



Aluminium Conductor Steel Supported - (ACSS)

Construction

ACSS is a composite concentric-lay stranded conductor. Steel strands form the central core of the conductor with one or more layers of aluminium 1350-0 wire stranded around it. The steel core carries most or all of the mechanical load of the conductor due to the "0" (fully annealed or soft) temper Aluminium. Steel core wires are protected from corrosion by galvanizing, aluminizing, or mischmetal alloy coating. Corrosion protection should be selected to suit the environment to which the conductor will be exposed. High strength steel core is also available.

Values based on following Specifications:•

- B341 Aluminium-Coated Steel Core Wire for Aluminium Conductors, Steel Reinforced.
- B500 Metallic Coated Stranded Steel Core For Aluminium Conductors, Steel Reinforced.
- B609 Aluminium 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes.
- B802 Zinc-5% Aluminium-Mischmetal Alloy-Coated Steel Core Wire for Aluminium Conductors, Steel Reinforced.
- B803 High-Strength Zinc-5% Aluminium-Mischmetal Alloy-Coated Steel Core Wire for Aluminium and Aluminium-Alloy Conductors, Steel Reinforced.
- B856 Concentric-Lay-Stranded Aluminium Conductors, Coated Steel Supported (ACSS).

Applications

ACSS is used for overhead distribution and transmission lines. It is designed to operate continuously at elevated temperatures up to 250°C without loss of strength; it sags less under emergency electrical loadings than ACSR; it is self-damping if prestretched during installation; and its final sags are not affected by long term creep of Aluminium. The advantages make ACSS especially useful in reconductoring applications requiring increased current with existing tensions and clearances, new line applications where structures can be economized because of reduced conductor sag, new line applications requiring high emergency loadings, and lines where aeolian vibration is a problem.

Code Word	Size (mm ²)	Stranding (Al./St.)	Diameter Wires (mm.)		Diameter Core & Composite Conductor (mm.)		Weight (kg/km)			Rated Strength (KN) (kgf/mm ²)	DC Resistance in ohm / KM
			Al	St.	Core	Conductor	Al	St.	Conductor		
Partridge/ACSS	135	26/7	2.57	2.00	6.00	16.31	374.0	171.9	545.9	39.51	0.2031
Junco/ACSS	135	30/7	2.40	2.40	7.19	16.76	374.9	246.3	621.2	52.06	0.2018
Ostrich/ACSS	152	26/7	2.73	2.12	6.37	17.27	420.6	193.3	613.7	44.50	0.1808
Linnet/ACSS	170	26/7	2.89	2.25	6.74	18.29	471.4	216.8	688.3	49.84	0.1611
Oriole/ACSS	170	30/7	2.69	2.69	8.07	18.82	472.6	310.6	783.2	65.86	0.1601
Brant/ACSS	201	24/7	3.27	2.18	6.54	19.61	557.2	203.9	761.0	48.95	0.1368
Ibis/ACSS	201	26/7	3.14	2.44	7.33	19.89	557.2	256.1	813.3	57.85	0.1365
Lark/ACSS	201	30/7	2.92	2.92	8.77	20.47	558.5	366.8	925.5	77.87	0.1355
Flicker/ACSS	242	24/7	3.58	2.39	7.16	21.49	668.6	244.7	913.1	57.85	0.1142
Hawk/ACSS	242	26/7	3.44	2.67	8.03	21.79	668.6	307.3	975.9	69.42	0.1135
Hen/ACSS	242	30/7	3.20	3.20	9.61	22.43	670.3	440.3	1110.6	93.44	0.1129
Parakeet/ACSS	282	24/7	3.87	2.58	7.73	23.22	779.9	285.4	1065.4	67.64	0.0978
Dove/ACSS	282	26/7	3.72	2.89	8.67	23.55	780.1	358.5	1138.6	80.99	0.0974
Eagle/ACSS	282	30/7	3.46	3.46	10.38	24.21	781.9	513.7	1295.6	109.02	0.0968
Peacock/ACSS	307	24/7	4.03	2.69	8.06	24.21	848.0	310.3	1158.2	73.42	0.0899
Squab/ACSS	307	26/7	3.87	3.01	9.04	24.54	848.0	389.7	1237.9	87.66	0.0896
Wood Duck/ACSS	307	30/7	3.61	3.61	10.82	25.25	850.0	558.5	1408.5	115.69	0.0889
Teal/ACSS	307	30/19	3.61	2.16	10.82	25.25	850.0	546.7	1396.8	118.36	0.0892
Rook/ACSS	322	24/7	4.14	2.76	8.27	24.82	891.4	326.2	1217.6	76.98	0.0856
Grosbeak/ACSS	322	26/7	3.97	3.09	9.27	25.17	891.4	409.8	1301.2	92.11	0.0853
Scoter/ACSS	322	30/7	3.70	3.70	11.09	25.88	893.6	587.1	1480.7	121.92	0.0846



