AAAC Conductor Application

AAAC is mainly used as bare overhead transmission cable and as primary and secondary distribution cable. It is also suitable for laying across basins, rivers and valleys where special geographical teatures exist. All aluminium alloy conductor(AAAC) is a special alloy with Magnesium and Silicium with an excellent conductivity value,specific mechanical resistance and high corrosion resistance.

AAAC Cable Standard

Basic design to BS 3242 / BS EN 50182 / IEC 61089 / ASTM B 399/B 399M / DIN 48201-6/AS 1531 standards

AAAC Wire Construction

AA-6101 aluminium alloy,Concentrically stranded

Max. Size 2500MCM, Max. str. No. 91Wires

All Aluminium Alloy Conductor Data Sheet

AAAC-IEC61089

Cross-section Area	Stranding No. & Wire No.s		Approx. Overall Dia.	Approx. Weight	Rated strength	Max. D.C. resistance at 20℃
mm2	No.s	mm	mm	Kg/km	kN	Ω/km
28.8	7	2.29	6.87	78.7	8.49	1.1453
46	7	2.89	8.67	125.9	13.58	0.7158
115	19	2.78	13.9	316.3	33.95	0.2877
460	37	3.98	27.86	1268.4	135.81	0.0721
1036	91	3.81	41.91	2861.1	305.58	0.0321
1439	91	4.49	49.39	3973.7	424.41	0.0231

AAAC-ASTM B399

Code Name	Conductor size		Stranding No. & Wire No.s		Approx. Overall Dia.	Approx. Weight	Rated strength	Max. D.C. resistance at 20℃
	AWG (MCM)	mm2	No.s	mm	mm	Kg/km	Kn	Ω/km
Alton	48.69(4)	24.67	7	2.12	6.36	68	7.8	1.586
Azusa	123.3(1/0)	62.46	7	3.37	10.11	172	19.8	0.5365
Alliance	246.9 (4/0)	125.1	7	4.77	14.31	345	38.1	0.2678
Butte	312.8	158.5	19	3.26	16.3	437	48.8	0.2112
Canton	394.5	199	19	3.66	18.3	551	59	0.1676
	450	228	19	3.91	19.55	629	67.2	0.1468

AAAC-BS3242

Code Name	Nominal Cross-section Area	Calculated Cross-section Area	Stranding No. & Wire No.s		Approx. Overall Dia.	Approx. Weight	Rated Strength	D.C. Resistance at 20°C
	mm2	mm2	No.s	mm	mm	Kg/km	Kn	Ω/km
Hazel	50	59.87	7	3.3	9.9	165	16.8	0.5498
	70	84.05	7	3.91	11.73	232	23.5	0.3917
Ash	150	180.7	19	3.48	17.4	498	50.6	0.1831
Upas	300	362.1	37	3.53	24.71	998	101.4	0.09156
Walnut	350	421.8	37	3.81	26.67	1163	118.1	0.0786
Araucaria	700	821.1	61	4.14	37.26	2264	229.8	0.04047

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AAAC-NFC34125

Code	Cross-section Area	Stranding No	Single wire dia.	Approx. overall dia.	Approx. weight	Rated tensile strength
	mm2	No.s	mm	mm	kg/km	KN
55	54.6	7	3.15	9.45	149	17.75
153	152.8	19	3.2	16	417	49.66
323	312.6	37	3.28	22.96	853	101.6
475	475.4	61	3.15	28.35	1296	154.51
621	620.9	61	3.6	32.4	1693	201.79
926	926.3	91	3.6	32.4	2526	301.05

