

# ACSR – Aluminum Conductor Steel Reinforced



## APPLICATION:

ACSR – Aluminum Conductor Steel Reinforced is used as bare overhead transmission cable and as primary and secondary distribution cable. ACSR offers optimal strength for line design. Variable steel core stranding for desired strength to be achieved without sacrificing ampacity.

## CONDUCTORS:

- Aluminum alloy 1350-H119 wires, concentrically stranded around a steel core. The core wire for ACSR is available with class A, or C galvanizing (GA/GC); aluminum-mischmetal alloy-coated steel core (MA/MC); or aluminum-clad steel core (AW). Additional corrosion protection is available through the application of grease to the corer or infusion of the complete cable with grease. Resistance is calculated using ASTM standard increments of stranding, and metal conductivity of 61.2% IACS for EC (1350) and 8% IACS for steel. AC (60Hz) resistance includes current-dependent hysteresis loss factor for 1- and 3-layer constructions. Also available with a Non-Specular surface finish

## STANDARDS:

- B230 Aluminum wire, 1350-H19 for Electrical Purposes
- B232 Aluminum Conductors, Concentric-Lay-Stranded, Coated Steel Reinforced (ACSR)
- B341 Aluminum-Coated Steel Core Wire for Aluminum Conductors, Steel Reinforced (ACSR/AZ)
- B498 Zinc-Coated Steel Core Wire for Aluminum Conductors, Steel Reinforced (ACSR)
- B500 Metallic Coated Stranded Steel Core for Aluminum Conductors, Steel Reinforced (ACSR)
- RUS Accepted

Code Word	Size (AWG or kcmil)	Stranding (AL/STL)	Diameter(inch)				Weight (lbs/kft)			Content %		Rated Breaking Strength (lbs.)	Resistance** (Ohms/kft)		Ampacity* (amps)
			Individual Wire			Comp. Cable OD	AL	STL	Total	AL	STL		DC @ 20°C	AC @ 75°C	
			AL	STL	Steel Core										
Turkey	6	6/1	0.0661	0.0661	0.0664	0.198	24.5	11.6	36	67.90	32.10	1,190	0.6410	0.806	105
Swan	4	6/1	0.0834	0.0834	0.0834	0.250	39.0	18.4	57	67.90	32.10	1,860	0.4030	0.515	140
Swanate	4	7/1	0.0772	0.1029	0.1029	0.257	39.0	28.0	67	58.13	41.87	2,360	0.3990	0.519	140
Sparrow	2	6/1	0.1052	0.1052	0.1052	0.316	62.0	29.3	91	67.90	32.10	2,850	0.2540	0.332	184
Sparate	2	7/1	0.0974	0.1299	0.1299	0.325	62.0	44.7	107	58.13	41.87	3,640	0.2510	0.338	184
Robin	1	6/1	0.1181	0.1181	0.1181	0.354	78.2	36.9	115	67.90	32.10	3,550	0.2010	0.268	212
Raven	1/0	6/1	0.1327	0.1327	0.1327	0.398	98.7	46.6	145	67.90	32.10	4,380	0.1590	0.217	242
Quail	2/0	6/1	0.1489	0.1489	0.1489	0.447	124.3	58.7	183	67.90	32.10	5,300	0.1260	0.176	276
Pigeon	3/0	6/1	0.1672	0.1672	0.1672	0.502	156.7	74.0	231	67.90	32.10	6,620	0.1000	0.144	315
Penguin	4/0	6/1	0.1878	0.1878	0.1878	0.563	197.7	93.4	291	67.90	32.10	8,350	0.0795	0.119	357
Waxwing	266.8	18/1	0.1217	0.1217	0.1217	0.609	250.3	39.2	290	86.45	13.55	6,880	0.0643	0.079	449
Partridge	266.8	26/7	0.1013	0.0788	0.2364	0.642	251.7	115.5	367	68.53	31.47	11,130	0.0637	0.078	475
Ostrich	300.0	26/7	0.1074	0.0835	0.2505	0.680	282.9	129.8	413	68.53	31.47	12,700	0.0567	0.069	492
Merlin	336.4	18/1	0.1367	0.1367	0.1367	0.683	315.8	49.5	365	86.45	13.55	8,680	0.0510	0.063	519
Linnet	336.4	26/7	0.1137	0.0884	0.2652	0.720	317.1	145.4	463	68.53	31.47	14,100	0.0505	0.062	529
Oriole	336.4	30/7	0.1059	0.1059	0.3177	0.741	318.2	208.9	527	60.35	39.65	17,300	0.0502	0.061	535
Chickadee	397.5	18/1	0.1486	0.1486	0.1486	0.743	373.1	58.5	432	86.45	13.55	9,940	0.0432	0.053	576
Brant	397.5	24/7	0.1287	0.0858	0.2574	0.772	375.0	137.0	512	73.23	26.77	14,600	0.0430	0.053	584
Ibis	397.5	26/7	0.1236	0.0961	0.2882	0.783	374.7	171.9	547	68.53	31.47	16,300	0.0428	0.052	587
Lark	397.5	30/7	0.1151	0.1151	0.3453	0.806	375.8	246.8	623	60.35	39.65	20,300	0.0425	0.052	594

