Application

ACSS (Aluminum Conductor Steel Supported) is a high-temperature bare overhead conductor designed for electrical power transmission and distribution lines. It consists of a central steel core surrounded by layers of fully annealed (soft-tempered) aluminum wires. Unlike conventional ACSR conductors, the steel core carries most or all of the mechanical load, while the aluminum wires primarily provide electrical conductivity.

ACSS conductors are designed for continuous operation at elevated temperatures up to **250°C (482°F)**, depending on the selected core configuration and conductor design. Their high-temperature capability, reduced thermal sag, and self-damping characteristics make them particularly suitable for:

Transmission Line Reconductoring: Increasing the current-carrying capacity of existing transmission lines while maintaining existing tensions and ground clearances, subject to engineering verification.

Transmission Capacity Upgrades: Enhancing the power transmission capacity of existing networks without necessarily modifying existing towers.

High-Temperature Applications: Supporting continuous high-temperature operation and increased emergency loading requirements.

New Transmission Lines: Reducing conductor sag under high operating temperatures and potentially allowing more economical structure designs.

Vibration-Prone Environments: Providing self-damping characteristics that help reduce aeolian vibration when properly installed and prestretched.

ACSS/AW Conductor

ACSS/AW (Aluminum Conductor Steel Supported with Aluminum-Clad Steel Core) offers mechanical strength characteristics similar to conventional ACSS, with an aluminum-clad steel core providing enhanced corrosion protection.

It is suitable for overhead transmission and distribution applications, particularly in environments where improved corrosion resistance is required.

ACSS/TW Conductor

ACSS/TW (Trapezoidal Wire Aluminum Conductor Steel Supported) features compact concentric-lay construction with trapezoidal-shaped aluminum wires surrounding a central steel core.

Its compact design allows a higher aluminum content within a given conductor diameter compared with conventional round-wire configurations. It is suitable for overhead transmission and distribution lines requiring high current-carrying capacity and efficient conductor utilization.

Standards

ACSS conductor meets or exceeds the following ASTM specifications:

• B500 Metallic Coated Stranded Steel Core for Use in Overhead Electrical Conductors.

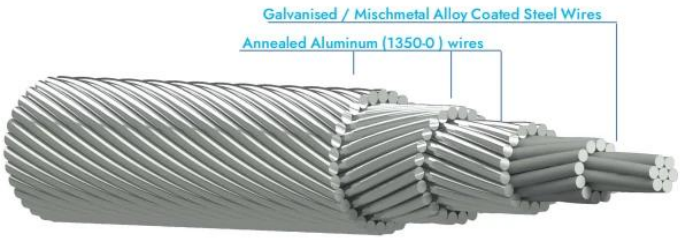
• B502/B502M (optional) Standard Specification for Aluminum-Clad Steel Core Wire for Use in Overhead Electrical Aluminum

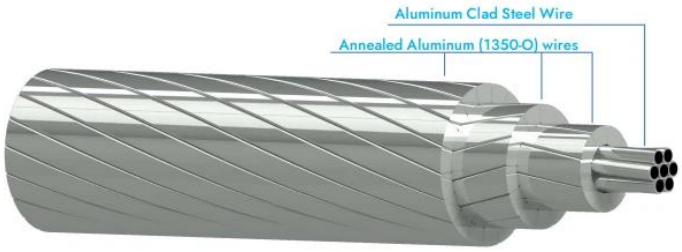
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Conductors

• 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 is a composite concentric-lay-stranded conductor consisting of a central steel core surrounded by one or more layers of fully annealed aluminum 1350-O wires.

The steel core carries most or all of the mechanical tensile load, while the annealed aluminum wires primarily serve as the electrical conducting component.

The conductor can be supplied with different steel core materials and corrosion protection systems to suit specific project requirements.

ACSS Construction

Conductor: One or more layers of fully annealed aluminum 1350-O wires with a minimum average conductivity of 63% IACS.

Core: Central galvanized steel wires or other specified high-strength steel core materials.

Corrosion Protection: Steel core wires can be supplied with zinc coating, zinc-5% aluminum-mischmetal alloy coating, or other specified protective coatings.

Core Options: Regular-strength, high-strength, extra-high-strength and ultra-high-strength steel cores.