Code Word	Size (mm ²)	Stranding (Al./St.)	Diameter Wires (mm.)		Diameter Core & Composite Conductor (mm.)		Weight (kg/km)			Rated Strength (KN) (kgf/mm ²)	DC Resistance in ohm / KM
			Al	St.	Core	Conductor	Al	St.	Conductor		
Egret/ACSS	322	30/19	3.70	2.22	11.09	25.88	893.6	574.9	1468.5	124.59	0.0846
Flamingo/ACSS	338	24/7	4.23	2.82	8.47	25.40	934.4	341.8	1276.2	80.99	0.0817
Gannet/ACSS	338	26/7	4.07	3.16	9.49	25.76	934.3	429.5	1363.7	96.56	0.0814
Partridge/ACSS	135	26/7	2.57	2.00	6.00	16.31	374.0	171.9	545.9	39.51	0.2031
Junco/ACSS	135	30/7	2.40	2.40	7.19	16.76	374.9	246.3	621.2	52.06	0.2018
Ostrich/ACSS	152	26/7	2.73	2.12	6.37	17.27	420.6	193.3	613.7	44.50	0.1808
Linnet/ACSS	170	26/7	2.89	2.25	6.74	18.29	471.4	216.8	688.3	49.84	0.1611
Oriole/ACSS	170	30/7	2.69	2.69	8.07	18.82	472.6	310.6	783.2	65.86	0.1601
Brant/ACSS	201	24/7	3.27	2.18	6.54	19.61	557.2	203.9	761.0	48.95	0.1368
Ibis/ACSS	201	26/7	3.14	2.44	7.33	19.89	557.2	256.1	813.3	57.85	0.1365
Lark/ACSS	201	30/7	2.92	2.92	8.77	20.47	558.5	366.8	925.5	77.87	0.1355
Flicker/ACSS	242	24/7	3.58	2.39	7.16	21.49	668.6	244.7	913.1	57.85	0.1142
Hawk/ACSS	242	26/7	3.44	2.67	8.03	21.79	668.6	307.3	975.9	69.42	0.1135
Hen/ACSS	242	30/7	3.20	3.20	9.61	22.43	670.3	440.3	1110.6	93.44	0.1129
Parakeet/ACSS	282	24/7	3.87	2.58	7.73	23.22	779.9	285.4	1065.4	67.64	0.0978
Dove/ACSS	282	26/7	3.72	2.89	8.67	23.55	780.1	358.5	1138.6	80.99	0.0974
Eagle/ACSS	282	30/7	3.46	3.46	10.38	24.21	781.9	513.7	1295.6	109.02	0.0968
Peacock/ACSS	307	24/7	4.03	2.69	8.06	24.21	848.0	310.3	1158.2	73.42	0.0899
Squab/ACSS	307	26/7	3.87	3.01	9.04	24.54	848.0	389.7	1237.9	87.66	0.0896
Wood Duck/ACSS	307	30/7	3.61	3.61	10.82	25.25	850.0	558.5	1408.5	115.69	0.0889
Teal/ACSS	307	30/19	3.61	2.16	10.82	25.25	850.0	546.7	1396.8	118.36	0.0892
Rook/ACSS	322	24/7	4.14	2.76	8.27	24.82	891.4	326.2	1217.6	76.98	0.0856
Grosbeak/ACSS	322	26/7	3.97	3.09	9.27	25.17	891.4	409.8	1301.2	92.11	0.0853
Scoter/ACSS	322	30/7	3.70	3.70	11.09	25.88	893.6	587.1	1480.7	121.92	0.0846
Egret/ACSS	322	30/19	3.70	2.22	11.09	25.88	893.6	574.9	1468.5	124.59	0.0846
Flamingo/ACSS	338	24/7	4.23	2.82	8.47	25.40	934.4	341.8	1276.2	80.99	0.0817
Gannet/ACSS	338	26/7	4.07	3.16	9.49	25.76	934.3	429.5	1363.7	96.56	0.0814
Stilt/ACSS	363	24/7	4.39	2.92	8.77	26.31	1002.9	366.8	1369.9	86.77	0.0761
Starling/ACSS	363	26/7	4.21	3.28	9.83	26.70	1002.9	461.0	1463.9	103.68	0.0758
Redwing/ACSS	363	30/19	3.92	2.35	11.77	27.46	1005.4	646.8	1652.0	137.05	0.0755
Cuckoo/ACSS	403	24/7	4.62	3.08	9.25	27.74	1114.3	407.8	1521.9	96.56	0.0686
Drake/ACSS	403	26/7	4.44	3.45	10.36	28.12	1114.3	512.2	1626.6	115.25	0.0686
Macaw/ACSS	403	42/7	3.50	1.94	5.82	26.80	1114.3	161.8	1276.1	52.51	0.0692
Tern/ACSS	403	45/7	3.38	2.25	6.75	27.00	1114.3	217.4	1331.8	63.19	0.0689
Condor/ACSS	403	54/7	3.08	3.08	9.25	27.74	1114.3	407.8	1521.9	96.56	0.0686
Mallard/ACSS	403	30/19	4.14	2.48	12.41	28.93	1117.0	718.5	1835.5	152.63	0.0679
Ruddy/ACSS	456	45/7	3.59	2.40	7.18	28.73	1261.5	246.1	1507.7	70.31	0.0610
Canary/ACSS	456	54/7	3.28	3.28	9.84	29.51	1261.5	461.5	1723.0	109.46	0.0604
Redbird/ACSS	483	24/7	5.06	3.38	10.13	30.38	1337.1	489.2	1826.4	115.69	0.0571
Rail/ACSS	483	45/7	3.70	2.47	7.40	29.59	1337.1	260.9	1598.1	74.31	0.0574
Towhee/ACSS	483	48/7	3.58	2.79	8.36	29.85	1337.1	332.9	1670.2	87.66	0.0574



