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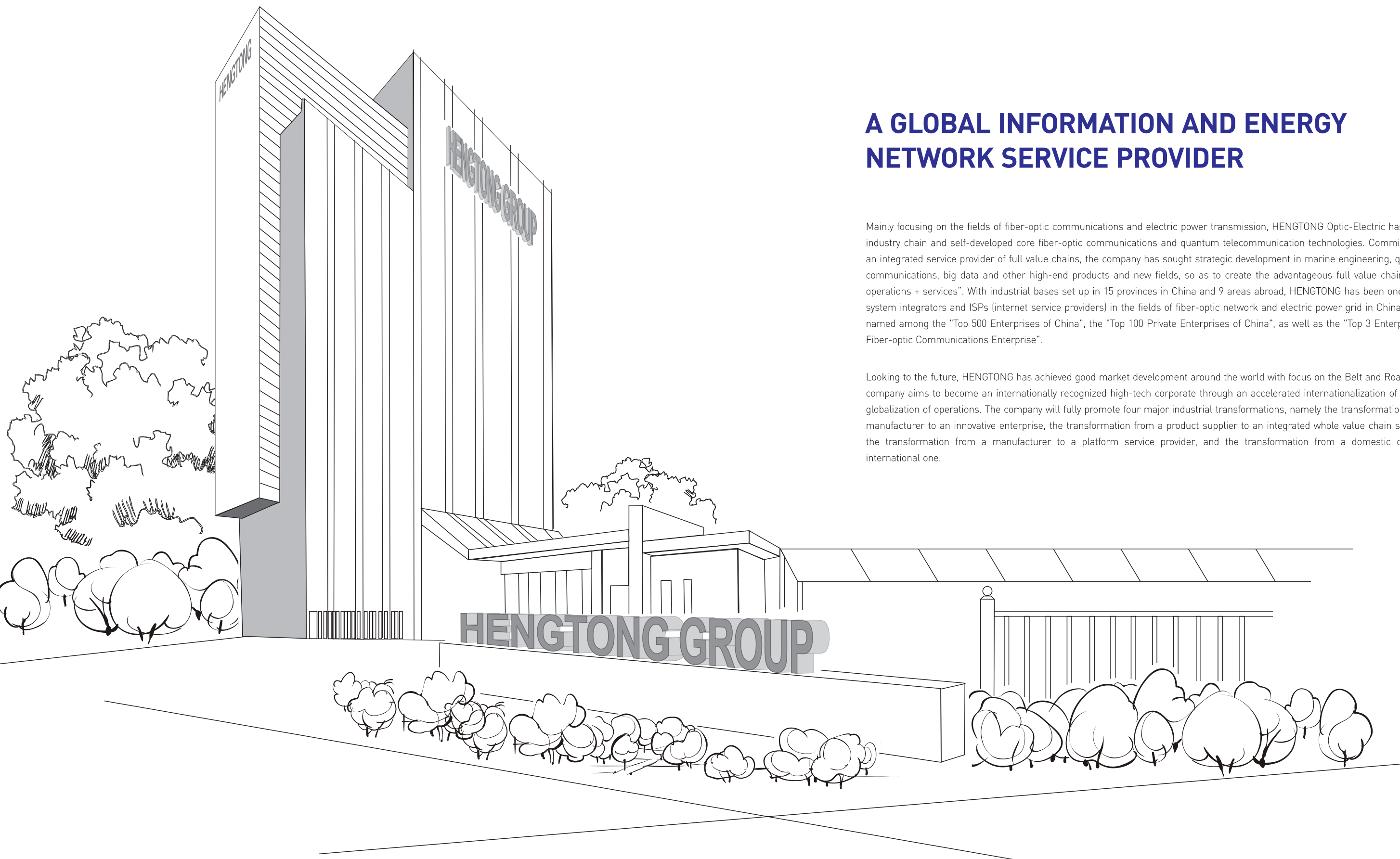
OVERHEAD TRANSMISSION AND DISTRIBUTION OPTICAL FIBER CABLE

