



ACSS - Aluminum Conductor Steel Supported

Product Description

ACSS is a concentric-lay stranded composite conductor made up of a core of galvanized steel strands and one or more layers of annealed or soft 1350-0 Aluminum. The steel core wire is Class A galvanized zinc-coated steel which, due to the annealed or soft temper Aluminum, carries most or all of the mechanical load of the conductor. Upon request the steel core is available in High strength.

Application

Aluminum conductor steel supported (ACSS) cable is used for overhead transmission lines. ACSS is designed to operate continuously at higher temperatures up to 250°C without loss of strength, which allows for a significant increase in current carrying capacity over ACSR. ACSS is self-damping, sags less than ACSR under emergency electrical loadings, and its final sags are not affected by the long term creep of aluminum. These advantages make ACSS useful in new line applications where structures can be optimized due to the reduced conductor sag or where high emergency loads may be required; or in lines where Aeolian vibration is a problem. Existing lines can be re-conducted using ACSS to allow for increased current using the existing clearances and tensions.

Product Data

Code Word	Size (kcmil)	Stranding (Al/St)	Diameter (ins.)			Complete Cable	Weight Per 1000 ft (lb.)			Standard Rated Strength	Resistance OHMS/1000ft		Ampacity at 200°C (AMPS)
			Individual Wires		Steel Core		Al	Steel	Total		DC @20°C	AC @75°C	
			Al	Steel									
Partridge/ACSS	266.8	26/7	.1013	.0788	.2363	.642	251.3	115.5	366.8	8880	.0619	.0761	812
Junco/ACSS	266.8	30/7	.0943	.0943	.2829	.660	251.9	165.5	417.4	11700	.0615	.0756	822
Ostrich/ACSS	300.0	26/7	.1074	.0835	.2506	.680	282.6	129.9	412.4	10000	.0551	.0677	877
Linnet/ACSS	336.4	26/7	.1137	.0885	.2654	.720	316.8	145.7	462.5	11200	.0491	.0604	945
Oriole/ACSS	336.4	30/7	.1059	.1059	.3177	.741	317.6	208.7	526.3	14800	.0488	.0600	957
Brant/ACSS	397.5	24/7	.1287	.0858	.2574	.772	374.4	137.0	511.4	11000	.0417	.0514	1047
Ibis/ACSS	397.5	26/7	.1236	.0962	.2885	.783	374.4	172.1	546.5	13000	.0416	.0512	1054
Lark/ACSS	397.5	30/7	.1151	.1151	.3453	.806	375.3	246.5	621.9	17500	.0413	.0508	1068
Flicker/ACSS	477	24/7	.1410	.0940	.2819	.846	449.3	164.4	613.6	13000	.0348	.0429	1180
Hawk/ACSS	477	26/7	.1354	.1053	.3160	.858	449.3	206.5	655.8	15600	.0346	.0427	1188
Hen/ACSS	477	30/7	.1261	.1261	.3783	.883	450.4	295.9	746.3	21000	.0344	.0424	1204
Parakeet/ACSS	556.5	24/7	.1523	.1015	.3045	.914	524.1	191.8	715.9	15200	.0298	.0368	1306
Dove/ACSS	556.5	26/7	.1463	.1138	.3413	.927	524.2	240.9	765.1	18200	.0297	.0366	1315