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			Individual Wire			Comp. Cable OD	AL	STL	Total	AL	STL		DC @ 20°C	AC @ 75°C	
			AL	STL	Steel Core										
Pelican	477.0	18/1	0.1628	0.1628	0.1628	0.814	447.8	70.2	518	86.45	13.55	11,800	0.0360	0.044	646
Flicker	477.0	24/7	0.1410	0.0940	0.2820	0.846	450.1	164.4	615	73.23	26.77	17,200	0.0358	0.044	655
Hawk	477.0	26/7	0.1354	0.1053	0.3159	0.858	449.6	206.4	656	68.53	31.47	19,500	0.0356	0.044	659
Hen	477.0	30/7	0.1261	0.1261	0.3783	0.883	451.1	296.2	747	60.35	39.65	23,800	0.0354	0.043	666
Osprey	556.5	18/1	0.1758	0.1758	0.1758	0.879	522.2	81.8	604	86.45	13.55	13,700	0.0308	0.038	711
Parakeet	556.5	24/7	0.1523	0.1015	0.3045	0.914	525.1	191.7	717	73.23	26.77	19,800	0.0307	0.038	721
Dove	556.5	26/7	0.1463	0.1138	0.3414	0.927	525.0	241.0	766	68.53	31.47	22,600	0.0306	0.038	726
Eagle	556.5	30/7	0.1362	0.1362	0.4086	0.953	526.3	345.6	872	60.35	39.75	27,800	0.0303	0.037	734
Peacock	605.0	24/7	0.1588	0.1059	0.3177	0.953	570.9	208.7	780	73.23	26.77	21,600	0.0282	0.035	760
Squab	605.0	26/7	0.1525	0.1186	0.3558	0.966	570.4	261.8	832	68.53	31.47	24,300	0.0281	0.035	765
Wood Duck	605.0	30/7	0.1420	0.1420	0.4260	0.994	572.0	375.6	948	60.35	39.55	28,900	0.0279	0.034	774
Teal	605.0	30/19	0.1420	0.0852	0.4260	0.994	572.0	367.4	939	60.89	39.11	30,000	0.0278	0.034	773
KingBird	636.0	18/1	0.1880	0.1880	0.1880	0.940	597.2	93.6	691	86.45	13.55	15,700	0.0270	0.033	773
Swift	636.0	36/1	0.1329	0.1329	0.1329	0.930	596.9	46.8	644	92.80	7.20	13,800	0.0271	0.033	769
Rook	636.0	24/7	0.1628	0.1085	0.3255	0.977	600.0	219.1	819	73.23	26.77	22,600	0.0268	0.033	784
Grosbeak	636.0	26/7	0.1564	0.1216	0.3648	0.990	599.9	276.2	876	68.53	31.47	25,200	0.0267	0.033	789
Scoter	636.0	30/7	0.1456	0.1456	0.4368	1.019	601.4	394.9	996	60.35	39.65	30,400	0.0256	0.033	798
Egret	636.0	30/19	0.1456	0.0874	0.4370	1.019	601.4	386.6	988	60.89	39.11	31,500	0.0266	0.033	798
Flamingo	666.6	24/7	0.1667	0.1110	0.3330	1.000	629.1	229.7	859	73.23	26.77	23,700	0.0256	0.032	807
Gannet	666.6	26/7	0.1601	0.1245	0.3735	1.014	628.7	288.5	917	68.53	31.47	26,400	0.0255	0.031	812
Stilt	715.5	24/7	0.1727	0.1151	0.3453	1.036	675.2	246.5	922	73.23	26.77	25,500	0.0239	0.029	844
Starling	715.5	26/7	0.1659	0.1290	0.3870	1.051	675.0	309.7	985	68.53	31.47	28,400	0.0238	0.029	849
Redwing	715.5	30/19	0.1544	0.0926	0.4630	1.081	676.3	434.0	1,110	60.89	39.11	34,600	0.0236	0.029	859
Coot	795.0	36/1	0.1486	0.1486	0.1486	1.040	746.2	58.5	805	92.80	7.20	16,800	0.0217	0.027	894
Cuckoo	795.0	24/7	0.1820	0.1213	0.3640	1.092	749.9	273.8	1,024	72.23	26.77	27,900	0.0215	0.027	901
Drake	795.0	26/7	0.1749	0.1360	0.4080	1.108	750.3	344.2	1,094	68.53	31.47	31,500	0.0214	0.026	907
Tern	795.0	45/7	0.1329	0.0886	0.2660	1.063	749.8	146.1	896	83.69	16.31	22,100	0.0216	0.027	887
Condor	795.0	54/7	0.1213	0.1213	0.3639	1.092	749.5	273.6	1,023	73.25	26.75	28,200	0.0215	0.027	889
Mallard	795.0	30/19	0.1628	0.0977	0.4885	1.140	751.9	483.1	1,235	60.89	39.11	38,400	0.0213	0.026	918
Chutepoke	850.0	45/7	0.1375	0.0917	0.2751	1.100	804.5	159.6	964	83.40	16.60	23,192	0.0204	0.025	935
Les Boules	864.9	42/7	0.1435	0.0797	0.2391	1.102	813.4	121.1	935	87.04	12.96	22,480	0.0201	0.025	950
Ruddy	900.0	45/7	0.1414	0.0943	0.2829	1.131	848.7	165.5	1,014	83.69	16.31	24,400	0.0191	0.024	958
Canary	900.0	54/7	0.1291	0.1291	0.3873	1.162	849.0	309.9	1,159	73.25	26.75	31,900	0.0190	0.024	961
Rail	954.0	45/7	0.1456	0.0971	0.2913	1.165	899.9	175.5	1,075	83.69	16.31	25,900	0.0180	0.023	993
Cardinal	954.0	54/7	0.1329	0.1329	0.3987	1.196	900.7	328.4	1,228	73.25	26.75	33,800	0.0179	0.023	996

