

ACSS

Aluminum Conductor, Steel Supported. Bare.

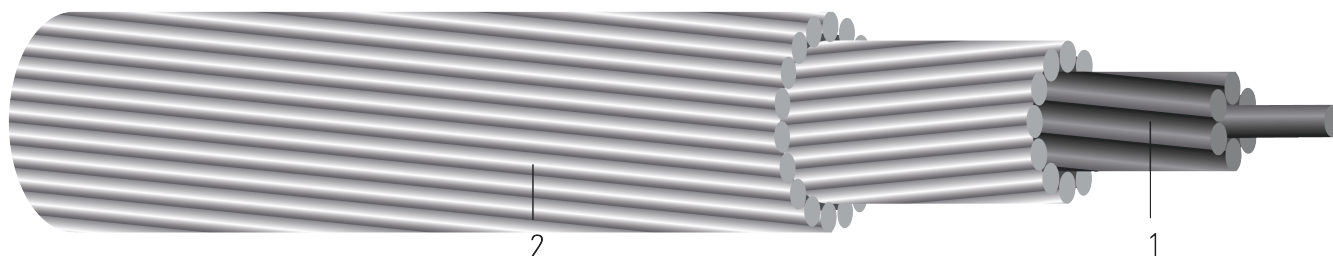


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Core:** Steel strands form the central core of the conductor with two or more layers of aluminum 1350-O wire stranded around it.
2. **Stranding:** ACSS is a composite concentric-lay stranded conductor.
 - The steel core carries most or all of the mechanical load of the conductor due to the “O” temper (fully annealed or soft) aluminum.
 - Steel core wires are protected from corrosion by a zinc-5% aluminum-mischmetal alloy coating.
 - For aluminum-clad (AW) ACSS, please refer to the ACSS/AW catalog sheet.

APPLICATIONS AND FEATURES:

ACSS is used for overhead distribution and transmission lines. It is designed to operate continuously at elevated temperatures up to 250°C without loss of strength; it sags less than a comparable ACSR under electrical loadings; it is self-damping if prestretched during installation; and its final sags are not affected by long term creep of aluminum. The advantages make ACSS especially useful in reconductoring applications requiring increased current with existing tensions and clearances, new line applications where structures can be economized because of reduced conductor sag, new line applications requiring high emergency loadings, and lines where aeolian vibration is a problem.

SPECIFICATIONS:

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



Table 1 - Weights and Measurements

Code Word	Size (AWG or kcmil)	Stranding (Al/Stl)	AL Strand Dia inch	Steel Strand Dia inch	Steel Core inch	Comp Cable inch	AL Weight lbs/1,000'	Steel Weight lbs/1,000'	Overall Weight lbs/1,000'
Partridge/ACSS	266.8	26/7	0.1013	0.0788	0.2363	0.642	251.3	115.5	366.8
Junco/ACSS	266.8	30/7	0.0943	0.0943	0.2829	0.66	251.9	165.5	417.4
Ostrich/ACSS	300	26/7	0.1074	0.0835	0.2506	0.68	282.6	129.9	412.5
Linnet/ACSS	336.4	26/7	0.1137	0.0885	0.2654	0.72	316.8	145.7	462.5
Oriole/ACSS	336.4	30/7	0.1059	0.1059	0.3177	0.741	317.6	208.7	526.3
Brant/ACSS	397.5	24/7	0.1287	0.0858	0.2574	0.772	374.4	137	511.4
Ibis/ACSS	397.5	26/7	0.1236	0.0962	0.2885	0.783	374.4	172.1	546.5
Lark/ACSS	397.5	30/7	0.1151	0.1151	0.3453	0.806	375.3	246.5	621.8
Flicker/ACSS	477	24/7	0.141	0.094	0.2819	0.846	449.3	164.4	613.7
Hawk/ACSS	477	26/7	0.1354	0.1053	0.316	0.858	449.3	206.5	655.8
Hen/ACSS	477	30/7	0.1261	0.1261	0.3783	0.883	450.4	295.9	746.3
Parakeet/ACSS	556.5	24/7	0.1523	0.1015	0.3045	0.914	524	192	716
Dove/ACSS	556.5	26/7	0.1463	0.1138	0.3413	0.927	524.2	240.9	765.1
Eagle/ACSS	556.5	30/7	0.1362	0.1362	0.4086	0.953	525.4	345.2	870.6
Peacock/ACSS	605	24/7	0.1588	0.1058	0.3175	0.953	569.8	208.5	778.3
Squab/ACSS	605	26/7	0.1525	0.1186	0.3559	0.966	569.8	261.9	831.7
Wood Duck/ACSS	605	30/7	0.142	0.142	0.426	0.994	571.2	375.3	946.5
Teal/ACSS	605	30/19	0.142	0.0852	0.426	0.994	571.2	367.4	938.6
Rook/ACSS	636	24/7	0.1628	0.1085	0.3256	0.977	599	219.2	818.2
Grosbeak/ACSS	636	26/7	0.1564	0.1216	0.3649	0.991	599	275.4	874.4
Scoter/ACSS	636	30/7	0.1456	0.1456	0.4368	1.019	600.5	394.5	995
Egret/ACSS	636	30/19	0.1456	0.0874	0.4368	1.019	600.5	386.3	986.8
Flamingo/ACSS	666.6	24/7	0.1667	0.1111	0.3333	1	627.9	229.7	857.6
Gannet/ACSS	666.6	26/7	0.1601	0.1245	0.3736	1.014	627.8	288.6	916.4
Stilt/ACSS	715.5	24/7	0.1727	0.1151	0.3453	1.036	673.9	246.5	920.4
Starling/ACSS	715.5	26/7	0.1659	0.129	0.3871	1.051	673.9	309.8	983.7
Redwing/ACSS	715.5	30/19	0.1544	0.0927	0.4633	1.081	675.6	434.6	1110.2
Cuckoo/ACSS	795	24/7	0.182	0.1213	0.364	1.092	748.8	274	1022.8
Drake/ACSS	795	26/7	0.1749	0.136	0.408	1.107	748.8	344.2	1093
Macaw/ACSS	795	42/7	0.1376	0.0764	0.2293	1.055	748.8	108.7	857.5
Tern/ACSS	795	45/7	0.1329	0.0886	0.2658	1.063	748.8	146.1	894.9
Condor/ACSS	795	54/7	0.1213	0.1213	0.364	1.092	748.8	274	1022.8
Mallard/ACSS	795	30/19	0.1628	0.0977	0.4884	1.139	750.6	482.8	1233.4
Ruddy/ACSS	900	45/7	0.1414	0.0943	0.2828	1.131	847.7	165.4	1012.1
Canary/ACSS	900	54/7	0.1291	0.1291	0.3873	1.162	847.7	310.1	1157.8
Redbird/ACSS	954	24/7	0.1994	0.1329	0.3987	1.196	898.5	328.7	1227.2
Rail/ACSS	954	45/7	0.1456	0.0971	0.2912	1.165	898.5	175.3	1073.8
Towhee/ACSS	954	48/7	0.141	0.1097	0.329	1.175	898.5	223.7	1122.2
Cardinal/ACSS	954	54/7	0.1329	0.1329	0.3987	1.196	898.6	328.7	1227.2
Canvasback/ACSS	954	30/19	0.1783	0.107	0.535	1.248	900.7	579.4	1480.1
Snowbird/ACSS	1033.5	42/7	0.1569	0.0871	0.2614	1.203	973.4	141.3	1114.7