Code Word	Size (mm2)	Stranding (Al./St.)	Diameter Wires (mm.)		Diameter Core & Composite Conductor (mm.)		Weight (kg/km)			Rated Strength (KN) (kgf/mm2)	DC Resistance in ohm / KM
			Al	St.	Core	Conductor	Al	St.	Conductor		
Cardinal/ACSS	483	54/7	3.38	3.38	10.13	30.38	1337.3	489.2	1826.4	115.69	0.0571
Canvasback/ACSS	483	30/19	4.53	2.72	13.59	31.70	1340.4	862.2	2202.6	182.88	0.0564
Snowbird/ACSS	524	42/7	3.99	2.21	6.64	30.56	1448.6	210.3	1658.9	68.53	0.0531
Ortolan/ACSS	524	45/7	3.85	2.57	7.70	30.78	1448.6	282.8	1731.3	80.54	0.0531
Curlew/ACSS	524	54/7	3.51	3.51	10.54	31.62	1448.6	530.1	1978.7	125.48	0.0528
Bluejay/ACSS	564	45/7	4.00	2.66	7.99	31.95	1560.0	304.3	1864.4	86.77	0.0492
Finch/ACSS	564	54/19	3.65	2.19	10.94	32.82	1567.6	558.8	2126.4	135.27	0.0492
Bunting/ACSS	604	45/7	4.14	2.76	8.27	33.07	1671.5	326.2	1997.7	95.22	0.0459
Bittern/ACSS	645	45/7	4.27	2.85	8.54	34.16	1783.0	347.9	2130.9	99.23	0.0430
Pheasant/ACSS	645	54/19	3.90	2.34	11.69	35.08	1791.6	638.7	2430.2	151.74	0.0430
Dipper/ACSS	685	45/7	4.40	2.93	8.80	35.20	1893.7	369.5	2263.2	105.46	0.0407
Martin/ACSS	685	54/19	4.02	2.41	12.05	36.17	1902.9	678.3	2581.2	161.08	0.0404
Bobolink/ACSS	725	45/7	4.53	3.02	9.06	36.25	2005.7	391.4	2397.1	111.69	0.0384
Plover/ACSS	725	54/19	4.14	2.48	12.41	37.21	2015.6	718.5	2734.0	170.87	0.0384
Nuthatch/ACSS	765	45/7	4.65	3.10	9.31	37.21	2116.5	413.0	2529.6	117.92	0.0364
Parrot/ACSS	765	54/19	4.25	2.55	12.74	38.23	2126.9	758.2	2884.9	179.77	0.0361
Ratite/ACSS	806	42/7	4.94	2.75	8.24	37.90	2228.7	323.5	2552.2	104.12	0.0344
Lapwing/ACSS	806	45/7	4.78	3.18	9.55	38.20	2228.7	434.8	2663.5	124.15	0.0344
Falcon/ACSS	806	54/19	4.36	2.62	13.08	39.22	2239.5	798.4	3037.9	189.56	0.0344
Chukar/ACSS	902	84/19	3.70	2.22	11.09	40.67	2507.1	574.6	3081.7	157.52	0.0308
Mockingbird/ACSS	1031	72/7	4.27	2.85	8.54	42.70	2865.6	347.8	3213.4	121.03	0.0272
Roadrunner/ACSS	1042	76/19	4.18	1.95	9.75	43.18	2897.3	443.9	3341.2	141.06	0.0269
Bluebird/ACSS	1092	84/19	4.07	2.44	12.21	44.75	3036.7	695.9	3732.6	187.33	0.0256
Kiwi/ACSS	1098	72/7	4.41	2.94	8.81	44.07	3052.2	370.4	3422.6	129.04	0.0256
Thrasher/ACSS	1171	76/19	4.43	2.07	10.34	45.77	3256.4	499.0	3755.4	158.41	0.0240
Joree/ACSS	1274	76/19	4.62	2.16	10.78	47.75	3542.4	542.7	4085.1	172.20	0.0220



Aluminium Conductor Aluminium Clad Steel Supported - (ACSS/AW)

Construction

ACSS/AW is a composite concentric-lay-stranded conductor. Steel strands form the central core of the conductor with one or more layers of Aluminium 1350-0 wire stranded around it. The steel core carries most or all of the mechanical load of the conductor due to the "0" (fully annealed or soft) temper Aluminium. Steel core wires are protected from corrosion by an Aluminium coating.

