

High Conductivity Alloy Conductor (AL5, AL6, AL7, AL57, AL59, AL60, AAAC 1120 etc)

High Conductivity Alloy Conductors : These are low resistance High Conductivity alloy conductors with excellent electrical characteristics, excellent sag-tension characteristics and superior corrosion resistance to that of ACSR. As compared to ACSR they have lighter weight, comparable strength and current carrying capacity, lower electrical losses and superior corrosion resistance have given this conductor wide acceptance as a transmission conductor. It has found limited use, however, as a distribution conductor.

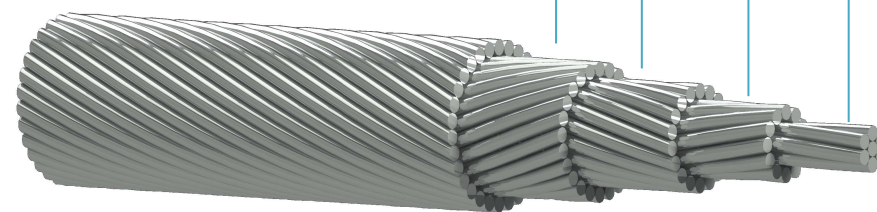
Construction

Aluminium Alloy wires, concentrically stranded.

High Conductivity Alumimun Alloy Wires



High Conductivity Alumimun Alloy Wires



Values based on following Specifications:

Swedish Specification SS 424 08 14, SS 424 08 12, EN 50182, AS 1531 & More.

Features:

- Better Conductivity, so better power transmission.
- Lower Operating costs due to lower ohmic losses.
- Can be recycled easily.

ALUMINUM ALLOY CONDUCTORS (TYPE- AL5) EN 50182

Code	Old Code	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
			(mm ²)	(No.)					(mm)	(mm)
239-AL5	POPLAR	239.4	37	2.87	20.10	659.4	70.61	0.1330	384	477
303-AL5	SYCAMORE	303.2	37	3.23	22.60	835.2	89.44	0.1050	439	549
362-AL5	UPAS	362.1	37	3.53	24.70	997.5	106.82	0.0879	485	610
479-AL5	YEW	479.0	37	4.06	28.40	1319.6	141.31	0.0665	566	720
498-AL5	TOTARA	498.1	37	4.14	29.00	1372.1	146.93	0.0639	579	737
587-AL5	RUBUS	586.9	61	3.50	31.50	1622.0	173.13	0.0544	632	810
659-AL5	SORBUS	659.4	61	3.71	33.40	1822.5	194.53	0.0484	673	867
821-AL5	ARAUCARIA	821.1	61	4.14	37.30	2269.4	242.24	0.0389	754	982
996-AL5	REDWOOD	996.2	61	4.56	41.00	2753.2	293.88	0.0321	831	1092

ALUMINUM ALLOY CONDUCTORS (TYPE- AL6) EN 50182

Code	Old Code	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
			(mm ²)	(No.)					(mm)	(mm)
46-AL6	AL56 - 46	46.2	7	2.90	8.70	126.2	14.52	0.6779	147	177
65-AL6	AL56 - 65	65.1	7	3.44	10.30	177.6	20.43	0.4818	180	217
93-AL6	AL56 - 93	92.9	7	4.11	12.30	253.5	28.23	0.3375	222	270
130-AL6	AL56 - 130	129.9	7	4.86	14.60	354.5	39.48	0.2414	271	331
167-AL6	AL56 - 167	167.5	19	3.35	16.80	459.8	52.59	0.1882	314	386
178-AL6	AL56 - 178	177.6	19	3.45	17.30	487.6	55.77	0.1775	325	400
210-AL6	AL56 - 210	209.8	19	3.75	18.80	576.1	63.79	0.1502	357	442
225-AL6	AL56 - 225	224.7	19	3.88	19.40	616.7	68.29	0.1403	371	461
263-AL6	AL56 - 263	263.2	19	4.20	21.00	722.7	80.02	0.1197	407	507
280-AL6	AL56 - 280	279.8	19	4.33	21.70	768.1	85.05	0.1127	421	526
322-AL6	AL56 - 322	322.2	37	3.33	23.30	887.7	101.18	0.0982	456	571
342-AL6	AL56 - 342	341.9	37	3.43	24.00	941.8	107.35	0.0925	471	592
444 -AL6	AL56 - 444	444.3	37	3.91	27.40	1223.9	135.06	0.0712	545	691
454-AL6	AL56 - 454	454.5	61	3.08	27.70	1256.1	142.71	0.0698	551	700
594-AL6	AL56 - 594	593.6	61	3.52	31.70	1640.6	180.46	0.0535	638	818
685-AL6	AL56 - 685	684.5	61	3.78	34.00	1891.9	208.1	0.0464	688	887
865-AL6	AL56 - 865	865.4	61	4.25	38.30	2391.6	263.07	0.0367	777	1014