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Ortolan/ACSS	1033.5	45/7	0.1515	0.101	0.3031	1.212	973.4	190	1163.4
Curlew/ACSS	1033.5	54/7	0.1383	0.1383	0.415	1.245	973.4	356.2	1329.6
Bluejay/ACSS	1113	45/7	0.1573	0.1048	0.3145	1.258	1048.3	204.5	1252.8
Finch/ACSS	1113	54/19	0.1436	0.0861	0.4307	1.292	1053.4	375.5	1428.9
Bunting/ACSS	1192.5	45/7	0.1628	0.1085	0.3256	1.302	1123.2	219.2	1342.4
Bittern/ACSS	1272	45/7	0.1681	0.1121	0.3363	1.345	1198	234	1432
Pheasant/ACSS	1272	54/19	0.1535	0.0921	0.4604	1.381	1203.9	429.2	1633.1
Dipper/ACSS	1351	45/7	0.1733	0.1155	0.3465	1.386	1272.5	248.3	1520.8
Martin/ACSS	1351	54/19	0.1582	0.0949	0.4745	1.424	1278.7	455.8	1734.5
Bobolink/ACSS	1431	45/7	0.1783	0.1189	0.3566	1.427	1347.8	263	1610.8
Plover/ACSS	1431	54/19	0.1628	0.0977	0.4884	1.465	1354.4	482.8	1837.2
Nuthatch/ACSS	1510	45/7	0.1832	0.1221	0.3664	1.465	1422.2	277.5	1699.7
Parrot/ACSS	1510	54/19	0.1672	0.1003	0.5017	1.505	1429.2	509.5	1938.7
Ratite/ACSS	1590	42/7	0.1946	0.1081	0.3243	1.492	1497.6	217.4	1715
Lapwing/ACSS	1590	45/7	0.188	0.1253	0.3759	1.504	1497.6	292.2	1789.8
Falcon/ACSS	1590	54/19	0.1716	0.103	0.5148	1.544	1504.9	536.5	2041.4
Chukar/ACSS	1780	84/19	0.1456	0.0873	0.4367	1.601	1684.7	386.1	2070.8
Mockingbird/ACSS	2034.5	72/7	0.1681	0.1121	0.3362	1.681	1925.6	233.7	2159.3
Roadrunner/ACSS	2057	76/19	0.1645	0.0768	0.3839	1.7	1946.9	298.3	2245.2
Bluebird/ACSS	2156	84/19	0.1602	0.0961	0.4806	1.762	2040.6	467.6	2508.2
Kiwi/ACSS	2167	72/7	0.1735	0.1157	0.347	1.735	2051	248.9	2299.9
Thrasher/ACSS	2312	76/19	0.1744	0.0814	0.407	1.802	2188.2	335.3	2523.5
Joree/ACSS	2515	76/19	0.1819	0.0849	0.4245	1.88	2380.4	364.7	2745.1

(1) Data Based on a nominal cable manufactured in accordance with ASTM B856.

(2) Resistance and Ampacity based on an aluminum conductivity of 63%, IACS at 20°C, and a steel conductivity of 8%, IACS at 20°C.

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

(4) Rated strength for standard strength core based on Class A Galfan coated steel core wire in accordance with ASTM B802.

(5) Rated strength for high strength core based on a Class A Galfan coated high strength steel core wire in accordance with B803.



Table 2 - Electrical and Engineering Data

Code Word	Size (AWG or kcmil)	Rated Strength lbs	High Strength* lbs	HS285** Strength lbs	DC Resistance @ 20C Ohms/1,000'	AC Resistance @ 75C Ohms/1,000'	Ampacity @ 200°C Amps
Partridge/ACSS	266.8	8880	9730	11400	0.0619	0.0761	812
Junco/ACSS	266.8	11700	13000	15200	0.0615	0.0756	822
Ostrich/ACSS	300	10000	10900	12800	0.0551	0.0677	877
Linnet/ACSS	336.4	11200	12300	14400	0.0491	0.0604	945
Oriole/ACSS	336.4	14800	16300	19100	0.0488	0.06	957
Brant/ACSS	397.5	11000	12100	14100	0.0417	0.0514	1047
Ibis/ACSS	397.5	13000	14200	16500	0.0416	0.0512	1054
Lark/ACSS	397.5	17500	19300	22600	0.0413	0.0508	1068
Flicker/ACSS	477	13000	14200	16400	0.0348	0.0429	1180
Hawk/ACSS	477	15600	17100	19800	0.0346	0.0427	1188
Hen/ACSS	477	21000	22700	26700	0.0344	0.0424	1204
Parakeet/ACSS	556.5	15200	16600	19100	0.0298	0.0368	1306
Dove/ACSS	556.5	18200	19900	23200	0.0297	0.0366	1315
Eagle/ACSS	556.5	24500	26500	31100	0.0295	0.0363	1331
Peacock/ACSS	605	16500	18100	20800	0.0274	0.0339	1379
Squab/ACSS	605	19700	21300	25200	0.0273	0.0337	1389
Wood Duck/ACSS	605	26000	28300	33300	0.0271	0.0334	1407
Teal/ACSS	605	26600	29300	34800	0.0272	0.0335	1406
Rook/ACSS	636	17300	19000	21900	0.0261	0.0322	1425
Grosbeak/ACSS	636	20700	22400	26000	0.026	0.0321	1435
Scoter/ACSS	636	27400	29700	35000	0.0258	0.0318	1454
Egret/ACSS	636	28000	30900	36600	0.0258	0.0319	1453
Flamingo/ACSS	666.6	18200	19900	22900	0.0249	0.0308	1470
Gannet/ACSS	666.6	21700	23400	27300	0.0248	0.0306	1480
Stilt/ACSS	715.5	19500	21300	24600	0.0232	0.0287	1540
Starling/ACSS	715.5	23300	25200	29800	0.0231	0.0286	1550
Redwing/ACSS	715.5	30800	34000	39800	0.023	0.0284	1570
Cuckoo/ACSS	795	21700	23300	26900	0.0209	0.0259	1650
Drake/ACSS	795	25900	28000	32600	0.0209	0.0257	1662
Macaw/ACSS	795	11800	12600	14300	0.0211	0.0262	1621
Tern/ACSS	795	14200	15200	17400	0.021	0.0263	1618
Condor/ACSS	795	21700	23300	26900	0.0209	0.0266	1618
Mallard/ACSS	795	34300	37900	44300	0.0207	0.0255	1683
Ruddy/ACSS	900	15800	17000	19200	0.0186	0.0233	1755
Canary/ACSS	900	24600	26400	30500	0.0184	0.0236	1756
Redbird/ACSS	954	26000	28000	32300	0.0174	0.0217	1859
Rail/ACSS	954	16700	18000	20400	0.0175	0.022	1824
Towhee/ACSS	954	19700	21300	24300	0.0175	0.0218	1842
Cardinal/ACSS	954	26000	28000	32300	0.0174	0.0223	1825
Canvasback/ACSS	954	41100	45400	53100	0.0172	0.0214	1897
Snowbird/ACSS	1033.5	15400	16500	18500	0.0162	0.0204	1924



