

HS285® Ultra-High Strength ACSS Conductor



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

Code Word	Conductor Size (kcmil)	Type No.	Cross Sectional Area Sq In		Layers of Alum.	Stranding		Diameter		Weight per 1000 feet			Rated Breaking Strength		
			Alum.	Total		No. of 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
Linnet/ACSS/TW	336.4	16	0.2641	0.3070	2	18	7 x 0.0884	0.2652	0.659	315.9	145.5	461.4	11,200	12,300	14,400
Oriole/ACSS/TW	336.4	23	0.2642	0.3258	2	16	7 x 0.1059	0.3177	0.693	316.1	208.7	524.8	14,800	16,300	19,100
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
Hawk/ACSS/TW	477.0	16	0.3746	0.4356	2	18	7 x 0.1053	0.3159	0.789	448.1	206.4	654.5	15,600	17,100	19,800
Hen/ACSS/TW	477.0	23	0.3747	0.4621	2	16	7 x 0.1261	0.3783	0.825	448.3	296.0	744.3	21,000	22,700	26,700
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
Dove/ACSS/TW	556.5	16	0.4371	0.5083	2	20	7 x 0.1138	0.3414	0.852	522.9	241.0	763.9	18,200	19,900	23,100
Rook/ACSS/TW	636.0	13	0.4995	0.5643	2	18	7 x 0.1085	0.3255	0.890	597.0	219.1	816.1	17,300	19,000	21,900
Grosbeak/ACSS/TW	636.0	16	0.4995	0.5808	2	20	7 x 0.1216	0.3648	0.908	597.6	275.2	872.8	20,700	22,400	26,000
Scoter/ACSS/TW	636.0	23	0.4995	0.616	2	18	7 x 0.1456	0.4368	0.953	597.6	394.6	992.2	27,400	29,700	35,000
Tern/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
Puffin/ACSS/TW	795.0	10	0.6244	0.6919	2	18	7 x 0.1108	0.3324	0.980	745.9	228.5	974.4	18,900	20,600	23,700
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	21,700	23,300	26,900
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	25,900	28,000	32,600
Canary/ACSS/TW	900.0	13	0.7069	0.7983	2	20	7 x 0.1291	0.3873	1.055	844.9	310.2	1155	24,600	26,400	30,500
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	14,200	15,200	17,100
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	16,700	18,000	20,400
Cardinal/ACSS/TW	954.0	13	0.7493	0.8464	2	20	7 x 0.1329	0.3987	1.084	895.5	328.7	1224	26,000	28,000	32,300
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	15,400	16,400	18,500
Ortolan/ACSS/TW	1033.5	7	0.8117	0.8678	3	32	7 x 0.1010	0.3030	1.102	972.5	189.9	1162	18,100	19,500	22,000
Curlew/ACSS/TW	1033.5	13	0.8117	0.9169	2	20	7 x 0.1383	0.4149	1.129	970.1	356.0	1326	28,200	30,300	35,000
Avocet/ACSS/TW	1113.0	5	0.8742	0.9191	3	30	7 x 0.0904	0.2712	1.129	1047	152.1	1199	16,300	17,500	19,500
Bluejay/ACSS/TW	1113.0	7	0.8742	0.9347	3	33	7 x 0.1049	0.3147	1.143	1048	204.8	1253	19,500	21,000	23,800
Finch/ACSS/TW	1113.0	13	0.8743	0.9852	3	38	19 x 0.0862	0.4310	1.185	1051	376.1	1427	30,400	33,200	38,700
Oxbird/ACSS/TW	1192.5	5	0.9366	0.9848	3	30	7 x 0.0936	0.2808	1.167	1122	163.1	1285	17,500	18,700	20,900
Bunting/ACSS/TW	1192.5	7	0.9366	1.001	3	33	7 x 0.1085	0.3255	1.181	1123	219.1	1342	20,900	22,500	25,400
Grackle/ACSS/TW	1192.5	13	0.9366	1.055	3	38	19 x 0.0892	0.4460	1.225	1126	402.8	1529	32,600	35,500	41,500
Scissortail/ACSS/TW	1272.0	5	0.9991	1.05	3	30	7 x 0.0967	0.2901	1.203	1197	174.0	1371	18,700	20,000	22,300
Bittern/ACSS/TW	1272.0	7	0.9990	1.068	3	35	7 x 0.1121	0.3363	1.220	1198	233.9	1432	22,300	24,000	27,100
Pheasant/ACSS/TW	1272.0	13	0.9990	1.125	3	39	19 x 0.0921	0.4605	1.264	1201	429.4	1630	34,100	37,300	43,000
Dipper/ACSS/TW	1351.5	7	1.0615	1.134	3	35	7 x 0.1155	0.3465	1.256	1273	248.3	1521	23,700	25,500	28,800
Martin/ACSS/TW	1351.5	13	1.0615	1.195	3	39	19 x 0.0949	0.4745	1.300	1276	455.9	1732	36,200	39,600	45,600
Bobolink/ACSS/TW	1431.0	7	1.1236	1.201	3	36	7 x 0.1189	0.3567	1.291	1347	263.1	1611	25,100	27,000	30,500
Plover/ACSS/TW	1431.0	13	1.1239	1.266	3	39	19 x 0.0977	0.4885	1.337	1351	483.2	1834	38,400	41,900	48,300
Lapwing/ACSS/TW	1590.0	7	1.2488	1.335	3	36	7 x 0.1253	0.3759	1.358	1498	292.2	1790	27,900	29,600	33,500
Falcon/ACSS/TW	1590.0	13	1.2488	1.407	3	42	19 x 0.1030	0.5150	1.408	1501	537.0	2038	42,600	46,600	53,700
Chukar/ACSS/TW	1780.0	8	1.3986	1.512	3	37	19 x 0.0874	0.4370	1.445	1675	386.7	2062	35,300	38,200	43,900
Bluebird/ACSS/TW	2156.0	8	1.6933	1.830	4	64	19 x 0.0961	0.4805	1.608	2045	467.5	2512	42,100	45,500	51,700