HENG TONG OPTIC-ELECTRIC
A Global Information and Energy Network
Service Provider



Introduction

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A GLOBAL INFORMATION AND ENERGY NETWORK SERVICE PROVIDER

Mainly focusing on the fields of fiber-optic communications and electric power transmission, HENG TONG Optic-Electric has built up a full industry chain and self-developed core fiber-optic communications and quantum telecommunication technologies. Committed to building an integrated service provider of full value chains, the company has sought strategic development in marine engineering, quantum secure communications, big data and other high-end products and new fields, so as to create the advantageous full value chain of "product + operations + services". With industrial bases set up in 15 provinces in China and 9 areas abroad, HENG TONG has been one of the leading system integrators and ISPs (internet service providers) in the fields of fiber-optic network and electric power grid in China, and has been named among the "Top 500 Enterprises of China", the "Top 100 Private Enterprises of China", as well as the "Top 3 Enterprises of Global Fiber-optic Communications Enterprise".

Looking to the future, HENG TONG has achieved good market development around the world with focus on the Belt and Road Initiative. The company aims to become an internationally recognized high-tech corporate through an accelerated internationalization of production and globalization of operations. The company will fully promote four major industrial transformations, namely the transformation from an R&D manufacturer to an innovative enterprise, the transformation from a product supplier to an integrated whole value chain service provider, the transformation from a manufacturer to a platform service provider, and the transformation from a domestic company to an international one.



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Optical Fiber Composite Overhead Ground Wire (OPGW)



CE RoHS KEMA KEBS

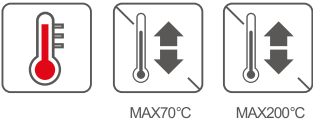
Optical fiber composite overtiead ground wire (OPGW) adds fiber into it and at the same time, maintains all the original performance and functions of the existing overhead ground wire, which opens up the high-performance optical transmissbn channel, giving it both lightning-resistant and communications functions. It is a kind of wire that combines the functions of overtiead ground wire and communications capabilities.

Features

- It can not only avoid lightning, but also applies to communications, requiring no additional hanging cable
- The optical unit is located in the middle of OPGW and winded and protected by aluminum-clad steel wire or aluminumalloy wire outside, boasting high reliability
- OPGW is erected with power lines, thereby saving construction costs
- OPGW is erected on the transmission line tower, being relatively safe, reliable and is not prone to steel

Applications

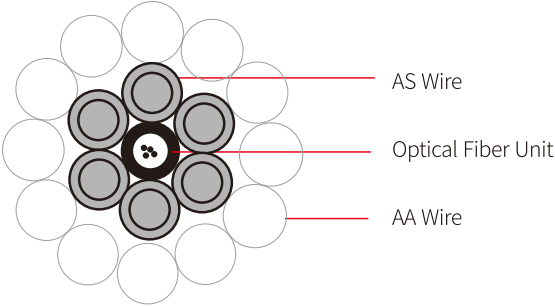
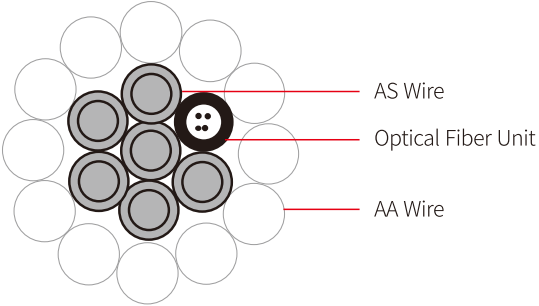
Newly erected lines, replacement of old ground lines