ALUMINUM ALLOY CONDUCTORS (TYPE- AL7) EN 50182

Code	Old Code	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
			(mm ²)	(No.)					(mm)	(KN)
46-AL7	AL58 - 46	46.2	7	2.90	8.70	126.2	13.41	0.6560	150	179
65-AL7	AL58 - 65	65.1	7	3.44	10.30	177.6	17.89	0.4662	183	221
93-AL7	AL58 - 93	92.9	7	4.11	12.30	253.5	23.68	0.3266	226	274
130-AL7	AL58 - 130	129.9	7	4.86	14.60	354.5	33.11	0.2336	275	336
167-AL7	AL58 - 167	167.5	19	3.35	16.80	459.8	46.05	0.1821	319	393
178-AL7	AL58 - 178	177.6	19	3.45	17.30	487.6	48.84	0.1717	330	407
210-AL7	AL58 - 210	209.8	19	3.75	18.80	576.1	55.61	0.1454	363	450
225-AL7	AL58 - 225	224.7	19	3.88	19.40	616.7	59.53	0.1358	378	468
263-AL7	AL58 - 263	263.2	19	4.20	21.00	722.7	67.12	0.1159	413	515
280-AL7	AL58 - 280	279.8	19	4.33	21.70	768.1	71.34	0.1090	428	534
322-AL7	AL58 - 322	322.2	37	3.33	23.30	887.7	88.62	0.0950	463	580
342-AL7	AL58 - 342	341.9	37	3.43	24.00	941.8	94.02	0.0895	479	601
444-AL7	AL58 - 444	444.3	37	3.91	27.40	1223.9	117.73	0.0689	554	703
484-AL7	AL58 - 454	454.5	61	3.08	27.70	1256.1	124.98	0.0676	560	711
594-AL7	AL58 - 594	593.6	61	3.52	31.70	1640.6	157.31	0.0517	648	831
685-AL7	AL58 - 685	684.5	61	3.78	34.00	1891.9	181.4	0.0449	699	901
865-AL7	AL58 - 865	865.4	61	4.25	38.30	2391.6	220.67	0.0355	789	1029
62-AL7	AlMgSi - 62	62.4	7	3.37	10.10	170.5	17.17	0.4858	179	215
99-AL7	AlMgSi - 99	99.3	7	4.25	12.80	271.1	25.32	0.3055	235	286
159-AL7	AlMgSi - 157	158.6	19	3.26	16.30	435.4	43.61	0.1923	309	380
241-AL7	AlMgSi - 241	241.2	19	4.02	20.10	662.1	61.49	0.1265	393	489
330-AL7	AlMgSi - 329	330.0	37	3.37	23.60	909.2	90.76	0.0927	470	589
454-AL7	AlMgSi - 454	454.5	61	3.08	27.70	1256.1	124.98	0.0676	560	711
594-AL7	AlMgSi - 593	593.6	61	3.52	31.70	1640.6	157.31	0.0517	648	831
774-AL7	AlMgSi - 774	774.2	61	4.02	36.20	2139.8	197.43	0.0397	745	967
911-AL7	AlMgSi - 910	910.7	61	4.36	39.20	2517.0	232.24	0.0337	810	1059

ALUMINUM ALLOY CONDUCTORS (TYPE- AL57) SS 424 08 12

Nominal Area	Sectional Area	Equivalent copper 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
(mm ²)	(mm ²)	(mm ²)	(No.)	(mm)	(mm)	(Kg/Km)	KN	(Ω/Km)	(Ampere)	(Ampere)
31	31.14	17.90	7	2.38	7.14	85.0	9.31	0.9740	118	140
62	62.44	35.88	7	3.37	10.11	170.0	17.20	0.4860	178	214
99	99.3	57.07	7	4.25	12.75	271.0	25.30	0.3050	234	285
157	158.59	91.14	19	3.26	16.30	436.0	43.70	0.1930	307	377
241	241.16	138.59	19	4.02	20.10	663.0	61.60	0.1270	391	485
329	330.03	189.67	37	3.37	23.60	910.0	90.70	0.0928	467	586
454	454.49	261.20	61	3.08	27.72	1260.0	125.16	0.0675	558	708
593	593.62	341.15	61	3.52	31.68	1640.0	157.00	0.0517	645	827
774	774.24	444.96	61	4.02	36.18	2140.0	197.00	0.0396	743	963
910	910.74	523.40	61	4.36	39.20	2520.0	232.00	0.0337	806	1054

