 | 1318 | 0.6677 | 1035 | 1.035E-03 | 19 |
| 20 | 1005 | 0.5092 | 789.2 | 7.892E-04 | 1024 | 0.5189 | 804.2 | 8.042E-04 | 1043 | 0.5286 | 819.4 | 8.194E-04 | 20 |
| 21 | 795.2 | 0.4030 | 624.6 | 6.246E-04 | 812.3 | 0.4116 | 637.9 | 6.379E-04 | 829.4 | 0.4203 | 651.4 | 6.514E-04 | 21 |
| 22 | 625.0 | 0.3167 | 490.9 | 4.909E-04 | 640.1 | 0.3243 | 502.7 | 5.027E-04 | 655.4 | 0.3321 | 514.7 | 5.147E-04 | 22 |
| 23 | 501.8 | 0.2542 | 394.1 | 3.941E-04 | 510.8 | 0.2588 | 401.2 | 4.012E-04 | 519.8 | 0.2634 | 408.3 | 4.083E-04 | 23 |
| 24 | 396.0 | 0.2007 | 311.0 | 3.110E-04 | 404.0 | 0.2047 | 317.3 | 3.173E-04 | 412.1 | 0.2088 | 323.7 | 3.237E-04 | 24 |
| 25 | 313.3 | 0.1587 | 246.1 | 2.461E-04 | 320.4 | 0.1624 | 251.7 | 2.517E-04 | 327.6 | 0.1660 | 257.3 | 2.573E-04 | 25 |
| 26 | 246.5 | 0.1249 | 193.6 | 1.936E-04 | 252.8 | 0.1281 | 198.6 | 1.986E-04 | 259.2 | 0.1313 | 203.6 | 2.036E-04 | 26 |
| 27 | 198.8 | 0.1007 | 156.1 | 1.561E-04 | 201.6 | 0.1022 | 158.4 | 1.584E-04 | 204.5 | 0.1036 | 160.6 | 1.606E-04 | 27 |
| 28 | 156.3 | 0.07917 | 122.7 | 1.227E-04 | 158.8 | 0.08045 | 124.7 | 1.247E-04 | 161.3 | 0.08173 | 126.7 | 1.267E-04 | 28 |
| 29 | 125.4 | 0.06356 | 98.52 | 9.852E-05 | 127.7 | 0.06470 | 100.3 | 1.003E-04 | 130.0 | 0.06585 | 102.1 | 1.021E-04 | 29 |
| 30 | 98.01 | 0.04966 | 76.98 | 7.698E-05 | 100.0 | 0.05067 | 78.54 | 7.854E-05 | 102.0 | 0.05169 | 80.12 | 8.012E-05 | 30 |
| 31 | 77.44 | 0.03924 | 60.82 | 6.082E-05 | 79.21 | 0.04014 | 62.21 | 6.221E-05 | 81.00 | 0.04104 | 63.62 | 6.362E-05 | 31 |
| 32 | 62.41 | 0.03162 | 49.02 | 4.902E-05 | 64.00 | 0.03243 | 50.27 | 5.027E-05 | 65.61 | 0.03325 | 51.53 | 5.153E-05 | 32 |
| 33 | 49.00 | 0.02483 | 38.48 | 3.848E-05 | 50.41 | 0.02554 | 39.59 | 3.959E-05 | 51.84 | 0.02627 | 40.72 | 4.072E-05 | 33 |
| 34 | 38.44 | 0.01948 | 30.19 | 3.019E-05 | 39.69 | 0.02011 | 31.17 | 3.117E-05 | 40.96 | 0.02075 | 32.17 | 3.217E-05 | 34 |
| 35 | 30.25 | 0.01533 | 23.76 | 2.376E-05 | 31.36 | 0.01589 | 24.63 | 2.463E-05 | 32.49 | 0.01646 | 25.52 | 2.552E-05 | 35 |
| 36 | 24.01 | 0.01217 | 18.86 | 1.886E-05 | 25.00 | 0.01267 | 19.64 | 1.964E-05 | 26.01 | 0.01318 | 20.43 | 2.043E-05 | 36 |
| 37 | 19.36 | 0.009810 | 15.21 | 1.521E-05 | 20.25 | 0.01026 | 15.90 | 1.590E-05 | 21.16 | 0.01072 | 16.62 | 1.662E-05 | 37 |
| 38 | 15.21 | 0.007707 | 11.95 | 1.195E-05 | 16.00 | 0.008107 | 12.57 | 1.257E-05 | 16.81 | 0.008518 | 13.20 | 1.320E-05 | 38 |
| 39 | 11.56 | 0.005858 | 9.079 | 9.079E-06 | 12.25 | 0.006207 | 9.62 | 9.621E-06 | 12.96 | 0.006567 | 10.18 | 1.018E-05 | 39 |
| 40 | 9.000 | 0.004560 | 7.069 | 7.069E-06 | 9.610 | 0.004869 | 7.548 | 7.548E-06 | 10.24 | 0.005189 | 8.042 | 8.042E-06 | 40 |
| 41 | 7.290 | 0.003694 | 5.726 | 5.726E-06 | 7.840 | 0.003973 | 6.158 | 6.158E-06 | 8.410 | 0.004261 | 6.605 | 6.605E-06 | 41 |
| 42 | 5.760 | 0.002919 | 4.524 | 4.524E-06 | 6.250 | 0.003167 | 4.909 | 4.909E-06 | 6.760 | 0.003425 | 5.309 | 5.309E-06 | 42 |
| 43 | 4.410 | 0.002235 | 3.464 | 3.464E-06 | 4.840 | 0.002452 | 3.801 | 3.801E-06 | 5.290 | 0.002680 | 4.155 | 4.155E-06 | 43 |
| 44 | 3.610 | 0.001829 | 2.835 | 2.835E-06 | 4.000 | 0.002027 | 3.142 | 3.142E-06 | 4.410 | 0.002235 | 3.464 | 3.464E-06 | 44 |
| 45 | 2.856 | 0.001447 | 2.243 | 2.243E-06 | 3.098 | 0.001570 | 2.433 | 2.433E-06 | 3.3489 | 0.001697 | 2.630 | 2.630E-06 | 45 |
| 46 | 2.280 | 0.001155 | 1.791 | 1.791E-06 | 2.465 | 0.001249 | 1.936 | 1.936E-06 | 2.6569 | 0.001346 | 2.087 | 2.087E-06 | 46 |

ROUND, BARE WIRE

Copper & Aluminum

CROSS-SECTIONAL AREAS

| Half AWG Size | Minimum | | | | Nominal | | | | Maximum | | | | Half AWG Size |
|---------------------|------------|----------|-----------|-----------|------------|----------|-----------|-----------|------------|----------|-----------|-----------|---------------------|
| | Circ. Mils | Sq. mm. | Sq. Mils. | Sq. In. | Circ. Mils | Sq. mm. | Sq. Mils. | Sq. In. | Circ. Mils | Sq. mm. | Sq. Mils. | Sq. In. | |
| 1 ½ | 73062 | 37.021 | 57383 | 5.738E-02 | 74529 | 37.764 | 58535 | 5.854E-02 | 75570 | 38.292 | 59353 | 5.935E-02 | 1 ½ |
| 2 ½ | 57936 | 29.357 | 45503 | 4.550E-02 | 59098 | 29.945 | 46415 | 4.642E-02 | 59927 | 30.366 | 47067 | 4.707E-02 | 2 ½ |
| 3 ½ | 45924 | 23.270 | 36069 | 3.607E-02 | 46872 | 23.751 | 36813 | 3.681E-02 | 47524 | 24.081 | 37325 | 3.733E-02 | 3 ½ |
| 4 ½ | 36443 | 18.466 | 28622 | 2.862E-02 | 37172 | 18.835 | 29195 | 2.919E-02 | 37675 | 19.090 | 29590 | 2.959E-02 | 4 ½ |
| 5 ½ | 28900 | 14.644 | 22698 | 2.270E-02 | 29481 | 14.938 | 23154 | 2.315E-02 | 29894 | 15.148 | 23479 | 2.348E-02 | 5 ½ |
| 6 ½ | 22922 | 11.615 | 18003 | 1.800E-02 | 23378 | 11.846 | 18361 | 1.836E-02 | 23716 | 12.017 | 18627 | 1.863E-02 | 6 ½ |
| 7 ½ | 18171 | 9.207 | 14272 | 1.427E-02 | 18550 | 9.400 | 14570 | 1.457E-02 | 18824 | 9.538 | 14784 | 1.478E-02 | 7 ½ |
| 8 ½ | 14424 | 7.309 | 11329 | 1.133E-02 | 14714 | 7.456 | 11556 | 1.156E-02 | 14908 | 7.554 | 11709 | 1.171E-02 | 8 ½ |
| 9 ½ | 11428 | 5.790 | 8975 | 8.975E-03 | 11664 | 5.910 | 9161 | 9.161E-03 | 11859 | 6.009 | 9314 | 9.314E-03 | 9 ½ |
| 10 ½ | 9063 | 4.592 | 7118 | 7.118E-03 | 9254 | 4.689 | 7268 | 7.268E-03 | 9409 | 4.768 | 7390 | 7.390E-03 | 10 ½ |
| 11 ½ | 7174 | 3.635 | 5635 | 5.635E-03 | 7327 | 3.713 | 5755 | 5.755E-03 | 7448 | 3.774 | 5849 | 5.849E-03 | 11 ½ |
| 12 ½ | 5700 | 2.888 | 4477 | 4.477E-03 | 5822 | 2.950 | 4572 | 4.572E-03 | 5914 | 2.996 | 4645 | 4.645E-03 | 12 ½ |
| 13 ½ | 4516 | 2.288 | 3547 | 3.547E-03 | 4610 | 2.336 | 3621 | 3.621E-03 | 4679 | 2.371 | 3675 | 3.675E-03 | 13 ½ |
| 14 ½ | 3588 | 1.818 | 2818 | 2.818E-03 | 3660 | 1.855 | 2875 | 2.875E-03 | 3733 | 1.892 | 2932 | 2.932E-03 | 14 ½ |
| 15 ½ | 2852 | 1.445 | 2240 | 2.240E-03 | 2905 | 1.472 | 2282 | 2.282E-03 | 2959 | 1.500 | 2324 | 2.324E-03 | 15 ½ |
| 16 ½ | 2256 | 1.143 | 1772 | 1.772E-03 | 2304 | 1.167 | 1810 | 1.810E-03 | 2352 | 1.192 | 1847 | 1.847E-03 | 16 ½ |
| 17 ½ | 1789 | 0.907 | 1405 | 1.405E-03 | 1823 | 0.924 | 1432 | 1.432E-03 | 1858 | 0.941 | 1459 | 1.459E-03 | 17 ½ |
| 18 ½ | 1414 | 0.7164 | 1110 | 1.110E-03 | 1444 | 0.7317 | 1134 | 1.134E-03 | 1475 | 0.7472 | 1158 | 1.158E-03 | 18 ½ |
| 19 ½ | 1129 | 0.5721 | 886.7 | 8.867E-04 | 1149 | 0.5823 | 903 | 9.026E-04 | 1170 | 0.5927 | 919 | 9.186E-04 | 19 ½ |
| 20 ½ | 894 | 0.4530 | 702.2 | 7.022E-04 | 912.0 | 0.4621 | 716.3 | 7.163E-04 | 930.3 | 0.4714 | 730.6 | 7.306E-04 | 20 ½ |
| 21 ½ | 707.6 | 0.3585 | 555.7 | 5.557E-04 | 723.6 | 0.3667 | 568.3 | 5.683E-04 | 739.8 | 0.3749 | 581.1 | 5.811E-04 | 21 ½ |
| 22 ½ | 561.7 | 0.2846 | 441.2 | 4.412E-04 | 571.2 | 0.2894 | 448.6 | 4.486E-04 | 580.8 | 0.2943 | 456.2 | 4.562E-04 | 22 ½ |
| 23 ½ | 445.2 | 0.2256 | 349.7 | 3.497E-04 | 453.7 | 0.2299 | 356.3 | 3.563E-04 | 462.3 | 0.2342 | 363.1 | 3.631E-04 | 23 ½ |
| 24 ½ | 353.4 | 0.1791 | 277.6 | 2.776E-04 | 361.0 | 0.1829 | 283.5 | 2.835E-04 | 368.6 | 0.1868 | 289.5 | 2.895E-04 | 24 ½ |
| 25 ½ | 278.9 | 0.1413 | 219.0 | 2.190E-04 | 285.6 | 0.1447 | 224.3 | 2.243E-04 | 292.4 | 0.1482 | 229.7 | 2.297E-04 | 25 ½ |
| 26 ½ | 222.0 | 0.1125 | 174.4 | 1.744E-04 | 225.0 | 0.1140 | 176.7 | 1.767E-04 | 231.0 | 0.1171 | 181.5 | 1.815E-04 | 26 ½ |
| 27 ½ | 176.9 | 0.0896 | 138.9 | 1.389E-04 | 179.6 | 0.0910 | 141 | 1.410E-04 | 182.3 | 0.0923 | 143.1 | 1.431E-04 | 27 ½ |
| 28 ½ | 139.2 | 0.07055 | 109.4 | 1.094E-04 | 141.6 | 0.07176 | 111.2 | 1.112E-04 | 144.0 | 0.07297 | 113.1 | 1.131E-04 | 28 ½ |
| 29 ½ | 110.3 | 0.05586 | 86.59 | 8.659E-05 | 112.4 | 0.05693 | 88.25 | 8.825E-05 | 114.5 | 0.05801 | 89.92 | 8.992E-05 | 29 ½ |
| 30 ½ | 88.36 | 0.04477 | 69.40 | 6.940E-05 | 90.25 | 0.04573 | 70.88 | 7.088E-05 | 92.16 | 0.04670 | 72.38 | 7.238E-05 | 30 ½ |
| 31 ½ | 68.89 | 0.03491 | 54.11 | 5.411E-05 | 70.56 | 0.03575 | 55.42 | 5.542E-05 | 72.25 | 0.03661 | 56.75 | 5.675E-05 | 31 ½ |
| 32 ½ | 54.76 | 0.02775 | 43.01 | 4.301E-05 | 56.25 | 0.02850 | 44.18 | 4.418E-05 | 57.76 | 0.02927 | 45.36 | 4.536E-05 | 32 ½ |
| 33 ½ | 43.56 | 0.02207 | 34.21 | 3.421E-05 | 44.89 | 0.02275 | 35.26 | 3.526E-05 | 46.24 | 0.02343 | 36.32 | 3.632E-05 | 33 ½ |
| 34 ½ | 33.64 | 0.01705 | 26.42 | 2.642E-05 | 34.81 | 0.01764 | 27.34 | 2.734E-05 | 36.00 | 0.01824 | 28.27 | 2.827E-05 | 34 ½ |
| 35 ½ | 27.04 | 0.01370 | 21.24 | 2.124E-05 | 28.09 | 0.01423 | 22.06 | 2.206E-05 | 29.16 | 0.01478 | 22.90 | 2.290E-05 | 35 ½ |
| 36 ½ | 21.16 | 0.01072 | 16.62 | 1.662E-05 | 22.09 | 0.01119 | 17.35 | 1.735E-05 | 23.04 | 0.01167 | 18.10 | 1.810E-05 | 36 ½ |
| 37 ½ | 16.81 | 0.008518 | 13.20 | 1.320E-05 | 17.64 | 0.008938 | 13.85 | 1.385E-05 | 18.49 | 0.009369 | 14.52 | 1.452E-05 | 37 ½ |
| 38 ½ | 12.96 | 0.006567 | 10.18 | 1.018E-05 | 13.69 | 0.006937 | 10.75 | 1.075E-05 | 14.44 | 0.007317 | 11.34 | 1.134E-05 | 38 ½ |
| 39 ½ | 10.24 | 0.005189 | 8.042 | 8.042E-06 | 10.89 | 0.005518 | 8.553 | 8.553E-06 | 11.56 | 0.005858 | 9.079 | 9.079E-06 | 39 ½ |
| 40 ½ | 8.410 | 0.004261 | 6.605 | 6.605E-06 | 9.000 | 0.00456 | 7.069 | 7.069E-06 | 9.610 | 0.004869 | 7.548 | 7.548E-06 | 40 ½ |
| 41 ½ | 6.250 | 0.003167 | 4.909 | 4.909E-06 | 6.760 | 0.003425 | 5.309 | 5.309E-06 | 7.290 | 0.003694 | 5.726 | 5.726E-06 | 41 ½ |
| 42 ½ | 5.290 | 0.002680 | 4.155 | 4.155E-06 | 5.760 | 0.002919 | 4.524 | 4.524E-06 | 6.250 | 0.003167 | 4.909 | 4.909E-06 | 42 ½ |
| 43 ½ | 4.000 | 0.002027 | 3.142 | 3.142E-06 | 4.410 | 0.002235 | 3.464 | 3.464E-06 | 4.840 | 0.002452 | 3.801 | 3.801E-06 | 43 ½ |
| 44 ½ | 3.240 | 0.001642 | 2.545 | 2.545E-06 | 3.610 | 0.001829 | 2.835 | 2.835E-06 | 4.000 | 0.002027 | 3.142 | 3.142E-06 | 44 ½ |

ROUND, BARE WIRE

Copper & Aluminum

WEIGHTS

| Whole AWG Size | COPPER | | | | | | ALUMINUM | | | | | | Whole AWG Size |
|----------------------|----------------------|-------------------|----------------------|-------------------|----------------------|-------------------|----------------------|-------------------|----------------------|-------------------|----------------------|-------------------|----------------------|
| | Minimum | | Nominal | | Maximum | | Minimum | | Nominal | | Maximum | | |
| | Lbs. Per 1000 ft. | Kg per Kilomtr | Lbs. Per 1000 ft. | Kg per Kilomtr | Lbs. Per 1000 ft. | Kg per Kilomtr | Lbs. Per 1000 ft. | Kg per Kilomtr | Lbs. Per 1000 ft. | Kg per Kilomtr | Lbs. Per 1000 ft. | Kg per Kilomtr | |
| 4/0 | 600.5 | 894.4 | 640.5 | 954.0 | 653.4 | 973.2 | 182.6 | 271.94 | 194.74 | 290.06 | 198.65 | 295.89 | 4/0 |
| 3/0 | 497.7 | 741.4 | 507.8 | 756.4 | 518.1 | 771.7 | 151.3 | 225.40 | 154.40 | 229.98 | 157.51 | 234.61 | 3/0 |
| 2/0 | 394.9 | 588.2 | 402.8 | 600.0 | 410.8 | 611.9 | 120.1 | 178.84 | 122.47 | 182.42 | 124.90 | 186.04 | 2/0 |
| 1/0 | 304.2 | 453.1 | 319.5 | 475.9 | 325.9 | 485.4 | 92.48 | 137.75 | 97.15 | 144.70 | 99.07 | 147.56 | 1/0 |
| 1 | 248.3 | 369.8 | 253.3 | 377.4 | 258.4 | 385.0 | 75.49 | 112.44 | 77.02 | 114.73 | 78.58 | 117.04 | 1 |
| 2 | 196.8 | 293.2 | 200.9 | 299.2 | 203.7 | 303.4 | 59.84 | 89.14 | 61.07 | 90.96 | 61.93 | 92.24 | 2 |
| 3 | 156.1 | 232.5 | 159.3 | 237.3 | 161.5 | 240.6 | 47.46 | 70.70 | 48.43 | 72.14 | 49.11 | 73.15 | 3 |
| 4 | 123.9 | 184.5 | 126.3 | 188.2 | 128.1 | 190.8 | 37.66 | 56.10 | 38.41 | 57.21 | 38.94 | 58.00 | 4 |
| 5 | 98.18 | 146.2 | 100.2 | 149.2 | 101.6 | 151.3 | 29.85 | 44.46 | 30.45 | 45.36 | 30.89 | 46.01 | 5 |
| 6 | 77.88 | 116.0 | 79.44 | 118.3 | 80.52 | 119.9 | 23.68 | 35.27 | 24.15 | 35.97 | 24.48 | 36.47 | 6 |
| 7 | 61.81 | 92.07 | 63.03 | 93.88 | 63.91 | 95.19 | 18.79 | 27.99 | 19.16 | 28.54 | 19.43 | 28.94 | 7 |
| 8 | 48.98 | 72.95 | 49.98 | 74.45 | 50.69 | 75.50 | 14.89 | 22.18 | 15.20 | 22.63 | 15.41 | 22.95 | 8 |
| 9 | 38.86 | 57.88 | 39.62 | 59.01 | 40.24 | 59.94 | 11.81 | 17.60 | 12.04 | 17.94 | 12.23 | 18.22 | 9 |
| 10 | 30.82 | 45.90 | 31.43 | 46.82 | 31.93 | 47.55 | 9.369 | 13.96 | 9.556 | 14.23 | 9.707 | 14.46 | 10 |
| 11 | 24.41 | 36.36 | 24.90 | 37.09 | 25.29 | 37.67 | 7.421 | 11.05 | 7.571 | 11.28 | 7.688 | 11.45 | 11 |
| 12 | 19.37 | 28.86 | 19.76 | 29.44 | 20.06 | 29.87 | 5.890 | 8.773 | 6.008 | 8.949 | 6.098 | 9.083 | 12 |
| 13 | 15.39 | 22.92 | 15.69 | 23.37 | 15.95 | 23.76 | 4.679 | 6.969 | 4.771 | 7.106 | 4.851 | 7.225 | 13 |
| 14 | 12.21 | 18.18 | 12.44 | 18.53 | 12.67 | 18.87 | 3.711 | 5.527 | 3.781 | 5.632 | 3.852 | 5.738 | 14 |
| 15 | 9.663 | 14.39 | 9.869 | 14.7 | 10.08 | 15.01 | 2.938 | 4.376 | 3.001 | 4.469 | 3.064 | 4.564 | 15 |
| 16 | 7.659 | 11.41 | 7.812 | 11.64 | 7.966 | 11.87 | 2.328 | 3.468 | 2.375 | 3.538 | 2.422 | 3.607 | 16 |
| 17 | 6.075 | 9.049 | 6.212 | 9.252 | 6.350 | 9.458 | 1.847 | 2.751 | 1.889 | 2.813 | 1.930 | 2.875 | 17 |
| 18 | 4.819 | 7.178 | 4.916 | 7.323 | 5.014 | 7.469 | 1.465 | 2.182 | 1.495 | 2.226 | 1.524 | 2.271 | 18 |
| 19 | 3.815 | 5.682 | 3.901 | 5.811 | 3.989 | 5.941 | 1.160 | 1.728 | 1.186 | 1.767 | 1.213 | 1.806 | 19 |
| 20 | 3.042 | 4.531 | 3.100 | 4.617 | 3.158 | 4.704 | 0.9248 | 1.377 | 0.9424 | 1.404 | 0.9601 | 1.430 | 20 |
| 21 | 2.407 | 3.586 | 2.459 | 3.662 | 2.511 | 3.740 | 0.7319 | 1.090 | 0.7475 | 1.113 | 0.7633 | 1.137 | 21 |
| 22 | 1.892 | 2.818 | 1.938 | 2.886 | 1.984 | 2.955 | 0.5752 | 0.8567 | 0.5891 | 0.8774 | 0.6031 | 0.8984 | 22 |
| 23 | 1.519 | 2.262 | 1.546 | 2.303 | 1.574 | 2.344 | 0.4618 | 0.6878 | 0.4701 | 0.7001 | 0.4784 | 0.7126 | 23 |
| 24 | 1.199 | 1.785 | 1.223 | 1.822 | 1.247 | 1.858 | 0.3644 | 0.5428 | 0.3718 | 0.5538 | 0.3792 | 0.5649 | 24 |
| 25 | 0.9483 | 1.413 | 0.9699 | 1.445 | 0.9917 | 1.477 | 0.2883 | 0.4295 | 0.2949 | 0.4392 | 0.3015 | 0.4491 | 25 |
| 26 | 0.7461 | 1.111 | 0.7653 | 1.14 | 0.7846 | 1.169 | 0.2268 | 0.3379 | 0.2327 | 0.3465 | 0.2386 | 0.3553 | 26 |
| 27 | 0.6018 | 0.8964 | 0.6104 | 0.9091 | 0.6190 | 0.9220 | 0.1830 | 0.2725 | 0.1856 | 0.2764 | 0.1882 | 0.2803 | 27 |
| 28 | 0.473 | 0.7045 | 0.4806 | 0.7158 | 0.4882 | 0.7272 | 0.1438 | 0.2142 | 0.1461 | 0.2176 | 0.1484 | 0.2211 | 28 |
| 29 | 0.3797 | 0.5656 | 0.3865 | 0.5757 | 0.3934 | 0.5860 | 0.1154 | 0.1720 | 0.1175 | 0.1750 | 0.1196 | 0.1781 | 29 |
| 30 | 0.2967 | 0.4419 | 0.3027 | 0.4509 | 0.3088 | 0.4599 | 0.0902 | 0.1344 | 0.0920 | 0.1371 | 0.0939 | 0.1398 | 30 |
| 31 | 0.2344 | 0.3492 | 0.2398 | 0.3571 | 0.2452 | 0.3652 | *** | *** | *** | *** | *** | *** | 31 |
| 32 | 0.1889 | 0.2814 | 0.1937 | 0.2886 | 0.1986 | 0.2958 | *** | *** | *** | *** | *** | *** | 32 |
| 33 | 0.1483 | 0.2209 | 0.1526 | 0.2273 | 0.1569 | 0.2337 | *** | *** | *** | *** | *** | *** | 33 |
| 34 | 0.1164 | 0.1733 | 0.1201 | 0.179 | 0.1240 | 0.1847 | *** | *** | *** | *** | *** | *** | 34 |
| 35 | 0.09157 | 0.1364 | 0.09493 | 0.1414 | 0.09835 | 0.1465 | *** | *** | *** | *** | *** | *** | 35 |
| 36 | 0.07268 | 0.1083 | 0.07568 | 0.1127 | 0.07873 | 0.1173 | *** | *** | *** | *** | *** | *** | 36 |
| 37 | 0.0586 | 0.08729 | 0.06130 | 0.0913 | 0.06405 | 0.0954 | *** | *** | *** | *** | *** | *** | 37 |
| 38 | 0.04604 | 0.06858 | 0.04843 | 0.07214 | 0.05088 | 0.07579 | *** | *** | *** | *** | *** | *** | 38 |
| 39 | 0.03499 | 0.05212 | 0.03708 | 0.05523 | 0.03923 | 0.05843 | *** | *** | *** | *** | *** | *** | 39 |
| 40 | 0.02724 | 0.04058 | 0.02909 | 0.04333 | 0.03100 | 0.04617 | *** | *** | *** | *** | *** | *** | 40 |
| 41 | 0.02207 | 0.03287 | 0.02373 | 0.03535 | 0.02546 | 0.03792 | *** | *** | *** | *** | *** | *** | 41 |
| 42 | 0.01744 | 0.02597 | 0.01892 | 0.02818 | 0.02046 | 0.03048 | *** | *** | *** | *** | *** | *** | 42 |
| 43 | 0.01335 | 0.01988 | 0.01465 | 0.02182 | 0.01601 | 0.02385 | *** | *** | *** | *** | *** | *** | 43 |
| 44 | 0.01093 | 0.01628 | 0.01211 | 0.01803 | 0.01335 | 0.01988 | *** | *** | *** | *** | *** | *** | 44 |
| 45 | 0.00865 | 0.01288 | 0.00938 | 0.01397 | 0.01014 | 0.01510 | *** | *** | *** | *** | *** | *** | 45 |
| 46 | 0.00690 | 0.01028 | 0.00746 | 0.01111 | 0.00804 | 0.01198 | *** | *** | *** | *** | *** | *** | 46 |

ROUND, BARE WIRE

Copper & Aluminum

WEIGHTS

| Half AWG Size | COPPER | | | | | | ALUMINUM | | | | | | Half AWG Size |
|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|---------------------|
| | Minimum | | Nominal | | Maximum | | Minimum | | Nominal | | Maximum | | |
| | Lbs. Per 1000 Ft. | Kg per Kilometer | Lbs. Per 1000 Ft. | Kg per Kilometer | Lbs. Per 1000 Ft. | Kg per Kilometer | Lbs. Per 1000 Ft. | Kg per Kilometer | Lbs. Per 1000 Ft. | Kg per Kilometer | Lbs. Per 1000 Ft. | Kg per Kilometer | |
| 1 ½ | 221.16 | 329.4 | 225.6 | 336.029 | 228.750 | 340.723 | 67.239 | 100.152 | 68.589 | 102.163 | 69.547 | 103.590 | 1 ½ |
| 2 ½ | 175.37 | 261.2 | 178.9 | 266.454 | 181.399 | 270.193 | 53.319 | 79.418 | 54.388 | 81.010 | 55.151 | 82.147 | 2 ½ |
| 3 ½ | 139.01 | 207.1 | 141.9 | 211.333 | 143.855 | 214.272 | 42.264 | 62.953 | 43.137 | 64.252 | 43.736 | 65.145 | 3 ½ |
| 4 ½ | 110.31 | 164.3 | 112.5 | 167.597 | 114.042 | 169.865 | 33.538 | 49.955 | 34.209 | 50.955 | 34.672 | 51.644 | 4 ½ |
| 5 ½ | 87.48 | 130.3 | 89.24 | 132.921 | 90.490 | 134.785 | 26.597 | 39.616 | 27.131 | 40.412 | 27.512 | 40.979 | 5 ½ |
| 6 ½ | 69.38 | 103.3 | 70.77 | 105.406 | 71.788 | 106.928 | 21.095 | 31.421 | 21.515 | 32.047 | 21.826 | 32.510 | 6 ½ |
| 7 ½ | 55.00 | 81.93 | 56.15 | 83.639 | 56.980 | 84.871 | 16.723 | 24.909 | 17.072 | 25.429 | 17.324 | 25.803 | 7 ½ |
| 8 ½ | 43.66 | 65.03 | 44.54 | 66.340 | 45.128 | 67.218 | 13.274 | 19.772 | 13.541 | 20.169 | 13.720 | 20.436 | 8 ½ |
| 9 ½ | 34.59 | 51.52 | 35.31 | 52.590 | 35.898 | 53.470 | 10.517 | 15.665 | 10.734 | 15.989 | 10.914 | 16.256 | 9 ½ |
| 10 ½ | 27.43 | 40.86 | 28.01 | 41.726 | 28.481 | 42.422 | 8.341 | 12.423 | 8.517 | 12.686 | 8.659 | 12.898 | 10 ½ |
| 11 ½ | 21.72 | 32.35 | 22.18 | 33.037 | 22.544 | 33.579 | 6.602 | 9.834 | 6.743 | 10.044 | 6.854 | 10.209 | 11 ½ |
| 12 ½ | 17.25 | 25.70 | 17.62 | 26.248 | 17.900 | 26.663 | 5.246 | 7.814 | 5.358 | 7.980 | 5.442 | 8.106 | 12 ½ |
| 13 ½ | 13.67 | 20.36 | 13.96 | 20.787 | 14.162 | 21.094 | 4.156 | 6.190 | 4.243 | 6.320 | 4.306 | 6.413 | 13 ½ |
| 14 ½ | 10.86 | 16.18 | 11.08 | 16.503 | 11.300 | 16.832 | 3.302 | 4.918 | 3.369 | 5.017 | 3.436 | 5.117 | 14 ½ |
| 15 ½ | 8.632 | 12.86 | 8.794 | 13.099 | 8.958 | 13.343 | 2.624 | 3.909 | 2.674 | 3.982 | 2.723 | 4.057 | 15 ½ |
| 16 ½ | 6.830 | 10.17 | 6.974 | 10.388 | 7.120 | 10.606 | 2.076 | 3.093 | 2.120 | 3.158 | 2.165 | 3.224 | 16 ½ |
| 17 ½ | 5.416 | 8.067 | 5.519 | 8.221 | 5.623 | 8.375 | 1.647 | 2.453 | 1.678 | 2.499 | 1.710 | 2.546 | 17 ½ |
| 18 ½ | 4.279 | 6.374 | 4.371 | 6.511 | 4.463 | 6.648 | 1.301 | 1.938 | 1.329 | 1.979 | 1.357 | 2.021 | 18 ½ |
| 19 ½ | 3.417 | 5.090 | 3.479 | 5.181 | 3.541 | 5.274 | 1.039 | 1.548 | 1.058 | 1.575 | 1.076 | 1.603 | 19 ½ |
| 20 ½ | 2.706 | 4.031 | 2.761 | 4.112 | 2.816 | 4.194 | 0.8228 | 1.225 | 0.8394 | 1.250 | 0.8561 | 1.275 | 20 ½ |
| 21 ½ | 2.142 | 3.190 | 2.190 | 3.263 | 2.239 | 3.336 | 0.6512 | 0.9699 | 0.6659 | 0.9919 | 0.6809 | 1.014 | 21 ½ |
| 22 ½ | 1.700 | 2.532 | 1.729 | 2.575 | 1.758 | 2.619 | 0.5169 | 0.7700 | 0.5257 | 0.7830 | 0.5345 | 0.7962 | 22 ½ |
| 23 ½ | 1.348 | 2.007 | 1.373 | 2.046 | 1.399 | 2.084 | 0.4097 | 0.6103 | 0.4175 | 0.6219 | 0.4254 | 0.6336 | 23 ½ |
| 24 ½ | 1.070 | 1.594 | 1.093 | 1.628 | 1.116 | 1.662 | 0.3253 | 0.4845 | 0.3322 | 0.4949 | 0.3393 | 0.5053 | 24 ½ |
| 25 ½ | 0.8442 | 1.257 | 0.8645 | 1.288 | 0.8851 | 1.318 | 0.2567 | 0.3823 | 0.2628 | 0.3915 | 0.2691 | 0.4008 | 25 ½ |
| 26 ½ | 0.6720 | 1.001 | 0.6811 | 1.0145 | 0.6994 | 1.042 | 0.2043 | 0.3043 | 0.2071 | 0.3084 | 0.2126 | 0.3167 | 26 ½ |
| 27 ½ | 0.5354 | 0.7975 | 0.5435 | 0.8096 | 0.5517 | 0.8217 | 0.1628 | 0.2425 | 0.1652 | 0.2461 | 0.1677 | 0.2498 | 27 ½ |
| 28 ½ | 0.4215 | 0.6278 | 0.4287 | 0.6385 | 0.4359 | 0.6493 | 0.1281 | 0.1909 | 0.1303 | 0.1941 | 0.1325 | 0.1974 | 28 ½ |
| 29 ½ | 0.3337 | 0.4971 | 0.3401 | 0.5066 | 0.3466 | 0.5162 | 0.1015 | 0.1511 | 0.1034 | 0.1540 | 0.1054 | 0.1569 | 29 ½ |
| 30 ½ | 0.2675 | 0.3984 | 0.2732 | 0.4069 | 0.2790 | 0.4155 | *** | *** | *** | *** | *** | *** | 30 ½ |
| 31 ½ | 0.2085 | 0.3106 | 0.2136 | 0.3181 | 0.2187 | 0.3258 | *** | *** | *** | *** | *** | *** | 31 ½ |
| 32 ½ | 0.1658 | 0.2469 | 0.1703 | 0.2536 | 0.1748 | 0.2604 | *** | *** | *** | *** | *** | *** | 32 ½ |
| 33 ½ | 0.1319 | 0.1964 | 0.1359 | 0.2024 | 0.1400 | 0.2085 | *** | *** | *** | *** | *** | *** | 33 ½ |
| 34 ½ | 0.1018 | 0.1517 | 0.1054 | 0.1569 | 0.1090 | 0.1623 | *** | *** | *** | *** | *** | *** | 34 ½ |
| 35 ½ | 0.08185 | 0.1219 | 0.08503 | 0.1266 | 0.08827 | 0.1315 | *** | *** | *** | *** | *** | *** | 35 ½ |
| 36 ½ | 0.06405 | 0.09540 | 0.06687 | 0.09960 | 0.06974 | 0.1039 | *** | *** | *** | *** | *** | *** | 36 ½ |
| 37 ½ | 0.05088 | 0.07579 | 0.05340 | 0.07953 | 0.05597 | 0.08337 | *** | *** | *** | *** | *** | *** | 37 ½ |
| 38 ½ | 0.03923 | 0.05843 | 0.04144 | 0.06172 | 0.04371 | 0.06511 | *** | *** | *** | *** | *** | *** | 38 ½ |
| 39 ½ | 0.03100 | 0.04617 | 0.03296 | 0.04910 | 0.03499 | 0.05212 | *** | *** | *** | *** | *** | *** | 39 ½ |
| 40 ½ | 0.02546 | 0.03792 | 0.02724 | 0.04058 | 0.02909 | 0.04333 | *** | *** | *** | *** | *** | *** | 40 ½ |
| 41 ½ | 0.01892 | 0.02818 | 0.02046 | 0.03048 | 0.02207 | 0.03287 | *** | *** | *** | *** | *** | *** | 41 ½ |
| 42 ½ | 0.01601 | 0.02385 | 0.01744 | 0.02597 | 0.01892 | 0.02818 | *** | *** | *** | *** | *** | *** | 42 ½ |
| 43 ½ | 0.01211 | 0.01803 | 0.01335 | 0.01988 | 0.01465 | 0.02182 | *** | *** | *** | *** | *** | *** | 43 ½ |
| 44 ½ | 0.00981 | 0.01461 | 0.01093 | 0.01628 | 0.01211 | 0.01803 | *** | *** | *** | *** | *** | *** | 44 ½ |

ROUND, BARE WIRE

Copper

RESISTANCE

| Whole AWG Size | BARE CONDUCTOR RESISTANCE | | | | | | Nominal Feet per Ohm | Nominal Meters per Ohm | Whole AWG Size |
|----------------------|---------------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------------|------------------------------|----------------------|
| | Minimum* | | Nominal | | Maximum | | | | |
| | Ohms per 1000 Ft. | Ohms per Kilomtr | Ohms per 1000 Ft. | Ohms per Kilomtr | Ohms per 1000 Ft. | Ohms per Kilomtr | | | |
| 1 | 0.1196 | 0.3922 | 0.1239 | 0.4065 | 0.1264 | 0.4148 | 8070 | 2460 | 1 |
| 2 | 0.1517 | 0.4977 | 0.1563 | 0.5128 | 0.1595 | 0.5233 | 6398 | 1950 | 2 |
| 3 | 0.1913 | 0.6276 | 0.1971 | 0.6466 | 0.2011 | 0.6597 | 5074 | 1547 | 3 |
| 4 | 0.2412 | 0.7915 | 0.2485 | 0.8152 | 0.2534 | 0.8314 | 4025 | 1227 | 4 |
| 5 | 0.3041 | 0.9978 | 0.3134 | 1.028 | 0.3197 | 1.049 | 3190 | 972.4 | 5 |
| 6 | 0.3837 | 1.259 | 0.3952 | 1.297 | 0.4031 | 1.322 | 2531 | 771.3 | 6 |
| 7 | 0.4835 | 1.586 | 0.4981 | 1.634 | 0.5079 | 1.666 | 2008 | 612.0 | 7 |
| 8 | 0.6096 | 2.000 | 0.6281 | 2.061 | 0.6410 | 2.103 | 1592 | 485.3 | 8 |
| 9 | 0.7678 | 2.519 | 0.7924 | 2.600 | 0.8079 | 2.651 | 1262 | 384.6 | 9 |
| 10 | 0.9678 | 3.175 | 0.9988 | 3.277 | 1.019 | 3.342 | 1001 | 305.2 | 10 |
| 11 | 1.222 | 4.009 | 1.261 | 4.136 | 1.286 | 4.219 | 793.2 | 241.8 | 11 |
| 12 | 1.541 | 5.054 | 1.589 | 5.212 | 1.620 | 5.316 | 629.5 | 191.9 | 12 |
| 13 | 1.937 | 6.354 | 2.001 | 6.564 | 2.040 | 6.693 | 499.9 | 152.4 | 13 |
| 14 | 2.438 | 8.000 | 2.524 | 8.281 | 2.572 | 8.438 | 396.2 | 120.8 | 14 |
| 15 | 3.066 | 10.06 | 3.181 | 10.44 | 3.249 | 10.66 | 314.4 | 95.82 | 15 |
| 16 | 3.879 | 12.73 | 4.019 | 13.18 | 4.099 | 13.45 | 248.8 | 75.84 | 16 |
| 17 | 4.866 | 15.97 | 5.054 | 16.58 | 5.167 | 16.95 | 197.9 | 60.31 | 17 |
| 18 | 6.162 | 20.22 | 6.386 | 20.95 | 6.514 | 21.37 | 156.6 | 47.73 | 18 |
| 19 | 7.747 | 25.42 | 8.047 | 26.40 | 8.229 | 27.00 | 124.3 | 37.88 | 19 |
| 20 | 9.784 | 32.10 | 10.13 | 33.23 | 10.32 | 33.86 | 98.74 | 30.10 | 20 |
| 21 | 12.31 | 40.38 | 12.77 | 41.89 | 13.04 | 42.79 | 78.32 | 23.87 | 21 |
| 22 | 15.58 | 51.10 | 16.20 | 53.16 | 16.59 | 54.44 | 61.72 | 18.81 | 22 |
| 23 | 19.64 | 64.42 | 20.31 | 66.62 | 20.67 | 67.81 | 49.25 | 15.01 | 23 |
| 24 | 24.77 | 81.27 | 25.67 | 84.22 | 26.19 | 85.92 | 38.96 | 11.87 | 24 |
| 25 | 31.16 | 102.2 | 32.37 | 106.2 | 33.10 | 108.6 | 30.89 | 9.417 | 25 |
| 26 | 39.38 | 129.2 | 41.02 | 134.6 | 42.07 | 138.0 | 24.38 | 7.430 | 26 |
| 27 | 49.92 | 163.8 | 51.43 | 168.7 | 52.17 | 171.1 | 19.44 | 5.926 | 27 |
| 28 | 63.29 | 207.6 | 65.33 | 214.3 | 66.37 | 217.8 | 15.31 | 4.666 | 28 |
| 29 | 78.54 | 257.7 | 81.22 | 266.5 | 82.68 | 271.2 | 12.31 | 3.753 | 29 |
| 30 | 100.1 | 328.3 | 103.7 | 340.3 | 105.8 | 347.2 | 9.642 | 2.939 | 30 |
| 31 | 126.0 | 413.5 | 130.9 | 429.6 | 133.9 | 439.4 | 7.638 | 2.328 | 31 |
| 32 | 155.6 | 510.4 | 162.0 | 531.6 | 166.2 | 545.2 | 6.171 | 1.881 | 32 |
| 33 | 196.9 | 646.0 | 205.7 | 675.0 | 211.7 | 694.4 | 4.861 | 1.482 | 33 |
| 34 | 249.2 | 817.6 | 261.3 | 857.3 | 269.8 | 885.2 | 3.827 | 1.166 | 34 |
| 35 | 314.2 | 1031 | 330.7 | 1085 | 342.8 | 1125 | 3.024 | 0.9217 | 35 |
| 36 | 392.5 | 1288 | 414.8 | 1361 | 431.9 | 1417 | 2.411 | 0.7347 | 36 |
| 37 | 482.4 | 1583 | 512.1 | 1680 | 535.7 | 1758 | 1.953 | 0.5951 | 37 |
| 38 | 607.2 | 1992 | 648.2 | 2127 | 681.9 | 2237 | 1.543 | 0.4702 | 38 |
| 39 | 787.6 | 2584 | 846.6 | 2778 | 897.1 | 2943 | 1.181 | 0.3600 | 39 |
| 40 | 996.8 | 3270 | 1079 | 3541 | 1152 | 3781 | 0.9266 | 0.2824 | 40 |
| 41 | 1214 | 3982 | 1323 | 4340 | 1423 | 4667 | 0.7560 | 0.2304 | 41 |
| 42 | 1510 | 4954 | 1659 | 5444 | 1801 | 5907 | 0.6026 | 0.1837 | 42 |
| 43 | 1930 | 6331 | 2143 | 7030 | 2352 | 7716 | 0.4667 | 0.1422 | 43 |
| 44 | 2315 | 7594 | 2593 | 8506 | 2873 | 9425 | 0.3857 | 0.1176 | 44 |
| 45 | 3048 | 10000 | 3348 | 10984 | 3631 | 11913 | 0.2987 | 0.0910 | 45 |
| 46 | 3842 | 12605 | 4207 | 13804 | 4548 | 14923 | 0.2377 | 0.0724 | 46 |

* Minimum resistance values are based on maximum bare diameter and 101.6% IACS conductivity.

Nominal and maximum resistance values are based on nominal bare diameter and 100.0% IACS conductivity.

