

APPLICATION:

AAAC – The full name: All Aluminum Alloy Conductor. It is used for primary and secondary overhead transmission and distribution services. This has been designed utilizing a high-strength aluminum alloy to achieve a high strength-to-weight ratio and better sag characteristic. The conductor has a higher resistance to corrosion than ACSR.

CONDUCTORS:

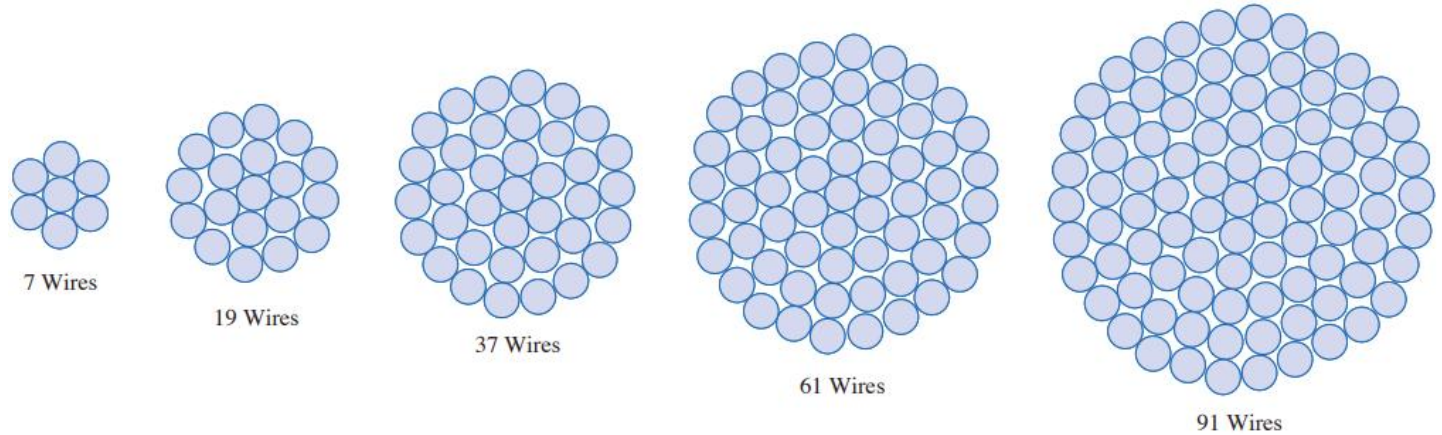
Stranded 6201-T81 high strength aluminum conductors, conforming to ASTM specifications B399 are concentriclay-stranded, similar in construction and appearance to 1350 aluminum alloy grade aluminum conductors, and has a greater resistance to abrasion than conductors of 1350 aluminum alloy.

AAAC cable consists of aluminum alloy wires and the wires are concentrically stranded.

This section deals with aluminum alloys of the magnesium-silicon type heat treatable according to the applicable International Standard, whose electrical and mechanical properties are all within the values suggested by the relevant standard.

Conductors with all other recognized specifications can also be supplied. The mentioned alloys have higher strength but lower conductivity than pure aluminum.

Being lighter, alloy conductors can sometimes be used to advantage in place of more conventional ACSR; by having lower breaking loads than the later ones, its use becomes particularly favorable when the ice and wind loads are low.



STANDARD

1. American Standard-ASTM B 399/B 399M
2. German Standards-DIN 48201-6
3. British Standards-BS EN 50182 BS 3242
4. International Electrotechnical Commission International Standards&China National Standards-IEC 61089 GB/T 1179
5. Russian National Standard-AAAC GOST 839-80
6. French Sizes NFC 34

ASTM B 399/B 399M Full Size

Code Name	Area		Size&Stranding ACSR with equal diameter		No. And diameter of wires	Cable diameter	Weight	Rated Strength	Strand Length
	Nominal	Actual	AWG or MCM	Al/Steel					
	MCM	mm ²			mm	mm	Kg/km	kN	m±5%
Akron	30.58	15.48	6	6/1	7/1.68	5.04	42.7	4.92	3000
Alton	48.69	24.71	4	6/1	7/2.12	6.35	68.0	7.84	3000
Ames	77.47	39.22	2	6/1	7/2.67	8.02	108	12.45	2000
Azusa	123.3	62.38	1/0	6/1	7/3.37	10.11	172	18.97	2000
Ananeim	155.4	78.65	2/0	6/1	7/3.78	11.35	217	23.93	3000
Amherst	195.7	99.22	3/0	6/1	7/4.25	12.75	273	30.18	2500
Alliance	246.9	125.1	4/0	6/1	7/4.77	14.31	345	38.05	2000
Butte	312.8	158.6	266.8	26/7	19/3.26	16.30	437	48.76	3000
Canton	394.5	199.9	336.4	26/7	19/3.66	18.30	551	58.91	2500
Cairo	465.5	235.8	397.5	26/7	19/3.98	19.88	650	69.48	2000
Darien	559.5	283.5	477	26/7	19/4.36	21.79	781	83.52	2000
Elgin	652.4	330.6	556.5	26/7	19/4.71	23.54	911	97.42	1500
Flint	740.8	375.3	636	26/7	37/3.59	25.16	1035	108.21	3000