ACSS/AW Construction

Conductor: Fully annealed aluminum 1350-O wires, concentrically stranded.

Core: Aluminum-clad steel wires.

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Advantages: Combines the mechanical strength of steel with additional corrosion protection provided by the aluminum cladding.

ACSS/TW Construction

Conductor: Trapezoidal-shaped fully annealed aluminum 1350-O wires.

Core: Central steel core.

Design: Compact concentric-lay-stranded construction designed to increase aluminum content within the specified conductor diameter.

Key Features and Benefits

1. High-Temperature Operation

ACSS conductors can operate continuously at temperatures up to 250°C, depending on the selected design and core protection system. This makes them suitable for high-temperature transmission applications and network capacity upgrades.

2. High Current-Carrying Capacity

The fully annealed aluminum wires and steel-supported construction allow ACSS to carry significantly higher current than conventional ACSR conductors of comparable size under suitable operating conditions.

3. Reduced Thermal Sag

The steel core provides the principal mechanical support, helping maintain conductor tension and limit thermal sag during high-temperature operation.

4. Excellent Self-Damping Performance

The annealed aluminum strands provide self-damping characteristics that help reduce aeolian vibration and associated conductor fatigue when the conductor is properly prestretched during installation.

5. Long-Term Dimensional Stability

The mechanical behavior of ACSS is primarily governed by its steel core. Its final sag is therefore less affected by long-term aluminum creep compared with conventional ACSR conductors.

6. Flexible Corrosion Protection

Different steel core coatings are available to meet the environmental requirements of overhead transmission projects, including galvanized steel and aluminum-clad steel.

ACSS vs. ACSR

ACSS and ACSR are both steel-supported aluminum overhead conductors, but they differ in aluminum temper, mechanical load distribution and high-temperature performance.

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Comparison	ACSS	ACSR
Aluminum Wire	Fully annealed 1350-O	Hard-drawn aluminum
Steel Core	Carries most or all mechanical load	Shares mechanical load with aluminum
Operating Temperature	Up to 250°C for specified designs	Typically lower, depending on design
Thermal Sag	Reduced at elevated temperatures	Generally higher at elevated temperatures
Aluminum Creep	Less influence on final sag	More significant long-term influence
Self-Damping	Excellent when properly prestretched	Depends on conductor design and installation
Main Application	High-capacity transmission and reconductoring	Conventional overhead transmission and distribution

ACSS can provide substantially higher ampacity than comparable ACSR conductors. Actual capacity improvements depend on conductor size, ambient temperature, wind speed, solar radiation, allowable operating temperature and line design.

Available Core Options

ACSS conductors can be manufactured with different steel core strength grades and corrosion protection systems.

Galvanized Steel Core

Regular-Strength Class C Galvanized Steel Core

High-Strength Class A Galvanized Steel Core

Extra-High-Strength Class A Galvanized Steel Core

Ultra-High-Strength Class A Galvanized Steel Core

Zinc-5% Aluminum-Mischmetal Alloy-Coated Steel Core

Regular-Strength Class A Coated Steel Core

High-Strength Class A Coated Steel Core

Extra-High-Strength Class A Coated Steel Core

Ultra-High-Strength Class A Coated Steel Core

Other Core Options

Aluminum-Clad Steel Core

High-Strength Aluminum-Clad Steel Core, subject to design requirements

Additional Options

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Continuous operating temperature rating up to 250°C for specified core configurations.

Round-wire and trapezoidal-wire constructions.

Different aluminum-to-steel ratios.

Customized conductor diameters and cross-sectional areas.

Non-specular surface finish, subject to manufacturing requirements.

Customized stranding configurations according to project specifications.

Technical Specifications

ACSS ASTM B856

Code Word	Size (kcmil)	Stranding (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

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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	477	24/7	0.1410	0.0940	0.2819	0.846	449.3	164.4	613.7	13000	14200	16400	.0348	.0429	1180
Hawk/ACSS	477	26/7	0.1354	0.1053	0.3160	0.858	449.3	206.5	655.8	15600	17100	19800	.0346	.0427	1188
Hen/ACSS	477	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

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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

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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
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

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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

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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: Data Based on a nominal cable manufactured in accordance with ASTM B856. 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, 2ft/sec. wind, in sun, with an emissivity of 0.5