ROUND, BARE WIRE

Copper

RESISTANCE

| Half AWG Size | BARE CONDUCTOR RESISTANCE | | | | | | Nominal Feet per Ohm | Nominal Meters per Ohm | Half AWG Size |
|---------------------|---------------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------------|------------------------------|---------------------|
| | Minimum* | | Nominal | | Maximum | | | | |
| | Ohms per 1000 Ft. | Ohms per Kilomtr | Ohms per 1000 Ft. | Ohms per Kilomtr | Ohms per 1000 Ft. | Ohms per Kilomtr | | | |
| 1 ½ | 0.1351 | 0.4432 | 0.1392 | 0.4565 | 0.1419 | 0.4657 | 7186 | 2190 | 1 ½ |
| 2 ½ | 0.1703 | 0.5588 | 0.1755 | 0.5758 | 0.179 | 0.5873 | 5698 | 1737 | 2 ½ |
| 3 ½ | 0.2148 | 0.7047 | 0.2213 | 0.7259 | 0.2258 | 0.7409 | 4520 | 1378 | 3 ½ |
| 4 ½ | 0.2709 | 0.8889 | 0.2790 | 0.9154 | 0.2846 | 0.9337 | 3584 | 1092 | 4 ½ |
| 5 ½ | 0.3415 | 1.120 | 0.3518 | 1.154 | 0.3589 | 1.177 | 2843 | 866.4 | 5 ½ |
| 6 ½ | 0.4304 | 1.412 | 0.4436 | 1.455 | 0.4524 | 1.484 | 2254 | 687.1 | 6 ½ |
| 7 ½ | 0.5423 | 1.779 | 0.5591 | 1.834 | 0.5707 | 1.873 | 1789 | 545.2 | 7 ½ |
| 8 ½ | 0.6847 | 2.246 | 0.7049 | 2.313 | 0.719 | 2.359 | 1419 | 432.4 | 8 ½ |
| 9 ½ | 0.8607 | 2.824 | 0.8891 | 2.917 | 0.9075 | 2.977 | 1125 | 342.8 | 9 ½ |
| 10 ½ | 1.085 | 3.559 | 1.121 | 3.677 | 1.144 | 3.754 | 892.3 | 272.0 | 10 ½ |
| 11 ½ | 1.371 | 4.497 | 1.415 | 4.644 | 1.446 | 4.743 | 706.5 | 215.3 | 11 ½ |
| 12 ½ | 1.726 | 5.663 | 1.781 | 5.845 | 1.819 | 5.969 | 561.3 | 171.1 | 12 ½ |
| 13 ½ | 2.182 | 7.158 | 2.249 | 7.380 | 2.297 | 7.535 | 444.5 | 135.5 | 13 ½ |
| 14 ½ | 2.734 | 8.971 | 2.833 | 9.296 | 2.890 | 9.483 | 352.9 | 107.6 | 14 ½ |
| 15 ½ | 3.449 | 11.32 | 3.570 | 11.71 | 3.637 | 11.93 | 280.1 | 85.38 | 15 ½ |
| 16 ½ | 4.340 | 14.24 | 4.501 | 14.77 | 4.597 | 15.08 | 222.2 | 67.71 | 16 ½ |
| 17 ½ | 5.495 | 18.03 | 5.688 | 18.66 | 5.796 | 19.02 | 175.8 | 53.59 | 17 ½ |
| 18 ½ | 6.923 | 22.71 | 7.182 | 23.56 | 7.336 | 24.07 | 139.2 | 42.44 | 18 ½ |
| 19 ½ | 8.727 | 28.63 | 9.024 | 29.61 | 9.186 | 30.14 | 110.8 | 33.77 | 19 ½ |
| 20 ½ | 10.97 | 36.00 | 11.37 | 37.31 | 11.60 | 38.06 | 87.94 | 26.80 | 20 ½ |
| 21 ½ | 13.80 | 45.27 | 14.33 | 47.02 | 14.66 | 48.09 | 69.77 | 21.27 | 21 ½ |
| 22 ½ | 17.57 | 57.66 | 18.16 | 59.57 | 18.46 | 60.58 | 55.08 | 16.79 | 22 ½ |
| 23 ½ | 22.08 | 72.45 | 22.86 | 75.00 | 23.29 | 76.43 | 43.75 | 13.33 | 23 ½ |
| 24 ½ | 27.69 | 90.85 | 28.73 | 94.25 | 29.34 | 96.27 | 34.81 | 10.61 | 24 ½ |
| 25 ½ | 34.91 | 114.5 | 36.31 | 119.1 | 37.19 | 122.0 | 27.54 | 8.394 | 25 ½ |
| 26 ½ | 44.18 | 145.0 | 46.09 | 151.2 | 46.71 | 153.3 | 21.70 | 6.613 | 26 ½ |
| 27 ½ | 56.01 | 183.8 | 57.76 | 189.5 | 58.63 | 192.4 | 17.31 | 5.277 | 27 ½ |
| 28 ½ | 70.89 | 232.6 | 73.24 | 240.3 | 74.48 | 244.4 | 13.65 | 4.162 | 28 ½ |
| 29 ½ | 89.16 | 292.5 | 92.30 | 302.8 | 94.07 | 308.6 | 10.83 | 3.302 | 29 ½ |
| 30 ½ | 110.8 | 363.4 | 114.9 | 377.0 | 117.4 | 385.1 | 8.702 | 2.652 | 30 ½ |
| 31 ½ | 141.3 | 463.5 | 147.0 | 482.2 | 150.5 | 493.9 | 6.804 | 2.074 | 31 ½ |
| 32 ½ | 176.7 | 579.8 | 184.4 | 604.9 | 189.4 | 621.4 | 5.424 | 1.653 | 32 ½ |
| 33 ½ | 220.8 | 724.3 | 231.0 | 758.0 | 238.1 | 781.1 | 4.328 | 1.319 | 33 ½ |
| 34 ½ | 283.5 | 930.3 | 297.9 | 977.5 | 308.3 | 1011.5 | 3.356 | 1.023 | 34 ½ |
| 35 ½ | 350.1 | 1148 | 369.2 | 1211 | 383.5 | 1258 | 2.709 | 0.8256 | 35 ½ |
| 36 ½ | 443.0 | 1454 | 469.5 | 1540 | 490.1 | 1608 | 2.13 | 0.6492 | 36 ½ |
| 37 ½ | 552.1 | 1811 | 587.9 | 1929 | 617.0 | 2024 | 1.701 | 0.5184 | 37 ½ |
| 38 ½ | 706.9 | 2319 | 757.6 | 2485 | 800.2 | 2625 | 1.320 | 0.4023 | 38 ½ |
| 39 ½ | 883.0 | 2897 | 952.3 | 3124 | 1013 | 3323 | 1.050 | 0.3201 | 39 ½ |
| 40 ½ | 1062 | 3485 | 1152 | 3781 | 1233 | 4046 | 0.8678 | 0.2645 | 40 ½ |
| 41 ½ | 1400 | 4594 | 1534 | 5033 | 1659 | 5444 | 0.6518 | 0.1987 | 41 ½ |
| 42 ½ | 1633 | 5358 | 1801 | 5907 | 1960 | 6432 | 0.5554 | 0.1693 | 42 ½ |
| 43 ½ | 2109 | 6919 | 2352 | 7716 | 2593 | 8506 | 0.4252 | 0.1296 | 43 ½ |
| 44 ½ | 2552 | 8372 | 2873 | 9425 | 3201 | 10502 | 0.3481 | 0.1061 | 44 ½ |

* Minimum resistance values are based on maximum bare diameter and 101.6% IACS conductivity.
Nominal and maximum resistance values are based on nominal bare diameter and 100.0% IACS conductivity.

ROUND, BARE WIRE

Aluminum

RESISTANCE

| Whole AWG Size | BARE CONDUCTOR RESISTANCE | | | | | | Nominal Feet per Ohm | Nominal Meters per Ohm | Whole AWG Size |
|----------------------|---------------------------|---------------------|----------------------|---------------------|----------------------|---------------------|-------------------------|------------------------------|----------------------|
| | Minimum* | | Nominal | | Maximum** | | | | |
| | Ohms per 1000 Ft. | Ohms per Kilomtr | Ohms per 1000 Ft. | Ohms per Kilomtr | Ohms per 1000 Ft. | Ohms per Kilomtr | | | |
| 1 | 0.1966 | 0.6449 | 0.2005 | 0.6579 | 0.2046 | 0.6712 | 4987 | 1520 | 1 |
| 2 | 0.2494 | 0.8183 | 0.2529 | 0.8297 | 0.2581 | 0.8467 | 3954 | 1205 | 2 |
| 3 | 0.3145 | 1.032 | 0.3189 | 1.046 | 0.3254 | 1.068 | 3136 | 955.8 | 3 |
| 4 | 0.3966 | 1.301 | 0.4021 | 1.319 | 0.4101 | 1.345 | 2487 | 758.1 | 4 |
| 5 | 0.5000 | 1.641 | 0.5072 | 1.664 | 0.5174 | 1.697 | 1972 | 600.9 | 5 |
| 6 | 0.6309 | 2.070 | 0.6395 | 2.098 | 0.6523 | 2.140 | 1564 | 476.7 | 6 |
| 7 | 0.7949 | 2.608 | 0.806 | 2.644 | 0.8218 | 2.696 | 1241 | 378.2 | 7 |
| 8 | 1.002 | 3.288 | 1.016 | 3.334 | 1.037 | 3.403 | 983.9 | 299.9 | 8 |
| 9 | 1.262 | 4.142 | 1.282 | 4.207 | 1.307 | 4.289 | 779.8 | 237.7 | 9 |
| 10 | 1.591 | 5.220 | 1.616 | 5.302 | 1.648 | 5.408 | 618.7 | 188.6 | 10 |
| 11 | 2.009 | 6.591 | 2.040 | 6.693 | 2.081 | 6.828 | 490.2 | 149.4 | 11 |
| 12 | 2.533 | 8.310 | 2.571 | 8.433 | 2.622 | 8.603 | 389.0 | 118.6 | 12 |
| 13 | 3.184 | 10.45 | 3.237 | 10.62 | 3.301 | 10.83 | 308.9 | 94.15 | 13 |
| 14 | 4.009 | 13.15 | 4.084 | 13.40 | 4.162 | 13.65 | 244.8 | 74.63 | 14 |
| 15 | 5.041 | 16.54 | 5.147 | 16.89 | 5.257 | 17.25 | 194.3 | 59.22 | 15 |
| 16 | 6.377 | 20.92 | 6.503 | 21.34 | 6.633 | 21.76 | 153.8 | 46.87 | 16 |
| 17 | 8.000 | 26.25 | 8.178 | 26.83 | 8.362 | 27.43 | 122.3 | 37.27 | 17 |
| 18 | 10.13 | 33.24 | 10.33 | 33.90 | 10.54 | 34.58 | 96.78 | 29.50 | 18 |
| 19 | 12.74 | 41.78 | 13.02 | 42.72 | 13.32 | 43.69 | 76.80 | 23.41 | 19 |
| 20 | 16.09 | 52.77 | 16.39 | 53.77 | 16.70 | 54.79 | 61.02 | 18.60 | 20 |
| 21 | 20.23 | 66.38 | 20.66 | 67.79 | 21.10 | 69.24 | 48.40 | 14.75 | 21 |
| 22 | 25.61 | 84.01 | 26.22 | 86.02 | 26.85 | 88.09 | 38.14 | 11.63 | 22 |
| 23 | 32.28 | 105.9 | 32.86 | 107.8 | 33.45 | 109.7 | 30.43 | 9.277 | 23 |
| 24 | 40.72 | 133.6 | 41.54 | 136.3 | 42.38 | 139.0 | 24.07 | 7.338 | 24 |
| 25 | 51.23 | 168.1 | 52.38 | 171.8 | 53.57 | 175.7 | 19.09 | 5.819 | 25 |
| 26 | 64.74 | 212.4 | 66.38 | 217.8 | 68.08 | 223.4 | 15.06 | 4.592 | 26 |
| 27 | 82.07 | 269.2 | 83.23 | 273.1 | 84.41 | 276.9 | 12.02 | 3.662 | 27 |
| 28 | 104.0 | 341.4 | 105.7 | 346.8 | 107.4 | 352.4 | 9.460 | 2.883 | 28 |

Values are based on a resistivity of 16.782 ohm - circ. mil/ft. at 20°C (61.8% IACS Conductivity) for soft, annealed 1350 (EC) aluminum. In practice, conductors of higher conductivity will often be encountered, yielding a resistance lower than that specified when conductor dimensions are at or near maximum tolerance limits.

* Minimum resistance values are based on maximum bare diameter.

** Maximum resistance values are based on minimum bare diameter.

ROUND, BARE WIRE

Aluminum

RESISTANCE

| Half AWG Size | BARE CONDUCTOR RESISTANCE | | | | | | Nominal Feet per Ohm | Nominal Meters per Ohm | Half AWG Size |
|---------------------|---------------------------|-----------------------|----------------------|-----------------------|----------------------|-----------------------|----------------------------|------------------------------|---------------------|
| | Minimum* | | Nominal | | Maximum** | | | | |
| | Ohms per 1000 Ft. | Ohms per Kilometer | Ohms per 1000 Ft. | Ohms per Kilometer | Ohms per 1000 Ft. | Ohms per Kilometer | | | |
| 1 ½ | 0.2221 | 0.7286 | 0.2252 | 0.7388 | 0.2297 | 0.7536 | 4441 | 1354 | 1 ½ |
| 2 ½ | 0.2800 | 0.9188 | 0.2840 | 0.9317 | 0.2897 | 0.9503 | 3521 | 1073 | 2 ½ |
| 3 ½ | 0.3531 | 1.159 | 0.3580 | 1.175 | 0.3654 | 1.199 | 2793 | 851.3 | 3 ½ |
| 4 ½ | 0.4454 | 1.461 | 0.4515 | 1.481 | 0.4605 | 1.511 | 2215 | 675.1 | 4 ½ |
| 5 ½ | 0.5614 | 1.842 | 0.5693 | 1.868 | 0.5807 | 1.905 | 1757 | 535.4 | 5 ½ |
| 6 ½ | 0.7076 | 2.322 | 0.7178 | 2.355 | 0.7321 | 2.402 | 1393 | 424.6 | 6 ½ |
| 7 ½ | 0.8915 | 2.925 | 0.9047 | 2.968 | 0.9236 | 3.030 | 1105 | 336.9 | 7 ½ |
| 8 ½ | 1.126 | 3.693 | 1.141 | 3.742 | 1.163 | 3.817 | 876.8 | 267.2 | 8 ½ |
| 9 ½ | 1.415 | 4.643 | 1.439 | 4.720 | 1.469 | 4.818 | 695.0 | 211.8 | 9 ½ |
| 10 ½ | 1.784 | 5.852 | 1.813 | 5.949 | 1.852 | 6.075 | 551.5 | 168.1 | 10 ½ |
| 11 ½ | 2.253 | 7.393 | 2.290 | 7.514 | 2.339 | 7.675 | 436.6 | 133.1 | 11 ½ |
| 12 ½ | 2.838 | 9.311 | 2.883 | 9.458 | 2.944 | 9.659 | 346.9 | 105.7 | 12 ½ |
| 13 ½ | 3.587 | 11.77 | 3.640 | 11.94 | 3.716 | 12.19 | 274.7 | 83.74 | 13 ½ |
| 14 ½ | 4.495 | 14.75 | 4.585 | 15.04 | 4.677 | 15.35 | 218.1 | 66.48 | 14 ½ |
| 15 ½ | 5.671 | 18.60 | 5.777 | 18.95 | 5.885 | 19.31 | 173.1 | 52.77 | 15 ½ |
| 16 ½ | 7.134 | 23.41 | 7.284 | 23.90 | 7.438 | 24.40 | 137.3 | 41.85 | 16 ½ |
| 17 ½ | 9.034 | 29.64 | 9.204 | 30.20 | 9.379 | 30.77 | 108.6 | 33.12 | 17 ½ |
| 18 ½ | 11.38 | 37.34 | 11.62 | 38.13 | 11.87 | 38.95 | 86.06 | 26.23 | 18 ½ |
| 19 ½ | 14.35 | 47.07 | 14.60 | 47.91 | 14.87 | 48.77 | 68.49 | 20.87 | 19 ½ |
| 20 ½ | 18.04 | 59.19 | 18.40 | 60.37 | 18.77 | 61.59 | 54.35 | 16.56 | 20 ½ |
| 21 ½ | 22.68 | 74.42 | 23.19 | 76.09 | 23.72 | 77.82 | 43.12 | 13.14 | 21 ½ |
| 22 ½ | 28.89 | 94.80 | 29.38 | 96.39 | 29.88 | 98.02 | 34.04 | 10.37 | 22 ½ |
| 23 ½ | 36.31 | 119.1 | 36.99 | 121.4 | 37.69 | 123.7 | 27.03 | 8.240 | 23 ½ |
| 24 ½ | 45.52 | 149.4 | 46.49 | 152.5 | 47.48 | 155.8 | 21.51 | 6.557 | 24 ½ |
| 25 ½ | 57.39 | 188.3 | 58.76 | 192.8 | 60.17 | 197.4 | 17.02 | 5.187 | 25 ½ |
| 26 ½ | 72.64 | 238.3 | 74.59 | 244.7 | 75.59 | 248.0 | 13.41 | 4.087 | 26 ½ |
| 27 ½ | 92.08 | 302.1 | 93.46 | 306.6 | 94.87 | 311.3 | 10.70 | 3.261 | 27 ½ |

Values are based on a resistivity of 16.782 ohm - circ. mil/ft. at 20°C (61.8% IACS Conductivity) for soft, annealed 1350 (EC) aluminum. In practice, conductors of higher conductivity will often be encountered, yielding a resistance lower than that specified when conductor dimensions are at or near maximum tolerance limits.

* Minimum resistance values are based on maximum bare diameter.

** Maximum resistance values are based on minimum bare diameter.

ROUND, SINGLE BUILD FILM-INSULATED WIRE

Copper & Aluminum

DIMENSIONS

| WHOLE AWG SIZE | Bare Wire Diameter | | | | | | Increase in Diameter Due to Film Coating | | Overall Diameter of Film-Coated Wire | | WHOLE AWG SIZE |
|----------------------|--------------------|--------|---------|--------|---------|--------|---|--------|---|--------|----------------------|
| | Minimum | | Nominal | | Maximum | | Minimum | | Maximum | | |
| | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm | |
| 8 | 0.1272 | 3.231 | 0.1285 | 3.264 | 0.1294 | 3.297 | 0.0017 | 0.043 | 0.1314 | 3.338 | 8 |
| 9 | 0.1133 | 2.878 | 0.1144 | 2.906 | 0.1153 | 2.929 | 0.0017 | 0.043 | 0.1173 | 2.980 | 9 |
| 10 | 0.1009 | 2.563 | 0.1019 | 2.588 | 0.1027 | 2.609 | 0.0017 | 0.043 | 0.1047 | 2.660 | 10 |
| 11 | 0.0898 | 2.281 | 0.0907 | 2.304 | 0.0914 | 2.322 | 0.0017 | 0.043 | 0.0934 | 2.373 | 11 |
| 12 | 0.0800 | 2.032 | 0.0808 | 2.052 | 0.0814 | 2.069 | 0.0016 | 0.041 | 0.0833 | 2.117 | 12 |
| 13 | 0.0713 | 1.811 | 0.072 | 1.829 | 0.0726 | 1.843 | 0.0016 | 0.041 | 0.0745 | 1.892 | 13 |
| 14 | 0.0635 | 1.613 | 0.0641 | 1.628 | 0.0647 | 1.643 | 0.0016 | 0.041 | 0.0666 | 1.692 | 14 |
| 15 | 0.0565 | 1.435 | 0.0571 | 1.450 | 0.0577 | 1.466 | 0.0015 | 0.038 | 0.0594 | 1.509 | 15 |
| 16 | 0.0503 | 1.278 | 0.0508 | 1.290 | 0.0513 | 1.303 | 0.0014 | 0.036 | 0.0531 | 1.349 | 16 |
| 17 | 0.0448 | 1.138 | 0.0453 | 1.151 | 0.0458 | 1.163 | 0.0014 | 0.036 | 0.0475 | 1.207 | 17 |
| 18 | 0.0399 | 1.013 | 0.0403 | 1.024 | 0.0407 | 1.034 | 0.0013 | 0.033 | 0.0424 | 1.077 | 18 |
| 19 | 0.0355 | 0.902 | 0.0359 | 0.912 | 0.0363 | 0.922 | 0.0012 | 0.030 | 0.0379 | 0.963 | 19 |
| 20 | 0.0317 | 0.805 | 0.0320 | 0.813 | 0.0323 | 0.820 | 0.0012 | 0.030 | 0.0340 | 0.864 | 20 |
| 21 | 0.0282 | 0.716 | 0.0285 | 0.724 | 0.0288 | 0.732 | 0.0011 | 0.028 | 0.0303 | 0.770 | 21 |
| 22 | 0.0250 | 0.635 | 0.0253 | 0.643 | 0.0256 | 0.650 | 0.0011 | 0.028 | 0.027 | 0.686 | 22 |
| 23 | 0.0224 | 0.569 | 0.0226 | 0.574 | 0.0228 | 0.579 | 0.0010 | 0.025 | 0.0243 | 0.617 | 23 |
| 24 | 0.0199 | 0.505 | 0.0201 | 0.511 | 0.0203 | 0.516 | 0.0010 | 0.025 | 0.0217 | 0.551 | 24 |
| 25 | 0.0177 | 0.450 | 0.0179 | 0.455 | 0.0181 | 0.460 | 0.0009 | 0.023 | 0.0194 | 0.493 | 25 |
| 26 | 0.0157 | 0.399 | 0.0159 | 0.404 | 0.0161 | 0.409 | 0.0009 | 0.023 | 0.0173 | 0.439 | 26 |
| 27 | 0.0141 | 0.358 | 0.0142 | 0.361 | 0.0143 | 0.363 | 0.0008 | 0.020 | 0.0156 | 0.396 | 27 |
| 28 | 0.0125 | 0.318 | 0.0126 | 0.320 | 0.0127 | 0.323 | 0.0008 | 0.020 | 0.0140 | 0.356 | 28 |
| 29 | 0.0112 | 0.284 | 0.0113 | 0.287 | 0.0114 | 0.290 | 0.0007 | 0.018 | 0.0126 | 0.320 | 29 |
| 30 | 0.0099 | 0.251 | 0.0100 | 0.254 | 0.0101 | 0.257 | 0.0007 | 0.018 | 0.0112 | 0.285 | 30 |
| 31 | 0.0088 | 0.224 | 0.0089 | 0.226 | 0.0090 | 0.229 | 0.0006 | 0.015 | 0.0100 | 0.255 | 31 |
| 32 | 0.0079 | 0.201 | 0.008 | 0.203 | 0.0081 | 0.206 | 0.0006 | 0.015 | 0.0090 | 0.229 | 32 |
| 33 | 0.0070 | 0.178 | 0.0071 | 0.180 | 0.0072 | 0.183 | 0.0005 | 0.013 | 0.0081 | 0.205 | 33 |
| 34 | 0.0062 | 0.157 | 0.0063 | 0.160 | 0.0064 | 0.163 | 0.0005 | 0.013 | 0.0072 | 0.183 | 34 |
| 35 | 0.0055 | 0.140 | 0.0056 | 0.142 | 0.0057 | 0.145 | 0.0004 | 0.010 | 0.0065 | 0.164 | 35 |
| 36 | 0.0049 | 0.124 | 0.0050 | 0.127 | 0.0051 | 0.130 | 0.0004 | 0.010 | 0.0058 | 0.147 | 36 |
| 37 | 0.0044 | 0.112 | 0.0045 | 0.114 | 0.0046 | 0.117 | 0.0004 | 0.010 | 0.0052 | 0.132 | 37 |
| 38 | 0.0039 | 0.099 | 0.0040 | 0.102 | 0.0041 | 0.104 | 0.0003 | 0.008 | 0.0047 | 0.118 | 38 |
| 39 | 0.0034 | 0.086 | 0.0035 | 0.089 | 0.0036 | 0.091 | 0.0003 | 0.008 | 0.0042 | 0.106 | 39 |
| 40 | 0.0030 | 0.076 | 0.0031 | 0.079 | 0.0032 | 0.081 | 0.0003 | 0.008 | 0.0037 | 0.095 | 40 |
| 41 | 0.0027 | 0.069 | 0.0028 | 0.071 | 0.0029 | 0.074 | 0.0003 | 0.008 | 0.0033 | 0.085 | 41 |
| 42 | 0.0024 | 0.061 | 0.0025 | 0.064 | 0.0026 | 0.066 | 0.0002 | 0.005 | 0.0030 | 0.076 | 42 |
| 43 | 0.0021 | 0.053 | 0.0022 | 0.056 | 0.0023 | 0.058 | 0.0002 | 0.005 | 0.0027 | 0.068 | 43 |
| 44 | 0.0019 | 0.048 | 0.0020 | 0.051 | 0.0021 | 0.053 | 0.0002 | 0.005 | 0.0024 | 0.061 | 44 |
| 45 | 0.00169 | 0.0429 | 0.00176 | 0.0447 | 0.00183 | 0.0465 | 0.00020 | 0.0051 | 0.00220 | 0.0559 | 45 |
| 46 | 0.00151 | 0.0384 | 0.00157 | 0.0399 | 0.00163 | 0.0414 | 0.00020 | 0.0051 | 0.00200 | 0.0508 | 46 |

From NEMA Standards Publication No. MW 1000.

ROUND, SINGLE BUILD FILM-INSULATED WIRE

Copper & Aluminum

DIMENSIONS

| HALF AWG SIZE | Bare Wire Diameter | | | | | | Increase in Diameter Due to Film Coating | | Overall Diameter of Film-Coated Wire | | HALF AWG SIZE |
|---------------------|--------------------|-------|---------|-------|---------|-------|---|-------|---|-------|---------------------|
| | Minimum | | Nominal | | Maximum | | Minimum | | Maximum | | |
| | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm | |
| 8 ½ | 0.1201 | 3.051 | 0.1213 | 3.081 | 0.1221 | 3.103 | 0.0017 | 0.043 | 0.1241 | 3.153 | 8 ½ |
| 9 ½ | 0.1069 | 2.715 | 0.1080 | 2.743 | 0.1089 | 2.765 | 0.0017 | 0.043 | 0.1109 | 2.816 | 9 ½ |
| 10 ½ | 0.0952 | 2.418 | 0.0962 | 2.443 | 0.0970 | 2.463 | 0.0017 | 0.043 | 0.0990 | 2.514 | 10 ½ |
| 11 ½ | 0.0847 | 2.151 | 0.0856 | 2.174 | 0.0863 | 2.192 | 0.0016 | 0.041 | 0.0882 | 2.240 | 11 ½ |
| 12 ½ | 0.0755 | 1.918 | 0.0763 | 1.938 | 0.0769 | 1.954 | 0.0016 | 0.041 | 0.0788 | 2.002 | 12 ½ |
| 13 ½ | 0.0672 | 1.707 | 0.0679 | 1.725 | 0.0684 | 1.738 | 0.0016 | 0.041 | 0.0703 | 1.786 | 13 ½ |
| 14 ½ | 0.0599 | 1.521 | 0.0605 | 1.537 | 0.0611 | 1.552 | 0.0016 | 0.041 | 0.0629 | 1.598 | 14 ½ |
| 15 ½ | 0.0534 | 1.356 | 0.0539 | 1.369 | 0.0544 | 1.382 | 0.0015 | 0.038 | 0.0563 | 1.430 | 15 ½ |
| 16 ½ | 0.0475 | 1.207 | 0.0480 | 1.219 | 0.0485 | 1.232 | 0.0014 | 0.036 | 0.0502 | 1.275 | 16 ½ |
| 17 ½ | 0.0423 | 1.074 | 0.0427 | 1.085 | 0.0431 | 1.095 | 0.0013 | 0.033 | 0.0449 | 1.140 | 17 ½ |
| 18 ½ | 0.0376 | 0.955 | 0.0380 | 0.965 | 0.0384 | 0.975 | 0.0013 | 0.033 | 0.0400 | 1.016 | 18 ½ |
| 19 ½ | 0.0336 | 0.853 | 0.0339 | 0.861 | 0.0342 | 0.869 | 0.0012 | 0.030 | 0.0359 | 0.912 | 19 ½ |
| 20 ½ | 0.0299 | 0.759 | 0.0302 | 0.767 | 0.0305 | 0.775 | 0.0011 | 0.028 | 0.0321 | 0.815 | 20 ½ |
| 21 ½ | 0.0266 | 0.676 | 0.0269 | 0.683 | 0.0272 | 0.691 | 0.0011 | 0.028 | 0.0287 | 0.729 | 21 ½ |
| 22 ½ | 0.0237 | 0.602 | 0.0239 | 0.607 | 0.0241 | 0.612 | 0.0010 | 0.025 | 0.0257 | 0.653 | 22 ½ |
| 23 ½ | 0.0211 | 0.536 | 0.0213 | 0.541 | 0.0215 | 0.546 | 0.0010 | 0.025 | 0.0230 | 0.584 | 23 ½ |
| 24 ½ | 0.0188 | 0.478 | 0.0190 | 0.483 | 0.0192 | 0.488 | 0.0009 | 0.023 | 0.0206 | 0.523 | 24 ½ |
| 25 ½ | 0.0167 | 0.424 | 0.0169 | 0.429 | 0.0171 | 0.434 | 0.0009 | 0.023 | 0.0184 | 0.467 | 25 ½ |
| 26 ½ | 0.0149 | 0.378 | 0.0150 | 0.381 | 0.0152 | 0.386 | 0.0008 | 0.020 | 0.0165 | 0.419 | 26 ½ |
| 27 ½ | 0.0133 | 0.338 | 0.0134 | 0.340 | 0.0135 | 0.343 | 0.0008 | 0.020 | 0.0148 | 0.376 | 27 ½ |
| 28 ½ | 0.0118 | 0.300 | 0.0119 | 0.302 | 0.0120 | 0.305 | 0.0008 | 0.020 | 0.0132 | 0.335 | 28 ½ |
| 29 ½ | 0.0105 | 0.267 | 0.0106 | 0.269 | 0.0107 | 0.272 | 0.0007 | 0.018 | 0.0118 | 0.300 | 29 ½ |
| 30 ½ | 0.0094 | 0.239 | 0.0095 | 0.241 | 0.0096 | 0.244 | 0.0006 | 0.015 | 0.0106 | 0.270 | 30 ½ |
| 31 ½ | 0.0083 | 0.211 | 0.0084 | 0.213 | 0.0085 | 0.216 | 0.0006 | 0.015 | 0.0095 | 0.242 | 31 ½ |
| 32 ½ | 0.0074 | 0.188 | 0.0075 | 0.191 | 0.0076 | 0.193 | 0.0005 | 0.013 | 0.0085 | 0.216 | 32 ½ |
| 33 ½ | 0.0066 | 0.168 | 0.0067 | 0.170 | 0.0068 | 0.173 | 0.0005 | 0.013 | 0.0076 | 0.194 | 33 ½ |
| 34 ½ | 0.0058 | 0.147 | 0.0059 | 0.150 | 0.0060 | 0.152 | 0.0004 | 0.010 | 0.0068 | 0.174 | 34 ½ |
| 35 ½ | 0.0052 | 0.132 | 0.0053 | 0.135 | 0.0054 | 0.137 | 0.0004 | 0.010 | 0.0061 | 0.156 | 35 ½ |
| 36 ½ | 0.0046 | 0.117 | 0.0047 | 0.119 | 0.0048 | 0.122 | 0.0004 | 0.010 | 0.0055 | 0.139 | 36 ½ |
| 37 ½ | 0.0041 | 0.104 | 0.0042 | 0.107 | 0.0043 | 0.109 | 0.0003 | 0.008 | 0.0049 | 0.125 | 37 ½ |
| 38 ½ | 0.0036 | 0.091 | 0.0037 | 0.094 | 0.0038 | 0.097 | 0.0003 | 0.008 | 0.0044 | 0.112 | 38 ½ |
| 39 ½ | 0.0032 | 0.081 | 0.0033 | 0.084 | 0.0034 | 0.086 | 0.0003 | 0.008 | 0.0039 | 0.100 | 39 ½ |
| 40 ½ | 0.0029 | 0.074 | 0.0030 | 0.076 | 0.0031 | 0.079 | 0.0003 | 0.008 | 0.0035 | 0.090 | 40 ½ |
| 41 ½ | 0.0025 | 0.064 | 0.0026 | 0.066 | 0.0027 | 0.069 | 0.0002 | 0.005 | 0.0032 | 0.080 | 41 ½ |
| 42 ½ | 0.0023 | 0.058 | 0.0024 | 0.061 | 0.0025 | 0.064 | 0.0002 | 0.005 | 0.0028 | 0.072 | 42 ½ |
| 43 ½ | 0.0020 | 0.051 | 0.0021 | 0.053 | 0.0022 | 0.056 | 0.0002 | 0.005 | 0.0025 | 0.065 | 43 ½ |
| 44 ½ | 0.0018 | 0.046 | 0.0019 | 0.048 | 0.0020 | 0.051 | 0.0002 | 0.005 | 0.0023 | 0.058 | 44 ½ |

From NEMA Standards Publication No. MW 1000.

ROUND, MEDIUM BUILD FILM-INSULATED WIRE

Copper & Aluminum

DIMENSIONS

| Whole AWG Size | Bare Wire Diameter | | | | | | Increase in Diameter Due to Film Coating | | Overall Diameter of Film-Coated Wire | | Whole AWG Size |
|----------------------|--------------------|-------|---------|-------|---------|-------|---|--------|---|--------|----------------------|
| | Minimum | | Nominal | | Maximum | | Minimum | | Maximum | | |
| | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm | |
| 14 | 0.0635 | 1.613 | 0.0641 | 1.628 | 0.0647 | 1.643 | 0.0024 | 0.0610 | 0.0674 | 1.7120 | 14 |
| 15 | 0.0565 | 1.435 | 0.0571 | 1.450 | 0.0577 | 1.466 | 0.0023 | 0.0584 | 0.0602 | 1.5291 | 15 |
| 16 | 0.0503 | 1.278 | 0.0508 | 1.290 | 0.0513 | 1.303 | 0.0022 | 0.0559 | 0.0538 | 1.3665 | 16 |
| 17 | 0.0448 | 1.138 | 0.0453 | 1.151 | 0.0458 | 1.163 | 0.0021 | 0.0533 | 0.0482 | 1.2243 | 17 |
| 18 | 0.0399 | 1.013 | 0.0403 | 1.024 | 0.0407 | 1.034 | 0.0020 | 0.0508 | 0.0431 | 1.0947 | 18 |
| 19 | 0.0355 | 0.902 | 0.0359 | 0.912 | 0.0363 | 0.922 | 0.0019 | 0.0483 | 0.0385 | 0.9779 | 19 |
| 20 | 0.0317 | 0.805 | 0.0320 | 0.813 | 0.0323 | 0.820 | 0.0018 | 0.0457 | 0.0345 | 0.8763 | 20 |
| 21 | 0.0282 | 0.716 | 0.0285 | 0.724 | 0.0288 | 0.732 | 0.0017 | 0.0432 | 0.0309 | 0.7849 | 21 |
| 22 | 0.0250 | 0.635 | 0.0253 | 0.643 | 0.0256 | 0.650 | 0.0016 | 0.0406 | 0.0276 | 0.7010 | 22 |
| 23 | 0.0224 | 0.569 | 0.0226 | 0.574 | 0.0228 | 0.579 | 0.0015 | 0.0381 | 0.0248 | 0.6299 | 23 |
| 24 | 0.0199 | 0.505 | 0.0201 | 0.511 | 0.0203 | 0.516 | 0.0014 | 0.0356 | 0.0222 | 0.5639 | 24 |
| 25 | 0.0177 | 0.450 | 0.0179 | 0.455 | 0.0181 | 0.460 | 0.0014 | 0.0356 | 0.0199 | 0.5055 | 25 |
| 26 | 0.0157 | 0.399 | 0.0159 | 0.404 | 0.0161 | 0.409 | 0.0013 | 0.0330 | 0.0178 | 0.4521 | 26 |
| 27 | 0.0141 | 0.358 | 0.0142 | 0.361 | 0.0143 | 0.363 | 0.0012 | 0.0305 | 0.0160 | 0.4064 | 27 |
| 28 | 0.0125 | 0.318 | 0.0126 | 0.320 | 0.0127 | 0.323 | 0.0012 | 0.0305 | 0.0144 | 0.3658 | 28 |
| 29 | 0.0112 | 0.284 | 0.0113 | 0.287 | 0.0114 | 0.290 | 0.0011 | 0.0279 | 0.0130 | 0.3302 | 29 |
| 30 | 0.0099 | 0.251 | 0.0100 | 0.254 | 0.0101 | 0.257 | 0.0010 | 0.0254 | 0.0116 | 0.2946 | 30 |
| 31 | 0.0088 | 0.224 | 0.0089 | 0.226 | 0.0090 | 0.229 | 0.0010 | 0.0254 | 0.0104 | 0.2642 | 31 |
| 32 | 0.0079 | 0.201 | 0.0080 | 0.203 | 0.0081 | 0.206 | 0.0008 | 0.0203 | 0.0095 | 0.2413 | 32 |
| 33 | 0.0070 | 0.178 | 0.0071 | 0.180 | 0.0072 | 0.183 | 0.0008 | 0.0203 | 0.0085 | 0.2159 | 33 |
| Half AWG Size | Bare Wire Diameter | | | | | | Increase in Diameter Due to Film Coating | | Overall Diameter of Film-Coated Wire | | Half AWG Size |
| | Minimum | | Nominal | | Maximum | | Minimum | | Maximum | | |
| | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm | |
| 14 ½ | 0.0599 | 1.521 | 0.0605 | 1.537 | 0.0611 | 1.552 | 0.0024 | 0.0610 | 0.0638 | 1.621 | 14 ½ |
| 15 ½ | 0.0534 | 1.356 | 0.0539 | 1.369 | 0.0544 | 1.382 | 0.0023 | 0.0584 | 0.0569 | 1.445 | 15 ½ |
| 16 ½ | 0.0475 | 1.207 | 0.0480 | 1.219 | 0.0485 | 1.232 | 0.0022 | 0.0559 | 0.0510 | 1.295 | 16 ½ |
| 17 ½ | 0.0423 | 1.074 | 0.0427 | 1.085 | 0.0431 | 1.095 | 0.0021 | 0.0533 | 0.0455 | 1.156 | 17 ½ |
| 18 ½ | 0.0376 | 0.955 | 0.0380 | 0.965 | 0.0384 | 0.975 | 0.0020 | 0.0508 | 0.0408 | 1.036 | 18 ½ |
| 19 ½ | 0.0336 | 0.853 | 0.0339 | 0.861 | 0.0342 | 0.869 | 0.0019 | 0.0483 | 0.0364 | 0.925 | 19 ½ |
| 20 ½ | 0.0299 | 0.759 | 0.0302 | 0.767 | 0.0305 | 0.775 | 0.0018 | 0.0457 | 0.0327 | 0.831 | 20 ½ |
| 21 ½ | 0.0266 | 0.676 | 0.0269 | 0.683 | 0.0272 | 0.691 | 0.0017 | 0.0432 | 0.0293 | 0.744 | 21 ½ |
| 22 ½ | 0.0237 | 0.602 | 0.0239 | 0.607 | 0.0241 | 0.612 | 0.0016 | 0.0406 | 0.0261 | 0.663 | 22 ½ |
| 23 ½ | 0.0211 | 0.536 | 0.0213 | 0.541 | 0.0215 | 0.546 | 0.0015 | 0.0381 | 0.0235 | 0.597 | 23 ½ |
| 24 ½ | 0.0188 | 0.478 | 0.0190 | 0.483 | 0.0192 | 0.488 | 0.0015 | 0.0381 | 0.0211 | 0.536 | 24 ½ |
| 25 ½ | 0.0167 | 0.424 | 0.0169 | 0.429 | 0.0171 | 0.434 | 0.0014 | 0.0356 | 0.0189 | 0.480 | 25 ½ |
| 26 ½ | 0.0149 | 0.378 | 0.0150 | 0.381 | 0.0152 | 0.386 | 0.0013 | 0.0330 | 0.0169 | 0.429 | 26 ½ |
| 27 ½ | 0.0133 | 0.338 | 0.0134 | 0.340 | 0.0135 | 0.343 | 0.0012 | 0.0305 | 0.0152 | 0.386 | 27 ½ |
| 28 ½ | 0.0118 | 0.300 | 0.0119 | 0.302 | 0.0120 | 0.305 | 0.0011 | 0.0279 | 0.0136 | 0.345 | 28 ½ |
| 29 ½ | 0.0105 | 0.267 | 0.0106 | 0.269 | 0.0107 | 0.272 | 0.0011 | 0.0279 | 0.0122 | 0.310 | 29 ½ |
| 30 ½ | 0.0094 | 0.239 | 0.0095 | 0.241 | 0.0096 | 0.244 | 0.0009 | 0.0229 | 0.0111 | 0.281 | 30 ½ |
| 31 ½ | 0.0083 | 0.211 | 0.0084 | 0.213 | 0.0085 | 0.216 | 0.0009 | 0.0229 | 0.0099 | 0.251 | 31 ½ |
| 32 ½ | 0.0074 | 0.188 | 0.0075 | 0.191 | 0.0076 | 0.193 | 0.0008 | 0.0202 | 0.0090 | 0.227 | 32 ½ |

ROUND, HEAVY BUILD FILM-INSULATED WIRE

Copper & Aluminum

DIMENSIONS

| Whole AWG Size | Bare Wire Diameter | | | | | | Increase in Diameter Due to Film Coating | | Overall Diameter of Film-Coated Wire | | Whole AWG Size |
|----------------------|--------------------|--------|---------|--------|---------|--------|---|--------|---|--------|----------------------|
| | Minimum | | Nominal | | Maximum | | Minimum | | Maximum | | |
| | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm | |
| 1 | 0.2864 | 7.275 | 0.2893 | 7.348 | 0.2922 | 7.422 | 0.0039 | 0.099 | 0.2951 | 7.496 | 1 |
| 2 | 0.2550 | 6.477 | 0.2576 | 6.543 | 0.2602 | 6.609 | 0.0038 | 0.097 | 0.2634 | 6.690 | 2 |
| 3 | 0.2271 | 5.768 | 0.2294 | 5.827 | 0.2317 | 5.885 | 0.0038 | 0.097 | 0.2351 | 5.971 | 3 |
| 4 | 0.2023 | 5.138 | 0.2043 | 5.189 | 0.2057 | 5.225 | 0.0037 | 0.094 | 0.2098 | 5.330 | 4 |
| 5 | 0.1801 | 4.575 | 0.1819 | 4.620 | 0.1832 | 4.666 | 0.0037 | 0.094 | 0.1873 | 4.757 | 5 |
| 6 | 0.1604 | 4.074 | 0.1620 | 4.115 | 0.1631 | 4.155 | 0.0036 | 0.091 | 0.1672 | 4.246 | 6 |
| 7 | 0.1429 | 3.630 | 0.1443 | 3.665 | 0.1453 | 3.701 | 0.0035 | 0.089 | 0.1492 | 3.790 | 7 |
| 8 | 0.1272 | 3.231 | 0.1285 | 3.264 | 0.1294 | 3.297 | 0.0035 | 0.089 | 0.1332 | 3.383 | 8 |
| 9 | 0.1133 | 2.878 | 0.1144 | 2.906 | 0.1153 | 2.929 | 0.0034 | 0.086 | 0.1190 | 3.023 | 9 |
| 10 | 0.1009 | 2.563 | 0.1019 | 2.588 | 0.1027 | 2.609 | 0.0034 | 0.086 | 0.1064 | 2.703 | 10 |
| 11 | 0.0898 | 2.281 | 0.0907 | 2.304 | 0.0914 | 2.322 | 0.0033 | 0.084 | 0.0952 | 2.418 | 11 |
| 12 | 0.0800 | 2.032 | 0.0808 | 2.052 | 0.0814 | 2.069 | 0.0032 | 0.081 | 0.0851 | 2.163 | 12 |
| 13 | 0.0713 | 1.811 | 0.0720 | 1.829 | 0.0726 | 1.843 | 0.0032 | 0.081 | 0.0762 | 1.934 | 13 |
| 14 | 0.0635 | 1.613 | 0.0641 | 1.628 | 0.0647 | 1.643 | 0.0032 | 0.081 | 0.0682 | 1.732 | 14 |
| 15 | 0.0565 | 1.435 | 0.0571 | 1.450 | 0.0577 | 1.466 | 0.0030 | 0.076 | 0.0610 | 1.549 | 15 |
| 16 | 0.0503 | 1.278 | 0.0508 | 1.290 | 0.0513 | 1.303 | 0.0029 | 0.074 | 0.0545 | 1.384 | 16 |
| 17 | 0.0448 | 1.138 | 0.0453 | 1.151 | 0.0458 | 1.163 | 0.0028 | 0.071 | 0.0488 | 1.240 | 17 |
| 18 | 0.0399 | 1.013 | 0.0403 | 1.024 | 0.0407 | 1.034 | 0.0026 | 0.066 | 0.0437 | 1.110 | 18 |
| 19 | 0.0355 | 0.902 | 0.0359 | 0.912 | 0.0363 | 0.922 | 0.0025 | 0.064 | 0.0391 | 0.993 | 19 |
| 20 | 0.0317 | 0.805 | 0.0320 | 0.813 | 0.0323 | 0.820 | 0.0024 | 0.061 | 0.0351 | 0.892 | 20 |
| 21 | 0.0282 | 0.716 | 0.0285 | 0.724 | 0.0288 | 0.732 | 0.0022 | 0.056 | 0.0315 | 0.800 | 21 |
| 22 | 0.0250 | 0.635 | 0.0253 | 0.643 | 0.0256 | 0.650 | 0.0021 | 0.053 | 0.0281 | 0.714 | 22 |
| 23 | 0.0224 | 0.569 | 0.0226 | 0.574 | 0.0228 | 0.579 | 0.0020 | 0.051 | 0.0253 | 0.643 | 23 |
| 24 | 0.0199 | 0.505 | 0.0201 | 0.511 | 0.0203 | 0.516 | 0.0019 | 0.048 | 0.0227 | 0.577 | 24 |
| 25 | 0.0177 | 0.450 | 0.0179 | 0.455 | 0.0181 | 0.460 | 0.0018 | 0.046 | 0.0203 | 0.516 | 25 |
| 26 | 0.0157 | 0.399 | 0.0159 | 0.404 | 0.0161 | 0.409 | 0.0017 | 0.043 | 0.0182 | 0.462 | 26 |
| 27 | 0.0141 | 0.358 | 0.0142 | 0.361 | 0.0143 | 0.363 | 0.0016 | 0.041 | 0.0165 | 0.419 | 27 |
| 28 | 0.0125 | 0.318 | 0.0126 | 0.320 | 0.0127 | 0.323 | 0.0016 | 0.041 | 0.0147 | 0.373 | 28 |
| 29 | 0.0112 | 0.284 | 0.0113 | 0.287 | 0.0114 | 0.290 | 0.0015 | 0.038 | 0.0133 | 0.338 | 29 |
| 30 | 0.0099 | 0.251 | 0.010 | 0.254 | 0.0101 | 0.257 | 0.0013 | 0.033 | 0.0121 | 0.307 | 30 |
| 31 | 0.0088 | 0.224 | 0.0089 | 0.226 | 0.0090 | 0.229 | 0.0012 | 0.030 | 0.0108 | 0.275 | 31 |
| 32 | 0.0079 | 0.201 | 0.0080 | 0.203 | 0.0081 | 0.206 | 0.0011 | 0.028 | 0.0097 | 0.247 | 32 |
| 33 | 0.0070 | 0.178 | 0.0071 | 0.180 | 0.0072 | 0.183 | 0.0010 | 0.025 | 0.0087 | 0.222 | 33 |
| 34 | 0.0062 | 0.157 | 0.0063 | 0.160 | 0.0064 | 0.163 | 0.0009 | 0.023 | 0.0078 | 0.199 | 34 |
| 35 | 0.0055 | 0.140 | 0.0056 | 0.142 | 0.0057 | 0.145 | 0.0009 | 0.023 | 0.0070 | 0.178 | 35 |
| 36 | 0.0049 | 0.124 | 0.0050 | 0.127 | 0.0051 | 0.130 | 0.0008 | 0.020 | 0.0063 | 0.160 | 36 |
| 37 | 0.0044 | 0.112 | 0.0045 | 0.114 | 0.0046 | 0.117 | 0.0007 | 0.018 | 0.0057 | 0.144 | 37 |
| 38 | 0.0039 | 0.099 | 0.0040 | 0.102 | 0.0041 | 0.104 | 0.0007 | 0.018 | 0.0051 | 0.129 | 38 |
| 39 | 0.0034 | 0.086 | 0.0035 | 0.089 | 0.0036 | 0.091 | 0.0006 | 0.015 | 0.0045 | 0.116 | 39 |
| 40 | 0.0030 | 0.076 | 0.0031 | 0.079 | 0.0032 | 0.081 | 0.0005 | 0.013 | 0.0041 | 0.104 | 40 |
| 41 | 0.0027 | 0.069 | 0.0028 | 0.071 | 0.0029 | 0.074 | 0.0005 | 0.013 | 0.0037 | 0.093 | 41 |
| 42 | 0.0024 | 0.061 | 0.0025 | 0.064 | 0.0026 | 0.066 | 0.0005 | 0.013 | 0.0033 | 0.083 | 42 |
| 43 | 0.0021 | 0.053 | 0.0022 | 0.056 | 0.0023 | 0.058 | 0.0004 | 0.010 | 0.0029 | 0.075 | 43 |
| 44 | 0.0019 | 0.048 | 0.0020 | 0.051 | 0.0021 | 0.053 | 0.0004 | 0.010 | 0.0026 | 0.067 | 44 |
| 45 | 0.00169 | 0.0429 | 0.00176 | 0.0447 | 0.00183 | 0.0465 | 0.00040 | 0.0100 | 0.0024 | 0.0610 | 45 |
| 46 | 0.00151 | 0.0384 | 0.00157 | 0.0399 | 0.00163 | 0.0414 | 0.00030 | 0.0076 | 0.0021 | 0.0533 | 46 |

From NEMA Standards Publication No. MW 1000.