- 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. 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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Code Word	Conductor Size (kcmil)	Stranding (Al/St)	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								
Linnet/ACSS/TW	336.4	16	0.2588	0.2647	0.2914	0.3182	0.0221	0.463	0.1066	523	638	801	921	1021
Oriole/ACSS/TW	336.4	23	0.2565	0.2622	0.2887	0.3151	0.0238	0.454	0.1051	533	650	816	940	1043
Flicker/ACSS/TW	477.0	13	0.1831	0.1877	0.2066	0.2255	0.0257	0.444	0.1017	648	793	998	1151	1279
Hawk/ACSS/TW	477.0	16	0.1825	0.1870	0.2059	0.2247	0.0264	0.441	0.1013	652	799	1005	1159	1289
Hen/ACSS/TW	477.0	23	0.1809	0.1853	0.2039	0.2225	0.0283	0.432	0.1000	663	813	1024	1181	1315
Parakeet/ACSS/TW	556.5	13	0.1569	0.1612	0.1774	0.1935	0.0277	0.435	0.0994	713	874	1102	1271	1415
Dove/ACSS/TW	556.5	16	0.1564	0.1606	0.1767	0.1928	0.0286	0.431	0.0991	719	881	1111	1282	1427
Rook/ACSS/TW	636.0	13	0.1373	0.1413	0.1554	0.1696	0.0296	0.427	0.0978	775	951	1200	1386	1544
Grosbeak/ACSS/TW	636.0	16	0.1369	0.1407	0.1548	0.1689	0.0305	0.423	0.0971	781	958	1210	1398	1557
Scoter/ACSS/TW	636.0	23	0.1357	0.1393	0.1533	0.1672	0.0328	0.415	0.0957	795	976	1234	1427	1591
Tern/ACSS/TW	795.0	7	0.1105	0.1147	0.1260	0.1373	0.0312	0.421	0.0955	878	1080	1366	1580	1762
Puffin/ACSS/TW	795.0	10	0.1101	0.1139	0.1252	0.1365	0.0323	0.417	0.0949	886	1090	1378	1595	1778
Condor/ACSS/TW	795.0	13	0.1098	0.1136	0.1248	0.1361	0.0331	0.414	0.0945	890	1095	1386	1604	1789
Drake/ACSS/TW	795.0	16	0.1095	0.1130	0.1243	0.1355	0.0339	0.411	0.0940	896	1103	1396	1616	1803
Canary/ACSS/TW	900.0	13	0.0970	0.1007	0.1106	0.1205	0.0359	0.404	0.0927	962	1185	1501	1739	1942
Phoenix/ACSS/TW	954.0	5	0.0927	0.0970	0.1087	0.1190	0.0343	0.409	0.0928	967	1189	1503	1740	1940
Rail/ACSS/TW	954.0	7	0.0926	0.0967	0.1084	0.1187	0.0349	0.407	0.0925	972	1196	1512	1750	1953
Cardinal/ACSS/TW	954.0	13	0.0915	0.0952	0.1045	0.1138	0.0362	0.403	0.0919	997	1229	1558	1806	2016