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and a coefficient of solar absorption of 0.5, at sea level. Rated strength for standard strength core based on Class A Galfan coated steel core wire in accordance with ASTM B802. Rated strength for high strength core based on a Class A Galfan coated high strength steel core wire in accordance with B803. *Designated by "/HS" (e.g. Drake/ACSS/HS) **Designated by "/HS285" (e.g. Drake/ACSS/HS285)

ACSS/AW ASTM B 856

Code Word	Size (kcmil)	Stranding (Al/St)	Diameter (in)				Weight Per 1000 ft (lb)			Rated Strength (lb)	Resistance OHMS/1000 ft		Ampacity at 200°C (AMPS)
			Individual Wires		Steel Core	Complete Cable	Al	Steel	Total		DC @ 20°C	AC @ 75°C	
			Al	Steel									
Junco/ACSS/AW	266.8	30/7	.0943	.0943	.2829	.66	252	140	392	11200	.0589	.0723	841
Ostrich/ACSS/AW	300	26/7	.1074	.0835	.2506	.68	283	110	393	9360	.0534	.0656	891
Linnet/ACSS/AW	336.4	26/7	.1137	.0885	.2654	.72	317	123	440	10500	.0476	.0585	960
Oriole/ACSS/AW	336.4	30/7	.1059	.1059	.3177	.741	318	177	494	14200	.0467	.0573	979
Brant/ACSS/AW	397.5	24/7	.1287	.0858	.2574	.772	374	116	490	10400	.0407	.0501	1061
Ibis/ACSS/AW	397.5	26/7	.1236	.0962	.2885	.783	374	146	520	12400	.0403	.0496	1071
Lark/ACSS/AW	397.5	30/7	.1151	.1151	.3453	.806	375	209	584	16700	.0395	.0486	1092
Flicker/ACSS/AW	477	24/7	.141	.094	.2819	.846	449	139	589	12500	.0339	.0418	1195
Hawk/ACSS/AW	477	26/7	.1354	.1053	.316	.858	449	175	624	14900	.0336	.0413	1207
Hen/ACSS/AW	477	30/7	.1261	.1261	.3783	.883	450	251	701	20100	.0329	.0405	1231

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Parakeet/ACSS/AW	556.5	24/7	.1523	.1015	.3045	.914	524	163	687	14600	.0291	.0359	1323
Dove/ACSS/AW	556.5	26/7	.1463	.1138	.3413	.927	524	204	728	17500	.0288	.0355	1336
Eagle/ACSS/AW	556.5	30/7	.1362	.1362	.4086	.953	525	293	818	22900	.0282	.0348	1362
Peacock/ACSS/AW	605	24/7	.1588	.1058	.3175	.953	570	177	746	15900	.0267	.033	1397
Squab/ACSS/AW	605	26/7	.1525	.1186	.3559	.966	570	222	792	19000	.0265	.0327	1411
Wood Duck/ACSS/AW	605	30/7	.142	.142	.426	.994	571	318	889	24400	.026	.032	1439
Teal/ACSS/AW	605	30/19	.142	.0852	.426	.994	571	311	883	25000	.026	.032	1438
Rook/ACSS/AW	636	24/7	.1628	.1085	.3256	.977	599	186	785	16700	.0255	.0314	1444
Grosbeak/ACSS/AW	636	26/7	.1564	.1216	.3649	.991	599	233	832	19900	.0252	.0311	1458
Scoter/ACSS/AW	636	30/7	.1456	.1456	.4368	1.019	600	334	935	25100	.0247	.0305	1487
Egret/ACSS/AW	636	30/19	.1456	.0874	.4368	1.019	600	327	928	26300	.0247	.0305	1486
Flamingo/ACSS/AW	666.6	24/7	.1667	.1111	.3333	1	628	195	823	17500	.0243	.03	1489
Gannet/ACSS/AW	666.6	26/7	.1601	.1245	.3736	1.014	628	245	872	20900	.024	.0297	1504
Stilt/ACSS/AW	715.5	24/7	.1727	.1151	.3453	1.036	674	209	883	18800	.0226	.028	1559
Starling/ACSS/AW	715.5	26/7	.1659	.129	.3871	1.051	674	263	936	22000	.0224	.0277	1576