BS 3242

Code	AL Nominal Area	Cu Nominal Area Equivalent	Total Area	Stranding	Overall Diameter	Weight
	mm^2	mm^2	mm^2	No.×mm	mm	kg/km
-	-	6.45	11.7	7/1.47	4.41	32.2
Box	-	9.68	18.8	7/1.85	5.55	51.7
Acacia	-	12.9	21.9	7/2.08	6.24	66.1
Almond	25	16.1	30.1	7/2.34	7.02	82.9
Ceda	30	19.4	35.5	7/2.54	7.62	97.8
-	40	22.6	42.2	7/2.77	8.31	116.4
Fir	50	25.8	47.8	7/2.95	8.85	131.8
Hazel	100	32.3	59.9	7/3.30	9.9	165
Pine	-	38.7	71.7	7/3.61	10.83	197.7
-	-	45.2	84.1	7/3.91	11.73	231.6
Willow	150	48.4	89.8	7/4.04	12.12	247.5
-	175	51.6	96.5	7/4.19	12.57	266.2
-	300	58.1	108.8	7/4.45	13.35	299.8
Oak	-	64.5	118.9	7/4.65	13.95	327.8
-	-	80.6	118.8	19/2.82	14.1	327.6
Mulberry	-	96.8	151.1	19/3.18	15.9	416.7
Ash	-	113	180.7	19/3.48	17.4	498.1
Elm	-	129	211	19/3.76	18.8	582.1
Poplar	-	145	239	37/2.87	20.09	658.8
-	-	161	270.8	37/3.05	21.35	746.7
Sycamore	-	194	303	37/3.23	22.61	834.9
Upas	-	226	362.1	37/3.53	24.71	998.6
-	-	258	421.8	37/3.81	26.47	1163
Yew	-	-	479.9	37/4.06	28.42	1323

(*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

BS EN 50182

Code	Stranding	Nominal Area	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*

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	No.×mm	mm^2	mm	kg/km	KN	Ω/Km	A
Box	7/1.85	18.8	5.55	51.4	5.55	1.748	87
Acacia	7/2.08	23.8	6.24	64.9	7.02	1.3828	101
Almond	7/2.34	30.1	7.02	82.2	8.88	1.0926	116
Cedar	7/2.54	35.5	7.62	96.8	10.46	0.9273	129
Deodar	7/2.77	42.2	8.31	115.2	12.44	0.7797	143
Fir	7/2.95	47.8	8.85	130.6	14.11	0.6875	155
Hazel	7/3.30	59.9	9.9	163.4	17.66	0.5494	178
Pine	7/3.61	71.6	10.83	195.6	21.14	0.4591	199
Holly	7/3.91	84.1	11.73	229.5	24.79	0.3913	219
Willow	7/4.04	89.7	12.12	245	26.47	0.3665	228
Oak	7/4.65	118.9	13.95	324.5	35.07	0.2767	272
Mulberry	19/3.18	150.9	15.9	414.3	44.52	0.2192	314
Ash	19/3.48	180.7	17.4	496.1	53.31	0.183	351
Elm	19/3.76	211	18.8	579.2	62.24	0.1568	386
Poplar	37/2.87	239.4	20.09	659.4	70.61	0.1387	416
Sycamore	37/3.23	303.2	22.61	835.2	89.4	0.1095	480
Upas	37/3.53	362.1	24.71	997.5	106.82	0.0917	535
Yew	37/4.06	479	28.42	1319.6	141.31	0.0693	633
Totara	37/4.14	498.1	28.98	1372.1	146.93	0.0666	648
Rubus	61/3.50	586.9	31.5	1622	173.13	0.0567	714
Sorbus	61/3.71	659.4	33.39	1822.5	194.53	0.0505	764
Araucaria	61/4.14	821.1	37.26	2269.4	242.24	0.0406	868
Redwood	61/4.56	996.2	41.04	2753.2	293.88	0.0334	970

