

ACSS/AW Aluminum Conductor Steel Supported

Aluminum-Clad



A Viakable Company

Features

ACSS has at least 63.0% IACS conductivity due to their "dead-soft" (fully annealed) aluminum strands.

For the same reason, ACSS cables can be operated at temperatures of maximum 250 °C without loss of strength.

Since the mechanical tension applied to the aluminum strands is low, the ACSS self damping characteristic is high.

This allows ACSS cables to be installed at high unloaded tensions without the need for separate Stockbridge dampers.

Application

Generally used as bare overhead transmission lines.

Standards

ASTM B856

Concentric-Lay-Stranded Aluminum Conductors, Coated Steel Supported (ACSS).

ASTM B609

Aluminum 1350 Round Wire, Annealed and Intermediate Tempers.

ASTM B502

Specification for Aluminum-Clad Steel Core Wire for Aluminum Conductors, Aluminum-Clad Steel Reinforced.

Specifications

Maximum operating temperature:

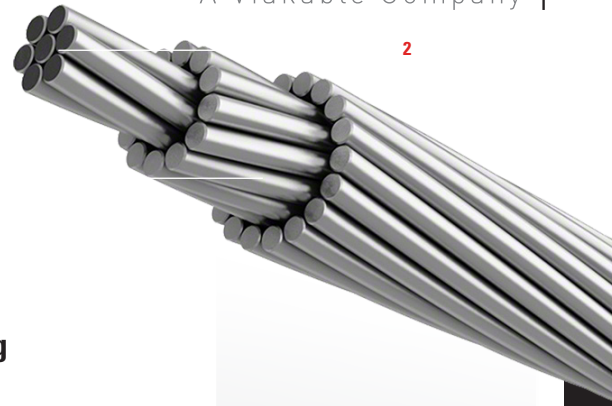
- ACSS/AW 250 °C

Engineering Information

1. Conductor: Aluminum alloy 1350-0, fully annealed (0 temper).

Steel Core: Aluminum-Clad steel core wire.

2. Stranding: 1350-0 wires concentrically stranded, consisting of one or more layers of wire helically wrapped around a stranded Aluminum-Clad Steel core wire.



