



OVERHEAD CONDUCTORS



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ACSS

Aluminum Conductor, Steel Supported. Bare.

Applications

ACSS bare conductors are primarily used in high-temperature overhead transmission lines, especially in regions with high ambient temperatures and long spans requiring superior mechanical strength. They excel in high-capacity power corridors and both urban and suburban distribution networks. These conductors are particularly valuable in areas subject to ice loading and high wind conditions, as well as in retrofit projects where increased capacity is needed without modifying existing towers.

Specifications

US Electric Wire's ACSS conductor meets or exceeds the following ASTM specifications:

B500	Metallic Coated Stranded Steel Core for Use in Overhead Electrical Conductors.
B609	Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes.
B802	Zinc-5% Aluminum-Mischmetal Alloy-Coated Steel Core Wire for Aluminum Conductors, Steel Reinforced (ACSR).
B803	High-Strength Zinc-5% Aluminum Mischmetal Alloy-Coated Steel Core Wire for Use in Overhead Electrical Conductors.
B856	Concentric-Lay-Stranded Aluminum Conductors, Coated Steel Supported (ACSS).
B958	Extra-High-Strength and Ultra-High-Strength Class A Zinc-5% Aluminum-Mischmetal Alloy-Coated Steel Core Wire for Use in Overhead Electrical Conductors.

Construction

ACSS conductors consist of a high-strength galvanized steel core (single or stranded) wrapped with fully annealed 1350-O aluminum wires in concentric layers. This specific design enables operation at temperatures up to 250°C with minimal sag, as the steel core bears mechanical loads while the annealed aluminum maintains conductivity at high temperatures. This construction results in reduced sag compared to conventional ACSR conductors when operating at elevated temperatures, helping maintain necessary clearance requirements under heavy load conditions. Additionally, the construction provides self-damping characteristics that help reduce vibration during service.