Values based on following ASTM Specifications:

- B609 Aluminium 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes.
- B502 Aluminium-Clad Steel Core Wire for Aluminium conductors, Aluminium-Clad Steel Reinforced.
- B856 Concentric-Lay-Stranded Aluminium Conductors, Coated Steel Supported (ACSS).

Applications

ACSS/AW is used for overhead distribution and transmission lines. It is designed to operate continuously at elevated temperatures up to 250°C without loss of strength; it sags less under emergency electrical loadings than ACSR/AW; it is self-damping if prestretched during installation; and its final sags are not affected by long term creep of Aluminium. The advantages make ACSS/AW especially useful in reconducting applications requiring increased current with existing tensions and clearances, new line applications where structures can be economized because of reduced conductor sag, new line applications requiring high emergency loadings, and lines where aeolian vibration is a problem. ACSS/AW offers strength characteristics similar to ACSS, along with slightly greater ampacity and resistance to corrosion due to Aluminium-cladding of the steel core wires.

Code Word	Size (mm ²)	Stranding (Al./St.)	Diameter Wires (mm.)		Diameter Core & Composite Conductor (mm.)		Weight (kg/km)			Rated Strength (KN) (kgf/mm ²)	DC Resistance in ohm / KM
			Al	St.	Core	Conductor	Al	St.	Conductor		
Junco/ACSS/AW	135	30/7	2.40	2.40	7.19	16.76	375.0	208.3	583.4	49.84	0.1932
Ostrich/ACSS/AW	152	26/7	2.73	2.12	6.37	17.27	421.1	163.7	584.8	41.65	0.1752
Linnet/ACSS/AW	170	26/7	2.89	2.25	6.74	18.29	471.7	183.0	654.8	46.72	0.1562
Oriole/ACSS/AW	170	30/7	2.69	2.69	8.07	18.82	473.2	263.4	735.2	63.19	0.1532
Brant/ACSS/AW	201	24/7	3.27	2.18	6.54	19.61	556.6	172.6	729.2	46.28	0.1335
Ibis/ACSS/AW	201	26/7	3.14	2.44	7.33	19.89	556.6	217.3	773.8	55.18	0.1322
Lark/ACSS/AW	201	30/7	2.92	2.92	8.77	20.47	558.1	311.0	869.1	74.31	0.1296
Flicker/ACSS/AW	242	24/7	3.58	2.39	7.16	21.49	668.2	206.9	876.5	55.62	0.1112
Hawk/ACSS/AW	242	26/7	3.44	2.67	8.03	21.79	668.2	260.4	928.6	66.30	0.1102
Hen/ACSS/AW	242	30/7	3.20	3.20	9.61	22.43	669.7	373.5	1043.2	89.44	0.1079
Parakeet/ACSS/AW	282	24/7	3.87	2.58	7.73	23.22	779.8	242.6	1022.4	64.97	0.0955
Dove/ACSS/AW	282	26/7	3.72	2.89	8.67	23.55	779.8	303.6	1083.4	77.87	0.0945
Eagle/ACSS/AW	282	30/7	3.46	3.46	10.38	24.21	781.3	436.0	1217.3	101.90	0.0925
Peacock/ACSS/AW	307	24/7	4.03	2.69	8.06	24.21	848.3	263.4	1110.2	70.75	0.0876
Squab/ACSS/AW	307	26/7	3.87	3.01	9.04	24.54	848.3	330.4	1178.6	84.55	0.0869
Wood Duck/ACSS/AW	307	30/7	3.61	3.61	10.82	25.25	849.7	473.2	1323.0	108.57	0.0853
Teal/ACSS/AW	307	30/19	3.61	2.16	10.82	25.25	849.7	462.8	1314.0	111.24	0.0853
Rook/ACSS/AW	322	24/7	4.14	2.76	8.27	24.82	891.4	276.8	1168.2	74.31	0.0837
Grosbeak/ACSS/AW	322	26/7	3.97	3.09	9.27	25.17	891.4	346.7	1238.1	88.55	0.0827
Scoter/ACSS/AW	322	30/7	3.70	3.70	11.09	25.88	892.9	497.0	1391.4	111.69	0.0810
Egret/ACSS/AW	322	30/19	3.70	2.22	11.09	25.88	892.9	486.6	1381.0	117.03	0.0810
Flamingo/ACSS/AW	338	24/7	4.23	2.82	8.47	25.40	934.6	290.2	1224.8	77.87	0.0797
Gannet/ACSS/AW	338	26/7	4.07	3.16	9.49	25.76	934.6	364.6	1297.7	93.00	0.0787
Stilt/ACSS/AW	363	24/7	4.39	2.92	8.77	26.31	1003.0	311.0	1314.0	83.66	0.0741