ALUMINUM ALLOY CONDUCTORS (TYPE- AL59) SS 424 08 14

Nominal Area	Sectional Area	Equivalent copper 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
(mm ²)	(mm ²)	(mm ²)	(No.)	(mm)	(mm)	(Kg/Km)	KN	(Ω/Km)	(Ampere)	(Ampere)
31	31.14	18.48	7	2.38	7.14	85.0	7.77	0.9430	120	142
62	62.44	37.06	7	3.37	10.11	170.0	15.60	0.4700	181	218
99	99.30	58.93	7	4.25	12.75	271.0	22.80	0.2960	238	289
157	158.59	94.12	19	3.26	16.30	436.0	39.70	0.1860	313	384
241	241.16	143.13	19	4.02	20.10	663.0	55.50	0.1230	397	493
329	330.03	195.87	37	3.37	23.60	910.0	82.50	0.0899	475	595
454	454.49	269.74	61	3.08	27.72	1260.0	113.00	0.0654	567	719
593	593.62	352.31	61	3.52	31.68	1640.0	143.00	0.0501	655	840
774	774.24	459.51	61	4.02	36.18	2140.0	178.00	0.0384	754	977
910	910.74	540.52	61	4.36	39.20	2520.0	209.00	0.0326	819	1070

ALUMINUM ALLOY CONDUCTORS (TYPE- AL60)

Nominal Area	Sectional Area	Equivalent copper 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
(mm ²)	(mm ²)	(mm ²)	(No.)	(mm)	(mm)	(Kg/Km)	KN	(Ω/Km)	(Ampere)	(Ampere)
31	31.14	18.48	7	2.38	7.14	85.0	7.77	0.9346	120	143
62	62.44	37.06	7	3.37	10.11	170.0	15.60	0.4662	182	219
99	99.30	58.93	7	4.25	12.75	271.0	22.80	0.2931	239	290
157	158.59	94.12	19	3.26	16.30	436.0	39.70	0.1844	314	386
241	241.16	143.13	19	4.02	20.10	663.0	55.50	0.1213	400	496
329	330.03	195.87	37	3.37	23.60	910.0	82.50	0.0888	477	599
454	454.49	269.74	61	3.08	27.72	1260.0	113.00	0.0646	570	723
593	593.62	352.31	61	3.52	31.68	1640.0	143.00	0.0495	659	845
774	774.24	459.51	61	4.02	36.18	2140.0	178.00	0.0379	758	983
910	910.74	540.52	61	4.36	39.20	2520.0	209.00	0.0323	822	1075

ALUMINUM ALLOY CONDUCTORS (TYPE- AAAC 1120) AS 1531

Code Name	Sectional Area	Equivalent Aluminum 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
	(mm ²)	(mm ²)	(No.)	(mm)	(mm)	(Kg/Km)	KN	(Ω/Km)	(Ampere)	(Ampere)
Chlorine	34.36	32.80	7	2.50	7.50	94.3	8.18	0.8640	126	150
Chromium	41.58	39.70	7	2.75	8.25	113.0	9.91	0.7130	141	169
Fluorine	49.48	47.20	7	3.00	9.00	135.0	11.80	0.5990	156	188
Helium	77.28	73.70	7	3.75	11.30	211.0	17.60	0.3830	204	247
Hydrogen	111.30	106.00	7	4.50	13.50	304.0	24.30	0.2660	253	308
Iodine	124.00	118.00	7	4.75	14.30	339.0	27.10	0.2390	269	329
Krypton	157.60	150.00	19	3.25	16.30	433.0	37.40	0.1890	309	380
Lutetium	182.80	173.00	19	3.50	17.50	503.0	41.70	0.1630	337	415
Neon	209.80	199.00	19	3.75	18.80	576.0	47.80	0.1420	365	451
Nitrogen	261.60	248.00	37	3.00	21.00	721.0	62.20	0.1140	414	515
Nobelium	307.00	291.00	37	3.25	22.80	845.0	72.80	0.0973	453	567
Oxygen	336.70	320.00	19	4.75	23.80	924.0	73.60	0.0884	478	599
Phosphorus	408.50	387.00	37	3.75	26.30	1 120	93.10	0.0731	532	672
Selenium	506.10	478.00	61	3.25	29.30	1 400	114.00	0.0592	598	761
Silicon	586.90	555.00	61	3.50	31.50	1 620	127.00	0.0511	647	829
Sulfur	673.40	636.00	61	3.75	33.80	1 860	145.00	0.0444	697	898

NOTE :
 Current capacity based on referenced conductor temperature, 0.56 m/s wind, 0 m Elevation, 0.45 Emmisivity, 0.80 absorptivity, 45°C Ambient temperature, 1045 W/m² Solar radiation.