ROUND, HEAVY BUILD FILM-INSULATED WIRE

Copper & Aluminum

DIMENSIONS

| Half AWG Size | Bare Wire Diameter | | | | | | Increase in Diameter Due to Film Coating | | Overall Diameter of Film-Coated Wire | | Half AWG Size |
|---------------------|--------------------|-------|---------|-------|---------|-------|---|-------|---|-------|---------------------|
| | Minimum | | Nominal | | Maximum | | Minimum | | Maximum | | |
| | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm | |
| | | | | | | | | | | | |
| 1 ½ | 0.2703 | 6.866 | 0.2730 | 6.934 | 0.2749 | 6.982 | 0.0039 | 0.099 | 0.2788 | 7.082 | 1 ½ |
| 2 ½ | 0.2407 | 6.114 | 0.2431 | 6.175 | 0.2448 | 6.218 | 0.0038 | 0.097 | 0.2488 | 6.320 | 2 ½ |
| 3 ½ | 0.2143 | 5.443 | 0.2165 | 5.499 | 0.2180 | 5.538 | 0.0038 | 0.097 | 0.2221 | 5.641 | 3 ½ |
| 4 ½ | 0.1909 | 4.849 | 0.1928 | 4.897 | 0.1941 | 4.931 | 0.0037 | 0.094 | 0.1982 | 5.035 | 4 ½ |
| 5 ½ | 0.1700 | 4.318 | 0.1717 | 4.361 | 0.1729 | 4.392 | 0.0036 | 0.091 | 0.1769 | 4.494 | 5 ½ |
| 6 ½ | 0.1514 | 3.846 | 0.1529 | 3.884 | 0.1540 | 3.911 | 0.0036 | 0.091 | 0.1579 | 4.012 | 6 ½ |
| 7 ½ | 0.1348 | 3.424 | 0.1362 | 3.459 | 0.1372 | 3.484 | 0.0035 | 0.089 | 0.1410 | 3.581 | 7 ½ |
| 8 ½ | 0.1201 | 3.051 | 0.1213 | 3.081 | 0.1221 | 3.103 | 0.0034 | 0.086 | 0.1258 | 3.196 | 8 ½ |
| 9 ½ | 0.1069 | 2.715 | 0.1080 | 2.743 | 0.1089 | 2.765 | 0.0034 | 0.086 | 0.1125 | 2.859 | 9 ½ |
| 10 ½ | 0.0952 | 2.418 | 0.0962 | 2.443 | 0.0970 | 2.463 | 0.0033 | 0.084 | 0.1007 | 2.557 | 10 ½ |
| 11 ½ | 0.0847 | 2.151 | 0.0856 | 2.174 | 0.0863 | 2.192 | 0.0033 | 0.084 | 0.0900 | 2.287 | 11 ½ |
| 12 ½ | 0.0755 | 1.918 | 0.0763 | 1.938 | 0.0769 | 1.954 | 0.0032 | 0.081 | 0.0805 | 2.045 | 12 ½ |
| 13 ½ | 0.0672 | 1.707 | 0.0679 | 1.725 | 0.0684 | 1.738 | 0.0032 | 0.081 | 0.0720 | 1.829 | 13 ½ |
| 14 ½ | 0.0599 | 1.521 | 0.0605 | 1.537 | 0.0611 | 1.552 | 0.0031 | 0.079 | 0.0645 | 1.638 | 14 ½ |
| 15 ½ | 0.0534 | 1.356 | 0.0539 | 1.369 | 0.0544 | 1.382 | 0.0030 | 0.076 | 0.0578 | 1.468 | 15 ½ |
| 16 ½ | 0.0475 | 1.207 | 0.0480 | 1.219 | 0.0485 | 1.232 | 0.0028 | 0.071 | 0.0516 | 1.311 | 16 ½ |
| 17 ½ | 0.0423 | 1.074 | 0.0427 | 1.085 | 0.0431 | 1.095 | 0.0027 | 0.069 | 0.0462 | 1.173 | 17 ½ |
| 18 ½ | 0.0376 | 0.955 | 0.0380 | 0.965 | 0.0384 | 0.975 | 0.0025 | 0.064 | 0.0413 | 1.049 | 18 ½ |
| 19 ½ | 0.0336 | 0.853 | 0.0339 | 0.861 | 0.0342 | 0.869 | 0.0024 | 0.061 | 0.0371 | 0.942 | 19 ½ |
| 20 ½ | 0.0299 | 0.759 | 0.0302 | 0.767 | 0.0305 | 0.775 | 0.0023 | 0.058 | 0.0332 | 0.843 | 20 ½ |
| 21 ½ | 0.0266 | 0.676 | 0.0269 | 0.683 | 0.0272 | 0.691 | 0.0022 | 0.056 | 0.0298 | 0.757 | 21 ½ |
| 22 ½ | 0.0237 | 0.602 | 0.0239 | 0.607 | 0.0241 | 0.612 | 0.0021 | 0.053 | 0.0267 | 0.678 | 22 ½ |
| 23 ½ | 0.0211 | 0.536 | 0.0213 | 0.541 | 0.0215 | 0.546 | 0.0020 | 0.051 | 0.0240 | 0.610 | 23 ½ |
| 24 ½ | 0.0188 | 0.478 | 0.0190 | 0.483 | 0.0192 | 0.488 | 0.0019 | 0.048 | 0.0215 | 0.546 | 24 ½ |
| 25 ½ | 0.0167 | 0.424 | 0.0169 | 0.429 | 0.0171 | 0.434 | 0.0018 | 0.046 | 0.0193 | 0.490 | 25 ½ |
| 26 ½ | 0.0149 | 0.378 | 0.0150 | 0.381 | 0.0152 | 0.386 | 0.0017 | 0.043 | 0.0173 | 0.439 | 26 ½ |
| 27 ½ | 0.0133 | 0.338 | 0.0134 | 0.340 | 0.0135 | 0.343 | 0.0016 | 0.041 | 0.0156 | 0.396 | 27 ½ |
| 28 ½ | 0.0118 | 0.300 | 0.0119 | 0.302 | 0.0120 | 0.305 | 0.0015 | 0.038 | 0.0140 | 0.356 | 28 ½ |
| 29 ½ | 0.0105 | 0.267 | 0.0106 | 0.269 | 0.0107 | 0.272 | 0.0014 | 0.036 | 0.0126 | 0.320 | 29 ½ |
| 30 ½ | 0.0094 | 0.239 | 0.0095 | 0.241 | 0.0096 | 0.244 | 0.0013 | 0.033 | 0.0114 | 0.291 | 30 ½ |
| 31 ½ | 0.0083 | 0.211 | 0.0084 | 0.213 | 0.0085 | 0.216 | 0.0012 | 0.030 | 0.0103 | 0.261 | 31 ½ |
| 32 ½ | 0.0074 | 0.188 | 0.0075 | 0.191 | 0.0076 | 0.193 | 0.0011 | 0.028 | 0.0092 | 0.234 | 32 ½ |
| 33 ½ | 0.0066 | 0.168 | 0.0067 | 0.170 | 0.0068 | 0.173 | 0.0010 | 0.025 | 0.0083 | 0.210 | 33 ½ |
| 34 ½ | 0.0058 | 0.147 | 0.0059 | 0.150 | 0.0060 | 0.152 | 0.0009 | 0.023 | 0.0074 | 0.188 | 34 ½ |
| 35 ½ | 0.0052 | 0.132 | 0.0053 | 0.135 | 0.0054 | 0.137 | 0.0008 | 0.020 | 0.0066 | 0.169 | 35 ½ |
| 36 ½ | 0.0046 | 0.117 | 0.0047 | 0.119 | 0.0048 | 0.122 | 0.0007 | 0.018 | 0.0060 | 0.152 | 36 ½ |
| 37 ½ | 0.0041 | 0.104 | 0.0042 | 0.107 | 0.0043 | 0.109 | 0.0007 | 0.018 | 0.0054 | 0.136 | 37 ½ |
| 38 ½ | 0.0036 | 0.091 | 0.0037 | 0.094 | 0.0038 | 0.097 | 0.0006 | 0.015 | 0.0048 | 0.122 | 38 ½ |
| 39 ½ | 0.0032 | 0.081 | 0.0033 | 0.084 | 0.0034 | 0.086 | 0.0006 | 0.015 | 0.0043 | 0.109 | 39 ½ |
| 40 ½ | 0.0029 | 0.074 | 0.0030 | 0.076 | 0.0031 | 0.079 | 0.0005 | 0.013 | 0.0039 | 0.098 | 40 ½ |
| 41 ½ | 0.0025 | 0.064 | 0.0026 | 0.066 | 0.0027 | 0.069 | 0.0005 | 0.013 | 0.0035 | 0.088 | 41 ½ |
| 42 ½ | 0.0023 | 0.058 | 0.0024 | 0.061 | 0.0025 | 0.064 | 0.0005 | 0.013 | 0.0031 | 0.079 | 42 ½ |
| 43 ½ | 0.0020 | 0.051 | 0.0021 | 0.053 | 0.0022 | 0.056 | 0.0004 | 0.010 | 0.0028 | 0.071 | 43 ½ |
| 44 ½ | 0.0018 | 0.046 | 0.0019 | 0.048 | 0.0020 | 0.051 | 0.0004 | 0.010 | 0.0025 | 0.064 | 44 ½ |

ROUND, TRIPLE BUILD FILM-INSULATED WIRE

Copper & Aluminum

DIMENSIONS

| Whole AWG Size | Bare Wire Diameter | | | | | | Increase in Diameter Due to Film Coating | | Overall Diameter of Film-Coated Wire | | Whole AWG Size |
|----------------------|--------------------|-------|---------|-------|---------|-------|---|-------|---|-------|----------------------|
| | Minimum | | Nominal | | Maximum | | Minimum | | Maximum | | |
| | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm | |
| 10 | 0.1009 | 2.563 | 0.1019 | 2.588 | 0.1027 | 2.609 | 0.0051 | 0.130 | 0.1079 | 2.741 | 10 |
| 11 | 0.0898 | 2.281 | 0.0907 | 2.304 | 0.0914 | 2.322 | 0.005 | 0.127 | 0.0965 | 2.451 | 11 |
| 12 | 0.0800 | 2.032 | 0.0808 | 2.052 | 0.0814 | 2.069 | 0.0048 | 0.122 | 0.0864 | 2.195 | 12 |
| 13 | 0.0713 | 1.811 | 0.0720 | 1.829 | 0.0726 | 1.843 | 0.0048 | 0.122 | 0.0775 | 1.969 | 13 |
| 14 | 0.0635 | 1.613 | 0.0641 | 1.628 | 0.0647 | 1.643 | 0.0048 | 0.122 | 0.0698 | 1.773 | 14 |
| 15 | 0.0565 | 1.435 | 0.0571 | 1.450 | 0.0577 | 1.466 | 0.0046 | 0.117 | 0.0625 | 1.588 | 15 |
| 16 | 0.0503 | 1.278 | 0.0508 | 1.290 | 0.0513 | 1.303 | 0.0043 | 0.109 | 0.0560 | 1.422 | 16 |
| 17 | 0.0448 | 1.138 | 0.0453 | 1.151 | 0.0458 | 1.163 | 0.0041 | 0.104 | 0.0502 | 1.275 | 17 |
| 18 | 0.0399 | 1.013 | 0.0403 | 1.024 | 0.0407 | 1.034 | 0.0039 | 0.099 | 0.045 | 1.143 | 18 |
| 19 | 0.0355 | 0.902 | 0.0359 | 0.912 | 0.0363 | 0.922 | 0.0037 | 0.094 | 0.0404 | 1.026 | 19 |
| 20 | 0.0317 | 0.805 | 0.0320 | 0.813 | 0.0323 | 0.820 | 0.0035 | 0.089 | 0.0363 | 0.922 | 20 |
| 21 | 0.0282 | 0.716 | 0.0285 | 0.724 | 0.0288 | 0.732 | 0.0034 | 0.086 | 0.0326 | 0.828 | 21 |
| 22 | 0.0250 | 0.635 | 0.0253 | 0.643 | 0.0256 | 0.650 | 0.0032 | 0.081 | 0.0292 | 0.742 | 22 |
| 23 | 0.0224 | 0.569 | 0.0226 | 0.574 | 0.0228 | 0.579 | 0.0030 | 0.076 | 0.0263 | 0.668 | 23 |
| 24 | 0.0199 | 0.505 | 0.0201 | 0.511 | 0.0203 | 0.516 | 0.0029 | 0.074 | 0.0236 | 0.599 | 24 |
| 25 | 0.0177 | 0.450 | 0.0179 | 0.455 | 0.0181 | 0.460 | 0.0027 | 0.069 | 0.0212 | 0.538 | 25 |
| 26 | 0.0157 | 0.399 | 0.0159 | 0.404 | 0.0161 | 0.409 | 0.0026 | 0.066 | 0.0191 | 0.485 | 26 |
| 27 | 0.0141 | 0.358 | 0.0142 | 0.361 | 0.0143 | 0.363 | 0.0025 | 0.064 | 0.0173 | 0.439 | 27 |
| 28 | 0.0125 | 0.318 | 0.0126 | 0.320 | 0.0127 | 0.323 | 0.0023 | 0.058 | 0.0155 | 0.394 | 28 |
| 29 | 0.0112 | 0.284 | 0.0113 | 0.287 | 0.0114 | 0.290 | 0.0022 | 0.056 | 0.0141 | 0.358 | 29 |
| 30 | 0.0099 | 0.251 | 0.0100 | 0.254 | 0.0101 | 0.257 | 0.0020 | 0.051 | 0.0126 | 0.321 | 30 |
| 31 | 0.0088 | 0.224 | 0.0089 | 0.226 | 0.0090 | 0.229 | 0.0018 | 0.046 | 0.0114 | 0.289 | 31 |
| 32 | 0.0079 | 0.201 | 0.0080 | 0.203 | 0.0081 | 0.206 | 0.0017 | 0.043 | 0.0102 | 0.260 | 32 |
| Half AWG Size | Bare Wire Diameter | | | | | | Increase in Diameter Due to Film Coating | | Overall Diameter of Film-Coated Wire | | Half AWG Size |
| | Minimum | | Nominal | | Maximum | | Minimum | | Maximum | | |
| | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm | |
| 10 ½ | 0.0952 | 2.418 | 0.0962 | 2.443 | 0.097 | 2.463 | 0.0051 | 0.130 | 0.1022 | 2.596 | 10 ½ |
| 11 ½ | 0.0847 | 2.151 | 0.0856 | 2.174 | 0.0863 | 2.192 | 0.0050 | 0.127 | 0.0914 | 2.322 | 11 ½ |
| 12 ½ | 0.0755 | 1.918 | 0.0763 | 1.938 | 0.0769 | 1.954 | 0.0048 | 0.122 | 0.0819 | 2.080 | 12 ½ |
| 13 ½ | 0.0672 | 1.707 | 0.0679 | 1.725 | 0.0684 | 1.738 | 0.0048 | 0.122 | 0.0734 | 1.864 | 13 ½ |
| 14 ½ | 0.0599 | 1.521 | 0.0605 | 1.537 | 0.0611 | 1.552 | 0.0047 | 0.119 | 0.0661 | 1.679 | 14 ½ |
| 15 ½ | 0.0534 | 1.356 | 0.0539 | 1.369 | 0.0544 | 1.382 | 0.0045 | 0.114 | 0.0592 | 1.504 | 15 ½ |
| 16 ½ | 0.0475 | 1.207 | 0.0480 | 1.219 | 0.0485 | 1.232 | 0.0042 | 0.107 | 0.053 | 1.346 | 16 ½ |
| 17 ½ | 0.0423 | 1.074 | 0.0427 | 1.085 | 0.0431 | 1.095 | 0.0040 | 0.102 | 0.0476 | 1.209 | 17 ½ |
| 18 ½ | 0.0376 | 0.955 | 0.0380 | 0.965 | 0.0384 | 0.975 | 0.0038 | 0.097 | 0.0426 | 1.082 | 18 ½ |
| 19 ½ | 0.0336 | 0.853 | 0.0339 | 0.861 | 0.0342 | 0.869 | 0.0036 | 0.091 | 0.0383 | 0.973 | 19 ½ |
| 20 ½ | 0.0299 | 0.759 | 0.0302 | 0.767 | 0.0305 | 0.775 | 0.0034 | 0.086 | 0.0344 | 0.874 | 20 ½ |
| 21 ½ | 0.0266 | 0.676 | 0.0269 | 0.683 | 0.0272 | 0.691 | 0.0033 | 0.084 | 0.0309 | 0.785 | 21 ½ |
| 22 ½ | 0.0237 | 0.602 | 0.0239 | 0.607 | 0.0241 | 0.612 | 0.0031 | 0.079 | 0.0277 | 0.704 | 22 ½ |
| 23 ½ | 0.0211 | 0.536 | 0.0213 | 0.541 | 0.0215 | 0.546 | 0.0030 | 0.076 | 0.0249 | 0.632 | 23 ½ |
| 24 ½ | 0.0188 | 0.478 | 0.0190 | 0.483 | 0.0192 | 0.488 | 0.0028 | 0.071 | 0.0224 | 0.569 | 24 ½ |
| 25 ½ | 0.0167 | 0.424 | 0.0169 | 0.429 | 0.0171 | 0.434 | 0.0027 | 0.069 | 0.0202 | 0.513 | 25 ½ |
| 26 ½ | 0.0149 | 0.378 | 0.0150 | 0.381 | 0.0152 | 0.386 | 0.0025 | 0.064 | 0.0182 | 0.462 | 26 ½ |
| 27 ½ | 0.0133 | 0.338 | 0.0134 | 0.340 | 0.0135 | 0.343 | 0.0024 | 0.061 | 0.0164 | 0.417 | 27 ½ |
| 28 ½ | 0.0118 | 0.300 | 0.0119 | 0.302 | 0.0120 | 0.305 | 0.0023 | 0.058 | 0.0147 | 0.373 | 28 ½ |
| 29 ½ | 0.0105 | 0.267 | 0.0106 | 0.269 | 0.0107 | 0.272 | 0.0022 | 0.056 | 0.0133 | 0.338 | 29 ½ |
| 30 ½ | 0.0094 | 0.239 | 0.0095 | 0.241 | 0.0096 | 0.244 | 0.0019 | 0.048 | 0.0120 | 0.304 | 30 ½ |
| 31 ½ | 0.0083 | 0.211 | 0.0084 | 0.213 | 0.0085 | 0.216 | 0.0017 | 0.043 | 0.0108 | 0.274 | 31 ½ |

ROUND, SINGLE BUILD FILM-INSULATED WIRE

Copper

WEIGHTS

| Whole AWG Size | NOMINAL | | | | | | | | | | Whole AWG Size |
|----------------|------------------|--------------------|---------------------|-------------------------|----------------|---------------------|----------------|-------------------|--------------------|-------------------|----------------|
| | Bare Diam. (in.) | Overall Dia. (in.) | Pounds Per 1000 Ft. | Kilograms Per Kilometer | Feet Per Pound | Meters Per Kilogram | Ohms Per Pound | Ohms Per Kilogram | Wires Per Sq. Inch | Ohms Per Cu. Inch | |
| 8 | 0.1285 | 0.1302 | 50.18 | 74.74 | 19.93 | 13.38 | 0.0125 | 0.0276 | 59.0 | 0.0031 | 8 |
| 9 | 0.1144 | 0.1162 | 39.80 | 59.29 | 25.12 | 16.87 | 0.0199 | 0.0439 | 74.1 | 0.0049 | 9 |
| 10 | 0.1019 | 0.1037 | 31.60 | 47.06 | 31.65 | 21.25 | 0.0316 | 0.0697 | 93.1 | 0.0077 | 10 |
| 11 | 0.0907 | 0.0925 | 25.05 | 37.31 | 39.92 | 26.80 | 0.0503 | 0.1110 | 117.0 | 0.0123 | 11 |
| 12 | 0.0808 | 0.0825 | 19.89 | 29.62 | 50.28 | 33.76 | 0.0799 | 0.1761 | 147.1 | 0.0195 | 12 |
| 13 | 0.0720 | 0.0737 | 15.81 | 23.54 | 63.26 | 42.47 | 0.1266 | 0.2790 | 184.1 | 0.0307 | 13 |
| 14 | 0.0641 | 0.0659 | 12.54 | 18.68 | 79.73 | 53.53 | 0.2012 | 0.4437 | 230.6 | 0.0485 | 14 |
| 15 | 0.0571 | 0.0587 | 9.955 | 14.83 | 100.5 | 67.44 | 0.3195 | 0.7044 | 290.2 | 0.0769 | 15 |
| 16 | 0.0508 | 0.0524 | 7.888 | 11.75 | 126.8 | 85.11 | 0.5095 | 1.123 | 364.2 | 0.1220 | 16 |
| 17 | 0.0453 | 0.0469 | 6.278 | 9.351 | 159.3 | 106.9 | 0.805 | 1.775 | 455.6 | 0.1919 | 17 |
| 18 | 0.0403 | 0.0418 | 4.973 | 7.407 | 201.1 | 135.0 | 1.284 | 2.831 | 572.3 | 0.3046 | 18 |
| 19 | 0.0359 | 0.0373 | 3.949 | 5.882 | 253.2 | 170.0 | 2.038 | 4.493 | 718.8 | 0.4820 | 19 |
| 20 | 0.0320 | 0.0335 | 3.144 | 4.682 | 318.1 | 213.6 | 3.222 | 7.103 | 893.7 | 0.7543 | 20 |
| 21 | 0.0285 | 0.0298 | 2.494 | 3.714 | 401.0 | 269.2 | 5.120 | 11.29 | 1126 | 1.198 | 21 |
| 22 | 0.0253 | 0.0266 | 1.968 | 2.931 | 508.2 | 341.2 | 8.235 | 18.15 | 1419 | 1.915 | 22 |
| 23 | 0.0226 | 0.0239 | 1.573 | 2.343 | 635.7 | 426.8 | 12.91 | 28.46 | 1758 | 2.975 | 23 |
| 24 | 0.0201 | 0.0213 | 1.246 | 1.856 | 802.6 | 538.8 | 20.60 | 45.42 | 2204 | 4.715 | 24 |
| 25 | 0.0179 | 0.0190 | 0.9887 | 1.473 | 1011 | 679.1 | 32.74 | 72.18 | 2770 | 7.472 | 25 |
| 26 | 0.0159 | 0.0170 | 0.7812 | 1.164 | 1280 | 859.4 | 52.51 | 115.8 | 3481 | 11.90 | 26 |
| 27 | 0.0142 | 0.0153 | 0.6247 | 0.9305 | 1601 | 1075 | 82.34 | 181.5 | 4300 | 18.43 | 27 |
| 28 | 0.0126 | 0.0137 | 0.4933 | 0.7348 | 2027 | 1361 | 132.4 | 291.9 | 5367 | 29.22 | 28 |
| 29 | 0.0113 | 0.0123 | 0.3969 | 0.5911 | 2520 | 1692 | 204.6 | 451.2 | 6664 | 45.10 | 29 |
| 30 | 0.0100 | 0.0109 | 0.3114 | 0.4638 | 3211 | 2156 | 333.0 | 734.2 | 8417 | 72.74 | 30 |
| 31 | 0.0089 | 0.0097 | 0.2467 | 0.3674 | 4054 | 2722 | 530.8 | 1170 | 10628 | 116.0 | 31 |
| 32 | 0.0080 | 0.0088 | 0.1995 | 0.2972 | 5011 | 3364 | 812.1 | 1790 | 13061 | 176.4 | 32 |
| 33 | 0.0071 | 0.0078 | 0.1574 | 0.2345 | 6352 | 4265 | 1307 | 2881 | 16437 | 281.8 | 33 |
| 34 | 0.0063 | 0.0070 | 0.1241 | 0.1849 | 8056 | 5409 | 2105 | 4641 | 20703 | 450.8 | 34 |
| 35 | 0.0056 | 0.0062 | 0.09821 | 0.1463 | 10183 | 6836 | 3368 | 7424 | 26015 | 716.9 | 35 |
| 36 | 0.0050 | 0.0056 | 0.07836 | 0.1167 | 12761 | 8568 | 5294 | 11671 | 32465 | 1122 | 36 |
| 37 | 0.0045 | 0.0050 | 0.06350 | 0.09458 | 15749 | 10573 | 8066 | 17782 | 40000 | 1707 | 37 |
| 38 | 0.0040 | 0.0045 | 0.05019 | 0.07476 | 19923 | 13376 | 12914 | 28470 | 50499 | 2728 | 38 |
| 39 | 0.0035 | 0.0040 | 0.03863 | 0.05754 | 25885 | 17378 | 21914 | 48312 | 64092 | 4522 | 39 |
| 40 | 0.0031 | 0.0035 | 0.03031 | 0.04515 | 32990 | 22149 | 35603 | 78490 | 81633 | 7341 | 40 |
| 41 | 0.0028 | 0.0032 | 0.02470 | 0.03678 | 40492 | 27185 | 53565 | 118089 | 100781 | 11110 | 41 |
| 42 | 0.0025 | 0.0028 | 0.01965 | 0.02928 | 50878 | 34158 | 84424 | 186122 | 127551 | 17638 | 42 |
| 43 | 0.0022 | 0.0025 | 0.01530 | 0.02279 | 65344 | 43870 | 140018 | 308684 | 160000 | 28570 | 43 |
| 44 | 0.0020 | 0.0023 | 0.01260 | 0.01877 | 79365 | 53283 | 205774 | 453651 | 197531 | 42679 | 44 |

ROUND, SINGLE BUILD FILM-INSULATED WIRE

Copper

WEIGHTS

| Half AWG Size | NOMINAL | | | | | | | | | | Half AWG Size |
|---------------------|---------------------|-----------------------|---------------------------|-------------------------------|----------------------|---------------------------|----------------------|-------------------------|--------------------------|-------------------------|---------------------|
| | Bare Diam. (in.) | Overall Dia. (in.) | Pounds Per 1000 Ft. | Kilograms Per Kilometer | Feet Per Pound | Meters Per Kilogram | Ohms Per Pound | Ohms Per Kilogram | Wires Per Sq. Inch | Ohms Per Cu. Inch | |
| 8 ½ | 0.1213 | 0.1230 | 44.72 | 66.62 | 22.36 | 15.01 | 0.0158 | 0.0347 | 66.2 | 0.0039 | 8 ½ |
| 9 ½ | 0.1080 | 0.1098 | 35.48 | 52.85 | 28.18 | 18.92 | 0.0251 | 0.0552 | 83.0 | 0.0062 | 9 ½ |
| 10 ½ | 0.0962 | 0.0980 | 28.17 | 41.96 | 35.50 | 23.83 | 0.0398 | 0.0877 | 104.2 | 0.0097 | 10 ½ |
| 11 ½ | 0.0856 | 0.0873 | 22.31 | 33.23 | 44.82 | 30.09 | 0.0634 | 0.1399 | 131.4 | 0.0155 | 11 ½ |
| 12 ½ | 0.0763 | 0.0780 | 17.74 | 26.42 | 56.37 | 37.84 | 0.1004 | 0.2214 | 164.6 | 0.0244 | 12 ½ |
| 13 ½ | 0.0679 | 0.0696 | 14.06 | 20.94 | 71.12 | 47.75 | 0.1600 | 0.3527 | 206.7 | 0.0388 | 13 ½ |
| 14 ½ | 0.0605 | 0.0622 | 11.18 | 16.65 | 89.48 | 60.07 | 0.2535 | 0.5589 | 258.5 | 0.0610 | 14 ½ |
| 15 ½ | 0.0539 | 0.0556 | 8.880 | 13.23 | 112.5 | 75.60 | 0.4017 | 0.8856 | 323.5 | 0.0962 | 15 ½ |
| 16 ½ | 0.0480 | 0.0496 | 7.044 | 10.49 | 141.7 | 95.25 | 0.6380 | 1.407 | 407.3 | 0.1525 | 16 ½ |
| 17 ½ | 0.0427 | 0.0443 | 5.582 | 8.317 | 178.9 | 120.2 | 1.018 | 2.244 | 510.7 | 0.2418 | 17 ½ |
| 18 ½ | 0.0380 | 0.0395 | 4.423 | 6.592 | 225.7 | 151.7 | 1.621 | 3.574 | 642.5 | 0.3839 | 18 ½ |
| 19 ½ | 0.0339 | 0.0354 | 3.525 | 5.250 | 283.4 | 190.5 | 2.558 | 5.639 | 800.2 | 0.6013 | 19 ½ |
| 20 ½ | 0.0302 | 0.0316 | 2.799 | 4.172 | 356.7 | 239.7 | 4.056 | 8.942 | 1005 | 0.9505 | 20 ½ |
| 21 ½ | 0.0269 | 0.0282 | 2.224 | 3.313 | 449.2 | 301.9 | 6.438 | 14.19 | 1257 | 1.500 | 21 ½ |
| 22 ½ | 0.0239 | 0.0252 | 1.759 | 2.619 | 568.3 | 381.9 | 10.32 | 22.75 | 1575 | 2.382 | 22 ½ |
| 23 ½ | 0.0213 | 0.0226 | 1.399 | 2.083 | 714.4 | 480.1 | 16.33 | 36.00 | 1967 | 3.743 | 23 ½ |
| 24 ½ | 0.0190 | 0.0202 | 1.114 | 1.660 | 896.4 | 602.4 | 25.75 | 56.77 | 2463 | 5.885 | 24 ½ |
| 25 ½ | 0.0169 | 0.0180 | 0.8823 | 1.314 | 1132 | 760.8 | 41.11 | 90.63 | 3086 | 9.329 | 25 ½ |
| 26 ½ | 0.0150 | 0.0161 | 0.6969 | 1.037 | 1435 | 964.0 | 66.13 | 145.8 | 3858 | 14.82 | 26 ½ |
| 27 ½ | 0.0134 | 0.0145 | 0.5571 | 0.8292 | 1795 | 1206 | 103.7 | 228.6 | 4789 | 23.06 | 27 ½ |
| 28 ½ | 0.0119 | 0.0129 | 0.4401 | 0.6561 | 2268 | 1524 | 166.1 | 366.2 | 6009 | 36.61 | 28 ½ |
| 29 ½ | 0.0106 | 0.0115 | 0.3493 | 0.5209 | 2857 | 1920 | 263.7 | 581.4 | 7561 | 58.04 | 29 ½ |
| 30 ½ | 0.0095 | 0.0103 | 0.2805 | 0.4191 | 3551 | 2386 | 408.0 | 899.5 | 9426 | 89.90 | 30 ½ |
| 31 ½ | 0.0084 | 0.0092 | 0.2201 | 0.3278 | 4543 | 3051 | 667.3 | 1471 | 11815 | 144.6 | 31 ½ |
| 32 ½ | 0.0075 | 0.0082 | 0.1754 | 0.2623 | 5703 | 3812 | 1046 | 2306 | 14872 | 227.3 | 32 ½ |
| 33 ½ | 0.0067 | 0.0074 | 0.1401 | 0.2093 | 7137 | 4779 | 1643 | 3622 | 18511 | 355.1 | 33 ½ |
| 34 ½ | 0.0059 | 0.0065 | 0.1088 | 0.1626 | 9190 | 6150 | 2727 | 6012 | 23669 | 585.3 | 34 ½ |
| 35 ½ | 0.0053 | 0.0059 | 0.08787 | 0.1310 | 11381 | 7634 | 4194 | 9246 | 29221 | 897.4 | 35 ½ |
| 36 ½ | 0.0047 | 0.0053 | 0.06940 | 0.1035 | 14409 | 9663 | 6751 | 14883 | 36281 | 1417 | 36 ½ |
| 37 ½ | 0.0042 | 0.0047 | 0.05524 | 0.0824 | 18103 | 12130 | 10620 | 23413 | 46248 | 2261 | 37 ½ |
| 38 ½ | 0.0037 | 0.0042 | 0.06940 | 0.0643 | 23215 | 15550 | 17540 | 38669 | 58064 | 3656 | 38 ½ |
| 39 ½ | 0.0033 | 0.0037 | 0.03426 | 0.0509 | 29188 | 19640 | 27840 | 61377 | 73046 | 5806 | 39 ½ |
| 40 ½ | 0.0030 | 0.0034 | 0.02827 | 0.0421 | 35371 | 23747 | 40759 | 89857 | 89107 | 8557 | 40 ½ |
| 41 ½ | 0.0026 | 0.0030 | 0.02136 | 0.0318 | 46812 | 31428 | 71818 | 158331 | 114910 | 14691 | 41 ½ |
| 42 ½ | 0.0024 | 0.0027 | 0.01802 | 0.0268 | 55494 | 37257 | 99917 | 220280 | 142399 | 21366 | 42 ½ |
| 43 ½ | 0.0021 | 0.0024 | 0.01386 | 0.0207 | 72128 | 48425 | 169624 | 373957 | 181077 | 35487 | 43 ½ |
| 44 ½ | 0.0019 | 0.0022 | 0.01140 | 0.0170 | 87748 | 58911 | 252087 | 555756 | 216333 | 51791 | 44 ½ |

ROUND, MEDIUM BUILD FILM-INSULATED WIRE

Copper

WEIGHTS

| Whole AWG Size | NOMINAL | | | | | | | | | | Whole AWG Size |
|----------------|------------------|--------------------|---------------------|-------------------------|----------------|---------------------|----------------|-------------------|--------------------|-------------------|----------------|
| | Bare Diam. (in.) | Overall Dia. (in.) | Pounds Per 1000 Ft. | Kilograms Per Kilometer | Feet Per Pound | Meters Per Kilogram | Ohms Per Pound | Ohms Per Kilogram | Wires Per Sq. Inch | Ohms Per Cu. Inch | |
| 14 | 0.0641 | 0.0667 | 12.59 | 18.76 | 79.42 | 53.32 | 0.2005 | 0.4419 | 225.1 | 0.0474 | 14 |
| 15 | 0.0571 | 0.0595 | 10.00 | 14.89 | 100.0 | 67.14 | 0.3181 | 0.7013 | 282.5 | 0.0749 | 15 |
| 16 | 0.0508 | 0.0532 | 7.925 | 11.80 | 126.2 | 84.72 | 0.5071 | 1.118 | 354.0 | 0.1186 | 16 |
| 17 | 0.0453 | 0.0476 | 6.308 | 9.396 | 158.5 | 106.4 | 0.8011 | 1.766 | 442.3 | 0.1863 | 17 |
| 18 | 0.0403 | 0.0425 | 5.000 | 7.448 | 200.0 | 134.3 | 1.277 | 2.815 | 553.6 | 0.2946 | 18 |
| 19 | 0.0359 | 0.0380 | 3.971 | 5.915 | 251.8 | 169.1 | 2.026 | 4.467 | 694.3 | 0.4656 | 19 |
| 20 | 0.0320 | 0.0340 | 3.161 | 4.708 | 316.4 | 212.4 | 3.204 | 7.064 | 865.1 | 0.7301 | 20 |
| 21 | 0.0285 | 0.0304 | 2.510 | 3.739 | 398.3 | 267.4 | 5.086 | 11.21 | 1082 | 1.151 | 21 |
| 22 | 0.0253 | 0.0271 | 1.981 | 2.951 | 504.7 | 338.9 | 8.178 | 18.03 | 1362 | 1.838 | 22 |
| 23 | 0.0226 | 0.0244 | 1.584 | 2.360 | 631.3 | 423.8 | 12.82 | 28.26 | 1687 | 2.854 | 23 |
| 24 | 0.0201 | 0.0218 | 1.255 | 1.869 | 796.9 | 535.0 | 20.46 | 45.10 | 2114 | 4.522 | 24 |
| 25 | 0.0179 | 0.0195 | 0.998 | 1.486 | 1002 | 673.0 | 32.45 | 71.53 | 2630 | 7.094 | 25 |
| 26 | 0.0159 | 0.0174 | 0.7884 | 1.174 | 1268 | 851.6 | 52.03 | 114.7 | 3303 | 11.29 | 26 |
| 27 | 0.0142 | 0.0157 | 0.6304 | 0.9390 | 1586 | 1065 | 81.59 | 179.9 | 4083 | 17.50 | 27 |
| 28 | 0.0126 | 0.0141 | 0.4985 | 0.7425 | 2006 | 1347 | 131.1 | 288.9 | 5066 | 27.58 | 28 |
| 29 | 0.0113 | 0.0127 | 0.4015 | 0.5980 | 2491 | 1672 | 202.3 | 446.0 | 6249 | 42.30 | 29 |
| 30 | 0.0100 | 0.0113 | 0.3150 | 0.4692 | 3175 | 2131 | 329.2 | 725.8 | 7901 | 68.29 | 30 |
| 31 | 0.0089 | 0.0101 | 0.2503 | 0.3729 | 3995 | 2682 | 523.0 | 1153 | 9803 | 107.0 | 31 |
| 32 | 0.0080 | 0.0091 | 0.2024 | 0.3015 | 4940 | 3316 | 800.5 | 1765 | 12076 | 163.1 | 32 |
| 33 | 0.0071 | 0.0082 | 0.1600 | 0.2383 | 6250 | 4196 | 1286 | 2835 | 15055 | 258.1 | 33 |
| Half AWG Size | NOMINAL | | | | | | | | | | Half AWG Size |
| | Bare Diam. (in.) | Overall Dia. (in.) | Pounds Per 1000 Ft. | Kilograms Per Kilometer | Feet Per Pound | Meters Per Kilogram | Ohms Per Pound | Ohms Per Kilogram | Wires Per Sq. Inch | Ohms Per Cu. Inch | |
| 14 ½ | 0.0605 | 0.0631 | 11.23 | 16.72 | 89.08 | 59.81 | 0.2524 | 0.5565 | 251.6 | 0.0594 | 14 ½ |
| 15 ½ | 0.0539 | 0.0563 | 8.917 | 13.28 | 112.2 | 75.29 | 0.4004 | 0.8826 | 315.5 | 0.0939 | 15 ½ |
| 16 ½ | 0.0480 | 0.0504 | 7.081 | 10.55 | 141.2 | 94.81 | 0.6357 | 1.401 | 394.5 | 0.1480 | 16 ½ |
| 17 ½ | 0.0427 | 0.0450 | 5.610 | 8.357 | 178.2 | 119.7 | 1.014 | 2.235 | 494.9 | 0.2346 | 17 ½ |
| 18 ½ | 0.0380 | 0.0402 | 4.451 | 6.629 | 224.7 | 150.8 | 1.614 | 3.558 | 618.8 | 0.3704 | 18 ½ |
| 19 ½ | 0.0339 | 0.0360 | 3.545 | 5.280 | 282.1 | 189.4 | 2.546 | 5.612 | 773.8 | 0.5819 | 19 ½ |
| 20 ½ | 0.0302 | 0.0322 | 2.819 | 4.198 | 354.8 | 238.2 | 4.034 | 8.894 | 964.5 | 0.9139 | 20 ½ |
| 21 ½ | 0.0269 | 0.0288 | 2.239 | 3.336 | 446.6 | 299.8 | 6.400 | 14.11 | 1206 | 1.440 | 21 ½ |
| 22 ½ | 0.0239 | 0.0257 | 1.770 | 2.637 | 564.8 | 379.2 | 10.26 | 22.61 | 1514 | 2.291 | 22 ½ |
| 23 ½ | 0.0213 | 0.0231 | 1.409 | 2.099 | 709.6 | 476.4 | 16.22 | 35.76 | 1882 | 3.585 | 23 ½ |
| 24 ½ | 0.0190 | 0.0207 | 1.124 | 1.674 | 889.7 | 597.3 | 25.56 | 56.35 | 2334 | 5.587 | 24 ½ |
| 25 ½ | 0.0169 | 0.0185 | 0.8908 | 1.327 | 1123 | 753.7 | 40.76 | 89.87 | 2922 | 8.841 | 25 ½ |
| 26 ½ | 0.0150 | 0.0166 | 0.7037 | 1.048 | 1421 | 954.0 | 65.50 | 144.4 | 3651 | 14.02 | 26 ½ |
| 27 ½ | 0.0134 | 0.0149 | 0.5625 | 0.8378 | 1778 | 1194 | 102.7 | 226.4 | 4535 | 21.83 | 27 ½ |
| 28 ½ | 0.0119 | 0.0133 | 0.4444 | 0.6619 | 2250 | 1511 | 164.8 | 363.3 | 5696 | 34.76 | 28 ½ |
| 29 ½ | 0.0106 | 0.0119 | 0.3537 | 0.5268 | 2828 | 1898 | 261.0 | 575.4 | 7062 | 54.32 | 29 ½ |
| 30 ½ | 0.0095 | 0.0107 | 0.2842 | 0.4233 | 3519 | 2363 | 404.4 | 891.5 | 8775 | 84.03 | 30 ½ |
| 31 ½ | 0.0084 | 0.0096 | 0.2231 | 0.3324 | 4481 | 3009 | 658.7 | 1452 | 10965 | 134.3 | 31 ½ |
| 32 ½ | 0.0075 | 0.0086 | 0.1782 | 0.2655 | 5610 | 3766 | 1034 | 2280 | 13608 | 209.1 | 32 ½ |

