

Copper Magnet Wire Data

| SIZE (AWG) | BARE COPPER | | | | | | | | | SIZE (AWG) |
|---------------|------------------------|--------|--------|---|-------|-------|----------------------|---------------------------|-----------------------------|---------------|
| | DIAMETER * (INCHES) | | | RESISTANCE** (OHMS PER 1000 FT. AT 20°C) | | | FEET PER POUND | POUNDS PER 1000 FT. | CIRCULAR MILS NOMINAL | |
| | MIN. | NOM. | MAX. | MIN. | NOM. | MAX. | | | | |
| 6 | .1604 | .1620 | .1633 | .3875 | .3952 | .4031 | 12.59 | 79.44 | 26240 | 6 |
| 7 | .1429 | .1443 | .1454 | .4885 | .4981 | .5079 | 15.87 | 63.03 | 20820 | 7 |
| 8 | .1272 | .1285 | .1294 | .6156 | .6281 | .6410 | 20.01 | 49.98 | 16510 | 8 |
| 9 | .1133 | .1144 | .1153 | .7774 | .7924 | .8079 | 25.24 | 39.62 | 13090 | 9 |
| 10 | .1009 | .1019 | .1027 | .9795 | .9988 | 1.019 | 31.82 | 31.43 | 10380 | 10 |
| 11 | .0898 | .0907 | .0916 | 1.236 | 1.261 | 1.286 | 40.2 | 24.9 | 8226 | 11 |
| 12 | .0800 | .0808 | .0816 | 1.558 | 1.589 | 1.620 | 50.6 | 19.8 | 6529 | 12 |
| 13 | .0713 | .0720 | .0727 | 1.962 | 2.001 | 2.040 | 63.7 | 15.7 | 5184 | 13 |
| 14 | .0635 | .0641 | .0647 | 2.477 | 2.524 | 2.572 | 80.4 | 12.4 | 4109 | 14 |
| 15 | .0565 | .0571 | .0577 | 3.115 | 3.181 | 3.249 | 101 | 9.87 | 3260 | 15 |
| 16 | .0503 | .0508 | .0513 | 3.941 | 4.019 | 4.099 | 128 | 7.81 | 2581 | 16 |
| 17 | .0448 | .0453 | .0458 | 4.944 | 5.054 | 5.167 | 161 | 6.21 | 2052 | 17 |
| 18 | .0399 | .0403 | .0407 | 6.261 | 6.386 | 6.514 | 203 | 4.92 | 1624 | 18 |
| 19 | .0355 | .0359 | .0363 | 7.871 | 8.047 | 8.229 | 256 | 3.90 | 1289 | 19 |
| 20 | .0317 | .0320 | .0323 | 9.941 | 10.13 | 10.32 | 323 | 3.10 | 1024 | 20 |
| 21 | .0282 | .0285 | .0288 | 12.50 | 12.77 | 13.04 | 407 | 2.46 | 812.3 | 21 |
| 22 | .0250 | .0253 | .0256 | 15.82 | 16.20 | 16.59 | 516 | 1.94 | 640.1 | 22 |
| 23 | .0224 | .0226 | .0228 | 19.95 | 20.31 | 20.67 | 647 | 1.55 | 510.8 | 23 |
| 24 | .0199 | .0201 | .0203 | 25.17 | 25.67 | 26.19 | 818 | 1.22 | 404.0 | 24 |
| 25 | .0177 | .0179 | .0181 | 31.66 | 32.37 | 33.10 | 1030 | .970 | 320.4 | 25 |
| 26 | .0157 | .0159 | .0161 | 40.01 | 41.02 | 42.07 | 1310 | .765 | 252.8 | 26 |
| 27 | .0141 | .0142 | .0143 | 50.72 | 51.43 | 52.17 | 1640 | .610 | 201.6 | 27 |
| 28 | .0125 | .0126 | .0127 | 64.30 | 65.33 | 66.37 | 2080 | .481 | 158.8 | 28 |
| 29 | .0112 | .0113 | .0114 | 79.80 | 81.22 | 82.68 | 2590 | .387 | 127.7 | 29 |
| 30 | .0099 | .0100 | .0101 | 101.7 | 103.7 | 105.8 | 3300 | .303 | 100.0 | 30 |
| 31 | .0088 | .0089 | .0090 | 128.0 | 130.9 | 133.9 | 4170 | .240 | 79.21 | 31 |
| 32 | .0079 | .0080 | .0081 | 158.1 | 162.0 | 166.2 | 5160 | .194 | 64.00 | 32 |
| 33 | .0070 | .0071 | .0072 | 200.1 | 205.7 | 211.7 | 6550 | .153 | 50.41 | 33 |
| 34 | .0062 | .0063 | .0064 | 253.2 | 261.3 | 269.8 | 8320 | .120 | 39.69 | 34 |
| 35 | .0055 | .0056 | .0057 | 319.2 | 330.7 | 342.8 | 10500 | .0949 | 31.36 | 35 |
| 36 | .0049 | .0050 | .0051 | 398.7 | 414.8 | 431.9 | 13200 | .0757 | 25.00 | 36 |
| 37 | .0044 | .0045 | .0046 | 490.1 | 512.1 | 535.7 | 16300 | .0613 | 20.25 | 37 |
| 38 | .0039 | .0040 | .0041 | 617.0 | 648.2 | 681.9 | 20600 | .0484 | 16.00 | 38 |
| 39 | .0034 | .0035 | .0036 | 800.2 | 846.6 | 897.1 | 27000 | .0371 | 12.25 | 39 |
| 40 | .0030 | .0031 | .0032 | 1013 | 1079 | 1152 | 34400 | .0291 | 9.61 | 40 |
| 41 | .0027 | .0028 | .0029 | 1233 | 1323 | 1423 | 42100 | .0237 | 7.84 | 41 |
| 42 | .0024 | .0025 | .0026 | 1534 | 1659 | 1801 | 52900 | .0189 | 6.25 | 42 |
| 43 | .0021 | .0022 | .0023 | 1960 | 2143 | 2352 | 68300 | .0147 | 4.84 | 43 |
| 44 | .0019 | .0020 | .0021 | 2352 | 2593 | 2873 | 82600 | .0121 | 4.00 | 44 |
| 45 | .00169 | .00176 | .00183 | 3080 | 3348 | 3616 | 106,500 | .00939 | 3.10 | 45 |
| 46 | .00151 | .00157 | .00164 | 3870 | 4207 | 4544 | 134,400 | .00744 | 2.47 | 46 |
| 47 | .00135 | .00140 | .00146 | 4868 | 5291 | 5714 | 169,200 | .00591 | 1.96 | 47 |
| 48 | .00119 | .00124 | .00129 | 6205 | 6745 | 7285 | 213,400 | .00469 | 1.54 | 48 |
| 49 | .00107 | .00111 | .00116 | 7744 | 8417 | 9090 | 269,700 | .00371 | 1.23 | 49 |
| 50 | .00095 | .00099 | .00103 | 9734 | 10580 | 11430 | 339,700 | .00294 | .98 | 50 |
| 51 | .00085 | .00088 | .00092 | 12320 | 13390 | 14460 | 428,400 | .00233 | .775 | 51 |
| 52 | .00075 | .00078 | .00081 | 15690 | 17050 | 18410 | 540,000 | .00185 | .608 | 52 |
| 53 | .00067 | .00070 | .00073 | 19480 | 21170 | 22860 | 681,200 | .00147 | .490 | 53 |
| 54 | .00060 | .00062 | .00065 | 24820 | 26980 | 29140 | 859,100 | .00116 | .384 | 54 |
| 55 | .00053 | .00055 | .00057 | 31540 | 34280 | 37020 | 1,083,000 | .000923 | .303 | 55 |

