ACSS/ HS285® Ultra-High Strength Conductor

Shaped Wire Concentric-Lay Compact Aluminum Conductors Steel Supported ACSS/TW HS285® Conductor
Diameters Equal to ACSR

			Size & Stranding of ACSR with Equal Diameter		Cross Sectional Area Sq In			Stranding		Diameter		Weight per 1000 feet			Rated Breaking Strength		
Code Word	Conductor Size (kcmil)	Type No.	kcmil	Stranding	Alum.	Total	Layers of Alum.	No. & Alum. Wires	No. & Dia. Indv. Steel Wire	Steel Core in	Complete Conductor in	Alum. lb	Steel lb	Total lb	Standard Strength lb	High Strength lb	HS285 Strength lb
	403.4	16	336.4	26/7	0.3168	0.3681	2	18	7 x 0.0966	0.2898	0.720	378.7	173.7	552.4	13,100	14,400	16,700
Mohawk/ACSS/TW	571.7	13	477.0	24/7	0.4490	0.5074	2	18	7 x 0.1030	0.3090	0.846	536.6	197.5	734.1	15,600	17,100	19,700
Calumet/ACSS/TW	565.3	16	477.0	26/7	0.4439	0.5162	2	20	7 x 0.1146	0.3441	0.858	531.2	244.4	775.6	18,400	20,200	23,500
Mystic/ACSS/TW	666.6	13	556.5	24/7	0.5236	0.5914	2	20	7 x 0.1111	0.3333	0.913	625.7	229.7	855.4	18,200	19,900	22,900
Oswego/ACSS/TW	664.8	16	556.5	26/7	0.5221	0.6072	2	20	7 x 0.1244	0.3732	0.927	624.6	288.0	912.6	21,700	23,400	27,200
Maumee/ACSS/TW	768.2	13	636.0	24/7	0.6034	0.6819	2	20	7 x 0.1195	0.3585	0.977	721.1	265.8	986.9	21,000	23,000	26,500
Wabash/ACSS/TW	762.8	16	636.0	26/7	0.5992	0.6966	2	20	7 x 0.1331	0.3993	0.990	716.7	329.7	1046	24,900	26,800	31,200
Kettle/ACSS/TW	957.2	7	795.0	45/7	0.7518	0.8038	3	32	7 x 0.0973	0.2919	1.060	901.6	176.2	1078	16,800	18,100	20,400
Fraser/ACSS/TW	946.7	10	795.0	22/7	0.7436	0.8168	3	35	7 x 0.1154	0.3462	1.077	892.6	247.9	1141	21,100	22,900	26,200
Columbia/ACSS/TW	966.2	13	795.0	54/7	0.7589	0.8573	2	21	7 x 0.1338	0.4014	1.092	906.9	333.2	1240	26,400	28,300	32,800
Suwannee/ACSS/TW	959.6	16	795.0	26/7	0.7537	0.8762	2	22	7 x 0.1493	0.4479	1.108	901.6	414.9	1317	30,700	33,100	38,600
Cheyenne/ACSS/TW	1168.1	5	954.0	42/7	0.9175	0.9646	3	30	7 x 0.0926	0.2778	1.155	1099	159.6	1259	17,200	18,300	20,500
Genesee/ACSS/TW	1158.0	7	954.0	45/7	0.9095	0.9733	3	33	7 x 0.1078	0.3234	1.165	1091	216.3	1307	20,500	22,100	25,000
Hudson/ACSS/TW	1158.4	13	954.0	54/7	0.9098	1.028	2	25	7 x 0.1467	0.4401	1.196	1087	400.6	1488	31,100	33,500	38,800
Catawba/ACSS/TW	1272.0	5	1033.5	42/7	0.9991	1.050	3	30	7 x 0.0967	0.2901	1.203	1197	174.0	1371	18,700	20,000	22,300