Greely	927.2	469.8	795	26/7	37/4.02	28.14	1295	135.47	2500
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AAAC 6201 ASTM B 399

Conductor size	Sectional Area	Stranding		Diameter of Complete Conductor	Weight	Rated Strength	DC Resistance @ 20°C	Current Capacity	
		No. of Aluminium Wires	Individual wire diameter					@ 75°C	@ 85°C
(kcmil)	(mm ²)	(No.)	(mm)	(mm)	(Kg/Km)	KN	(Ω/Km)	(Ampere)	(Ampere)
1439.2	729	61	3.9	35.1	1999	207	0.04597	693	897
1348.8	685	61	3.78	34.02	1878	194	0.04893	671	865
1259.6	638	61	3.65	32.85	1751	181	0.05248	646	831
1165.1	590	61	3.51	31.59	1620	167	0.05675	620	794
1077.4	547	61	3.38	30.42	1502	156	0.0612	595	760
927.2	470	37	4.02	28.14	1289	135	0.07133	547	694
740.8	375	37	3.59	25.13	1028	107	0.08944	482	607
652.4	331	19	4.71	23.55	908.3	97	0.1012	449	564
559.5	284	19	4.36	21.8	778.3	83.1	0.1181	412	514
465.4	236	19	3.98	19.9	648.6	69.2	0.1417	371	461
394.5	200	19	3.66	18.3	548.5	58.6	0.1676	337	417
312.8	159	19	3.26	16.3	435.1	46.5	0.2112	295	362
246.9	125	7	4.77	14.31	343.2	37.8	0.2678	256	313
195.7	99.3	7	4.25	12.75	272.5	30	0.3373	224	272
155.4	78.6	7	3.78	11.34	215.6	23.8	0.4264	195	236
123.3	62.4	7	3.37	10.11	171.3	18.9	0.5365	170	205
77.47	39.2	7	2.67	8.01	107.5	12.4	0.8547	129	154
48.69	24.7	7	2.12	6.36	67.8	7.83	1.356	98	116
30.58	15.5	7	1.68	5.04	42.58	4.92	2.159	74	88
1750	886	61	4.3	38.7	2431	251	0.03781	767	1002
1500	759	61	3.98	35.82	2082	215	0.04414	708	918
1250	631	61	3.63	32.67	1732	179	0.05306	642	826
1000	508	37	4.18	29.26	1393	146	0.06597	571	727
900	456	37	3.96	27.72	1250	131	0.07351	538	682
800	404	37	3.73	26.11	1109	116	0.08285	503	636
750	381	37	3.62	25.34	1045	109	0.08796	487	613
700	354	37	3.49	24.43	971.2	101	0.09464	467	587
650	330	37	3.37	23.59	905.5	94.9	0.1015	449	563
600	303	37	3.23	22.61	831.9	91	0.11049	428	535
550	279	37	3.1	21.7	766.2	83.9	0.11995	408	510
500	253	19	4.12	20.6	695	74.2	0.13224	386	480
450	228	19	3.91	19.55	626	66.8	0.14683	364	451
400	203	19	3.69	18.45	557.5	59.5	0.16486	340	421
350	178	19	3.45	17.25	487.3	52	0.1886	315	388
300	152	19	3.19	15.95	416.7	46.6	0.22059	287	353
250	126	19	2.91	14.55	346.7	38.8	0.26509	258	316
211.6	107	7	4.42	13.26	294.7	32.5	0.31188	234	285
167.8	84.9	7	3.93	11.79	233	25.7	0.3945	204	247

133.1	67.3	7	3.5	10.5	184.8	20.4	0.49738	178	215
105.6	53.5	7	3.12	9.36	146.8	17	0.62592	155	187
66.36	33.5	7	2.47	7.41	92	10.6	0.9987	118	140
41.74	21.1	7	1.96	5.88	57.9	6.69	1.586	89	106
26.24	13.2	7	1.55	4.65	36.2	4.18	2.5361	67	79