Code Word	Size (mm2)	Stranding (Al./St.)	Diameter Wires (mm.)		Diameter Core & Composite Conductor (mm.)		Weight (kg/km)			Rated Strength (KN) (kgf/mm2)	DC Resistance in ohm / KM
			Al	St.	Core	Conductor	Al	St.	Conductor		
Starling/ACSS/AW	363	26/7	4.21	3.28	9.83	26.70	1003.0	391.4	1392.9	97.89	0.0735
Redwing/ACSS/AW	363	30/19	3.92	2.35	11.77	27.46	1006.0	547.6	1553.6	131.27	0.0722
Cuckoo/ACSS/AW	403	24/7	4.62	3.08	9.25	27.74	1114.6	345.3	1459.9	93.00	0.0669
Drake/ACSS/AW	403	26/7	4.44	3.45	10.36	28.12	1114.6	434.5	1547.7	108.57	0.0663
Macaw/ACSS/AW	403	42/7	3.50	1.94	5.82	26.80	1114.6	136.9	1251.5	50.73	0.0686
Tern/ACSS/AW	403	45/7	3.38	2.25	6.75	27.00	1114.6	184.5	1299.2	60.07	0.0682
Condor/ACSS/AW	403	54/7	3.08	3.08	9.25	27.74	1114.6	345.3	1459.9	70.31	0.0669
Mallard/ACSS/AW	403	30/19	4.14	2.48	12.41	28.93	1117.6	608.7	1726.3	146.40	0.0650
Ruddy/ACSS/AW	456	45/7	3.59	2.40	7.18	28.73	1262.0	208.3	1470.3	68.08	0.0600
Canary/ACSS/AW	456	54/7	3.28	3.28	9.84	29.51	1262.0	391.4	1653.3	103.23	0.0591
Rail/ACSS/AW	483	45/7	3.70	2.47	7.40	29.59	1337.9	221.7	1558.1	72.09	0.0568
Towhee/ACSS/AW	483	48/7	3.58	2.79	8.36	29.85	1337.9	282.8	1619.1	84.55	0.0564
Cardinal/ACSS/AW	483	54/7	3.38	3.38	10.13	30.38	1337.9	415.2	1751.6	109.46	0.0558
Canvasback/ACSS/AW	483	30/19	4.53	2.72	13.59	31.70	1340.8	730.7	2071.5	175.32	0.0541
Snowbird/ACSS/AW	524	42/7	3.99	2.21	6.64	30.56	1448.0	178.6	1626.6	65.86	0.0528
Curlew/ACSS/AW	524	54/7	3.51	3.51	10.54	31.62	1448.0	449.4	1897.4	116.14	0.0515
Bluejay/ACSS/AW	564	45/7	4.00	2.66	7.99	31.95	1559.6	257.5	1818.5	84.10	0.0486
Finch/ACSS/AW	564	54/19	3.65	2.19	10.94	32.82	1567.0	473.2	2041.8	128.15	0.0479
Bunting/ACSS/AW	604	45/7	4.14	2.76	8.27	33.07	1671.2	276.8	1948.0	90.33	0.0453
Grackle/ACSS/AW	604	54/19	3.77	2.27	11.32	33.96	1680.1	507.5	2187.6	137.05	0.0449
Bittern/ACSS/AW	645	45/7	4.27	2.85	8.54	34.16	1782.8	294.7	2077.5	96.11	0.0427
Pheasant/ACSS/AW	645	54/19	3.90	2.34	11.69	35.08	1791.7	541.7	2333.4	145.95	0.0420
Dipper/ACSS/AW	685	45/7	4.40	2.93	8.80	35.20	1892.9	312.5	2206.9	102.34	0.0400
Martin/ACSS/AW	685	54/19	4.02	2.41	12.05	36.17	1903.4	574.4	2477.8	155.30	0.0394
Bobolink/ACSS/AW	725	45/7	4.53	3.02	9.06	36.25	2006.0	331.9	2337.9	108.13	0.0377
Plover/ACSS/AW	725	54/19	4.14	2.48	12.41	37.21	2015.0	608.7	2625.1	164.20	0.0374
Nuthatch/ACSS/AW	765	45/7	4.65	3.10	9.31	37.21	2116.2	349.7	2465.9	114.36	0.0358
Parrot/ACSS/AW	765	54/19	4.25	2.55	12.74	38.23	2126.6	642.9	2769.5	173.09	0.0354
Lapwing/ACSS/AW	806	45/7	4.78	3.18	9.55	38.20	2229.3	369.1	2596.8	120.14	0.0341
Falcon/ACSS/AW	806	54/19	4.36	2.62	13.08	39.22	2239.7	677.1	2916.8	182.88	0.0335
Chukar/ACSS/AW	902	84/19	3.70	2.22	11.09	40.67	2507.5	486.6	2994.2	149.51	0.0305
Mockingbird/ACSS/AW	1031	72/7	4.27	2.85	8.54	42.70	2866.2	294.7	3160.9	117.92	0.0269
Roadrunner/ACSS/AW	1042	76/19	4.18	1.95	9.75	43.18	2897.4	376.5	3274.0	134.83	0.0266
Bluebird/ACSS/AW	1092	84/19	4.07	2.44	12.21	44.75	3037.3	589.3	3626.6	181.10	0.0253
Kiwi/ACSS/AW	1098	72/7	4.41	2.94	8.81	44.07	3052.2	314.0	3366.2	125.48	0.0253
Thrasher/ACSS/AW	1171	76/19	4.43	2.07	10.34	45.77	3256.1	422.6	3678.7	151.74	0.0236
Joree/ACSS/AW	1274	76/19	4.62	2.16	10.78	47.75	3541.8	459.8	4001.7	165.09	0.0217