Code Word	Size (AWG or kcmil)	Rated Strength	High Strength*	HS285** Strength	DC Resistance @ 20C	AC Resistance @ 75C	Ampacity @ 200°C
		lbs	lbs	lbs	Ohms/1,000'	Ohms/1,000'	Amps
Ortolan/ACSS	1033.5	18100	19500	22000	0.0162	0.0204	1921
Curlew/ACSS	1033.5	28200	30300	35000	0.0161	0.0206	1924
Bluejay/ACSS	1113	19500	21100	23800	0.015	0.019	2017
Finch/ACSS	1113	30400	33200	38700	0.015	0.0193	2015
Bunting/ACSS	1192.5	21400	23500	25400	0.014	0.0178	2110
Bittern/ACSS	1272	22300	24000	27100	0.0131	0.0167	2201
Pheasant/ACSS	1272	34100	37300	43000	0.0131	0.0169	2200
Dipper/ACSS	1351	23700	25500	28800	0.0124	0.0158	2289
Martin/ACSS	1351	36200	39600	45600	0.0123	0.016	2288
Bobolink/ACSS	1431	25100	27000	30500	0.0117	0.015	2375
Plover/ACSS	1431	38400	41900	48300	0.0117	0.0151	2375
Nuthatch/ACSS	1510	26500	28100	31800	0.0111	0.0143	2459
Parrot/ACSS	1510	40400	44200	51000	0.011	0.0144	2460
Ratite/ACSS	1590	23400	25000	27900	0.0105	0.0136	2543
Lapwing/ACSS	1590	27900	29600	33500	0.0105	0.0136	2543
Falcon/ACSS	1590	42600	46600	53700	0.0105	0.0137	2545
Chukar/ACSS	1780	35400	38200	43900	0.0094	0.0122	2751
Mockingbird/ACSS	2034.5	27200	28900	32000	0.0083	0.011	2960
Roadrunner/ACSS	2057	31700	33900	38300	0.0082	0.0108	2992
Bluebird/ACSS	2156	42100	45500	51700	0.0078	0.0103	3106
Kiwi/ACSS	2167	29000	30800	34100	0.0078	0.0104	3080
Thrasher/ACSS	2312	35600	38100	43000	0.0073	0.0098	3218
Joree/ACSS	2515	38700	41400	46800	0.0067	0.0092	3390

*Designated by "/HS" (e.g. Drake/ACSS/HS)

**Designated by "/HS285" (e.g. Drake/ACSS/HS285)

(1) Data Based on a nominal cable manufactured in accordance with ASTM B856.

(2) Resistance and Ampacity based on an aluminum conductivity of 63%, IACS at 20°C, and a steel conductivity of 8%, IACS at 20°C.

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

(4) Rated strength for standard strength core based on Class A Galfan coated steel core wire in accordance with ASTM B802.

(5) Rated strength for high strength core based on a Class A Galfan coated high strength steel core wire in accordance with B803.