Eagle/ACSS	556.5	30/7	.1362	.1362	.4086	.953	525.4	345.2	870.6	24500	.0295	.0363	1331
Peacock/ACSS	605	24/7	.1588	.1058	.3175	.953	569.8	205.5	778.3	16500	.0274	.0339	1379
Squab/ACSS	605	26/7	.1525	.1186	.3559	.966	569.8	208.5	831.8	19700	.0273	.0337	1389
Wood Duck/ACSS	605	30/7	.1420	.1420	.4260	.994	571.2	375.3	946.5	26000	.0271	.0334	1407
Teal/ACSS	605	30/19	.1420	.0852	.4260	.994	571.2	367.4	938.6	26600	.0272	.0335	1406
Rook/ACSS	636	24/7	.1628	.1085	.3256	.977	599.0	219.2	818.2	17300	.0261	.0322	1425
Grobeak/ACSS	636	26/7	.1564	.1216	.3649	.991	599.0	275.4	874.4	20700	.0260	.0321	1435
Scoter/ACSS	636	30/7	.1456	.1456	.4368	1.019	600.5	394.5	995.0	27400	.0258	.0318	1454
Egret/ACSS	636	30/19	.1456	.0874	.4368	1.019	600.5	386.3	986.8	28000	.0258	.0319	1453
Flamingo/ACSS	666.6	24/7	.1667	.1111	.3333	1.000	627.9	229.7	857.6	18200	.0249	.0308	1470
Gannet/ACSS	666.6	26/7	.1601	.1245	.3736	1.014	627.8	288.6	916.4	21700	.0248	.0306	1480
Stilt/ACSS	715.5	24/7	.1727	.1151	.3453	1.036	673.9	246.5	920.5	19500	.0232	.0287	1540
Starling/ACSS	715.5	26/7	.1659	.1290	.3871	1.051	673.9	309.8	983.7	23300	.0231	.0286	1550
Redwing/ACSS	715.5	30/19	.1544	.0927	.4633	1.081	675.6	434.6	1110.1	30800	.0230	.0284	1570
Cuckoo/ACSS	795	24/7	.1820	.1213	.3640	1.092	748.8	274.0	1022.7	21700	.0209	.0259	1650
Drake/ACSS	795	26/7	.1749	.1360	.4080	1.107	748.8	344.2	1093.0	25900	.0209	.0257	1662
Macaw/ACSS	795	42/7	.1376	.0764	.2293	1.055	748.8	108.7	857.5	11800	.0211	.0262	1621
Tern/ACSS	795	45/7	.1329	.0886	.2658	1.063	748.8	146.1	894.9	14200	.0210	.0263	1618
Condor/ACSS	795	54/7	.1213	.1213	.3640	1.092	748.8	274.0	1022.7	21700	.0209	.0266	1618
Mallard/ACSS	795	30/19	.1628	.0977	.4884	1.139	750.6	482.8	1233.4	34300	.0207	.0255	1683
Ruddy/ACSS	900	45/7	.1414	.0943	.2828	1.131	847.7	165.4	1013.1	15800	.0186	.0233	1755
Canary/ACSS	900	54/7	.1291	.1291	.3873	1.162	847.7	310.1	1157.8	26400	.0184	.0236	1756
Redbird/ACSS	954	24/7	.1994	.1329	.3987	1.196	898.5	328.7	1227.3	26000	.0174	.0217	1859
Rail/ACSS	954	45/7	.1456	.0971	.2912	1.165	898.5	175.3	1073.9	16700	.0175	.0220	1824
Towhee/ACSS	954	48/7	.1410	.1097	.329	1.175	898.5	223.7	1122.3	19700	.0175	.0218	1842
Cardinal/ACSS	954	54/7	.1329	.1329	.3987	1.196	898.6	328.7	1227.3	26000	.0174	.0223	1825
Canvasback/ACSS	954	30/19	.1783	.1070	.5350	1.248	900.7	579.4	1480.1	41100	.0172	.0214	1897
Snowbird/ACSS	1033.5	42/7	.1569	.0871	.2614	1.203	973.4	141.3	1114.7	15400	.0162	.0204	1924
Ortolan/ACSS	1033.5	45/7	.1515	.1010	.3031	1.212	973.4	190.0	1163.4	18100	.0162	.0204	1921
Curlew/ACSS	1033.5	54/7	.1383	.1383	.4150	1.245	973.4	356.2	1329.6	28200	.0161	.0206	1924