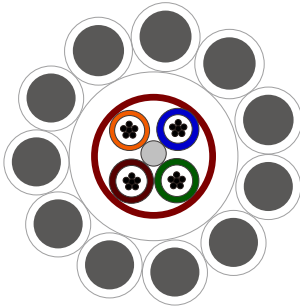
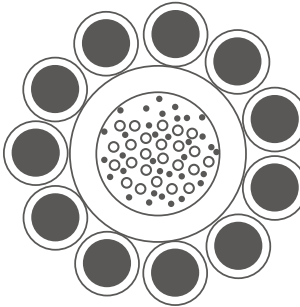
Product Attributes

- Conductor: OPGW
- Temperature range: -40°C to 60°C
- Voltage rating: 110kV-1100kV

OPGW Cable Staictune Type

Tubular OPGW	Layer-stranded OPGW
	

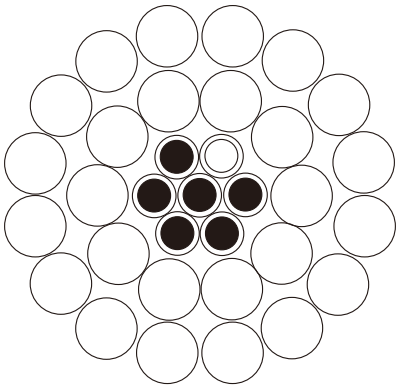
Aluminum-clad Optical Fiber Unit Structure A

Aluminum-clad PBT Cable Core Structure	Aluminum-clad Stainless Steel Tubular Structure
	

Structure Parameters

Model				OPGW-24B1-90	OPGW-24B1-100	OPGW-30B1-120	OPGW-30B1-120	OPGW-36B1-135	OPGW-36B1-135	OPGW-36B1-145	OPGW-36B1-145	OPGW-48B1-165	OPGW-48B1-185	
Structure parameters	Center	PCS		1	1	1	1	1	1	1	1	1	1	
		Normal diameter	mm	2.60	2.60	2.85	2.85	3.20	3.20	3.30	3.30	3.50	3.80	
		Material		20AS	20AS	20AS	20AS	20AS	40AS	20AS	40AS	20AS	20AS	
	First layer	PCS		5	5	5	5	5	5	5	5	5	5	
		Normal diameter	mm	2.50	2.50	2.75	2.75	3.10	3.10	3.20	3.20	3.40	3.60	
		Material		20AS	20AS	20AS	20AS	20AS	40AS	20AS	40AS	20AS	20AS	
	Second layer	PCS		12	11	11	11	12	12	12	12	12	12	
		Normal diameter	mm	2.50	2.85	3.10	3.10	3.10	3.10	3.20	3.20	3.40	3.60	
		Material		20AS	20AS	20AS	Al3	20AS	40AS	20AS	40AS	20AS	20AS	
	Stainless steel tube optical unit	PCS		1	1	1	1	1	1	1	1	1	1	
		Normal diameter	mm	2.50	2.50	2.70	2.70	3.00	3.00	3.10	3.10	3.30	3.40	
		Maximum quantity of optical fiber		24B1	24B1	30B1	30B1	36B1	36B1	36B1	36B1	48B1	48B1	
	Normal diameter			mm	12.60	13.30	14.55	14.55	15.60	15.60	16.10	16.10	17.10	18.20
	Section area	AL-clad Steel Wire		mm²	88.76	100.03	119.10	36.08	136.35	136.35	145.28	145.28	163.97	184.8
		AS		mm²	-	-	-	83.02	-	-	-	-	-	
		Total		mm²	88.76	100.03	119.10	119.10	136.35	136.35	145.28	145.28	163.97	184.38
Mass per unit length			kg/km	615.4	691.2	819.2	489.3	934.7	662.8	994.6	704.9	1125.0	1261.9	
Rated breaking force			kN	107.04	120.63	143.64	68.00	164.44	83.45	174.97	88.91	193.32	211.15	
20℃ DC resistance			Ω/km	0.9718	0.8626	0.7244	0.3421	0.6326	0.3215	0.5937	0.3018	0.5260	0.4678	
Total breaking force /mass per unit length			km	17.75	17.81	17.89	14.18	17.95	12.85	17.95	12.87	17.53	17.08	
Elastic Modulus			Gpa	162.00	162.00	162.00	94.38	162.00	109.00	162.00	109.00	162.00	162.00	
Linear expansion coefficient				13.00	13.00	13.00	17.80	13.00	15.50	13.00	15.50	13.00	13.00	
Short circuit current thermal capacity				34.88	44.30	62.80	114.01	82.31	127.76	93.44	145.03	119.03	150.51	
Recommended MatchedGrounding Wire				JLB20A-95-7	GJ-100	GJ-120	JLB40-120-19	-	-	-	JLB40-150-19	-	-	

