

Shape Wire Concentric-Lay Compact Aluminum Conductors Steel Supported (ACSS/TW)

Diameter Equal to Standard ACSS 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. & Diameters Individual Steel Wire	Steel Core	Completed Cable	Alum.	Steel	Total	Standard Strength	High Strength	H5-285	DC @ 20° C	AC @ 75° C	@ 75° C	@ 100° C	@ 150° C	@ 200° C	@ 250° C
Mohawk/ACSS/TW	571.7	13	0.449	0.507	2	18	7×0.1030	0.309	0.846	536.6	197.5	734.1	15,600	17,100	19,700	0.153	0.188	725	889	1121	1294	1441
Calumet/ACSS/TW	565.3	16	0.444	0.516	2	20	7×0.1146	0.3441	0.858	531.2	244.4	775.6	18,400	20,200	23,500	0.154	0.19	725	890	1122	1295	1442
Mystic/ACSS/TW	666.6	13	0.524	0.591	2	20	7×0.1111	0.3333	0.913	625.7	229.7	855.4	18,200	19,900	22,900	0.131	0.162	798	980	1238	1431	1595
Oswego/ACSS/TW	664.8	16	0.522	0.607	2	20	7×0.1244	0.3732	0.927	624.6	288	912.6	21,700	23,400	27,200	0.131	0.162	802	985	1244	1439	1604
Maumee/ACSS/TW	768.2	13	0.603	0.682	2	20	7×0.1195	0.3585	0.977	721.1	265.8	986.9	21,000	23,000	26,500	0.114	0.141	872	1072	1356	1569	1750
Wabash/ACSS/TW	762.8	16	0.599	0.697	2	20	7×0.1331	0.3993	0.99	716.7	329.7	1046	24,900	26,800	31,200	0.114	0.141	873	1074	1359	1573	1755
Kettle/ACSS/TW	957.2	7	0.752	0.804	3	32	7×0.0973	0.2919	1.06	901.6	176.2	1078	16,800	18,100	20,400	0.092	0.118	973	1197	1514	1753	1955
Fraser/ACSS/TW	946.7	10	0.744	0.817	3	35	7×0.1154	0.3462	1.077	892.6	247.9	1141	21,100	22,900	26,200	0.093	0.119	974	1199	1517	1756	1959
Columbia/ACSS/TW	966.2	13	0.759	0.857	2	21	7×0.1338	0.4014	1.092	906.9	333.2	1240	26,400	28,300	32,800	0.09	0.112	1005	1239	1571	1822	2035
Suwannee/ACSS/TW	959.6	16	0.754	0.876	2	22	7×0.1493	0.4479	1.108	901.6	414.9	1317	30,700	33,100	35,600	0.091	0.113	1008	1243	1576	1828	2042
Cheyenne/ACSS/TW	1168	5	0.918	0.965	3	30	7×0.0926	0.2778	1.155	1099	159.6	1259	17,200	18,300	20,500	0.076	0.098	1095	1350	1712	1986	2219
Genesee/ACSS/TW	1158	7	0.91	0.973	3	33	7×0.1078	0.3234	1.165	1091	216.3	1307	20,500	22,100	25,000	0.076	0.098	1094	1350	1712	1985	2218
Hudson/ACSS/TW	1158	13	0.91	1.028	2	25	7×0.1467	0.4401	1.196	1087	400.6	1488	31,100	33,500	38,800	0.075	0.094	1124	1389	1766	2051	2295
Catawba/ACSS/TW	1275	5	0.999	1.051	3	30	7×0.0967	0.2901	1.203	1197	174	1371	18,700	20,000	22,300	0.07	0.09	1152	1423	1807	2098	2346
Nelson/ACSS/TW	1257	7	0.987	1.056	3	35	7×0.1115	0.3345	1.213	1184	231.4	1415	22,100	23,800	26,900	0.07	0.091	1150	1420	1804	2094	2342
Yukon/ACSS/TW	1234	13	0.969	1.093	3	38	19×0.0910	0.455	1.245	1165	419.2	1584	33,200	36,300	41,900	0.071	0.091	1154	1425	1810	2101	2350
Truckee/ACSS/TW	1373	5	1.078	1.133	3	30	7×0.1004	0.3012	1.248	1292	187.6	1479	20,200	21,500	24,000	0.064	0.084	1206	1491	1896	2203	2466
Mackenzie/ACSS/TW	1360	7	1.068	1.142	3	36	7×0.1159	0.3477	1.259	1281	250	1531	23,900	25,700	29,000	0.065	0.084	1206	1490	1895	2202	2465
