Percon®24 Copper Alloy Conductor Wire

Introduction

Percon® 24 was developed specifically to meet the requirement of AS22759, AS29606, NEMA WC 67, ASTM B 624, and MIL-DTL-25038. It replaces cadmium containing PD 135 in these applications. A truly high performance conductor comprising a minimum strength of 60 ksi (414 MPa), elongation of 6%, electrical conductivity of 90% IACS minimum, excellent flex life and exceptional softening resistance to elevated operating or high fluoropolymer insulating temperatures.

Key Attributes

- Excellent resistance to corrosive environments.
- Does not contain any cadmium or environmentally hazardous elements.

Percon 24 is available in bare, or plated with nickel, silver or gold and in light weight constructions. To learn more please contact our sales department.

Fisk Alloy Wire Inc.
P.O. Box 26
10 Thomas Road N.
Hawthorne, NJ 07506 U.S.A.

Phone: (973) 825-8500
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Specifications
ASTM B624
AS22759
AS29606
MIL-DTL-25038
NEMA WC67
SAE 29606
W-29606

Physical Properties

SOFT	
Available Platings	Ag, Ni
Elongation	6%
Tensile	60 ksi
Electrical Conductivity	90% IACS @ 68 °F
Electrical Resistivity	11.5 Ω-cmil/ft @ 68 ºF
Density	0.323 lb/in³
Coefficient of Thermal Resistance	0.0019 per °F
Melting Point (Solidus)	1,965 °F
Melting Point (Liquidus)	1,985 °F

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19-Strand

NICKEL PLATED PERCON 24 - SOFT (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	0.0525	0.0520	0.0530	5.44	7.20	115
18	19/30	2	0.0474	0.0467	0.0481	6.79	6.11	90.3
20	19/32	4	0.0378	0.0370	0.0385	11.4	3.94	58.1
22	19/34	4	0.0300	0.0293	0.0307	18.6	2.49	35.8
24	19/36	4	0.0236	0.0231	0.0241	30.1	1.53	22.4
26	19/38	7	0.0189	0.0184	0.0194	49.4	0.986	14.2
28	19/40	7	0.0146	0.0141	0.0151	85.1	0.581	8.05
30	19/42	8	0.0118	0.0113	0.0123	141	0.383	5.15

SILVER PLATED PERCON 24 - SOFT (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	0.0533	0.0528	0.0538	4.90	7.63	115
18	19/30	2	0.0472	0.0467	0.0477	6.27	6.00	90.3
20	19/32	2.5	0.0378	0.0373	0.0382	9.85	3.86	58.1
22	19/34	3	0.0296	0.0290	0.0302	16.5	2.25	35.8
24	19/36	4	0.0236	0.0231	0.0241	25.6	1.53	22.4
26	19/38	5	0.0189	0.0184	0.0194	40.4	0.994	14.2
28	19/40	6.1	0.0147	0.0142	0.0151	68.2	0.607	8.10
30	19/42	8	0.0118	0.0113	0.0123	106	0.400	5.16
32	19/44[(1)]	10	0.0100	0.00950	0.0105	171	0.264	3.23
34	19/46[(1,2)]	10	0.00790	0.00750	0.00820	274	0.161	2.01

(1) True Concentric

(2) These single end sizes will not have 40 micro-inches of silver

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7-Strand

NICKEL PLATED PERCON 24 - SOFT (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	18.3	2.28	32.3
24	7/32	4	0.0240	0.0235	0.0245	29.6	1.45	20.3
26	7/34	4	0.0189	0.0186	0.0192	48.7	0.891	12.6
28	7/36	4	0.0150	0.0147	0.0153	79.0	0.568	8.20
30	7/38	7	0.0120	0.0117	0.0123	130	0.366	5.20
32	7/40	7	0.00930	0.00900	0.00960	231	0.223	2.97