Optical Fiber Composite Overhead Phase Conductor(OPPC)



RoHS

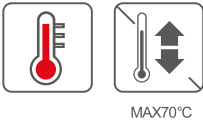
Optical fiber composite overhead phase Conductor (OPPC) is a new type of special power composite cable, which combines optical fiber unit and traditional phase structure in the wire. It makes full use of its own line power system resources, in particular the power distribution network system, to avoid conflict with the outside world in aspects such as frequency resources, routing coordination, electromagnetic compatibility, which gives it dual functions of power transmission and communication.

Features

- Optimized transmission line design, boasting remarkable energy-saving effect
- No broken stands triggered by lightning, serious accident by broken optical fiber
- Extremely-high economical nature
- High security system
- Natural theft prevention

Applications

Newly erected wires, transformation of old wires



MAX70°C

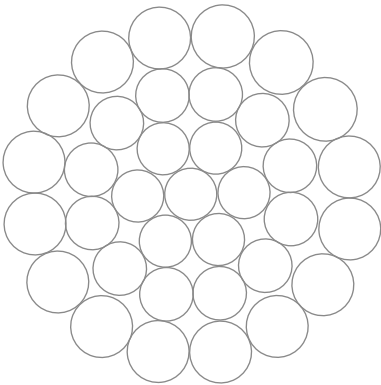
Product Attributes

- Conductor: OPPC
- Temperature range: -40°C to 70°C
- Voltage rating: 10kV-220kV