Thames/ACSS/TW	1335	13	1.048	1.181	3	39	19×0.0944	0.472	1.29	1260	451.1	1711	35,800	39,100	45,100	0.066	0.085	1210	1495	1902	2209	2472
St. Croix/ACSS/TW	1468	5	1.153	1.212	3	33	7×0.1041	0.3123	1.292	1381	201.7	1583	21,600	23,100	25,800	0.06	0.079	1256	1554	1979	2302	2578

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			Aluminum	Total	No. of Layers of Aluminum	No. of Aluminum Wires	No. & Diameters Individual Steel Wire	Steel Core	Completed Cable	Alum.	Steel	Total	Standard Strength	High Strength	H5-285	DC @ 20° C	AC @ 75° C	@ 75° C	@ 100° C	@ 150° C	@ 200° C	@ 250° C
Miramichi/ACSS/TW	1455	7	1.143	1.222	3	36	7×0.1200	0.36	1.302	1372	268	1640	25,600	27,100	30,700	0.061	0.079	1269	1573	2007	2338	2577
Merrimack/ACSS/TW	1434	13	1.125	1.268	3	39	19×0.0978	0.489	1.34	1356	434	1840	38,400	42,000	48,400	0.061	0.079	1277	1584	2021	2354	2595
Platte/ACSS/TW	1569	5	1.232	1.296	3	33	7×0.1047	0.3222	1.334	1478	215	1693	23,100	24,600	27,500	0.056	0.074	1319	1637	2092	2439	2692
Potomac/ACSS/TW	1557	7	1.223	1.308	3	36	7×0.1241	0.3723	1.345	1468	287	1755	27,300	29,000	32,800	0.057	0.074	1321	1639	2094	2441	2694
Rio Grande/ACSS/TW	1533	13	1.204	1.357	3	39	19×0.1012	0.506	1.382	1449	519	1968	41,200	45,000	51,900	0.057	0.074	1329	1650	2108	2456	2710
Schuykill/ACSS/TW	1657	7	1.302	1.392	3	36	7×0.1280	0.384	1.386	1563	305	1868	29,100	30,900	34,900	0.053	0.07	1370	1702	2177	2539	2805
Pecos/ACSS/TW	1622	13	1.274	1.443	3	39	19×0.1064	0.532	1.424	1533	574	2107	45,000	49,300	56,900	0.054	0.07	1377	1710	2187	2551	2816
Pee Dee/ACSS/TW	1759	7	1.381	1.477	3	37	7×0.1319	0.3957	1.427	1658	324	1982	30,900	32,800	37,100	0.05	0.066	1418	1763	2259	2637	2916
James/ACSS/TW	1731	13	1.359	1.531	3	34	19×0.1075	0.5375	1.47	1636	585	2221	46,400	50,800	58,500	0.051	0.066	1430	1778	2277	2657	2937
Athabaska/ACSS/TW	1950	7	1.531	1.638	3	42	7×0.1392	0.4176	1.504	1836	360.7	2197	34,300	36,500	41,300	0.045	0.06	1505	1873	2403	2808	3157
Cumberland/ACSS/TW	1927	13	1.513	1.705	3	42	19×0.1133	0.5665	1.545	1819	649.8	2469	51,600	56,400	65,000	0.046	0.06	1508	1875	2400	2802	3148
Powder/ACSS/TW	2154	8	1.691	1.829	4	64	19×0.0961	0.4805	1.602	2043	467.5	2510	42,100	45,500	51,700	0.041	0.054	1599	1996	2569	3009	3391
Santee/ACSS/TW	2627	8	2.063	2.227	4	64	19×0.1062	0.531	1.762	2492	570.9	3062	51,300	55,600	63,100	0.034	0.046	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 factored 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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			Aluminum	Total	No. of Layers of Aluminum	No. of Aluminum Wires	No. & Diameters Individual Steel Wire	Steel Core	Completed 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
