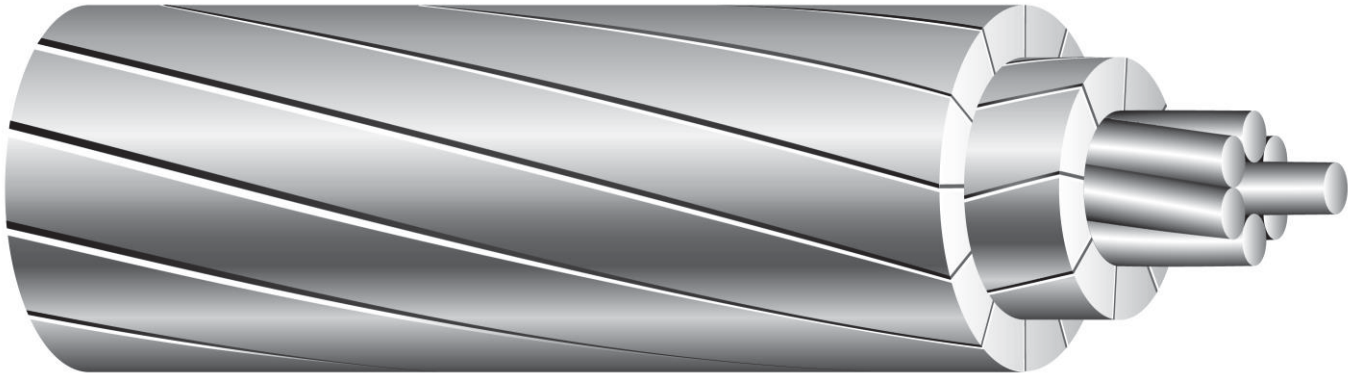


**Aluminum Conductor, Steel Supported.
Trapezoidal Shaped Aluminum Strands. Bare.****APPLICATIONS**

Southwire's ACSS/TW is designed 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 under emergency electrical loadings than ACSR/TW, excellent self-damping properties, and its final sags are not affected by long-term creep of aluminum. Southwire's ACSS/TW is available in equal area and equal diameter design. The equal area design allows equal ampacity in a smaller diameter conductor when compared with a standard ACSS conductor. The equal diameter design allows more ampacity in an equal diameter conductor when compared with a standard ACSS conductor. ACSS/TW also provides many design opportunities for new line construction: i.e., reduced tower cost, decreased sag, increased self-damping properties, increased operating temperature and improved corrosion resistance.

SPECIFICATIONS

Southwire's ACSS/TW conductor meets or exceeds the following ASTM specifications:

- B500 Metallic Coated Stranded Steel Core for Aluminum Conductors, Steel Reinforced.
- 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.
- B803 High-Strength Zinc-5% Aluminum-Mischmetal Alloy-Coated Steel Core Wire for Aluminum and Aluminum-Alloy Conductors, Steel Reinforced.
- B857 Shaped Wire Compact Concentric-Lay-Stranded Aluminum Conductors, Coated-Steel Supported (ACSS/TW).

CONSTRUCTION

ACSS is a composite concentric-lay-stranded conductor. Steel strands form the central core of the conductor with one or more layers of 63% minimum average conductivity aluminum 1350-0 wire stranded around it. The steel core carries most or all of the mechanical load of the conductor due to the "0" (fully annealed or soft) temper aluminum. Steel core wires are protected from corrosion by Galfan®, zinc-5% aluminum-mischmetal alloy coating. High strength steel core, aluminized, and aluminum clad steel core is also available.