Nelson/ACSS/TW	1257.1	7	1033.5	45/7	0.9874	1.055	3	35	7 x 0.1115	0.3345	1.213	1184	231.4	1415	22,100	23,800	26,900
Yukon/ACSS/TW	1233.6	13	1033.5	54/7	0.9689	1.092	3	38	19 x 0.0910	0.4550	1.245	1165	419.2	1584	33,200	36,300	41,900
Truckee/ACSS/TW	1372.5	5	1113.0	42/7	1.078	1.133	3	30	7 x 0.1004	0.3012	1.248	1292	187.6	1479	20,200	21,500	24,000
Mackenzie/ACSS/TW	1359.7	7	1113.0	45/7	1.067	1.141	3	36	7 x 0.1159	0.3477	1.259	1281	250.0	1531	23,900	25,700	29,000
Thames/ACSS/TW	1334.6	13	1113.0	54/19	1.048	1.180	3	39	19 x 0.0944	0.4720	1.290	1260	451.1	1711	35,800	39,100	45,100
St. Croix/ACSS/TW	1467.8	5	1192.5	42/7	1.152	1.212	3	33	7 x 0.1041	0.3123	1.292	1381	201.7	1583	21,600	23,100	25,800
Miramichi/ACSS/TW	1455.3	7	1192.5	45/7	1.143	1.222	3	36	7 x 0.1200	0.3600	1.302	1371	268.0	1639	25,600	27,100	30,700
Merrimack/ACSS/TW	1433.6	13	1192.5	54/19	1.125	1.267	3	39	19 x 0.0978	0.4890	1.340	1354	484.2	1838	38,400	42,000	48,400
Platte/ACSS/TW	1569.0	5	1272.0	42/7	1.232	1.295	3	33	7 x 0.1074	0.3222	1.334	1476	214.7	1691	23,100	24,600	27,500
Potomac/ACSS/TW	1557.4	7	1272.0	45/7	1.223	1.307	3	36	7 x 0.1241	0.3723	1.345	1467	286.7	1754	27,300	29,000	32,800
Rio Grande/ACSS/TW	1533.3	13	1272.0	54/19	1.204	1.357	3	39	19 x 0.1012	0.5060	1.382	1448	518.4	1966	41,200	45,000	51,900
Schuylkill/ACSS/TW	1657.4	7	1351.5	45/7	1.302	1.392	3	36	7 x 0.1280	0.3840	1.386	1561	305.0	1866	29,100	30,900	34,900
Pecos/ACSS/TW	1622.0	13	1351.5	54/19	1.273	1.442	3	39	19 x 0.1064	0.5320	1.424	1532	573.1	2105	45,000	49,300	56,900
Pee Dee/ACSS/TW	1758.6	7	1431.0	45/7	1.381	1.477	3	37	7 x 0.1319	0.3957	1.427	1656	323.8	1980	30,900	32,800	37,100
James/ACSS/TW	1730.6	13	1431.0	54/19	1.359	1.531	3	39	19 x 0.1075	0.5375	1.470	1634	585.0	2219	46,400	50,800	58,500
Athabaska/ACSS/TW	1949.6	7	1590.0	45/7	1.531	1.637	3	42	7 x 0.1392	0.4176	1.504	1836	360.7	2197	34,300	36,500	41,300
Cumberland/ACSS/TW	1926.9	13	1590.0	54/19	1.513	1.704	3	42	19 x 0.1133	0.5665	1.545	1819	649.8	2469	51,600	56,400	65,000
Powder/ACSS/TW	2153.8	8	1780.0	84/19	1.691	1.829	4	64	19 x 0.0961	0.4805	1.602	2043	467.5	2510	42,100	45,500	51,700
Santee/ACSS/TW	2627.3	8	2156.0	84/19	2.063	2.226	4	64	19 x 0.1062	0.5310	1.762	2492	570.9	3062	51,300	55,600	63,100