ROUND, HEAVY BUILD AND SELF-BONDING, TYPE 1 FILM-INSULATED WIRE

| Copper | | | | | | | | | | | WEIGHTS |
|----------------------|---------------------|-----------------------|---------------------------|----------------------------|-------------------|------------------------|-------------------|----------------------|-----------------------|----------------------|----------------------|
| Whole AWG Size | NOMINAL | | | | | | | | | | Whole AWG Size |
| | Bare Diam. (in.) | Overall Dia. (in.) | Pounds Per 1000 Ft. | Kilograms Per Kilometer | Feet Per Pound | Meters Per Kilogram | Ohms Per Pound | Ohms Per Kilogram | Wires Per Sq. Inch | Ohms Per Cu. Inch | |
| 1 | 0.2893 | 0.2927 | 254.3 | 378.7 | 3.933 | 2.640 | 0.0005 | 0.0011 | 11.67 | 0.0001 | 1 |
| 2 | 0.2576 | 0.2611 | 201.7 | 300.4 | 4.958 | 3.328 | 0.0008 | 0.0017 | 14.67 | 0.0002 | 2 |
| 3 | 0.2294 | 0.2330 | 160.1 | 238.4 | 6.247 | 4.194 | 0.0012 | 0.0027 | 18.42 | 0.0003 | 3 |
| 4 | 0.2043 | 0.2079 | 127.0 | 189.2 | 7.872 | 5.285 | 0.0020 | 0.0043 | 23.14 | 0.0005 | 4 |
| 5 | 0.1819 | 0.1856 | 100.8 | 150.1 | 9.923 | 6.662 | 0.0031 | 0.0069 | 29.05 | 0.0008 | 5 |
| 6 | 0.1620 | 0.1656 | 79.99 | 119.1 | 12.50 | 8.393 | 0.0049 | 0.0109 | 36.47 | 0.0012 | 6 |
| 7 | 0.1443 | 0.1478 | 63.50 | 94.59 | 15.75 | 10.572 | 0.0078 | 0.0173 | 45.78 | 0.0019 | 7 |
| 8 | 0.1285 | 0.1320 | 50.40 | 75.07 | 19.84 | 13.321 | 0.0125 | 0.0275 | 57.44 | 0.0030 | 8 |
| 9 | 0.1144 | 0.1179 | 39.99 | 59.56 | 25.01 | 16.790 | 0.0198 | 0.0437 | 72.00 | 0.0048 | 9 |
| 10 | 0.1019 | 0.1054 | 31.76 | 47.31 | 31.48 | 21.137 | 0.0314 | 0.0693 | 90.10 | 0.0075 | 10 |
| 11 | 0.0907 | 0.0942 | 25.20 | 37.53 | 39.69 | 26.645 | 0.0500 | 0.1103 | 112.81 | 0.0119 | 11 |
| 12 | 0.0808 | 0.0842 | 20.02 | 29.82 | 49.95 | 33.538 | 0.0794 | 0.1749 | 141.22 | 0.0187 | 12 |
| 13 | 0.0720 | 0.0754 | 15.92 | 23.71 | 62.81 | 42.170 | 0.1257 | 0.2770 | 176.13 | 0.0294 | 13 |
| 14 | 0.0641 | 0.0675 | 12.64 | 18.83 | 79.11 | 53.109 | 0.1997 | 0.4402 | 219.80 | 0.0462 | 14 |
| 15 | 0.0571 | 0.0603 | 10.04 | 14.96 | 99.60 | 66.866 | 0.3168 | 0.6984 | 275.48 | 0.0730 | 15 |
| 16 | 0.0508 | 0.0539 | 7.959 | 11.86 | 125.6 | 84.349 | 0.5049 | 1.113 | 344.85 | 0.1155 | 16 |
| 17 | 0.0453 | 0.0482 | 6.337 | 9.439 | 157.8 | 105.9 | 0.7975 | 1.758 | 430.43 | 0.1813 | 17 |
| 18 | 0.0403 | 0.0431 | 5.024 | 7.484 | 199.0 | 133.6 | 1.271 | 2.802 | 538.33 | 0.2865 | 18 |
| 19 | 0.0359 | 0.0386 | 3.993 | 5.947 | 250.5 | 168.2 | 2.015 | 4.443 | 672.90 | 0.4512 | 19 |
| 20 | 0.0320 | 0.0346 | 3.180 | 4.736 | 314.5 | 211.1 | 3.185 | 7.022 | 835.31 | 0.7050 | 20 |
| 21 | 0.0285 | 0.0310 | 2.526 | 3.763 | 395.9 | 265.8 | 5.054 | 11.14 | 1043.95 | 1.111 | 21 |
| 22 | 0.0253 | 0.0276 | 1.994 | 2.970 | 501.5 | 336.7 | 8.126 | 17.91 | 1312.75 | 1.772 | 22 |
| 23 | 0.0226 | 0.0249 | 1.596 | 2.377 | 626.8 | 420.8 | 12.73 | 28.06 | 1619.37 | 2.740 | 23 |
| 24 | 0.0201 | 0.0223 | 1.265 | 1.884 | 790.5 | 530.7 | 20.29 | 44.73 | 2019.95 | 4.321 | 24 |
| 25 | 0.0179 | 0.0199 | 1.005 | 1.497 | 995.1 | 668.1 | 32.21 | 71.01 | 2525.19 | 6.811 | 25 |
| 26 | 0.0159 | 0.0178 | 0.7949 | 1.184 | 1258 | 844.6 | 51.61 | 113.8 | 3156.17 | 10.79 | 26 |
| 27 | 0.0142 | 0.0161 | 0.6370 | 0.9488 | 1570 | 1054 | 80.74 | 178.0 | 3857.88 | 16.54 | 27 |
| 28 | 0.0126 | 0.0144 | 0.5031 | 0.7493 | 1988 | 1335 | 129.9 | 286.3 | 4822.53 | 26.25 | 28 |
| 29 | 0.0113 | 0.0130 | 0.4056 | 0.6042 | 2465 | 1655 | 200.2 | 441.4 | 5917.16 | 40.05 | 29 |
| 30 | 0.0100 | 0.0117 | 0.3192 | 0.4755 | 3132 | 2103 | 324.9 | 716.2 | 7367.98 | 63.68 | 30 |
| 31 | 0.0089 | 0.0104 | 0.2532 | 0.3771 | 3950 | 2652 | 517.2 | 1140 | 9245.56 | 100.9 | 31 |
| 32 | 0.0080 | 0.0094 | 0.2046 | 0.3047 | 4888 | 3282 | 792.1 | 1746 | 11438.70 | 154.5 | 32 |
| 33 | 0.0071 | 0.0084 | 0.1615 | 0.2406 | 6191 | 4156 | 1274 | 2808 | 14342.57 | 245.9 | 33 |
| 34 | 0.0063 | 0.0075 | 0.1275 | 0.1899 | 7845 | 5267 | 2050 | 4519 | 18017.21 | 392.3 | 34 |
| 35 | 0.0056 | 0.0067 | 0.1012 | 0.1507 | 9882 | 6635 | 3268 | 7205 | 22276.68 | 613.9 | 35 |
| 36 | 0.0050 | 0.0060 | 0.08077 | 0.1203 | 12381 | 8312 | 5136 | 11323 | 27777.78 | 960 | 36 |
| 37 | 0.0045 | 0.0054 | 0.06542 | 0.09745 | 15285 | 10262 | 7828 | 17259 | 34293.55 | 1464 | 37 |
| 38 | 0.0040 | 0.0049 | 0.05192 | 0.07733 | 19262 | 12932 | 12486 | 27526 | 42512.49 | 2296 | 38 |
| 39 | 0.0035 | 0.0043 | 0.03977 | 0.05924 | 25143 | 16880 | 21287 | 46929 | 55363.32 | 3906 | 39 |
| 40 | 0.0031 | 0.0038 | 0.03133 | 0.04666 | 31922 | 21432 | 34450 | 75950 | 69252.08 | 6228 | 40 |
| 41 | 0.0028 | 0.0035 | 0.02561 | 0.03815 | 39043 | 26212 | 51647 | 113863 | 84015.96 | 9262 | 41 |
| 42 | 0.0025 | 0.0031 | 0.02047 | 0.03050 | 48841 | 32790 | 81045 | 178674 | 104058.27 | 14389 | 42 |
| 43 | 0.0022 | 0.0027 | 0.01579 | 0.02351 | 63351 | 42532 | 135746 | 299269 | 137174.21 | 24494 | 43 |
| 44 | 0.0020 | 0.0025 | 0.01304 | 0.01942 | 76715 | 51504 | 198903 | 438506 | 166597.25 | 35995 | 44 |
| 45 | 0.0018 | 0.00225 | 0.01028 | 0.01531 | 97316 | 65334 | 325820 | 718309 | 198411.71 | 55358 | 45 |
| 46 | 0.0016 | 0.00196 | 0.00809 | 0.01205 | 123615 | 82991 | 520105 | 1146636 | 261641.41 | 91737 | 46 |

ROUND, HEAVY BUILD AND SELF-BONDING, TYPE 1 FILM-INSULATED WIRE

Copper

WEIGHTS

| Half AWG Size | NOMINAL | | | | | | | | | | Half AWG Size |
|---------------------|---------------------|-----------------------|------------------------|----------------------------|-------------------|------------------------|-------------------|----------------------|-----------------------|----------------------|---------------------|
| | Bare Diam. (in.) | Overall Dia. (in.) | Pounds Per 1000 Ft. | Kilograms Per Kilometer | Feet Per Pound | Meters Per Kilogram | Ohms Per Pound | Ohms Per Kilogram | Wires Per Sq. Inch | Ohms Per Cu. Inch | |
| 1 ½ | 0.2730 | 0.2765 | 226.5 | 337.4 | 4.415 | 2.964 | 0.0006 | 0.0014 | 13.08 | 0.0002 | 1 ½ |
| 2 ½ | 0.2431 | 0.2467 | 179.7 | 267.7 | 5.565 | 3.736 | 0.0010 | 0.0022 | 16.44 | 0.0002 | 2 ½ |
| 3 ½ | 0.2165 | 0.2201 | 142.6 | 212.4 | 7.012 | 4.708 | 0.0016 | 0.0034 | 20.64 | 0.0004 | 3 ½ |
| 4 ½ | 0.1928 | 0.1964 | 113.2 | 168.6 | 8.836 | 5.932 | 0.0025 | 0.0054 | 25.92 | 0.0006 | 4 ½ |
| 5 ½ | 0.1717 | 0.1753 | 89.81 | 133.8 | 11.13 | 7.476 | 0.0039 | 0.0086 | 32.56 | 0.0010 | 5 ½ |
| 6 ½ | 0.1529 | 0.1565 | 71.27 | 106.2 | 14.03 | 9.419 | 0.0062 | 0.0137 | 40.86 | 0.0015 | 6 ½ |
| 7 ½ | 0.1362 | 0.1397 | 56.59 | 84.3 | 17.67 | 11.86 | 0.0099 | 0.0218 | 51.28 | 0.0024 | 7 ½ |
| 8 ½ | 0.1213 | 0.1247 | 44.92 | 66.9 | 22.26 | 14.95 | 0.0157 | 0.0346 | 64.36 | 0.0038 | 8 ½ |
| 9 ½ | 0.1080 | 0.1114 | 35.65 | 53.1 | 28.05 | 18.83 | 0.0249 | 0.0550 | 80.58 | 0.0060 | 9 ½ |
| 10 ½ | 0.0962 | 0.0996 | 28.32 | 42.2 | 35.31 | 23.71 | 0.0396 | 0.0872 | 100.80 | 0.0094 | 10 ½ |
| 11 ½ | 0.0856 | 0.0890 | 22.45 | 33.4 | 44.53 | 29.90 | 0.0630 | 0.1390 | 126.25 | 0.0149 | 11 ½ |
| 12 ½ | 0.0763 | 0.0796 | 17.86 | 26.6 | 55.99 | 37.59 | 0.0997 | 0.2199 | 157.82 | 0.0234 | 12 ½ |
| 13 ½ | 0.0679 | 0.0712 | 14.17 | 21.1 | 70.58 | 47.39 | 0.1588 | 0.3500 | 197.26 | 0.0370 | 13 ½ |
| 14 ½ | 0.0605 | 0.0638 | 11.27 | 16.8 | 88.76 | 59.59 | 0.2515 | 0.5544 | 246.06 | 0.0581 | 14 ½ |
| 15 ½ | 0.0539 | 0.0571 | 8.959 | 13.3 | 111.6 | 74.94 | 0.3985 | 0.8785 | 306.71 | 0.0912 | 15 ½ |
| 16 ½ | 0.0480 | 0.0510 | 7.109 | 10.6 | 140.7 | 94.43 | 0.6332 | 1.396 | 385.22 | 0.1445 | 16 ½ |
| 17 ½ | 0.0427 | 0.0456 | 5.638 | 8.4 | 177.4 | 119.1 | 1.009 | 2.224 | 480.92 | 0.2280 | 17 ½ |
| 18 ½ | 0.0380 | 0.0407 | 4.469 | 6.7 | 223.7 | 150.2 | 1.607 | 3.543 | 603.69 | 0.3613 | 18 ½ |
| 19 ½ | 0.0339 | 0.0366 | 3.565 | 5.3 | 280.5 | 188.3 | 2.531 | 5.581 | 748.56 | 0.5629 | 19 ½ |
| 20 ½ | 0.0302 | 0.0327 | 2.834 | 4.2 | 352.9 | 236.9 | 4.013 | 8.847 | 935.20 | 0.886 | 20 ½ |
| 21 ½ | 0.0269 | 0.0293 | 2.253 | 3.4 | 443.9 | 298.0 | 6.362 | 14.03 | 1164.84 | 1.391 | 21 ½ |
| 22 ½ | 0.0239 | 0.0263 | 1.784 | 2.7 | 560.7 | 376.4 | 10.18 | 22.44 | 1451.25 | 2.196 | 22 ½ |
| 23 ½ | 0.0213 | 0.0236 | 1.420 | 2.1 | 704.2 | 472.8 | 16.10 | 35.49 | 1803.09 | 3.435 | 23 ½ |
| 24 ½ | 0.0190 | 0.0211 | 1.132 | 1.7 | 883.6 | 593.2 | 25.38 | 55.96 | 2246.13 | 5.377 | 24 ½ |
| 25 ½ | 0.0169 | 0.0189 | 0.8977 | 1.3 | 1114 | 747.9 | 40.45 | 89.18 | 2799.47 | 8.47 | 25 ½ |
| 26 ½ | 0.0150 | 0.0170 | 0.7099 | 1.1 | 1409 | 945.7 | 64.93 | 143.1 | 3480.65 | 13.37 | 26 ½ |
| 27 ½ | 0.0134 | 0.0153 | 0.5681 | 0.8 | 1760 | 1182 | 101.7 | 224.2 | 4299.92 | 20.70 | 27 ½ |
| 28 ½ | 0.0119 | 0.0137 | 0.4494 | 0.7 | 2225 | 1494 | 163.0 | 359.3 | 5367.04 | 32.76 | 28 ½ |
| 29 ½ | 0.0106 | 0.0123 | 0.3576 | 0.5 | 2797 | 1878 | 258.1 | 569.1 | 6663.89 | 51.26 | 29 ½ |
| 30 ½ | 0.0095 | 0.0111 | 0.2879 | 0.4 | 3473 | 2332 | 399.1 | 879.9 | 8189.84 | 78.4 | 30 ½ |
| 31 ½ | 0.0084 | 0.0099 | 0.2263 | 0.3 | 4419 | 2967 | 649.5 | 1432 | 10203.04 | 125.0 | 31 ½ |
| 32 ½ | 0.0075 | 0.0089 | 0.1805 | 0.3 | 5540 | 3720 | 1022 | 2252 | 12767.72 | 196.2 | 32 ½ |
| 33 ½ | 0.0067 | 0.0080 | 0.1444 | 0.2 | 6927 | 4651 | 1600 | 3528 | 15822.16 | 304.6 | 33 ½ |
| 34 ½ | 0.0059 | 0.0071 | 0.1123 | 0.2 | 8907 | 5980 | 2654 | 5851 | 20119.71 | 499.5 | 34 ½ |
| 35 ½ | 0.0053 | 0.0063 | 0.0904 | 0.1 | 11062 | 7427 | 4084 | 9004 | 25195.26 | 775 | 35 ½ |
| 36 ½ | 0.0047 | 0.0057 | 0.07142 | 0.1 | 14002 | 9400 | 6574 | 14493 | 31325.87 | 1226 | 36 ½ |
| 37 ½ | 0.0042 | 0.0051 | 0.05727 | 0.1 | 17461 | 11722 | 10266 | 22632 | 38446.75 | 1884 | 37 ½ |
| 38 ½ | 0.0037 | 0.0045 | 0.04448 | 0.1 | 22483 | 15095 | 17033 | 37550 | 49382.72 | 3118 | 38 ½ |
| 39 ½ | 0.0033 | 0.0041 | 0.03552 | 0.1 | 28156 | 18903 | 26814 | 59115 | 60966.32 | 4838 | 39 ½ |
| 40 ½ | 0.0030 | 0.0037 | 0.02924 | 0.0 | 34194 | 22957 | 39403 | 86870 | 75060.99 | 7208 | 40 ½ |
| 41 ½ | 0.0026 | 0.0033 | 0.02222 | 0.0 | 44998 | 30210 | 69035 | 152195 | 94674.56 | 12104 | 41 ½ |
| 42 ½ | 0.0024 | 0.0030 | 0.01880 | 0.0 | 53197 | 35715 | 95783 | 211164 | 114909.51 | 17241 | 42 ½ |
| 43 ½ | 0.0021 | 0.0026 | 0.01444 | 0.0 | 69265 | 46503 | 162892 | 359114 | 147928.99 | 28990 | 43 ½ |
| 44 ½ | 0.0019 | 0.0024 | 0.01181 | 0.0 | 84652 | 56833 | 243194 | 536150 | 181077.41 | 43351 | 44 ½ |

ROUND, TRIPLE BUILD AND SELF-BONDING, TYPE 2 FILM-INSULATED WIRE

Copper

WEIGHTS

| Whole AWG Size | NOMINAL | | | | | | | | | | Whole AWG Size |
|----------------------|---------------------|-----------------------|------------------------|-------------------------------|-------------------|------------------------|-------------------|----------------------|-----------------------|----------------------|----------------------|
| | Bare Diam. (in.) | Overall Dia. (in.) | Pounds Per 1000 Ft. | Kilograms Per Kilometer | Feet Per Pound | Meters Per Kilogram | Ohms Per Pound | Ohms Per Kilogram | Wires Per Sq. Inch | Ohms Per Cu. Inch | |
| 10 | 0.1019 | 0.1070 | 31.92 | 47.54 | 31.33 | 21.03 | 0.0313 | 0.0690 | 87.43 | 0.00728 | 10 |
| 11 | 0.0907 | 0.0985 | 25.33 | 37.73 | 39.48 | 26.51 | 0.0498 | 0.1097 | 103.07 | 0.01083 | 11 |
| 12 | 0.0808 | 0.0856 | 20.13 | 29.99 | 49.67 | 33.35 | 0.0789 | 0.1740 | 136.47 | 0.01807 | 12 |
| 13 | 0.0720 | 0.0768 | 16.02 | 23.87 | 62.41 | 41.90 | 0.1249 | 0.2753 | 169.54 | 0.02827 | 13 |
| 14 | 0.0641 | 0.0691 | 12.74 | 18.98 | 78.48 | 52.69 | 0.1981 | 0.4367 | 209.74 | 0.04412 | 14 |
| 15 | 0.0571 | 0.0618 | 10.13 | 15.09 | 98.74 | 66.29 | 0.3141 | 0.6924 | 261.83 | 0.06940 | 15 |
| 16 | 0.0508 | 0.0553 | 8.033 | 11.96 | 124.5 | 83.58 | 0.5003 | 1.103 | 327.0 | 0.1095 | 16 |
| 17 | 0.0453 | 0.0496 | 6.398 | 9.530 | 156.3 | 104.9 | 0.7899 | 1.741 | 407.30 | 0.1715 | 17 |
| 18 | 0.0403 | 0.0444 | 5.077 | 7.562 | 197.0 | 132.2 | 1.258 | 2.773 | 507.26 | 0.2699 | 18 |
| 19 | 0.0359 | 0.0398 | 4.038 | 6.014 | 247.7 | 166.3 | 1.993 | 4.393 | 631.30 | 0.4233 | 19 |
| 20 | 0.0320 | 0.0358 | 3.217 | 4.792 | 310.8 | 208.7 | 3.148 | 6.940 | 782.43 | 0.6604 | 20 |
| 21 | 0.0285 | 0.0321 | 2.560 | 3.813 | 390.7 | 262.3 | 4.988 | 11.00 | 970.49 | 1.033 | 21 |
| 22 | 0.0253 | 0.0287 | 2.023 | 3.013 | 494.4 | 331.9 | 8.011 | 17.66 | 1214.05 | 1.639 | 22 |
| 23 | 0.0226 | 0.0259 | 1.619 | 2.411 | 617.7 | 414.7 | 12.54 | 27.65 | 1496.51 | 2.532 | 23 |
| 24 | 0.0201 | 0.0232 | 1.285 | 1.914 | 778.2 | 522.4 | 19.98 | 44.04 | 1857.91 | 3.974 | 24 |
| 25 | 0.0179 | 0.0208 | 1.022 | 1.522 | 978.6 | 657.0 | 31.68 | 69.83 | 2311.39 | 6.235 | 25 |
| 26 | 0.0159 | 0.0187 | 0.8101 | 1.207 | 1234 | 828.7 | 50.64 | 111.6 | 2859.68 | 9.780 | 26 |
| 27 | 0.0142 | 0.0170 | 0.6500 | 0.9682 | 1538 | 1033 | 79.12 | 174.4 | 3480.65 | 14.92 | 27 |
| 28 | 0.0126 | 0.0152 | 0.5133 | 0.7646 | 1948 | 1308 | 127.3 | 280.6 | 4356.87 | 23.72 | 28 |
| 29 | 0.0113 | 0.0138 | 0.4149 | 0.6180 | 2410 | 1618 | 195.7 | 431.5 | 5289.26 | 35.80 | 29 |
| 30 | 0.0100 | 0.0123 | 0.3259 | 0.4854 | 3069 | 2060 | 318.2 | 701.6 | 6663.89 | 57.59 | 30 |
| 31 | 0.0089 | 0.0110 | 0.2591 | 0.3860 | 3859 | 2591 | 505.3 | 1114.0 | 8264.46 | 90.2 | 31 |
| 32 | 0.0080 | 0.0099 | 0.2095 | 0.3120 | 4774 | 3205 | 773.6 | 1705.5 | 10203.04 | 137.8 | 32 |

ROUND, TRIPLE BUILD AND SELF-BONDING, TYPE 2 FILM-INSULATED WIRE

Copper

WEIGHTS

| Half AWG Size | NOMINAL | | | | | | | | | | Half AWG Size |
|---------------------|---------------------|-----------------------|------------------------|-------------------------------|-------------------|------------------------|-------------------|----------------------|-----------------------|----------------------|---------------------|
| | Bare Diam. (in.) | Overall Dia. (in.) | Pounds Per 1000 Ft. | Kilograms Per Kilometer | Feet Per Pound | Meters Per Kilogram | Ohms Per Pound | Ohms Per Kilogram | Wires Per Sq. Inch | Ohms Per Cu. Inch | |
| 10 ½ | 0.0962 | 0.1070 | 28.47 | 42.41 | 35.12 | 23.58 | 0.0394 | 0.0868 | 87.43 | 0.00816 | 10 ½ |
| 11 ½ | 0.0856 | 0.0957 | 22.58 | 33.64 | 44.28 | 29.73 | 0.0627 | 0.1382 | 109.3 | 0.01289 | 11 ½ |
| 12 ½ | 0.0763 | 0.0856 | 17.97 | 26.77 | 55.64 | 37.36 | 0.0991 | 0.2185 | 136.5 | 0.02026 | 12 ½ |
| 13 ½ | 0.0679 | 0.0768 | 14.27 | 21.25 | 70.09 | 47.05 | 0.1577 | 0.3476 | 169.5 | 0.03178 | 13 ½ |
| 14 ½ | 0.0605 | 0.0691 | 11.36 | 16.92 | 88.01 | 59.09 | 0.2494 | 0.5498 | 209.7 | 0.04952 | 14 ½ |
| 15 ½ | 0.0539 | 0.0618 | 9.036 | 13.46 | 110.67 | 74.30 | 0.3951 | 0.8709 | 261.8 | 0.07789 | 15 ½ |
| 16 ½ | 0.0480 | 0.0553 | 7.176 | 10.69 | 139.3 | 93.55 | 0.6272 | 1.383 | 327.0 | 0.1227 | 16 ½ |
| 17 ½ | 0.0427 | 0.0496 | 5.696 | 8.483 | 175.6 | 117.9 | 0.9987 | 2.202 | 407.3 | 0.1931 | 17 ½ |
| 18 ½ | 0.0380 | 0.0444 | 4.519 | 6.731 | 221.3 | 148.6 | 1.589 | 3.504 | 507.3 | 0.3036 | 18 ½ |
| 19 ½ | 0.0339 | 0.0398 | 3.606 | 5.372 | 277.3 | 186.2 | 2.502 | 5.517 | 631.3 | 0.4748 | 19 ½ |
| 20 ½ | 0.0302 | 0.0358 | 2.869 | 4.273 | 348.6 | 234.0 | 3.963 | 8.738 | 782.4 | 0.7414 | 20 ½ |
| 21 ½ | 0.0269 | 0.0321 | 2.283 | 3.401 | 438.0 | 294.0 | 6.277 | 13.84 | 970 | 1.159 | 21 ½ |
| 22 ½ | 0.0239 | 0.0287 | 1.808 | 2.694 | 553.0 | 371.3 | 10.04 | 22.13 | 1214 | 1.837 | 22 ½ |
| 23 ½ | 0.0213 | 0.0259 | 1.441 | 2.147 | 693.9 | 465.8 | 15.86 | 34.97 | 1497 | 2.851 | 23 ½ |
| 24 ½ | 0.0190 | 0.0232 | 1.150 | 1.712 | 869.8 | 583.9 | 24.99 | 55.09 | 1858 | 4.448 | 24 ½ |
| 25 ½ | 0.0169 | 0.0208 | 0.9138 | 1.3610 | 1094.3 | 734.7 | 39.74 | 87.60 | 2311 | 6.994 | 25 ½ |
| 26 ½ | 0.0150 | 0.0187 | 0.7303 | 1.0880 | 1369 | 919.3 | 63.12 | 139.2 | 2860 | 10.98 | 26 ½ |
| 27 ½ | 0.0134 | 0.0170 | 0.5797 | 0.8634 | 1725 | 1158 | 99.64 | 219.7 | 3481 | 16.75 | 27 ½ |
| 28 ½ | 0.0119 | 0.0152 | 0.4591 | 0.6838 | 2178 | 1462 | 159.5 | 351.7 | 4357 | 26.59 | 28 ½ |
| 29 ½ | 0.0106 | 0.0138 | 0.3663 | 0.5457 | 2730 | 1833 | 252.0 | 555.5 | 5289 | 40.68 | 29 ½ |
| 30 ½ | 0.0095 | 0.0130 | 0.2942 | 0.4383 | 3399 | 2282 | 390.5 | 861.0 | 5917 | 56.66 | 30 ½ |
| 31 ½ | 0.0084 | 0.0123 | 0.2310 | 0.3441 | 4329 | 2906 | 636.3 | 1402.8 | 6664 | 81.6 | 31 ½ |

ROUND, SINGLE BUILD FILM-INSULATED WIRE

| Aluminum | | | | | | | | | | WEIGHTS |
|----------------|------------------|---------------------|-------------------------|----------------|---------------------|----------------|-------------------|--------------------|-------------------|----------------|
| Whole AWG Size | NOMINAL | | | | | | | | | Whole AWG Size |
| | Bare Diam. (in.) | Pounds Per 1000 Ft. | Kilograms Per Kilometer | Feet Per Pound | Meters Per Kilogram | Ohms Per Pound | Ohms Per Kilogram | Wires Per Sq. Inch | Ohms Per Cu. Inch | |
| 8 | 0.1285 | 15.39 | 22.93 | 64.96 | 43.61 | 0.0408 | 0.0899 | 59.0 | 0.0031 | 8 |
| 9 | 0.1144 | 12.23 | 18.22 | 81.76 | 54.89 | 0.0648 | 0.1428 | 74.1 | 0.0049 | 9 |
| 10 | 0.1019 | 9.723 | 14.48 | 102.9 | 69.05 | 0.1027 | 0.2265 | 93.1 | 0.0077 | 10 |
| 11 | 0.0907 | 7.719 | 11.50 | 129.5 | 86.97 | 0.1633 | 0.3600 | 117.0 | 0.0123 | 11 |
| 12 | 0.0808 | 6.133 | 9.135 | 163.1 | 109.5 | 0.2590 | 0.5710 | 147.1 | 0.0195 | 12 |
| 13 | 0.0720 | 4.886 | 7.277 | 204.7 | 137.4 | 0.4095 | 0.9028 | 184.1 | 0.0307 | 13 |
| 14 | 0.0641 | 3.887 | 5.789 | 257.3 | 172.7 | 0.6494 | 1.432 | 230.6 | 0.0485 | 14 |
| 15 | 0.0571 | 3.086 | 4.597 | 324.0 | 217.5 | 1.031 | 2.272 | 290.2 | 0.0769 | 15 |
| 16 | 0.0508 | 2.451 | 3.651 | 407.9 | 273.9 | 1.639 | 3.614 | 364.2 | 0.1220 | 16 |
| 17 | 0.0453 | 1.955 | 2.911 | 511.6 | 343.5 | 2.586 | 5.700 | 455.6 | 0.1919 | 17 |
| 18 | 0.0403 | 1.552 | 2.311 | 644.5 | 432.7 | 4.115 | 9.073 | 572.3 | 0.3046 | 18 |
| 19 | 0.0359 | 1.234 | 1.837 | 810.7 | 544.3 | 6.523 | 14.38 | 718.8 | 0.4820 | 19 |
| 20 | 0.0320 | 0.9863 | 1.469 | 1014 | 680.7 | 10.27 | 22.64 | 893.7 | 0.7543 | 20 |
| 21 | 0.0285 | 0.7826 | 1.166 | 1278 | 857.9 | 16.31 | 35.97 | 1126 | 1.198 | 21 |
| 22 | 0.0253 | 0.6191 | 0.9221 | 1615 | 1084 | 26.17 | 57.70 | 1419 | 1.915 | 22 |
| 23 | 0.0226 | 0.4969 | 0.7402 | 2012 | 1351 | 40.86 | 90.08 | 1758 | 2.975 | 23 |
| 24 | 0.0201 | 0.3948 | 0.5881 | 2533 | 1700 | 65.02 | 143.3 | 2204 | 4.715 | 24 |
| 25 | 0.0179 | 0.3137 | 0.4672 | 3188 | 2140 | 103.2 | 227.5 | 2770 | 7.472 | 25 |
| 26 | 0.0159 | 0.2486 | 0.3703 | 4022 | 2700 | 165.0 | 363.7 | 3481 | 11.90 | 26 |
| 27 | 0.0142 | 0.1999 | 0.2977 | 5003 | 3359 | 257.3 | 567.3 | 4300 | 18.43 | 27 |
| 28 | 0.0126 | 0.1589 | 0.2366 | 6294 | 4226 | 411.2 | 906.5 | 5367 | 29.22 | 28 |
| Half AWG Size | NOMINAL | | | | | | | | | Half AWG Size |
| | Bare Diam. (in.) | Pounds Per 1000 Ft. | Kilograms Per Kilometer | Feet Per Pound | Meters Per Kilogram | Ohms Per Pound | Ohms Per Kilogram | Wires Per Sq. Inch | Ohms Per Cu. Inch | |
| 8 ½ | 0.1213 | 13.54 | 20.17 | 73.85 | 49.58 | 0.0521 | 0.1148 | 66.15 | 0.0039 | 8 ½ |
| 9 ½ | 0.1080 | 10.73 | 15.99 | 93.16 | 62.54 | 0.0828 | 0.1826 | 83.02 | 0.0062 | 9 ½ |
| 10 ½ | 0.0962 | 8.517 | 12.69 | 117.4 | 78.83 | 0.1316 | 0.2901 | 104.2 | 0.0097 | 10 ½ |
| 11 ½ | 0.0856 | 6.743 | 10.04 | 148.3 | 99.56 | 0.2099 | 0.4627 | 131.4 | 0.0155 | 11 ½ |
| 12 ½ | 0.0763 | 5.358 | 7.980 | 186.6 | 125.3 | 0.3325 | 0.7330 | 164.6 | 0.0244 | 12 ½ |
| 13 ½ | 0.0679 | 4.243 | 6.320 | 235.7 | 158.2 | 0.5302 | 1.169 | 206.7 | 0.0388 | 13 ½ |
| 14 ½ | 0.0605 | 3.369 | 5.017 | 296.9 | 199.3 | 0.8411 | 1.854 | 258.5 | 0.0610 | 14 ½ |
| 15 ½ | 0.0539 | 2.674 | 3.982 | 374.0 | 251.1 | 1.335 | 2.944 | 323.5 | 0.0962 | 15 ½ |
| 16 ½ | 0.0480 | 2.120 | 3.158 | 471.6 | 316.6 | 2.123 | 4.680 | 407.3 | 0.1528 | 16 ½ |
| 17 ½ | 0.0427 | 1.678 | 2.499 | 596.0 | 400.1 | 3.390 | 7.473 | 510.7 | 0.2421 | 17 ½ |
| 18 ½ | 0.0380 | 1.329 | 1.979 | 752.5 | 505.2 | 5.405 | 11.91 | 642.5 | 0.3846 | 18 ½ |
| 19 ½ | 0.0339 | 1.058 | 1.575 | 945.5 | 634.8 | 8.533 | 18.81 | 800.2 | 0.6018 | 19 ½ |
| 20 ½ | 0.0302 | 0.8394 | 1.250 | 1191 | 799.9 | 13.55 | 29.87 | 1005 | 0.952 | 20 ½ |
| 21 ½ | 0.0269 | 0.6659 | 0.9919 | 1502 | 1008 | 21.52 | 47.45 | 1257 | 1.502 | 21 ½ |
| 22 ½ | 0.0239 | 0.5257 | 0.7830 | 1902 | 1277 | 34.54 | 76.14 | 1575 | 2.383 | 22 ½ |
| 23 ½ | 0.0213 | 0.4175 | 0.6219 | 2395 | 1608 | 54.75 | 120.7 | 1967 | 3.746 | 23 ½ |
| 24 ½ | 0.0190 | 0.3322 | 0.4949 | 3010 | 2021 | 86.47 | 190.6 | 2463 | 5.896 | 24 ½ |
| 25 ½ | 0.0169 | 0.2628 | 0.3915 | 3804 | 2554 | 138.1 | 304.6 | 3086 | 9.339 | 25 ½ |
| 26 ½ | 0.0150 | 0.2071 | 0.3084 | 4829 | 3242 | 222.6 | 490.7 | 3858 | 14.82 | 26 ½ |
| 27 ½ | 0.0134 | 0.1652 | 0.2461 | 6051 | 4063 | 349.5 | 770.6 | 4789 | 23.05 | 27 ½ |

ROUND, MEDIUM BUILD FILM-INSULATED WIRE

Aluminum

WEIGHTS

| Whole AWG Size | NOMINAL | | | | | | | | | Whole AWG Size |
|----------------|------------------|---------------------|-------------------------|----------------|---------------------|----------------|-------------------|--------------------|-------------------|----------------|
| | Bare Diam. (in.) | Pounds Per 1000 Ft. | Kilograms Per Kilometer | Feet Per Pound | Meters Per Kilogram | Ohms Per Pound | Ohms Per Kilogram | Wires Per Sq. Inch | Ohms Per Cu. Inch | |
| 14 | 0.0641 | 3.936 | 5.862 | 254.1 | 170.6 | 1.038 | 2.288 | 225.1 | 0.0766 | 14 |
| 15 | 0.0571 | 3.130 | 4.662 | 319.5 | 214.5 | 1.644 | 3.625 | 282.5 | 0.1212 | 15 |
| 16 | 0.0508 | 2.488 | 3.706 | 401.9 | 269.8 | 2.614 | 5.762 | 354.0 | 0.1918 | 16 |
| 17 | 0.0453 | 1.985 | 2.957 | 503.7 | 338.2 | 4.119 | 9.082 | 442.3 | 0.3014 | 17 |
| 18 | 0.0403 | 1.579 | 2.352 | 633.3 | 425.2 | 6.544 | 14.427 | 553.6 | 0.4767 | 18 |
| 19 | 0.0359 | 1.256 | 1.871 | 796.1 | 534.4 | 10.37 | 22.85 | 694.3 | 0.7534 | 19 |
| 20 | 0.0320 | 1.004 | 1.495 | 996.5 | 669.0 | 16.33 | 36.00 | 865.1 | 1.181 | 20 |
| 21 | 0.0285 | 0.7993 | 1.191 | 1251 | 839.9 | 25.85 | 56.98 | 1082 | 1.863 | 21 |
| 22 | 0.0253 | 0.6327 | 0.9425 | 1580 | 1061 | 41.44 | 91.35 | 1362 | 2.975 | 22 |
| 23 | 0.0226 | 0.5081 | 0.7568 | 1968 | 1321 | 64.67 | 142.56 | 1687 | 4.618 | 23 |
| 24 | 0.0201 | 0.4038 | 0.6014 | 2477 | 1663 | 102.9 | 226.8 | 2114 | 7.317 | 24 |
| 25 | 0.0179 | 0.3226 | 0.4805 | 3100 | 2081 | 162.4 | 358.0 | 2630 | 11.48 | 25 |
| 26 | 0.0159 | 0.2558 | 0.3810 | 3909 | 2625 | 259.5 | 572.1 | 3303 | 18.27 | 26 |
| 27 | 0.0142 | 0.2056 | 0.3063 | 4864 | 3265 | 404.8 | 892.4 | 4083 | 28.32 | 27 |
| 28 | 0.0126 | 0.1640 | 0.2443 | 6098 | 4094 | 644.6 | 1421 | 5066 | 44.62 | 28 |
| Half AWG Size | NOMINAL | | | | | | | | | Half AWG Size |
| | Bare Diam. (in.) | Pounds Per 1000 Ft. | Kilograms Per Kilometer | Feet Per Pound | Meters Per Kilogram | Ohms Per Pound | Ohms Per Kilogram | Wires Per Sq. Inch | Ohms Per Cu. Inch | |
| 14 ½ | 0.0605 | 3.514 | 5.235 | 284.5 | 191.0 | 1.305 | 2.876 | 251.6 | 0.0961 | 14 ½ |
| 15 ½ | 0.0539 | 2.796 | 4.165 | 357.6 | 240.1 | 2.066 | 4.554 | 315.5 | 0.1519 | 15 ½ |
| 16 ½ | 0.0480 | 2.227 | 3.318 | 449 | 301.4 | 3.270 | 7.209 | 394.5 | 0.2394 | 16 ½ |
| 17 ½ | 0.0427 | 1.769 | 2.635 | 565.2 | 379.5 | 5.202 | 11.469 | 494.9 | 0.3796 | 17 ½ |
| 18 ½ | 0.0380 | 1.409 | 2.098 | 709.9 | 476.6 | 8.251 | 18.19 | 618.8 | 0.5993 | 18 ½ |
| 19 ½ | 0.0339 | 1.124 | 1.674 | 889.7 | 597.3 | 12.99 | 28.64 | 773.8 | 0.9416 | 19 ½ |
| 20 ½ | 0.0302 | 0.8971 | 1.336 | 1115 | 748.3 | 20.51 | 45.22 | 964.5 | 1.479 | 20 ½ |
| 21 ½ | 0.0269 | 0.7149 | 1.065 | 1399 | 939.1 | 32.44 | 71.52 | 1206 | 2.330 | 21 ½ |
| 22 ½ | 0.0239 | 0.5670 | 0.8446 | 1764 | 1184 | 51.81 | 114.23 | 1514 | 3.707 | 22 ½ |
| 23 ½ | 0.0213 | 0.4535 | 0.6754 | 2205 | 1481 | 81.57 | 179.8 | 1882 | 5.802 | 23 ½ |
| 24 ½ | 0.0190 | 0.3635 | 0.5414 | 2751 | 1847 | 127.9 | 282.0 | 2334 | 9.041 | 24 ½ |
| 25 ½ | 0.0169 | 0.2891 | 0.4306 | 3459 | 2322 | 203.3 | 448.1 | 2922 | 14.31 | 25 ½ |
| 26 ½ | 0.0150 | 0.2297 | 0.3422 | 4353 | 2923 | 324.7 | 715.8 | 3651 | 22.69 | 26 ½ |
| 27 ½ | 0.0134 | 0.1842 | 0.2744 | 5428 | 3644 | 507.3 | 1118.5 | 4535 | 35.32 | 27 ½ |

ROUND, HEAVY BUILD FILM-INSULATED WIRE

Aluminum

WEIGHTS

| Whole AWG Size | NOMINAL | | | | | | | | | | Whole AWG Size |
|----------------------|---------------------|-----------------------|------------------------|-------------------------------|-------------------|------------------------|-------------------|----------------------|-----------------------|----------------------|----------------------|
| | Bare Diam. (in.) | Overall Dia. (in.) | Pounds Per 1000 Ft. | Kilograms Per Kilometer | Feet Per Pound | Meters Per Kilogram | Ohms Per Pound | Ohms Per Kilogram | Wires Per Sq. Inch | Ohms Per Cu. Inch | |
| 1 | 0.2893 | 0.2927 | 77.94 | 116.09 | 12.83 | 8.61 | 0.0026 | 0.0057 | 11.67 | 0.0002 | 1 |
| 2 | 0.2576 | 0.2611 | 61.91 | 92.21 | 16.15 | 10.84 | 0.0041 | 0.0090 | 14.67 | 0.0003 | 2 |
| 3 | 0.2294 | 0.2330 | 49.20 | 73.28 | 20.32 | 13.65 | 0.0065 | 0.0143 | 18.42 | 0.0005 | 3 |
| 4 | 0.2043 | 0.2079 | 39.10 | 58.24 | 25.58 | 17.17 | 0.0103 | 0.0227 | 23.14 | 0.0008 | 4 |
| 5 | 0.1819 | 0.1856 | 31.07 | 46.28 | 32.18 | 21.61 | 0.0163 | 0.0360 | 29.05 | 0.0012 | 5 |
| 6 | 0.1620 | 0.1656 | 24.70 | 36.79 | 40.49 | 27.18 | 0.0259 | 0.0571 | 36.47 | 0.0019 | 6 |
| 7 | 0.1443 | 0.1478 | 19.64 | 29.25 | 50.93 | 34.19 | 0.0410 | 0.0905 | 45.78 | 0.0031 | 7 |
| 8 | 0.1285 | 0.1320 | 15.61 | 23.25 | 64.05 | 43.00 | 0.0651 | 0.1435 | 57.44 | 0.0049 | 8 |
| 9 | 0.1144 | 0.1179 | 12.42 | 18.49 | 80.55 | 54.08 | 0.1033 | 0.2277 | 72.00 | 0.0077 | 9 |
| 10 | 0.1019 | 0.1054 | 9.887 | 14.73 | 101.1 | 67.90 | 0.1635 | 0.3604 | 90.10 | 0.0121 | 10 |
| 11 | 0.0907 | 0.0942 | 7.866 | 11.72 | 127.1 | 85.35 | 0.2593 | 0.5717 | 112.81 | 0.0192 | 11 |
| 12 | 0.0808 | 0.0842 | 6.264 | 9.330 | 159.6 | 107.2 | 0.4104 | 0.9047 | 141.22 | 0.0303 | 12 |
| 13 | 0.0720 | 0.0754 | 4.999 | 7.447 | 200.0 | 134.3 | 0.6475 | 1.428 | 176.13 | 0.0475 | 13 |
| 14 | 0.0641 | 0.0675 | 3.985 | 5.936 | 250.9 | 168.5 | 1.025 | 2.259 | 219.8 | 0.0748 | 14 |
| 15 | 0.0571 | 0.0603 | 3.172 | 4.724 | 315.3 | 211.7 | 1.623 | 3.578 | 275.48 | 0.1182 | 15 |
| 16 | 0.0508 | 0.0539 | 2.523 | 3.758 | 396.4 | 266.1 | 2.578 | 5.683 | 344.85 | 0.1869 | 16 |
| 17 | 0.0453 | 0.0482 | 2.014 | 3.000 | 496.5 | 333.3 | 4.060 | 8.952 | 430.43 | 0.2933 | 17 |
| 18 | 0.0403 | 0.0431 | 1.603 | 2.387 | 623.9 | 418.9 | 6.447 | 14.21 | 538.33 | 0.4636 | 18 |
| 19 | 0.0359 | 0.0386 | 1.277 | 1.903 | 782.8 | 525.6 | 10.19 | 22.47 | 672.90 | 0.7302 | 19 |
| 20 | 0.0320 | 0.0346 | 1.023 | 1.523 | 977.9 | 656.6 | 16.03 | 35.33 | 835.31 | 1.141 | 20 |
| 21 | 0.0285 | 0.0310 | 0.8150 | 1.214 | 1227 | 823.8 | 25.35 | 55.89 | 1043.95 | 1.797 | 21 |
| 22 | 0.0253 | 0.0276 | 0.6454 | 0.9613 | 1549 | 1040 | 40.62 | 89.56 | 1312.75 | 2.868 | 22 |
| 23 | 0.0226 | 0.0249 | 0.5195 | 0.7738 | 1925 | 1292 | 63.25 | 139.4 | 1619.37 | 4.434 | 23 |
| 24 | 0.0201 | 0.0223 | 0.4140 | 0.6166 | 2416 | 1622 | 100.3 | 221.2 | 2019.95 | 6.992 | 24 |
| 25 | 0.0179 | 0.0199 | 0.3299 | 0.4914 | 3031 | 2035 | 158.8 | 350.0 | 2525.19 | 11.02 | 25 |
| 26 | 0.0159 | 0.0178 | 0.2623 | 0.3907 | 3812 | 2559 | 253.1 | 557.9 | 3156.17 | 17.46 | 26 |
| 27 | 0.0142 | 0.0161 | 0.2122 | 0.3161 | 4712 | 3163 | 392.2 | 864.6 | 3857.88 | 26.76 | 27 |
| 28 | 0.0126 | 0.0144 | 0.1686 | 0.2511 | 5931 | 3982 | 626.9 | 1382 | 4822.53 | 42.48 | 28 |

