



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, nickel, silver or gold plated and in light weight constructions.

Custom constructions are available, please contact the sales department.

Fisk Alloy Wire, Inc.
P.O. Box 26
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Hawthorne, NJ 07507 U.S.A.

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Physical Properties and Specifications

PHYSICAL PROPERTIES		
PROPERTY	ENGLISH	METRIC
Tensile	80 ksi	552 MPa
Elongation	6%	6%
Electrical Conductivity	85% IACS @ 68°F	0.493 MΩ/cm @ 20°C
Electrical Resistivity	12.2 Ω-cmil/ft @ 68°F	2.028 μΩ-cm @ 20°C
Melting Point	1972°F	1078°C
Density	0.323 lbs/in ³	8.94 g/cm ³
Thermal Coefficient of Resistance	0.00190/°F	0.00342/°C

SPECIFICATIONS
AS29606
AS22759
ASTM B264
SAE 29606
SAE 22759
SAE 25308
NEMA WC67

Alloy Characteristics

ALLOY NAME	TEMPER	TENSILE STRENGTH	CONDUCTIVITY	ELONGATION	FLEX LIFE	MECHANICAL PROCESSING	AVAILABLE PLATINGS	SOFTENING RESISTANCE
COPPER	Soft	32,000	100%	15%	P	E	S, N, T	-
COPPER	Hard	60,000	96%	1%	P	E	S, N, T	P
PERCON 24	Soft	60,000	90%	8%	E	E	S, N	E
C18135	Soft	60,000	90%	8%	E	E	S, N	E
PERCON 11	Hard	80,000	90%	1/5	G	VG	S, N, T	VG
PERCON 17	Soft	58,000	85%	6%	G	E	S, N	VG
PERCON 17	Hard	95,000	80%	1%	VG	E	S, N, T	G
PERCON 19	Hard	110,000	73%	1%	E	E	S, N, T	G
CALCIUM COPPER	Hard	100,000	80%	1%	VG	VG	S, N, T	G
CCS (40%)	Hard	110,000	39%	1%	E	G	S, N, T	G

E = Excellent, VG = Very Good, G = Good, P = Poor, S = Silver Plate, N = Nickel Plate, T = Tin Plate

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7-Strand Constructions

SILVER PLATED PERCON 28 (40 MICRO-INCH SILVER THICKNESS)												
AWG	CONST	PLATE %	DIAMETER				RESISTANCE		WEIGHT		BREAK STRENGTH	
			inch		mm		max		max		min	
			min	max	min	max	Ω/mft	Ω/km	lb/mft	kg/km	lb	N
22	7/30	2	0.0297	0.0303	0.754	0.770	18.0	59.1	2.21	3.29	43.1	192
24	7/32	2.5	0.0237	0.0243	0.602	0.617	28.3	92.8	1.42	2.12	27.4	122
26	7/34	3	0.0186	0.0192	0.472	0.488	45.9	151	0.889	1.32	16.9	75.2
28	7/36	4	0.0147	0.0153	0.373	0.392	74.4	244	0.574	0.855	10.6	47.0
30	7/38	5	0.0117	0.0123	0.297	0.315	117.4	385	0.373	0.555	6.69	29.8
32	7/40	6.1	0.0090	0.0096	0.229	0.244	196	644	0.223	0.332	3.96	17.6
34	7/42	8	0.0072	0.0078	0.183	0.198	307	1006	0.148	0.220	2.53	11.3
36	7/44	10	0.0057	0.0063	0.145	0.160	489	1,605	0.0968	0.144	1.59	7.06
38	7/46	10	0.0045	0.0050	0.114	0.125	817	2,681	0.0615	0.0915	0.950	4.23
40	7/48	10	0.0035	0.0040	0.090	0.099	1,359	4,457	0.0398	0.0592	0.572	2.54
42	7/50	10	0.0028	0.0033	0.072	0.079	2,229	7,313	0.0263	0.0392	0.348	1.55
44	7/52	10	0.0022	0.0025	0.056	0.062	3,406	11,174	0.0156	0.0233	0.228	1.01
46	7/54	10	0.0018	0.0020	0.045	0.050	5,435	17,830	0.0099	0.0148	0.143	0.64