All values are nominal and subject to correction.

\* Current ratings based on 75°C conductor temperature, 25°C ambient temperature, emissivity 0.5, 2ft/sec wind in sun.

\*\* Resistance is calculated using ASTM standard increments of stranding, and metal conductivity of 61.2% IACS for EC (1350) and 8% IACS for steel. AC (60Hz) resistance includes current dependent hysteresis loss factor for 1 and 3 layer constructions.

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			AL	STL	Steel Core										
Ortolan	1033.5	45/7	0.1515	0.1010	0.3030	1.212	974.3	189.8	1,164	83.69	16.31	27,700	0.0167	0.021	1,043
Curlew	1033.5	54/7	0.1383	0.1383	0.4149	1.245	974.3	355.6	1,330	73.25	26.75	36,600	0.0165	0.021	1,047
Beaumont	1113.0	42/7	0.1628	0.0904	0.2712	1.250	1046.5	155.5	1,202	87.06	12.94	28,300	0.0156	0.020	990
Bluejay	1113.0	45/7	0.1573	0.1049	0.3147	1.259	1050.0	204.8	1,255	83.69	16.31	29,800	0.0155	0.019	1,092
Finch	1113.0	54/19	0.1436	0.0862	0.4310	1.293	1056.0	376.0	1,432	73.75	26.25	39,100	0.0154	0.020	1,093
Bunting	1192.5	45/7	0.1628	0.1085	0.3255	1.302	1125.0	219.1	1,344	83.69	16.31	32,000	0.0144	0.018	1,139
Grackle	1192.5	54/19	0.1486	0.0892	0.4460	1.338	1130.0	402.7	1,533	73.75	26.25	41,900	0.0144	0.018	1,140
Bittern	1272.0	45/7	0.1681	0.1121	0.3363	1.345	1200.0	233.9	1,434	83.69	16.31	34,100	0.0135	0.017	1,184
Pheasant	1272.0	54/19	0.1535	0.0921	0.4605	1.382	1206.0	429.3	1,635	73.75	26.25	43,600	0.0135	0.017	1,187
Dipper	1351.5	45/7	0.1733	0.1155	0.3465	1.386	1275.0	248.3	1,523	83.69	16.31	36,200	0.0127	0.016	1,229
Martin	1351.5	54/19	0.1582	0.0949	0.4745	1.424	1281.0	455.8	1,737	72.75	26.25	46,300	0.0127	0.016	1,232
Bobolink	1431.0	45/7	0.1783	0.1189	0.3567	1.427	1350.0	263.1	1,613	83.69	16.31	38,300	0.0120	0.015	1,272
Plover	1431.0	54/19	0.1628	0.0977	0.4885	1.465	1357.0	483.1	1,840	73.75	26.25	49,100	0.0120	0.016	1,275