ROUND, HEAVY BUILD FILM-INSULATED WIRE

Aluminum

WEIGHTS

| Half AWG Size | NOMINAL | | | | | | | | | | Half AWG Size |
|---------------------|---------------------|-----------------------|------------------------|-------------------------------|-------------------|------------------------|-------------------|----------------------|-----------------------|----------------------|---------------------|
| | Bare Diam. (in.) | Overall Dia. (in.) | Pounds Per 1000 Ft. | Kilograms Per Kilometer | Feet Per Pound | Meters Per Kilogram | Ohms Per Pound | Ohms Per Kilogram | Wires Per Sq. Inch | Ohms Per Cu. Inch | |
| 1 ½ | 0.2730 | 0.2765 | 69.48 | 103.49 | 14.39 | 9.663 | 0.0032 | 0.0071 | 13.42 | 0.0003 | 1 ½ |
| 2 ½ | 0.2431 | 0.2467 | 55.19 | 82.21 | 18.12 | 12.16 | 0.0051 | 0.0113 | 16.92 | 0.0004 | 2 ½ |
| 3 ½ | 0.2165 | 0.2201 | 43.86 | 65.34 | 22.80 | 15.31 | 0.0082 | 0.0180 | 21.33 | 0.0006 | 3 ½ |
| 4 ½ | 0.1928 | 0.1964 | 34.86 | 51.92 | 28.69 | 19.26 | 0.0130 | 0.0286 | 26.90 | 0.0010 | 4 ½ |
| 5 ½ | 0.1717 | 0.1753 | 27.70 | 41.26 | 36.10 | 24.24 | 0.0205 | 0.0453 | 33.92 | 0.0016 | 5 ½ |
| 6 ½ | 0.1529 | 0.1565 | 22.02 | 32.80 | 45.41 | 30.48 | 0.0326 | 0.0719 | 42.77 | 0.0026 | 6 ½ |
| 7 ½ | 0.1362 | 0.1397 | 17.51 | 26.09 | 57.10 | 38.34 | 0.0517 | 0.1139 | 53.91 | 0.0041 | 7 ½ |
| 8 ½ | 0.1213 | 0.1247 | 13.92 | 20.74 | 71.83 | 48.22 | 0.0819 | 0.1806 | 67.96 | 0.0065 | 8 ½ |
| 9 ½ | 0.1080 | 0.1114 | 11.08 | 16.50 | 90.25 | 60.59 | 0.1299 | 0.2863 | 85.73 | 0.0103 | 9 ½ |
| 10 ½ | 0.0962 | 0.0996 | 8.825 | 13.14 | 113.3 | 76.07 | 0.2055 | 0.4530 | 108.06 | 0.0163 | 10 ½ |
| 11 ½ | 0.0856 | 0.0890 | 7.018 | 10.45 | 142.5 | 95.66 | 0.3263 | 0.7195 | 136.5 | 0.0260 | 11 ½ |
| 12 ½ | 0.0763 | 0.0796 | 5.596 | 8.335 | 178.7 | 120.0 | 0.5151 | 1.1357 | 171.8 | 0.0413 | 12 ½ |
| 13 ½ | 0.0679 | 0.0712 | 4.456 | 6.636 | 224.4 | 150.7 | 0.8170 | 1.801 | 216.9 | 0.0658 | 13 ½ |
| 14 ½ | 0.0605 | 0.0638 | 3.556 | 5.296 | 281.3 | 188.8 | 1.290 | 2.843 | 273.2 | 0.1044 | 14 ½ |
| 15 ½ | 0.0539 | 0.0571 | 2.838 | 4.227 | 352.3 | 236.6 | 2.035 | 4.487 | 344.2 | 0.1657 | 15 ½ |
| 16 ½ | 0.0480 | 0.0510 | 2.256 | 3.360 | 443.4 | 297.7 | 3.229 | 7.119 | 434.0 | 0.2634 | 16 ½ |
| 17 ½ | 0.0427 | 0.0456 | 1.797 | 2.676 | 556.6 | 373.7 | 5.123 | 11.295 | 548.5 | 0.4207 | 17 ½ |
| 18 ½ | 0.0380 | 0.0407 | 1.427 | 2.126 | 700.6 | 470.4 | 8.143 | 17.95 | 692.5 | 0.6707 | 18 ½ |
| 19 ½ | 0.0339 | 0.0366 | 1.144 | 1.704 | 874.1 | 586.8 | 12.76 | 28.14 | 870.2 | 1.059 | 19 ½ |
| 20 ½ | 0.0302 | 0.0327 | 0.9122 | 1.359 | 1096 | 736.0 | 20.17 | 44.47 | 1096 | 1.681 | 20 ½ |
| 21 ½ | 0.0269 | 0.0293 | 0.7284 | 1.085 | 1373 | 921.7 | 31.84 | 70.20 | 1382 | 2.671 | 21 ½ |
| 22 ½ | 0.0239 | 0.0263 | 0.5803 | 0.8643 | 1723 | 1157 | 50.63 | 111.63 | 1751 | 4.286 | 22 ½ |
| 23 ½ | 0.0213 | 0.0236 | 0.4643 | 0.6915 | 2154 | 1446 | 79.68 | 175.7 | 2204 | 6.794 | 23 ½ |
| 24 ½ | 0.0190 | 0.0211 | 0.3712 | 0.5529 | 2694 | 1809 | 125.2 | 276.1 | 2770 | 10.73 | 24 ½ |
| 25 ½ | 0.0169 | 0.0189 | 0.2960 | 0.4409 | 3378 | 2268 | 198.5 | 437.6 | 3501 | 17.14 | 25 ½ |
| 26 ½ | 0.0150 | 0.0170 | 0.2359 | 0.3514 | 4239 | 2846 | 316.2 | 697.0 | 4444 | 27.62 | 26 ½ |
| 27 ½ | 0.0134 | 0.0153 | 0.1898 | 0.2827 | 5269 | 3537 | 492.4 | 1086 | 5569 | 43.38 | 27 ½ |

ROUND, SELF-BONDING, TYPE 1 FILM-INSULATED WIRE

Copper & Aluminum

DIMENSIONS

| Whole AWG Size | Bare Wire Diameter | | | | | | Increase in Diameter Due to Film Coating | | | | Overall Diameter of Film-Coated Wire | | Whole AWG Size |
|----------------------|--------------------|--------|---------|--------|---------|--------|--|----------|--------|---------|--------------------------------------|-------|----------------------|
| | Minimum | | Nominal | | Maximum | | Minimum | | | Maximum | | | |
| | In. | mm | In. | mm | In. | mm | Insulation | Bondcoat | Total | | Maximum | | |
| | | | | | | | | | In. | mm | In. | mm | |
| 14 | 0.0635 | 1.6129 | 0.0641 | 1.6281 | 0.0647 | 1.6434 | 0.0016 | 0.0009 | 0.0025 | 0.064 | 0.0682 | 1.732 | 14 |
| 15 | 0.0565 | 1.4351 | 0.0571 | 1.4503 | 0.0577 | 1.4656 | 0.0015 | 0.0009 | 0.0024 | 0.061 | 0.0610 | 1.549 | 15 |
| 16 | 0.0503 | 1.2776 | 0.0508 | 1.2903 | 0.0513 | 1.3030 | 0.0014 | 0.0009 | 0.0023 | 0.058 | 0.0545 | 1.384 | 16 |
| 17 | 0.0448 | 1.1379 | 0.0453 | 1.1506 | 0.0458 | 1.1633 | 0.0014 | 0.0009 | 0.0023 | 0.058 | 0.0488 | 1.240 | 17 |
| 18 | 0.0399 | 1.0135 | 0.0403 | 1.0236 | 0.0407 | 1.0338 | 0.0013 | 0.0008 | 0.0021 | 0.053 | 0.0437 | 1.110 | 18 |
| 19 | 0.0355 | 0.9017 | 0.0359 | 0.9119 | 0.0363 | 0.9220 | 0.0012 | 0.0008 | 0.0020 | 0.051 | 0.0391 | 0.993 | 19 |
| 20 | 0.0317 | 0.8052 | 0.0320 | 0.8128 | 0.0323 | 0.8204 | 0.0012 | 0.0007 | 0.0019 | 0.048 | 0.0351 | 0.892 | 20 |
| 21 | 0.0282 | 0.7163 | 0.0285 | 0.7239 | 0.0288 | 0.7315 | 0.0011 | 0.0007 | 0.0018 | 0.046 | 0.0315 | 0.800 | 21 |
| 22 | 0.0250 | 0.6350 | 0.0253 | 0.6426 | 0.0256 | 0.6502 | 0.0011 | 0.0007 | 0.0018 | 0.046 | 0.0281 | 0.714 | 22 |
| 23 | 0.0224 | 0.5690 | 0.0226 | 0.5740 | 0.0228 | 0.5791 | 0.0010 | 0.0006 | 0.0016 | 0.041 | 0.0253 | 0.643 | 23 |
| 24 | 0.0199 | 0.5055 | 0.0201 | 0.5105 | 0.0203 | 0.5156 | 0.0010 | 0.0006 | 0.0016 | 0.041 | 0.0227 | 0.577 | 24 |
| 25 | 0.0177 | 0.4496 | 0.0179 | 0.4547 | 0.0181 | 0.4597 | 0.0009 | 0.0006 | 0.0015 | 0.038 | 0.0203 | 0.516 | 25 |
| 26 | 0.0157 | 0.3988 | 0.0159 | 0.4039 | 0.0161 | 0.4089 | 0.0009 | 0.0005 | 0.0014 | 0.036 | 0.0182 | 0.462 | 26 |
| 27 | 0.0141 | 0.3581 | 0.0142 | 0.3607 | 0.0143 | 0.3632 | 0.0008 | 0.0005 | 0.0013 | 0.033 | 0.0165 | 0.419 | 27 |
| 28 | 0.0125 | 0.3175 | 0.0126 | 0.3200 | 0.0127 | 0.3226 | 0.0008 | 0.0005 | 0.0013 | 0.033 | 0.0147 | 0.373 | 28 |
| 29 | 0.0112 | 0.2845 | 0.0113 | 0.2870 | 0.0114 | 0.2896 | 0.0007 | 0.0004 | 0.0011 | 0.028 | 0.0133 | 0.338 | 29 |
| 30 | 0.0099 | 0.2515 | 0.0100 | 0.2540 | 0.0101 | 0.2565 | 0.0007 | 0.0004 | 0.0011 | 0.028 | 0.0121 | 0.307 | 30 |
| 31 | 0.0088 | 0.2235 | 0.0089 | 0.2261 | 0.0090 | 0.2286 | 0.0006 | 0.0004 | 0.0010 | 0.025 | 0.0108 | 0.275 | 31 |
| 32 | 0.0079 | 0.2007 | 0.0080 | 0.2032 | 0.0081 | 0.2057 | 0.0006 | 0.0004 | 0.0010 | 0.025 | 0.0097 | 0.247 | 32 |
| 33 | 0.0070 | 0.1778 | 0.0071 | 0.1803 | 0.0072 | 0.1829 | 0.0005 | 0.0004 | 0.0009 | 0.023 | 0.0087 | 0.222 | 33 |
| 34 | 0.0062 | 0.1575 | 0.0063 | 0.1600 | 0.0064 | 0.1626 | 0.0005 | 0.0003 | 0.0008 | 0.020 | 0.0078 | 0.199 | 34 |

From NEMA Standards Publication No. MW 1000.

NOTES: Overall dimensions equivalent to heavy build.

ROUND, SELF-BONDING, TYPE 1 FILM-INSULATED WIRE

Copper & Aluminum

DIMENSIONS

| Half AWG Size | Bare Wire Diameter | | | | | | Increase in Diameter Due to Film Coating | | | | Overall Diameter of Film-Coated Wire | | Half AWG Size |
|---------------------|--------------------|-------|---------|-------|---------|-------|--|----------|--------|-------|---|-------|---------------------|
| | | | | | | | Minimum | | | | | | |
| | Minimum | | Nominal | | Maximum | | Insulation | Bondcoat | Total | | Maximum | | |
| | In. | mm | In. | mm | In. | mm | In. | In. | In. | mm | In. | mm | |
| 14 ½ | 0.0599 | 1.521 | 0.0605 | 1.537 | 0.0611 | 1.552 | 0.0016 | 0.0009 | 0.0025 | 0.064 | 0.0629 | 1.598 | 14 ½ |
| 15 ½ | 0.0534 | 1.356 | 0.0539 | 1.369 | 0.0544 | 1.382 | 0.0015 | 0.0009 | 0.0024 | 0.061 | 0.0563 | 1.430 | 15 ½ |
| 16 ½ | 0.0475 | 1.207 | 0.048 | 1.219 | 0.0485 | 1.232 | 0.0014 | 0.0009 | 0.0023 | 0.058 | 0.0502 | 1.275 | 16 ½ |
| 17 ½ | 0.0423 | 1.074 | 0.0427 | 1.085 | 0.0431 | 1.095 | 0.0013 | 0.0009 | 0.0022 | 0.056 | 0.0449 | 1.140 | 17 ½ |
| 18 ½ | 0.0376 | 0.955 | 0.0380 | 0.965 | 0.0384 | 0.975 | 0.0013 | 0.0008 | 0.0021 | 0.053 | 0.0400 | 1.016 | 18 ½ |
| 19 ½ | 0.0336 | 0.853 | 0.0339 | 0.861 | 0.0342 | 0.869 | 0.0012 | 0.0008 | 0.0020 | 0.051 | 0.0359 | 0.912 | 19 ½ |
| 20 ½ | 0.0299 | 0.759 | 0.0302 | 0.767 | 0.0305 | 0.775 | 0.0011 | 0.0007 | 0.0018 | 0.046 | 0.0321 | 0.815 | 20 ½ |
| 21 ½ | 0.0266 | 0.676 | 0.0269 | 0.683 | 0.0272 | 0.691 | 0.0011 | 0.0007 | 0.0018 | 0.046 | 0.0287 | 0.729 | 21 ½ |
| 22 ½ | 0.0237 | 0.602 | 0.0239 | 0.607 | 0.0241 | 0.612 | 0.0010 | 0.0007 | 0.0017 | 0.043 | 0.0257 | 0.653 | 22 ½ |
| 23 ½ | 0.0211 | 0.536 | 0.0213 | 0.541 | 0.0215 | 0.546 | 0.0010 | 0.0006 | 0.0016 | 0.041 | 0.0230 | 0.584 | 23 ½ |
| 24 ½ | 0.0188 | 0.478 | 0.0190 | 0.483 | 0.0192 | 0.488 | 0.0009 | 0.0006 | 0.0015 | 0.038 | 0.0206 | 0.523 | 24 ½ |
| 25 ½ | 0.0167 | 0.424 | 0.0169 | 0.429 | 0.0171 | 0.434 | 0.0009 | 0.0006 | 0.0015 | 0.038 | 0.0184 | 0.467 | 25 ½ |
| 26 ½ | 0.0149 | 0.378 | 0.0150 | 0.381 | 0.0152 | 0.386 | 0.0008 | 0.0005 | 0.0013 | 0.033 | 0.0165 | 0.419 | 26 ½ |
| 27 ½ | 0.0133 | 0.338 | 0.0134 | 0.340 | 0.0135 | 0.343 | 0.0008 | 0.0005 | 0.0013 | 0.033 | 0.0148 | 0.376 | 27 ½ |
| 28 ½ | 0.0118 | 0.300 | 0.0119 | 0.302 | 0.012 | 0.305 | 0.0008 | 0.0005 | 0.0013 | 0.033 | 0.0132 | 0.335 | 28 ½ |
| 29 ½ | 0.0105 | 0.267 | 0.0106 | 0.269 | 0.0107 | 0.272 | 0.0007 | 0.0004 | 0.0011 | 0.028 | 0.0118 | 0.300 | 29 ½ |
| 30 ½ | 0.0094 | 0.239 | 0.0095 | 0.241 | 0.0096 | 0.244 | 0.0006 | 0.0004 | 0.0010 | 0.025 | 0.0106 | 0.270 | 30 ½ |
| 31 ½ | 0.0083 | 0.211 | 0.0084 | 0.213 | 0.0085 | 0.216 | 0.0006 | 0.0004 | 0.0010 | 0.025 | 0.0095 | 0.242 | 31 ½ |
| 32 ½ | 0.0074 | 0.188 | 0.0075 | 0.191 | 0.0076 | 0.193 | 0.0005 | 0.0004 | 0.0009 | 0.023 | 0.0085 | 0.216 | 32 ½ |
| 33 ½ | 0.0066 | 0.168 | 0.0067 | 0.170 | 0.0068 | 0.173 | 0.0005 | 0.0004 | 0.0009 | 0.023 | 0.0076 | 0.194 | 33 ½ |

From NEMA Standards Publication No. MW 1000.

NOTES: Overall dimensions equivalent to heavy build.

ROUND, SELF-BONDING, TYPE 2 FILM-INSULATED WIRE

Copper & Aluminum

DIMENSIONS

| Whole AWG Size | Bare Wire Diameter | | | | | | Increase in Diameter Due to Film Coating | | | | Overall Diameter of Film-Coated Wire | | Whole AWG Size |
|----------------------|--------------------|-------|---------|-------|---------|-------|--|----------|--------|---------|---|-------|----------------------|
| | Minimum | | Nominal | | Maximum | | Minimum | | | Maximum | | | |
| | | | | | | | Insulation | Bondcoat | Total | | | | |
| | Inches | mm | Inches | mm | Inches | mm | In. | In. | Inches | mm | Inches | mm | |
| 14 | 0.0635 | 1.613 | 0.0641 | 1.628 | 0.0647 | 1.643 | 0.0032 | 0.0009 | 0.0041 | 0.104 | 0.0698 | 1.679 | 14 |
| 15 | 0.0565 | 1.435 | 0.0571 | 1.450 | 0.0577 | 1.466 | 0.0030 | 0.0009 | 0.0039 | 0.099 | 0.0625 | 1.549 | 15 |
| 16 | 0.0503 | 1.278 | 0.0508 | 1.290 | 0.0513 | 1.303 | 0.0029 | 0.0009 | 0.0038 | 0.097 | 0.0560 | 1.384 | 16 |
| 17 | 0.0448 | 1.138 | 0.0453 | 1.151 | 0.0458 | 1.163 | 0.0028 | 0.0009 | 0.0037 | 0.094 | 0.0502 | 1.240 | 17 |
| 18 | 0.0399 | 1.013 | 0.0403 | 1.024 | 0.0407 | 1.034 | 0.0026 | 0.0008 | 0.0034 | 0.086 | 0.0450 | 1.110 | 18 |
| 19 | 0.0355 | 0.902 | 0.0359 | 0.912 | 0.0363 | 0.922 | 0.0025 | 0.0008 | 0.0033 | 0.084 | 0.0404 | 0.993 | 19 |
| 20 | 0.0317 | 0.805 | 0.0320 | 0.813 | 0.0323 | 0.820 | 0.0024 | 0.0007 | 0.0031 | 0.079 | 0.0363 | 0.892 | 20 |
| 21 | 0.0282 | 0.716 | 0.0285 | 0.724 | 0.0288 | 0.732 | 0.0022 | 0.0007 | 0.0029 | 0.074 | 0.0326 | 0.800 | 21 |
| 22 | 0.0250 | 0.635 | 0.0253 | 0.643 | 0.0256 | 0.650 | 0.0021 | 0.0007 | 0.0028 | 0.071 | 0.0292 | 0.714 | 22 |
| 23 | 0.0224 | 0.569 | 0.0226 | 0.574 | 0.0228 | 0.579 | 0.0020 | 0.0006 | 0.0026 | 0.066 | 0.0263 | 0.643 | 23 |
| 24 | 0.0199 | 0.505 | 0.0201 | 0.511 | 0.0203 | 0.516 | 0.0019 | 0.0006 | 0.0025 | 0.064 | 0.0236 | 0.577 | 24 |
| 25 | 0.0177 | 0.450 | 0.0179 | 0.455 | 0.0181 | 0.460 | 0.0018 | 0.0006 | 0.0024 | 0.061 | 0.0212 | 0.516 | 25 |
| 26 | 0.0157 | 0.399 | 0.0159 | 0.404 | 0.0161 | 0.409 | 0.0017 | 0.0005 | 0.0022 | 0.056 | 0.0191 | 0.462 | 26 |
| 27 | 0.0141 | 0.358 | 0.0142 | 0.361 | 0.0143 | 0.363 | 0.0016 | 0.0005 | 0.0021 | 0.053 | 0.0173 | 0.419 | 27 |
| 38 | 0.0125 | 0.318 | 0.0126 | 0.320 | 0.0127 | 0.323 | 0.0016 | 0.0005 | 0.0021 | 0.053 | 0.0155 | 0.373 | 38 |
| 29 | 0.0112 | 0.284 | 0.0113 | 0.287 | 0.0114 | 0.290 | 0.0015 | 0.0004 | 0.0019 | 0.048 | 0.0141 | 0.338 | 29 |
| 30 | 0.0099 | 0.251 | 0.0100 | 0.254 | 0.0101 | 0.257 | 0.0013 | 0.0004 | 0.0017 | 0.043 | 0.0126 | 0.307 | 30 |
| 31 | 0.0088 | 0.224 | 0.0089 | 0.226 | 0.0090 | 0.229 | 0.0012 | 0.0004 | 0.0016 | 0.041 | 0.0114 | 0.275 | 31 |
| 32 | 0.0079 | 0.201 | 0.0080 | 0.203 | 0.0081 | 0.206 | 0.0011 | 0.0004 | 0.0015 | 0.038 | 0.0102 | 0.247 | 32 |

From NEMA Standards Publication No. MW 1000.

NOTES: Overall dimensions equivalent to triple build.

ROUND, SELF-BONDING, TYPE 2 FILM-INSULATED WIRE

Copper & Aluminum

DIMENSIONS

| Half AWG Size | Bare Wire Diameter | | | | | | Increase in Diameter Due to Film Coating | | | | Overall Diameter of Film-Coated Wire | | Half AWG Size |
|---------------------|--------------------|-------|---------|-------|---------|-------|--|--------|--------|---------|--------------------------------------|-------|---------------------|
| | | | | | | | Minimum | | | Maximum | | | |
| | Minimum | | Nominal | | Maximum | | Inches | mm | Inches | mm | Inches | mm | |
| | Inches | mm | Inches | mm | Inches | mm | | | | | | | |
| 14 ½ | 0.0599 | 1.521 | 0.0605 | 1.537 | 0.0611 | 1.552 | 0.0031 | 0.0009 | 0.0040 | 0.102 | 0.0661 | 1.679 | 14 ½ |
| 15 ½ | 0.0534 | 1.356 | 0.0539 | 1.369 | 0.0544 | 1.382 | 0.0030 | 0.0009 | 0.0039 | 0.099 | 0.0592 | 1.504 | 15 ½ |
| 16 ½ | 0.0475 | 1.207 | 0.0480 | 1.219 | 0.0485 | 1.232 | 0.0028 | 0.0009 | 0.0037 | 0.094 | 0.0530 | 1.346 | 16 ½ |
| 17 ½ | 0.0423 | 1.074 | 0.0427 | 1.085 | 0.0431 | 1.095 | 0.0027 | 0.0009 | 0.0036 | 0.091 | 0.0476 | 1.209 | 17 ½ |
| 18 ½ | 0.0376 | 0.955 | 0.0380 | 0.965 | 0.0384 | 0.975 | 0.0025 | 0.0008 | 0.0033 | 0.084 | 0.0426 | 1.082 | 18 ½ |
| 19 ½ | 0.0336 | 0.853 | 0.0339 | 0.861 | 0.0342 | 0.869 | 0.0024 | 0.0008 | 0.0032 | 0.081 | 0.0383 | 0.973 | 19 ½ |
| 20 ½ | 0.0299 | 0.759 | 0.0302 | 0.767 | 0.0305 | 0.775 | 0.0023 | 0.0007 | 0.0030 | 0.076 | 0.0344 | 0.874 | 20 ½ |
| 21 ½ | 0.0266 | 0.676 | 0.0269 | 0.683 | 0.0272 | 0.691 | 0.0022 | 0.0007 | 0.0029 | 0.074 | 0.0309 | 0.785 | 21 ½ |
| 22 ½ | 0.0237 | 0.602 | 0.0239 | 0.607 | 0.0241 | 0.612 | 0.0021 | 0.0007 | 0.0028 | 0.071 | 0.0277 | 0.704 | 22 ½ |
| 23 ½ | 0.0211 | 0.536 | 0.0213 | 0.541 | 0.0215 | 0.546 | 0.0020 | 0.0006 | 0.0026 | 0.066 | 0.0249 | 0.632 | 23 ½ |
| 24 ½ | 0.0188 | 0.478 | 0.0190 | 0.483 | 0.0192 | 0.488 | 0.0019 | 0.0006 | 0.0025 | 0.064 | 0.0224 | 0.569 | 24 ½ |
| 25 ½ | 0.0167 | 0.424 | 0.0169 | 0.429 | 0.0171 | 0.434 | 0.0018 | 0.0006 | 0.0024 | 0.061 | 0.0202 | 0.513 | 25 ½ |
| 26 ½ | 0.0149 | 0.378 | 0.0150 | 0.381 | 0.0152 | 0.386 | 0.0017 | 0.0005 | 0.0022 | 0.056 | 0.0182 | 0.462 | 26 ½ |
| 27 ½ | 0.0133 | 0.338 | 0.0134 | 0.340 | 0.0135 | 0.343 | 0.0016 | 0.0005 | 0.0021 | 0.053 | 0.0164 | 0.417 | 27 ½ |
| 28 ½ | 0.0118 | 0.300 | 0.0119 | 0.302 | 0.012 | 0.305 | 0.0015 | 0.0005 | 0.0020 | 0.051 | 0.0147 | 0.373 | 28 ½ |
| 29 ½ | 0.0105 | 0.267 | 0.0106 | 0.269 | 0.0107 | 0.272 | 0.0014 | 0.0004 | 0.0018 | 0.046 | 0.0133 | 0.338 | 29 ½ |
| 30 ½ | 0.0094 | 0.239 | 0.0095 | 0.241 | 0.0096 | 0.244 | 0.0013 | 0.0004 | 0.0017 | 0.043 | 0.0120 | 0.305 | 30 ½ |
| 31 ½ | 0.0083 | 0.211 | 0.0084 | 0.213 | 0.0085 | 0.216 | 0.0012 | 0.0004 | 0.0016 | 0.041 | 0.0108 | 0.274 | 31 ½ |

From NEMA Standards Publication No. MW 1000.

NOTES: Overall dimensions equivalent to triple build.

ROUND, SERVED WIRE, POLYESTER GLASS & POLYIMIDE TAPE

Copper & Aluminum

DIMENSIONS

| Whole AWG Size | Bare Wire Diameter Inches Nominal | POLYESTER GLASS FIBER Single Covering | | | POLYESTER GLASS FIBER Double Covering | | | POLYIMIDE TAPE | | | | Whole AWG Size |
|----------------------|--|--|-------------------------|-------------------|--|-------------------------|-------------------|--------------------------------|---------------------------|--------------------------------|---------------------------|----------------------|
| | | Minimum Increase, Inches | Max. Overall Diam., In. | | Minimum Increase, Inches | Max. Overall Diam., In. | | Single 55% Lap | | Double 55% Lap | | |
| | | | Over Bare | Over Hvy. Film | | Over Bare | Over Hvy. Film | Minimum Increase, Inches | Max. Overall Diam. In. | Minimum Increase, Inches | Max. Overall Diam. In. | |
| | | | | | | | | | | | | |
| 1/0 | 0.3249 | 0.0040 | 0.3331 | *** | 0.0060 | 0.3371 | *** | 0.0052 | 0.3377 | 0.0104 | 0.3473 | 1/0 |
| 1 | 0.2893 | 0.0040 | 0.2972 | *** | 0.0060 | 0.3012 | *** | 0.0052 | 0.3018 | 0.0104 | 0.3114 | 1 |
| 2 | 0.2576 | 0.0040 | 0.2652 | *** | 0.0060 | 0.2692 | *** | 0.0052 | 0.2690 | 0.0104 | 0.2786 | 2 |
| 3 | 0.2294 | 0.0040 | 0.2367 | *** | 0.0060 | 0.2407 | *** | 0.0052 | 0.2406 | 0.0104 | 0.2502 | 3 |
| 4 | 0.2043 | 0.0040 | 0.2123 | 0.2158 | 0.0060 | 0.2153 | 0.2188 | 0.0052 | 0.2153 | 0.0104 | 0.2249 | 4 |
| 5 | 0.1819 | 0.0040 | 0.1897 | 0.1932 | 0.0060 | 0.1927 | 0.1962 | 0.0052 | 0.1928 | 0.0104 | 0.2024 | 5 |
| 6 | 0.1620 | 0.0040 | 0.1696 | 0.1731 | 0.0060 | 0.1726 | 0.1761 | 0.0052 | 0.1727 | 0.0104 | 0.1823 | 6 |
| 7 | 0.1443 | 0.0040 | 0.1517 | 0.1551 | 0.0060 | 0.1547 | 0.1581 | 0.0052 | 0.1549 | 0.0104 | 0.1645 | 7 |
| 8 | 0.1285 | 0.0040 | 0.1358 | 0.1392 | 0.0060 | 0.1388 | 0.1422 | 0.0052 | 0.1390 | 0.0104 | 0.1486 | 8 |
| 9 | 0.1144 | 0.0040 | 0.1215 | 0.1249 | 0.0060 | 0.1245 | 0.1279 | 0.0052 | 0.1249 | 0.0104 | 0.1345 | 9 |
| 10 | 0.1019 | 0.0035 | 0.1079 | 0.1111 | 0.0055 | 0.1109 | 0.1141 | 0.0052 | 0.1123 | 0.0104 | 0.1219 | 10 |
| 11 | 0.0907 | 0.0035 | 0.0966 | 0.0998 | 0.0055 | 0.0996 | 0.1028 | 0.0052 | 0.1010 | 0.0104 | 0.1106 | 11 |
| 12 | 0.0808 | 0.0035 | 0.0866 | 0.0897 | 0.0055 | 0.0986 | 0.0927 | 0.0052 | 0.0910 | 0.0104 | 0.1006 | 12 |
| Half AWG Size | Bare Wire Diameter Inches Nominal | POLYESTER GLASS FIBER Single Covering | | | POLYESTER GLASS FIBER Double Covering | | | POLYIMIDE TAPE | | | | Half AWG Size |
| | | Minimum Increase, Inches | Max. Overall Diam., In. | | Minimum Increase, Inches | Max. Overall Diam., In. | | Single 55% Lap | | Double 55% Lap | | |
| | | | Over Bare | Over Hvy. Film | | Over Bare | Over Hvy. Film | Minimum Increase, Inches | Max. Overall Diam. In. | Minimum Increase, Inches | Max. Overall Diam. In. | |
| | | | | | | | | | | | | |
| 1 ½ | 0.2730 | 0.0035 | 0.2807 | *** | 0.0060 | 0.2847 | *** | 0.0052 | 0.2845 | 0.0104 | 0.2941 | 1 ½ |
| 2 ½ | 0.2431 | 0.0035 | 0.2522 | *** | 0.0060 | 0.2562 | *** | 0.0052 | 0.2544 | 0.0104 | 0.2640 | 2 ½ |
| 3 ½ | 0.2165 | 0.0035 | 0.2278 | 0.2313 | 0.0060 | 0.2308 | 0.2343 | 0.0052 | 0.2276 | 0.0104 | 0.2372 | 3 ½ |
| 4 ½ | 0.1928 | 0.0035 | 0.2052 | 0.2087 | 0.0060 | 0.2082 | 0.2117 | 0.0052 | 0.2037 | 0.0104 | 0.2133 | 4 ½ |
| 5 ½ | 0.1717 | 0.0035 | 0.1851 | 0.1886 | 0.0060 | 0.1881 | 0.1916 | 0.0052 | 0.1825 | 0.0104 | 0.1921 | 5 ½ |
| 6 ½ | 0.1529 | 0.0035 | 0.1672 | 0.1706 | 0.0060 | 0.1702 | 0.1736 | 0.0052 | 0.1636 | 0.0104 | 0.1732 | 6 ½ |
| 7 ½ | 0.1362 | 0.0035 | 0.1513 | 0.1547 | 0.0060 | 0.1543 | 0.1577 | 0.0052 | 0.1468 | 0.0104 | 0.1564 | 7 ½ |
| 8 ½ | 0.1213 | 0.0035 | 0.1370 | 0.1404 | 0.0060 | 0.1400 | 0.1434 | 0.0052 | 0.1317 | 0.0104 | 0.1413 | 8 ½ |
| 9 ½ | 0.1080 | 0.0035 | 0.1234 | 0.1266 | 0.0055 | 0.1264 | 0.1296 | 0.0052 | 0.1185 | 0.0104 | 0.1281 | 9 ½ |
| 10 ½ | 0.0962 | 0.0035 | 0.1121 | 0.1153 | 0.0055 | 0.1151 | 0.1183 | 0.0052 | 0.1066 | 0.0104 | 0.1162 | 10 ½ |
| 11 ½ | 0.0856 | 0.0035 | 0.1021 | 0.1052 | 0.0055 | 0.1141 | 0.1082 | 0.0052 | 0.0959 | 0.0104 | 0.1055 | 11 ½ |

From NEMA Standards Publication MW 1000.

SQUARE, BARE WIRE

Copper & Aluminum

DIMENSIONS AND AREA

| Whole AWG Size | BARE WIRE THICKNESS* | | | | | | Nominal | | BARE WIRE CROSS-SECTIONAL AREA | | | | | | Whole AWG Size |
|----------------------|----------------------|-------|---------|-------|---------|-------|----------------|------|--------------------------------|--------|----------|--------|----------|--------|----------------------|
| | Minimum | | Nominal | | Maximum | | Corner Radius† | | Minimum | | Nominal | | Maximum | | |
| | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Sq. Mils | Sq. mm | Sq. Mils | Sq. mm | Sq. Mils | Sq. mm | |
| 2/0 | 0.3612 | 9.174 | 0.3648 | 9.266 | 0.3684 | 9.357 | 0.039 | 0.99 | 129160 | 83.33 | 131773 | 85.01 | 134413 | 86.72 | 2/0 |
| 1/0 | 0.3219 | 8.176 | 0.3249 | 8.252 | 0.3281 | 8.334 | 0.039 | 0.99 | 102314 | 66.01 | 104254 | 67.26 | 106344 | 68.61 | 1/0 |
| 1 | 0.2864 | 7.275 | 0.2893 | 7.348 | 0.2922 | 7.422 | 0.039 | 0.99 | 80719 | 52.08 | 82389 | 53.15 | 84075 | 54.24 | 1 |
| 2 | 0.2550 | 6.477 | 0.2576 | 6.543 | 0.2602 | 6.609 | 0.039 | 0.99 | 63719 | 41.11 | 65052 | 41.97 | 66398 | 42.84 | 2 |
| 3 | 0.2271 | 5.768 | 0.2294 | 5.827 | 0.2317 | 5.885 | 0.039 | 0.99 | 50269 | 32.43 | 51319 | 33.11 | 52379 | 33.79 | 3 |
| 4 | 0.2023 | 5.138 | 0.2043 | 5.189 | 0.2063 | 5.240 | 0.039 | 0.99 | 39620 | 25.56 | 40433 | 26.09 | 41254 | 26.62 | 4 |
| 5 | 0.1801 | 4.575 | 0.1819 | 4.620 | 0.1837 | 4.666 | 0.039 | 0.99 | 31130 | 20.08 | 31782 | 20.50 | 32440 | 20.93 | 5 |
| 6 | 0.1604 | 4.074 | 0.1620 | 4.115 | 0.1636 | 4.155 | 0.031 | 0.79 | 24903 | 16.07 | 25419 | 16.40 | 25940 | 16.74 | 6 |
| 7 | 0.1429 | 3.630 | 0.1443 | 3.665 | 0.1457 | 3.701 | 0.031 | 0.79 | 19595 | 12.64 | 19998 | 12.90 | 20404 | 13.16 | 7 |
| 8 | 0.1272 | 3.231 | 0.1285 | 3.264 | 0.1298 | 3.297 | 0.031 | 0.79 | 15355 | 9.91 | 15687 | 10.12 | 16023 | 10.34 | 8 |
| 9 | 0.1133 | 2.878 | 0.1144 | 2.906 | 0.1155 | 2.934 | 0.026 | 0.66 | 12257 | 7.91 | 12507 | 8.069 | 12760 | 8.232 | 9 |
| 10 | 0.1009 | 2.563 | 0.1019 | 2.588 | 0.1029 | 2.614 | 0.026 | 0.66 | 9601 | 6.19 | 9803 | 6.325 | 10008 | 6.457 | 10 |
| 11 | 0.0897 | 2.278 | 0.0907 | 2.304 | 0.0917 | 2.329 | 0.020 | 0.51 | 7703 | 4.97 | 7883 | 5.086 | 8066 | 5.204 | 11 |
| 12 | 0.0798 | 2.027 | 0.0808 | 2.052 | 0.0818 | 2.078 | 0.020 | 0.51 | 6025 | 3.89 | 6185 | 3.990 | 6348 | 4.095 | 12 |
| 13 | 0.0710 | 1.803 | 0.0720 | 1.829 | 0.0730 | 1.854 | 0.016 | 0.41 | 4821 | 3.11 | 4964 | 3.203 | 5109 | 3.296 | 13 |
| 14 | 0.0631 | 1.603 | 0.0641 | 1.628 | 0.0651 | 1.654 | 0.016 | 0.41 | 3762 | 2.43 | 3889 | 2.509 | 4018 | 2.592 | 14 |
| Half AWG Size | BARE WIRE THICKNESS* | | | | | | Nominal | | BARE WIRE CROSS-SECTIONAL AREA | | | | | | Half AWG Size |
| | Minimum | | Nominal | | Maximum | | Corner Radius† | | Minimum | | Nominal | | Maximum | | |
| | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Sq. Mils | Sq. mm | Sq. Mils | Sq. mm | Sq. Mils | Sq. mm | |
| 1 ½ | 0.2703 | 6.866 | 0.2730 | 6.934 | 0.2757 | 7.004 | 0.039 | 0.99 | 71756 | 46.29 | 73223 | 47.24 | 74721 | 48.21 | 1 ½ |
| 2 ½ | 0.2407 | 6.114 | 0.2431 | 6.175 | 0.2455 | 6.236 | 0.039 | 0.99 | 56631 | 36.54 | 57792 | 37.29 | 58980 | 38.05 | 2 ½ |
| 3 ½ | 0.2143 | 5.443 | 0.2165 | 5.499 | 0.2187 | 5.554 | 0.039 | 0.99 | 44619 | 28.79 | 45567 | 29.40 | 46509 | 30.01 | 3 ½ |
| 4 ½ | 0.1909 | 4.849 | 0.1928 | 4.897 | 0.1947 | 4.946 | 0.039 | 0.99 | 35137 | 22.67 | 35866 | 23.14 | 36613 | 23.62 | 4 ½ |
| 5 ½ | 0.1700 | 4.318 | 0.1717 | 4.361 | 0.1734 | 4.405 | 0.039 | 0.99 | 27594 | 17.80 | 28175 | 18.18 | 28768 | 18.56 | 5 ½ |
| 6 ½ | 0.1514 | 3.846 | 0.1529 | 3.884 | 0.1544 | 3.922 | 0.031 | 0.79 | 22097 | 14.26 | 22553 | 14.55 | 23023 | 14.85 | 6 ½ |
| 7 ½ | 0.1348 | 3.424 | 0.1362 | 3.459 | 0.1376 | 3.494 | 0.031 | 0.79 | 17346 | 11.19 | 17726 | 11.44 | 18098 | 11.68 | 7 ½ |
| 8 ½ | 0.1201 | 3.051 | 0.1213 | 3.081 | 0.1223 | 3.106 | 0.031 | 0.79 | 13599 | 8.774 | 13889 | 8.960 | 14132 | 9.118 | 8 ½ |
| 9 ½ | 0.1069 | 2.715 | 0.1080 | 2.743 | 0.1090 | 2.769 | 0.026 | 0.66 | 10847 | 6.998 | 11084 | 7.151 | 11301 | 7.291 | 9 ½ |
| 10 ½ | 0.0952 | 2.418 | 0.0962 | 2.443 | 0.0972 | 2.469 | 0.026 | 0.66 | 8483 | 5.473 | 8674 | 5.596 | 8868 | 5.721 | 10 ½ |
| 11 ½ | 0.0847 | 2.151 | 0.0856 | 2.174 | 0.0866 | 2.200 | 0.020 | 0.51 | 6831 | 4.407 | 6984 | 4.506 | 7156 | 4.617 | 11 ½ |
| 12 ½ | 0.0755 | 1.918 | 0.0763 | 1.938 | 0.0773 | 1.963 | 0.020 | 0.51 | 5357 | 3.456 | 5478 | 3.534 | 5632 | 3.633 | 12 ½ |
| 13 ½ | 0.0672 | 1.707 | 0.0679 | 1.725 | 0.0689 | 1.750 | 0.016 | 0.41 | 4296 | 2.772 | 4391 | 2.833 | 4527 | 2.921 | 13 ½ |

†Radii Tolerance is ± 25%.

* Minimum and maximum dimensions are based on tolerances specified by ASTM Standards Specifications for "Soft Rectangular and Square Bare Copper Wire for Electrical Conductors" B48.

SQUARE, BARE WIRE

Copper

RESISTANCE AND WEIGHT

| Whole AWG Size | Nominal Bare Thickness Inches | BARE WIRE RESISTANCE | | | | | | | | BARE WIRE WEIGHT | | | | | | Whole AWG Size |
|----------------|-------------------------------|----------------------|------------------|-------------------|------------------|-------------------|------------------|----------------------|------------------------|-------------------|----------------|-------------------|----------------|-------------------|----------------|----------------|
| | | Minimum | | Nominal | | Maximum | | Nominal Feet Per Ohm | Nominal Meters Per Ohm | Minimum | | Nominal | | Maximum | | |
| | | Ohms Per 1000 ft. | Ohms per Kilomtr | Ohms Per 1000 ft. | Ohms per Kilomtr | Ohms Per 1000 ft. | Ohms per Kilomtr | | | Lbs. Per 1000 ft. | Kg per Kilomtr | Lbs. Per 1000 ft. | Kg per Kilomtr | Lbs. Per 1000 ft. | Kg per Kilomtr | |
| | | | | | | | | | | | | | | | | |
| 2/0 | 0.3648 | 0.05965 | 0.1957 | 0.06181 | 0.2028 | 0.06307 | 0.2069 | 16177 | 4931 | 518.0 | 771.6 | 507.9 | 756.4 | 497.8 | 741.4 | 2/0 |
| 1/0 | 0.3249 | 0.07539 | 0.2473 | 0.07813 | 0.2563 | 0.07961 | 0.2612 | 12799 | 3901 | 409.8 | 610.5 | 401.8 | 598.5 | 394.3 | 587.3 | 1/0 |
| 1 | 0.2893 | 0.09536 | 0.3128 | 0.09887 | 0.3244 | 0.1009 | 0.3311 | 10115 | 3083 | 324.0 | 482.6 | 317.5 | 473.0 | 311.1 | 463.4 | 1 |
| 2 | 0.2576 | 0.1207 | 0.3961 | 0.1252 | 0.4108 | 0.1278 | 0.4194 | 7986 | 2434 | 255.9 | 381.2 | 250.7 | 373.4 | 245.6 | 365.8 | 2 |
| 3 | 0.2294 | 0.1531 | 0.5022 | 0.1587 | 0.5207 | 0.162 | 0.5316 | 6300 | 1920 | 201.9 | 300.7 | 197.8 | 294.6 | 193.7 | 288.6 | 3 |
| 4 | 0.2043 | 0.1943 | 0.6376 | 0.2015 | 0.6609 | 0.2056 | 0.6745 | 4964 | 1513 | 159.0 | 236.8 | 155.8 | 232.1 | 152.7 | 227.4 | 4 |
| 5 | 0.1819 | 0.2471 | 0.8108 | 0.2563 | 0.8409 | 0.2617 | 0.8585 | 3902 | 1189 | 125.0 | 186.2 | 122.5 | 182.4 | 120.0 | 178.7 | 5 |
| 6 | 0.1620 | 0.3091 | 1.014 | 0.3204 | 1.051 | 0.3271 | 1.073 | 3121 | 951.2 | 100.0 | 148.9 | 97.97 | 145.9 | 95.98 | 143.0 | 6 |
| 7 | 0.1443 | 0.3929 | 1.289 | 0.4073 | 1.336 | 0.4157 | 1.364 | 2455 | 748.3 | 78.64 | 117.1 | 77.07 | 114.8 | 75.52 | 112.5 | 7 |
| 8 | 0.1285 | 0.5003 | 1.642 | 0.5192 | 1.704 | 0.5305 | 1.740 | 1926 | 587.0 | 61.75 | 91.98 | 60.46 | 90.05 | 59.18 | 88.15 | 8 |
| 9 | 0.1144 | 0.6283 | 2.061 | 0.6513 | 2.137 | 0.6646 | 2.180 | 1535 | 468.0 | 49.18 | 73.25 | 48.20 | 71.80 | 47.24 | 70.36 | 9 |
| 10 | 0.1019 | 0.8011 | 2.628 | 0.8309 | 2.726 | 0.8484 | 2.784 | 1204 | 366.8 | 38.57 | 57.45 | 37.78 | 56.28 | 37.00 | 55.11 | 10 |
| 11 | 0.0907 | 0.994 | 3.261 | 1.033 | 3.390 | 1.057 | 3.469 | 967.8 | 295.0 | 31.08 | 46.30 | 30.38 | 45.25 | 29.69 | 44.22 | 11 |
| 12 | 0.0808 | 1.263 | 4.144 | 1.317 | 4.321 | 1.352 | 4.436 | 759.3 | 231.4 | 22.61 | 33.68 | 21.98 | 32.74 | 21.36 | 31.82 | 12 |
| 13 | 0.0720 | 1.569 | 5.148 | 1.641 | 5.383 | 1.689 | 5.543 | 609.4 | 185.8 | 19.69 | 29.33 | 19.13 | 28.50 | 18.58 | 27.68 | 13 |
| 14 | 0.0641 | 1.995 | 6.546 | 2.094 | 6.872 | 2.165 | 7.104 | 477.4 | 145.5 | 15.49 | 23.07 | 14.99 | 22.33 | 14.50 | 21.60 | 14 |
| Half AWG Size | Nominal Bare Thickness Inches | BARE WIRE RESISTANCE | | | | | | | | BARE WIRE WEIGHT | | | | | | Half AWG Size |
| | | Minimum | | Nominal | | Maximum | | Nominal Feet Per Ohm | Nominal Meters Per Ohm | Minimum | | Nominal | | Maximum | | |
| | | Ohms Per 1000 ft. | Ohms per Kilomtr | Ohms Per 1000 ft. | Ohms per Kilomtr | Ohms Per 1000 ft. | Ohms per Kilomtr | | | Lbs. Per 1000 ft. | Kg per Kilomtr | Lbs. Per 1000 ft. | Kg per Kilomtr | Lbs. Per 1000 ft. | Kg per Kilomtr | |
| | | | | | | | | | | | | | | | | |
| 1 ½ | 0.2730 | 0.1073 | 0.3520 | 0.1112 | 0.3650 | 0.1135 | 0.3724 | 8989 | 2740 | 288.0 | 428.9 | 282.2 | 420.3 | 276.5 | 411.9 | 1 ½ |
| 2 ½ | 0.2431 | 0.1359 | 0.4460 | 0.1409 | 0.4624 | 0.1438 | 0.4719 | 7095 | 2163 | 227.3 | 338.6 | 222.7 | 331.8 | 218.3 | 325.1 | 2 ½ |
| 3 ½ | 0.2165 | 0.1724 | 0.5655 | 0.1788 | 0.5865 | 0.1826 | 0.5989 | 5594 | 1705 | 179.2 | 267.0 | 175.6 | 261.6 | 172.0 | 256.1 | 3 ½ |
| 4 ½ | 0.1928 | 0.2190 | 0.7184 | 0.2271 | 0.7451 | 0.2318 | 0.7606 | 4403 | 1342 | 141.1 | 210.2 | 138.2 | 205.9 | 135.4 | 201.7 | 4 ½ |
| 5 ½ | 0.1717 | 0.2787 | 0.9143 | 0.2891 | 0.9485 | 0.2952 | 0.9685 | 3459 | 1054 | 110.9 | 165.1 | 108.6 | 161.7 | 106.3 | 158.4 | 5 ½ |
| 6 ½ | 0.1529 | 0.3482 | 1.142 | 0.3612 | 1.185 | 0.3686 | 1.209 | 2769 | 843.9 | 88.73 | 132.2 | 86.92 | 129.5 | 85.16 | 126.8 | 6 ½ |
| 7 ½ | 0.1362 | 0.4430 | 1.453 | 0.4595 | 1.508 | 0.4696 | 1.541 | 2176 | 663.3 | 69.75 | 103.9 | 68.31 | 101.75 | 66.85 | 99.58 | 7 ½ |
| 8 ½ | 0.1213 | 0.5576 | 1.830 | 0.5763 | 1.891 | 0.5884 | 1.930 | 1735 | 528.9 | 55.41 | 82.53 | 54.47 | 81.13 | 53.35 | 79.47 | 8 ½ |
| 9 ½ | 0.1080 | 0.7094 | 2.328 | 0.7349 | 2.411 | 0.7509 | 2.464 | 1361 | 414.7 | 43.55 | 64.87 | 42.72 | 63.63 | 41.81 | 62.27 | 9 ½ |
| 10 ½ | 0.0962 | 0.9041 | 2.966 | 0.9391 | 3.081 | 0.9602 | 3.150 | 1065 | 324.6 | 34.18 | 50.90 | 33.43 | 49.79 | 32.69 | 48.70 | 10 ½ |
| 11 ½ | 0.0856 | 1.120 | 3.676 | 1.166 | 3.826 | 1.192 | 3.912 | 857.4 | 261.3 | 27.58 | 41.08 | 26.92 | 40.09 | 26.33 | 39.21 | 11 ½ |
| 12 ½ | 0.0763 | 1.424 | 4.670 | 1.487 | 4.878 | 1.521 | 4.989 | 672.6 | 205.0 | 21.71 | 32.33 | 21.11 | 31.45 | 20.65 | 30.75 | 12 ½ |
| 13 ½ | 0.0679 | 1.771 | 5.810 | 1.855 | 6.087 | 1.896 | 6.221 | 539.0 | 164.3 | 17.45 | 25.99 | 16.92 | 25.20 | 16.56 | 24.66 | 13 ½ |

* Minimum resistance values are based on maximum bare diameter and 101.6% IACS conductivity.
 Nominal and maximum resistance values are based on nominal bare diameter and 100.0% IACS conductivity.