Snowbird/ACSS/TW	1033.5	5	0.0856	0.0899	0.1007	0.1101	0.0356	0.405	0.0917	1016	1251	1584	1834	2048
Ortolan/ACSS/TW	1033.5	7	0.0854	0.0896	0.1004	0.1098	0.0363	0.402	0.0914	1021	1257	1592	1843	2058
Curlew/ACSS/TW	1033.5	13	0.0845	0.0881	0.0967	0.1053	0.0377	0.398	0.0906	1048	1293	1641	1903	2126
Avocet/ACSS/TW	1113.0	5	0.0794	0.0838	0.0938	0.1025	0.0369	0.400	0.0906	1063	1310	1661	1925	2150
Bluejay/ACSS/TW	1113.0	7	0.0793	0.0835	0.0935	0.1022	0.0376	0.398	0.0903	1068	1317	1669	1935	2161
Finch/ACSS/TW	1113.0	13	0.0789	0.0826	0.0925	0.1012	0.0399	0.391	0.0891	1084	1336	1695	1965	2196
Oxbird/ACSS/TW	1192.5	5	0.0741	0.0786	0.0879	0.0960	0.0382	0.396	0.0896	1108	1367	1735	2013	2249
Bunting/ACSS/TW	1192.5	7	0.0740	0.0783	0.0875	0.0956	0.0390	0.394	0.0893	1114	1374	1744	2023	2261
Grackle/ACSS/TW	1192.5	13	0.0737	0.0773	0.0866	0.0947	0.0412	0.387	0.0883	1130	1395	1771	2055	2298
Scissortail/ACSS/TW	1272.0	5	0.0695	0.0741	0.0827	0.0902	0.0394	0.392	0.0888	1152	1423	1807	2098	2346
Bittern/ACSS/TW	1272.0	7	0.0694	0.0737	0.0824	0.0899	0.0403	0.390	0.0884	1159	1431	1817	2110	2360
Pheasant/ACSS/TW	1272.0	13	0.0691	0.0728	0.0814	0.0890	0.0426	0.383	0.0874	1176	1452	1846	2143	2398
Dipper/ACSS/TW	1351.5	7	0.0653	0.0697	0.0778	0.0849	0.0415	0.386	0.0874	1202	1485	1888	2194	2455
Martin/ACSS/TW	1351.5	13	0.0650	0.0688	0.0768	0.0839	0.0438	0.377	0.0865	1220	1508	1918	2228	2494
Bobolink/ACSS/TW	1431.0	7	0.0617	0.0662	0.0738	0.0804	0.0427	0.383	0.0867	1243	1538	1958	2276	2549
Plover/ACSS/TW	1431.0	13	0.0614	0.0652	0.0728	0.0795	0.0451	0.376	0.0860	1263	1562	1989	2313	2590
Lapwing/ACSS/TW	1590.0	7	0.0555	0.0602	0.0670	0.0729	0.0449	0.377	0.0851	1324	1640	2092	2435	2730
Falcon/ACSS/TW	1590.0	13	0.0553	0.0592	0.0660	0.0719	0.0476	0.370	0.0841	1346	1668	2127	2477	2777
Chukar/ACSS/TW	1780.0	8	0.0495	0.0542	0.0601	0.0654	0.0482	0.368	0.0832	1421	1764	2255	2630	2952
Bluebird/ACSS/TW	2156.0	8	0.4117	0.0464	0.0503	0.0543	0.0538	0.355	0.0801	1601	1999	2573	3014	3396

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.