* Minimum and maximum dimensions are based on tolerances specified by ASTM Standard B3 and NEMA MW1000-2015 for sizes 6 - 44 AWG. Sizes 45 - 55 AWG dimensions calculated from DC resistance.

** Values are based on a resistivity of 10.371 ohms per circular mil/ft at 20°C. (100% IACS conductivity). Minimum resistance values are based on maximum bare diameter. Maximum resistance values are based on minimum bare diameter.

6 - 44 AWG magnet wire will be furnished to dimensional standard with resistance values as a guideline.

45 - 55 AWG magnet wire will be furnished to resistance with the dimensions as a guideline.

Copper Magnet Wire Data

Dimensional values derived from NEMA MW1000-2015 Standard

| SIZE (AWG) | SINGLE BUILD | | | | HEAVY BUILD | | | | TRIPLE BUILD | | | | **QUADRUPLE BUILD | | | | SIZE (AWG) |
|------------|---------------------|--------|--------|----------------|---------------------|--------|--------|----------------|---------------------|--------|--------|----------------|---------------------|--------|--------|----------------|------------|
| | DIAMETER * (INCHES) | | | FEET PER POUND | DIAMETER * (INCHES) | | | FEET PER POUND | DIAMETER * (INCHES) | | | FEET PER POUND | DIAMETER * (INCHES) | | | FEET PER POUND | |
| | MIN. | NOM. | MAX. | | MIN. | NOM. | MAX. | | MIN. | NOM. | MAX. | | MIN. | NOM. | MAX. | | |
| 6 | .1622 | .1648 | .1665 | 12,545 | .1640 | .1656 | .1672 | 12.5 | .1651 | .1679 | .1688 | 12,455 | .1663 | .1685 | .1706 | 12.41 | 6 |
| 7 | .1446 | .1469 | .1485 | 15.81 | .1464 | .1478 | .1492 | 15.75 | .1475 | .1492 | .1508 | 15.69 | .1488 | .1506 | .1525 | 15.63 | 7 |
| 8 | .1289 | .1302 | .1314 | 19.93 | .1307 | .1320 | .1332 | 19.85 | .1317 | .1333 | .1348 | 19.77 | .1330 | .1349 | .1365 | 19.69 | 8 |
| 9 | .1150 | .1162 | .1173 | 25.12 | .1167 | .1179 | .1190 | 25 | .1177 | .1191 | .1205 | 24.88 | .1190 | .1205 | .1221 | 24.76 | 9 |
| 10 | .1026 | .1037 | .1047 | 31.66 | .1043 | .1054 | .1064 | 31.5 | .1052 | .1064 | .1076 | 31.34 | .1077 | .1088 | .1098 | 31.18 | 10 |
| 11 | .0915 | .0925 | .0936 | 39.6 | .0931 | .0942 | .0952 | 39 | .0940 | .0952 | .0963 | 38.4 | .0964 | .0974 | .0983 | 38.34 | 11 |
| 12 | .0816 | .0825 | .0835 | 50.25 | .0832 | .0842 | .0851 | 49.9 | .0840 | .0851 | .0861 | 49.55 | .0864 | .0873 | .0881 | 49.2 | 12 |
| 13 | .0729 | .0737 | .0746 | 63.3 | .0745 | .0754 | .0762 | 62.9 | .0752 | .0762 | .0771 | 62.5 | .0777 | .0785 | .0793 | 62.1 | 13 |
| 14 | .0651 | .0659 | .0666 | 79.94 | .0667 | .0675 | .0682 | 79.18 | .0683 | .0691 | .0698 | 78.42 | .0699 | .0707 | .0714 | 77.66 | 14 |
| 15 | .0580 | .0587 | .0594 | 100.4 | .0595 | .0603 | .0610 | 99.7 | .0611 | .0618 | .0625 | 99 | .0626 | .0633 | .0640 | 98.3 | 15 |
| 16 | .0517 | .0524 | .0531 | 126.8 | .0532 | .0539 | .0545 | 125.6 | .0546 | .0553 | .0560 | 124.4 | .0561 | .0568 | .0574 | 123.2 | 16 |
| 17 | .0462 | .0469 | .0475 | 159.4 | .0476 | .0482 | .0488 | 157.7 | .0489 | .0496 | .0502 | 156 | .0503 | .0510 | .0516 | 154.3 | 17 |
| 18 | .0412 | .0418 | .0424 | 201.1 | .0425 | .0431 | .0437 | 199.2 | .0438 | .0444 | .0450 | 197.3 | .0451 | .0458 | .0464 | 195.4 | 18 |
| 19 | .0367 | .0373 | .0379 | 253.2 | .0380 | .0386 | .0391 | 250.6 | .0392 | .0398 | .0404 | 248 | .0405 | .0412 | .0418 | 245.4 | 19 |
| 20 | .0329 | .0335 | .0340 | 318.4 | .0341 | .0346 | .0351 | 314.5 | .0352 | .0358 | .0363 | 310.6 | .0364 | .0371 | .0377 | 306.7 | 20 |
| 21 | .0293 | .0298 | .0303 | 400.6 | .0304 | .0310 | .0315 | 395.3 | .0316 | .0321 | .0326 | 390 | .0327 | .0333 | .0340 | 384.7 | 21 |
| 22 | .0261 | .0266 | .0270 | 507.1 | .0271 | .0276 | .0281 | 502.5 | .0282 | .0287 | .0292 | 497.9 | .0293 | .0300 | .0306 | 493.3 | 22 |
| 23 | .0234 | .0239 | .0243 | 633.7 | .0244 | .0249 | .0253 | 625 | .0254 | .0259 | .0263 | 616.3 | .0264 | .0271 | .0277 | 607.6 | 23 |
| 24 | .0209 | .0213 | .0217 | 804.5 | .0218 | .0223 | .0227 | 790.5 | .0228 | .0232 | .0236 | 776.5 | .0237 | .0244 | .0250 | 762.5 | 24 |
| 25 | .0186 | .0190 | .0194 | 1010 | .0195 | .0199 | .0203 | 992.1 | .0204 | .0208 | .0212 | 974.2 | .0213 | .0220 | .0226 | 956.3 | 25 |
| 26 | .0166 | .0170 | .0173 | 1279 | .0174 | .0178 | .0182 | 1254 | .0183 | .0187 | .0191 | 1229 | .0192 | .0198 | .0204 | 1204 | 26 |