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

Code Word	Size (kcmil)	Type No.	Cross Sectional Area (in ²)			Stranding		Diameter (in)		Weight (lbs/1000 ft)		Rated Breaking Strength (lbs)		Resistance (ohms/mile)		Ampacity (amps)						
			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	DC @ 20°C	AC @ 75°C	@ 75°C	@ 100°C	@ 150°C	@ 200°C	@ 250°C
Partridge/ACSS/TW	266.8	16	0.2094	0.2435	2	14	7 x 0.0788	0.2364	0.595	250.5	115.6	366.1	8,880	9,730	11,400	0.3262	0.4009	454	553	692	795	880
Linnet/ACSS/TW	336.4	16	0.2641	0.3070	2	16	7 x 0.0885	0.2655	0.667	316.1	145.8	461.9	11,200	12,300	14,400	0.2588	0.3181	523	638	801	921	1021
Oriole/ACSS/TW	336.4	23	0.2642	0.3258	2	16	7 x 0.1059	0.3177	0.692	318.2	209.2	527.4	14,800	16,300	19,100	0.2565	0.3151	533	650	816	940	1043
Flicker/ACSS/TW	477.0	13	0.3747	0.4233	2	18	7 x 0.0940	0.2820	0.776	447.8	164.5	612.3	13,000	14,200	16,400	0.1831	0.2255	648	793	998	1151	1279
Hawk/ACSS/TW	477.0	16	0.3746	0.4356	2	18	7 x 0.1054	0.3162	0.790	448.7	206.4	655.1	15,600	17,100	19,800	0.1825	0.2247	652	799	1005	1159	1289
Hen/ACSS/TW	477.0	23	0.3747	0.4621	2	20	7 x 0.1261	0.3783	0.820	451.1	296.6	747.8	21,000	22,700	26,700	0.1809	0.2225	663	813	1024	1181	1315
Parakeet/ACSS/TW	556.5	13	0.4371	0.4937	2	18	7 x 0.1015	0.3045	0.835	522.4	191.8	714.2	15,200	16,600	19,100	0.1569	0.1935	713	874	1102	1271	1415
Dove/ACSS/TW	556.5	16	0.4371	0.5083	2	20	7 x 0.1138	0.3414	0.850	523.4	241.1	764.5	18,200	19,900	23,100	0.1564	0.1928	719	881	1111	1282	1427
Rook/ACSS/TW	636.0	13	0.4995	0.5643	2	20	7 x 0.1085	0.3255	0.893	597.0	219.2	816.2	17,300	19,000	21,900	0.1373	0.1696	775	951	1200	1386	1544
Grosbeak/ACSS/TW	636.0	16	0.4995	0.5808	2	20	7 x 0.1216	0.3648	0.909	601.5	275.8	877.3	20,700	22,400	26,000	0.1369	0.1689	781	958	1210	1398	1557
