



Percon®28 Copper Alloy Conductor Wire

Introduction

Percon®28 is engineered to have 33% greater minimum break strength with the same electrical conductivity of ASTM B 624 conductors. This alloy allows wire and cable system designers performance improvements in strength and flex life and the ability to reduce finish cable gauge sizes, saving weight while sustaining the cable break strength of a larger gauge size.

Key Attributes

- RoHS compliant; does not contain cadmium or any environmentally hazardous elements.
- Exceptional flex life.
- Highly resistant to thermal softening from high operating or fluoropolymer insulating temperatures.
- Exhibits the nobility inherent in all high copper alloys and is therefore resistant to corrosive environments.

Percon 28 is available in bare, silver or nickel plated and in light weight constructions. Custom constructions are available. To learn more please contact our [sales department](#).

Percon®28 Copper Alloy Conductor Wire

Specifications

AS22759

AS29606

ASTM B624

MIL-DTL-25038

NEMA WC67

Physical Properties

SOFT

| | |
|-----------------------------------|--------------------------|
| Available Platings | Ag, Ni |
| Elongation | 6% |
| Tensile | 80 ksi |
| Electrical Conductivity | 85% IACS @ 68 °F |
| Electrical Resistivity | 12.2 Ω-cmil/ft @ 68 °F |
| Density | 0.323 lb/in ³ |
| Coefficient of Thermal Resistance | 0.0019 per °F |
| Melting Point (Solidus) | 1,965 °F |
| Melting Point (Liquidus) | 1,985 °F |

Percon®28 Copper Alloy Conductor Wire

19-Strand

| NICKEL PLATED PERCON 28 (50 MICRO-INCH NICKEL THICKNESS) | | | | | | | | |
|--|-------|--------------------|-----------------|--------|--------|--------------------|---------------------|---------------------|
| AWG | CONST | STANDARD PLATE (%) | DIAMETER (inch) | | | RESIST (Ω/mft) Max | WEIGHT (lb/mft) Max | BREAK STRG (lb) Min |
| | | | Nom | Min | Max | | | |
| 16 | 19/29 | 2 | 0.0538 | 0.0528 | 0.0548 | 5.16 | 7.76 | 147 |
| 18 | 19/30 | 2 | 0.0477 | 0.0467 | 0.0487 | 6.79 | 6.10 | 117 |
| 20 | 19/32 | 4 | 0.0378 | 0.0373 | 0.0383 | 11.4 | 3.74 | 74.5 |
| 22 | 19/34 | 4 | 0.0298 | 0.0293 | 0.0302 | 18.6 | 2.41 | 45.9 |
| 24 | 19/36 | 4 | 0.0243 | 0.0231 | 0.0254 | 30.1 | 1.48 | 28.7 |
| 26 | 19/38 | 7 | 0.0189 | 0.0184 | 0.0194 | 47.9 | 0.957 | 18.2 |
| 28 | 19/40 | 7 | 0.0146 | 0.0141 | 0.0151 | 81.1 | 0.583 | 10.8 |

| SILVER PLATED PERCON 28 (40 MICRO-INCH SILVER THICKNESS) | | | | | | | | |
|--|------------------------|--------------------|-----------------|---------|---------|--------------------|---------------------|---------------------|
| AWG | CONST | STANDARD PLATE (%) | DIAMETER (inch) | | | RESIST (Ω/mft) Max | WEIGHT (lb/mft) Max | BREAK STRG (lb) Min |
| | | | Nom | Min | Max | | | |
| 16 | 19/29 | 2 | 0.0538 | 0.0528 | 0.0548 | 5.06 | 7.79 | 147 |
| 18 | 19/30 | 2.5 | 0.0477 | 0.0467 | 0.0487 | 6.43 | 6.13 | 117 |
| 20 | 19/32 | 3 | 0.0378 | 0.0373 | 0.0383 | 10.7 | 3.75 | 74.5 |
| 22 | 19/34 | 4 | 0.0298 | 0.0293 | 0.0302 | 17.1 | 2.35 | 45.9 |
| 24 | 19/36 | 5 | 0.0236 | 0.0231 | 0.0241 | 27.1 | 1.50 | 28.7 |
| 26 | 19/38 | 6.1 | 0.0189 | 0.0184 | 0.0194 | 42.8 | 0.965 | 18.2 |
| 28 | 19/40 | 8 | 0.0147 | 0.0142 | 0.0151 | 72.3 | 0.589 | 10.8 |
| 30 | 19/42 | 10 | 0.0118 | 0.0113 | 0.0123 | 113 | 0.389 | 6.88 |
| 32 | 19/44 ⁽¹⁾ | 10 | 0.0100 | 0.00950 | 0.0105 | 182 | 0.268 | 4.31 |
| 34 | 19/46 ^(1,2) | 10 | 0.00741 | 0.00708 | 0.00774 | 290 | 0.156 | 2.69 |

