



ACSR -- ALUMINUM CONDUCTOR STEEL REINFORCED



APPLICATIONS

Bare ACSR conductors are intended for use as overhead transmission, primary or secondary distribution conductor. The steel wire core and the outer aluminum wires provide an optimal balance between conductor strength and current carrying capacity, allowing for greater conductor currents at longer spans between supports. This conductor is often used as the messenger for multi conductor neutral supported conductor designs.

CONSTRUCTION

Aluminum alloy 1350-H19 wires concentrically stranded over a steel wire core. The steel wire core is Class A Zinc coated (Code GA2).

STANDARDS

These conductors are manufactured and tested to meet or exceed the following standards:

- ASTM B230 – Aluminum 1350-H19 Wire for Electrical Purposes
- ASTM B231 – Concentric-Lay-Stranded Aluminum 1350 Conductors
- ASTM B232 – Concentric-Lay-Stranded Aluminum Conductors, Coated-Steel Reinforced (ACSR)
- ASTM B498 – Zinc-Coated (Galvanized) Steel Core Wire for Use in Overhead Electrical Conductors

Code Word	Size (AWG or kcmil)	Stranding (Al/Stl)	Wire Diameter		Diameter		Weight			Rated Strength (lbf)	DC Resistance @ 20 deg C (ohm/1000f)	Ampacity (A)
			Aluminum (in)	Steel (in)	Steel Core (in)	Overall (in)	Aluminum (lb/1000ft)	Steel (lb/1000ft)	Net (lb/1000ft)			
Grouse	80	8/1	0.1000	0.1670	0.1670	0.367	75.0	73.9	148.9	5200	0.206	206
Petrel	101.8	12/7	0.0921	0.2763	0.2763	0.461	95.9	157.9	253.8	10400	0.158	234
Minorca	110.8	12/7	0.0961	0.0961	0.2883	0.481	104.4	171.9	276.3	11300	0.145	245
Leghorn	134.6	12/7	0.1059	0.1059	0.3177	0.530	126.8	208.7	335.5	13600	0.120	271
Guinea	159	12/7	0.1151	0.1151	0.3453	0.576	149.7	246.6	396.3	16000	0.101	296
Dotterel	176.9	12/7	0.1214	0.1214	0.3642	0.607	166.6	274.3	440.9	17300	0.0911	313
Dorking	190.8	12/7	0.1261	0.1261	0.3783	0.631	179.7	296.0	475.7	18700	0.0845	326
Brahma	203.2	16/19	0.1127	0.0977	0.4885	0.714	191.4	483.2	674.6	28400	0.0764	341
Cochin	211.3	12/7	0.1327	0.1327	0.3981	0.664	199.0	327.8	526.8	20700	0.0763	344
Turkey	6	6/1	0.0661	0.0661	0.0661	0.198	24.5	11.6	36.1	1190	0.641	105
Swan	4	6/1	0.0834	0.0834	0.0834	0.250	38.9	18.4	57.3	1860	0.403	139
Swanate	4	6/1	0.0772	0.1029	0.1029	0.257	38.9	28.0	66.9	2360	0.399	139
Sparrow	2	6/1	0.1052	0.1052	0.1052	0.316	61.9	29.3	91.2	2850	0.254	184
Sparate	2	6/1	0.0974	0.1299	0.1299	0.325	61.9	44.7	106.6	3640	0.251	184
Robin	1	6/1	0.1181	0.1182	0.1182	0.355	78.1	37.0	115.1	3550	0.201	211
Raven	1/0	6/1	0.1327	0.1327	0.1327	0.398	98.5	46.6	145.1	4380	0.159	243
Quail	2/0	6/1	0.1489	0.1489	0.1489	0.447	124.1	58.7	182.8	5310	0.126	278
Pigeon	3/0	6/1	0.1672	0.1672	0.1672	0.502	156.4	74.0	230.4	6620	0.100	319
Penguin	4/0	6/1	0.1878	0.1878	0.1878	0.563	197.4	93.4	290.8	8350	0.0795	366
Waxwing	266.8	18/1	0.1217	0.1217	0.1217	0.609	249.9	39.2	289.1	6880	0.0643	449
Partridge	266.8	26/7	0.1013	0.0788	0.2364	0.642	251.3	115.6	366.9	11300	0.0637	457
Ostrich	300	26/7	0.1074	0.0835	0.2505	0.680	282.5	129.7	412.2	12700	0.0567	492
Merlin	336.4	18/1	0.1367	0.1367	0.1367	0.683	315.3	49.5	364.8	8680	0.0510	519
Linnet	336.4	26/7	0.1137	0.0884	0.2652	0.720	316.6	145.4	462.0	14100	0.0505	529
Oriole	336.4	30/7	0.1059	0.1059	0.3177	0.741	317.7	208.7	526.4	17300	0.0502	535
Chickadee	397.5	18/1	0.1486	0.1486	0.1486	0.743	372.5	58.5	431.0	9940	0.0432	576
Brant	397.5	24/7	0.1287	0.0858	0.2574	0.772	374.4	137.0	511.4	14600	0.0430	584



