



Percon®19 Copper Alloy Conductor Wire

Introduction

Percon® 19 is a cadmium free copper alloy developed to replace cadmium copper C162.

Key Attributes

- Engineered to be hard drawn for high strength and high flex life, exceeding the performance of cadmium copper.
- Greater and more uniform flex life than cadmium copper.
- Excellent resistance to corrosive environments.
- Does not contain any cadmium or environmentally hazardous elements.

Percon 19 is available hard drawn, bare or plated with nickel, tin, silver or gold. To learn more please contact our [sales department](#).

Percon®19 Copper Alloy Conductor Wire

Physical Properties

| HARD | |
|-----------------------------------|--------------------------|
| Available Platings | Ag, Ni, Sn |
| Elongation | 1% |
| Tensile | 110 ksi |
| Electrical Conductivity | 73% IACS @ 68 °F |
| Electrical Resistivity | 14.2 Ω-cmil/ft @ 68 °F |
| Density | 0.321 lb/in ³ |
| Coefficient of Thermal Resistance | 0.00169 per °F |
| Melting Point (Solidus) | 1,850 °F |
| Melting Point (Liquidus) | 1,958 °F |

Percon®19 Copper Alloy Conductor Wire

19-Strand

| BARE PERCON 19 - HARD TEMPER | | | | | | | |
|------------------------------|----------------------|-----------------|---------|---------|----------------|-----------------|-------------|
| AWG | CONST | DIAMETER (inch) | | | RESIST | WEIGHT | BREAK STRG |
| | | Nom | Min | Max | (Ω/mft) Max | (lb/mft) Max | (lb) Min |
| 18 | 19/30 | 0.0472 | 0.0467 | 0.0477 | 7.98 | 5.77 | 160 |
| 20 | 19/32 | 0.0378 | 0.0372 | 0.0383 | 12.5 | 3.71 | 102 |
| 22 | 19/34 | 0.0298 | 0.0292 | 0.0303 | 20.4 | 2.33 | 63.0 |
| 24 | 19/36 | 0.0236 | 0.0231 | 0.0241 | 32.6 | 1.47 | 39.4 |
| 26 | 19/38 | 0.0189 | 0.0184 | 0.0194 | 51.4 | 0.951 | 24.9 |
| 28 | 19/40 | 0.0151 | 0.0142 | 0.0160 | 86.9 | 0.606 | 14.7 |
| 30 | 19/42 | 0.0118 | 0.0113 | 0.0123 | 136 | 0.383 | 9.45 |
| 32 | 19/44 ⁽¹⁾ | 0.0100 | 0.00950 | 0.0105 | 212 | 0.260 | 5.92 |
| 34 | 19/46 ⁽¹⁾ | 0.00790 | 0.00740 | 0.00840 | 337 | 0.164 | 3.55 |
| (1) True Concentric | | | | | | | |

7-Strand

| BARE PERCON 19 - HARD TEMPER | | | | | | | |
|------------------------------|-------|-----------------|---------|---------|----------------|-----------------|-------------|
| AWG | CONST | DIAMETER (inch) | | | RESIST | WEIGHT | BREAK STRG |
| | | Nom | Min | Max | (Ω/mft) Max | (lb/mft) Max | (lb) Min |
| 22 | 7/30 | 0.0300 | 0.0297 | 0.0303 | 21.1 | 2.22 | 59.2 |
| 24 | 7/32 | 0.0240 | 0.0237 | 0.0243 | 32.9 | 1.42 | 37.7 |
| 26 | 7/34 | 0.0189 | 0.0186 | 0.0192 | 53.5 | 0.886 | 23.2 |
| 28 | 7/36 | 0.0150 | 0.0147 | 0.0153 | 85.6 | 0.562 | 14.5 |
| 30 | 7/38 | 0.0120 | 0.0117 | 0.0123 | 136 | 0.363 | 9.19 |
| 32 | 7/40 | 0.00930 | 0.00900 | 0.00960 | 229 | 0.222 | 5.44 |
| 34 | 7/42 | 0.00750 | 0.00720 | 0.00780 | 357 | 0.147 | 3.48 |
| | | | | | | | |