SQUARE, BARE WIRE

Aluminum

RESISTANCE AND WEIGHT

| Whole AWG Size | Nominal Bare Thickness Inches | BARE WIRE RESISTANCE | | | | | | | | BARE WIRE WEIGHT | | | | | | Whole AWG Size |
|----------------|-------------------------------|----------------------|------------------|-------------------|------------------|-------------------|------------------|----------------------|------------------------|-------------------|----------------|-------------------|----------------|-------------------|----------------|----------------|
| | | Minimum | | Nominal | | Maximum | | Nominal Feet Per Ohm | Nominal Meters Per Ohm | Minimum | | Nominal | | Maximum | | |
| | | Ohms Per 1000 ft. | Ohms per Kilomtr | Ohms Per 1000 ft. | Ohms per Kilomtr | Ohms Per 1000 ft. | Ohms per Kilomtr | | | Lbs. Per 1000 ft. | Kg per Kilomtr | Lbs. Per 1000 ft. | Kg per Kilomtr | Lbs. Per 1000 ft. | Kg per Kilomtr | |
| 2/0 | 0.3648 | 0.0981 | 0.3217 | 0.1000 | 0.3282 | 0.1020 | 0.3348 | 9998 | 3047 | 151.3 | 225.4 | 154.4 | 230.0 | 157.5 | 234.6 | 2/0 |
| 1/0 | 0.3249 | 0.1239 | 0.4066 | 0.1264 | 0.4148 | 0.1288 | 0.4226 | 7910 | 2411 | 119.9 | 178.6 | 122.2 | 182.0 | 124.6 | 185.6 | 1/0 |
| 1 | 0.2893 | 0.1568 | 0.5143 | 0.1600 | 0.5248 | 0.1633 | 0.5357 | 6251 | 1905 | 94.59 | 140.9 | 96.54 | 143.8 | 98.52 | 146.7 | 1 |
| 2 | 0.2576 | 0.1985 | 0.6512 | 0.2026 | 0.6647 | 0.2068 | 0.6786 | 4936 | 1504 | 74.67 | 111.2 | 76.23 | 113.5 | 77.81 | 115.9 | 2 |
| 3 | 0.2294 | 0.2516 | 0.8255 | 0.2568 | 0.8426 | 0.2622 | 0.8602 | 3894 | 1187 | 58.90 | 87.74 | 60.14 | 89.57 | 61.38 | 91.42 | 3 |
| 4 | 0.2043 | 0.3195 | 1.048 | 0.3260 | 1.069 | 0.3327 | 1.091 | 3068 | 935 | 46.43 | 69.15 | 47.38 | 70.57 | 48.34 | 72.00 | 4 |
| 5 | 0.1819 | 0.4063 | 1.333 | 0.4147 | 1.361 | 0.4234 | 1.389 | 2411 | 735 | 36.48 | 54.33 | 37.24 | 55.47 | 38.01 | 56.62 | 5 |
| 6 | 0.1620 | 0.5081 | 1.667 | 0.5185 | 1.701 | 0.5292 | 1.736 | 1929 | 587.8 | 29.18 | 43.47 | 29.79 | 44.37 | 48.62 | 72.41 | 6 |
| 7 | 0.1443 | 0.6460 | 2.119 | 0.6591 | 2.162 | 0.6726 | 2.207 | 1517 | 462.5 | 22.96 | 34.20 | 23.43 | 34.90 | 38.36 | 57.14 | 7 |
| 8 | 0.1285 | 0.8226 | 2.699 | 0.8402 | 2.756 | 0.8584 | 2.816 | 1190 | 362.8 | 17.99 | 26.80 | 18.38 | 27.38 | 30.21 | 44.99 | 8 |
| 9 | 0.1144 | 1.033 | 3.389 | 1.054 | 3.457 | 1.075 | 3.528 | 948.9 | 289.2 | 14.08 | 20.97 | 14.37 | 21.40 | 23.77 | 35.41 | 9 |
| 10 | 0.1019 | 1.317 | 4.321 | 1.344 | 4.411 | 1.373 | 4.504 | 743.8 | 226.7 | 10.96 | 16.33 | 11.20 | 16.68 | 18.65 | 27.79 | 10 |
| 11 | 0.0907 | 1.634 | 5.361 | 1.672 | 5.485 | 1.711 | 5.614 | 598.1 | 182.3 | 8.462 | 12.60 | 8.673 | 12.92 | 14.61 | 21.76 | 11 |
| 12 | 0.0808 | 2.076 | 6.812 | 2.131 | 6.991 | 2.188 | 7.177 | 469.3 | 143.0 | 6.495 | 9.675 | 6.684 | 9.955 | 11.39 | 16.97 | 12 |
| 13 | 0.0720 | 2.580 | 8.463 | 2.655 | 8.711 | 2.734 | 8.97 | 376.7 | 114.8 | 4.940 | 7.359 | 5.108 | 7.608 | 8.823 | 13.14 | 13 |
| 14 | 0.0641 | 3.280 | 10.76 | 3.389 | 11.12 | 3.504 | 11.49 | 295.1 | 89.94 | 3.699 | 5.510 | 3.848 | 5.732 | 6.798 | 10.13 | 14 |
| Half AWG Size | Nominal Bare Thickness Inches | BARE WIRE RESISTANCE | | | | | | | | BARE WIRE WEIGHT | | | | | | Half AWG Size |
| | | Minimum | | Nominal | | Maximum | | Nominal Feet Per Ohm | Nominal Meters Per Ohm | Minimum | | Nominal | | Maximum | | |
| | | Ohms Per 1000 ft. | Ohms per Kilomtr | Ohms Per 1000 ft. | Ohms per Kilomtr | Ohms Per 1000 ft. | Ohms per Kilomtr | | | Lbs. Per 1000 ft. | Kg per Kilomtr | Lbs. Per 1000 ft. | Kg per Kilomtr | Lbs. Per 1000 ft. | Kg per Kilomtr | |
| 1 ½ | 0.273 | 0.1764 | 0.5787 | 0.1800 | 0.5905 | 0.1837 | 0.6026 | 5556 | 1693 | 84.08 | 125.2 | 85.80 | 127.8 | 87.56 | 130.4 | 1 ½ |
| 2 ½ | 0.2431 | 0.2235 | 0.7332 | 0.2281 | 0.7482 | 0.2327 | 0.7636 | 4385 | 1336 | 66.36 | 98.84 | 67.72 | 100.9 | 69.11 | 102.9 | 2 ½ |
| 3 ½ | 0.2165 | 0.2834 | 0.9297 | 0.2892 | 0.949 | 0.2954 | 0.9691 | 3457 | 1054 | 52.28 | 77.88 | 53.39 | 79.53 | 54.50 | 81.18 | 3 ½ |
| 4 ½ | 0.1928 | 0.3600 | 1.181 | 0.3675 | 1.206 | 0.3751 | 1.231 | 2721 | 829 | 41.17 | 61.33 | 42.03 | 62.60 | 42.90 | 63.90 | 4 ½ |
| 5 ½ | 0.1717 | 0.4582 | 1.503 | 0.4678 | 1.535 | 0.4776 | 1.567 | 2138 | 652 | 32.34 | 48.16 | 33.02 | 49.18 | 33.71 | 50.21 | 5 ½ |
| 6 ½ | 0.1529 | 0.5725 | 1.878 | 0.5844 | 1.917 | 0.5965 | 1.957 | 1711 | 521.6 | 25.89 | 38.57 | 26.43 | 39.36 | 26.98 | 40.18 | 6 ½ |
| 7 ½ | 0.1362 | 0.7282 | 2.389 | 0.7436 | 2.440 | 0.7598 | 2.493 | 1345 | 409.9 | 20.33 | 30.28 | 20.77 | 30.94 | 21.21 | 31.59 | 7 ½ |
| 8 ½ | 0.1213 | 0.9167 | 3.008 | 0.9326 | 3.060 | 0.9521 | 3.124 | 1072 | 326.8 | 16.22 | 24.16 | 16.56 | 24.67 | 16.85 | 25.09 | 8 ½ |
| 9 ½ | 0.1080 | 1.166 | 3.826 | 1.189 | 3.901 | 1.215 | 3.986 | 841 | 256.3 | 12.71 | 18.93 | 12.99 | 19.35 | 13.24 | 19.72 | 9 ½ |
| 10 ½ | 0.0962 | 1.486 | 4.876 | 1.519 | 4.985 | 1.554 | 5.098 | 658 | 200.6 | 9.940 | 14.81 | 10.164 | 15.14 | 10.39 | 15.48 | 10 ½ |
| 11 ½ | 0.0856 | 1.842 | 6.043 | 1.887 | 6.192 | 1.930 | 6.330 | 529.9 | 161.5 | 8.004 | 11.92 | 8.184 | 12.19 | 8.386 | 12.49 | 11 ½ |
| 12 ½ | 0.0763 | 2.340 | 7.678 | 2.406 | 7.893 | 2.460 | 8.072 | 415.7 | 126.7 | 6.277 | 9.350 | 6.420 | 9.562 | 6.599 | 9.830 | 12 ½ |
| 13 ½ | 0.0679 | 2.911 | 9.551 | 3.002 | 9.849 | 3.068 | 10.07 | 333.1 | 101.5 | 5.034 | 7.498 | 5.145 | 7.663 | 5.305 | 7.902 | 13 ½ |

Values are based on a resistivity of 16.782 ohm - circ. mil/ft. at 20°C (61.8% IACS Conductivity). In practice, conductors of higher conductivity will often be encountered, yielding a resistance lower than that specified here when conductor dimensions are at or near maximum tolerance limits.

SQUARE, HEAVY BUILD FILM-INSULATED WIRE

Copper & Aluminum

DIMENSIONS

| INSULATED WIRE DIMENSIONS | | | | | | | |
|---------------------------|-----------------------------|-------|-----------------------------------|-------|----------------------------|-------|----------------------|
| Whole AWG Size | Nominal Bare Wire Thickness | | Minimum Increase in Dimensions | | Maximum Overall Dimensions | | Whole AWG Size |
| | Inches | mm | Inches | mm | Inches | mm | |
| 2/0 | 0.3648 | 9.266 | 0.0030 | 0.076 | 0.3734 | 9.486 | 2/0 |
| 1/0 | 0.3249 | 8.252 | 0.0030 | 0.076 | 0.3331 | 8.462 | 1/0 |
| 1 | 0.2893 | 7.348 | 0.0030 | 0.076 | 0.2972 | 7.549 | 1 |
| 2 | 0.2576 | 6.543 | 0.0030 | 0.076 | 0.2652 | 6.736 | 2 |
| 3 | 0.2294 | 5.827 | 0.0030 | 0.076 | 0.2367 | 6.012 | 3 |
| 4 | 0.2043 | 5.189 | 0.0030 | 0.076 | 0.2113 | 5.367 | 4 |
| 5 | 0.1819 | 4.620 | 0.0030 | 0.076 | 0.1887 | 4.793 | 5 |
| 6 | 0.1620 | 4.115 | 0.0030 | 0.076 | 0.1686 | 4.282 | 6 |
| 7 | 0.1443 | 3.665 | 0.0030 | 0.076 | 0.1507 | 3.828 | 7 |
| 8 | 0.1285 | 3.264 | 0.0030 | 0.076 | 0.1348 | 3.424 | 8 |
| 9 | 0.1144 | 2.906 | 0.0030 | 0.076 | 0.1205 | 3.061 | 9 |
| 10 | 0.1019 | 2.588 | 0.0030 | 0.076 | 0.1079 | 2.741 | 10 |
| 11 | 0.0907 | 2.304 | 0.0030 | 0.076 | 0.0967 | 2.456 | 11 |
| 12 | 0.0808 | 2.052 | 0.0030 | 0.076 | 0.0868 | 2.205 | 12 |
| 13 | 0.0720 | 1.829 | 0.0030 | 0.076 | 0.0780 | 1.981 | 13 |
| 14 | 0.0641 | 1.628 | 0.0030 | 0.076 | 0.0701 | 1.781 | 14 |
| INSULATED WIRE DIMENSIONS | | | | | | | |
| Half AWG Size | Nominal Bare Wire Thickness | | Minimum Increase in Dimensions | | Maximum Overall Dimensions | | Half AWG Size |
| | Inches | mm | Inches | mm | Inches | mm | |
| 1 ½ | 0.2730 | 6.934 | 0.0030 | 0.076 | 0.2807 | 7.131 | 1 ½ |
| 2 ½ | 0.2431 | 6.175 | 0.0030 | 0.076 | 0.2505 | 6.363 | 2 ½ |
| 3 ½ | 0.2165 | 5.499 | 0.0030 | 0.076 | 0.2237 | 5.681 | 3 ½ |
| 4 ½ | 0.1928 | 4.897 | 0.0030 | 0.076 | 0.1997 | 5.073 | 4 ½ |
| 5 ½ | 0.1717 | 4.361 | 0.0030 | 0.076 | 0.1784 | 4.532 | 5 ½ |
| 6 ½ | 0.1529 | 3.884 | 0.0030 | 0.076 | 0.1594 | 4.049 | 6 ½ |
| 7 ½ | 0.1362 | 3.459 | 0.0030 | 0.076 | 0.1426 | 3.621 | 7 ½ |
| 8 ½ | 0.1213 | 3.081 | 0.0030 | 0.076 | 0.1275 | 3.239 | 8 ½ |
| 9 ½ | 0.1080 | 2.743 | 0.0030 | 0.076 | 0.1141 | 2.898 | 9 ½ |
| 10 ½ | 0.0962 | 2.443 | 0.0030 | 0.076 | 0.1022 | 2.595 | 10 ½ |
| 11 ½ | 0.0856 | 2.174 | 0.0030 | 0.076 | 0.0915 | 2.323 | 11 ½ |
| 12 ½ | 0.0763 | 1.938 | 0.0030 | 0.076 | 0.0821 | 2.084 | 12 ½ |
| 13 ½ | 0.0679 | 1.725 | 0.0030 | 0.076 | 0.0736 | 1.869 | 13 ½ |

SQUARE, SERVED WIRE, POLYESTER GLASS, BARE AND HEAVY FILM

Copper

DIMENSIONS

| Whole AWG Size | Nominal Bare Wire Dimension Inches | Nominal Corner Radii ± 25% Inches | Bare Double-Polyester-Glass Fiber-Covered | | Heavy, Film-Coated Single-Polyester-Glass Fiber- Covered | | Heavy, Film-Coated Double-Polyester-Glass Fiber-Coated | | Whole AWG Size |
|----------------------|---|---|--|--|--|--|--|--|----------------------|
| | | | Minimum Increase, Inches | Maximum Overall Dimension, Inches | Minimum Increase, Inches | Maximum Overall Dimension, Inches | Minimum Increase, Inches | Maximum Overall Dimension, Inches | |
| 1/0 | 0.3249 | 0.039 | 0.012 | 0.344 | 0.009 | 0.341 | 0.015 | 0.349 | 1/0 |
| 1 | 0.2893 | 0.039 | 0.012 | 0.308 | 0.009 | 0.305 | 0.015 | 0.313 | 1 |
| 2 | 0.2576 | 0.039 | 0.012 | 0.276 | 0.008 | 0.272 | 0.015 | 0.281 | 2 |
| 3 | 0.2294 | 0.039 | 0.012 | 0.248 | 0.008 | 0.244 | 0.015 | 0.253 | 3 |
| 4 | 0.2043 | 0.039 | 0.012 | 0.222 | 0.008 | 0.219 | 0.015 | 0.227 | 4 |
| 5 | 0.1819 | 0.039 | 0.011 | 0.199 | 0.008 | 0.196 | 0.014 | 0.204 | 5 |
| 6 | 0.1620 | 0.031 | 0.011 | 0.179 | 0.008 | 0.175 | 0.014 | 0.184 | 6 |
| 7 | 0.1443 | 0.031 | 0.010 | 0.160 | 0.008 | 0.157 | 0.013 | 0.165 | 7 |
| 8 | 0.1285 | 0.031 | 0.009 | 0.143 | 0.008 | 0.141 | 0.012 | 0.148 | 8 |
| 9 | 0.1144 | 0.026 | 0.009 | 0.129 | 0.008 | 0.127 | 0.012 | 0.134 | 9 |
| 10 | 0.1019 | 0.026 | 0.008 | 0.115 | 0.007 | 0.113 | 0.011 | 0.120 | 10 |
| 11 | 0.0907 | 0.020 | 0.008 | 0.103 | 0.007 | 0.102 | 0.011 | 0.108 | 11 |
| 12 | 0.0808 | 0.020 | 0.008 | 0.093 | 0.007 | 0.092 | 0.011 | 0.098 | 12 |
| 13 | 0.0720 | 0.016 | 0.008 | 0.084 | 0.007 | 0.084 | 0.011 | 0.089 | 13 |
| 14 | 0.0641 | 0.016 | 0.008 | 0.076 | 0.007 | 0.076 | 0.011 | 0.081 | 14 |

NOTE A: The increase due to the heavy film coating and/or polyester glass, fiber covering for wires having dimensions not shown in the table above shall be the same as the next larger size.

NOTE B: The increase in thickness due to the heavy film coating, if any, shall be in accordance with applicable standard in NEMA MW 1000.

SQUARE, SERVED WIRE, POLYIMIDE AND AROMATIC POLYAMIDE TAPES

Copper & Aluminum

DIMENSIONS

| Whole AWG Size | Bare Wire Dimension | Nominal Corner Radii ± 25% Inches | POLYIMIDE TAPE OVER BARE | | | | POLYAMIDE PAPER OVER BARE | | | | Whole AWG Size |
|----------------------|------------------------|---|-------------------------------|---|-------------------------------|---|-------------------------------|---|-------------------------------|---|----------------------|
| | | | Single, 55% Lap | | Double, 55% Lap | | Single, 1/2 Lap | | Single, 3/4 Lap | | |
| | Inches Nominal | | Minimum Increase Inches | Maximum Overall Bare Cdr., Inches | Minimum Increase Inches | Maximum Overall Bare Cdr., Inches | Minimum Increase Inches | Maximum Overall Bare Cdr., Inches | Minimum Increase Inches | Maximum Overall Bare Cdr., Inches | |
| 1/0 | 0.3249 | 0.040 | 0.0052 | 0.3377 | 0.0104 | 0.3473 | 0.0070 | 0.3389 | 0.0110 | 0.3436 | 1/0 |
| 1 | 0.2893 | 0.040 | 0.0052 | 0.3018 | 0.0104 | 0.3114 | 0.0070 | 0.3032 | 0.0110 | 0.3072 | 1 |
| 2 | 0.2576 | 0.040 | 0.0052 | 0.2698 | 0.0104 | 0.2794 | 0.0070 | 0.2712 | 0.0110 | 0.2752 | 2 |
| 3 | 0.2294 | 0.040 | 0.0052 | 0.2413 | 0.0104 | 0.2509 | 0.0070 | 0.2427 | 0.0110 | 0.2467 | 3 |
| 4 | 0.2043 | 0.040 | 0.0052 | 0.2159 | 0.0104 | 0.2255 | 0.0070 | 0.2173 | 0.0110 | 0.2213 | 4 |
| 5 | 0.1819 | 0.040 | 0.0052 | 0.1933 | 0.0104 | 0.2029 | 0.0070 | 0.1947 | 0.0110 | 0.1987 | 5 |
| 6 | 0.1620 | 0.032 | 0.0052 | 0.1732 | 0.0104 | 0.1828 | 0.0070 | 0.1746 | 0.0110 | 0.1786 | 6 |
| 7 | 0.1443 | 0.032 | 0.0052 | 0.1553 | 0.0104 | 0.1649 | 0.0070 | 0.1567 | 0.0110 | 0.1607 | 7 |
| 8 | 0.1285 | 0.032 | 0.0052 | 0.1394 | 0.0104 | 0.1490 | 0.0070 | 0.1408 | 0.0110 | 0.1448 | 8 |
| 9 | 0.1144 | 0.026 | 0.0052 | 0.1251 | 0.0104 | 0.1347 | 0.0070 | 0.1265 | 0.0110 | 0.1305 | 9 |
| 10 | 0.1019 | 0.026 | 0.0052 | 0.1125 | 0.0104 | 0.1221 | 0.0070 | 0.1139 | 0.0110 | 0.1179 | 10 |
| 11 | 0.0907 | 0.020 | 0.0052 | 0.1013 | 0.0104 | 0.1109 | 0.0070 | 0.1027 | 0.0110 | 0.1067 | 11 |
| 12 | 0.0808 | 0.020 | 0.0052 | 0.0914 | 0.0104 | 0.1010 | 0.0070 | 0.0928 | 0.0110 | 0.0968 | 12 |

From NEMA Standards Publication MW 1000.

RECTANGULAR, HEAVY BUILD WIRE

Copper & Aluminum

DIMENSIONS

| THICKNESS | | | | | | WIDTH | | | | | |
|--------------|------|----------------------------|-------|-------------------------|-------|--------------|-------|------------------------|-------|-------------------------|--------|
| Nominal Bare | | Min. Increase in Thickness | | Max. Overall Dimensions | | Nominal Bare | | Min. Increase in Width | | Max. Overall Dimensions | |
| Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm |
| 0.040 | 1.02 | 0.0030 | 0.076 | 0.0460 | 1.168 | 0.091 | 2.31 | 0.0025 | 0.064 | 0.0965 | 2.451 |
| 0.045 | 1.14 | 0.0030 | 0.076 | 0.0510 | 1.295 | 0.102 | 2.59 | 0.0025 | 0.064 | 0.1075 | 2.731 |
| 0.051 | 1.30 | 0.0030 | 0.076 | 0.0570 | 1.448 | 0.114 | 2.90 | 0.0025 | 0.064 | 0.1196 | 3.038 |
| 0.057 | 1.45 | 0.0030 | 0.076 | 0.0630 | 1.600 | 0.128 | 3.25 | 0.0025 | 0.064 | 0.1338 | 3.399 |
| 0.064 | 1.63 | 0.0030 | 0.076 | 0.0700 | 1.778 | 0.144 | 3.66 | 0.0025 | 0.064 | 0.1499 | 3.808 |
| 0.072 | 1.83 | 0.0030 | 0.076 | 0.0780 | 1.981 | 0.162 | 4.11 | 0.0025 | 0.064 | 0.1681 | 4.270 |
| 0.081 | 2.06 | 0.0030 | 0.076 | 0.0870 | 2.210 | 0.182 | 4.62 | 0.0025 | 0.064 | 0.1883 | 4.783 |
| 0.091 | 2.31 | 0.0030 | 0.076 | 0.0970 | 2.464 | 0.204 | 5.18 | 0.0025 | 0.064 | 0.2105 | 5.347 |
| 0.102 | 2.59 | 0.0030 | 0.076 | 0.1080 | 2.743 | 0.229 | 5.82 | 0.0025 | 0.064 | 0.2358 | 5.989 |
| 0.114 | 2.90 | 0.0030 | 0.076 | 0.1201 | 3.051 | 0.258 | 6.55 | 0.0025 | 0.064 | 0.2651 | 6.734 |
| 0.128 | 3.25 | 0.0030 | 0.076 | 0.1343 | 3.411 | 0.289 | 7.34 | 0.0025 | 0.064 | 0.2964 | 7.529 |
| 0.144 | 3.66 | 0.0030 | 0.076 | 0.1504 | 3.820 | 0.325 | 8.26 | 0.0025 | 0.064 | 0.3328 | 8.453 |
| 0.162 | 4.11 | 0.0030 | 0.076 | 0.1686 | 4.282 | 0.365 | 9.27 | 0.0025 | 0.064 | 0.3732 | 9.479 |
| 0.182 | 4.62 | 0.0030 | 0.076 | 0.1888 | 4.796 | 0.410 | 10.41 | 0.0025 | 0.064 | 0.4186 | 10.632 |
| 0.204 | 5.18 | 0.0030 | 0.076 | 0.2110 | 5.359 | 0.460 | 11.68 | 0.0025 | 0.064 | 0.4691 | 11.915 |
| 0.229 | 5.82 | 0.0030 | 0.076 | 0.2363 | 6.002 | | | | | | |

| Increase in Thickness, Inches (mm) | | Increase in Width, Inches (mm) | |
|---------------------------------------|----------------------|-----------------------------------|----------------------|
| Minimum | Maximum ¹ | Minimum | Maximum ¹ |
| 0.0030 (0.076) | 0.0050 (0.127) | 0.0025 (0.064) | 0.0045 (0.114) |

From NEMA Standards Publication No. MW 1000.

¹The maximum increase may be exceeded provided the maximum overall dimension of the coated wire does not exceed the sum of the maximum dimension of the bare wire plus the maximum increase due to coating.

RECTANGULAR, DOUBLE POLYESTER GLASS WIRE

Copper & Aluminum

SERVED WIRE ADDITIONS

| Thick- ness Inches | T* and W* | WIDTH - Inches | | | | | | | | | | | | | | |
|--------------------------|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|
| | | 0.091 2.30mm | 0.102 2.59mm | 0.114 2.91mm | 0.128 3.26mm | 0.144 3.66mm | 0.163 4.12mm | 0.182 4.62mm | 0.204 5.19mm | 0.229 5.83mm | 0.258 6.54mm | 0.289 7.35mm | 0.325 8.25mm | 0.365 9.27mm | 0.410 10.40mm | 0.460 11.68mm |
| 0.040 1.02mm | T. | | 0.011 | 0.011 | 0.012 | 0.012 | 0.013 | 0.013 | 0.014 | 0.014 | 0.015 | 0.015 | 0.015 | 0.016 | | |
| | W. | | 0.008 | 0.008 | 0.008 | 0.008 | 0.009 | 0.009 | 0.010 | 0.010 | 0.010 | 0.01 | 0.01 | 0.011 | | |
| 0.045 1.15mm | T. | 0.011 | 0.011 | 0.011 | 0.012 | 0.012 | 0.013 | 0.013 | 0.014 | 0.014 | 0.015 | 0.015 | 0.015 | 0.016 | 0.016 | |
| | W. | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.009 | 0.009 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.011 | 0.011 | |
| 0.051 1.29mm | T. | 0.011 | 0.011 | 0.011 | 0.012 | 0.012 | 0.013 | 0.013 | 0.014 | 0.014 | 0.015 | 0.015 | 0.015 | 0.016 | 0.016 | |
| | W. | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.009 | 0.009 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.011 | 0.011 | |
| 0.057 1.45mm | T. | 0.011 | 0.011 | 0.011 | 0.012 | 0.012 | 0.013 | 0.013 | 0.014 | 0.014 | 0.015 | 0.015 | 0.015 | 0.016 | 0.016 | |
| | W. | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.009 | 0.009 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.011 | 0.011 | |
| 0.064 1.63mm | T. | 0.011 | 0.011 | 0.011 | 0.012 | 0.012 | 0.013 | 0.013 | 0.014 | 0.014 | 0.015 | 0.015 | 0.015 | 0.016 | 0.016 | |
| | W. | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.009 | 0.009 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.011 | 0.011 | |
| 0.072 1.83mm | T. | | 0.011 | 0.011 | 0.012 | 0.012 | 0.013 | 0.013 | 0.014 | 0.014 | 0.015 | 0.015 | 0.015 | 0.016 | 0.016 | |
| | W. | | 0.008 | 0.008 | 0.008 | 0.008 | 0.009 | 0.009 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.011 | 0.011 | |
| 0.081 2.05mm | T. | | 0.011 | 0.011 | 0.012 | 0.012 | 0.013 | 0.013 | 0.014 | 0.014 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | |
| | W. | | 0.008 | 0.008 | 0.008 | 0.008 | 0.009 | 0.009 | 0.010 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | |
| 0.091 2.30mm | T. | | 0.011 | 0.012 | 0.012 | 0.012 | 0.013 | 0.014 | 0.014 | 0.014 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | 0.008 | 0.009 | 0.008 | 0.008 | 0.009 | 0.010 | 0.010 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.102 2.59mm | T. | | | 0.012 | 0.012 | 0.013 | 0.014 | 0.014 | 0.014 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | 0.009 | 0.008 | 0.009 | 0.010 | 0.010 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.114 2.91mm | T. | | | | 0.013 | 0.013 | 0.014 | 0.014 | 0.014 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | 0.009 | 0.009 | 0.010 | 0.010 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.128 3.26mm | T. | | | | | 0.013 | 0.014 | 0.014 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | | 0.009 | 0.010 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.144 3.66mm | T. | | | | | | | 0.014 | 0.014 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | | | | 0.010 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.162 4.12mm | T. | | | | | | | | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | | | | | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.182 4.62mm | T. | | | | | | | | | | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | | | | | | | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.204 5.19mm | T. | | | | | | | | | | | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | | | | | | | | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.229 5.83mm | T. | | | | | | | | | | | | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | | | | | | | | | 0.011 | 0.011 | 0.011 | 0.011 |

* T = maximum thickness addition

*W = minimum width addition

Note: The maximum addition may be exceeded provided the overall dimension of the covered wire does not exceed the sum of the maximum bare wire dimension plus the maximum addition of the polyester glass covering.

From NEMA Publication No. MW 1000 and applies to bare or film insulated conductors.

RECTANGULAR WIRE CONSTRUCTIONS AND INCREASES DUE TO INSULATION

Copper & Aluminum

SERVED WIRE ADDITIONS

| Polyimide Tape: | | Build Tolerance | |
|------------------------|-------------------------|------------------------|----------------|
| | | Minimum | Maximum |
| Single: | 45 - 49% Lap (2 layers) | 0.0050 | 0.0070 |
| | 50 - 55% Lap (2 layers) | 0.0052 | 0.0080 |
| | 2/3 Lap (3 layers) | 0.0075 | 0.0105 |
| Double: | 45 - 49% Lap (4 layers) | 0.0100 | 0.0130 |
| | 55% Lap (4 layers) | 0.0120 | 0.0160 |

| Aromatic Polyamide Paper: | | Build Tolerance | |
|----------------------------------|----------------------|------------------------|----------------|
| | | Minimum | Maximum |
| Single: | Magnaply™ (2 layers) | 0.0070 | 0.0110 |
| | 2/3 Lap (3 layers) | 0.0110 | 0.0150 |
| | 3/4 Lap (4 layers) | 0.0150 | 0.0190 |

RECTANGULAR, BARE WIRE, STANDARD SIZES

Copper

RESISTANCE

| Thick- ness | WIDTH (Inches/mm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|--------|--|--|--|--|--|
| | 0.091 2.31 | 0.096 2.44 | 0.102 2.59 | 0.108 2.74 | 0.114 2.90 | 0.121 3.07 | 0.128 3.25 | 0.136 3.45 | 0.144 3.66 | 0.153 3.89 | 0.162 4.11 | 0.172 4.37 | 0.182 4.62 | 0.193 4.90 | 0.204 5.18 | 0.217 5.51 | 0.229 5.82 | 0.243 6.17 | 0.258 6.55 | 0.273 6.93 | 0.289 7.34 | 0.307 7.80 | 0.325 8.26 | 0.344 8.74 | 0.365 9.27 | 0.387 9.83 | 0.410 10.41 | 0.434 11.02 | 0.460 11.68 | 0.487 12.37 | 0.517 13.13 | | | | | | |
| 0.040 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.02 | | | 2.180 | 2.048 | 1.932 | 1.811 | 1.705 | 1.598 | 1.504 | 1.410 | 1.327 | 1.246 | 1.174 | 1.104 | 1.042 | 0.9771 | 0.9239 | 0.8687 | 0.8165 | 0.7701 | 0.7262 | 0.6824 | 0.6436 | 0.6071 | 0.5713 | 0.5381 | | | | | | | | | | | |
| 0.045 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.14 | 2.225 | 2.096 | 1.960 | 1.841 | 1.735 | 1.626 | 1.53 | 1.433 | 1.347 | 1.263 | 1.188 | 1.115 | 1.050 | 0.9873 | 0.9314 | 0.873 | 0.8252 | 0.7757 | 0.7289 | 0.6874 | 0.6480 | 0.6088 | 0.574 | 0.5414 | 0.5094 | 0.4797 | 0.4521 | 0.4266 | | | | | | | | | |
| 0.051 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.30 | 1.995 | 1.878 | 1.754 | 1.646 | 1.550 | 1.451 | 1.364 | 1.277 | 1.200 | 1.124 | 1.057 | 0.9917 | 0.9337 | 0.8773 | 0.8273 | 0.7751 | 0.7325 | 0.6883 | 0.6465 | 0.6095 | 0.5744 | 0.5395 | 0.5086 | 0.4795 | 0.4511 | 0.4247 | 0.4002 | 0.3775 | 0.3557 | 0.3355 | | | | | | | |
| 0.057 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.45 | 1.814 | 1.706 | 1.592 | 1.492 | 1.404 | 1.314 | 1.234 | 1.155 | 1.085 | 1.015 | 0.9542 | 0.8944 | 0.8418 | 0.7905 | 0.7452 | 0.6979 | 0.6592 | 0.6193 | 0.5815 | 0.548 | 0.5163 | 0.4848 | 0.4569 | 0.4307 | 0.4051 | 0.3813 | 0.3593 | 0.3388 | 0.3191 | 0.301 | 0.2831 | | | | | | |
| 0.064 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.63 | 1.486 | 1.404 | 1.317 | 1.240 | 1.172 | 1.101 | 1.038 | 0.974 | 0.9180 | 0.8621 | 0.8125 | 0.7638 | 0.7205 | 0.7066 | 0.6660 | 0.6236 | 0.5889 | 0.5531 | 0.5192 | 0.4893 | 0.4610 | 0.4327 | 0.4078 | 0.3844 | 0.3615 | 0.3402 | 0.3205 | 0.3022 | 0.2847 | 0.2684 | 0.2525 | | | | | | |
| 0.072 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.83 | 1.312 | 1.24 | 1.164 | 1.096 | 1.036 | 0.9733 | 0.918 | 0.8621 | 0.8125 | 0.7632 | 0.7195 | 0.6765 | 0.6383 | 0.6232 | 0.5876 | 0.5504 | 0.5200 | 0.4886 | 0.4589 | 0.4326 | 0.4076 | 0.3828 | 0.3608 | 0.3402 | 0.3200 | 0.3012 | 0.2839 | 0.2677 | 0.2522 | 0.2379 | 0.2238 | | | | | | |
| 0.081 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.06 | 1.159 | 1.096 | 1.029 | 0.9692 | 0.9162 | 0.8613 | 0.8125 | 0.7632 | 0.7195 | 0.676 | 0.6374 | 0.5994 | 0.5657 | 0.5501 | 0.5189 | 0.4862 | 0.4596 | 0.4319 | 0.4058 | 0.3826 | 0.3607 | 0.3388 | 0.3194 | 0.3012 | 0.2834 | 0.2669 | 0.2515 | 0.2373 | 0.2236 | 0.2109 | 0.1984 | | | | | | |
| 0.091 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.31 | | | 0.9113 | 0.8588 | 0.8121 | 0.7636 | 0.7205 | 0.6770 | 0.6383 | 0.5998 | 0.5657 | 0.5321 | 0.5022 | 0.4866 | 0.4592 | 0.4305 | 0.4070 | 0.3826 | 0.3596 | 0.3391 | 0.3198 | 0.3004 | 0.2833 | 0.2672 | 0.2515 | 0.2368 | 0.2233 | 0.2106 | 0.1985 | 0.1873 | 0.1762 | | | | | | |
| 0.102 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.59 | | | | 0.7373 | 0.6925 | 0.6529 | 0.6128 | 0.5774 | 0.5421 | 0.5109 | 0.4802 | 0.4529 | 0.4319 | 0.4076 | 0.3823 | 0.3615 | 0.3399 | 0.3195 | 0.3014 | 0.2843 | 0.2672 | 0.2520 | 0.2377 | 0.2237 | 0.2108 | 0.1987 | 0.1875 | 0.1767 | 0.1667 | 0.1569 | | | | | | | |
| 0.114 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.90 | | | | | | | 0.5813 | 0.5458 | 0.5144 | 0.4831 | 0.4554 | 0.4281 | 0.4039 | 0.3846 | 0.3631 | 0.3406 | 0.3222 | 0.3031 | 0.2849 | 0.2689 | 0.2536 | 0.2384 | 0.2249 | 0.2122 | 0.1997 | 0.1881 | 0.1774 | 0.1674 | 0.1578 | 0.1489 | 0.1402 | | | | | | |
| 0.128 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.25 | | | | | | | | | 0.4626 | 0.4342 | 0.4091 | 0.3844 | 0.3625 | 0.3411 | 0.3221 | 0.3022 | 0.2859 | 0.2690 | 0.2530 | 0.2387 | 0.2252 | 0.2117 | 0.1998 | 0.1885 | 0.1775 | 0.1672 | 0.1577 | 0.1488 | 0.1403 | 0.1324 | 0.1246 | | | | | | |
| 0.144 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.66 | | | | | | | | | | | 0.3620 | 0.3402 | 0.3209 | 0.0721 | 0.2853 | 0.2677 | 0.2534 | 0.2384 | 0.2242 | 0.2116 | 0.1997 | 0.1878 | 0.1772 | 0.1672 | 0.1574 | 0.1484 | 0.1399 | 0.1321 | 0.1245 | 0.1175 | 0.1106 | | | | | | |
| 0.162 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.11 | | | | | | | | | | | | | 0.2842 | 0.2676 | 0.2528 | 0.2373 | 0.2246 | 0.2113 | 0.1988 | 0.1877 | 0.1771 | 0.1665 | 0.1572 | 0.1484 | 0.1397 | 0.1317 | 0.1242 | 0.1172 | 0.1105 | 0.1043 | 0.0982 | | | | | | |
| 0.182 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.62 | | | | | | | | | | | | | | 0.2274 | 0.2133 | 0.2018 | 0.1898 | 0.1784 | 0.1684 | 0.1588 | 0.1493 | 0.1408 | 0.1329 | 0.1251 | 0.1178 | 0.1111 | 0.1049 | 0.0988 | 0.0933 | 0.0878 | | | | | | | |
| 0.204 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.18 | | | | | | | | | | | | | | | | | 0.1794 | 0.1688 | 0.1587 | 0.1498 | 0.1413 | 0.1328 | 0.1253 | 0.1183 | 0.1113 | 0.1049 | 0.0989 | 0.0934 | 0.0880 | 0.0831 | 0.0782 | | | | | | |
| 0.229 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.82 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.258 | | | | | | | | | | | | | | | | | | | | 0.1410 | 0.1331 | 0.1256 | 0.1181 | 0.1114 | 0.1051 | 0.099 | 0.0933 | 0.0880 | 0.0830 | 0.0783 | 0.0739 | 0.0696 | | | | | |
| 6.55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | 0.1112 | 0.1046 | 0.0987 | 0.0931 | 0.0877 | 0.0827 | 0.0780 | 0.0736 | 0.0694 | 0.0655 | 0.0617 | | | | | | |

NOTE: Conductor resistance per thousand feet (ohms).