Aluminium Conductor Steel Supported Trapezoid Shape - (ACSS/TW)

Construction

ACSS is a composite concentric-lay-stranded conductor. Steel strands form the central core of the conductor with one or more layers of 63% minimum average conductivity Aluminium 1350-0 wire stranded around it. The steel core carries most or all of the mechanical load of the conductor due to the "0" (fully annealed or soft) temper Aluminium. Steel core wires are protected from corrosion by Galfan[®], zinc-5% Aluminium-mischmetal alloy coating. High strength steel core, aluminized, and Aluminium clad steel core is also available.

Values based on following ASTM Specifications:

- B500 Metallic Coated Stranded Steel Core for Aluminium Conductors, Steel Reinforced.
- B609 Aluminium 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes.
- B802 Zinc-5% Aluminium-Mischmetal Alloy-Coated Steel Core Wire for Aluminium Conductors, Steel Reinforced.
- B803 High-Strength Zinc-5% Aluminium-Mischmetal Alloy-Coated Steel Core Wire for Aluminium and Aluminium-Alloy Conductors, Steel Reinforced.
- B857 Shaped Wire Compact Concentric-Lay-Stranded Aluminium Conductors, Coated-Steel Supported (ACSS/TW) Shaped Wire Compact Concentric-Lay-Stranded Aluminium Conductors, Coated-Steel Supported (ACSS/TW)

Applications

"Apar's ACSS/TW is designed for overhead distribution and transmission lines. It is designed to operate continuously at elevated temperatures up to 250°C without loss of strength, it sags less under emergency electrical loadings than ACSR/TW, excellent self-damping properties, and its final sags are not affected by long-term creep of Aluminium. Apar's ACSS/TW is available in equal area and equal diameter design. The equal area design allows equal ampacity in a smaller diameter conductor when compared with a standard ACSS conductor. The equal diameter design allows more ampacity in an equal diameter conductor when compared with a standard ACSS conductor. ACSS/TW also provides many design opportunities for new line construction: i.e., reduced tower cost, decreased sag, increased self-damping properties, increased operating temperature and improved corrosion resistance."

