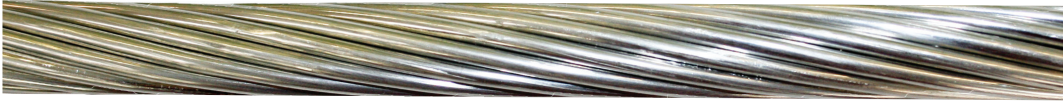


# AAAC Conductor

Eland Product Group **A4A**



## Application

AAAC is used as a bare overhead conductor for power transmission and distribution lines, on aerial circuits that require a larger mechanical resistance than AAC, and a better corrosion resistance than ACSR. The sag characteristics and the strength-to-weight ratio of AAAC is better than AAC / ACSR.

## Standards

ASTM - B 399 Metric Units, ASTM - B 231, TS IEC 1089, DIN 48201, BS 215, UNE 21.018

## Technical Data

### Conductor

All Aluminium Alloy

## Dimensions

### ASTM Sizes

Code	Size KCM	Stranding	Diameter inches		Cross Sectional Area Sq In	Weight 1000ft Lbs	Rated Strength Lbs	Resistance Ohms/1000ft		Current Rating Amps	Size	ACSR with Equiv.Diam. Stranding AL/Stl
			Individual Wires	Total				DC at 20°C	AC at 75°C			
AKRON	30.58	7	0.0661	0.198	0.024	28.7	1.110	0.6590	0.7850	107	6	6\1
ALTON	48.69	7	0.0834	0.250	0.0382	45.7	1.760	0.4140	0.4930	143	4	6\1
AMES	77.47	7	0.1052	0.316	0.0608	72.7	2.800	0.2600	0.3100	191	2	6\1
AZUSA	123.3	7	0.1327	0.398	0.0968	115.7	4.460	0.1630	0.1950	256	1/0	6\1
ANAHEIM	155.4	7	0.1490	0.447	0.1221	145.9	5.390	0.1300	0.1540	296	2/0	6\1
AMHERST	195.7	7	0.1672	0.502	0.1537	183.7	6.790	0.1030	0.1230	342	3/0	6\1
ALLIANCE	246.9	7	0.1878	0.563	0.1939	231.8	8.560	0.0816	0.0973	395	4/0	6\1
BUTTE	312.8	19	0.1283	0.642	0.2456	293.6	11.000	0.0644	0.0769	460	266.8	26\7
CANTON	394.5	19	0.1441	0.721	0.3098	370.3	13.300	0.0511	0.0610	532	336.4	26\7
CAIRO	465.4	19	0.1565	0.783	0.3655	436.9	15.600	0.0433	0.0518	590	397.5	26\7
DARIEN	559.5	19	0.1716	0.858	0.4394	525.2	18.800	0.0360	0.0431	663	477.0	26\17
ELGIN	652.4	19	0.1853	0.927	0.5124	612.4	21.900	0.0309	0.0371	729	556.5	26\17
FLINT	740.8	37	0.1415	0.991	0.5818	695.5	24.400	0.0272	0.0327	790	636.0	26\7
GREELY	927.2	37	0.1583	1.108	0.7282	870.4	30.500	0.0217	0.0263	908	795.0	26\7

1. Resistance is calculated using ASTM standard increments of stranding, and metal conductivity of 52.5% IACS. AC resistance at 60 Hz.

2. Current ratings are based on 75°C conductor temperature, 250°C ambient, 2 ft/s wind, 96/watts/sq.foot sun, 0.5 coefficients of emissivity and absorption.