DIN 48201-6

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

BS EN 50182 BS 3242

Code	Stranding	Nominal Area	Sectional Area	Overall Diameter	Weight	Rated Strength	Electrical Resistance	Current Rating*
	No.×mm	mm ²	mm ²	mm	kg/km	KN	Ω/Km	A
Box	7/1.85	15	18.8	5.55	51.4	5.55	1.748	87
Acacia	7/2.08	20	23.8	6.24	64.9	7.02	1.3828	101
Almond	7/2.34	25	30.1	7.02	82.2	8.88	1.0926	116
Cedar	7/2.54	30	35.5	7.62	96.8	10.46	0.9273	129
Deodar	7/2.77	35	42.2	8.31	115.2	12.44	0.7797	143
Fir	7/2.95	40	47.8	8.85	130.6	14.11	0.6875	155
Hazel	7/3.30	50	59.9	9.9	163.4	17.66	0.5494	178
Pine	7/3.61	60	71.6	10.83	195.6	21.14	0.4591	199
Holly	7/3.91	70	84.1	11.73	229.5	24.79	0.3913	219
Willow	7/4.04	75	89.7	12.12	245	26.47	0.3665	228
–	7/4.19	80	96.52	12.57	264	27.17	0.3411	245
–	7/4.44	90	108.0	13.32	298	30.65	0.3023	260
Oak	7/4.65	80	118.9	13.95	324.5	35.07	0.2767	272

-	19/2.82	100	118.70	14.1	326	33.42	0.2787	290
Mulberry	19/3.18	125	150.9	15.9	414.3	44.52	0.2192	314
Ash	19/3.48	150	180.7	17.4	496.1	53.31	0.183	351
Elm	19/3.76	175	211	18.8	579.2	62.24	0.1568	386
Poplar	37/2.87	200	239.4	20.09	659.4	70.61	0.1387	416
-	37/3.05	225	270.30	21.35	744	76.08	0.1227	448
Sycamore	37/3.23	250	303.2	22.61	835.2	89.4	0.1095	480
Upas	37/3.53	300	362.1	24.71	997.5	106.82	0.0917	535
Walnut	37/3.81	350	421.80	26.67	1162	118.72	0.07860	584
Yew	37/4.06	400	479	28.42	1319.6	141.31	0.0693	633
Totara	37/4.14	425	498.1	28.98	1372.1	146.93	0.0666	648
Rubus	61/3.50	500	586.9	31.5	1622	173.13	0.0567	714
Sorbus	61/3.71	600	659.4	33.39	1822.5	194.53	0.0505	764
Araucaria	61/4.14	700	821.1	37.26	2269.4	242.24	0.0406	868
Redwood	61/4.56	800	996.2	41.04	2753.2	293.88	0.0334	970

IEC 61089 GB/T 1179

Code	A2/A3 Sectional Area	A2/A3 Stranding	A2/A3 Overall Diameter	A2/A3 Weight	A2/A3 Rated Strength	Electrical Resistance	Current Rating*
	mm ²	No.×mm	mm	kg/km	KN	Ω/Km	A
16	18.4/18.6	7/1.83/1.84	5.49/5.52	50.4/50.8	5.43/6.04	1.7896	86
25	28.8/29.0	7/2.29/2.30	6.87/6.90	78.7/79.5	8.49/9.44	1.1453	113
40	46/46.5	7/2.89/2.91	8.67/8.72	125.9/127.1	13.58/15.10	0.7158	151
63	72.5/73.2	7/3.63/3.65	10.89/10.90	198.3/200.2	21.39/23.06	0.4545	200
100	115/116	19/2.78/2.79	13.9/14.0	316.3/319.3	33.95/37.76	0.2877	266
125	144/145	19/3.10/3.12	15.5/15.6	395.4/399.2	42.44/47.20	0.2302	305
160	184/186	19/3.51/3.53	17.55/17.60	506.1/511.0	54.32/58.56	0.1798	355
200	230/232	19/3.93/3.95	19.65/19.70	632.7/638.7	67.91/73.20	0.1439	407
250	288/290	19/4.39/4.41	21.95/22.1	790.8/798.4	84.88/91.50	0.1151	466
315	363/366	37/3.53/3.55	24.71/24.80	998.9/1008.4	106.95/115.3	0.0916	535
400	460/465	37/3.98/4.00	27.86/28.00	1268.4/1280.5	135.81/146.40	0.0721	618
450	518/523	37/4.22/4.24	29.54/29.70	1426.9/1440.5	152.79/164.70	0.0641	663
500	575/581	37/4.45/4.47	31.15/31.30	1585.5/1600.6	169.76/183.00	0.0577	706
560	645/651	61/3.67/3.69	33.03/33.20	1778.4/1795.3	190.14/204.96	0.0516	755
630	725/732	61/3.89/3.91	35.01/35.20	2000.7/2019.8	213.9/230.58	0.0458	809
710	817/825	61/4.13/4.15	37.17/37.3	2254.8/2276.2	241.07/259.86	0.0407	866
800	921/930	61/4.38/4.40	39.42/39.6	2540.6/2564.8	271.62/292.80	0.0361	928
900	1036/1046	91/3.81/3.83	41.91/42.10	2861.1/2888.3	305.58/329.40	0.0321	992
1000	1151/1162	91/4.01/4.03	44.11/44.40	3179/3209	339.53/366	0.0289	1051