Note: *The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

IEC 61089

Code	Nominal Area	Stranding	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*
	mm^2	No.×mm	mm	kg/km	KN	Ω/Km	A
16	18.4	18.4	5.49	50.4	5.43	1.7896	86
25	28.8	28.8	6.87	78.7	8.49	1.1453	113
40	46	46	8.67	125.9	13.58	0.7158	151
63	72.5	72.5	10.89	198.3	21.39	0.4545	200
100	115	115	13.9	316.3	33.95	0.2877	266
125	144	144	15.5	395.4	42.44	0.2302	305
160	184	184	17.55	506.1	54.32	0.1798	355
200	230	230	19.65	632.7	67.91	0.1439	407
250	288	288	21.95	790.8	84.88	0.1151	466
315	363	363	24.71	998.9	106.95	0.0916	535
400	460	460	27.86	1268.4	135.81	0.0721	618
450	518	518	29.54	1426.9	152.79	0.0641	663
500	575	575	31.15	1585.5	169.76	0.0577	706
560	645	645	33.03	1778.4	190.14	0.0516	755
630	725	725	35.01	2000.7	213.9	0.0458	809

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710	817	817	37.17	2254.8	241.07	0.0407	866
800	921	921	39.42	2540.6	271.62	0.0361	928
900*	1036	1036	41.91	2861.1	305.58	0.0321	992
1000*	1151	1151	44.11	3179	339.53	0.0289	1051
1120*	1289	1289	46.75	3560.5	380.27	0.0258	1118
1250*	1439	1439	49.39	3973.7	424.41	0.0231	1185

(*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

ASTM B 399/B 399M

Nominal Area		Stranding	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*
AWG&MCM	mm^2	No.×mm	mm	kg/km	KN	Ω/Km	A
6	13.2	7/1.55	4.65	36.2	4.18	2.5361	69
4	21.1	7/1.96	5.88	57.9	6.69	1.586	93
2	33.5	7/2.47	7.41	92	10.6	0.9987	123
0	53.5	7/3.12	9.36	146.8	17	0.62592	165
2/0	67.3	7/3.50	10.5	184.8	20.4	0.49738	190
3/0	84.9	7/3.93	11.79	233	25.7	0.3945	219
4/0	107	7/4.42	13.26	294.7	32.5	0.31188	253
250	126	19/2.91	14.55	346.7	38.8	0.26509	280
300	152	19/3.19	15.95	416.7	46.6	0.22059	313
350	178	19/3.45	17.25	487.3	52	0.1886	345
400	203	19/3.69	18.45	557.5	59.5	0.16486	375
450	228	19/3.91	19.55	626	66.8	0.14683	402
500	253	19/4.12	20.6	695	74.2	0.13224	429
550	279	37/3.10	21.7	766.2	83.9	0.11995	455
600	303	37/3.23	22.61	831.9	91	0.11049	478
650	330	37/3.37	23.59	905.5	94.9	0.1015	504
700	354	37/3.49	24.43	971.2	101	0.09464	525
750	381	37/3.62	25.34	1045	109	0.08796	549
800	404	37/3.73	26.11	1109	116	0.08285	569
900	456	37/3.96	27.72	1250	131	0.07351	612
1000	508	37/4.18	29.26	1393	146	0.06597	653
1250	631	61/3.63	32.67	1732	179	0.05306	743
1500	759	61/3.98	35.82	2082	215	0.04414	827
1750	886	61/4.30	38.7	2431	251	0.03781	904

(*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

DIN 48201 Part 6

Nominal Area		Stranding	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*
Nominal	Teorical						
mm^2	mm^2	No.×mm	mm	kg/km	KN	Ω/Km	A
16	15.89	7/1.70	5.1	43	4.44	2.0742	78
25	24.25	7/2.10	6.3	66	6.77	1.3593	102
35	34.36	7/2.50	7.5	94	9.6	0.9591	126

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50	49.48	7/3.00	9	135	13.82	0.666	158
50	48.35	19/1.80	9	133	13.5	0.6849	156
70	65.81	19/2.10	10.5	181	18.38	0.5032	189
95	93.27	19/2.50	12.5	256	26.05	0.3551	234
120	116.99	19/2.80	14	322	32.68	0.2831	269
150	147.11	37/2.25	15.8	406	41.09	0.2256	309
185	181.62	37/2.50	17.5	500	50.73	0.1828	352
240	242.54	61/2.25	20.3	670	67.74	0.1371	420
300	299.43	61/2.50	22.5	827	83.63	0.111	477
400	400.14	61/2.89	26	1104	111.76	0.0831	568
500	499.83	61/3.23	29.1	1379	139.6	0.0665	649
625*	626.2	91/2.96	32.6	1732	174.9	0.0531	742
800*	802.09	91/3.35	36.9	2218	224.02	0.0415	857
1000*	999.71	91/3.74	41.1	2767	279.22	0.0333	971

* The items marked with "*" are not in our current product range and the details are for information only.