### ASTM Sizes

Conductor Size c mil	Area mm <sup>2</sup>	Number and Diameter of Wires		Overall Diameter of Conductor		Linear Weight		Rate Strength lb	Maximum Resistance DC at 20°C km Ohms/Km
		inch	mm	inch	mm	kg/km	daN		
66360	33.62	7 x 0.0974	7 x 2.47	0.291	7.41	93	1068	2400	0.9942
105600	53.50	7 x 0.1228	7 x 3.12	0.368	9.36	148	1697	3815	0.6256
133100	67.44	7 x 0.1379	7 x 3.50	0.413	10.50	187	2052	4612	0.4959
167800	85.02	7 x 0.1548	7 x 3.93	0.464	11.80	235	2586	5810	0.3936
211600	107.21	7 x 0.1739	7 x 4.42	0.522	13.26	296	3263	7332	0.3119
400000	202.68	19 x 0.1451	19 x 3.68	0.724	18.40	560	5974	13426	0.1650
450000	228.00	19 x 0.1539	19 x 3.91	0.769	19.55	630	6719	15100	0.1487
500000	253.35	19 x 0.1622	19 x 4.12	0.811	20.60	700	4764	16774	0.1321
550000	278.68	37 x 0.1219	37 x 3.10	0.854	21.70	769	8380	18835	0.1202
600000	304.00	37 x 0.1273	37 x 3.23	0.890	22.60	839	9138	20535	0.1102
650000	329.35	37 x 0.1325	37 x 3.36	0.926	23.52	910	9494	21336	0.1016
700000	354.70	37 x 0.1375	37 x 3.49	0.962	24.43	978	10220	22967	0.0944
750000	380.00	37 x 0.1424	37 x 3.61	0.995	25.27	1050	10940	24630	0.0880
800000	405.36	37 x 0.1470	37 x 3.73	1.020	26.10	1118	11680	26248	0.0826
900000	456.00	37 x 0.1560	37 x 3.96	1.090	27.72	1260	13150	29551	0.0733
1000000	506.70	37 x 0.1644	37 x 4.17	1.150	29.20	1400	14610	32832	0.0660

### ASTM Sizes Metric Units

Code	Sizes KCM	Nominal Size mm <sup>2</sup>	Stranding	Diameter inches		Weight <sup>1</sup>	Rated Strength <sup>2</sup> kg	Resistance <sup>3</sup> Ohms/km		Current Rating <sup>4</sup> Amps	Size mm <sup>2</sup>	ACSR with Equiv. Diam. Stranding Al/Stl
				Individual Wires	Total			DC at 20°C	AC at 75°C			
AKRON	30.58	15.50	7	1.679	5.04	42.7	503	2.1600	2.5700	107	13.30	6/1
ALTON	48.69	24.67	7	2.118	6.36	68.0	798	1.3600	1.6200	143	21.15	6/1
AMES	77.47	39.25	7	2.672	8.02	108.2	1270	0.8530	1.0200	191	33.63	6/1
AZUSA	123.3	62.48	7	3.371	10.11	172.2	2023	0.5360	0.6390	256	53.31	6/1
ANAHEIM	155.4	78.74	7	3.785	11.35	217.1	2445	0.4250	0.5090	296	67.44	6/1
AMHERST	195.7	99.16	7	4.247	12.74	273.3	3080	0.3380	0.4030	342	85.03	6/1
ALLIANCE	246.9	125.10	7	4.770	14.31	344.9	3883	0.2680	0.3190	395	107.22	6/1
BUTTE	312.8	158.50	19	3.259	16.29	436.9	4989	0.2110	0.2520	460	135.19	26/7
CANTON	394.5	199.90	19	3.660	18.30	551.1	6033	0.1680	0.2000	532	170.46	26/7
CAIRO	465.4	235.80	19	3.975	19.88	650.0	7076	0.1420	0.1700	590	201.42	26/7
DARIEN	559.5	283.50	19	4.359	21.79	781.5	8527	0.1180	0.1420	663	241.70	26/7
ELGIN	652.4	330.60	19	4.707	23.53	911.3	9934	0.1010	0.1220	729	281.98	26/7
FLINT	740.8	375.40	37	3.594	25.16	1035.0	11068	0.0892	0.1070	790	322.27	26/7
GREELY	927.2	469.80	37	4.021	28.15	1295.0	13834	0.0713	0.0863	908	402.83	26/7