Bluejay/ACSS	1113	45/7	.1573	.1048	.3145	1.258	1048.3	204.5	1252.8	19500	.0150	.0190	2017
Finch/ACSS	1113	54/19	.1436	.0861	.4307	1.292	1053.4	375.5	1428.9	30400	.0150	.0193	2015
Bunting/ACSS	1192.5	45/7	.1628	.1085	.3256	1.302	1123.2	219.2	1342.4	21400	.0140	.0178	2110
Bittern/ACSS	1272	45/7	.1681	.1121	.3362	1.345	1198.1	233.8	1431.9	22300	.0131	.0167	2200
Pheasant/ACSS	1272	54/19	.1535	.0921	.4604	1.381	1203.9	429.2	1633.0	34100	.0131	.0169	2200
Dipper/ACSS	1351	45/7	.1733	.1155	.3465	1.386	1272.5	248.3	1520.8	23700	.0124	.0158	2289
Martin/ACSS	1351	54/19	.1582	.0949	.4745	1.424	1278.7	455.8	1734.5	36200	.0123	.0160	2288
Bobolink/ACSS	1431	45/7	.1783	.1189	.3566	1.427	1347.8	263.0	1610.8	25100	.0117	.0150	2375
Flower/ACSS	1431	54/19	.1628	.0977	.4884	1.465	1354.4	482.8	1837.2	38400	.0117	.0151	2375
Nuthatch/ACSS	1510	45/7	.1832	.1221	.3664	1.465	1422.2	277.5	1699.8	26500	.0111	.0143	2459
Parrot/ACSS	1510	54/19	.1672	.1003	.5017	1.505	1429.2	509.5	1938.6	40400	.0110	.0144	2460
Rattler/ACSS	1590	42/7	.1946	.1081	.3243	1.492	1497.6	217.4	1715.0	23400	.0105	.0136	2543
Lapwing/ACSS	1590	45/7	.1880	.1253	.3759	1.504	1497.6	292.2	1789.8	27900	.0105	.0136	2543
Falcon/ACSS	1590	54/19	.1716	.1030	.5148	1.544	1504.9	536.5	2041.4	42600	.0105	.0137	2545
Chukar/ACSS	1780	84/19	.1456	.0873	.4367	1.601	1684.7	386.1	2070.8	35400	.0094	.0122	2751
Mockingbird/ACSS	2034.5	72/7	.1681	.1121	.3362	1.681	1925.6	233.7	2159.3	27200	.0083	.0110	2960
Roadrunner/ACSS	2057	76/19	.1645	.0768	.3839	1.700	1946.9	298.3	2245.2	31700	.0082	.0108	2992
Bluebird/ACSS	2156	84/19	.1602	.0961	.4806	1.762	2040.6	467.6	2508.2	42100	.0078	.0103	3106
Kiwi/ACSS	2167	72/7	.1735	.1157	.3470	1.735	2051.0	248.9	2299.9	29000	.0078	.0104	3080
Thrasher/ACSS	2312	76/19	.1744	.0814	.4070	1.802	2188.2	335.3	2523.5	35600	.0073	.0098	3218
Joree/ACSS	2515	76/19	.1819	.0849	.4245	1.880	2380.4	364.7	2745.1	38700	.0067	.0092	3390

+Data based on a nominal cable manufactured in accordance with ASTM B-856.

++Resistance and ampacity based on an aluminum conductivity of 63%, IACS at 20° C, and a steel conductivity of 8% IACS at 20°C.

+++Ampacity based on a 200°C conductor temperature, 25°C ambient temperature, 2 ft./sec. wind in sun with an emissivity of 0.5 and a coefficient of solar absorption of 0.5 at sea level.

*Manufactured with pride in DeKalb, IL USA.

Specification Data

ASTM B-609	Aluminum 1350 round wire, annealed and intermediate tempers, for electrical purposes
ASTM B-498	Zinc-coated (galvanized) steel core wire
ASTM B-856	Concentric lay stranded aluminum conductors, coated steel supported (ACSS)

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