ACSR -- ALUMINUM CONDUCTOR STEEL REINFORCED

Code Word	Size (AWG or kcmil)	Stranding (Al/Stl)	Wire Diameter		Diameter		Weight			Rated Strength (lbf)	DC Resistance @ 20 deg C (ohm/1000f)	Ampacity (A)
			Aluminum (in)	Steel (in)	Steel Core (in)	Overall (in)	Aluminum (lb/1000ft)	Steel (lb/1000ft)	Net (lb/1000ft)			
Ibis	397.5	26/7	0.1236	0.0961	0.2883	0.783	374.1	171.9	546.0	16300	0.0428	587
Lark	397.5	30/7	0.1151	0.1151	0.3453	0.806	375.3	246.5	621.8	20300	0.0425	594
Pelican	477	18/1	0.1628	0.1628	0.1628	0.814	447.1	70.2	517.3	11800	0.0360	646
Flicker	477	24/7	0.1410	0.0940	0.2820	0.846	449.4	164.5	613.9	17200	0.0358	655
Hawk	477	26/7	0.1354	0.1053	0.3159	0.858	449.0	206.4	655.3	19500	0.0356	659
Hen	477	30/7	0.1261	0.1261	0.3783	0.883	450.4	296.0	746.4	23800	0.0354	666
Osprey	556.5	18/1	0.1758	0.1758	0.1758	0.879	521.4	81.8	603.3	13700	0.0308	711
Parakeet	556.5	24/7	0.1523	0.1015	0.3045	0.914	524.3	191.8	716.1	19800	0.0307	721
Dove	556.5	26/7	0.1463	0.1138	0.3414	0.927	524.2	241.0	765.2	22600	0.0305	726
Eagle	556.5	30/7	0.1362	0.1362	0.4086	0.953	525.4	345.2	870.7	27800	0.0303	734
Peacock	605	24/7	0.1588	0.1059	0.3177	0.966	570.1	208.7	778.8	21600	0.0282	760
Squab	605	26/7	0.1525	0.1186	0.3558	0.994	569.3	261.8	831.3	24300	0.0281	765
Wood Duck	605	30/7	0.1420	0.1420	0.4260	0.994	571.2	375.3	946.5	28900	0.0279	773
Teal	605	30/19	0.1420	0.0852	0.4260	0.994	571.2	367.4	938.6	30000	0.0279	773
Kingbird	636	18/1	0.1880	0.1880	0.1880	0.940	596.3	93.6	689.9	15700	0.0270	773
Swift	636	36/1	0.1329	0.1329	0.1329	0.930	596.0	46.8	642.8	13800	0.0271	769
Rook	636	24/7	0.1628	0.1085	0.3255	0.977	599.1	219.1	818.2	22600	0.0269	784
Grosbeak	636	26/7	0.1564	0.1216	0.3648	0.990	599.0	275.2	874.2	25200	0.0267	789
Scoter	636	30/7	0.1456	0.1456	0.4368	1.019	600.5	394.6	995.1	30400	0.0266	798
Egret	636	30/19	0.1456	0.0874	0.4370	1.019	600.5	386.7	987.2	31500	0.0266	798
Flamingo	666.6	24/7	0.1667	0.1111	0.3333	1.000	628.2	229.7	857.9	23700	0.0256	807
Gannet	666.6	26/7	0.1601	0.1245	0.3735	1.014	627.7	288.5	916.2	26400	0.0255	812
Stilt	715.5	24/7	0.1727	0.1151	0.3453	1.036	674.2	246.6	920.8	25500	0.0239	844
Starling	715.5	26/7	0.1659	0.1290	0.3870	1.051	674.0	309.7	983.7	28400	0.0238	849
Redwing	715.5	30/19	0.1544	0.0926	0.4630	1.081	675.3	434.0	1109.3	34600	0.0236	859
Coot	795	36/1	0.1486	0.1486	0.1486	1.040	745.1	58.5	803.6	16800	0.0217	884
Cuckoo	795	24/7	0.1213	0.1213	0.3639	1.092	748.8	273.9	1022.6	27900	0.0215	901
Drake	795	26/7	0.1360	0.1360	0.4080	1.108	749.1	344.3	1093.4	31500	0.0214	907
Tern	795	45/7	0.1329	0.0886	0.2658	1.063	748.6	146.1	894.7	22100	0.0216	887
Condor	795	54/7	0.1213	0.1213	0.3639	1.092	748.4	273.9	1022.2	28200	0.0215	889
Mallard	795	30/19	0.1628	0.0977	0.4885	1.108	750.7	483.2	1234.0	38400	0.0213	917
Ruddy	900	45/7	0.1414	0.0943	0.2829	1.131	847.4	165.5	1013.0	24400	0.0191	958
Canary	900	54/7	0.1291	0.1291	0.3873	1.162	847.7	310.2	1157.9	31900	0.0190	960
Rail	954	45/7	0.1456	0.0971	0.2913	1.165	898.5	175.5	1074.0	25900	0.0188	993
Cardinal	954	54/7	0.1329	0.1329	0.3987	1.196	898.3	328.7	1227.1	33800	0.0179	996
Ortolan	1033.5	45/7	0.1515	0.1010	0.3030	1.212	972.8	189.9	1162.7	27700	0.0166	1043
Curlew	1033.5	54/7	0.1383	0.1383	0.4149	1.245	972.8	356.0	1328.8	36600	0.0165	1047
Bluejay	1113	45/7	0.1573	0.1049	0.3147	1.259	1048.7	204.8	1253.6	29800	0.0155	1092
Finch	1113	54/19	0.1436	0.0862	0.4310	1.293	1053.9	376.1	1430.1	39100	0.0154	1093