Nuthatch	1510.5	45/7	0.1832	0.1221	0.3663	1.465	1425.0	277.4	1,702	83.69	16.31	40,100	0.0114	0.015	1,313
Parrot	1510.5	54/19	0.1672	0.1003	0.5015	1.505	1431.0	509.2	1,940	73.75	26.25	51,700	0.0114	0.015	1,318
Lapwing	1590.0	45/7	0.1880	0.1253	0.3759	1.504	1500.0	292.2	1,792	83.69	16.31	42,200	0.0108	0.014	1,354
Falcon	1590.0	54/19	0.1716	0.1030	0.5150	1.545	1507.0	537.0	2,044	73.75	26.25	54,500	0.0108	0.014	1,359
Chukar	1780.0	84/19	0.1456	0.0874	0.4370	1.602	1688.0	386.6	2,075	81.30	18.70	51,000	0.0097	0.013	1,453
Bluebird	2156.0	84/19	0.1602	0.0961	0.4805	1.762	2044.0	467.4	2,511	81.30	18.70	60,300	0.0081	0.011	1,623
Kiwi	2167.0	72/7	0.1735	0.1157	0.3471	1.735	2055.0	248.9	2,304	89.20	10.80	49,800	0.0080	0.011	1,607
Thrasher	2312.0	76/19	0.1744	0.0814	0.4070	1.802	2191.0	335.4	2,527	86.73	13.27	56,700	0.0075	0.010	1,673
Joree	2515.0	76/19	0.1819	0.0849	0.4245	1.880	2384.0	364.8	2,749	86.73	13.27	61,700	0.0069	0.009	1,751
<b>High Mechanical Strength</b>															
Grouse	80.0	8/1	0.1000	0.1670	0.1670	0.367	75.1	73.9	149.0	50.56	49.44	5,200	0.2070	0.261	204
Petrel	101.8	12/7	0.0921	0.0921	0.2763	0.461	96.0	158.0	254.0	37.79	62.21	10,400	0.1580	0.239	237
Minorca	110.8	12/7	0.0961	0.0961	0.2883	0.481	103.9	172.1	276.0	37.79	62.21	11,300	0.1450	0.223	246
Leghorn	134.6	12/7	0.1059	0.1059	0.3177	0.530	127.0	209.0	336.0	37.79	62.21	13,600	0.1200	0.189	273
Guinea	159.0	12/7	0.1151	0.1151	0.3453	0.576	149.2	246.8	396.0	37.79	62.21	16,000	0.1010	0.165	297
Dotterel	176.9	12/7	0.1214	0.1214	0.3642	0.607	166.4	274.6	441.0	37.79	62.21	17,300	0.0911	0.151	312
Dorking	190.8	12/7	0.1261	0.1261	0.3783	0.631	179.7	296.3	476.0	37.79	62.21	18,700	0.0845	0.142	324
Brahma	203.2	16/19	0.1127	0.0977	0.4885	0.714	190.0	485.0	675.0	28.33	71.67	28,400	0.0764	0.135	341
Cochin	211.3	12/7	0.1327	0.1327	0.3981	0.664	198.8	328.2	527.0	37.79	62.21	30,700	0.0764	0.131	340

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