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NICKEL PLATED PERCON 28 (50 MICRO-INCH NICKEL THICKNESS)											
AWG	CONST	DIAMETER				RESISTANCE		WEIGHT		BREAK STRENGTH	
		inch		mm		max		max		min	
		min	max	min	max	Ω/mft	Ω/km	lb/mft	kg/km	lb	N
22	7/30	0.0297	0.0303	0.754	0.770	18.4	60.4	2.20	3.27	43.1	192
24	7/32	0.0237	0.0243	0.602	0.617	29.5	96.8	1.42	2.11	27.4	122
26	7/34	0.0186	0.0192	0.472	0.488	48.9	160	0.884	1.32	16.9	75.2
28	7/36	0.0147	0.0153	0.373	0.389	78.2	257	0.561	0.835	10.6	47.0
30	7/38	0.0117	0.0123	0.297	0.312	127	417	0.363	0.540	6.69	29.8
32	7/40	0.0090	0.0096	0.229	0.244	215	705	0.221	0.329	3.96	17.6

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19-Strand Unilay Constructions

SILVER PLATED PERCON 28 (40 MICRO-INCH SILVER THICKNESS)												
AWG	CONST	PLATE %	DIAMETER				RESISTANCE		WEIGHT		BREAK STRENGTH	
			inch		mm		max		max		min	
			min	max	min	max	Ω/mft	Ω/km	lb/mft	kg/km	lb	N
18	19/30	2	0.0467	0.0486	1.186	1.234	6.43	21.1	6.13	9.12	119	531
20	19/32	2.5	0.0373	0.0392	0.947	0.995	10.7	35.1	3.96	5.90	76.4	340
22	19/34	3	0.0293	0.0311	0.743	0.791	17.5	57.4	2.49	3.71	47.4	211
24	19/36	4	0.0231	0.0244	0.587	0.621	28.4	93.2	1.56	2.325	29.1	130
26	19/38	5	0.0184	0.0198	0.466	0.502	44.8	147	1.01	1.510	18.5	82.4
28	19/40	6.1	0.0142	0.0151	0.359	0.383	72.4	238	0.607	0.904	10.7	47.8
30	19/42	8	0.0113	0.0123	0.288	0.312	113	371	0.402	0.599	6.88	30.6
32	19/44 ⁽¹⁾	10	0.0095	0.0105	0.241	0.267	181	592	0.263	0.392	4.31	19.2
34	19/46 ⁽¹⁾	10	0.0075	0.0082	0.191	0.208	302	990	0.167	0.249	2.58	11.5
(1) True Concentric												

NICKEL PLATED PERCON 28 (50 MICRO-INCH NICKEL THICKNESS)												
AWG	CONST	DIAMETER				RESISTANCE		WEIGHT		BREAK STRENGTH		
		inch		mm		max		max		min		
		min	max	min	max	Ω/mft	Ω/km	lb/mft	kg/km	lb	N	
18	19/30	0.0467	0.0476	1.186	1.210	6.79	22.3	5.99	8.91	117	520	
20	19/32	0.0373	0.0382	0.947	0.971	10.9	35.7	3.85	5.73	75.0	331	
22	19/34	0.0293	0.0302	0.743	0.767	18.0	59.2	2.40	3.58	45.9	204	
24	19/36	0.0231	0.0241	0.587	0.612	28.9	94.7	1.53	2.28	28.7	128	
26	19/38	0.0184	0.0193	0.467	0.490	47.1	155	0.987	1.469	18.2	81.0	
28	19/40	0.0142	0.0151	0.361	0.384	79.5	261	0.601	0.894	10.7	47.6	

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