

HS285® Ultra-High Strength ACSS Conductor



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

Code Word	Conductor Size (kcmil)	Type No.	Size & Stranding of ACSR with Equal Diameter		Cross Sectional Area Sq In		Layers of Alum.	Stranding		Diameter		Weight per 1000 feet			Rated Breaking Strength		
			kcmil	Stranding	Alum.	Total		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	585.3	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 Galvan coated steel core wire in accordance with ASTM B 802.
 - Rated Strength for high strength core based on Class A Galvan 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.



HS285® Ultra-High Strength ACSS Conductor



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

Code Word	Conductor Size (kcmil)	Type No.	Resistance				Resistance @ 1 ft Spacing 60 HZ			Ampacity				
			dc @ 20°C, Ω/mile	ac-60 Hz			GMR feet Ω/mile	Inductive X _a , MΩ-mile	Capacitive X _a , 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
Schuykill/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.