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Redwing/ACSS/AW	715.5	30/19	.1544	.0927	.4633	1.081	676	368	1044	29500	.022	.0272	1605
Cuckoo/ACSS/AW	795	24/7	.182	.1213	.364	1.092	749	232	981	20900	.0204	.0252	1671
Drake/ACSS/AW	795	26/7	.1749	.136	.408	1.107	749	292	1040	24400	.0202	.025	1688
Macaw/ACSS/AW	795	42/7	.1376	.0764	.2293	1.055	749	92	841	11400	.0209	.026	1630
Tern/ACSS/AW	795	45/7	.1329	.0886	.2658	1.063	749	124	873	13500	.0208	.026	1620
Condor/ACSS/AW	795	54/7	.1213	.1213	.364	1.092	749	232	981	15800	.0204	.026	1639
Mallard/ACSS/AW	795	30/19	.1628	.0977	.4884	1.139	751	409	1160	32900	.0198	.0245	1721
Ruddy/ACSS/AW	900	45/7	.1414	.0943	.2828	1.131	848	140	988	15300	.0183	.023	1767
Canary/ACSS/AW	900	54/7	.1291	.1291	.3873	1.162	848	263	1111	23200	.018	.023	1779
Rail/ACSS/AW	954	45/7	.1456	.0971	.2912	1.165	899	149	1047	16200	.0173	.0218	1836
Towhee/ACSS/AW	954	48/7	.141	.1097	.329	1.175	899	190	1088	19000	.0172	.0214	1858
Cardinal/ACSS/AW	954	54/7	.1329	.1329	.3987	1.196	899	279	1177	24600	.017	.0217	1848
Canvasback/ACSS/AW	954	30/19	.1783	.107	.535	1.248	901	491	1392	39400	.0165	.0205	1939
Snowbird/ACSS/AW	1033.5	42/7	.1569	.0871	.2614	1.203	973	120	1093	14800	.0161	.0202	1934
Curlew/ACSS/AW	1033.5	54/7	.1383	.1383	.415	1.245	973	302	1275	26100	.0157	.0201	1948

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Bluejay/ACSS/AW	1113	45/7	.1573	.1048	.3145	1.258	1048	173	1222	18900	.0148	.0088	2031
Finch/ACSS/AW	1113	54/19	.1436	.0861	.4307	1.292	1053	318	1372	28800	.0146	.0188	2040
Bunting/ACSS/AW	1192.5	45/7	.1628	.1085	.3256	1.302	1123	186	1309	20300	.0138	.0176	2124
Grackle/ACSS/AW	1192.5	54/19	.1486	.0892	.4458	1.337	1129	341	1470	30800	.0137	.0176	2135
Bittern/ACSS/AW	1272	45/7	.1681	.1121	.3362	1.345	1198	198	1396	21600	.013	.0165	2215
Pheasant/ACSS/AW	1272	54/19	.1535	.0921	.4604	1.381	1204	364	1568	32800	.0128	.0165	2227
Dipper/ACSS/AW	1351	45/7	.1733	.1155	.3465	1.386	1272	210	1483	23000	.0122	.0156	2304
Martin/ACSS/AW	1351	54/19	.1582	.0949	.4745	1.424	1279	386	1665	34900	.012	.0156	2307
Bobolink/ACSS/AW	1431	45/7	.1783	.1189	.3566	1.427	1348	223	1571	24300	.0115	.0148	2391
Plover/ACSS/AW	1431	54/19	.1628	.0977	.4884	1.465	1354	409	1764	36900	.0114	.0148	2405
Nuthatch/ACSS/AW	1510	45/7	.1832	.1221	.3664	1.465	1422	235	1657	25700	.0109	.0141	2476
Parrot/ACSS/AW	1510	54/19	.1672	.1003	.5017	1.505	1429	432	1861	38900	.0108	.0141	2491
Lapwing/ACSS/AW	1590	45/7	.188	.1253	.3759	1.504	1498	248	1745	27000	.0104	.0134	2560
Falcon/ACSS/AW	1590	54/19	.1716	.103	.5148	1.544	1505	455	1960	41100	.0102	.0134	2576
Chukar/ACSS/AW	1780	84/19	.1456	.0873	.4367	1.601	1685	327	2012	33600	.0093	.012	2772