| 27 | .0149 | .0153 | .0156 | 1600 | .0157 | .0161 | .0165 | 1571 | .0166 | .0170 | .0173 | 1542 | .0174 | .0180 | .0185 | 1513 | 27 |
| 28 | .0133 | .0137 | .0140 | 2028 | .0141 | .0144 | .0147 | 1987 | .0148 | .0152 | .0155 | 1946 | .0156 | .0162 | .0167 | 1905 | 28 |
| 29 | .0119 | .0123 | .0126 | 2513 | .0127 | .0130 | .0133 | 2463 | .0134 | .0138 | .0141 | 2413 | .0142 | .0147 | .0151 | 2363 | 29 |
| 30 | .0106 | .0109 | .0112 | 3208 | .0112 | .0117 | .0121 | 3136 | .0119 | .0123 | .0126 | 3064 | .0125 | .0132 | .0138 | 2992 | 30 |
| 31 | .0094 | .0097 | .0100 | 4052 | .0100 | .0104 | .0108 | 3948 | .0106 | .0110 | .0114 | 3844 | .0112 | .0119 | .0125 | 3740 | 31 |
| 32 | .0085 | .0088 | .0090 | 4995 | .0090 | .0094 | .0097 | 4873 | .0096 | .0099 | .0102 | 4751 | .0101 | .0107 | .0112 | 4629 | 32 |
| 33 | .0075 | .0078 | .0081 | 6337 | .0080 | .0084 | .0087 | 6161 | .0085 | .0089 | .0092 | 5985 | .0090 | .0096 | .0101 | 5809 | 33 |
| 34 | .0067 | .0070 | .0072 | 8055 | .0071 | .0075 | .0078 | 7837 | .0076 | .0080 | .0083 | 7619 | .0081 | .0086 | .0091 | 7401 | 34 |
| 35 | .0059 | .0062 | .0065 | 10250 | .0064 | .0067 | .0070 | 9891 | .0068 | .0072 | .0075 | 9532 | .0072 | .0077 | .0082 | 9173 | 35 |
| 36 | .0053 | .0056 | .0058 | 12800 | .0057 | .0060 | .0063 | 12380 | .0061 | .0064 | .0067 | 11960 | .0065 | .0070 | .0074 | 11540 | 36 |
| 37 | .0048 | .0050 | .0052 | 15750 | .0051 | .0055 | .0057 | 15290 | .0055 | .0058 | .0061 | 14830 | .0058 | .0063 | .0067 | 14370 | 37 |
| 38 | .0042 | .0045 | .0047 | 20020 | .0046 | .0049 | .0051 | 19360 | .0049 | .0052 | .0055 | 18700 | .0052 | .0056 | .0060 | 18040 | 38 |
| 39 | .0037 | .0040 | .0042 | 26240 | .0040 | .0043 | .0045 | 25270 | .0043 | .0046 | .0049 | 24300 | .0046 | .0050 | .0054 | 23330 | 39 |
| 40 | .0033 | .0035 | .0037 | 33330 | .0035 | .0038 | .0041 | 31940 | .0038 | .0041 | .0044 | 30550 | .0041 | .0045 | .0049 | 29160 | 40 |
| 41 | .0030 | .0032 | .0033 | 40800 | .0032 | .0035 | .0037 | 39340 | .0035 | .0038 | .0040 | 37880 | .0037 | .0041 | .0044 | 36420 | 41 |
| 42 | .0026 | .0028 | .0030 | 50940 | .0029 | .0031 | .0033 | 49600 | .0031 | .0034 | .0036 | 48260 | .0033 | .0036 | .0039 | 46920 | 42 |
| 43 | .0023 | .0025 | .0027 | 66140 | .0025 | .0027 | .0029 | 63170 | .0027 | .0029 | .0032 | 60200 | .0029 | .0033 | .0036 | 57230 | 43 |
| 44 | .0021 | .0023 | .0024 | 80060 | .0023 | .0025 | .0026 | 76160 | .0025 | .0027 | .0029 | 72260 | .0027 | .0030 | .0032 | 68360 | 44 |
| 45 | .00189 | .00205 | .00220 | 103,500 | .00209 | .00225 | .00240 | 99110 | .00219 | .00245 | .00270 | 94720 | .00239 | .00260 | .00290 | 90330 | 45 |
| 46 | .00171 | .00173 | .00200 | 130,000 | .00181 | .00196 | .00210 | 123,800 | .00201 | .00221 | .00240 | 117,600 | .00221 | .00241 | .00260 | 111,400 | 46 |
| 47 | .00145 | .00158 | .00170 | 163,400 | .00165 | .00178 | .00190 | 154,600 | .00185 | .00198 | .00210 | 145,800 | .00205 | .00218 | .00230 | 137,000 | 47 |
| 48 | .00129 | .00140 | .00150 | 204,900 | .00139 | .00155 | .00170 | 196,900 | .00159 | .00175 | .00190 | 188,900 | .00169 | .00190 | .00210 | 180,900 | 48 |
| 49 | .00117 | .00124 | .00130 | 259,700 | .00127 | .00139 | .00150 | 247,500 | .00147 | .00159 | .00170 | 235,300 | .00157 | .00174 | .00190 | 223,100 | 49 |
| 50 | .00105 | .00113 | .00120 | 324,700 | .00115 | .00128 | .00140 | 307,700 | .00125 | .00143 | .00160 | 290,700 | .00135 | .00158 | .00180 | 273,700 | 50 |
| 51 | .00095 | .00103 | .00110 | 406,500 | .00105 | .00117 | .00129 | 383,100 | .00115 | .00133 | .00150 | 359,700 | .00125 | .00148 | .00170 | 336,300 | 51 |
| 52 | .00085 | .00093 | .00100 | 507,600 | .00095 | .00107 | .00105 | 476,200 | .00105 | .00123 | .00140 | 444,800 | .00115 | .00138 | .00160 | 413,400 | 52 |
| 53 | .00072 | .00079 | .00085 | 653,600 | .00080 | .00090 | .00103 | 621,100 | .00087 | .00104 | .00121 | 588,600 | .00097 | .00118 | .00139 | 556,100 | 53 |
| 54 | .00065 | .00070 | .00075 | 826,400 | .00073 | .00082 | .00095 | 775,200 | — | — | — | — | — | — | — | — | 54 |
| 55 | .00058 | .00064 | .00070 | 1,032,000 | .00066 | .00075 | .00087 | 961,500 | — | — | — | — | — | — | — | — | 55 |