1120	1289/1301	91/4.25/4.27	46.75/46.9	3560.5/3594.4	380.27/409.92	0.0258	1118
1250	1439	91/4.49	49.39	3973.7	424.41	0.0231	1185

Type Ah GOST 839-80

Nominal Cross Section	Calculated Cross Section	Number of Wires	Conductor Diameter	DC Resistance at 20	Min. Breaking Load	Conductor Weight
mm ²	mm ²		mm	Ω	N	kg/km
16	15.9	7	5.1	1.9037	3734	43
25	24.9	7	6.4	1.2139	5370	68
35	34.3	7	7.5	0.8819	7389	94
50	49.5	7	9	0.6121	10662	135
120	117	19	14	0.2609	25186	321
150	148	19	15.8	0.2059	31900	406
185	182.3	19	17.5	0.1669	39386	502

Type Ankp GOST 839-80

Nominal Cross Section	Calculated Cross Section	Number of Wires	Conductor Diameter	DC Resistance at 20	Min. Breaking Load	Conductor Weight	Grease Weight
mm ²	mm ²		mm	Ω	N	kg/km	kg/km
16	15.9	7	5.1	1.9037	3734	43	0.5
25	24.9	7	6.4	1.2139	5370	68	0.5
35	34.3	7	7.5	0.8819	7389	94	0.5
50	49.5	7	9	0.6121	10662	135	–
120	117	19	14	0.2609	25186	321	–
150	148	19	15.8	0.2059	31900	406	–
185	182.3	19	17.5	0.1669			

French Sizes NFC 34

CODE NAME	AREA	NO. OF WIRES	DIAMETER OF WIRES	OVERALL DIAMETER OF CONDUCTOR	TENSILE STRENGTH OF WIRE	RATED STRENGTH OF CONDUCTOR	MAXIMUM DC RESISTANCE AT 20°C	LINEAR WEIGHT	ELASTICITY MODULUS*	COEFFICIENT OF LINEAR EXPANSION
	mm ²		mm	mm	hbar	daN	km	kg/km	hbar	*/oc
ASTER 22	21.99	7	2	6	32.4	710	1.5	60.2	6200	23.10-6
ASTER 34.4	34.36	7	2.5	7.5	32.4	1105	0.958	94.1	6200	23.10-6
ASTER 54.6	54.55	7	3.15	9.45	32.4	1755	0.603	149	6200	23.10-6

ASTE R 75.5	75.54	19	2.25	11.25	32.4	2430	0.438	208	6000	23.10-6
ASTE R 117	116.98	19	2.8	14	32.4	3765	0.283	322	6000	23.10-6
ASTE R 148	148.01	19	3.15	15.75	32.4	4765	0.224	407	6000	23.10-6
ASTE R 181.6	181.62	37	2.5	17.5	32.4	5845	0.183	500	5700	23.10-6
ASTE R 228	227.83	37	2.8	19.6	32.4	7340	0.146	627	5700	23.10-6
ASTE R 288	288.34	37	3.15	22.05	32.4	9280	0.115	794	5700	23.10-6
ASTE R 366	366.22	37	3.55	24.85	32.4	11785	0.0905	1009	5700	23.10-6
ASTE R 570	570.22	61	3.45	31.05	32.4	18360	0.0583	1574	5400	23.10-6
ASTE R 851	850.66	91	3.45	37.95	32.4	27390	0.0391	2354	5250	23.10-6
ASTE R 1144	1143.5 1	91	4	44	31.9	36260	0.0292	3164	5250	23.10-6
ASTE R 1600	1595.9 3	127	4	52	31.9	50640	0.0206	4425	5050	23.10-6