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7-Strand

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|------------------------------|-------|-----------------|---------|---------|--------------------------|---------------------------|---------------------------|
| AWG | CONST | DIAMETER (inch) | | | RESIST (Ω/mft) Max | WEIGHT (lb/mft) Max | BREAK STRG (lb) Min |
| | | Nom | Min | Max | | | |
| 36 | 7/44 | 0.00600 | 0.00570 | 0.00630 | 570 | 0.0950 | 2.18 |
| 38 | 7/46 | 0.00470 | 0.00440 | 0.00492 | 952 | 0.0598 | 1.31 |
| 40 | 7/48 | 0.00370 | 0.00340 | 0.00390 | 1,582 | 0.0385 | 0.786 |
| 42 | 7/50 | 0.00290 | 0.00270 | 0.00312 | 2,596 | 0.0255 | 0.479 |

Single End

| BARE PERCON 19 - HARD TEMPER | | | | | | | |
|------------------------------|-------|-----------------|---------|---------|--------------------------|---------------------------|---------------------------|
| AWG | CONST | DIAMETER (inch) | | | RESIST (Ω/mft) Max | WEIGHT (lb/mft) Max | BREAK STRG (lb) Min |
| | | Nom | Min | Max | | | |
| 30 | SE | 0.0100 | 0.00990 | 0.0101 | 145 | 0.309 | 8.46 |
| 31 | SE | 0.00890 | 0.00880 | 0.00900 | 184 | 0.246 | 6.69 |
| 32 | SE | 0.00800 | 0.00790 | 0.00810 | 228 | 0.199 | 5.39 |
| 33 | SE | 0.00710 | 0.00690 | 0.00720 | 290 | 0.157 | 4.23 |
| 34 | SE | 0.00630 | 0.00620 | 0.00640 | 370 | 0.124 | 3.32 |
| 35 | SE | 0.00560 | 0.00550 | 0.00570 | 470 | 0.0983 | 2.61 |
| 36 | SE | 0.00500 | 0.00490 | 0.00510 | 592 | 0.0787 | 2.07 |
| 37 | SE | 0.00450 | 0.00435 | 0.00460 | 751 | 0.0640 | 1.63 |
| 38 | SE | 0.00400 | 0.00390 | 0.00410 | 935 | 0.0510 | 1.31 |
| 39 | SE | 0.00350 | 0.00340 | 0.00363 | 1,229 | 0.0399 | 0.999 |
| 40 | SE | 0.00310 | 0.00300 | 0.00320 | 1,580 | 0.0310 | 0.777 |
| 41 | SE | 0.00280 | 0.00270 | 0.00290 | 1,950 | 0.0255 | 0.629 |
| 42 | SE | 0.00250 | 0.00240 | 0.00260 | 2,470 | 0.0205 | 0.497 |

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Single End

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|------------------------------|-------|-----------------|----------|---------|----------------|-----------------|-------------|
| AWG | CONST | DIAMETER (inch) | | | RESIST | WEIGHT | BREAK STRG |
| | | Nom | Min | Max | (Ω/mft) Max | (lb/mft) Max | (lb) Min |
| 43 | SE | 0.00220 | 0.00210 | 0.00232 | 3,222 | 0.0163 | 0.381 |
| 44 | SE | 0.00200 | 0.00190 | 0.00210 | 3,940 | 0.0134 | 0.311 |
| 45 | SE | 0.00180 | 0.00166 | 0.00190 | 5,160 | 0.0105 | 0.238 |
| 46 | SE | 0.00160 | 0.00147 | 0.00167 | 6,575 | 0.00844 | 0.187 |
| 47 | SE | 0.00140 | 0.00130 | 0.00150 | 8,406 | 0.00680 | 0.146 |
| 48 | SE | 0.00120 | 0.00110 | 0.00130 | 10,932 | 0.00543 | 0.112 |
| 49 | SE | 0.00110 | 0.00100 | 0.00120 | 13,927 | 0.00443 | 0.0880 |
| 50 | SE | 0.00100 | 0.000890 | 0.00109 | 17,936 | 0.00360 | 0.0680 |