* Diameters shown are per NEMA MW1000-2015. For Diameters per NEMA MW1000-1997 see page 33 or visit our website at www.mwswire.com

** Diameters shown do not include those for Quad Build NEMA MW1000-2015 MW16C.

Blue text above indicates changes from NEMA MW1000-1997 and page 33.

Red text above indicates sizes not covered by NEMA MW1000-2015. Values derived from MWS Wire Industries internal standards.

Half-Size Copper Magnet Wire

Dimensional values derived from NEMA MW1000-2015 Standard

| SIZE (AWG) | BARE COPPER | | | | | | | | | SINGLE BUILD DIAMETER (INCHES) | | | HEAVY BUILD DIAMETER (INCHES) | | |
|---------------|----------------------|-------|-------|---|-------|-------|----------------------|---------------------------|------------------------------|--------------------------------------|-------|-------|-------------------------------------|-------|-------|
| | DIAMETER (INCHES) | | | RESISTANCE (OHMS PER 1000 FT. AT 20°C) | | | FEET PER POUND | POUNDS PER 1000 FT. | CIRCULAR MILS NOMINAL | MIN. | NOM.* | MAX. | MIN. | NOM.* | MAX. |
| | MIN. | NOM. | MAX. | MIN. | NOM. | MAX. | | | | | | | | | |
| 4½ | .1909 | .1928 | .1942 | .2753 | .2790 | .2846 | 8.86 | 112.9 | 37290 | — | — | — | .1946 | .1964 | .1982 |
| 5½ | .1700 | .1717 | .1730 | .3469 | .3518 | .3589 | 11.17 | 89.55 | 29580 | — | — | — | .1736 | .1753 | .1769 |
| 6½ | .1514 | .1529 | .1540 | .4373 | .4436 | .4524 | 14.08 | 71.04 | 23470 | — | — | — | .1550 | .1565 | .1579 |
| 7½ | .1348 | .1362 | .1372 | .5510 | .5591 | .5707 | 17.76 | 56.31 | 18600 | — | — | — | .1383 | .1397 | .1410 |
| 8½ | .1201 | .1213 | .1221 | .6956 | .7049 | .7190 | 22.38 | 44.68 | 14760 | .1218 | .1230 | .1241 | .1235 | .1247 | .1258 |
| 9½ | .1069 | .1080 | .1088 | .8745 | .8891 | .9075 | 28.22 | 35.44 | 11710 | .1086 | .1098 | .1108 | .1103 | .1114 | .1125 |
| 10½ | .0952 | .0962 | .0971 | 1.10 | 1.12 | 1.14 | 35.6 | 28.1 | 9270 | .0969 | .0980 | .0991 | .0985 | .0996 | .1007 |
| 11½ | .0847 | .0856 | .0864 | 1.39 | 1.41 | 1.44 | 44.9 | 22.3 | 7360 | .0863 | .0873 | .0883 | .0880 | .0890 | .0900 |
| 12½ | .0755 | .0763 | .0770 | 1.75 | 1.78 | 1.81 | 56.6 | 17.7 | 5840 | .0771 | .0780 | .0789 | .0787 | .0796 | .0805 |
| 13½ | .0672 | .0679 | .0685 | 2.22 | 2.24 | 2.29 | 71.4 | 14.0 | 4620 | .0688 | .0696 | .0704 | .0704 | .0712 | .0720 |
| 14½ | .0599 | .0605 | .0611 | 2.77 | 2.82 | 2.88 | 90.0 | 11.1 | 3670 | .0615 | .0622 | .0629 | .0630 | .0638 | .0645 |
| 15½ | .0534 | .0539 | .0544 | 3.49 | 3.56 | 3.64 | 113 | 8.83 | 2920 | .0549 | .0556 | .0563 | .0564 | .0571 | .0578 |
| 16½ | .0475 | .0480 | .0485 | 4.41 | 4.48 | 4.58 | 143 | 7.00 | 2310 | .0489 | .0496 | .0502 | .0503 | .0510 | .0516 |
| 17½ | .0423 | .0427 | .0431 | 5.56 | 5.66 | 5.77 | 180 | 5.55 | 1830 | .0436 | .0443 | .0449 | .0450 | .0456 | .0462 |
| 18½ | .0376 | .0380 | .0384 | 7.00 | 7.14 | 7.30 | 228 | 4.39 | 1450 | .0389 | .0395 | .0400 | .0401 | .0407 | .0413 |
| 19½ | .0336 | .0339 | .0342 | 8.81 | 8.97 | 9.19 | 286 | 3.50 | 1160 | .0348 | .0354 | .0359 | .0360 | .0366 | .0371 |
| 20½ | .0299 | .0302 | .0305 | 11.1 | 11.4 | 11.6 | 362 | 2.76 | 912 | .0310 | .0316 | .0321 | .0322 | .0327 | .0332 |
| 21½ | .0266 | .0269 | .0272 | 14.0 | 14.3 | 14.5 | 457 | 2.19 | 724 | .0277 | .0282 | .0287 | .0288 | .0293 | .0298 |
| 22½ | .0237 | .0239 | .0241 | 17.7 | 18.0 | 18.5 | 573 | 1.74 | 576 | .0247 | .0252 | .0257 | .0258 | .0263 | .0267 |
| 23½ | .0211 | .0213 | .0215 | 22.2 | 22.6 | 23.3 | 721 | 1.39 | 458 | .0221 | .0226 | .0230 | .0231 | .0236 | .0240 |
| 24½ | .0188 | .0190 | .0192 | 28.1 | 28.7 | 29.3 | 915 | 1.09 | 361 | .0197 | .0202 | .0206 | .0207 | .0211 | .0215 |
| 25½ | .0167 | .0169 | .0171 | 35.5 | 36.3 | 37.2 | 1160 | .865 | 286 | .0176 | .0180 | .0184 | .0185 | .0189 | .0193 |
| 26½ | .0149 | .0150 | .0152 | 44.3 | 45.5 | 46.7 | 1450 | .690 | 228 | .0157 | .0161 | .0165 | .0166 | .0170 | .0173 |
| 27½ | .0133 | .0134 | .0135 | 56.1 | 57.7 | 58.6 | 1840 | .543 | 180 | .0141 | .0145 | .0148 | .0149 | .0153 | .0156 |
| 28½ | .0118 | .0119 | .0120 | 70.8 | 73.2 | 74.5 | 2290 | .436 | 144 | .0126 | .0129 | .0132 | .0133 | .0137 | .0140 |
| 29½ | .0105 | .0106 | .0107 | 90.6 | 92.3 | 94.0 | 2940 | .340 | 112 | .0112 | .0115 | .0118 | .0119 | .0123 | .0126 |