(*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.

All Aluminum Alloy 1120 AAAC/1120 [AS 1531 - Standard]

CODENAME AAAC1120	Construction	Calculation cross-section	Approx.Over all diameter	Approx.Over all weight	Maximum DC resistance at 20oC	Calculated breaking load	Equivalent Aluminum area
	No. x mm	mm2	mm	kg/km	Ω/km	kN	mm2
Chlorine	7 x 2.50	34.36	7.50	94.3	0.864	8.18	32.8
Chromium	7 x 2.75	41.58	8.25	113	0.713	9.91	39.7
Fluorine	7 x 3.00	49.48	9.00	135	0.599	11.8	47.2
Helium	7 x 3.75	77.28	11.3	211	0.383	17.6	73.7
Hydrogen	7 x 4.50	111.3	13.5	304	0. 266	24.3	106
Iodine	7 x 4.75	124.0	14.3	339	0.239	27.1	118
Krypton	19 x 3.25	157.6	16.3	433	0.189	37.4	150
Lutetium	19 x 3.50	182.8	17.5	503	0.163	41.7	173
Neon	19 x 3.75	209.8	18.8	576	0.142	47.8	199
Nitrogen	37 x 3.00	261.6	21.0	721	0.114	62.2	248
Nobelium	37 x 3.25	307.0	22.8	845	0.097 3	72.8	291
Oxygen	19 x 4.75	336.7	23.8	924	0.088 4	73.6	320
Phosphorus	37 x 3.75	408.5	26.3	1,120	0.073 1	93.1	387
Selenium	61 x 3.25	506.1	29.3	1,400	0.059 2	114	478
Silicon	61 x 3.50	586.9	31.5	1,620	0.051 1	127	555
Sulfur	61 x 3.75	673.7	33.8	1,860	0.044 4	145	636

All Aluminum Alloy 6201 AAAC/6201 [AS 1531 - Standard]

CODENAME AAAC6201	Construction	Calculation cross-section	Approx.Over all diameter	Approx.Over all weight	Maximum DC resistance at 20oC	Calculated breaking load	Equivalent Aluminum area
	No. x mm	mm2	mm	kg/km	Ω/km	kN	mm2
Diamond	7 x 2.50	34.36	7.50	94.3	0.967	9.64	29.3
Dolomite	7 x 2.75	41.58	8.25	113	0.799	11.6	35.4
Emerald	7 x 3.00	49.48	9.00	135	0.671	13.9	42.2
Garnet	7 x 3.75	77.28	11.3	211	0.430	21.7	65.8

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Jade	7 x 4.50	111.3	13.5	304	0.298	31.2	94.8
Jasper	7 x 4.75	124.0	14.3	339	0.268	34.8	106
Opal	19 x 3.25	157.6	16.3	433	0.212	44.2	134
Patronite	19 x 3.50	182.8	17.5	503	0.183	51.3	155
Pearl	19 x 3.75	209.8	18.8	576	0.159	58.8	178
Ruby	37 x 3.00	261.6	21.0	721	0.128	73.5	221
Ruthenium	37 x 3.25	307.0	22.8	845	0.109	86.1	260
Rutile	19 x 4.75	336.7	23.8	924	0.099 1	94.4	285
Sapphire	37 x 3.75	408.5	26.3	1,120	0.081 9	115	345
Spinel	61 x 3.25	506.1	29.3	1,400	0.066 2	135	427
Tantalum	61 x 3.50	586.9	31.5	1,620	0.057 2	156	495
Topaz	61 x 3.75	673.7	33.8	1,860	0.049 8	179	568

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