1. Weights are calculated using ASTM standard increments of stranding,
2. Rated strengths are calculated by ASTM methods and converted to metric units after rounding.
3. Resistance is calculated using ASTM standard increments of stranding, and metal conductivity of 52.5% IACS, AC resistance at 60 Hz.
4. Current ratings are based on 751 C conductor temperature, 250C ambient, 0.61 m/s wind, 1033 watts/sq. meter sun, 0.5 coefficients of emissivity and absorption.

**ASTM Sizes Metric Units**

Conductor Size mm <sup>2</sup>	Number of Wires	Diameter of Wire mm	Overall Diameter of Conductor mm	Linear Weight kg/km	Rated Strength daN	Maximum Resistance DC at 20°C Km Ohms/km
40	7	2.70	8.10	110	1270	0.8370
50	7	3.02	9.06	138	1590	0.6700
63	7	3.39	10.17	173	1910	0.5320
80	7	3.81	11.43	220	2410	0.4180
100	7	4.26	12.78	275	3020	0.3350
112	7	4.51	13.53	308	3380	0.3000
125	19	2.89	14.45	343	3830	0.2680
140	19	3.06	15.30	385	4290	0.2400
160	19	3.27	16.35	440	4670	0.2100
180	19	3.47	17.35	494	5260	0.1860
200	19	3.66	18.30	550	5860	0.1670
224	19	3.87	19.35	615	6550	0.1500
250	19	4.09	20.45	686	7310	0.1340
280	37	3.10	21.70	770	8390	0.1200
315	37	3.29	23.03	865	9020	0.1060
355	37	3.50	24.50	975	10200	0.0943
400	37	3.71	25.97	1098	11500	0.0837
450	37	3.94	27.58	1235	12900	0.0744
500	37	4.15	29.05	1372	14300	0.0470
560	37	4.39	30.73	1537	16100	0.0598
630	37	4.66	32.62	1730	18100	0.0531

**British Sizes**

Code	N	Rated Strength <sup>1</sup> kg	lbf	Maximum Resistance DC at 20° C <sup>2</sup>		Current Rating <sup>3</sup>	
				Ohm / km	Ohm / 1000ft	Temperate Amp	Tropical Amp
-	3714	379	835	2.8700	0.8730	90	73
BOX	5960	608	1340	1.7900	0.5440	121	98
ACACIA	7606	776	1710	1.4000	0.4260	140	114
ALMOND	9563	975	2150	1.1100	0.3390	162	131
CEDA	11253	1148	2530	0.9440	0.2880	180	145
-	13433	1370	3020	0.7940	0.2420	200	162
FIR	15168	1547	3410	0.7000	0.2130	217	175
HAZEL	18993	1937	4270	0.5590	0.1700	250	201
PINE	21840	2227	4910	0.4670	0.1420	279	224
-	25576	2608	5750	0.3980	0.1210	309	247
WILLOW	27355	2790	6150	0.3730	0.1140	322	258
-	29401	2998	6610	0.3470	0.1060	337	270
-	33093	3375	7440	0.3080	0.0938	343	290
OAK	36207	3692	8140	0.2820	0.0859	384	307
-	36563	3729	8220	0.2820	0.0860	385	307
MULBERRY	46704	4763	10500	0.2220	0.0676	448	356
ASH	53376	5443	12000	0.1850	0.0565	501	398
ELM	62272	6350	14000	0.1590	0.0480	553	438
POPLAR	72058	7348	16200	0.1400	0.0427	598	473
-	81398	8301	18300	0.1240	0.0337	647	511
SYCAMORE	91184	9299	20500	0.1110	0.0377	694	547
UPAS	104528	10659	23500	0.0925	0.0282	776	610
-	121875	12428	27400	0.0794	0.0242	854	669
YEW	138333	14107	31100	0.0698	0.0213	925	723