Scoter/ACSS/TW	636.0	23	0.4995	0.6160	2	22	7 x 0.1456	0.4368	0.942	600.5	394.7	995.2	27,400	29,700	35,000	0.1356	0.1672	795	976	1234	1427	1591
Term/ACSS/TW	795.0	7	0.6244	0.6675	2	17	7 x 0.0886	0.2658	0.960	745.2	146.1	891.3	14,200	15,200	17,400	0.1105	0.1373	878	1080	1366	1580	1762
Puffin/ACSS/TW	795.0	11	0.6244	0.6919	2	18	7 x 0.1056	0.3168	0.980	745.9	228.5	974.4	17,700	19,200	22,000	0.1101	0.1365	886	1090	1378	1595	1778
Condor/ACSS/TW	795.0	13	0.6244	0.7053	2	20	7 x 0.1213	0.3639	0.993	746.3	273.9	1020.0	21,700	23,300	26,900	0.1098	0.1361	890	1095	1386	1604	1789
Drake/ACSS/TW	795.0	16	0.6244	0.7261	2	20	7 x 0.1360	0.4080	1.010	747.0	344.3	1091.3	25,900	28,000	32,600	0.1095	0.1355	896	1103	1396	1616	1803
Canary/ACSS/TW	900.0	13	0.7069	0.7983	2	20	7 x 0.1291	0.3873	1.055	844.8	310.9	1155.7	24,600	26,400	30,500	0.0970	0.1205	962	1185	1501	1739	1942
Phoenix/ACSS/TW	954.0	5	0.7493	0.7876	3	30	7 x 0.0837	0.2511	1.044	897.7	130.4	1028.0	14,200	15,200	17,100	0.0927	0.1187	967	1189	1503	1740	1940
Rail/ACSS/TW	954.0	7	0.7493	0.8011	3	32	7 x 0.0971	0.2913	1.061	898.6	175.5	1074.1	16,700	18,000	20,400	0.0926	0.1183	972	1196	1512	1750	1953
Cardinal/ACSS/TW	954.0	13	0.7493	0.8464	2	20	7 x 0.1329	0.3987	1.080	895.5	328.8	1224.3	26,000	28,000	32,300	0.0915	0.1138	997	1229	1558	1806	2016
Snowbird/ACSS/TW	1033.5	5	0.8117	0.8534	3	30	7 x 0.0871	0.2613	1.089	972.5	141.2	1114.0	15,400	16,400	18,500	0.0856	0.1098	1016	1251	1584	1834	2048
Otolan/ACSS/TW	1033.5	7	0.8117	0.8678	3	32	7 x 0.1010	0.3030	1.102	972.5	189.9	1162.0	18,100	19,500	22,000	0.0854	0.1095	1021	1257	1592	1843	2058
Curlew/ACSS/TW	1033.5	13	0.8117	0.9169	2	22	7 x 0.1383	0.4149	1.132	970.1	356.1	1326.2	28,200	30,300	35,000	0.0845	0.1053	1048	1293	1641	1903	2126
Avocet/ACSS/TW	1113.0	5	0.8742	0.9191	3	30	7 x 0.0904	0.2712	1.129	1047.0	152.1	1199.0	16,300	17,500	19,500	0.0794	0.1022	1063	1310	1661	1925	2150