SILVER PLATED PERCON 24 - SOFT (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	0.0303	17.0	2.20	32.3
24	7/32	2.5	0.0240	0.0237	0.0243	26.6	1.42	20.6
26	7/34	3	0.0189	0.0186	0.0192	43.3	0.887	12.7
28	7/36	4	0.0150	0.0147	0.0153	69.3	0.560	8.20
30	7/38	5	0.0120	0.0117	0.0123	109	0.364	5.20
32	7/40	6.1	0.00930	0.00900	0.00960	185	0.227	2.97
34	7/42	8	0.00750	0.00720	0.00780	289	0.148	1.90
36	7/44	10	0.00600	0.00570	0.00630	459	0.0960	1.19
38	7/46[(1)]	10	0.00470	0.00450	0.00492	739	0.0590	0.742
40	7/48[(1)]	10	0.00370	0.00354	0.00390	1,194	0.0370	0.459
42	7/50[(1)]	10	0.00300	0.00282	0.00312	1,876	0.0237	0.300
44	7/52[(1)]	10	0.00230	0.00219	0.00249	3,120	0.0151	0.176

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SILVER PLATED PERCON 24 - SOFT (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			
46	7/54[(1)]	10	0.00190	0.00170	0.00200	5,117	0.00980	0.107
(1) These constructions will have 10% silver plate								

Single End

NICKEL PLATED PERCON 24 - SOFT (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			
30	SE	2	0.0101	0.00990	0.0102	126	0.317	4.62
31	SE	4	0.00895	0.00880	0.00910	162	0.253	3.65
32	SE	4	0.00800	0.00785	0.00815	206	0.203	2.91
33	SE	4	0.00710	0.00695	0.00725	266	0.161	2.28
34	SE	4	0.00630	0.00620	0.00640	338	0.125	1.82
35	SE	4	0.00560	0.00550	0.00570	434	0.0990	1.43
36	SE	4	0.00500	0.00490	0.00510	554	0.0792	1.14
37	SE	7	0.00445	0.00435	0.00455	717	0.0631	0.892
38	SE	7	0.00400	0.00390	0.00410	910	0.0512	0.717
39	SE	7	0.00353	0.00343	0.00363	1,200	0.0402	0.555
40	SE	7	0.00310	0.00300	0.00320	1,610	0.0312	0.425

SILVER PLATED PERCON 24 - SOFT (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			
30	SE	2	0.0100	0.00990	0.0101	118	0.312	4.62

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SILVER PLATED PERCON 24 - SOFT (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
31	SE	2.5	0.00890	0.00880	0.00900	149	0.248	3.65
32	SE	2.5	0.00800	0.00790	0.00810	185	0.201	2.90
33	SE	3	0.00710	0.00700	0.00720	236	0.159	2.31
34	SE	3	0.00630	0.00620	0.00640	300	0.126	1.81
35	SE	4	0.00560	0.00550	0.00570	381	0.0996	1.43
36	SE	4	0.00500	0.00490	0.00510	480	0.0800	1.13
37	SE	5	0.00450	0.00435	0.00455	609	0.0636	0.892
38	SE	5	0.00400	0.00390	0.00410	758	0.0517	0.717
39	SE	6.1	0.00350	0.00343	0.00363	980	0.0406	0.555
40	SE	6.1	0.00310	0.00300	0.00320	1,290	0.0316	0.425
41	SE	8	0.00280	0.00270	0.00290	1,590	0.0260	0.344
42	SE	8	0.00250	0.00240	0.00260	2,010	0.0209	0.272
43	SE	10	0.00220	0.00212	0.00232	2,570	0.0167	0.212
44	SE	10	0.00200	0.00190	0.00210	3,200	0.0137	0.171
45(1)	SE	12	0.00176	0.00166	0.00186	5,380	0.0108	0.228
46(1)	SE	12	0.00157	0.00150	0.00164	6,590	0.00837	0.186
47(1)	SE	15	0.00140	0.00132	0.00147	8,420	0.00672	0.146
48(1)	SE	15	0.00124	0.00118	0.00130	10,700	0.00529	0.115
49(1)	SE(2)	15	0.00111	0.00105	0.00117	13,500	0.00429	0.0910
50(1)	SE(2)	15	0.000990	0.000940	0.00104	16,800	0.00339	0.0729

(1) These single end sizes will be hard temper

(2) These single end sizes will not have 40 micro-inches of silver

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