* Nominal dimensional values calculated as the midpoint between minimum and maximum values. NEMA MW1000-2015 does not list "nominal" insulated values.

Sizes finer than 29½ AWG available upon request. For technical data on half-sizes finer than 29½ AWG see page 34.

Diameters shown are per NEMA MW1000-2015. For Diameters per NEMA MW1000-1997 see page 34 or visit our website at www.mwswire.com

Blue text above indicates changes from NEMA MW1000-1997 and page 34.

Copper Magnet Wire Data

Dimensional values derived from NEMA MW1000-1997 Standard

| SIZE (AWG) | SINGLE BUILD | | | | HEAVY BUILD | | | | TRIPLE BUILD | | | | QUADRUPLE BUILD | | | | SIZE (AWG) |
|------------|---------------------|--------|--------|----------------|---------------------|--------|--------|----------------|---------------------|--------|--------|----------------|---------------------|--------|--------|----------------|------------|
| | DIAMETER * (INCHES) | | | FEET PER POUND | DIAMETER * (INCHES) | | | FEET PER POUND | DIAMETER * (INCHES) | | | FEET PER POUND | DIAMETER * (INCHES) | | | FEET PER POUND | |
| | MIN. | NOM. | MAX. | | MIN. | NOM. | MAX. | | MIN. | NOM. | MAX. | | MIN. | NOM. | MAX. | | |
| 6 | .1622 | .1648 | .1665 | 12,545 | .1639 | .1659 | .1671 | 12.5 | .1651 | .1679 | .1688 | 12,455 | .1663 | .1685 | .1706 | 12.41 | 6 |
| 7 | .1446 | .1469 | .1485 | 15.81 | .1463 | .1481 | .1491 | 15.75 | .1475 | .1492 | .1508 | 15.69 | .1488 | .1506 | .1525 | 15.63 | 7 |
| 8 | .1288 | .1306 | .1324 | 19.93 | .1305 | .1322 | .1332 | 19.85 | .1317 | .1333 | .1348 | 19.77 | .1330 | .1349 | .1365 | 19.69 | 8 |
| 9 | .1149 | .1165 | .1181 | 25.12 | .1165 | .1177 | .1189 | 25 | .1177 | .1191 | .1205 | 24.88 | .1190 | .1205 | .1221 | 24.76 | 9 |
| 10 | .1024 | .1039 | .1054 | 31.66 | .1040 | .1051 | .1061 | 31.5 | .1052 | .1064 | .1076 | 31.34 | .1065 | .1078 | .1092 | 31.18 | 10 |
| 11 | .0913 | .0927 | .0941 | 39.6 | .0928 | .0938 | .0948 | 39 | .0940 | .0952 | .0963 | 38.4 | .0952 | .0965 | .0978 | 38.34 | 11 |
| 12 | .0814 | .0827 | .0840 | 50.25 | .0829 | .0838 | .0847 | 49.9 | .0840 | .0851 | .0861 | 49.55 | .0852 | .0864 | .0876 | 49.2 | 12 |
| 13 | .0727 | .0739 | .0750 | 63.3 | .0741 | .0749 | .0757 | 62.9 | .0752 | .0762 | .0771 | 62.5 | .0763 | .0774 | .0785 | 62.1 | 13 |
| 14 | .0651 | .0659 | .0666 | 79.94 | .0667 | .0675 | .0682 | 79.18 | .0683 | .0692 | .0700 | 78.42 | .0684 | .0696 | .0709 | 77.66 | 14 |
| 15 | .0580 | .0587 | .0594 | 100.4 | .0595 | .0602 | .0609 | 99.7 | .0610 | .0619 | .0627 | 99 | .0613 | .0625 | .0638 | 98.3 | 15 |
| 16 | .0517 | .0524 | .0531 | 126.8 | .0532 | .0539 | .0545 | 125.6 | .0546 | .0554 | .0562 | 124.4 | .0549 | .0561 | .0572 | 123.2 | 16 |
| 17 | .0462 | .0469 | .0475 | 159.4 | .0476 | .0482 | .0488 | 157.7 | .0489 | .0497 | .0504 | 156 | .0493 | .0504 | .0515 | 154.3 | 17 |
| 18 | .0412 | .0418 | .0424 | 201.1 | .0425 | .0431 | .0437 | 199.2 | .0438 | .0445 | .0452 | 197.3 | .0443 | .0454 | .0464 | 195.4 | 18 |
| 19 | .0367 | .0373 | .0379 | 253.2 | .0380 | .0386 | .0391 | 250.6 | .0392 | .0399 | .0406 | 248 | .0397 | .0407 | .0418 | 245.4 | 19 |
| 20 | .0329 | .0334 | .0339 | 318.4 | .0340 | .0346 | .0351 | 314.5 | .0352 | .0358 | .0364 | 310.6 | .0357 | .0366 | .0376 | 306.7 | 20 |
| 21 | .0293 | .0298 | .0303 | 400.6 | .0304 | .0309 | .0314 | 395.3 | .0315 | .0321 | .0326 | 390 | .0321 | .0330 | .0339 | 384.7 | 21 |
| 22 | .0261 | .0266 | .0270 | 507.1 | .0271 | .0276 | .0281 | 502.5 | .0282 | .0288 | .0293 | 497.9 | .0287 | .0296 | .0305 | 493.3 | 22 |
| 23 | .0234 | .0239 | .0243 | 633.7 | .0244 | .0249 | .0253 | 625 | .0254 | .0259 | .0264 | 616.3 | .0260 | .0268 | .0277 | 607.6 | 23 |
| 24 | .0209 | .0213 | .0217 | 804.5 | .0218 | .0223 | .0227 | 790.5 | .0228 | .0233 | .0238 | 776.5 | .0234 | .0242 | .0250 | 762.5 | 24 |
| 25 | .0186 | .0190 | .0194 | 1010 | .0195 | .0199 | .0203 | 992.1 | .0204 | .0209 | .0214 | 974.2 | .0211 | .0219 | .0226 | 956.3 | 25 |
| 26 | .0166 | .0170 | .0173 | 1279 | .0174 | .0178 | .0182 | 1254 | .0183 | .0188 | .0193 | 1229 | .0189 | .0196 | .0204 | 1204 | 26 |