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

Code Word	Size (kcmil)	Type No.	Cross Sectional Area (in ²)		Stranding			Diameter (in)		Weight (lbs/1000 ft)		Rated Breaking Strength (lbs)		Resistance (ohms/mile)		Ampacity (amps)						
			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	DC @ 20°C	AC @ 75°C	@ 75°C	@ 100°C	@ 150°C	@ 200°C	@ 250°C
Bluejay/ACSS/TW	1113.0	7	0.8742	0.9347	3	33	7 x 0.1049	0.3147	1.143	1048.0	204.8	1253.0	19,500	21,000	23,800	0.0793	0.1019	1068	1317	1669	1935	2161
Finch/ACSS/TW	1113.0	13	0.8743	0.9852	3	38	19 x 0.0862	0.4310	1.185	1051.0	376.1	1427.0	30,400	33,200	38,700	0.0789	0.1010	1084	1336	1695	1965	2196
Oxbird/ACSS/TW	1192.5	5	0.9366	0.9848	3	30	7 x 0.0936	0.2808	1.170	1122.9	163.1	1286.0	17,500	18,700	20,900	0.0741	0.0957	1108	1367	1735	2013	2249
Bunting/ACSS/TW	1192.5	7	0.9366	1.0013	3	34	7 x 0.1085	0.3255	1.181	1123.2	219.6	1342.8	20,900	22,500	25,400	0.0740	0.0954	1114	1374	1744	2023	2261
Grackle/ACSS/TW	1192.5	13	0.9366	1.0554	3	38	19 x 0.0892	0.4460	1.225	1127.8	402.9	1530.7	32,600	35,500	41,500	0.0737	0.0944	1130	1395	1771	2055	2298
Scissortail/ACSS/TW	1272.0	5	0.9991	1.0505	3	30	7 x 0.0967	0.2901	1.203	1197.0	174.0	1371.0	18,700	20,000	22,300	0.0695	0.0900	1152	1423	1807	2098	2346
Blittern/ACSS/TW	1272.0	7	0.9990	1.0681	3	38	7 x 0.1121	0.3363	1.224	1197.6	234.9	1432.5	22,300	24,000	27,100	0.0694	0.0897	1159	1431	1817	2110	2360
Pheasant/ACSS/TW	1272.0	13	0.9990	1.1256	3	39	19 x 0.0921	0.4605	1.260	1201.0	429.5	1630.5	34,100	37,300	43,000	0.0691	0.0887	1176	1452	1846	2143	2398
Dipper/ACSS/TW	1351.5	7	1.0615	1.1348	3	35	7 x 0.1155	0.3465	1.256	1273.0	248.3	1521.0	23,700	25,500	28,800	0.0653	0.0847	1202	1485	1888	2194	2455
Martin/ACSS/TW	1351.5	13	1.0615	1.1959	3	42	19 x 0.0949	0.4745	1.300	1276.1	456.0	1732.1	36,200	39,600	45,600	0.0650	0.0837	1220	1508	1918	2228	2494
Bobolink/ACSS/TW	1431.0	7	1.1236	1.2017	3	36	7 x 0.1189	0.3567	1.291	1347.0	263.1	1611.0	25,100	27,000	30,500	0.0617	0.0802	1243	1538	1958	2276	2549
Plover/ACSS/TW	1431.0	13	1.1239	1.2664	3	44	19 x 0.0977	0.4885	1.337	1351.0	483.2	1834.0	38,400	41,900	48,300	0.0614	0.0793	1263	1562	1989	2313	2590
Lapwing/ACSS/TW	1590.0	7	1.2488	1.3351	3	36	7 x 0.1253	0.3759	1.358	1497.6	292.3	1789.9	27,900	29,600	33,500	0.0555	0.0727	1324	1640	2092	2435	2730
Falcon/ACSS/TW	1590.0	13	1.2488	1.4071	3	42	19 x 0.1030	0.5150	1.410	1502.8	537.2	2040.0	42,600	46,600	53,700	0.0553	0.0717	1346	1668	2127	2477	2777
Chukar/ACSS/TW	1780.0	8	1.3986	1.5126	3	38	19 x 0.0874	0.4370	1.445	1680.6	386.8	2067.4	35,300	38,200	43,900	0.0495	0.0652	1421	1764	2255	2630	2952
Bluebird/ACSS/TW	2156.0	8	1.6933	1.8309	4	64	19 x 0.0961	0.4805	1.608	2045.0	467.5	2512	42,100	45,500	51,700	0.0412	0.0543	1601	1999	2573	3014	3396

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

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 referenced 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.

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

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

6) 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.