1. Rated strengths are calculated by ASTM methods and converted to metric units after rounding.

2. Resistance is calculated using ASTM standard increments of stranding, and metal conductivity of 52.5% IACS.

3. Current ratings are based on 50 Hz AC, 75°C conductor temperature, and 0.61 m/s (2 ft/s) wind, 0.5 coefficients of emissivity and absorption, Temperate rating - 250°C ambient, 1000 watts/sq. meter sun, Tropical rating - 400°C ambient, 1200 watts/sq. meter sun.

**British Sizes**

Code	Nominal Al Area mm <sup>2</sup>	Equivalent Cu Area		Stranding and Wire		Approximate Overall Diameter		Total Area		Weight <sup>1</sup>	
		mm <sup>2</sup>	inch <sup>2</sup>	mm	inch	mm	inch	mm <sup>2</sup>	inch <sup>2</sup>	Kg/Km	lb/M ft
-	-	6.45	0.010	7/1.47	7/0.0574	4.41	0.174	11.7	0.01812	32.2	21.7
BOX	-	9.68	0.015	7/1.85	7/0.0727	5.55	0.219	18.8	0.02908	51.7	34.7
ACACIA	-	12.9	0.020	7/2.08	7/0.0822	6.24	0.246	21.9	0.03711	66.1	44.4
ALMOND	25	16.1	0.025	7/2.34	7/0.0921	7.02	0.276	30.1	0.04666	82.9	55.7
CEDA	30	19.4	0.030	7/2.54	7/1000	7.62	0.300	35.5	0.05498	97.8	65.7
-	40	22.6	0.035	7/2.77	7/1091	8.31	0.327	42.2	0.06543	116.4	78.2
FIR	50	25.8	0.040	7/2.95	70161	8.85	0.348	47.8	0.07415	131.8	88.6
HAZEL	100	32.3	0.050	7/3.30	7/0.1299	9.90	0.390	59.9	0.09280	165.0	110.9
PINE	-	38.7	0.060	7/3.61	70422	10.83	0.426	71.7	0.11110	197.7	132.9
-	-	45.2	0.070	7/3.91	7/1539	11.73	0.462	84.1	0.13030	231.6	155.6
WILLOW	150	48.4	0.075	7/4.04	7/1591	12.12	0.477	89.8	0.13920	247.5	166.3
-	175	51.6	0.080	7/4.19	7/1650	12.57	0.495	96.5	0.14960	266.2	178.9
-	300	58.1	0.090	7/4.45	7/0.1751	13.35	0.526	108.8	0.16860	299.8	201.5
OAK	-	64.5	0.100	7/4.65	70831	13.95	0.549	118.9	0.18430	327.8	220.3
-	-	80.6	0.100	19/2.82	190111	14.10	0.555	118.8	0.18410	327.6	220.2
MULBERRY	-	96.8	0.125	19/3.18	19/1253	15.90	0.626	151.1	0.23420	416.7	280.0
ASH	-	113.0	0.150	19/3.48	19/1370	17.40	0.685	180.7	0.28010	498.1	334.8
ELM	-	129.0	0.175	19/3.76	19/1481	18.80	0.740	211.0	0.32710	582.1	391.2
POPLAR	-	145.0	0.200	37/2.87	37/1129	20.09	0.791	239.0	0.37050	658.8	442.7
-	-	161.0	0.225	37/3.05	37/1202	21.35	0.841	270.8	0.41970	746.7	501.8
SYCAMORE	-	194.0	0.250	37/3.23	37/0.1271	22.61	0.890	303.0	0.46970	834.9	561.1
UPAS	-	226.0	0.300	37/3.53	37/1390	24.71	0.973	362.1	0.56130	998.6	671.1
-	-	258.0	0.350	37/3.81	370500	26.47	1.050	421.8	0.65380	1163.0	781.5
YEW	-	-	0.400	37/4.06	370600	28.42	1.119	479.9	0.74390	1323.0	889.2

