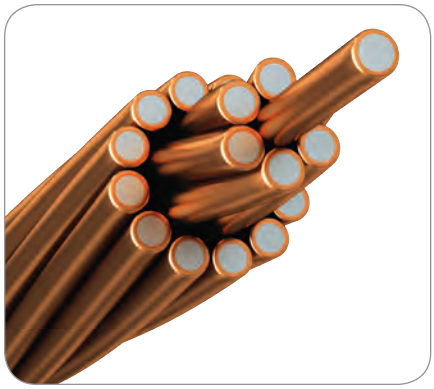
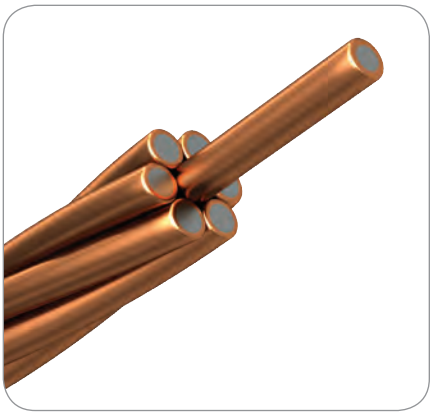
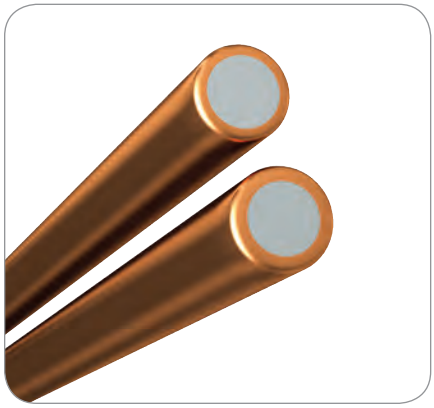
RUS Approved



19-strand Copperclad Steel Wire



7-strand Copperclad Steel Wire



Single strand Copperclad Steel Wire in large and small diameters

Copperclad Steel Wire

AFL's Copperclad Steel Wire is the ideal solution for grounding wire for power type applications. Composed of a steel core with coppercladding, the steel wire gives the wire its strength and the consistent layer of copper provides electrical conductivity and resistance to corrosion.

To manufacture Copperclad Steel Wire, carbon steel (low, high strength and extra high strength) is bonded with a uniform layer of oxygen-free coppercladding to achieve 30% and 40% IACS (International Annealed Copper Standard) conductivities. The material is available in a single wire, 3, 7 and 19 cable strands with some sizes jacketed to give the wire a different appearance to copper.

Features

- Demonstrates the same corrosion-resistant properties as copper while maintaining the high strength of steel
- Reduces damage caused during installation or fatigue from vibration or bending
- Special heat treat process results in a very malleable wire called Dead Soft Annealed (DSA)
- Copper permanently bonded to the steel core prevents corrosive of the steel core.
- Very little scrap value, discouraging theft and leaving the grounding system intact
- Compliant with IEEE 80, ASTM B258, ASTM B910/B910M, ASTM B339, ASTM B227

Dead Soft Annealed Copperclad Steel Wire

Copperclad Steel Wire is a strong, non-rusting, efficient grounding conductor. It is composed of Coppercladding that is permanently bonded to the central steel core of each wire. Copperclad provides the same conductivity and corrosion resistance as copper while maintaining the high strength of steel. Dead Soft Annealed (DSA) Copperclad Steel Wire is very flexible for easy preparation and installation.

When compared to solid copper, Copperclad Steel Wire has faster impedance to ground for better protection of lines and equipment plus a higher resistance to thermal expansion failures. It also reduces the fatigue damage caused by more than 10 times that of annealed solid copper.

Copperclad Steel Wire is an excellent solution for areas with high rates of copper theft as the amount of copper used in the bonding process is minimal—6% to 10% depending on the conductivity. When Copperclad Steel Wire is used in place of copper, the grounding conductor is far less likely to be stolen. This feature is important not only from an economic standpoint, but also from the standpoint of safety and reliability. Often, the fact that a copper downlead has been removed is not evident until a surge current causes a failure in the system.