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 (in ²)		Stranding			Diameter (in)		Weight (lbs/1000 ft)		Rated Breaking Strength (lbs)		Resistance (ohms/mile)		Ampacity (amps)						
			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	DC @ 20°C	AC @ 75°C	@ 75°C	@ 100°C	@ 150°C	@ 200°C	@ 250°C
Mohawk/ACSS/TW	571.7	13	0.4490	0.5074	2	18	7 x 0.1030	0.3090	0.850	537.0	197.5	734.5	15,600	17,100	19,700	0.1527	0.1884	725	889	1121	1294	1441
Calumet/ACSS/TW	565.3	16	0.4439	0.5162	2	20	7 x 0.1146	0.3438	0.860	531.2	244.5	775.7	18,400	20,200	23,500	0.1540	0.1898	725	890	1122	1295	1442
Mystic/ACSS/TW	666.6	13	0.5236	0.5914	2	20	7 x 0.1244	0.3732	0.913	630.4	230.3	860.7	18,200	19,900	22,900	0.1310	0.1619	798	980	1238	1431	1595
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	21,700	23,400	27,200	0.1309	0.1616	802	985	1244	1439	1604
Maumee/ACSS/TW	768.2	13	0.6034	0.6819	2	20	7 x 0.1195	0.3585	0.977	721.1	265.9	987.0	21,000	23,000	26,500	0.1137	0.1407	872	1072	1356	1569	1750
Wabash/ACSS/TW	762.8	16	0.5992	0.6966	2	20	7 x 0.1331	0.3993	0.990	716.7	329.8	1046.5	24,900	26,800	31,200	0.1141	0.1411	873	1074	1359	1573	1755
Kettle/ACSS/TW	957.2	7	0.7518	0.8038	3	32	7 x 0.0973	0.2919	1.060	901.6	176.2	1078.0	16,800	18,100	20,400	0.0922	0.1180	973	1197	1514	1753	1955
Fraser/ACSS/TW	946.7	10	0.7436	0.8168	3	35	7 x 0.1154	0.3462	1.077	892.6	247.9	1141.0	21,100	22,900	26,200	0.0930	0.1187	974	1199	1517	1756	1959
Columbia/ACSS/TW	966.2	13	0.7589	0.8573	2	21	7 x 0.1338	0.4014	1.092	906.9	333.2	1240.0	26,400	28,300	32,800	0.0904	0.1124	1005	1239	1571	1822	2035
Suwannee/ACSS/TW	959.6	16	0.7537	0.8762	2	22	7 x 0.1493	0.4479	1.110	901.6	415.0	1316.6	30,700	33,100	38,600	0.0907	0.1127	1008	1243	1576	1828	2042
Cheyenne/ACSS/TW	1188.1	5	0.9175	0.9646	3	30	7 x 0.0926	0.2778	1.155	1099.0	159.6	1259.0	17,200	18,300	20,500	0.0757	0.0979	1095	1350	1712	1986	2219
Genesee/ACSS/TW	1158.0	7	0.9095	0.9733	3	34	7 x 0.1078	0.3234	1.165	1092.0	216.0	1308.0	20,500	22,100	25,000	0.0762	0.0981	1094	1350	1712	1985	2218
Hudson/ACSS/TW	1158.4	13	0.9098	1.0281	2	24	7 x 0.1467	0.4401	1.196	1087.3	400.7	1488.0	31,100	33,500	38,800	0.0754	0.0943	1124	1389	1766	2051	2295
Catawba/ACSS/TW	1272.0	5	0.9991	1.0505	3	30	7 x 0.0967	0.2901	1.203	1197.0	174.0	1371.0	18,700	20,000	22,300	0.0695	0.0900	1152	1423	1807	2098	2346
Nelson/ACSS/TW	1257.1	7	0.9874	1.0557	3	35	7 x 0.1115	0.3345	1.213	1184.0	231.4	1415.0	22,100	23,800	26,900	0.0702	0.0907	1150	1420	1804	2094	2342
Yukon/ACSS/TW	1233.6	13	0.9689	1.0925	3	38	19 x 0.0910	0.4550	1.245	1166.7	419.3	1586.0	33,200	36,300	41,900	0.0712	0.0914	1154	1425	1810	2101	2350
Truckee/ACSS/TW	1372.5	5	1.0780	1.1334	3	30	7 x 0.1004	0.3012	1.248	1292.0	187.6	1479.0	20,200	21,500	24,000	0.0644	0.0838	1206	1491	1896	2203	2466
Mackenzie/ACSS/TW	1359.7	7	1.0679	1.1418	3	36	7 x 0.1159	0.3477	1.259	1281.0	250.0	1531.0	23,900	25,700	29,000	0.0649	0.0842	1206	1490	1895	2202	2465
Thames/ACSS/TW	1334.6	13	1.0480	1.1809	3	38	19 x 0.0944	0.4720	1.290	1260.1	451.2	1711.3	35,800	39,100	45,100	0.0658	0.0847	1210	1495	1902	2209	2472
St. Croix/ACSS/TW	1467.8	5	1.1529	1.2124	3	33	7 x 0.1041	0.3123	1.292	1381.0	201.7	1583.0	21,600	23,100	25,800	0.0602	0.0787	1256	1554	1979	2302	2578
Miramichi/ACSS/TW	1455.3	7	1.1430	1.2222	3	36	7 x 0.1200	0.3600	1.302	1372.0	268.0	1640.0	25,600	27,100	30,700	0.0607	0.0790	1269	1573	2007	2338	2577