1. Weights are calculated using ASTM standard increments of stranding.

**French Sizes**

Code	Area mm <sup>2</sup>	Number of Wires	Diameter of Wires mm	Overall Diameter of Conductor mm	Tensile Strength of Wire hbar	Rated Strength of Conductor daN	Maximum Re- sistance DC at 20°C km	Linear Weight kg/km	Elasticity Modu- lus * hbar	Coefficient of Linear Expansion * /oc
ASTER 22	21.99	7	2.00	6.00	32.4	710	1.5000	60.2	6200	23.10-6
ASTER 34.4	34.36	7	2.50	7.50	32.4	1105	0.9580	94.1	6200	23.10-6
ASTER 54.6	54.55	7	3.15	9.45	32.4	1755	0.6030	149.0	6200	23.10-6
ASTER 75.5	75.54	19	2.25	11.25	32.4	2430	0.4380	208.0	6000	23.10-6
ASTER 117	116.98	19	2.80	14.00	32.4	3765	0.2830	322.0	6000	23.10-6
ASTER 148	168.01	19	3.15	15.75	32.4	4765	0.2240	407.0	6000	23.10-6
ASTER 181.6	181.62	37	2.50	17.50	32.4	5845	0.1830	500.0	5700	23.10-6
ASTER 228	227.83	37	2.80	19.60	32.4	7340	0.1460	627.0	5700	23.10-6
ASTER 288	288.34	37	3.15	22.05	32.4	9280	0.1150	794.0	5700	23.10-6
ASTER 366	366.22	37	3.55	24.85	32.4	11785	0.0905	1009.0	5700	23.10-6
ASTER 570	570.22	61	3.45	31.05	32.4	18360	0.0583	1574.0	5400	23.10-6
ASTER 851	850.66	91	3.45	37.95	32.4	27390	0.0391	2354.0	5250	23.10-6
ASTER 1144	1143.51	91	4.00	44.00	31.9	36260	0.0292	3164.0	5250	23.10-6
ASTER 1600	1595.93	127	4.00	52.00	31.9	50640	0.0206	4425.0	5050	23.10-6

\* These values are given for information only

**German Sizes**

Conductor Size mm <sup>2</sup>	Alloy Area mm <sup>2</sup>	Number of Wires	Diameter mm	Overall Diameter of Conductor mm	Linear Weight kg/km	Rated Strength daN	Maximum Resistance DC at 20°C km Ohms/Km
16	15.89	7	1.70	5.1	43	444	2.09100
25	24.26	7	2.10	6.3	66	677	1.37030
35	34.36	7	2.50	7.5	94	690	0.96690
50	49.48	7	3.00	9.0	135	1382	0.67140
50	48.35	19	1.80	9.0	133	1350	0.69050
70	65.81	19	2.10	10.5	181	1838	0.50730
95	93.27	19	2.50	12.5	256	2605	0.35790
120	116.99	19	2.80	14.0	322	3268	0.28540
150	147.11	37	2.25	15.8	406	4109	0.22740
185	181.62	37	2.50	17.5	500	5073	0.18420
240	242.54	61	2.25	20.3	670	6774	0.13830
300	299.43	61	2.50	22.5	827	8363	0.11200
400	400.14	61	2.89	26.0	1104	11176	0.08380
500	499.83	61	3.23	29.1	1379	13960	0.06709
625	626.20	91	2.96	32.6	1732	17490	0.05400
800	802.09	91	3.35	36.9	2218	22402	0.04180
1000	999.71	91	3.74	41.1	2767	27922	0.03350

1. Weights are calculated using ASTM standard increments of stranding.

*The information contained within this datasheet is for guidance only. When selecting accessories such as cleats, glands, etc please note that actual cable dimensions may vary due to manufacturing tolerances.*