| 27 | .0149 | .0153 | .0156 | 1600 | .0157 | .0161 | .0164 | 1571 | .0165 | .0169 | .0173 | 1542 | .0171 | .0177 | .0184 | 1513 | 27 |
| 28 | .0133 | .0137 | .0140 | 2028 | .0141 | .0144 | .0147 | 1987 | .0148 | .0152 | .0156 | 1946 | .0154 | .0159 | .0165 | 1905 | 28 |
| 29 | .0119 | .0123 | .0126 | 2513 | .0127 | .0130 | .0133 | 2463 | .0134 | .0138 | .0142 | 2413 | .0140 | .0145 | .0151 | 2363 | 29 |
| 30 | .0106 | .0109 | .0112 | 3208 | .0113 | .0116 | .0119 | 3136 | .0120 | .0124 | .0128 | 3064 | .0126 | .0131 | .0136 | 2992 | 30 |
| 31 | .0094 | .0097 | .0100 | 4052 | .0101 | .0105 | .0108 | 3948 | .0108 | .0110 | .0114 | 3844 | .0114 | .0118 | .0121 | 3740 | 31 |
| 32 | .0085 | .0088 | .0091 | 4995 | .0091 | .0095 | .0098 | 4873 | .0097 | .0101 | .0103 | 4751 | .0103 | .0107 | .0110 | 4629 | 32 |
| 33 | .0075 | .0078 | .0081 | 6337 | .0081 | .0085 | .0088 | 6161 | .0086 | .0090 | .0092 | 5985 | .0092 | .0096 | .0099 | 5809 | 33 |
| 34 | .0067 | .0070 | .0072 | 8055 | .0072 | .0075 | .0078 | 7837 | .0077 | .0080 | .0082 | 7619 | .0082 | .0085 | .0088 | 7401 | 34 |
| 35 | .0059 | .0062 | .0064 | 10250 | .0064 | .0067 | .0070 | 9891 | .0068 | .0071 | .0074 | 9532 | .0073 | .0076 | .0079 | 9173 | 35 |
| 36 | .0053 | .0056 | .0058 | 12800 | .0057 | .0060 | .0063 | 12380 | .0061 | .0064 | .0067 | 11960 | .0065 | .0068 | .0071 | 11540 | 36 |
| 37 | .0047 | .0050 | .0052 | 15750 | .0052 | .0055 | .0057 | 15290 | .0056 | .0059 | .0060 | 14830 | .0060 | .0063 | .0065 | 14370 | 37 |
| 38 | .0042 | .0045 | .0047 | 20020 | .0046 | .0049 | .0051 | 19360 | .0049 | .0052 | .0054 | 18700 | .0053 | .0056 | .0058 | 18040 | 38 |
| 39 | .0036 | .0039 | .0041 | 26240 | .0040 | .0043 | .0045 | 25270 | .0043 | .0046 | .0048 | 24300 | .0046 | .0049 | .0051 | 23330 | 39 |
| 40 | .0032 | .0035 | .0037 | 33330 | .0036 | .0038 | .0040 | 31940 | .0039 | .0041 | .0043 | 30550 | .0042 | .0044 | .0046 | 29160 | 40 |
| 41 | .0029 | .0031 | .0033 | 40800 | .0032 | .0034 | .0036 | 39340 | .0034 | .0036 | .0039 | 37880 | .0037 | .0039 | .0041 | 36420 | 41 |
| 42 | .0026 | .0028 | .0030 | 50940 | .0028 | .0030 | .0032 | 49600 | .0030 | .0032 | .0035 | 48260 | .0032 | .0034 | .0036 | 46920 | 42 |
| 43 | .0023 | .0025 | .0026 | 66140 | .0025 | .0027 | .0029 | 63170 | .0027 | .0029 | .0032 | 60200 | .0029 | .0031 | .0033 | 57230 | 43 |
| 44 | .0020 | .0022 | .0024 | 80060 | .0023 | .0025 | .0027 | 76160 | .0025 | .0027 | .0029 | 72260 | .0027 | .0029 | .0031 | 68360 | 44 |
| 45 | .00179 | .00192 | .00205 | 103,500 | .00199 | .00215 | .00230 | 99110 | .00219 | .00237 | .00255 | 94720 | .00239 | .00260 | .00280 | 90330 | 45 |
| 46 | .00161 | .00173 | .00185 | 130,000 | .00181 | .00196 | .00210 | 123,800 | .00201 | .00218 | .00235 | 117,600 | .00221 | .00241 | .00260 | 111,400 | 46 |
| 47 | .00145 | .00158 | .00170 | 163,400 | .00165 | .00178 | .00190 | 154,600 | .00185 | .00198 | .00210 | 145,800 | .00205 | .00218 | .00230 | 137,000 | 47 |
| 48 | .00129 | .00140 | .00150 | 204,900 | .00139 | .00155 | .00170 | 196,900 | .00159 | .00175 | .00190 | 188,900 | .00169 | .00190 | .00210 | 180,900 | 48 |
| 49 | .00117 | .00124 | .00130 | 259,700 | .00127 | .00139 | .00150 | 247,500 | .00147 | .00159 | .00170 | 235,300 | .00157 | .00174 | .00190 | 223,100 | 49 |
| 50 | .00105 | .00113 | .00120 | 324,700 | .00115 | .00128 | .00140 | 307,700 | .00125 | .00143 | .00160 | 290,700 | .00135 | .00158 | .00180 | 273,700 | 50 |
| 51 | .00095 | .00103 | .00110 | 406,500 | .00105 | .00117 | .00129 | 383,100 | .00115 | .00133 | .00150 | 359,700 | .00125 | .00148 | .00170 | 336,300 | 51 |
| 52 | .00085 | .00093 | .00100 | 507,600 | .00095 | .00107 | .00105 | 476,200 | .00105 | .00123 | .00140 | 444,800 | .00115 | .00138 | .00160 | 413,400 | 52 |
| 53 | .00072 | .00079 | .00085 | 653,600 | .00080 | .00090 | .00103 | 621,100 | .00087 | .00104 | .00121 | 588,600 | .00097 | .00118 | .00139 | 556,100 | 53 |
| 54 | .00065 | .00070 | .00075 | 826,400 | .00073 | .00082 | .00095 | 775,200 | — | — | — | — | — | — | — | — | 54 |
| 55 | .00058 | .00064 | .00070 | 1,032,000 | .00066 | .00075 | .00087 | 961,500 | — | — | — | — | — | — | — | — | 55 |