ACSS/TW

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 (in ²)		Stranding			Diameter (in)		Weight (lbs/1000 ft)		Rated Breaking Strength (lbs)			Resistance (ohms/mile)		Ampacity (amps)					
			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	DC @ 20°C	AC @ 75°C	@ 75°C	@ 100°C	@ 150°C	@ 200°C	@ 250°C
Merimack/ACSS/TW	1433.6	13	1.1250	1.2677	3	39	19 x 0.0978	0.4890	1.340	1355.8	484.3	1840.1	38,400	42,000	48,400	0.0613	0.0791	1277	1584	2021	2354	2595
Platte/ACSS/TW	1569.0	5	1.2323	1.2957	3	33	7 x 0.1074	0.3222	1.334	1478	215.0	1693	23,100	24,600	27,500	0.0564	0.0740	1319	1637	2092	2439	2692
Potomac/ACSS/TW	1557.4	7	1.2232	1.3079	3	36	7 x 0.1241	0.3723	1.350	1466.9	288.1	1755	27,300	29,000	32,800	0.0567	0.0741	1321	1639	2094	2441	2694
Rio Grande/ACSS/TW	1533.3	13	1.2043	1.3571	3	38	19 x 0.1012	0.5060	1.380	1449.0	519.0	1968.0	41,200	45,000	51,900	0.0573	0.0742	1329	1650	2108	2456	2710
Schuykill/ACSS/TW	1657.4	7	1.3020	1.3920	3	36	7 x 0.1280	0.3840	1.386	1563	305.0	1868	29,100	30,900	34,900	0.0533	0.0700	1370	1702	2177	2539	2805
Pecos/ACSS/TW	1622.0	13	1.2739	1.4429	3	39	19 x 0.1064	0.5320	1.420	1533.7	573.2	2106.9	45,000	49,300	56,900	0.0541	0.0703	1377	1710	2187	2551	2816
Pee Dee/ACSS/TW	1758.6	7	1.3810	1.4770	3	38	7 x 0.1319	0.3957	1.427	1656.4	323.9	1980.3	30,900	32,800	37,100	0.0502	0.0663	1418	1763	2259	2637	2916
James/ACSS/TW	1730.6	13	1.3590	1.5314	3	34	19 x 0.1075	0.5375	1.470	1636	585.0	2221	46,400	50,800	58,500	0.0508	0.0663	1430	1778	2277	2657	2937
Athabaska/ACSS/TW	1949.6	7	1.5312	1.6377	3	44	7 x 0.1392	0.4176	1.504	1836	360.7	2197	34,300	36,500	41,300	0.0453	0.0595	1505	1873	2403	2808	3157
Cumberland/ACSS/TW	1926.9	13	1.5134	1.7049	3	42	19 x 0.1133	0.5665	1.550	1821	650.0	2471	51,600	56,400	65,000	0.0456	0.0600	1508	1875	2400	2802	3148
Powder/ACSS/TW	2153.8	8	1.6912	1.8290	4	64	19 x 0.0961	0.4805	1.602	2042.5	396.1	2438.6	42,100	45,500	51,700	0.0412	0.0543	1599	1996	2569	3009	3391
Santee/ACSS/TW	2627.3	8	2.0630	2.2268	4	64	19 x 0.1062	0.5310	1.761	2491.5	571.1	3062.6	51,300	55,600	63,100	0.0338	0.0459	1784	2237	2894	3403	3846

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

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 referenced 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.

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

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

6) 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.