XINLAN®

All Aluminum Alloy Conductor (AAAC) Cables

BS EN 50182

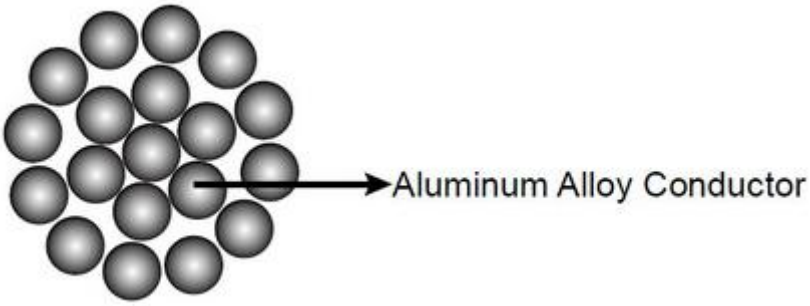
Application

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.

Standard

Basic design to BS EN 50182 standards

Construction



AAAC cable bvconsists of aluminum alloy wires. The aluminum alloy wires are concentrically stranded.

This section deals with heat-treatable magnesium silicon type aluminium alloys to the applicable International Standard, the electrical and mechanical properties of which all fall within the values suggested by relevant standard. Conductors to all other recognized specifications can also be supplied. The alloys referred to have higher strength but lower conductivity than pure aluminium.

Being lighter, alloy conductors can sometimes be used to advantage in place of the more conventional ACSR; Having lower breaking loads than the later, their use becomes particularly favourable when ice and wind loadings are low.

Electrical Properties

Density@20ºC	2.70 kg/dm
Temperature Coefficient@20°C	0.00360 (°C)
Resistivity@20°C	0.0326 Ohms mm²/m
Linear Expansivity	23 x10-6(°C)

Service Conditions

Ambient Temperature	-5°C - 50°C
Wind Pressure	80 – 130kg/m²
Seismic Acceleration	0.12 - 0.05g
Isokeraunic Level	10 – 18
Relative Humidity	5 – 100%

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Construction Parameters

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Code	Stranding	Nominal Area	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*
	No.×mm	mm²	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.

Technical Data

Code	AL Nominal Area	Maximum Resistance DC at 20°		Current Rating	
				Temperate	Tropical
	mm²	Ω / km	Ω / 1000ft	Amp	Amp
-	-	2.87	0.873	90	73
Box	-	1.79	0.544	121	98
Acacia	-	1.4	0.426	140	114
Almond	25	1.11	0.339	162	131

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Ceda	30	0.944	0.288	180	145
-	40	0.794	0.242	200	162
Fir	50	0.7	0.213	217	175
Hazel	100	0.559	0.17	250	201
Pine	-	0.467	0.142	279	224
-	-	0.398	0.121	309	247
Willow	150	0.373	0.114	322	258
-	175	0.347	0.106	337	270
-	300	0.308	0.0938	343	290
Oak	-	0.282	0.0859	384	307
-	-	0.282	0.086	385	307
Mulberry	-	0.222	0.0676	448	356
Ash	-	0.185	0.0565	501	398
Elm	-	0.159	0.048	553	438
Poplar	-	0.14	0.0427	598	473
-	-	0.124	0.0337	647	511
Sycamore	-	0.111	0.0377	694	547
Upas	-	0.0925	0.0282	776	610
-	-	0.0794	0.0242	854	669
Yew	-	0.0698	0.0213	925	723

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