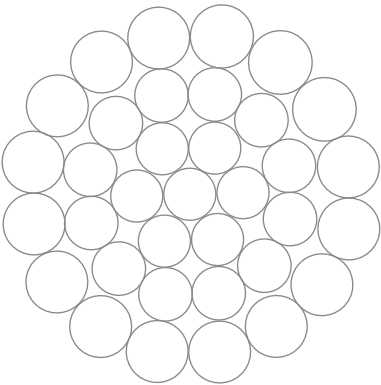
Structure Parameters

Model			OPPC-16B1-85/25	OPPC-16B1-90/25	OPPC-16B1-95/50	OPPC-16B1-110/25	OPPC-16B1-120/25	OPPC-16B1-150/25	OPPC-16B1-150/30	OPPC-16B1-185/25	OPPC-16B1-185/40	OPPC-16B1-210/25	OPPC-16B1-210/30	OPPC-16B1-240/30	OPPC-16B1-240/50	OPPC-20B1+4A1a-400/35	
Structure parameters	Center	PCS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
		Normal diameter	mm	2.3	2.4	3.25	2.35	2.4	2.35	2.55	2.35	2.85	2.3	2.55	2.45	3.25	2.5
		Material		20AS	20AS	14AS	20AS	20AS	20AS	14AS	20AS	14AS	20AS	14AS	20AS	14AS	LB14
	First layer	PCS	5	5	5	5	5	5	5	5	5	5	5	5	5	5	15
		Normal diameter	mm	2.3	2.4	3.25	2.35	2.4	2.35	2.55	2.35	2.85	2.3	2.55	2.45	3.25	2.5
		Material		20AS	20AS	14AS	20AS	20AS	20AS	14AS	20AS	14AS	20AS	14AS	20AS	14AS	SUSLG14
	Stainless steel tube optical unit	PCS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		Normal diameter	mm	2.3	2.4	3.25	2.35	2.4	2.35	2.55	2.35	2.85	2.3	2.55	2.45	3.25	2.5
		Maximum quantity of optical fiber		16B1	20B1	48B1	16B1	20B1	16B1	24B1	16B1	30B1	16B1	24B1	20B1	48B1	20B1+4la
	Second layer	PCS	9	9	12	8	8	11	12	10	12	9	10	9	12	12	1016
		Normal diameter	mm	2.45	3.6	3.2	4.2	4.35	2.6	2.55	3.0	2.8	3.35	3.22	3.6	3.2	3.22
		Material		AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	HAL
	Third layer	PCS	/	/	/	/	/	17	18	16	18	15	16	15	18	22	
		Normal diameter	mm	/	/	/	/	/	2.6	2.55	3.0	2.8	3.35	3.22	3.6	3.2	3.22
		Material		AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	AL	HAL
Normal diameter		mm	13.8	14.4	16.5	15.45	15.9	17.45	17.85	19.05	19.75	20.3	20.53	21.75	22.55	26.82	
Section area	AL-clad Steel Wire	mm ²	84.13	91.61	96.51	110.84	118.89	148.66	153.21	183.78	184.73	211.54	211.73	244.29	241.27	29.45	
	AS	mm ²	24.93	27.14	49.77	26.02	27.14	26.02	30.64	26.02	38.28	24.93	30.64	28.29	49.77	390.88	
	Total	mm ²	109.1	118.8	146.3	136.9	146.0	174.7	183.9	209.8	223.0	236.5	242.2	272.6	291.0	420.33	
Mass per unit length		kg/km	410	446	645	491	521	597	659	693	803	762	819	875	1045	1321	
Rated breaking force		kN	42.2	45.9	83.3	47.3	49.9	54.1	67.3	58.7	82.2	63.9	74.3	73.1	104.2	103.9	
20℃ DC resistance		Ω/km	0.3106	0.2852	0.2665	0.2401	0.2242	0.1831	0.1799	0.1496	0.1489	0.1309	0.1317	0.1135	0.1141	0.0725	
Reference carrying capacity	40~70℃		251	265	281	293	305	344	349	387	391	415	419	456	459	620	
	40~80℃		307	233	345	359	374	423	430	478	484	515	519	567	571	760	
	40~90℃		352	371	397	412	430	487	195	552	560	595	601	657	663	869	
Conduct wire			LGJ-95/15	LGJ-95/20	LGJ-95/55	LGJ-120/20	LGJ-120/25	LGJ-150/25	LGJ-150/35	LGJ-185/45	LGJ-210/25	LGJ-210/25	LGJ-210/35	LGJ-240/30	LGJ-240/55	LGJ-400/35	

High Voltage-Aluminum Alloy Conductors
Aluminum Alloy Wire



37 pieces of Aluminum-Alloy Wire



61 pieces of Aluminum-Alloy Wire



RoHS

Aluminum-alloy wires can replace some aluminum wires or steel-core aluminum wires to apply to overhead transmission and distribution lines, boasting good corrosion resistance. Refractory aluminum-magnesium-silicon alloy boasts excellent tensile strength, and its electrical conductivity is decreased only about 10%compared to aluminum wire. It can be applied to large-span transmission line.

Features

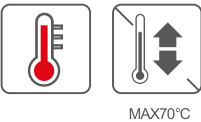
- Good corrosion resistance
- Excellent tensile strength
- Light weight
- Long life