Code Word	Size (mm ²)	Area Square in (mm)		Standing			Outside Diameter (mm.)		Weight (kg/km)			Rated Strength (KN)	DC Resistance in ohm / KM
		Al	Total	No. of Al. Layers	Al	St.	Conductor	Core	Conductor	Al	St.		
Flicker/ACSS/TW	242	241.74	273.10	2	18	7 X 2.39	19.71	7.16	911.9	667.3	244.7	57.85	0.1142
Hawk/ACSS/TW	242	241.68	281.03	2	18	7 X 2.68	20.04	8.02	974.7	667.7	307.0	69.42	0.1135
Parakeet/ACSS/TW	282	282.00	318.52	2	18	7 X 2.58	21.21	7.73	1063.9	778.6	285.3	67.64	0.0974
Dove/ACSS/TW	282	282.00	327.93	2	20	7 X 2.9	21.64	8.67	1137.7	779.1	358.6	80.99	0.0971
Rook/ACSS/TW	322	322.26	364.06	2	20	7 X 2.76	22.61	8.27	1214.3	889.8	326.1	76.98	0.0853
Grosbeak/ACSS/TW	322	322.26	374.71	2	20	7 X 3.09	23.06	9.27	1299.9	890.5	409.4	92.11	0.0850
Tern/ACSS/TW	403	402.84	430.64	2	17	7 X 2.26	24.38	6.75	1327.4	1110.0	217.4	63.19	0.0686
Puffin/ACSS/TW	403	402.84	446.39	2	18	7 X 2.82	24.89	8.44	1451.4	1111.5	339.9	84.10	0.0686
Condor/ACSS/TW	403	402.84	455.03	2	20	7 X 3.09	25.22	9.24	1519.4	1112.0	407.5	96.56	0.0682
Drake/ACSS/TW	403	402.84	468.45	2	20	7 X 3.46	25.65	10.36	1625.1	1112.8	512.2	115.25	0.0679
Phoenix/ACSS/TW	483	483.42	508.13	3	30	7 X 2.13	26.52	6.38	1535.8	1341.7	194.1	63.19	0.0577
Rail/ACSS/TW	483	483.42	516.84	3	32	7 X 2.47	26.95	7.40	1599.8	1339.3	260.4	74.31	0.0574
Cardinal/ACSS/TW	483	483.42	546.06	2	20	7 X 3.38	27.53	10.13	1824.5	1335.3	489.2	115.69	0.0568
Snowbird/ACSS/TW	524	523.68	550.58	3	30	7 X 2.22	27.66	6.64	1659.3	1449.2	210.1	68.53	0.0531
Ortolan/ACSS/TW	524	523.68	559.87	3	32	7 X 2.57	27.99	7.70	1733.7	1451.3	282.5	80.54	0.0531
Curlew/ACSS/TW	524	523.68	591.55	2	20	7 X 3.52	28.68	10.54	1974.8	1445.2	529.6	125.48	0.0525
Avocet/ACSS/TW	564	564.00	592.97	3	30	7 X 2.3	28.68	6.89	1787.3	1560.9	226.3	72.53	0.0492
Bluejay/ACSS/TW	564	564.00	603.03	3	33	7 X 2.67	29.03	7.99	1870.6	1565.8	304.8	86.77	0.0492
Finch/ACSS/TW	564	564.00	635.55	3	38	19 X 2.19	30.10	10.95	2126.6	1566.4	560.1	135.27	0.0489
Oxbird/ACSS/TW	604	604.26	635.35	3	30	7 X 2.38	29.64	7.13	1913.8	1671.2	242.6	77.87	0.0459
Bunting/ACSS/TW	604	604.26	646.00	3	33	7 X 2.76	30.00	8.27	1998.6	1672.7	325.9	93.00	0.0459
Grackle/ACSS/TW	604	604.26	680.90	3	38	19 X 2.27	31.12	11.33	2276.9	1677.2	599.7	145.06	0.0459