Notes:
- Rated strengths 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.
- Data based on a nominal cable manufactured in accordance with ASTM B 857.

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ACSS/ HS285® Ultra-High Strength Conductor

Shaped Wire Concentric-Lay Compact Aluminum Conductors Steel Supported ACSS/TW HS285® Conductor
Diameters Equal to ACSR

			Resistance				Resistance @ 1 ft Spacing 60 HZ			Ampacity				
Code Word	Conductor Size (kcmil)	Type No.	dc @ 20°C, Ω/ mile	ac–60 Hz			GMR feet Ω/mile	Inductive Xa, MΩ-mile	Capacitive Xa, MΩ-mile	@ 75°C, amp	@ 100°C, amp	@ 150°C, amp	@ 200°C, amp	@ 250°C, amp
				@ 25°C, Ω/mile	@ 50°C, Ω/mile	@ 75°C, Ω/mile								
	403.4	16	0.2158	0.2209	0.2432	0.2655	0.0241	0.452	0.1040	586	716	900	1036	1151
Mohawk/ACSS/TW	571.7	13	0.1527	0.1570	0.1727	0.1884	0.0281	0.433	0.0991	725	889	1121	1294	1441
Calumet/ACSS/TW	565.3	16	0.1540	0.1581	0.1739	0.1898	0.0288	0.430	0.0988	725	890	1122	1295	1442
Mystic/ACSS/TW	666.6	13	0.1310	0.1349	0.1484	0.1619	0.0304	0.424	0.0970	798	980	1238	1431	1595
Oswego/ACSS/TW	664.8	16	0.1309	0.1347	0.1482	0.1617	0.0310	0.421	0.0964	802	985	1244	1439	1604
Maumee/ACSS/TW	768.2	13	0.1137	0.1174	0.1291	0.1407	0.0325	0.416	0.0949	872	1072	1356	1569	1750
Wabash/ACSS/TW	762.8	16	0.1141	0.1177	0.1294	0.1411	0.0330	0.413	0.0946	873	1074	1359	1573	1755
Kettle/ACSS/TW	957.2	7	0.0923	0.0964	0.1081	0.1183	0.0350	0.407	0.0925	973	1197	1514	1753	1955
Fraser/ACSS/TW	946.7	10	0.0930	0.0969	0.1087	0.1190	0.0358	0.404	0.0919	974	1199	1517	1756	1959
Columbia/ACSS/TW	966.2	13	0.0904	0.0940	0.1032	0.1124	0.0364	0.402	0.0917	1005	1239	1571	1822	2035
Suwannee/ACSS/TW	959.6	16	0.0907	0.0941	0.1034	0.1127	0.0373	0.399	0.0913	1008	1243	1576	1828	2042
Cheyenne/ACSS/TW	1168.1	5	0.0757	0.0801	0.0896	0.0979	0.0378	0.397	0.0901	1095	1350	1712	1986	2219
Genesee/ACSS/TW	1158.0	7	0.0762	0.0805	0.0900	0.0983	0.0384	0.395	0.0897	1094	1350	1712	1985	2218
Hudson/ACSS/TW	1158.4	13	0.0754	0.0790	0.0866	0.0943	0.0400	0.391	0.0889	1124	1389	1766	2051	2295
Catawba/ACSS/TW	1272.0	5	0.0695	0.0741	0.0827	0.0902	0.0394	0.392	0.0889	1152	1423	1807	2098	2346
Nelson/ACSS/TW	1257.1	7	0.0702	0.0745	0.0833	0.0909	0.0400	0.390	0.0886	1150	1420	1804	2094	2342
Yukon/ACSS/TW	1233.6	13	0.0712	0.0749	0.0838	0.0916	0.0420	0.385	0.0877	1154	1425	1810	2101	2350
Truckee/ACSS/TW	1372.5	5	0.0644	0.0691	0.0770	0.0840	0.0409	0.388	0.0877	1206	1491	1896	2203	2466
Mackenzie/ACSS/TW	1359.7	7	0.0649	0.0694	0.0774	0.0844	0.0420	0.386	0.0874	1206	1490	1895	2202	2465
Thames/ACSS/TW	1334.6	13	0.0658	0.0696	0.0777	0.0849	0.0436	0.380	0.0866	1210	1495	1902	2209	2472
St. Croix/ACSS/TW	1467.8	5	0.0602	0.0650	0.0724	0.0789	0.0424	0.840	0.0867	1256	1554	1979	2302	2578
Miramichi/ACSS/TW	1455.3	7	0.0607	0.0652	0.0726	0.0792	0.0431	0.382	0.0867	1256	1554	1979	2301	2577
Merrimack/ACSS/TW	1433.6	13	0.0613	0.0651	0.0727	0.0793	0.0450	0.376	0.0856	1265	1565	1992	2317	2595
Platte/ACSS/TW	1569.0	5	0.0564	0.0613	0.0681	0.0742	0.0439	0.379	0.0858	1306	1618	2063	2402	2692
Potomac/ACSS/TW	1557.4	7	0.0567	0.0613	0.0682	0.0743	0.0445	0.378	0.0853	1308	1620	2065	2403	2694
Rio Grande/ACSS/TW	1533.3	13	0.0573	0.0612	0.0682	0.0744	0.0466	0.372	0.0847	1316	1630	2078	2418	2710
Schuylkill/ACSS/TW	1657.4	7	0.0533	0.0581	0.0645	0.0702	0.0459	0.374	0.0845	1357	1682	2147	2501	2805
Pecos/ACSS/TW	1622.0	13	0.0541	0.0580	0.0646	0.0705	0.0481	0.368	0.0839	1363	1690	2157	2511	2816
Pee Dee/ACSS/TW	1758.6	7	0.0502	0.0551	0.0611	0.0665	0.0473	0.370	0.0837	1405	1743	2228	2598	2916
James/ACSS/TW	1730.6	13	0.0508	0.0549	0.0610	0.0664	0.0494	0.365	0.0829	1416	1758	2245	2617	2937
Athabaska/ACSS/TW	1949.6	7	0.0453	0.0505	0.0550	0.0595	0.0500	0.363	0.0822	1505	1873	2403	2808	3157
Cumberland/ACSS/TW	1926.9	13	0.0456	0.0499	0.0553	0.0602	0.0523	0.358	0.0815	1508	1875	2400	2802	3148
Powder/ACSS/TW	2153.8	8	0.0412	0.0464	0.0504	0.0543	0.0538	0.355	0.0803	1599	1996	2569	3009	3391
Santee/ACSS/TW	2627.3	8	0.0338	0.0396	0.0427	0.0459	0.0594	0.343	0.0775	1784	2237	2894	3403	3846

Notes:
- 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 reference conductor temperature, 25°C ambient temperature, 2 ft/sec wind, in sun, with an emissivity of .5 and a coefficient of solar absorption of .5, at sea level.

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