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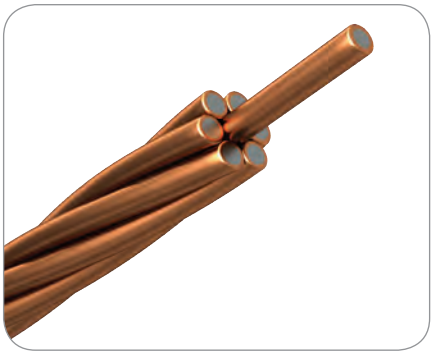
Copperclad Steel Wire—High Strength/Extra High Strength



7-strand Copperclad Steel Wire

High Strength (HS) and Extra High Strength (EHS) copperclad steel wire provides the same conductivity and corrosion resistance as copper while maintaining the high strength of steel. Frequently used for overhead ground wire and messenger wire, HS and EHS copperclad Steel Wire can resist mechanical damage caused during installation plus electrical damage during a fault condition. The core carbon steel is bonded with a uniform layer of oxygen-free coppercladding to ensure that the copper will not flake, crack or peel when the wire is twisted, installed or buried.

Specifications and Ordering Information

30% CONDUCTIVITY—HIGH STRENGTH												
CONDUCTOR SIZE	STRANDS	AFL NO.	OVERALL DIAMETER		AREA		MIN. BREAKING LOAD		WEIGHT/LENGTH		NOM. DC RESISTANCE	
AWG			IN.	MM	CMIL	(MM^2)	LBF	KGF	LBS/KFT	KG/KM	Ω/KFT	Ω/KM
19#4	19	CCS19043H	1.022	25.95	793,000	401.8	65264	29603	2346.4	3491.8	0.0442	0.1451
19#5	19	CCS19053H	0.910	23.10	628,700	318.6	53893	24445	1860.1	2768.1	0.0558	0.1830
19#6	19	CCS19063H	0.810	20.57	498,600	252.6	44456	20165	1475.3	2195.5	0.0703	0.2307
19#7	19	CCS19073H	0.722	18.33	395,600	200.5	36629	16615	1170.6	1742.0	0.0886	0.2908
19#8	19	CCS19083H	0.643	16.32	313,700	159.0	30123	13663	928.3	1381.4	0.1118	0.3667
19#9	19	CCS19093H	0.572	14.53	248,700	126.0	24727	11216	735.7	1094.9	0.1410	0.4626
4/0	19	CCS4/03H	0.528	13.40	211,500	107.2	21030	9539	625.7	931.1	0.1658	0.5440
19#10	19	CCS19103H	0.510	12.94	197,300	100.0	20431	9267	583.7	868.7	0.1777	0.5831
7#4	7	CCS07043H	0.613	15.57	292,200	148.1	24045	10906	861.0	1281.4	0.1195	0.3922
7#5	7	CCS07053H	0.546	13.86	231,600	117.4	19855	9006	682.6	1015.8	0.1508	0.4947
7#6	7	CCS07063H	0.486	12.34	183,700	93.1	16379	7429	541.4	805.7	0.1901	0.6237
7#7	7	CCS07073H	0.433	11.00	145,800	73.9	13495	6121	429.6	639.3	0.2396	0.7861
2/0	7	CCS2/03H	0.414	10.51	133,100	67.4	12324	5590	392.3	583.8	0.2624	0.8608
7#8	7	CCS07083H	0.386	9.79	115,600	58.6	11098	5034	340.6	506.9	0.3021	0.9913
1/0	7	CCS1/03H	0.368	9.35	105,600	53.5	10135	4597	311.1	463.0	0.3308	1.0855
7#9	7	CCS07093H	0.343	8.72	91,610	46.4	9110	4132	270.0	401.8	0.3812	1.2507
7#10	7	CCS07103H	0.306	7.76	72,690	36.8	7527	3414	214.2	318.8	0.4805	1.5764
3#4	3	CCS03043H	0.440	11.18	125,200	63.4	10877	4934	368.3	548.1	0.2784	0.9132
3#5	3	CCS03053H	0.392	9.96	99,260	50.3	8982	4074	292.0	434.5	0.3511	1.1520
3#6	3	CCS03063H	0.349	8.86	78,730	39.9	7409	3361	231.6	344.6	0.4427	1.4524
3#7	3	CCS03073H	0.311	7.90	62,470	31.7	6105	2769	183.7	273.4	0.5580	1.8306
3#8	3	CCS03083H	0.277	7.04	49,540	25.1	5020	2277	145.7	216.8	0.7036	2.3084
3#9	3	CCS03093H	0.247	6.27	39,260	19.9	4121	1869	115.5	171.9	0.8877	2.9126
3#10	3	CCS03103H	0.220	5.59	31,150	15.8	3405	1545	91.6	136.3	1.1189	3.6709
#2 AWG	7	CCS02STR3H	0.258	6.55	51,770	26.2	5416	2457	152.6	227.1	0.6746	2.2132
#4 AWG	7	CCS04STR3H	0.204	5.18	32,370	16.4	2691	1221	95.4	142.0	1.0790	3.5399
#2 AWG	1	CCS01023H	0.258	6.54	66,370	33.6	6069	2753	193.7	288.2	0.5210	1.7093
#4 AWG	1	CCS01043H	0.204	5.19	41,740	21.2	3817	1731	121.8	181.2	0.8284	2.7180
#6 AWG	1	CCS01063H	0.162	4.12	26,250	13.3	2600	1180	76.6	114.0	1.3172	4.3216
#8 AWG	1	CCS01083H	0.129	3.26	16,510	8.4	1762	799	48.2	71.7	2.0941	6.8704
#9 AWG	1	CCS01093H	0.114	2.91	13,090	6.6	1446	656	38.2	56.8	2.6421	8.6683
#10 AWG	1	CCS01103H	0.102	2.59	10,380	5.3	1195	542	30.3	45.1	3.3301	10.9254