ALUMINUM
CONDUCTOR

Technical Data

ACSS/AW

Code Word	Size AWG or kcmil	Stranding Class	Diameter				Weight			Rated Strength	Resistance		200 °C † Ampacity (amp)
			Aluminum Wires	Steel Wires	Steel Core	Complete Cable	Aluminum	Steel	Total		dc 20 °C	ac 75 °C	
			in	in	in	in	lb/kft				lb	Ω/kft	
Partridge/ACSS	266.8	26/7	0.1013	0.0788	0.236	0.642	251	98	349	8370	0.0619	0.0761	817
Ostrich/ACSS	300	26/7	0.1074	0.0835	0.251	0.680	283	109	392	9400	0.0551	0.0677	882
Linnet/ACSS	336.4	26/7	0.1137	0.0885	0.265	0.720	317	123	440	10500	0.0491	0.0604	951
Oriole/ACSS	336.4	30/7	0.1059	0.1059	0.318	0.741	318	177	495	14200	0.0488	0.0600	962
Brant/ACSS	397.5	24/7	0.1287	0.0858	0.257	0.772	361	130	491	10400	0.0417	0.0514	1054
Ibis/ACSS	397.5	26/7	0.1236	0.0962	0.289	0.783	374	146	520	12400	0.0416	0.0512	1060
Lark/ACSS	397.5	30/7	0.1151	0.1151	0.345	0.806	375	209	584	16700	0.0413	0.0508	1073
Flicker/ACSS	477	24/7	0.1410	0.0940	0.282	0.846	449	140	589	12500	0.0348	0.0429	1187
Hawk/ACSS	477	26/7	0.1354	0.1053	0.316	0.858	449	175	624	14900	0.0346	0.0427	1196
Hen/ACSS	477	30/7	0.1261	0.1261	0.378	0.883	450	251	701	20100	0.0344	0.0424	1210
Parakeet/ACSS	556.5	24/7	0.1523	0.1015	0.305	0.914	524	163	687	14600	0.0298	0.0368	1314
Dove/ACSS	556.5	26/7	0.1463	0.1138	0.341	0.927	524	204	728	17500	0.0297	0.0366	1322
Eagle/ACSS	556.5	30/7	0.1362	0.1362	0.409	0.953	523	295	818	22900	0.0295	0.0363	1338
Squab/ACSS	605	26/7	0.1525	0.1186	0.356	0.966	507	284	791	19000	0.0273	0.0337	1396
Wood Duck/ACSS	605	30/7	0.1420	0.1420	0.426	0.994	441	448	889	24400	0.0271	0.0334	1414
Teal/ACSS	605	30/19	0.1420	0.0852	0.426	0.994	441	442	883	25000	0.0272	0.0335	1412
Grosbeak/ACSS	636	26/7	0.1564	0.1216	0.365	0.991	599	233	832	19900	0.0260	0.0321	1442
Scoter/ACSS	636	30/7	0.1456	0.1456	0.437	1.019	464	471	935	25100	0.0258	0.0318	1460
Egret/ACSS	636	30/19	0.1456	0.0874	0.437	1.019	600	328	928	26300	0.0258	0.0319	1460
Redwing/ACSS	715.5	30/19	0.1544	0.0927	0.463	1.081	676	367	1043	29500	0.0230	0.0284	1575
Tern/ACSS	795	45/7	0.1329	0.0886	0.266	1.063	749	123	872	13500	0.0210	0.0263	1639
Drake/ACSS	795	26/7	0.1749	0.1360	0.408	1.108	749	292	1040	24400	0.0202	0.0250	1688
Condor/ACSS	795	54/7	0.1213	0.1213	0.364	1.092	749	231	980	20900	0.0209	0.0266	1657
Ruddy/ACSS	900	45/7	0.1414	0.0943	0.283	1.131	436	552	988	15300	0.0186	0.0233	1774
Canary/ACSS	900	54/7	0.1291	0.1291	0.387	1.162	848	263	1111	23200	0.0184	0.0236	1799
Rail/ACSS	954	45/7	0.1456	0.0971	0.291	1.165	900	147	1047	16200	0.0175	0.0220	1845
Cardinal/ACSS	954	54/7	0.1329	0.1329	0.399	1.196	898	279	1177	24600	0.0174	0.0223	1866
Ortolan/ACSS	1033.5	45/7	0.1515	0.1010	0.303	1.212	973	161	1134	17600	0.0162	0.0204	1941
Curlew/ACSS	1033.5	54/7	0.1383	0.1383	0.415	1.245	973	301	1274	26100	0.0161	0.0206	1964
Bluejay/ACSS	1113	45/7	0.1573	0.1048	0.315	1.258	1050	172	1222	18900	0.0150	0.0190	2039
Finch/ACSS	1113	54/19	0.1436	0.0861	0.431	1.292	1054	319	1373	28800	0.0150	0.0193	2057
Pheasant/ACSS	1272	54/19	0.1535	0.0921	0.460	1.381	1204	364	1568	32800	0.0131	0.0169	2244

The above data are approximate and subject to normal manufacturing tolerances. Other sizes available upon request.

Direct current resistance is based on 16.946 Ω-cmil/ft (63% IACS) at 20 °C for 1350 aluminum nominal area of conductor and 129.64 Ω-cmil/ft (8% IACS) at 20 °C for steel nominal area, with standard stranding increments ASTM B231.

† Ampacities are based on the following:

200 °C Conductor Temperature, Conductivity 63%, Air Ambient 25 °C, Wind 2 ft/s, Sun, Sea Level, Solar Absorption 0.5, Emissivity 0.5.

Refer to IEEE Standard 738 for additional information.