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Mockingbird/ ACSS/AW	2034.5	72/7	.1681	.1121	.3362	1.681	1926	198	2124	26500	.0082	.0109	2972
Roadrunner/ACSS/AW	2057	76/19	.1645	.0768	.3839	1.7	1947	253	2200	30300	.0081	.0108	3007
Bluebird/ACSS/AW	2156	84/19	.1602	.0961	.4806	1.762	2041	396	2437	40700	.0077	.0102	3130
Kiwi/ACSS/AW	2167	72/7	.1735	.1157	.347	1.735	2051	211	2262	28200	.0077	.0104	3092
Thrasher/ACSS/AW	2312	76/19	.1744	.0814	.407	1.802	2188	284	2472	34100	.0072	.0097	3235
Joree/ACSS/AW	2515	76/19	.1819	.0849	.4245	1.88	2380	309	2689	37100	.0066	.0091	3407

Notes: 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 an aluminum-clad steel conductivity of 20.3% IACS at 20°C. Ampacity based on a 200°C conductor temperature, 25°C ambient temperature, 2 ft/sec wind, in sun, with emissivity of 0.5 and a coefficient of solar absorption of 0.5, at sea level. (4) Rated strengths based on aluminum-clad steel core wire in accordance with ASTM B 502.

ACSS/TW ASTM B 857

Shaped Wire Concentric-Lay Compact Aluminum Conductors Steel Supported (ACSS/TW) Diameter Equal to Standard ACSR Sizes

Code Word	Size (kcmil)	Type No.	Cross Sectional Area (in2)		Stranding			Diameter (in)		Weight (lbs/1000 ft)			Rated Breaking Strength (lbs)		
			Aluminum	Total	No of Layers of Aluminum	No. of Aluminum Wires	No. & Diameter Individual Steel Wire	Steel Core	Complete Cable	Alum.	Steel	Total	Standard Strength	High Strength	HS-285
Mohawk/ACSS/TW	571.7	13	0.449	0.5074	2	18	7 x 0.1030	0.309	0.85	537	197.5	734.5	15600	17100	19700
Calumet/ACSS/TW	565.3	16	0.4439	0.5162	2	20	7 x 0.1146	0.3438	0.86	531.2	244.5	775.7	18400	20200	23500
Mystic/ACSS/T	666.6	13	0.5236	0.5914	2	20	7 x 0.12	0.3732	0.913	630.4	230.	860.7	18200	19900	22900

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W							44				3				
Oswego /ACSS/ TW	664.8	16	0.5221	0.6072	2	20	7 x 0.1244	0.3732	0.927	628.7	288.7	917.4	21700	23400	27200
Maume e/ACSS /TW	768.2	13	0.6034	0.6819	2	20	7 x 0.1195	0.3585	0.977	721.1	265.9	987	21000	23000	26500
Wabash /ACSS/ TW	762.8	16	0.5992	0.6966	2	20	7 x 0.1331	0.3993	0.99	716.7	329.8	1046.5	24900	26800	31200
Kettle/A CSS/T W	957.2	7	0.7518	0.8038	3	32	7 x 0.0973	0.2919	1.06	901.6	176.2	1078	16800	18100	20400
Fraser/ ACSS/T W	946.7	10	0.7436	0.8168	3	35	7 x 0.1154	0.3462	1.077	892.6	247.9	1141	21100	22900	26200
Columb ia/ACS S/TW	966.2	13	0.7589	0.8573	2	21	7 x 0.1338	0.4014	1.092	906.9	333.2	1240	26400	28300	32800
Suwann ee/ACS S/TW	959.6	16	0.7537	0.8762	2	22	7 x 0.1493	0.4479	1.11	901.6	415	1316.6	30700	33100	38600
Cheyen ne/ACS S/TW	1168.1	5	0.9175	0.9646	3	30	7 x 0.0926	0.2778	1.155	1099	159.6	1259	17200	18300	20500
Genesee /ACSS/ TW	1158	7	0.9095	0.9733	3	34	7 x 0.1078	0.3234	1.165	1092	216	1308	20500	22100	25000
Hudson/ ACSS/T W	1158.4	13	0.9098	1.0281	2	24	7 x 0.1467	0.4401	1.196	1087.3	400.7	1488	31100	33500	38800
Catawb a/ACSS /TW	1272	5	0.9991	1.0505	3	30	7 x 0.0967	0.2901	1.203	1197	174	1371	18700	20000	22300
Nelson/ ACSS/T W	1257.1	7	0.9874	1.0557	3	35	7 x 0.1115	0.3345	1.213	1184	231.4	1415	22100	23800	26900
Yukon/ ACSS/T W	1233.6	13	0.9689	1.0925	3	38	19 x 0.0910	0.455	1.245	1166.7	419.3	1586	33200	36300	41900
Truckee /ACSS/ TW	1372.5	5	1.078	1.1334	3	30	7 x 0.1004	0.3012	1.248	1292	187.6	1479	20200	21500	24000
Macken zie/ACS S/TW	1359.7	7	1.0679	1.1418	3	36	7 x 0.1159	0.3477	1.259	1281	250	1531	23900	25700	29000