*Diameters shown are per NEMA MW1000-1997. For Diameters per NEMA MW1000-2015 see page 5 or visit our website at www.mwswire.com

Red text above indicates sizes not covered by NEMA MW1000-1997. Values derived from MWS Wire Industries internal standards.

Half-Size Copper Magnet Wire

Dimensional values derived from NEMA MW1000-1997 Standard

| SIZE (AWG) | BARE COPPER | | | | | | | | | SINGLE BUILD DIAMETER (INCHES) | | | HEAVY BUILD DIAMETER (INCHES) | | |
|------------|-------------------|--------|--------|--|-------|-------|----------------|---------------------|---------------|--------------------------------|--------|--------|-------------------------------|--------|--------|
| | DIAMETER (INCHES) | | | RESISTANCE (OHMS PER 1000 FT. AT 20°C) | | | FEET PER POUND | POUNDS PER 1000 FT. | CIRCULAR MILS | MIN. | NOM. | MAX. | MIN. | NOM. | MAX. |
| | MIN. | NOM. | MAX. | MIN. | NOM. | MAX. | | | | | | | | | |
| 4½ | .1912 | .1931 | .1950 | .2727 | .2781 | .2837 | 8.86 | 112.9 | 37290 | — | — | — | .1949 | .1968 | .1986 |
| 5½ | .1703 | .1720 | .1737 | .3437 | .3506 | .3576 | 11.17 | 89.55 | 29580 | — | — | — | .1736 | .1754 | .1772 |
| 6½ | .1517 | .1532 | .1547 | .4334 | .4419 | .4507 | 14.08 | 71.04 | 23470 | — | — | — | .1549 | .1566 | .1582 |
| 7½ | .1350 | .1364 | .1378 | .5462 | .5574 | .5682 | 17.76 | 56.31 | 18600 | — | — | — | .1382 | .1398 | .1413 |
| 8½ | .1203 | .1215 | .1227 | .6889 | .7025 | .7178 | 22.38 | 44.68 | 14760 | — | — | — | .1234 | .1248 | .1261 |
| 9½ | .1071 | .1082 | .1093 | .8697 | .8859 | .9025 | 28.22 | 35.44 | 11710 | — | — | — | .1101 | .1114 | .1126 |
| 10½ | .0952 | .0962 | .0972 | 1.10 | 1.12 | 1.14 | 35.6 | 28.1 | 9270 | — | — | — | .0983 | .0994 | .1004 |
| 11½ | .0847 | .0856 | .0865 | 1.38 | 1.41 | 1.44 | 44.9 | 22.3 | 7360 | — | — | — | .0877 | .0887 | .0897 |
| 12½ | .0755 | .0763 | .0771 | 1.74 | 1.78 | 1.81 | 56.6 | 17.7 | 5840 | — | — | — | .0784 | .0793 | .0802 |
| 13½ | .0672 | .0679 | .0686 | 2.20 | 2.24 | 2.29 | 71.4 | 14.0 | 4620 | — | — | — | .0700 | .0708 | .0716 |
| 14½ | .0599 | .0605 | .0611 | 2.77 | 2.82 | 2.88 | 90.0 | 11.1 | 3670 | .0615 | .0623 | .0630 | .0631 | .0639 | .0646 |
| 15½ | .0534 | .0539 | .0544 | 3.49 | 3.56 | 3.64 | 113 | 8.83 | 2920 | .0549 | .0555 | .0561 | .0564 | .0570 | .0576 |
| 16½ | .0475 | .0480 | .0485 | 4.41 | 4.48 | 4.58 | 143 | 7.00 | 2310 | .0489 | .0496 | .0503 | .0504 | .0511 | .0517 |
| 17½ | .0423 | .0427 | .0431 | 5.56 | 5.66 | 5.77 | 180 | 5.55 | 1830 | .0437 | .0443 | .0448 | .0451 | .0457 | .0463 |
| 18½ | .0376 | .0380 | .0384 | 7.00 | 7.14 | 7.30 | 228 | 4.39 | 1450 | .0389 | .0395 | .0401 | .0402 | .0408 | .0414 |
| 19½ | .0336 | .0339 | .0342 | 8.81 | 8.97 | 9.19 | 286 | 3.50 | 1160 | .0348 | .0353 | .0358 | .0361 | .0366 | .0370 |
| 20½ | .0299 | .0302 | .0305 | 11.1 | 11.4 | 11.6 | 362 | 2.76 | 912 | .0311 | .0316 | .0321 | .0322 | .0328 | .0333 |
| 21½ | .0266 | .0269 | .0272 | 14.0 | 14.3 | 14.5 | 457 | 2.19 | 724 | .0277 | .0282 | .0287 | .0288 | .0293 | .0298 |
| 22½ | .0237 | .0239 | .0241 | 17.7 | 18.0 | 18.5 | 573 | 1.74 | 576 | .0248 | .0252 | .0255 | .0258 | .0262 | .0266 |
| 23½ | .0211 | .0213 | .0215 | 22.2 | 22.6 | 23.3 | 721 | 1.39 | 458 | .0221 | .0226 | .0230 | .0231 | .0236 | .0240 |
| 24½ | .0188 | .0190 | .0192 | 28.1 | 28.7 | 29.3 | 915 | 1.09 | 361 | .0198 | .0202 | .0206 | .0207 | .0212 | .0216 |