(1) True Concentric

(2) These constructions will have 10% silver plate

Percon®28 Copper Alloy Conductor Wire

7-Strand

| NICKEL PLATED PERCON 28 (50 MICRO-INCH NICKEL THICKNESS) | | | | | | | | |
|--|-------|--------------------|-----------------|---------|---------|--------------------|---------------------|---------------------|
| AWG | CONST | STANDARD PLATE (%) | DIAMETER (inch) | | | RESIST (Ω/mft) Max | WEIGHT (lb/mft) Max | BREAK STRG (lb) Min |
| | | | Nom | Min | Max | | | |
| 22 | 7/30 | 2 | 0.0302 | 0.0297 | 0.0306 | 18.9 | 2.25 | 43.1 |
| 24 | 7/32 | 4 | 0.0240 | 0.0235 | 0.0245 | 30.0 | 1.43 | 27.1 |
| 26 | 7/34 | 4 | 0.0189 | 0.0186 | 0.0192 | 49.0 | 0.883 | 16.9 |
| 28 | 7/36 | 4 | 0.0150 | 0.0147 | 0.0153 | 79.0 | 0.568 | 10.6 |
| 30 | 7/38 | 7 | 0.0120 | 0.0117 | 0.0123 | 129 | 0.363 | 6.69 |
| 32 | 7/40 | 7 | 0.00930 | 0.00900 | 0.00960 | 220 | 0.221 | 3.96 |

| SILVER PLATED PERCON 28 (40 MICRO-INCH SILVER THICKNESS) | | | | | | | | |
|--|---------------------|--------------------|-----------------|---------|---------|--------------------|---------------------|---------------------|
| AWG | CONST | STANDARD PLATE (%) | DIAMETER (inch) | | | RESIST (Ω/mft) Max | WEIGHT (lb/mft) Max | BREAK STRG (lb) Min |
| | | | Nom | Min | Max | | | |
| 22 | 7/30 | 2 | 0.0302 | 0.0297 | 0.0306 | 18.4 | 2.26 | 43.1 |
| 24 | 7/32 | 2.5 | 0.0240 | 0.0235 | 0.0245 | 28.6 | 1.44 | 27.1 |
| 26 | 7/34 | 3 | 0.0189 | 0.0186 | 0.0192 | 45.9 | 0.888 | 16.9 |
| 28 | 7/36 | 4 | 0.0150 | 0.0147 | 0.0153 | 74.4 | 0.565 | 10.6 |
| 30 | 7/38 | 5 | 0.0120 | 0.0117 | 0.0123 | 116 | 0.364 | 6.69 |
| 32 | 7/40 | 6.1 | 0.00930 | 0.00900 | 0.00960 | 196 | 0.223 | 3.96 |
| 34 | 7/42 | 8 | 0.00750 | 0.00720 | 0.00780 | 306 | 0.148 | 2.53 |
| 36 | 7/44 | 10 | 0.00600 | 0.00570 | 0.00630 | 486 | 0.0960 | 1.58 |
| 38 | 7/46 ⁽¹⁾ | 10 | 0.00470 | 0.00450 | 0.00492 | 783 | 0.0590 | 0.990 |
| 40 | 7/48 ⁽¹⁾ | 10 | 0.00370 | 0.00354 | 0.00390 | 1,265 | 0.0370 | 0.612 |
| 42 | 7/50 ⁽¹⁾ | 10 | 0.00300 | 0.00282 | 0.00312 | 1,986 | 0.0237 | 0.388 |
| 44 | 7/52 ⁽¹⁾ | 10 | 0.00230 | 0.00219 | 0.00249 | 3,315 | 0.0151 | 0.232 |
| 46 | 7/54 ⁽¹⁾ | 10 | 0.00190 | 0.00170 | 0.00201 | 5,419 | 0.00980 | 0.142 |

(1) These constructions will have 10% silver plate

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| SILVER PLATED PERCON 28 (40 MICRO-INCH SILVER THICKNESS) | | | | | | | | |
|--|-------|-----------------------|-----------------|-----|-----|----------------------------|--------------------|--------------------|
| AWG | CONST | STANDARD PLATE (%) | DIAMETER (inch) | | | RESIST (Ω /mft) | WEIGHT (lb/mft) | BREAK STRG (lb) |
| | | | Nom | Min | Max | Max | Max | Min |