Code Word	Size (mm2)	Area Square in (mm)		Standing			Outside Diameter (mm.)		Weight (kg/km)			Rated Strength (KN)	DC Resistance in ohm / KM
		Al	Total	No. of Al. Layers	Al	St.	Conductor	Core	Conductor	Al	St.	Std. HTGS	
Scissortail/ACSS/TW	645	644.58	677.74	3	30	7 X 2.46	30.56	7.37	2041.8	1782.8	258.9	83.21	0.0433
Bittern/ACSS/TW	645	644.51	689.10	3	35	7 X 2.85	30.99	8.54	2132.5	1784.3	348.2	99.23	0.0430
Pheasant/ACSS/TW	645	644.51	726.19	3	39	19 X 2.34	32.11	11.70	2428.7	1788.8	639.9	151.74	0.0430
Dipper/ACSS/TW	685	684.84	732.13	3	35	7 X 2.94	31.90	8.80	2265.0	1895.9	369.1	105.46	0.0407
Martin/ACSS/TW	685	684.84	771.55	3	39	19 X 2.42	33.02	12.05	2580.5	1901.9	678.6	161.08	0.0404
Bobolink/ACSS/TW	725	724.90	775.29	3	36	7 X 3.03	32.79	9.06	2400.4	2009.0	391.4	111.69	0.0384
Plover/ACSS/TW	725	725.10	817.03	3	37	19 X 2.49	33.96	12.41	2732.3	2013.5	718.8	170.87	0.0381
Lapwing/ACSS/TW	806	805.68	861.35	3	36	7 X 3.19	34.49	9.55	2665.3	2230.8	434.5	124.15	0.0344
Falcon/ACSS/TW	806	805.68	907.80	3	42	19 X 2.62	35.76	13.08	3035.8	2236.7	799.1	189.56	0.0344
Chukar/ACSS/TW	902	902.32	975.48	3	37	19 X 2.22	36.70	11.10	3070.1	2494.2	575.9	157.08	0.0308
Bluebird/ACSS/TW	1092	705.42	1182.00	4	64	19 X 2.45	40.84	12.20	3742.7	3046.3	696.5	187.33	0.2559
Mohawk/ACSS/TW	290	289.68	327.35	2	18	7 X 2.62	21.49	7.85	1093.4	799.6	293.8	69.42	0.0948
Calumet/ACSS/TW	286	286.39	333.23	2	20	7 X 2.92	21.84	8.73	1154.4	790.5	363.9	81.88	0.0958
Mystic/ACSS/TW	338	337.81	381.55	2	20	7 X 2.82	23.19	8.46	1274.3	932.5	341.8	80.99	0.0814
Oswego/ACSS/TW	337	336.84	391.74	2	20	7 X 3.16	23.55	9.48	1359.3	930.7	428.6	96.56	0.0814
Maumee/ACSS/TW	389	389.29	439.93	2	20	7 X 3.04	24.82	9.11	1470.0	1074.6	395.4	93.44	0.0705
Wabash/ACSS/TW	387	386.58	449.42	2	20	7 X 3.39	25.15	10.14	1558.1	1067.0	491.1	110.80	0.0709
Kettle/ACSS/TW	485	485.03	518.58	3	32	7 X 2.48	26.92	7.41	1605.7	1343.5	262.2	74.76	0.0574
Fraser/ACSS/TW	480	479.74	526.97	3	35	7 X 2.94	27.36	8.79	1699.5	1330.4	369.1	93.89	0.0577
Columbia/ACSS/TW	490	489.61	553.10	2	21	7 X 3.4	27.74	10.20	1846.8	1351.2	495.6	117.47	0.0584
Suwannee/ACSS/TW	486	486.26	565.29	2	22	7 X 3.8	28.14	11.38	1961.4	1343.8	617.6	136.61	0.0564
Cheyenne/ACSS/TW	592	591.93	622.32	2	30	7 X 2.36	29.34	7.06	1875.1	1637.6	237.5	76.54	0.0469
Genesee/ACSS/TW	587	586.77	627.93	3	33	7 X 2.74	29.59	8.21	1946.5	1625.1	321.4	91.22	0.0472
Hudson/ACSS/TW	587	586.97	663.29	3	26	7 X 3.73	30.38	11.18	2215.9	1620.6	595.3	138.39	0.0469
Catawba/ACSS/TW	645	644.58	677.74	2	30	7 X 2.46	30.56	7.37	2041.8	1782.8	258.9	83.21	0.0433
Nelson/ACSS/TW	637	637.03	681.10	3	35	7 X 2.84	30.81	8.50	2108.7	1764.5	344.2	98.34	0.0436
Yukon/ACSS/TW	625	625.10	704.84	3	38	19 X 2.32	31.62	11.56	2360.2	1735.9	624.3	147.73	0.0443
Truckee/ACSS/TW	695	695.48	731.22	3	30	7 X 2.56	31.70	7.65	2204.0	1924.8	279.2	89.88	0.0400
Mackenzie/ACSS/TW	689	688.97	736.64	3	36	7 X 2.95	31.98	8.83	2276.9	1904.8	372.0	106.35	0.0404
Thames/ACSS/TW	676	676.13	761.87	3	39	19 X 2.4	32.77	11.99	2549.2	1877.5	671.8	159.30	0.0410
St. Croix/ACSS/TW	744	743.80	782.19	3	33	7 X 2.65	32.82	7.93	2358.7	2058.1	300.6	96.11	0.0374
Miramichi/ACSS/TW	737	737.42	788.39	3	36	7 X 3.05	33.07	9.14	2440.6	2041.8	398.8	113.91	0.0377
Merrimack/ACSS/TW	726	725.81	817.87	3	39	19 X 2.49	34.04	12.42	2738.2	2017.9	645.9	170.87	0.0381
Platte/ACSS/TW	795	795.03	835.93	3	33	7 X 2.73	33.88	8.18	2519.5	2199.5	320.0	102.79	0.0351
Potomac/ACSS/TW	789	789.16	843.80	3	36	7 X 3.16	34.16	9.46	2611.7	2184.6	427.1	121.48	0.0351
Rio Grande/ACSS/TW	777	776.97	875.55	3	39	19 X 2.58	35.10	12.85	2928.7	2156.3	772.4	183.33	0.0358
Schuykill/ACSS/TW	840	840.00	898.06	3	36	7 X 3.26	35.20	9.75	2779.9	2326.0	453.9	129.49	0.0331
Pecos/ACSS/TW	822	821.87	930.90	3	39	19 X 2.71	36.17	13.51	3135.6	2281.3	854.2	200.24	0.0335
Pee Dee/ACSS/TW	891	890.97	952.90	3	37	7 X 3.36	36.25	10.05	2949.5	2467.4	482.2	137.50	0.0312
James/ACSS/TW	877	876.77	988.00	3	34	19 X 2.74	37.34	13.65	3305.2	2434.6	870.6	206.47	0.0315
Athabaska/ACSS/TW	988	987.87	1056.58	3	42	7 X 3.54	38.20	10.61	3272.5	2735.2	537.2	152.63	0.0282
Cumberland/ACSS/TW	976	976.39	1099.93	3	42	19 X 2.88	39.24	14.39	3677.2	2709.9	967.3	229.61	0.0351
Powder/ACSS/TW	1091	1091.09	1180.00	4	64	19 X 2.45	40.69	12.20	3717.4	3021.0	696.5	187.33	0.0256
Santee/ACSS/TW	1331	1330.97	1436.64	4	64	19 X 2.7	44.75	13.49	4535.9	3686.2	849.7	228.27	0.0210