ACSS

Code Word	Size (kcmil)	Strand -ing (Al/St)	Diameter (in)				Weight (lbs/1000 ft)			Rated Strength (lbs)			Resistance (OHMS/1000ft)		Ampacity @ 200°C (AMPS)
			Individual Wires		Steel Core	Comp Cable	Al	Steel	Total	Standard Strength	High* Strength	HS285** Strength	DC @ 20°C	AC @ 75°C	
			Al	Steel											
Partridge/ACSS	266.8	26/7	0.1013	0.0788	0.2363	0.642	251.3	115.5	366.8	8880	9730	11400	.0619	.0761	812
Junco/ACSS	266.8	30/7	0.0943	0.0943	0.2829	0.660	251.9	165.5	417.4	11700	13000	15200	.0615	.0756	822
Ostrich/ACSS	300.0	26/7	0.1074	0.0835	0.2506	0.680	282.6	129.9	412.5	10000	10900	12800	.0551	.0677	877
Linnet/ACSS	336.4	26/7	0.1137	0.0885	0.2654	0.720	316.8	145.7	462.5	11200	12300	14400	.0491	.0604	945
Oriole/ACSS	336.4	30/7	0.1059	0.1059	0.3177	0.741	317.6	208.7	526.3	14800	16300	19100	.0488	.0600	957
Brant/ACSS	397.5	24/7	0.1287	0.0858	0.2574	0.772	374.4	137.0	511.4	11000	12100	14100	.0417	.0514	1047
Ibis/ACSS	397.5	26/7	0.1236	0.0962	0.2885	0.783	374.4	172.1	546.5	13000	14200	16500	.0416	.0512	1054
Lark/ACSS	397.5	30/7	0.1151	0.1151	0.3453	0.806	375.3	246.5	621.8	17500	19300	22600	.0413	.0508	1068
Flicker/ACSS	447	24/7	0.1410	0.0940	0.2819	0.846	449.3	164.4	613.7	13000	14200	16400	.0348	.0429	1180
Hawk/ACSS	447	26/7	0.1354	0.1053	0.3160	0.858	449.3	206.5	655.8	15600	17100	19800	.0346	.0427	1188
Hen/ACSS	447	30/7	0.1261	0.1261	0.3783	0.883	450.4	295.9	746.3	21000	22700	26700	.0344	.0424	1204
Parakeet/ACSS	556.5	24/7	0.1523	0.1015	0.3045	0.914	524.0	192.0	716.0	15200	16600	19100	.0298	.0368	1306
Dove/ACSS	556.5	26/7	0.1463	0.1138	0.3413	0.927	524.2	240.9	765.1	18200	19900	23200	.0297	.0366	1315
Eagle/ACSS	556.5	30/7	0.1362	0.1362	0.4086	0.953	525.4	345.2	870.6	24500	26500	31100	.0295	.0363	1331
Peacock/ACSS	605	24/7	0.1588	0.1058	0.3175	0.953	569.8	208.5	778.3	16500	18100	20800	.0274	.0339	1379
Squab/ACSS	605	26/7	0.1525	0.1186	0.3559	0.966	569.8	261.9	831.7	19700	21300	25200	.0273	.0337	1389
Wood Duck/ACSS	605	30/7	0.1420	0.1420	0.4260	0.994	571.2	375.3	946.5	26000	28300	33300	.0271	.0334	1407
Teal/ACSS	605	30/19	0.1420	0.0852	0.4260	0.994	571.2	367.4	938.6	26600	29300	34800	.0272	.0335	1406
Rook/ACSS	636	24/7	0.1628	0.1085	0.3256	0.977	599.0	219.2	818.2	17300	19000	21900	.0261	.0322	1425
Grosbeak/ACSS	636	26/7	0.1564	0.1216	0.3649	0.991	599.0	275.4	874.4	20700	22400	26000	.0260	.0321	1435
Scoter/ACSS	636	30/7	0.1456	0.1456	0.4368	1.019	600.5	394.5	995.0	27400	29700	35000	.0258	.0318	1454
Egret/ACSS	636	30/19	0.1456	0.0874	0.4368	1.019	600.5	386.3	986.8	28000	30900	36600	.0258	.0319	1453
Flamingo/ACSS	666.6	24/7	0.1667	0.1111	0.3333	1.000	627.9	229.7	857.6	18200	19900	22900	.0249	.0308	1470
Gannet/ACSS	666.6	26/7	0.1601	0.1245	0.3736	1.014	627.8	288.6	916.4	21700	23400	27300	.0248	.0306	1480
Stilt/ACSS	715.5	24/7	0.1727	0.1151	0.3453	1.036	673.9	246.5	920.4	19500	21300	24600	.0232	.0287	1540
Starling/ACSS	715.5	26/7	0.1659	0.1290	0.3871	1.051	673.9	309.8	983.7	23300	25200	29800	.0231	.0286	1550
Redwing/ACSS	715.5	30/19	0.1544	0.0927	0.4633	1.081	675.6	434.6	1110.2	30800	34000	39800	.0230	.0284	1570
Cuckoo/ACSS	795	24/7	0.1820	0.1213	0.3640	1.092	748.8	274.0	1022.8	21700	23300	26900	.0209	.0259	1650
Drake/ACSS	795	26/7	0.1749	0.1360	0.4080	1.107	748.8	344.2	1093.0	25900	28000	32600	.0209	.0257	1662
Macaw/ACSS	795	42/7	0.1376	0.0764	0.2293	1.055	748.8	108.7	857.5	11800	12600	14300	.0211	.0262	1621
Tern/ACSS	795	45/7	0.1329	0.0886	0.2658	1.063	748.8	146.1	894.9	14200	15200	17400	.0210	.0263	1618
Condor/ACSS	795	54/7	0.1213	0.1213	0.3640	1.092	748.8	274.0	1022.8	21700	23300	26900	.0209	.0266	1618
Mallard/ACSS	795	30/19	0.1628	0.0977	0.4884	1.139	750.6	482.8	1233.4	34300	37900	44300	.0207	.0255	1683
Ruddy/ACSS	900	45/7	0.1414	0.0943	0.2828	1.131	847.7	165.4	1012.1	15800	17000	19200	.0186	.0233	1755
Canary/ACSS	900	54/7	0.1291	0.1291	0.3873	1.162	847.7	310.1	1157.8	24600	26400	30500	.0184	.0236	1756