RECTANGULAR, BARE WIRE, STANDARD SIZES

Aluminum

RESISTANCE

| Thick-ness | WIDTH (Inches/mm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|--------|--------|--------|--|--|--|--|--|
| | 0.091 2.31 | 0.096 2.44 | 0.102 2.59 | 0.108 2.74 | 0.114 2.90 | 0.121 3.07 | 0.128 3.25 | 0.136 3.45 | 0.144 3.66 | 0.153 3.89 | 0.162 4.11 | 0.172 4.37 | 0.182 4.62 | 0.193 4.90 | 0.204 5.18 | 0.217 5.51 | 0.229 5.82 | 0.243 6.17 | 0.258 6.55 | 0.273 6.93 | 0.289 7.34 | 0.307 7.80 | 0.325 8.26 | 0.344 8.74 | 0.365 9.27 | 0.387 9.83 | 0.410 10.41 | 0.434 11.02 | 0.460 11.68 | 0.487 12.37 | 0.517 13.13 | | | | | | | | |
| 0.040 1.02 | | | 3.527 | 3.314 | 3.126 | 2.931 | 2.759 | 2.586 | 2.433 | 2.282 | 2.148 | 2.016 | 1.900 | 1.787 | 1.686 | 1.581 | 1.495 | 1.406 | 1.321 | 1.246 | 1.175 | 1.104 | 1.041 | 0.9824 | 0.9245 | 0.8707 | | | | | | | | | | | | | |
| 0.045 1.14 | 3.601 | 3.392 | 3.172 | 2.978 | 2.807 | 2.631 | 2.475 | 2.318 | 2.180 | 2.043 | 1.923 | 1.804 | 1.699 | 1.597 | 1.507 | 1.413 | 1.335 | 1.255 | 1.179 | 1.112 | 1.048 | 0.9850 | 0.9288 | 0.8760 | 0.8242 | 0.7762 | 0.7316 | 0.6902 | | | | | | | | | | | |
| 0.051 1.30 | 3.228 | 3.038 | 2.838 | 2.663 | 2.508 | 2.348 | 2.208 | 2.067 | 1.942 | 1.819 | 1.711 | 1.605 | 1.511 | 1.420 | 1.339 | 1.254 | 1.185 | 1.114 | 1.046 | 0.9862 | 0.9294 | 0.8729 | 0.8229 | 0.7759 | 0.7299 | 0.6872 | 0.6476 | 0.6109 | 0.5755 | 0.5429 | | | | | | | | | |
| 0.057 1.45 | 2.936 | 2.760 | 2.576 | 2.414 | 2.272 | 2.126 | 1.997 | 1.868 | 1.755 | 1.643 | 1.544 | 1.447 | 1.362 | 1.279 | 1.206 | 1.129 | 1.067 | 1.002 | 0.9408 | 0.8867 | 0.8355 | 0.7844 | 0.7393 | 0.6970 | 0.6555 | 0.6170 | 0.5813 | 0.5482 | 0.5164 | 0.4870 | 0.4581 | | | | | | | | |
| 0.064 1.63 | 2.405 | 2.272 | 2.131 | 2.007 | 1.896 | 1.781 | 1.679 | 1.576 | 1.485 | 1.395 | 1.315 | 1.236 | 1.166 | 1.143 | 1.078 | 1.009 | 0.9529 | 0.895 | 0.8402 | 0.7917 | 0.7459 | 0.7002 | 0.6598 | 0.6220 | 0.5849 | 0.5505 | 0.5186 | 0.489 | 0.4606 | 0.4344 | 0.4085 | | | | | | | | |
| 0.072 1.83 | 2.123 | 2.007 | 1.883 | 1.773 | 1.676 | 1.575 | 1.485 | 1.395 | 1.315 | 1.235 | 1.164 | 1.095 | 1.033 | 1.008 | 0.9507 | 0.8906 | 0.8415 | 0.7906 | 0.7425 | 0.6999 | 0.6596 | 0.6194 | 0.5838 | 0.5505 | 0.5178 | 0.4874 | 0.4593 | 0.4332 | 0.4081 | 0.3849 | 0.3621 | | | | | | | | |
| 0.081 2.06 | 1.875 | 1.773 | 1.664 | 1.568 | 1.482 | 1.394 | 1.315 | 1.235 | 1.164 | 1.094 | 1.031 | 0.9699 | 0.9154 | 0.8901 | 0.8395 | 0.7868 | 0.7436 | 0.6989 | 0.6566 | 0.6191 | 0.5836 | 0.5482 | 0.5169 | 0.4874 | 0.4586 | 0.4318 | 0.4070 | 0.3839 | 0.3617 | 0.3413 | 0.3211 | | | | | | | | |
| 0.091 2.31 | | | 1.474 | 1.390 | 1.314 | 1.236 | 1.166 | 1.095 | 1.033 | 0.9706 | 0.9154 | 0.8610 | 0.8126 | 0.7874 | 0.7430 | 0.6965 | 0.6585 | 0.6191 | 0.5818 | 0.5488 | 0.5174 | 0.4861 | 0.4584 | 0.4324 | 0.4069 | 0.3832 | 0.3612 | 0.3408 | 0.3212 | 0.3030 | 0.2851 | | | | | | | | |
| 0.102 2.59 | | | | 1.193 | 1.121 | 1.056 | 0.9916 | 0.9342 | 0.8772 | 0.8267 | 0.7770 | 0.7329 | 0.6988 | 0.6596 | 0.6185 | 0.5849 | 0.5501 | 0.5170 | 0.4878 | 0.4600 | 0.4323 | 0.4077 | 0.3847 | 0.3620 | 0.3410 | 0.3215 | 0.3034 | 0.2859 | 0.2698 | 0.2539 | | | | | | | | | |
| 0.114 2.90 | | | | | | 0.9406 | 0.8832 | 0.8323 | 0.7817 | 0.7368 | 0.6927 | 0.6535 | 0.6224 | 0.5876 | 0.5512 | 0.5213 | 0.4904 | 0.4610 | 0.4350 | 0.4103 | 0.3857 | 0.3638 | 0.3433 | 0.3232 | 0.3044 | 0.2871 | 0.2709 | 0.2554 | 0.2410 | 0.2268 | | | | | | | | | |
| 0.128 3.25 | | | | | | | | | 0.7486 | 0.7026 | 0.6619 | 0.6220 | 0.5865 | 0.5519 | 0.5212 | 0.4890 | 0.4627 | 0.4353 | 0.4093 | 0.3863 | 0.3644 | 0.3426 | 0.3232 | 0.3050 | 0.2872 | 0.2706 | 0.2552 | 0.2408 | 0.2270 | 0.2143 | 0.2017 | | | | | | | | |
| 0.144 3.66 | | | | | | | | | | 0.5857 | 0.5505 | 0.5192 | 0.4904 | 0.4610 | 0.4350 | 0.4103 | 0.3857 | 0.3638 | 0.3433 | 0.3232 | 0.3044 | 0.2871 | 0.2709 | 0.2554 | 0.2410 | 0.2268 | 0.2143 | 0.2017 | 0.1898 | 0.1788 | 0.1688 | 0.1589 | | | | | | | |
| 0.162 4.11 | | | | | | | | | | | | 0.4599 | 0.4330 | 0.4090 | 0.3839 | 0.3634 | 0.3420 | 0.3217 | 0.3037 | 0.2866 | 0.2695 | 0.2543 | 0.2401 | 0.2261 | 0.2130 | 0.2009 | 0.1897 | 0.1788 | 0.1688 | 0.1589 | 0.1498 | 0.1420 | 0.1344 | 0.1265 | | | | | |
| 0.182 4.62 | | | | | | | | | | | | | | 0.3679 | 0.3451 | 0.3265 | 0.3071 | 0.2887 | 0.2724 | 0.2570 | 0.2415 | 0.2279 | 0.2150 | 0.2024 | 0.1907 | 0.1798 | 0.1697 | 0.1599 | 0.1509 | 0.1420 | 0.1344 | 0.1267 | 0.1196 | 0.1126 | | | | | |
| 0.204 5.18 | | | | | | | | | | | | | | | | 0.2902 | 0.2731 | 0.2568 | 0.2423 | 0.2286 | 0.2149 | 0.2028 | 0.1914 | 0.1802 | 0.1698 | 0.1601 | 0.1511 | 0.1424 | 0.1344 | 0.1267 | 0.1196 | 0.1126 | | | | | | | |
| 0.229 5.82 | | | | | | | | | | | | | | | | | | | 0.2281 | 0.2153 | 0.2032 | 0.1910 | 0.1803 | 0.1701 | 0.1602 | 0.1509 | 0.1424 | 0.1344 | 0.1267 | 0.1196 | 0.1126 | | | | | | | | |
| 0.258 6.55 | | | | | | | | | | | | | | | | | | | | | 0.1799 | 0.1692 | 0.1597 | 0.1507 | 0.1419 | 0.1338 | 0.1262 | 0.1191 | 0.1123 | 0.1060 | 0.0998 | | | | | | | | |

NOTE: Conductor resistance per thousand feet (ohms).

RECTANGULAR, BARE WIRE, STANDARD SIZES

Copper

WEIGHTS

| Thick-ness | WIDTH (Inches/mm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|-------|--|--|--|--|--|
| | 0.091 2.31 | 0.096 2.44 | 0.102 2.59 | 0.108 2.74 | 0.114 2.90 | 0.121 3.07 | 0.128 3.25 | 0.136 3.45 | 0.144 3.66 | 0.153 3.89 | 0.162 4.11 | 0.172 4.37 | 0.182 4.62 | 0.193 4.90 | 0.204 5.18 | 0.217 5.51 | 0.229 5.82 | 0.243 6.17 | 0.258 6.55 | 0.273 6.93 | 0.289 7.34 | 0.307 7.80 | 0.325 8.26 | 0.344 8.74 | 0.365 9.27 | 0.387 9.83 | 0.410 10.41 | 0.434 11.02 | 0.460 11.68 | 0.487 12.37 | 0.517 13.13 | | | | | | |
| 0.040 1.02 | | | 14.40 | 15.33 | 16.25 | 17.33 | 18.41 | 19.64 | 20.88 | 22.26 | 23.65 | 25.19 | 26.73 | 28.43 | 30.13 | 32.13 | 33.98 | 36.14 | 38.45 | 40.76 | 43.23 | 46.00 | 48.78 | 51.71 | 54.95 | 58.34 | | | | | | | | | | | |
| 0.045 1.14 | 14.11 | 14.97 | 16.02 | 17.06 | 18.10 | 19.31 | 20.52 | 21.91 | 23.3 | 24.86 | 26.42 | 28.16 | 29.89 | 31.8 | 33.7 | 35.96 | 38.04 | 40.47 | 43.07 | 45.67 | 48.45 | 51.57 | 54.69 | 57.99 | 61.63 | 65.44 | 69.43 | 73.59 | | | | | | | | | |
| 0.051 1.30 | 15.74 | 16.72 | 17.90 | 19.08 | 20.26 | 21.63 | 23.01 | 24.58 | 26.15 | 27.92 | 29.69 | 31.66 | 33.62 | 35.78 | 37.95 | 40.50 | 42.86 | 45.61 | 48.56 | 51.51 | 54.65 | 58.19 | 61.73 | 65.46 | 69.59 | 73.92 | 78.44 | 83.15 | 88.26 | 93.57 | | | | | | | |
| 0.057 1.45 | 17.30 | 18.40 | 19.72 | 21.04 | 22.36 | 23.89 | 25.43 | 27.19 | 28.95 | 30.92 | 32.90 | 35.10 | 37.29 | 39.71 | 42.13 | 44.98 | 47.62 | 50.69 | 53.99 | 57.28 | 60.80 | 64.75 | 68.71 | 72.88 | 77.5 | 82.33 | 87.38 | 92.65 | 98.36 | 104.3 | 110.9 | | | | | | |
| 0.064 1.63 | 21.12 | 22.36 | 23.84 | 25.32 | 26.80 | 28.52 | 30.25 | 32.22 | 34.20 | 36.42 | 38.63 | 41.10 | 43.57 | 44.43 | 47.14 | 50.35 | 53.3 | 56.76 | 60.46 | 64.16 | 68.10 | 72.54 | 76.98 | 81.67 | 86.85 | 92.28 | 97.95 | 103.9 | 110.3 | 116.9 | 124.3 | | | | | | |
| 0.072 1.83 | 23.93 | 25.32 | 26.98 | 28.65 | 30.31 | 32.25 | 34.2 | 36.42 | 38.63 | 41.13 | 43.63 | 46.40 | 49.18 | 50.38 | 53.43 | 57.04 | 60.37 | 64.25 | 68.41 | 72.57 | 77.01 | 82.01 | 87.00 | 92.28 | 98.1 | 104.2 | 110.6 | 117.3 | 124.5 | 132.0 | 140.3 | | | | | | |
| 0.081 2.06 | 27.08 | 28.65 | 30.52 | 32.39 | 34.26 | 36.45 | 38.63 | 41.13 | 43.63 | 46.44 | 49.25 | 52.37 | 55.49 | 57.07 | 60.50 | 64.56 | 68.31 | 72.68 | 77.36 | 82.04 | 87.04 | 92.66 | 98.28 | 104.2 | 110.8 | 117.6 | 124.8 | 132.3 | 140.4 | 148.8 | 158.2 | | | | | | |
| 0.091 2.31 | | | 34.45 | 36.55 | 38.66 | 41.11 | 43.57 | 46.37 | 49.18 | 52.34 | 55.49 | 59.00 | 62.51 | 64.51 | 68.37 | 72.93 | 77.13 | 82.04 | 87.30 | 92.57 | 98.18 | 104.5 | 110.8 | 117.5 | 124.8 | 132.5 | 140.6 | 149.0 | 158.1 | 167.6 | 178.1 | | | | | | |
| 0.102 2.59 | | | | 42.58 | 45.33 | 48.08 | 51.23 | 54.37 | 57.91 | 61.45 | 65.38 | 69.31 | 72.69 | 77.01 | 82.13 | 86.84 | 92.35 | 98.24 | 104.1 | 110.4 | 117.5 | 124.6 | 132.0 | 140.3 | 149.0 | 158.0 | 167.4 | 177.7 | 188.3 | 200.1 | | | | | | | |
| 0.114 2.90 | | | | | 54.00 | 57.52 | 61.03 | 64.99 | 68.94 | 73.33 | 77.73 | 81.62 | 86.45 | 92.16 | 97.43 | 103.6 | 110.2 | 116.8 | 123.8 | 131.7 | 139.6 | 148.0 | 157.2 | 166.9 | 177.0 | 187.5 | 198.9 | 210.8 | 224.0 | | | | | | | | |
| 0.128 3.25 | | | | | | | | 67.86 | 72.30 | 76.74 | 81.67 | 86.60 | 92.03 | 97.46 | 103.9 | 109.8 | 116.7 | 124.1 | 131.5 | 139.4 | 148.3 | 157.2 | 167.2 | 177.2 | 187.7 | 199.1 | 210.9 | 223.7 | 237.1 | 251.9 | | | | | | | |
| 0.144 3.66 | | | | | | | | | | 86.73 | 92.28 | 97.83 | 103.9 | 110.0 | 117.3 | 123.9 | 131.7 | 140 | 148.3 | 157.2 | 167.2 | 177.2 | 187.7 | 199.4 | 211.6 | 224.4 | 237.7 | 252.1 | 267.1 | 283.7 | | | | | | | |
| 0.162 4.11 | | | | | | | | | | | | | 110.5 | 117.3 | 124.2 | 132.3 | 139.8 | 148.5 | 157.9 | 167.3 | 177.3 | 188.5 | 199.7 | 211.6 | 224.7 | 238.4 | 252.8 | 267.8 | 284.0 | 300.9 | 319.6 | | | | | | |
| 0.182 4.62 | | | | | | | | | | | | | | | 138.1 | 147.2 | 155.6 | 165.4 | 175.9 | 186.5 | 197.7 | 210.3 | 222.9 | 236.3 | 251.0 | 266.4 | 282.6 | 299.4 | 317.6 | 336.6 | 357.6 | | | | | | |
| 0.204 5.18 | | | | | | | | | | | | | | | | | 175.0 | 186.0 | 197.8 | 209.6 | 222.2 | 236.3 | 250.5 | 265.4 | 281.9 | 299.2 | 317.3 | 336.2 | 356.6 | 377.9 | 401.4 | | | | | | |
| 0.229 5.82 | | | | | | | | | | | | | | | | | | | 222.7 | 235.9 | 250.0 | 265.9 | 281.8 | 298.6 | 317.1 | 336.5 | 356.8 | 378.0 | 400.9 | 424.8 | 451.3 | | | | | | |
| 0.258 6.55 | | | | | | | | | | | | | | | | | | | | | | 282.3 | 300.2 | 318.1 | 337.0 | 357.9 | 379.8 | 402.6 | 426.5 | 452.4 | 479.2 | 509.0 | | | | | |

NOTE: Conductor weight in pounds per thousand feet (Lbs/1000 Ft).

RECTANGULAR WIRE

PREFERRED NUMBER SERIES

The tables of physical and electrical values for rectangular copper and aluminum wire presented in this section are based on a series of standardized size subdivisions for thickness and width known as the "Preferred Number Series."

The need for a workable system of standardization for rectangular wire has been recognized for many years, but the Preferred Number Series is the first to achieve world-wide attention and a significant degree of acceptance. This acceptance is especially apparent in the case of rectangular aluminum wire, where the recent development of many new user designs has permitted incorporation of wire sizes conforming to the series. The series has been adopted by the International Electrotechnical Commission and is being incorporated into all new NEMA Magnet Wire Standards for rectangular wires of both copper and aluminum.

Mathematically, the Preferred Numbers form a geometrical series (with a constant ratio between adjacent numbers) based on the 20th or 40th root of 10. The latter is called the R-40 Series, and is assigned to intermediate width values for rectangular wire. The R-20 series (with the 20th root of 10 as the ratio) is used to define Preferred wire thickness and width divisions.

Preferred Number Series values in inches (rounded to nearest 0.001") represent a conversion from original computations in millimeters, thus making identical wire sizes available worldwide.

The R-20 Series (for thickness) and R-40 Series (for width) are presented in millimeters and inches for comparison.

| R-20 SERIES | | R-40 SERIES | | | |
|-------------|------|-------------|------|--------|------|
| Inches | MM | Inches | MM | Inches | MM |
| 0.025 | 0.63 | 0.063 | 1.60 | 0.220 | 5.60 |
| .028 | .71 | .067* | 1.70 | .236* | 6.00 |
| .031 | .80 | .071 | 1.80 | .248 | 6.30 |
| .035 | .90 | .075* | 1.90 | .264* | 6.70 |
| .039 | 1.00 | .079 | 2.00 | .280 | 7.10 |
| .044 | 1.12 | .083* | 2.12 | .295* | 7.50 |
| .049 | 1.25 | .088 | 2.24 | .315 | 8.00 |
| .055 | 1.40 | .093* | 2.37 | .335* | 8.50 |
| .063 | 1.60 | .098 | 2.50 | .354 | 9.0 |
| .071 | 1.80 | .104* | 2.65 | .374* | 9.50 |
| .079 | 2.00 | .110 | 2.80 | .394 | 10.0 |
| .088 | 2.24 | .118* | 3.00 | .417* | 10.6 |
| .098 | 2.50 | .124 | .315 | .441 | 11.2 |
| .110 | 2.80 | .132* | 3.35 | .465* | 11.8 |
| .124 | 3.15 | .140 | 3.55 | .492 | 12.5 |
| .140 | 3.55 | .148* | 3.75 | .520* | 13.2 |
| .157 | 4.00 | .157 | 4.00 | .551 | 14.0 |
| .177 | 4.50 | .167* | 4.25 | .591* | 15.0 |
| .197 | 5.00 | .177 | 4.50 | .630 | 16.0 |
| .220 | 5.60 | .187* | 4.75 | .669* | 17.0 |
| .248 | 6.30 | .197 | 5.00 | .709 | 18.0 |
| .280 | 7.10 | .209* | 5.30 | .748* | 19.0 |

*Intermediate Widths

Multiplicative factors are presented below to facilitate conversion of the rectangular wire data table values to the metric system:

Corner Radius: Inches x 25.4 = Millimeters

Cross-Sectional Area: Sq. mils x 0.000645 = Sq. millimeters
Cir. Mils x 0.000506 = Sq. millimeters

Conductor Resistance: Ohms/1000 ft. x 3.2808 = Ohms/Kilometer
Ohms/Lb. X 2.2046 = Ohms/Kilogram
Feet/Ohm x 0.30480 = Meters/Ohm

Conductor Weight: Lb./1000 Ft. x 1.48816 = Kilograms/Kilometer
Feet/Lb. X 0.67197 = Meters/Kilogram

Bare Wire Tolerances: Inches
< .100 ± .001
.100 ≥ + ≤ .300 ± 1%
.300 > ± .003

RECTANGULAR, HEAVY BUILD WIRE, IEC PREFERRED NUMBER SERIES

Copper & Aluminum

DIMENSIONS

| THICKNESS | | | | | | WIDTH | | | | | | | | | | | |
|--------------|------|----------------------------|-------|------------------------|------|--------------|------|------------------------|-------|------------------------|------|--------------|------|------------------------|-------|------------------------|-------|
| Nominal Bare | | Min. Increase in Thickness | | Max. Overall Dimension | | Nominal Bare | | Min. Increase in Width | | Max. Overall Dimension | | Nominal Bare | | Min. Increase in Width | | Max. Overall Dimension | |
| Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm | Inches | mm |
| 0.025 | 0.63 | 0.0030 | 0.076 | 0.031 | 0.78 | 0.063 | 1.60 | 0.0025 | 0.064 | 0.0685 | 1.74 | 0.220 | 5.60 | 0.0025 | 0.064 | 0.2267 | 5.77 |
| 0.028 | 0.71 | 0.0030 | 0.076 | 0.034 | 0.86 | 0.067* | 1.70 | 0.0025 | 0.064 | 0.0725 | 1.84 | 0.236* | 6.00 | 0.0025 | 0.064 | 0.2429 | 6.17 |
| 0.031 | 0.80 | 0.0030 | 0.076 | 0.037 | 0.95 | 0.071 | 1.80 | 0.0025 | 0.064 | 0.0765 | 1.94 | 0.248 | 6.30 | 0.0025 | 0.064 | 0.2550 | 6.48 |
| 0.035 | 0.90 | 0.0030 | 0.076 | 0.041 | 1.05 | 0.075* | 1.90 | 0.0025 | 0.064 | 0.0805 | 2.04 | 0.264* | 6.70 | 0.0025 | 0.064 | 0.2711 | 6.88 |
| 0.039 | 1.00 | 0.0030 | 0.076 | 0.045 | 1.15 | 0.079 | 2.00 | 0.0025 | 0.064 | 0.0845 | 2.14 | 0.280 | 7.10 | 0.0025 | 0.064 | 0.2873 | 7.28 |
| 0.044 | 1.12 | 0.0030 | 0.076 | 0.050 | 1.27 | 0.083* | 2.12 | 0.0025 | 0.064 | 0.0885 | 2.26 | 0.295* | 7.50 | 0.0025 | 0.064 | 0.3025 | 7.69 |
| 0.049 | 1.25 | 0.0030 | 0.076 | 0.055 | 1.40 | 0.088 | 2.24 | 0.0025 | 0.064 | 0.0935 | 2.38 | 0.315 | 8.00 | 0.0025 | 0.064 | 0.3225 | 8.19 |
| 0.055 | 1.40 | 0.0030 | 0.076 | 0.061 | 1.55 | 0.093* | 2.37 | 0.0025 | 0.064 | 0.0985 | 2.51 | 0.335* | 8.50 | 0.0025 | 0.064 | 0.3425 | 8.69 |
| 0.063 | 1.60 | 0.0030 | 0.076 | 0.069 | 1.75 | 0.098 | 2.50 | 0.0025 | 0.064 | 0.1035 | 2.64 | 0.354 | 9.00 | 0.0025 | 0.064 | 0.3615 | 9.19 |
| 0.071 | 1.80 | 0.0030 | 0.076 | 0.077 | 1.95 | 0.104* | 2.65 | 0.0025 | 0.064 | 0.1095 | 2.79 | 0.374* | 9.50 | 0.0025 | 0.064 | 0.3815 | 9.69 |
| 0.079 | 2.00 | 0.0030 | 0.076 | 0.085 | 2.15 | 0.110 | 2.80 | 0.0025 | 0.064 | 0.1156 | 2.94 | 0.394 | 10.0 | 0.0025 | 0.064 | 0.4015 | 10.19 |
| 0.088 | 2.24 | 0.0030 | 0.076 | 0.094 | 2.39 | 0.118* | 3.00 | 0.0025 | 0.064 | 0.1237 | 3.14 | 0.417* | 10.6 | 0.0025 | 0.064 | 0.4245 | 10.79 |
| 0.098 | 2.50 | 0.0030 | 0.076 | 0.104 | 2.65 | 0.124 | 3.15 | 0.0025 | 0.064 | 0.1297 | 3.30 | 0.441 | 11.2 | 0.0025 | 0.064 | 0.4485 | 11.39 |
| 0.110 | 2.80 | 0.0030 | 0.076 | 0.116 | 2.96 | 0.132* | 3.35 | 0.0025 | 0.064 | 0.1378 | 3.50 | 0.465* | 11.8 | 0.0025 | 0.064 | 0.4725 | 11.99 |
| 0.124 | 3.15 | 0.0030 | 0.076 | 0.130 | 3.31 | 0.140 | 3.55 | 0.0025 | 0.064 | 0.1459 | 3.70 | 0.492 | 12.5 | 0.0025 | 0.064 | 0.4995 | 12.69 |
| 0.14 | 3.55 | 0.0030 | 0.076 | 0.146 | 3.71 | 0.148* | 3.75 | 0.0025 | 0.064 | 0.154 | 3.90 | 0.520* | 13.2 | 0.0025 | 0.064 | 0.5297 | 13.45 |
| 0.157 | 4.00 | 0.0030 | 0.076 | 0.164 | 4.17 | 0.157 | 4.00 | 0.0025 | 0.064 | 0.1631 | 4.15 | 0.551 | 14.0 | 0.0025 | 0.064 | 0.5610 | 14.25 |
| 0.177 | 4.50 | 0.0030 | 0.076 | 0.174 | 4.67 | 0.167* | 4.25 | 0.0025 | 0.064 | 0.1732 | 4.41 | 0.591* | 15.0 | 0.0025 | 0.064 | 0.6014 | 15.26 |
| 0.197 | 5.00 | 0.0030 | 0.076 | 0.204 | 5.18 | 0.177 | 4.50 | 0.0025 | 0.064 | 0.1833 | 4.66 | 0.630 | 16.0 | 0.0025 | 0.064 | 0.6408 | 16.27 |
| 0.220 | 5.60 | 0.0030 | 0.076 | 0.227 | 5.78 | 0.187* | 4.75 | 0.0025 | 0.064 | 0.1934 | 4.91 | 0.669* | 17.0 | 0.0025 | 0.064 | 0.6802 | 17.28 |
| 0.248 | 6.30 | 0.0030 | 0.076 | 0.255 | 6.49 | 0.197 | 5.00 | 0.0025 | 0.064 | 0.2035 | 5.16 | 0.709 | 18.0 | 0.0025 | 0.064 | 0.7206 | 18.29 |
| 0.280 | 7.10 | 0.0030 | 0.076 | 0.288 | 7.30 | 0.209* | 5.30 | 0.0025 | 0.064 | 0.2156 | 5.47 | 0.748* | 19.0 | 0.0025 | 0.064 | 0.7600 | 19.30 |

| Increase in Thickness, Inches (mm) | | Increase in Width, Inches (mm) | |
|------------------------------------|----------------------|--------------------------------|----------------------|
| Minimum | Maximum ¹ | Minimum | Maximum ¹ |
| 0.0030 (0.076) | 0.0050 (0.127) | 0.0025 (0.064) | 0.0045 (0.114) |

* Intermediate Widths. For a discussion of the Preferred Number Series sizes, see Page 52.

From NEMA Standards Publication No. MW 1000.

¹ The maximum increase may be exceeded provided the maximum overall dimension of the coated wire does not exceed the sum of the maximum dimension of the bare wire plus the maximum increase due to the coating.

RECTANGULAR, SINGLE POLYESTER GLASS WIRE, IEC PREFERRED NUMBER SERIES

Copper & Aluminum

SERVED WIRE ADDITIONS

| Thickness - Inches | T* and W* | WIDTH - Inches | | | | | | | | | | | | | | | | | |
|------------------------|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | | 0.088 2.24mm | 0.098 2.49mm | 0.110 2.79mm | 0.124 3.15mm | 0.140 3.56mm | 0.157 3.99mm | 0.177 4.50mm | 0.197 5.00mm | 0.220 5.59mm | 0.248 6.30mm | 0.280 7.11mm | 0.315 8.00mm | 0.354 8.99mm | 0.394 10.0mm | 0.441 11.2mm | 0.492 12.5mm | 0.551 14.0mm | 0.630 16.0mm |
| 0.049 1.25mm | T. | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.007 | 0.007 | 0.007 | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | 0.004 | 0.004 | 0.004 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.055 1.40mm | T. | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.007 | 0.007 | 0.007 | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | 0.004 | 0.004 | 0.004 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.063 1.60mm | T. | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.007 | 0.007 | 0.007 | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | 0.004 | 0.004 | 0.004 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.071 1.80mm | T. | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.007 | 0.007 | 0.007 | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | 0.004 | 0.004 | 0.004 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.079 2.01mm | T. | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.007 | 0.007 | 0.007 | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | 0.004 | 0.004 | 0.004 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.088 2.24mm | T. | | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.007 | 0.007 | 0.007 | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | | 0.004 | 0.004 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.098 2.49mm | T. | | | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.007 | 0.007 | 0.007 | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | | | 0.004 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.110 2.79mm | T. | | | | 0.006 | 0.006 | 0.006 | 0.006 | 0.007 | 0.007 | 0.007 | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | | | | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.124 3.15mm | T. | | | | | 0.006 | 0.006 | 0.006 | 0.007 | 0.007 | 0.007 | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | | | | | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.140 3.56mm | T. | | | | | | 0.006 | 0.006 | 0.007 | 0.007 | 0.007 | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | | | | | | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.157 3.99mm | T. | | | | | | | 0.006 | 0.007 | 0.007 | 0.007 | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | | | | | | | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.177 4.50mm | T. | | | | | | | | 0.007 | 0.007 | 0.007 | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | | | | | | | | 0.005 | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.197 5.00mm | T. | | | | | | | | | 0.007 | 0.007 | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | | | | | | | | | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.220 5.59mm | T. | | | | | | | | | | 0.007 | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | | | | | | | | | | 0.005 | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.248 6.30mm | T. | | | | | | | | | | | 0.007 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | | | | | | | | | | | 0.005 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |
| 0.280 7.11mm | T. | | | | | | | | | | | | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
| | W. | | | | | | | | | | | | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 |

* T = maximum thickness addition

*W = minimum width addition

From NEMA Standards Publication No. MW 1000 and applies to bare or film-insulated conductors.

Note: The maximum addition may be exceeded provided the overall dimension of the covered wire does not exceed the sum of the maximum bare wire dimension plus the maximum

RECTANGULAR, DOUBLE POLYESTER GLASS WIRE, IEC PREFERRED NUMBER SERIES

Copper & Aluminum

SERVED WIRE ADDITIONS

| Thickness - Inches | T* and W* | WIDTH - Inches | | | | | | | | | | | | | | | | | |
|------------------------|-----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | | 0.088 2.24mm | 0.098 2.49mm | 0.110 2.79mm | 0.124 3.15mm | 0.140 3.56mm | 0.157 3.99mm | 0.177 4.50mm | 0.197 5.00mm | 0.220 5.59mm | 0.248 6.30mm | 0.280 7.11mm | 0.315 8.00mm | 0.354 8.99mm | 0.394 10.0mm | 0.441 11.2mm | 0.492 12.5mm | 0.551 14.0mm | 0.630 16.0mm |
| 0.049 1.25mm | T. | 0.011 | 0.011 | 0.011 | 0.012 | 0.012 | 0.013 | 0.013 | 0.014 | 0.014 | 0.015 | 0.015 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.009 | 0.009 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.055 1.40mm | T. | 0.011 | 0.011 | 0.011 | 0.012 | 0.012 | 0.013 | 0.013 | 0.014 | 0.014 | 0.015 | 0.015 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.009 | 0.009 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.063 1.60mm | T. | 0.011 | 0.011 | 0.011 | 0.012 | 0.012 | 0.013 | 0.013 | 0.014 | 0.014 | 0.015 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.009 | 0.009 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.071 1.80mm | T. | 0.011 | 0.011 | 0.011 | 0.012 | 0.012 | 0.013 | 0.013 | 0.014 | 0.014 | 0.015 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.009 | 0.009 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.079 2.01mm | T. | 0.011 | 0.011 | 0.011 | 0.012 | 0.012 | 0.013 | 0.013 | 0.014 | 0.014 | 0.015 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.009 | 0.009 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.088 2.24mm | T. | | 0.011 | 0.012 | 0.012 | 0.012 | 0.013 | 0.013 | 0.014 | 0.014 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | 0.008 | 0.008 | 0.008 | 0.008 | 0.009 | 0.009 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.098 2.49mm | T. | | | 0.012 | 0.012 | 0.012 | 0.013 | 0.014 | 0.014 | 0.014 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | 0.008 | 0.008 | 0.008 | 0.009 | 0.010 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.110 2.79mm | T. | | | | 0.013 | 0.013 | 0.014 | 0.014 | 0.014 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | 0.009 | 0.009 | 0.010 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.124 3.15mm | T. | | | | | 0.013 | 0.014 | 0.014 | 0.014 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | | 0.009 | 0.010 | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.140 3.56mm | T. | | | | | | 0.014 | 0.014 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | | | 0.010 | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.157 3.99mm | T. | | | | | | | 0.014 | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | | | | 0.010 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.177 4.50mm | T. | | | | | | | | 0.015 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | | | | | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.197 5.00mm | T. | | | | | | | | | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | | | | | | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.220 5.59mm | T. | | | | | | | | | | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | | | | | | | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.248 6.30mm | T. | | | | | | | | | | | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | | | | | | | | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |
| 0.280 7.11mm | T. | | | | | | | | | | | | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 | 0.016 |
| | W. | | | | | | | | | | | | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 | 0.011 |

* T = maximum thickness addition

*W = minimum width addition

From NEMA Standards Publication No. MW 1000 and applies to bare or film-insulated conductors.

Note: The maximum addition may be exceeded provided the overall dimension of the covered wire does not exceed the sum of the maximum bare wire dimension plus the maximum addition of the polyester glass covering.

RECTANGULAR, BARE WIRE

Copper & Aluminum

DIMENSIONAL LIMITS

| THICKNESS | | | |
|---|--|---|---|
| SPECIFIED THICKNESS | MAXIMUM PERMISSIBLE VARIATION IN THICKNESS PLUS OR MINUS | | |
| | 1.000 Inch and Over in Width (25.4 mm) | 1.000 to 0.501 Inch in Width (25.4 mm to 12.7 mm) | 0.500 Inch and Under in Width (12.7 mm) |
| INCH | | | |
| 0.501 (12.72 MM) and Over | 1 Percent | 1 Percent | |
| Under 0.501 (12.72 mm) to 0.301 (7.64 mm) Incl. | 1 Percent | 1 Percent | 0.003 in. (.0762 mm) |
| Under 0.301 (7.64 mm) to 0.201 (5.10 mm) Incl. | 0.003 in. (.0635 mm) | 1 Percent | 1 Percent |
| Under 0.201 (5.10 mm) to 0.101 (2.56 mm) Incl. | 0.0025 in. (.0635 mm) | 1 Percent | 1 Percent |
| Under 0.101 (2.56 mm) to 0.051 (1.30 mm) Incl. | 0.002 in. (.0508 mm) | 0.001 in. (.0254 mm) | 0.001 in. (.0254 mm) |
| Under 0.051 (1.30 mm) | 0.0015 in. (.0381 mm) | 0.001 in. (.0254 mm) | 0.001 in. (.0254 mm) |

| WIDTH | |
|---|---|
| SPECIFIED WIDTH (Inch) | Maximum Permissible Variation in Width, Plus or Minus |
| 0.501 (12.72 mm) and Over | 1 Percent but not to exceed 0.016 in. (.4064 mm) |
| Under 0.501 (12.72 mm) to 0.301 (7.64 mm) Incl. | 0.003 in. (.0762 mm) |
| Under 0.301 (7.64 mm) to 0.101 (2.56 mm) Incl. | 1 Percent |
| Under 0.101 (2.56 mm) | 0.001 in. (.0254 mm) |

NOTE: ASTM Specifications for Soft Rectangular and Square Bare Copper Wire B 48 - Bare Aluminum Wire B 324.

| RADII IN INCHES AND MM (In Inches of Corners of Square and Rectangular Wire) | | | |
|--|---------------------------|---|-----------------------------|
| SPECIFIED THICKNESS | SPECIFIED WIDTH | | |
| | 0.751 AND Over (19.08 mm) | 0.189 to 0.750 Incl. (4.79 to 19.07 mm) | Up to 0.188 Incl. (4.78 mm) |
| INCH | | | |
| 0.689 (17.50 mm) and Over | 0.188 in. (4.78 mm) | 0.188 in. (4.78 mm) | |
| Under 0.689 (17.50 mm) to 0.439 (11.15 mm) Incl. | 0.125 in. (3.18 mm) | 0.094 in. (2.39 mm) | |
| Under 0.439 (11.15 mm) to 0.226 (5.74 mm) Incl. | 0.094 in. (2.39 mm) | 0.039 in. (1.02 mm) | |
| Under 0.226 (5.74 mm) to 0.166 (4.22 mm) Incl. | 0.063 in. (1.60 mm) | 0.039 in. (1.02 mm) | 0.039 in. (1.02 mm) |
| Under 0.166 (4.22 mm) to 0.126 (3.20 mm) Incl. | 0.063 in. (1.60 mm) | 0.031 in. (.81 mm) | 0.031 in. (.81 mm) |
| Under 0.126 (3.20 mm) to 0.096 (2.44 mm) Incl. | Rounded Edge ** | 0.031 in. (.81 mm) | 0.026 in. (.66 mm) |
| Under 0.096* (2.44 mm) to 0.061 (1.55 mm) Incl. | Rounded Edge ** | 0.031 in. (.81 mm) | 0.020 in. (.51 mm) |
| Under 0.061 (1.55 mm) | Rounded Edge ** | Rounded Edge** | Rounded Edge** |

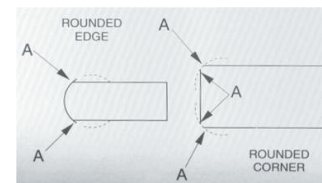
* Square wire 0.072 in. (1.83 mm) and under shall have a corner radius of 0.012 in. (.30 mm) ± 25%.

** A rounded edge is an edge produced by rolling round wire to the size specified either with or without edging rolls (see below).

CORNER RADII



A full rounded edge is an edge with corner radii that are essentially half the thickness of the wire.



A rounded edge is an edge produced by rolling round wire to the size specified either with or without edging rolls.

NOTE: The arc is not necessarily tangent to the flats at points A. However, the wire shall be commercially free of sharp, rough, or projecting edges.

RECTANGULAR, BARE WIRE

Copper & Aluminum

WEIGHT CORNER LOSSES

WEIGHT OF BARE COPPER

Lbs. Per 1000 Ft. = 0.003854 x Sq. MIL Area (Based on copper density of 0.32117 lbs. Per cubic inch).

Sq. MIL Area = (T x W) - Reduction (see table below).

Calculated reduction in area and weight from circumscribing rectangles due to rounding of corners of rectangular wire.†

| SPECIFIED THICKNESS INCHES | SPECIFIED WIDTH INCHES | | | | | |
|----------------------------|--|---------------|-------------------|---------------|-----------------|---------------|
| | CALCULATED REDUCTION IN SQ. MILS AND LBS. PER 1000 FT. | | | | | |
| | 0.751 and Over | | 0.189-0.750 Incl. | | 0.188 and Under | |
| | Sq. Mils | Lbs. 1000 Ft. | Sq. Mils | Lbs. 1000 Ft. | Sq. Mils | Lbs. 1000 Ft. |
| 0.689 and Over | 30340 | 116.9 | 30340 | 116.9 | | |
| Under 0.689 to 0.439 Incl. | 13413 | 51.68 | 7585 | 29.23 | | |
| Under 0.439 to 0.226 Incl. | 7585 | 29.23 | 1306 | 5.032 | | |
| Under 0.226 to 0.166 Incl. | 3407 | 13.13 | 1306 | 5.032 | 1306 | 5.032 |
| Under 0.166 to 0.126 Incl. | 3407 | 13.13 | 825 | 3.179 | 825 | 3.179 |
| Under 0.126 to 0.096 Incl. | *** | *** | 825 | 3.179 | 580 | 2.236 |
| Under 0.096 to 0.061 Incl. | *** | *** | 825 | 3.179 | 343 | 1.323 |
| Under 0.061 | *** | *** | *** | *** | *** | *** |

WEIGHT OF BARE ALUMINUM

Lbs. Per 1000 Ft. = 0.001172 x Sq. MIL Area (Based on copper density of 0.09765 lbs. Per cubic inch).

Sq. MIL Area = (T x W) - Reduction (see table below).

Calculated reduction in area and weight from circumscribing rectangles due to rounding of corners of rectangular wire.†

| SPECIFIED THICKNESS INCHES | SPECIFIED WIDTH INCHES | | | | | |
|----------------------------|--|---------------|-------------------|---------------|-----------------|---------------|
| | CALCULATED REDUCTION IN SQ. MILS AND LBS. PER 1000 FT. | | | | | |
| | 0.751 and Over | | 0.189-0.750 Incl. | | 0.188 and Under | |
| | Sq. Mils | Lbs. 1000 Ft. | Sq. Mils | Lbs. 1000 Ft. | Sq. Mils | Lbs. 1000 Ft. |
| 0.689 and Over | 30340 | 35.56 | 30340 | 35.56 | | |
| Under 0.689 to 0.439 Incl. | 13413 | 15.72 | 7585 | 8.890 | | |
| Under 0.439 to 0.226 Incl. | 7585 | 8.890 | 1306 | 1.530 | | |
| Under 0.226 to 0.166 Incl. | 3407 | 3.993 | 1306 | 1.530 | 1306 | 1.530 |
| Under 0.166 to 0.126 Incl. | 3407 | 3.993 | 825 | 0.967 | 825 | 0.967 |
| Under 0.126 to 0.096 Incl. | *** | *** | 825 | 0.967 | 580 | 0.6800 |
| Under 0.096 to 0.061 Incl. | *** | *** | 825 | 0.967 | 343 | 0.4023 |
| Under 0.061 | *** | *** | *** | *** | *** | *** |

NOTE: For wire with rounded edges, the calculated reduction in area in square mils is equivalent to $214600T^2$, where T is thickness of the wire inches.

†Based on ASTM Standards for corner radii.