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Thames/ACSS/TW	1334.6	13	1.048	1.1809	3	38	19 x 0.09 44	0.472	1.29	1260.1	451.2	1711.3	35800	39100	45100
St. Croix/ACSS/TW	1467.8	5	1.1529	1.2124	3	33	7 x 0.10 41	0.3123	1.292	1381	201.7	1583	21600	23100	25800
Miramichi/ACSS/TW	1455.3	7	1.143	1.2222	3	36	7 x 0.12 00	0.36	1.302	1372	268	1640	25600	27100	30700
Merrimack/ACSS/TW	1433.6	13	1.125	1.2677	3	39	19 x 0.09 78	0.489	1.34	1355.8	484.3	1840.1	38400	42000	48400
Platte/ACSS/TW	1569	5	1.2323	1.2957	3	33	7 x 0.10 74	0.3222	1.334	1478	215	1693	23100	24600	27500
Potomac/ACSS/TW	1557.4	7	1.2232	1.3079	3	36	7 x 0.12 41	0.3723	1.35	1466.9	288.1	1755	27300	29000	32800
Rio Grande/ACSS/TW	1533.3	13	1.2043	1.3571	3	38	19 x 0.10 12	0.506	1.38	1449	519	1968	41200	45000	51900
Schuylkill/ACSS/TW	1657.4	7	1.302	1.392	3	36	7 x 0.12 80	0.384	1.386	1563	305	1868	29100	30900	34900
Pecos/ACSS/TW	1622	13	1.2739	1.4429	3	39	19 x 0.10 64	0.532	1.42	1533.7	573.2	2106.9	45000	49300	56900
Pee Dee/ACSS/TW	1758.6	7	1.381	1.477	3	38	7 x 0.13 19	0.3957	1.427	1656.4	323.9	1980.3	30900	32800	37100
James/ACSS/TW	1730.6	13	1.359	1.5314	3	34	19 x 0.10 75	0.5375	1.47	1636	585	2221	46400	50800	58500
Athabaska/ACSS/TW	1949.6	7	1.5312	1.6377	3	44	7 x 0.13 92	0.4176	1.504	1836	360.7	2197	34300	36500	41300
Cumberland/ACSS/TW	1926.9	13	1.5134	1.7049	3	42	19 x 0.11 33	0.5665	1.55	1821	650	2471	51600	56400	65000
Powder/ACSS/TW	2153.8	8	1.6912	1.829	4	64	19 x 0.09 61	0.4805	1.602	2042.5	396.1	2438.6	42100	45500	51700
Santee/ACSS/T	2627.3	8	2.063	2.2268	4	64	19 x 0.10	0.531	1.761	2491.5	571.	3062.6	51300	55600	63100

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W							62				1				

Data based on a nominal cable manufactured in accordance with ASTM B 857.

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 referenced conductor temperature, 25°C ambient temperature, 2 ft/sec wind, in sun, with an emmisivity of 0.5 and a coefficient of solar absorption of 0.5, at sea level.

Rated breaking strength for standard core based on Class A Galfan coated steel core wire in accordance with ASTM B 802.

Rated strength for high strength core based on Class A Galfan coated high strength steel core wire in accordance with ASTM B 803.

The final design of a shaped wire compact conductor is contingent upon several factors such as: layer diameter, wire width and wire thickness. The actual configuration of a given size may vary between manufacturers. This may result in a slight variation in the number of wires, number of layers and dimensions of individual wires from that shown in the chart.

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