| 25½ | .0167 | .0169 | .0171 | 35.5 | 36.3 | 37.2 | 1160 | .865 | 286 | .0176 | .0180 | .0184 | .0185 | .0189 | .0193 |
| 26½ | .0148 | .0150 | .0152 | 44.3 | 45.5 | 46.7 | 1450 | .690 | 228 | .0158 | .0162 | .0165 | .0166 | .0170 | .0174 |
| 27½ | .0133 | .0134 | .0135 | 56.1 | 57.7 | 58.6 | 1840 | .543 | 180 | .0141 | .0145 | .0148 | .0149 | .0153 | .0156 |
| 28½ | .0118 | .0119 | .0120 | 70.8 | 73.2 | 74.5 | 2290 | .436 | 144 | .0126 | .0130 | .0133 | .0134 | .0137 | .0140 |
| 29½ | .0105 | .0106 | .0107 | 90.6 | 92.3 | 94.0 | 2940 | .340 | 112 | .0112 | .0116 | .0119 | .0120 | .0123 | .0126 |
| 30½ | .0094 | .0095 | .0096 | 112.5 | 114.9 | 117.4 | 3660 | .2732 | 90.25 | .0101 | .0104 | .0107 | .0108 | .0111 | .0114 |
| 31½ | .0083 | .0084 | .0085 | 143.5 | 147.0 | 150.5 | 4680 | .2136 | 70.56 | .0089 | .0092 | .0095 | .0096 | .0099 | .0103 |
| 32½ | .0074 | .0075 | .0076 | 179.6 | 184.4 | 189.4 | 5870 | .1703 | 56.25 | .0080 | .0083 | .0086 | .0086 | .0090 | .0093 |
| 33½ | .0066 | .0067 | .0068 | 224.3 | 231.0 | 238.1 | 7360 | .1359 | 44.89 | .0071 | .0074 | .0077 | .0077 | .0081 | .0084 |
| 34½ | .0058 | .0059 | .0060 | 288.1 | 297.9 | 308.3 | 9490 | .1054 | 34.81 | .0063 | .0065 | .0068 | .0068 | .0071 | .0074 |
| 35½ | .0052 | .0053 | .0054 | 355.7 | 369.2 | 383.5 | 11760 | .08503 | 28.09 | .0056 | .0058 | .0061 | .0061 | .0064 | .0067 |
| 36½ | .0046 | .0047 | .0048 | 450.1 | 469.5 | 490.1 | 14950 | .06687 | 22.09 | .0050 | .0053 | .0055 | .0054 | .0057 | .0060 |
| 37½ | .0041 | .0042 | .0043 | 560.9 | 587.9 | 617.0 | 18730 | .05340 | 17.64 | .0044 | .0047 | .0050 | .0049 | .0052 | .0054 |
| 38½ | .0036 | .0037 | .0038 | 718.2 | 757.7 | 800.2 | 24130 | .04144 | 13.69 | .0038 | .0041 | .0044 | .0043 | .0046 | .0048 |
| 39½ | .0032 | .0033 | .0034 | 897.1 | 952.3 | 1013 | 30340 | .03296 | 10.89 | .0034 | .0037 | .0039 | .0038 | .0041 | .0043 |
| 40½ | .0029 | .0030 | .0031 | 1079 | 1152 | 1233 | 36710 | .02724 | 9.00 | .0031 | .0034 | .0036 | .0035 | .0037 | .0039 |
| 41½ | .0025 | .0026 | .0027 | 1423 | 1534 | 1659 | 48880 | .02046 | 6.76 | .0027 | .0029 | .0031 | .0030 | .0032 | .0034 |
| 42½ | .0023 | .0024 | .0025 | 1659 | 1801 | 1960 | 57340 | .01744 | 5.76 | .0025 | .0026 | .0028 | .0027 | .0029 | .0031 |
| 43½ | .0020 | .0021 | .0022 | 2143 | 2352 | 2593 | 74900 | .01335 | 4.41 | .0021 | .0023 | .0025 | .0024 | .0026 | .0028 |
| 44½ | .0018 | .0019 | .0020 | 2593 | 2873 | 3201 | 91490 | .01093 | 3.61 | .0019 | .0021 | .0023 | .0022 | .0024 | .0026 |
| 45½ | .00160 | .00166 | .00173 | 3465 | 3764 | 4051 | 119,900 | .00834 | 2.7556 | .00170 | .00182 | .00194 | .00190 | .00205 | .00220 |
| 46½ | .00142 | .00148 | .00154 | 4373 | 4735 | 5143 | 150,800 | .00663 | 2.1904 | .00152 | .00163 | .00174 | .00172 | .00186 | .00200 |
| 47½ | .00127 | .00132 | .00137 | 5526 | 5952 | 6430 | 189,700 | .00527 | 1.7424 | .00137 | .00148 | .00159 | .00157 | .00169 | .00181 |
| 48½ | .00113 | .00117 | .00122 | 6968 | 7576 | 8122 | 241,500 | .00414 | 1.3689 | .00123 | .00133 | .00143 | .00133 | .00144 | .00155 |
| 49½ | .00101 | .00105 | .00109 | 8729 | 9407 | 10167 | 299,400 | .00334 | 1.1025 | .00111 | .00119 | .00127 | .00121 | .00132 | .00143 |
| 50½ | .00090 | .00093 | .00097 | 11022 | 11991 | 12804 | 382,000 | .002618 | .8649 | .00100 | .00108 | .00115 | .00110 | .00121 | .00132 |

Diameters shown are per NEMA MW1000-1997. For Diameters per [NEMA MW1000-2015](#) see page 6 or visit our website at www.mwswire.com