Linnet/ACSS/TW	336.4	16	0.2641	0.307	2	18	7×0.08484	0.2652	0.659	315.9	145.5	461.4	11,200	12,300	14,400	0.259	0.318	523	638	801	921	1021
Oriole/ACSS/TW	336.4	23	0.264	0.326	2	16	7×0.1059	0.3177	0.693	316.1	208.7	524.8	14,800	16,300	19,100	0.257	0.315	533	650	816	940	1043
Flicker/ACSS/TW	477	13	0.375	0.423	2	18	7×0.0940	0.282	0.776	447.8	164.5	612.3	13,000	14,200	16,400	0.183	0.226	648	793	998	1151	1279
Hawk/ACSS/TW	477	16	0.375	0.436	2	18	7×0.1053	0.3159	0.789	448.1	206.4	654.5	15,600	17,100	19,800	0.183	0.225	652	799	1005	1159	1589
Hen/ACSS/TW	477	23	0.375	0.462	2	16	7×0.1261	0.3783	0.825	448.3	296	744.3	21,000	22,700	26,700	0.181	0.223	663	813	1024	1181	1315
Parakeet/ACSS/TW	556.5	13	0.437	0.494	2	18	7×0.1015	0.3045	0.835	522.4	191.8	714.2	15,200	16,600	19,100	0.157	0.194	713	874	1102	1271	1415
Dove/ACSS/TW	556.5	16	0.437	0.508	2	20	7×0.1138	0.3414	0.852	522.9	241	763.9	18,200	19,900	23,100	0.156	0.193	719	881	1111	1282	1427
Rook/ACSS/TW	636	13	0.5	0.564	2	18	7×0.1085	0.3255	0.89	597	219.1	816.1	17,300	19,000	21,900	0.137	0.17	775	951	1200	1386	1544
Grosbeak/ACSS/TW	636	16	0.5	0.581	2	20	7×0.1216	0.3648	0.908	597.6	275.2	872.8	20,700	22,400	26,000	0.137	0.169	781	958	1210	1398	1557
Scoter/ACSS/TW	636	23	0.5	0.616	2	18	7×0.1456	0.4368	0.953	597.6	394.6	992.2	27,400	29,700	35,000	0.136	0.167	795	976	1234	1427	1591
Tern/ACSS/TW	795	7	0.624	0.668	2	17	7×0.0886	0.2658	0.96	745.2	146.1	891.3	14,200	15,200	17,400	0.111	0.137	878	1080	1366	1580	1762
Puffin/ACSS/TW	795	11	0.624	0.692	2	18	7×0.1056	0.3168	0.98	745.9	228.5	974.4	17,700	19,200	22,000	0.11	0.137	886	1090	1378	1595	1778
Condor/ACSS/TW	795	13	0.624	0.705	2	20	7×0.1213	0.3639	0.993	746.3	273.9	1020	21,700	23,300	26,900	0.11	0.136	890	1095	1386	1604	1789
Drake/ACSS/TW	795	16	0.624	0.726	2	20	7×0.1360	0.408	1.01	747	344.3	1091	25,900	28,000	32,600	0.11	0.136	896	1103	1396	1616	1803
Canary/ACSS/TW	900	13	0.707	0.798	2	20	7×0.1291	0.3873	1.055	844.9	310.2	1155	24,600	26,400	30,500	0.097	0.121	962	1185	1501	1739	1942
Phoenix/ACSS/TW	954	5	0.749	0.788	2	30	7×0.0837	0.2511	1.044	897.7	130.4	1028	14,200	15,200	17,100	0.093	0.119	967	1189	1503	1740	1940
Rail/ACSS/TW	954	7	0.749	0.801	3	32	7×0.0971	0.2913	1.061	898.6	175.5	1074	16,700	18,000	20,400	0.093	0.118	972	1196	1512	1750	1953
Cardinal/ACSS/TW	954	13	0.749	0.846	2	20	7×0.1329	0.3987	1.084	895.5	328.7	1224	26,000	28,000	32,300	0.092	0.114	997	1229	1558	1806	2016
Snowbird/ACSS/TW	1034	5	0.812	0.853	3	30	7×0.0871	0.2613	1.089	972.5	141.2	1114	15,400	16,400	18,500	0.086	0.11	1016	1251	1584	1834	2048
Ortolan/ACSS/TW	1034	7	0.812	0.868	3	32	7×0.1010	0.303	1.102	972.5	189.9	1162	18,100	19,500	22,000	0.854	0.11	1021	1257	1592	1843	2058
Curlew/ACSS/TW	1034	13	0.812	0.917	2	20	7×0.1383	0.4149	1.129	970.1	356	1326	28,200	30,300	35,000	0.085	0.105	1048	1293	1641	1903	2126