ACSR -- ALUMINUM CONDUCTOR STEEL REINFORCED

Code Word	Size (AWG or kcmil)	Stranding (Al/Stl)	Wire Diameter		Diameter		Weight			Rated Strength (lbf)	DC Resistance @ 20 deg C (ohm/1000f)	Ampacity (A)
			Aluminum (in)	Steel (in)	Steel Core (in)	Overall (in)	Aluminum (lb/1000ft)	Steel (lb/1000ft)	Net (lb/1000ft)			
Bunting	1192.5	45/7	0.1628	0.1085	0.3255	1.302	1123.4	219.1	1342.5	32000	0.0144	1139
Grackle	1192.5	54/19	0.1486	0.0892	0.4460	1.338	1128.6	402.8	1531.4	41900	0.0144	1141
Bittern	1272	45/7	0.1681	0.1121	0.3363	1.345	1197.7	233.9	1431.6	34100	0.0135	1184
Pheasant	1272	54/19	0.1535	0.0921	0.4605	1.382	1204.3	429.4	1633.7	43600	0.0135	1187
Dipper	1351.5	45/7	0.1733	0.1155	0.3465	1.386	1272.9	248.3	1521.2	36200	0.0127	1228
Martin	1351.5	54/19	0.1582	0.0949	0.4745	1.424	1279.1	455.9	1735.0	46300	0.0127	1231
Bobolink	1431	45/7	0.1783	0.1189	0.3567	1.427	1347.5	263.1	1610.6	38300	0.0120	1272
Plover	1431	54/19	0.1628	0.0977	0.4885	1.465	1354.6	483.2	1837.8	49100	0.0120	1275
Nuthatch	1510.5	45/7	0.1832	0.1221	0.3663	1.466	1422.5	277.5	1700.0	40000	0.0114	1313
Parrot	1510.5	54/19	0.1672	0.1003	0.5015	1.505	1428.8	509.2	1938.1	51700	0.0114	1317
Lapwing	1590	45/7	0.1880	0.1253	0.3759	1.504	1498.1	292.2	1790.3	42200	0.0108	1354
Falcon	1590	54/19	0.1716	0.1030	0.5150	1.545	1505.0	537.0	2042.1	54500	0.0108	1359
Chukar	1780	84/19	0.1456	0.0874	0.4370	1.602	1685.4	386.7	2072.1	51000	0.00970	1453
Bluebird	2156	84/19	0.1602	0.0961	0.4805	1.762	2040.4	467.5	2507.9	60300	0.00801	1622
Kiwi	2167	72/7	0.1735	0.1157	0.3471	1.735	2051.4	249.2	2300.5	49800	0.00801	1607
Thrasher	2312	76/19	0.1744	0.0814	0.4070	1.802	2187.9	335.4	2523.3	56700	0.00750	1672
Joree	2515	76/19	0.1819	0.0849	0.4245	1.880	2384.0	364.8	2749.0	61700	N/A	1751

NOTES

- 1) Dimensions and weights are subject to standard manufacturing tolerances and are subject to change without notice.
- 2) Resistance is calculated using metal conductivity of 61.2% IACS for EC (1350) at 20°C and 8% IACS for steel at 20°C.
- 3) Ampacities are based on 75°C conductor temperature, 25°C ambient, 2 ft/s wind, full sun, an emissivity of 0.5 and a coefficient of solar absorption of 0.5, at sea level.