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Copperclad Steel Wire—Extra High Strength

Specifications and Ordering Information

30% CONDUCTIVITY—EXTRA HIGH STRENGTH												
CONDUCTOR SIZE	STRANDS	AFL NO.	OVERALL DIAMETER		AREA		MIN. BREAKING LOAD		WEIGHT/LENGTH		NOM. DC RESISTANCE	
AWG			IN.	MM	CMIL	(MM^2)	LBF	KGF	LBS/KFT	KG/KM	Ω/KFT	Ω/KM
19#4	19	CCS19043E	1.022	25.95	793,000	401.8	77501	35154	2346.4	3491.8	0.0442	0.1451
19#5	19	CCS19053E	0.910	23.10	628,700	318.6	64887	29432	1860.1	2768.1	0.0558	0.1830
19#6	19	CCS19063E	0.810	20.57	498,600	252.6	53860	24431	1475.3	2195.5	0.0703	0.2307
19#7	19	CCS19073E	0.722	18.33	395,600	200.5	44497	20184	1170.6	1742.0	0.0886	0.2908
19#8	19	CCS19083E	0.643	16.32	313,700	159.0	36577	16591	928.3	1381.4	0.1118	0.3667
19#9	19	CCS19093E	0.572	14.53	248,700	126.0	29690	13467	735.7	1094.9	0.1410	0.4626
4/0	19	CCS4/03E	0.528	13.40	211,500	107.2	25250	11453	625.7	931.1	0.1658	0.5440
19#10	19	CCS19103E	0.510	12.94	197,300	100.0	24219	10986	583.7	868.7	0.1777	0.5831
7#4	7	CCS07043E	0.613	15.57	292,200	148.1	28553	12951	861.0	1281.4	0.1195	0.3922
7#5	7	CCS07053E	0.546	13.86	231,600	117.4	23906	10843	682.6	1015.8	0.1508	0.4947
7#6	7	CCS07063E	0.486	12.34	183,700	93.1	19843	9001	541.4	805.7	0.1901	0.6237
7#7	7	CCS07073E	0.433	11.00	145,800	73.9	16394	7436	429.6	639.3	0.2396	0.7861
2/0	7	CCS2/03E	0.414	10.51	133,100	67.4	14972	6791	392.3	583.8	0.2624	0.8608
7#8	7	CCS07083E	0.386	9.79	115,600	58.6	13476	6113	340.6	506.9	0.3021	0.9913
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3#5	3	CCS03053E	0.392	9.96	99,260	50.3	10815	4905	292.0	434.5	0.3511	1.1520
3#6	3	CCS03063E	0.349	8.86	78,730	39.9	8977	4072	231.6	344.6	0.4427	1.4524
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3#8	3	CCS03083E	0.277	7.04	49,540	25.1	6096	2765	145.7	216.8	0.7036	2.3084
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3#10	3	CCS03103E	0.220	5.59	31,150	15.8	4037	1831	91.6	136.3	1.1189	3.6709
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#8 AWG	1	CCS01083E	0.129	3.26	16,510	8.4	2139	970	48.2	71.7	2.0941	6.8704
#9 AWG	1	CCS01093E	0.114	2.91	13,090	6.6	1736	788	38.2	56.8	2.6421	8.6683
#10 AWG	1	CCS01103E	0.102	2.59	10,380	5.3	1416	642	30.3	45.1	3.3301	10.9254