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			Aluminum	Total	No. of Layers of Aluminum	No. of Aluminum Wires	No. & Diameters Individual Steel Wire	Steel Core	Completed 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
Avocet/ACSS/TW	1113	5	0.874	0.919	3	30	7×0.0904	0.2712	1.129	1047	152.1	1199	16,300	17,500	19,500	0.079	0.102	1063	1310	1661	1925	2150
Bluejay/ACSS/TW	1113	7	0.874	0.935	3	33	7×0.1049	0.3147	1.143	1048	204.8	1253	19,500	21,000	23,800	0.079	0.102	1068	1317	1669	1935	2161
Finch/ACSS/TW	1113	13	0.874	0.985	3	38	19×0.0862	0.431	1.185	1051	376.1	1427	30,400	33,200	38,700	0.079	0.101	1084	1336	1695	1965	2196
Oxbird/ACSS/TW	1193	5	0.937	0.985	3	30	7×0.0936	0.2808	1.167	1122	163.1	1285	17,500	18,700	20,900	0.074	0.096	1108	1367	1735	2013	2249
Bunting/ACSS/TW	1193	7	0.937	1.001	3	33	7×0.1085	0.3255	1.181	1123	219.1	1342	20,900	22,500	25,400	0.074	0.095	1114	1374	1744	2023	2261
Grackle/ACSS/TW	1193	13	0.937	1.055	3	38	19×0.0892	0.446	1.225	1126	402.8	1529	32,600	35,500	41,500	0.074	0.094	1130	1395	1771	2055	2298
Scissortail/ACSS/TW	1272	5	0.999	1.051	3	30	7×0.0967	0.2901	1.203	1197	174	1371	18,700	20,000	22,300	0.07	0.09	1152	1423	1807	2098	2346
Bittern/ACSS/TW	1272	7	0.999	1.068	3	35	7×0.1121	0.3363	1.22	1198	233.9	1432	22,300	24,000	27,100	0.069	0.09	1159	1431	1817	2110	2360
Pheasant/ACSS/TW	1272	13	0.999	1.126	3	39	19×0.0921	0.4605	1.264	1201	429.4	1630	34,100	37,300	43,000	0.069	0.089	1176	1452	1846	2143	2398
Dipper/ACSS/TW	1352	7	1.062	1.135	3	35	7×0.1155	0.3465	1.256	1273	248.3	1521	23,700	25,500	28,800	0.065	0.085	1202	1485	1888	2194	2455
Martin/ACSS/TW	1352	13	1.062	1.196	3	39	19×0.0949	0.4745	1.3	1276	455.9	1732	36,200	39,600	45,600	0.065	0.837	1220	1508	1918	2228	2494
Bobolink/ACSS/TW	1431	7	1.124	1.202	3	36	7×0.1189	0.3567	1.291	1347	263.1	1611	25,100	27,000	30,500	0.062	0.08	1243	1538	1958	2276	2549
Plover/ACSS/TW	1431	13	1.124	1.266	3	39	19×0.0977	0.4885	1.337	1351	483.2	1834	38,400	41,900	48,300	0.061	0.079	1263	1562	1989	2313	2590
Lapwing/ACSS/TW	1590	7	1.249	1.335	3	36	7×0.1253	0.3759	1.358	1498	292.2	1790	27,900	29,600	33,500	0.056	0.073	1324	1640	2092	2435	2730
Falcon/ACSS/TW	1590	13	1.249	1.407	3	42	19×0.1030	0.515	1.408	1501	537	2038	42,600	46,600	53,700	0.055	0.072	1346	1668	2127	2477	2777
Chukar/ACSS/TW	1780	8	1.399	1.513	3	37	19×0.0874	0.437	1.445	1675	386.7	2062	35,300	38,200	43,900	0.05	0.065	1421	1764	2255	2630	2952
Bluebird/ACSS/TW	2156	8	1.693	1.831	4	64	19×0.0961	0.4805	1.608	2045	467.5	2512	42,100	45,500	51,700	0.041	0.054	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 factored such as: layer diameter, wire width and wire thickness. The actual configuration of a given size may vary between manufacturers.

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