ACSS

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			Individual Wires		Steel Core	Comp Cable	Al	Steel	Total	Standard Strength	High* Strength	HS285** Strength	DC @ 20°C	AC @ 75°C	
			Al	Steel											
Redbird/ACSS	954	24/7	0.1994	0.1329	0.3987	1.196	898.5	328.7	1227.2	26000	28000	32300	.0174	.0217	1859
Rail/ACSS	954	45/7	0.1456	0.0971	0.2912	1.165	898.5	175.3	1073.8	16700	18000	20400	.0175	.0220	1824
Towhee/ACSS	954	48/7	0.1410	0.1097	0.3290	1.175	898.5	223.7	1122.2	19700	21300	24300	.0175	.0218	1842
Cardinal/ACSS	954	54/7	0.1329	0.1329	0.3987	1.196	898.6	328.7	1227.2	26000	28000	32300	.0174	.0223	1825
Canvasback/ACSS	954	30/19	0.1783	0.1070	0.5350	1.248	900.7	579.4	1480.1	41100	45400	53100	.0172	.0214	1897
Snowbird/ACSS	1033.5	42/7	0.1569	0.0871	0.2614	1.203	973.4	141.3	1114.7	15400	16500	18500	.0162	.0204	1924
Ortolan/ACSS	1033.5	45/7	0.1515	0.1010	0.3031	1.212	973.4	190.0	1163.4	18100	19500	22000	.0162	.0204	1921
Curlew/ACSS	1033.5	54/7	0.1383	0.1383	0.4150	1.245	973.4	356.2	1329.6	28200	30300	35000	.0161	.0206	1924
Bluejay/ACSS	1113	45/7	0.1573	0.1048	0.3145	1.258	1048.3	204.5	1252.8	19500	21100	23800	.0150	.0190	2017
Finch/ACSS	1113	54/19	0.1436	0.0861	0.4307	1.292	1053.4	375.5	1428.9	30400	33200	38700	.0150	.0193	2015
Bunting/ACSS	1192.5	45/7	0.1628	0.1085	0.3256	1.302	1123.2	219.2	1342.4	21400	23500	25400	.0140	.0178	2110
Bittern/ACSS	1272	45/7	0.1681	0.1121	0.3363	1.345	1198.0	234.0	1432.0	22300	24000	27100	.0131	.0167	2201
Pheasant/ACSS	1272	54/19	0.1535	0.0921	0.4604	1.381	1203.9	429.2	1633.1	34100	37300	43000	.0131	.0169	2200
Dipper/ACSS	1351	45/7	0.1733	0.1155	0.3465	1.386	1272.5	248.3	1520.8	23700	25500	28800	.0124	.0158	2289
Martin/ACSS	1351	54/19	0.1582	0.0949	0.4745	1.424	1278.7	455.8	1734.5	36200	39600	45600	.0123	.0160	2288
Bobolink/ACSS	1431	45/7	0.1783	0.1189	0.3566	1.427	1347.8	263.0	1610.8	25100	27000	30500	.0117	.0150	2375
Plover/ACSS	1431	54/19	0.1628	0.0977	0.4884	1.465	1354.4	482.8	1837.2	38400	41900	48300	.0117	.0151	2375
Nuthatch/ACSS	1510	45/7	0.1832	0.1221	0.3664	1.465	1422.2	277.5	1699.7	26500	28100	31800	.0111	.0143	2459
Parrot/ACSS	1510	54/19	0.1672	0.1003	0.5017	1.505	1429.2	509.5	1938.7	40400	44200	51000	.0110	.0144	2460
Ratite/ACSS	1590	42/7	0.1946	0.1081	0.3243	1.492	1497.6	217.4	1715.0	23400	25000	27900	.0105	.0136	2543
Lapwing/ACSS	1590	45/7	0.1880	0.1253	0.3759	1.504	1497.6	292.2	1789.8	27900	29600	33500	.0105	.0136	2543
Falcon/ACSS	1590	54/19	0.1716	0.1030	0.5148	1.544	1504.9	536.5	2041.4	42600	46600	53700	.0105	.0137	2545
Chukar/ACSS	1780	84/19	0.1456	0.0873	0.4367	1.601	1684.7	386.1	2070.8	35400	38200	43900	.0094	.0122	2751
Mockingbird/ ACSS	2034.5	72/7	0.1681	0.1121	0.3362	1.681	1925.6	233.7	2159.3	27200	28900	32000	.0083	.0110	2960
Roadrunner/ACSS	2057	76/19	0.1645	0.0768	0.3839	1.700	1946.9	298.3	2245.2	31700	33900	38300	.0082	.0108	2992
Bluebird/ACSS	2156	84/19	0.1602	0.0961	0.4806	1.762	2040.6	467.6	2508.2	42100	45500	51700	.0078	.0103	3106
Kiwi/ACSS	2167	72/7	0.1735	0.1157	0.3470	1.735	2051.0	248.9	2299.9	29000	30800	34100	.0078	.0104	3080
Thrasher/ACSS	2312	76/19	0.1744	0.0814	0.4070	1.802	2188.2	335.3	2523.5	35600	38100	43000	.0073	.0098	3218
Joree/ACSS	2515	76/19	0.1819	0.0849	0.4245	1.880	2380.4	364.7	2745.1	38700	41400	46800	.0067	.0092	3390

Notes:

- (1) All data refers to nominal cable manufactured in accordance with ASTM B856.
- (2) Resistance and ampacity calculations use aluminum conductivity of 63% IACS at 20°C and steel conductivity of 8% IACS at 20°C.
- (3) Ampacity ratings reflect the following conditions: 200°C conductor temperature, 25°C ambient temperature, 2ft/sec wind speed, direct sunlight exposure, 0.5 emissivity, 0.5 coefficient of solar absorption, at sea level.
- (4) Standard strength core ratings conform to Class A specifications per ASTM B802.
- (5) High strength core ratings conform to Class A specifications per ASTM B803.
- * High strength option indicated by "/HS" suffix (e.g., Parrot/ACSS/HS)
- ** Enhanced high strength option indicated by "/HS285" suffix (e.g., Parrot/ACSS/HS285)



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