RECTANGULAR, BARE WIRE, IEC PREFERRED NUMBER SERIES

Copper

WEIGHTS

| NOMINAL WIDTH Inches | NOMINAL THICKNESS - Inches | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 0.025 | 0.028 | 0.031 | 0.035 | 0.039 | 0.044 | 0.049 | 0.055 | 0.063 | 0.071 | 0.079 | 0.088 | 0.098 | 0.110 | 0.124 | 0.140 | 0.157 | 0.177 | 0.197 | 0.220 | 0.248 | 0.280 |
| 0.063 | 5.553 | 6.15 | 6.732 | 7.485 | 8.211 | 9.082 | 9.912 | 10.85 | | | | | | | | | | | | | | |
| 0.067* | 5.938 | 6.581 | 7.209 | 8.024 | 8.812 | 9.760 | 10.66 | 11.70 | 12.98 | | | | | | | | | | | | | |
| 0.071 | 6.323 | 7.013 | 7.687 | 8.564 | 9.413 | 10.43 | 11.42 | 12.54 | 13.95 | | | | | | | | | | | | | |
| 0.075* | 6.709 | 7.444 | 8.165 | 9.103 | 10.01 | 11.11 | 12.17 | 13.39 | 14.92 | 19.19 | | | | | | | | | | | | |
| 0.079 | 7.094 | 7.876 | 8.643 | 9.643 | 10.61 | 11.79 | 12.93 | 14.24 | 15.89 | 20.29 | | | | | | | | | | | | |
| 0.083* | 7.480 | 8.308 | 9.121 | 10.18 | 11.21 | 12.47 | 13.68 | 15.09 | 16.86 | 21.38 | 23.94 | | | | | | | | | | | |
| 0.088 | 7.961 | 8.847 | 9.718 | 10.85 | 11.96 | 13.32 | 14.63 | 16.15 | 18.08 | 22.75 | 25.46 | | | | | | | | | | | |
| 0.093* | 8.443 | 9.387 | 10.31 | 11.53 | 12.72 | 14.16 | 15.57 | 17.21 | 19.29 | 24.12 | 26.99 | 30.21 | | | | | | | | | | |
| 0.098 | 8.925 | 9.926 | 10.91 | 12.2 | 13.47 | 15.01 | 16.52 | 18.27 | 20.51 | 25.49 | 28.51 | 31.91 | | | | | | | | | | |
| 0.104* | 9.503 | 10.57 | 11.63 | 13.01 | 14.37 | 16.03 | 17.65 | 19.54 | 21.96 | 27.13 | 30.34 | 33.94 | 37.21 | | | | | | | | | |
| 0.110 | 10.08 | 11.22 | 12.34 | 13.82 | 15.27 | 17.05 | 18.78 | 20.81 | 23.42 | 28.77 | 32.16 | 35.98 | 39.47 | | | | | | | | | |
| 0.118* | 10.85 | 12.08 | 13.3 | 14.90 | 16.47 | 18.40 | 20.29 | 22.51 | 25.36 | 30.96 | 34.60 | 38.69 | 42.49 | 47.95 | | | | | | | | |
| 0.124 | 11.43 | 12.73 | 14.01 | 15.71 | 17.37 | 19.42 | 21.43 | 23.78 | 26.82 | 32.6 | 36.43 | 40.73 | 44.76 | 50.50 | | | | | | | | |
| 0.132* | 12.20 | 13.59 | 14.97 | 16.79 | 18.58 | 20.78 | 22.94 | 25.47 | 28.76 | 34.79 | 38.86 | 43.44 | 47.78 | 53.89 | 61.01 | | | | | | | |
| 0.140 | 12.97 | 14.45 | 15.93 | 17.87 | 19.78 | 22.13 | 24.45 | 27.17 | 30.70 | 36.98 | 41.3 | 46.15 | 50.8 | 57.28 | 64.83 | | | | | | | |
| 0.148* | 13.74 | 15.32 | 16.68 | 18.95 | 20.98 | 23.49 | 25.96 | 28.86 | 32.65 | 39.17 | 43.73 | 48.87 | 53.83 | 60.67 | 68.66 | 76.67 | | | | | | |
| 0.157 | 14.61 | 16.29 | 17.96 | 20.16 | 22.34 | 25.02 | 27.66 | 30.77 | 34.83 | 41.63 | 46.47 | 51.92 | 57.22 | 64.49 | 72.96 | 81.53 | | | | | | |
| 0.167* | 15.57 | 17.37 | 19.15 | 21.51 | 23.84 | 26.71 | 29.55 | 32.89 | 37.26 | 44.37 | 49.52 | 55.31 | 61.00 | 68.73 | 77.74 | 86.92 | 97.86 | | | | | |
| 0.177 | 16.53 | 18.45 | 20.35 | 22.86 | 25.34 | 28.41 | 31.43 | 35.01 | 39.69 | 47.10 | 52.56 | 58.70 | 64.78 | 72.96 | 82.51 | 92.32 | 103.9 | | | | | |
| 0.187* | 17.50 | 19.53 | 21.54 | 24.21 | 26.84 | 30.10 | 33.32 | 37.13 | 42.12 | 49.84 | 55.61 | 62.09 | 68.56 | 77.20 | 87.29 | 97.71 | 109.9 | 122.5 | | | | |
| 0.197 | 18.46 | 20.61 | 22.74 | 25.56 | 28.35 | 31.80 | 35.21 | 39.25 | 44.54 | 50.72 | 56.8 | 63.63 | 71.22 | 80.33 | 90.96 | 103.1 | 116.0 | 129.3 | | | | |
| 0.209* | 19.62 | 21.90 | 24.17 | 27.17 | 30.15 | 33.84 | 37.48 | 41.79 | 47.46 | 54.01 | 60.45 | 67.70 | 75.75 | 85.42 | 96.70 | 109.5 | 123.2 | 137.5 | 153.6 | | | |
| 0.220 | 20.68 | 23.09 | 25.49 | 28.66 | 31.80 | 35.70 | 39.56 | 44.13 | 50.13 | 57.02 | 63.80 | 71.43 | 79.91 | 90.08 | 101.9 | 115.5 | 129.9 | 145.0 | 162.0 | | | |
| 0.236* | 22.22 | 24.81 | 27.40 | 30.82 | 34.21 | 38.41 | 42.58 | 47.52 | 54.01 | 61.39 | 68.67 | 76.86 | 85.95 | 96.87 | 109.6 | 124.1 | 139.6 | 155.9 | 174.1 | 195.0 | | |
| 0.248 | 23.37 | 26.11 | 28.83 | 32.43 | 36.01 | 40.45 | 44.84 | 50.06 | 56.93 | 64.68 | 72.32 | 80.93 | 90.48 | 101.9 | 115.3 | 130.6 | 146.8 | 164.1 | 183.2 | 205.2 | | |
| 0.264* | 24.91 | 27.84 | 30.74 | 34.59 | 38.42 | 43.16 | 47.86 | 53.45 | 60.81 | 69.06 | 77.19 | 86.35 | 96.53 | 108.7 | 122.9 | 139.2 | 156.5 | 175.0 | 195.4 | 218.8 | 247.2 | |
| 0.280 | 26.46 | 29.56 | 32.65 | 36.75 | 40.82 | 45.88 | 50.89 | 56.84 | 64.70 | 73.43 | 82.07 | 91.78 | 102.5 | 115.5 | 130.6 | 147.8 | 166.2 | 185.9 | 207.5 | 232.3 | 262.5 | |
| 0.295* | 27.90 | 31.18 | 34.45 | 38.77 | 43.08 | 48.42 | 53.72 | 60.02 | 68.34 | 77.54 | 86.63 | 96.87 | 108.2 | 121.8 | 137.8 | 155.9 | 175.3 | 196.2 | 218.9 | 245.0 | 276.9 | 313.3 |
| 0.315 | 29.83 | 33.34 | 36.83 | 41.47 | 46.08 | 51.81 | 57.50 | 64.26 | 73.19 | 83.01 | 92.72 | 103.6 | 115.7 | 130.3 | 147.3 | 166.7 | 187.4 | 209.8 | 234.1 | 262.0 | 296.0 | 334.8 |
| 0.335* | 31.76 | 35.50 | 39.22 | 44.17 | 49.09 | 55.20 | 61.27 | 68.50 | 78.05 | 88.48 | 98.81 | 110.4 | 123.3 | 138.8 | 156.9 | 177.5 | 199.5 | 223.4 | 249.3 | 279.0 | 315.1 | 356.4 |
| 0.354 | 33.59 | 37.55 | 41.49 | 46.73 | 51.95 | 58.42 | 64.86 | 72.53 | 82.66 | 93.68 | 104.6 | 116.8 | 130.5 | 146.8 | 165.9 | 187.8 | 211.0 | 236.4 | 263.7 | 295.1 | 333.3 | 376.9 |
| 0.374* | 35.51 | 39.71 | 43.88 | 49.43 | 54.95 | 61.82 | 68.64 | 76.77 | 87.52 | 99.15 | 110.6 | 123.6 | 138.0 | 155.3 | 175.5 | 198.6 | 223.1 | 250.0 | 278.9 | 312.0 | 352.4 | 398.5 |
| 0.394 | 37.44 | 41.86 | 46.27 | 52.13 | 57.96 | 65.21 | 72.41 | 81.01 | 92.38 | 104.6 | 116.7 | 130.4 | 145.6 | 163.8 | 185.1 | 209.4 | 235.2 | 263.7 | 294.1 | 329.0 | 371.5 | |
| 0.417* | 39.66 | 44.35 | 49.02 | 55.23 | 61.41 | 69.11 | 76.76 | 85.88 | 97.96 | 110.9 | 123.7 | 138.2 | 154.3 | 173.6 | 196.1 | 221.8 | 249.1 | 279.4 | 311.5 | 348.5 | 393.5 | |
| 0.441 | 41.97 | 46.94 | 51.89 | 58.47 | 65.02 | 73.18 | 81.29 | 90.97 | 103.7 | 117.4 | 131.0 | 146.3 | 163.3 | 183.7 | 207.5 | 234.7 | 263.6 | 295.7 | 329.7 | 368.8 | | |
| 0.465* | 44.28 | 49.53 | 54.76 | 61.71 | 68.63 | 77.25 | 85.82 | 96.06 | 109.6 | 124.0 | 138.3 | 154.5 | 172.4 | 193.9 | 219.0 | 247.7 | 278.1 | 312.1 | 348.0 | 389.2 | | |
| 0.492 | 46.88 | 52.44 | 57.98 | 65.35 | 72.69 | 81.83 | 90.92 | 101.7 | 115.1 | 131.4 | 146.6 | 163.6 | 182.6 | 205.3 | 231.9 | 262.2 | 294.5 | 330.5 | 368.5 | | | |
| 0.520* | 49.58 | 55.46 | 61.33 | 69.12 | 76.90 | 86.57 | 96.21 | 107.7 | 122.9 | 139.1 | 155.1 | 173.1 | 192.2 | 217.2 | 245.3 | 277.3 | 311.4 | 349.6 | 389.7 | | | |
| 0.551 | 52.57 | 58.61 | 65.03 | 73.31 | 81.56 | 91.83 | 102.0 | 114.2 | 130.5 | 147.5 | 164.5 | 183.6 | 204.9 | 230.4 | 260.1 | 294.1 | 330.2 | 370.8 | | | | |
| 0.591* | 56.42 | 63.12 | 69.81 | 78.70 | 87.57 | 98.61 | 109.6 | 122.7 | 140.2 | 158.5 | 176.7 | 197.2 | 220.0 | 247.3 | 279.2 | 315.7 | 354.4 | 398.1 | | | | |
| 0.630 | 60.18 | 67.33 | 74.47 | 83.96 | 93.43 | 105.2 | 116.9 | 131.0 | 149.6 | 169.2 | 188.6 | 210.4 | 234.7 | 263.9 | 297.8 | 336.7 | 378.0 | | | | | |
| 0.669* | 63.94 | 71.54 | 79.13 | 89.22 | 99.29 | 111.8 | 124.3 | 139.3 | 159.1 | 179.8 | 200.5 | 223.7 | 249.4 | 280.4 | 316.5 | 357.7 | | | | | | |
| 0.709 | 67.79 | 75.86 | 83.91 | 94.62 | 105.3 | 118.6 | 131.9 | 147.7 | 168.8 | 190.8 | 212.6 | 237.2 | 264.6 | 297.3 | 335.6 | 379.3 | | | | | | |
| 0.748* | 71.55 | 80.06 | 88.57 | 99.88 | 111.1 | 125.2 | 139.2 | 156.0 | 178.3 | 201.4 | 224.5 | 250.5 | 279.3 | 313.9 | 354.2 | | | | | | | |

*R-40 Series Intermediate Widths.

NOTE: Conductor weight (pounds) per thousand feet .

RECTANGULAR, BARE WIRE, IEC PREFERRED NUMBER SERIES

Aluminum

WEIGHTS

| NOMINAL WIDTH - Inches | NOMINAL THICKNESS - Inches | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| | 0.025 | 0.028 | 0.031 | 0.035 | 0.039 | 0.044 | 0.049 | 0.055 | 0.063 | 0.071 | 0.079 | 0.088 | 0.098 | 0.110 | 0.124 | 0.140 | 0.157 | 0.177 | 0.197 | 0.220 | 0.248 | 0.280 | |
| 0.063 | 1.688 | 1.869 | 2.046 | 2.275 | 2.496 | 2.761 | 3.013 | 3.299 | | | | | | | | | | | | | | | |
| 0.067* | 1.805 | 2.001 | 2.192 | 2.439 | 2.679 | 2.967 | 3.243 | 3.557 | 3.948 | | | | | | | | | | | | | | |
| 0.071 | 1.922 | 2.132 | 2.337 | 2.603 | 2.862 | 3.173 | 3.472 | 3.815 | 4.243 | | | | | | | | | | | | | | |
| 0.075* | 2.039 | 2.263 | 2.482 | 2.767 | 3.045 | 3.380 | 3.702 | 4.072 | 4.538 | 5.837 | | | | | | | | | | | | | |
| 0.079 | 2.157 | 2.394 | 2.628 | 2.931 | 3.227 | 3.586 | 3.932 | 4.330 | 4.833 | 6.170 | | | | | | | | | | | | | |
| 0.083* | 2.274 | 2.526 | 2.773 | 3.096 | 3.410 | 3.792 | 4.161 | 4.588 | 5.129 | 6.503 | 7.281 | | | | | | | | | | | | |
| 0.088 | 2.240 | 2.690 | 2.955 | 3.301 | 3.639 | 4.050 | 4.449 | 4.910 | 5.498 | 6.919 | 7.744 | | | | | | | | | | | | |
| 0.093* | 2.567 | 2.854 | 3.136 | 3.506 | 3.867 | 4.308 | 4.736 | 5.233 | 5.867 | 7.335 | 8.206 | 9.187 | | | | | | | | | | | |
| 0.098 | 2.713 | 3.018 | 3.318 | 3.711 | 4.096 | 4.565 | 5.023 | 5.555 | 6.236 | 7.751 | 8.669 | 9.703 | | | | | | | | | | | |
| 0.104* | 2.889 | 3.215 | 3.536 | 3.957 | 4.370 | 4.875 | 5.367 | 5.942 | 6.679 | 8.250 | 9.225 | 10.32 | 11.31 | | | | | | | | | | |
| 0.110 | 3.065 | 3.411 | 3.754 | 4.203 | 4.644 | 5.184 | 5.712 | 6.328 | 7.122 | 8.749 | 9.780 | 10.94 | 12.00 | | | | | | | | | | |
| 0.118* | 3.299 | 3.674 | 4.044 | 4.531 | 5.010 | 5.597 | 6.171 | 6.844 | 7.713 | 9.414 | 10.52 | 11.76 | 12.92 | 14.58 | | | | | | | | | |
| 0.124 | 3.475 | 3.871 | 4.262 | 4.777 | 5.284 | 5.906 | 6.516 | 7.230 | 8.156 | 9.914 | 11.07 | 12.38 | 13.61 | 15.35 | | | | | | | | | |
| 0.132* | 3.709 | 4.133 | 4.553 | 5.105 | 5.649 | 6.318 | 6.975 | 7.746 | 8.746 | 10.57 | 11.81 | 13.20 | 14.52 | 16.38 | 18.55 | | | | | | | | |
| 0.140 | 3.944 | 4.396 | 4.843 | 5.433 | 6.015 | 6.731 | 7.434 | 8.262 | 9.337 | 11.24 | 12.55 | 14.03 | 15.44 | 17.41 | 19.71 | | | | | | | | |
| 0.148* | 4.178 | 4.658 | 5.134 | 5.761 | 6.381 | 7.143 | 7.894 | 8.777 | 9.927 | 11.91 | 13.29 | 14.85 | 16.36 | 18.44 | 20.87 | 23.31 | | | | | | | |
| 0.157 | 4.442 | 4.954 | 5.461 | 6.130 | 6.792 | 7.607 | 8.410 | 9.357 | 10.59 | 12.65 | 14.13 | 15.78 | 17.40 | 19.60 | 22.18 | 24.78 | | | | | | | |
| 0.167* | 4.735 | 5.282 | 5.824 | 6.541 | 7.249 | 8.123 | 8.985 | 10.00 | 11.33 | 13.49 | 15.05 | 16.81 | 18.54 | 20.89 | 23.63 | 26.43 | 29.75 | | | | | | |
| 0.177 | 5.028 | 5.160 | 6.188 | 6.951 | 7.706 | 8.639 | 9.559 | 10.64 | 12.06 | 14.32 | 15.98 | 17.84 | 19.69 | 22.18 | 25.08 | 28.07 | 31.59 | | | | | | |
| 0.187* | 5.320 | 5.938 | 6.551 | 7.361 | 8.163 | 9.154 | 10.13 | 11.29 | 12.80 | 15.15 | 16.90 | 18.88 | 20.84 | 23.47 | 26.54 | 29.71 | 33.43 | 37.25 | | | | | |
| 0.197 | 5.613 | 6.266 | 6.914 | 7.771 | 8.620 | 9.670 | 10.70 | 11.93 | 13.54 | 15.42 | 17.27 | 19.34 | 21.65 | 24.42 | 27.65 | 31.35 | 35.27 | 39.33 | | | | | |
| 0.209* | 5.965 | 6.660 | 7.350 | 8.263 | 9.168 | 10.28 | 11.39 | 12.70 | 14.43 | 16.42 | 18.38 | 20.58 | 23.03 | 25.97 | 29.40 | 33.32 | 37.48 | 41.81 | 46.71 | | | | |
| 0.220 | 6.287 | 7.021 | 7.750 | 8.714 | 9.671 | 10.85 | 12.02 | 13.41 | 15.24 | 17.33 | 19.39 | 21.71 | 24.29 | 27.39 | 31.00 | 35.12 | 39.50 | 44.09 | 49.25 | | | | |
| 0.236* | 6.756 | 7.546 | 8.331 | 9.371 | 10.40 | 11.68 | 12.94 | 14.44 | 16.42 | 18.66 | 20.88 | 23.36 | 26.13 | 29.45 | 33.32 | 37.74 | 42.45 | 47.41 | 52.94 | 59.30 | | | |
| 0.248 | 7.107 | 7.939 | 8.767 | 9.863 | 10.95 | 12.29 | 13.63 | 15.22 | 17.31 | 19.66 | 21.99 | 24.60 | 27.51 | 31.00 | 35.06 | 39.71 | 44.65 | 49.90 | 55.71 | 62.40 | | | |
| 0.264* | 7.576 | 8.464 | 9.348 | 10.51 | 11.68 | 13.12 | 14.55 | 16.25 | 18.49 | 20.99 | 23.47 | 26.25 | 29.35 | 33.06 | 37.39 | 42.34 | 47.60 | 53.22 | 59.41 | 66.52 | 75.19 | | |
| 0.280 | 8.045 | 8.989 | 9.929 | 11.17 | 12.41 | 13.94 | 15.47 | 17.28 | 19.67 | 22.32 | 24.95 | 27.90 | 31.18 | 35.12 | 39.71 | 44.96 | 50.54 | 56.54 | 63.10 | 70.65 | 79.83 | | |
| 0.295* | 8.484 | 9.481 | 10.47 | 11.79 | 13.09 | 14.72 | 16.33 | 18.25 | 20.77 | 23.57 | 26.34 | 29.45 | 32.91 | 37.05 | 41.89 | 47.42 | 53.30 | 59.65 | 66.56 | 74.51 | 84.19 | 95.26 | |
| 0.315 | 9.070 | 10.13 | 11.20 | 12.61 | 14.01 | 15.75 | 17.48 | 19.54 | 22.25 | 24.25 | 28.19 | 31.51 | 35.20 | 39.63 | 44.80 | 50.70 | 56.98 | 63.80 | 71.18 | 79.67 | 90.01 | 101.8 | |
| 0.335* | 9.656 | 10.79 | 11.92 | 13.43 | 14.92 | 16.78 | 18.63 | 20.82 | 23.73 | 26.90 | 30.04 | 33.57 | 37.50 | 42.21 | 47.70 | 53.99 | 60.66 | 67.95 | 75.80 | 84.83 | 95.82 | 108.3 | |
| 0.354 | 10.21 | 11.41 | 12.61 | 14.21 | 15.79 | 17.76 | 19.72 | 22.05 | 25.13 | 27.48 | 31.80 | 35.53 | 39.68 | 44.66 | 50.47 | 57.10 | 64.15 | 71.89 | 80.18 | 89.72 | 101.3 | 114.6 | |
| 0.374* | 10.79 | 12.07 | 13.34 | 15.03 | 16.70 | 18.79 | 20.87 | 23.34 | 26.61 | 30.14 | 33.65 | 37.59 | 41.98 | 47.24 | 53.37 | 60.38 | 67.83 | 76.04 | 84.80 | 94.88 | 107.1 | 121.1 | |
| 0.394 | 11.38 | 12.73 | 14.07 | 15.85 | 17.62 | 18.92 | 22.01 | 24.63 | 28.08 | 31.81 | 35.50 | 39.66 | 44.27 | 49.81 | 56.28 | 63.66 | 71.51 | 80.18 | 89.42 | 100.0 | 112.9 | | |
| 0.417* | 12.05 | 13.48 | 14.90 | 16.79 | 18.67 | 21.01 | 23.33 | 26.11 | 29.78 | 33.72 | 37.63 | 42.03 | 46.92 | 52.78 | 59.62 | 67.44 | 75.74 | 84.95 | 94.73 | 105.9 | 119.6 | | |
| 0.441 | 12.76 | 14.27 | 15.77 | 17.77 | 19.77 | 22.25 | 24.71 | 27.66 | 31.55 | 35.72 | 39.85 | 44.50 | 49.67 | 55.87 | 63.11 | 71.38 | 80.16 | 89.93 | 100.2 | 112.1 | | | |
| 0.465* | 13.46 | 15.05 | 16.64 | 18.76 | 20.86 | 23.48 | 26.09 | 29.20 | 33.32 | 37.72 | 42.07 | 46.98 | 52.43 | 58.97 | 66.59 | 75.31 | 84.58 | 94.91 | 105.8 | 118.3 | | | |
| 0.492 | 14.25 | 15.94 | 17.63 | 19.87 | 22.10 | 24.88 | 27.64 | 30.94 | 35.32 | 39.96 | 44.57 | 49.75 | 55.53 | 62.45 | 70.52 | 79.74 | 89.54 | 100.5 | 112.0 | | | | |
| 0.520* | 15.07 | 16.86 | 18.64 | 21.01 | 23.98 | 26.32 | 29.25 | 32.75 | 37.39 | 42.29 | 47.17 | 52.65 | 58.74 | 66.06 | 74.59 | 84.34 | 94.69 | 106.3 | 118.5 | | | | |
| 0.551 | 15.98 | 17.88 | 19.77 | 22.29 | 24.79 | 27.92 | 31.03 | 34.75 | 39.67 | 44.87 | 50.04 | 55.85 | 62.30 | 70.05 | 79.09 | 89.42 | 100.4 | 112.7 | | | | | |
| 0.591* | 17.15 | 19.19 | 21.22 | 23.93 | 26.62 | 29.98 | 33.33 | 37.32 | 42.63 | 48.20 | 53.74 | 59.97 | 66.90 | 75.21 | 84.90 | 95.98 | 107.7 | 121.0 | | | | | |
| 0.630 | 18.29 | 20.47 | 22.64 | 25.53 | 28.40 | 31.99 | 35.56 | 39.84 | 45.51 | 51.44 | 57.35 | 63.99 | 71.38 | 80.23 | 90.57 | 102.3 | 114.9 | | | | | | |
| 0.669* | 19.44 | 21.75 | 24.06 | 27.12 | 30.19 | 34.00 | 37.80 | 42.35 | 48.38 | 54.69 | 60.96 | 68.01 | 75.85 | 85.26 | 96.24 | 108.7 | | | | | | | |
| 0.709 | 20.61 | 23.06 | 25.51 | 28.77 | 32.01 | 36.06 | 40.10 | 44.93 | 51.34 | 58.02 | 64.66 | 72.14 | 80.45 | 90.42 | 102.0 | 115.3 | | | | | | | |
| 0.748* | 21.75 | 24.34 | 26.93 | 30.36 | 33.80 | 38.07 | 42.34 | 47.44 | 54.22 | 61.26 | 68.27 | 76.16 | 84.93 | 95.44 | 107.7 | | | | | | | | |

*R-40 Series Intermediate Widths.

NOTE: Conductor weight (pounds) per thousand feet .

RECTANGULAR, BARE WIRE, IEC PREFERRED NUMBER SERIES

Copper

RESISTANCE

| NOMINAL WIDTH - Inches | NOMINAL THICKNESS - Inches | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| | 0.025 | 0.028 | 0.031 | 0.035 | 0.039 | 0.044 | 0.049 | 0.055 | 0.063 | 0.071 | 0.079 | 0.088 | 0.098 | 0.110 | 0.124 | 0.140 | 0.157 | 0.177 | 0.197 | 0.220 | 0.248 | 0.280 | |
| 0.063 | 5.653 | 5.104 | 4.663 | 4.194 | 3.823 | 3.456 | 3.167 | 2.892 | | | | | | | | | | | | | | | |
| 0.067* | 5.286 | 4.769 | 4.354 | 3.912 | 3.562 | 3.216 | 2.943 | 2.683 | 2.417 | | | | | | | | | | | | | | |
| 0.071 | 4.964 | 4.476 | 4.083 | 3.665 | 3.334 | 3.007 | 2.748 | 2.501 | 2.249 | | | | | | | | | | | | | | |
| 0.075* | 4.679 | 4.216 | 3.844 | 3.448 | 3.134 | 2.823 | .577 | 2.343 | 2.103 | 1.635 | | | | | | | | | | | | | |
| 0.079 | 4.424 | 3.985 | 3.632 | 3.255 | 2.957 | 2.661 | 2.427 | 2.204 | 1.974 | 1.546 | | | | | | | | | | | | | |
| 0.083* | 4.196 | 3.778 | 3.441 | 3.083 | 2.798 | 2.516 | 2.293 | 2.080 | 1.860 | 1.467 | 1.310 | | | | | | | | | | | | |
| 0.088 | 3.943 | 3.548 | 3.230 | 2.891 | 2.622 | 2.356 | 2.145 | 1.943 | 1.736 | 1.379 | 1.232 | | | | | | | | | | | | |
| 0.093* | 3.718 | 3.344 | 3.043 | 2.722 | 2.467 | 2.215 | 2.015 | 1.824 | 1.626 | 1.301 | 1.163 | 1.038 | | | | | | | | | | | |
| 0.098 | .3517 | 3.162 | 2.876 | 2.571 | 2.330 | 2.090 | 1.900 | 1.718 | 1.530 | 1.231 | 1.100 | .9837 | | | | | | | | | | | |
| 0.104* | 3.303 | 2.968 | 2.699 | 2.412 | 2.184 | 1.957 | 1.778 | 1.606 | 1.429 | 1.156 | 1.034 | .9247 | .8436 | | | | | | | | | | |
| 0.110 | 3.113 | 2.797 | 2.542 | 2.270 | 2.055 | 1.841 | 1.671 | 1.508 | 1.340 | 1.090 | .9759 | .8724 | .7952 | | | | | | | | | | |
| 0.118* | 2.892 | 2.597 | 2.359 | 2.106 | 1.905 | 1.705 | 1.546 | 1.394 | 1.237 | 1.013 | .9072 | .8112 | .7386 | .6546 | | | | | | | | | |
| 0.124 | 2.746 | 2.465 | 2.239 | 1.997 | 1.806 | 1.616 | 1.464 | 1.320 | 1.170 | .9627 | .8617 | .7707 | .7012 | .6216 | | | | | | | | | |
| 0.132* | 2.573 | 2.309 | 2.096 | 1.869 | 1.689 | 1.510 | 1.368 | 1.232 | 1.091 | .9022 | .8077 | .7226 | .6569 | .5825 | .5145 | | | | | | | | |
| 0.140 | 2.420 | 2.171 | 1.970 | 1.756 | 1.586 | 1.418 | 1.283 | 1.155 | 1.022 | .8488 | .7601 | .6801 | .6178 | .5480 | .4841 | | | | | | | | |
| 0.148* | 2.284 | 2.048 | 1.859 | 1.656 | 1.495 | 1.336 | 1.209 | 1.087 | .9614 | .8013 | .7177 | .6423 | .5831 | .5174 | .4572 | .4094 | | | | | | | |
| 0.157 | 2.148 | 1.926 | 1.747 | 1.556 | 1.405 | 1.254 | 1.134 | 1.020 | .9011 | .7539 | .6754 | .6046 | .5485 | .4867 | .4302 | .3850 | | | | | | | |
| 0.167* | 2.015 | 1.807 | 1.638 | 1.459 | 1.316 | 1.175 | 1.062 | .9543 | .8424 | .7074 | .6339 | .5675 | .5145 | .4567 | .4038 | .3611 | .3207 | | | | | | |
| 0.177 | 1.898 | 1.701 | 1.542 | 1.373 | 1.238 | 1.104 | .9985 | .8965 | .7909 | .6663 | .5972 | .5347 | .4845 | .4302 | .3804 | .3400 | .3020 | | | | | | |
| 0.187* | 1.793 | 1.607 | 1.457 | 1.296 | 1.169 | 1.042 | .9419 | .8453 | .7453 | .6298 | .5645 | .5055 | .4578 | .4066 | .3596 | .3212 | .2854 | .2562 | | | | | |
| 0.197 | 1.700 | 1.523 | 1.380 | 1.228 | 1.107 | .9870 | .8914 | .7997 | .7046 | .6188 | .5527 | .4933 | .4407 | .3907 | .3451 | .3044 | .2705 | .2426 | | | | | |
| 0.209* | 1.600 | 1.433 | 1.298 | 1.155 | 1.041 | .9277 | .8375 | .7510 | .6614 | .5812 | .5193 | .4636 | .4143 | .3675 | .3246 | .2864 | .2546 | .2282 | .2043 | | | | |
| 0.220 | 1.518 | 1.359 | 1.231 | 1.095 | .9869 | .8792 | .7935 | .7113 | .6262 | .5505 | .4920 | .4394 | .3928 | .3484 | .3079 | .2717 | .2416 | .2164 | .1937 | | | | |
| 0.236* | 1.412 | 1.264 | 1.145 | 1.018 | .9175 | .8171 | .7372 | .6606 | .5811 | .5113 | .4571 | .4084 | .3652 | .3240 | .2864 | .2528 | .2248 | .2012 | .1802 | .1609 | | | |
| 0.248 | 1.342 | 1.202 | 1.088 | .9677 | .8716 | .7760 | .7000 | .6270 | .5514 | .4853 | .4340 | .3879 | .3469 | .3079 | .2721 | .2403 | .2137 | .1912 | .1713 | .1529 | | | |
| 0.264* | 1.259 | 1.127 | 1.021 | .9073 | .8170 | .7272 | .6558 | .5872 | .5162 | .4545 | .4066 | .3635 | .3252 | .2887 | .2552 | .2254 | .2005 | .1793 | .1606 | .1434 | .1269 | | |
| 0.280 | 1.186 | 1.061 | .9612 | .8541 | .7689 | .6842 | .6168 | .5522 | .4842 | .4274 | .3825 | .3420 | .3060 | .2717 | .2403 | .2122 | .1888 | .1688 | .1512 | .1351 | .1195 | | |
| 0.295* | 1.124 | 1.006 | .9112 | .8095 | .7286 | .6483 | .5843 | .5229 | .4593 | .4048 | .3623 | .3240 | .2900 | .2575 | .2278 | .2012 | .1790 | .1600 | .1433 | .1280 | .1133 | .1002 | |
| 0.315 | 1.052 | .9415 | .8521 | .7568 | .6811 | .6058 | .5459 | .4884 | .4288 | .3781 | .3385 | .3028 | .2711 | .2408 | .2130 | .1882 | .1675 | .1496 | .1340 | .1198 | .1060 | .0937 | |
| 0.335* | .9884 | .8842 | .8002 | .7106 | .6394 | .5686 | .5123 | .4582 | .4021 | .3547 | .3176 | .2842 | .2545 | .2261 | .2000 | .1767 | .1573 | .1404 | .1259 | .1125 | .0996 | .0880 | |
| 0.354 | .9345 | .8360 | .7564 | .6717 | .6043 | .5373 | .4839 | .4328 | .3797 | .3350 | .3001 | .2685 | .2405 | .2137 | .1891 | .1671 | .1487 | .1327 | .1190 | .1063 | .0941 | .0832 | |
| 0.374* | .8838 | .7905 | .7153 | .6350 | .5712 | .5078 | .4573 | .4089 | .3586 | .3165 | .2836 | .2538 | .2273 | .2020 | .1788 | .1580 | .1407 | .1255 | .1125 | .1005 | .0890 | .0787 | |
| 0.394 | .8384 | .7498 | .6783 | .6021 | .5416 | .4814 | .4335 | .3875 | .3398 | .3000 | .2688 | .2406 | .2155 | .1915 | .1695 | .1499 | .1334 | .1190 | .1067 | .0954 | .0844 | | |
| 0.417* | .7915 | .7078 | .6403 | .5683 | .5111 | .4542 | .4089 | .3655 | .3204 | .2830 | .2536 | .2270 | .2034 | .1808 | .1600 | .1415 | .1260 | .1123 | .1007 | .0900 | .0797 | | |
| 0.441 | .7479 | .6687 | .6049 | .5368 | .4827 | .4289 | .3861 | .3450 | .3024 | .2671 | .2394 | .2144 | .1921 | .1708 | .1512 | .1337 | .1190 | .1061 | .0951 | .0851 | | | |
| 0.465* | .7088 | .6338 | .5732 | .5087 | .4574 | .4063 | .3657 | .3268 | .2863 | .2530 | .2268 | .2031 | .1820 | .1618 | .1433 | .1267 | .1128 | .1005 | .0902 | .0806 | | | |
| 0.492 | .6695 | .5986 | .5414 | .4803 | .4318 | .3836 | .3452 | .3084 | .2702 | .2388 | .2141 | .1917 | .1718 | .1528 | .1353 | .1196 | .1065 | .0949 | .0851 | | | | |
| 0.520* | .6331 | .5660 | .5118 | .4541 | .4082 | .3626 | .3262 | .2914 | .2552 | .2256 | .2023 | .1812 | .1624 | .1444 | .1279 | .1131 | .1007 | .0897 | .0805 | | | | |
| 0.551 | .5971 | .5338 | .4827 | .4282 | .3849 | .3418 | .3075 | .2746 | .2405 | .2127 | .1907 | .1709 | .1531 | .1362 | .1206 | .1067 | .0950 | .0846 | | | | | |
| 0.591* | .5563 | .4973 | .4496 | .3988 | .3584 | .3183 | .2863 | .2557 | .2239 | .1980 | .1776 | .1591 | .1426 | .1269 | .1124 | .0994 | .0885 | .0786 | | | | | |
| 0.630 | .5216 | .4662 | .4215 | .3738 | .3359 | .2983 | .2683 | .2395 | .2097 | .1855 | .1664 | .1491 | .1337 | .1189 | .1053 | .0932 | .0830 | | | | | | |
| 0.669* | .4909 | .4388 | .3967 | .3518 | .3161 | .2806 | .2524 | .2253 | .1972 | .1745 | .1565 | .1403 | .1258 | .1119 | .0991 | .0877 | | | | | | | |
| 0.709 | .4630 | .4138 | .3741 | .3317 | .2981 | .2646 | .2380 | .2124 | .1859 | .1645 | .1476 | .1323 | .1186 | .1055 | .0935 | .0827 | | | | | | | |
| 0.748* | .4387 | .3920 | .3544 | .3143 | .2823 | .2506 | .2254 | .2011 | .1760 | .1558 | .1398 | .1253 | .1123 | .1000 | .0886 | | | | | | | | |

*R-40 Series Intermediate Widths.

NOTE: Conductor weight (pounds) per thousand feet .

Values are based on a resistivity of 10.372 ohm - circ. mil/ft. at 20°C (100% IACS Conductivity).

RECTANGULAR, BARE WIRE, IEC PREFERRED NUMBER SERIES

Aluminum

RESISTANCE

| NOMINAL WIDTH Inches | NOMINAL THICKNESS - Inches | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| | 0.025 | 0.028 | 0.031 | 0.035 | 0.039 | 0.044 | 0.049 | 0.055 | 0.063 | 0.071 | 0.079 | 0.088 | 0.098 | 0.110 | 0.124 | 0.140 | 0.157 | 0.177 | 0.197 | 0.220 | 0.248 | 0.280 | |
| 0.063 | 9.147 | 8.260 | 7.545 | 6.786 | 6.186 | 5.593 | 5.125 | 4.681 | | | | | | | | | | | | | | | |
| 0.067* | 8.554 | 7.718 | 7.045 | 6.330 | 5.764 | 5.204 | 4.762 | 4.341 | 3.912 | | | | | | | | | | | | | | |
| 0.071 | 8.032 | 7.243 | 6.607 | 5.931 | 5.396 | 4.866 | 4.447 | 4.048 | 3.639 | | | | | | | | | | | | | | |
| 0.075* | 7.571 | 6.823 | 6.221 | 5.580 | 5.072 | 4.569 | 4.171 | 3.792 | 3.403 | 2.645 | | | | | | | | | | | | | |
| 0.079 | 7.160 | 6.449 | 5.877 | 5.267 | 4.785 | 4.306 | 3.927 | 3.566 | 3.195 | 2.503 | | | | | | | | | | | | | |
| 0.083* | 6.791 | 6.114 | 5.569 | 4.988 | 4.528 | 4.072 | 3.711 | 3.366 | 3.011 | 2.375 | 2.121 | | | | | | | | | | | | |
| 0.088 | 6.380 | 5.741 | 5.226 | 4.678 | 4.244 | 3.813 | 3.471 | 3.145 | 2.809 | 2.232 | 1.994 | | | | | | | | | | | | |
| 0.093* | 6.016 | 5.411 | 4.924 | 4.405 | 3.993 | 3.585 | 3.261 | 2.951 | 2.632 | 2.105 | 1.882 | 1.681 | | | | | | | | | | | |
| 0.098 | 5.691 | 5.117 | 4.654 | 4.161 | 3.770 | 3.382 | 3.074 | 2.780 | 2.476 | 1.992 | 1.781 | 1.591 | | | | | | | | | | | |
| 0.104* | 5.345 | 4.804 | 4.367 | 3.903 | 3.534 | 3.168 | 2.877 | 2.599 | 2.312 | 1.872 | 1.674 | 1.496 | 1.365 | | | | | | | | | | |
| 0.110 | 5.038 | 4.526 | 4.114 | 3.674 | 3.325 | 2.979 | 2.703 | 2.440 | 2.168 | 1.765 | 1.579 | 1.411 | 1.286 | | | | | | | | | | |
| 0.118* | 4.680 | 4.203 | 3.818 | 3.408 | 3.082 | 2.759 | 2.502 | 2.256 | 2.002 | 1.640 | 1.468 | 1.312 | 1.195 | 1.059 | | | | | | | | | |
| 0.124 | 4.444 | 3.989 | 3.623 | 3.232 | 2.922 | 2.615 | 2.370 | 2.136 | 1.893 | 1.557 | 1.394 | 1.247 | 1.134 | 1.005 | | | | | | | | | |
| 0.132* | 4.163 | 3.736 | 3.392 | 3.025 | 2.733 | 2.444 | 2.214 | 1.993 | 1.765 | 1.459 | 1.307 | 1.169 | 1.063 | 0.9426 | 0.8325 | | | | | | | | |
| 0.140 | 3.916 | 3.513 | 3.188 | 2.842 | 2.567 | 2.294 | 2.077 | 1.869 | 1.654 | 1.373 | 1.229 | 1.100 | 0.9998 | 0.8868 | 0.7834 | | | | | | | | |
| 0.148* | 3.696 | 3.315 | 3.008 | 2.680 | 2.420 | 2.162 | 1.956 | 1.759 | 1.555 | 1.296 | 1.161 | 1.039 | 0.9436 | 0.8372 | 0.7398 | 0.6625 | | | | | | | |
| 0.157 | 3.477 | 3.117 | 2.828 | 2.519 | 2.273 | 2.030 | 1.836 | 1.650 | 1.458 | 1.220 | 1.092 | 0.9783 | 0.8876 | 0.7877 | 0.6962 | 0.6230 | | | | | | | |
| 0.167* | 3.261 | 2.924 | 2.651 | 2.361 | 2.130 | 1.901 | 1.719 | 1.544 | 1.363 | 1.144 | 1.025 | 0.9183 | 0.8326 | 0.7391 | 0.6534 | 0.5843 | 0.5190 | | | | | | |
| 0.177 | 3.071 | 2.753 | 2.496 | 2.221 | 2.004 | 1.787 | 1.615 | 1.450 | 1.279 | 1.078 | 0.9663 | 0.8653 | 0.7841 | 0.6961 | 0.6156 | 0.5502 | 0.4888 | | | | | | |
| 0.187* | 2.902 | 2.600 | 2.357 | 2.098 | 1.892 | 1.687 | 1.524 | 1.367 | 1.206 | 1.019 | 0.9134 | 0.818 | 0.7409 | 0.6579 | 0.5819 | 0.5198 | 0.4619 | 0.4145 | | | | | |
| 0.197 | 2.751 | 2.464 | 2.233 | 1.987 | 1.791 | 1.597 | 1.442 | 1.294 | 1.140 | 1.001 | 0.8943 | 0.7983 | 0.7132 | 0.6323 | 0.5584 | 0.4926 | 0.4378 | 0.3927 | | | | | |
| 0.209* | 2.589 | 2.319 | 2.101 | 1.869 | 1.684 | 1.501 | 1.355 | 1.215 | 1.070 | 0.9405 | 0.8402 | 0.7503 | 0.6705 | 0.5946 | 0.5253 | 0.4635 | 0.4120 | 0.3693 | 0.3306 | | | | |
| 0.220 | 2.456 | 2.199 | 1.992 | 1.772 | 1.597 | 1.422 | 1.284 | 1.151 | 1.013 | 0.8909 | 0.7961 | 0.7111 | 0.6356 | 0.5638 | 0.4982 | 0.4397 | 0.3909 | 0.3502 | 0.3135 | | | | |
| 0.236* | 2.286 | 2.046 | 1.853 | 1.648 | 1.484 | 1.322 | 1.192 | 1.068 | 0.9404 | 0.8273 | 0.7397 | 0.6609 | 0.5909 | 0.5244 | 0.4634 | 0.4091 | 0.3638 | 0.3267 | 0.2917 | 0.2604 | | | |
| 0.248 | 2.172 | 1.945 | 1.761 | 1.565 | 1.410 | 1.255 | 1.132 | 1.014 | 0.8922 | 0.7853 | 0.7023 | 0.6276 | 0.5613 | 0.4982 | 0.4404 | 0.3888 | 0.3458 | 0.3094 | 0.2772 | 0.2475 | | | |
| 0.264* | 2.038 | 1.824 | 1.652 | 1.468 | 1.322 | 1.176 | 1.061 | 0.9502 | 0.8352 | 0.7355 | 0.6580 | 0.5882 | 0.5262 | 0.4671 | 0.4130 | 0.3647 | 0.3244 | 0.2901 | 0.2599 | 0.2321 | 0.2054 | | |
| 0.280 | 1.919 | 1.718 | 1.555 | 1.382 | 1.244 | 1.107 | 0.9982 | 0.8935 | 0.7851 | 0.6917 | 0.6189 | 0.5534 | 0.4952 | 0.4397 | 0.3888 | 0.3434 | 0.3055 | 0.2731 | 0.2447 | 0.2186 | 0.1934 | | |
| 0.295* | 1.820 | 1.628 | 1.474 | 1.309 | 1.179 | 1.049 | 0.9455 | 0.8462 | 0.7432 | 0.6551 | 0.5863 | 0.5244 | 0.4693 | 0.4167 | 0.3686 | 0.3256 | 0.2897 | 0.2589 | 0.2320 | 0.2072 | 0.1834 | 0.1621 | |
| 0.315 | 1.702 | 1.523 | 1.378 | 1.224 | 1.102 | 0.9803 | 0.8834 | 0.7904 | 0.6939 | 0.6119 | 0.5478 | 0.4900 | 0.4387 | 0.3896 | 0.3447 | 0.3045 | 0.2710 | 0.2420 | 0.2169 | 0.1938 | 0.1715 | 0.1516 | |
| 0.335* | 1.599 | 1.430 | 1.294 | 1.149 | 1.034 | 0.9201 | 0.8290 | 0.7415 | 0.6508 | 0.5740 | 0.5140 | 0.4599 | 0.4118 | 0.3658 | 0.3237 | 0.2860 | 0.2546 | 0.2273 | 0.2037 | 0.1820 | 0.1611 | 0.1425 | |
| 0.354 | 1.512 | 1.352 | 1.224 | 1.086 | 0.9778 | 0.8694 | 0.7831 | 0.7003 | 0.6144 | 0.5422 | 0.4856 | 0.4346 | 0.3891 | 0.3458 | 0.3060 | 0.2704 | 0.2407 | 0.2148 | 0.1926 | 0.1721 | 0.1524 | 0.1347 | |
| 0.374* | 1.430 | 1.279 | 1.157 | 1.027 | 0.9243 | 0.8217 | 0.7400 | 0.6616 | 0.5803 | 0.5122 | 0.4589 | 0.4107 | 0.3679 | 0.3269 | 0.2893 | 0.2557 | 0.2276 | 0.2031 | 0.1821 | 0.1627 | 0.1441 | 0.1274 | |
| 0.394 | 1.356 | 1.213 | 1.097 | 0.9744 | 0.8764 | 0.7789 | 0.7014 | 0.6270 | 0.5498 | 0.4855 | 0.4350 | 0.3894 | 0.3488 | 0.3100 | 0.2744 | 0.2425 | 0.2159 | 0.1926 | 0.1727 | 0.1543 | 0.1367 | | |
| 0.417* | 1.280 | 1.145 | 1.036 | 0.9196 | 0.8270 | 0.7350 | 0.6617 | 0.5914 | 0.5185 | 0.4579 | 0.4103 | 0.3674 | 0.3291 | 0.2926 | 0.2590 | 0.2290 | 0.2039 | 0.1817 | 0.1630 | 0.1457 | 0.1290 | | |
| 0.441 | 1.210 | 1.082 | 0.9789 | 0.8687 | 0.7812 | 0.6941 | 0.6248 | 0.5583 | 0.4894 | 0.4323 | 0.3875 | 0.3470 | 0.3109 | 0.2764 | 0.2447 | 0.2163 | 0.1926 | 0.1717 | 0.1540 | 0.1377 | | | |
| 0.465* | 1.147 | 1.025 | 0.9276 | 0.8231 | 0.7401 | 0.6575 | 0.5918 | 0.5288 | 0.4634 | 0.4094 | 0.3670 | 0.3287 | 0.2945 | 0.2619 | 0.2319 | 0.2050 | 0.1826 | 0.1627 | 0.1459 | 0.1305 | | | |
| 0.492 | 10.83 | 0.9686 | 0.8760 | 0.7773 | 0.6988 | 0.6207 | 0.5586 | 0.4990 | 0.4372 | 0.3864 | 0.3464 | 0.3103 | 0.2781 | 0.2473 | 0.2190 | 0.1936 | 0.1724 | 0.1536 | 0.1378 | | | | |
| 0.520* | 1.024 | 0.9158 | 0.8282 | 0.7348 | 0.6605 | 0.5867 | 0.5279 | 0.4715 | 0.4130 | 0.3651 | 0.3274 | 0.2933 | 0.2629 | 0.2338 | 0.2070 | 0.1831 | 0.1631 | 0.1452 | 0.1303 | | | | |
| 0.551 | 0.9662 | 0.8637 | 0.7811 | 0.6929 | 0.6228 | 0.5531 | 0.4977 | 0.4444 | 0.3892 | 0.3441 | 0.3086 | 0.2765 | 0.2478 | 0.2204 | 0.1952 | 0.1727 | 0.1538 | 0.1369 | | | | | |
| 0.591* | 0.9002 | 0.8047 | 0.7276 | 0.6454 | 0.5800 | 0.5151 | 0.4634 | 0.4137 | 0.3623 | 0.3204 | 0.2873 | 0.2575 | 0.2308 | 0.2053 | 0.1819 | 0.1609 | 0.1433 | 0.1275 | | | | | |
| 0.630 | 0.8440 | 0.7544 | 0.6821 | 0.6049 | 0.5436 | 0.4827 | 0.4342 | 0.3876 | 0.3393 | 0.3002 | 0.2693 | 0.2413 | 0.2163 | 0.1924 | 0.1705 | 0.1508 | 0.1343 | | | | | | |
| 0.669* | 0.7944 | 0.7100 | 0.6419 | 0.5693 | 0.5115 | 0.4541 | 0.4085 | 0.3646 | 0.3191 | 0.2824 | 0.2533 | 0.2270 | 0.2036 | 0.1811 | 0.1604 | 0.1419 | | | | | | | |
| 0.709 | 0.7493 | 0.6696 | 0.6053 | 0.5368 | 0.4823 | 0.4282 | 0.3851 | 0.3437 | 0.3008 | 0.2662 | 0.2388 | 0.2140 | 0.1919 | 0.1708 | 0.1513 | 0.1339 | | | | | | | |
| 0.748* | 0.7099 | 0.6344 | 0.5735 | 0.5085 | 0.4569 | 0.4056 | 0.3647 | 0.3255 | 0.2848 | 0.2521 | 0.2262 | 0.2027 | 0.1818 | 0.1618 | 0.1433 | | | | | | | | |

*R-40 Series Intermediate Widths.

NOTE: Conductor weight (pounds) per thousand feet .

Values are based on a resistivity of 16.782 ohm - circ. mil/ft. at 20°C (61.8% IACS Conductivity). In practice, conductors of higher conductivity will often be encountered, yielding a resistance lower than that specified here when conductor dimensions are at or near maximum tolerance limits.

Notes

Notes

Notes



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