Product Attributes

- Conductor: OPPC
- Temperature range: -40℃ to 70℃
- Voltage rating: 10kV220kV

Applications

Newly erected wires,
transformation of old wires



Structure Parameters

Technical SpecificationType A IEC 61089

Code number	Size of conductor	Structure	Calculated area	Rated strength	DC resistance at 20℃	Overall diameter	Approx weight
	mm²	No./mm	mm²	kN	Ω/km	mm	kg/km
16	18.6	7/1.84	18.61	6.05	1.7896	5.52	50.9
25	29.0	7/2.30	29.08	9.43	1.1454	6.90	79.3
40	46.5	7/2.91	46.56	15.11	0.7159	8.73	127.2
63	73.2	7]3.65	73.24	23.06	0.4545	10.95	200.2
100	116	19/2.79	116.16	37.70	0.2877	13.95	318.8

125	145	19/3.12	145.26	47.13	0.2302	15.60	398.5
160	186	19/3.53	185.95	58.59	0.1798	17.65	511.2
200	232	19/3.95	232.83	73.08	0.1439	19.75	637.7
250	290	19/4.41	290.22	91.35	0.1151	22.05	797.1
315	366	37/3.55	366.23	115.29	0.0916	24.85	1008.4
400	465	37/4.00	464.96	146.48	0.0721	28.00	1281.1
450	523	37/4.24	522.43	164.75	0.0641	29.68	1440.9
500	581	37/4.47	580.64	183.02	0.0577	31.29	1600.7
560	651	61/3.69	652.34	205.07	0.0516	33.21	1796.2
630	732	61/3.91	732.44	230.58	0.0458	35.19	2019.7
710	825	61/4.15	825.12	259.88	0.0407	37.35	2276.3
800	930	61/4.40	927.53	292.95	0.0361	39.60	2566.0
900	1046	91/3.83	1048.41	329.49	0.0321	42.13	2889.2
1000	1162	91/4.03	1160.76	366.03	0.0289	44.33	3209.6
1120	1301	91/4.27	1303.13	409.82	0.0258	46.97	3593.5

Technical SpecificationType B IEC 61089

Code number	Size of conductor	Structure	Calculated area	Rated strength	DC resistance at 20°C	Overall diameter	Approx weight
	mm²	No./mm	mm²	kN	Ω/km	mm	kg/km
16	18.4	7/1.83	18.41	5.43	1.7896	5.49	50.3
25	28.8	7/2.29	28.83	8.50	1.1454	6.87	78.8
40	46.0	7/2.89	45.92	13.57	0.7159	8.67	125.8
63	72.5	7/3.63	72.44	21.39	0.4545	10.89	198.3
100	115	19/2.78	115.33	33.93	0.2877	13.90	316.1
125	144	19/3.10	143.41	42.48	0.2302	15.50	395.8
160	184	19/3.51	183.85	54.28	0.1798	17.55	505.7
200	230	19/3.93	230.48	67.85	0.1439	19.65	632.2
250	288	19/4.39	287.59	84.96	0.1151	21.95	791.6
315	363	37/3.53	362.11	107.09	0.0916	24.71	1000.1
400	460	37/3.98	460.32	135.70	0.0721	27.86	1267.3
450	518	37/4.22	517.51	152.81	0.0641	29.54	1427.1
500	575	37/4.45	575.46	169.63	0.0577	31.15	1584.2
560	645	61/3.67	645.29	190.28	0.0516	33.03	1779.6
630	725	61/3.89	724.97	213.88	0.0458	35.01	2000.4
710	817	61/4.13	817.19	241.02	0.0407	37.17	2254.2
800	921	61/4.38	919.11	271.70	0.0361	39.42	2541.2
900	1036	91/3.81	1037.49	305.62	0.0321	41.91	2861.5
1000	1151	91/4.01	1149.27	339.55	0.0289	44.11	3179.2
1120	1289	91/4.25	1290.95	380.26	0.0258	46.75	3560.3
1250	1439	91/4.49	1440.87	424.51	0.0231	49.39	3974.7

Technical Specification A STM B399

Size of conductor	Structure	Calculated area	Rated strength	DC resistance at 20°C	Overall diameter	Approx weight
cmil	No./mm	mm²	kN	Ω/km	mm	kg/km
1439200	61/3.90	728.70	207	0.0460	35.10	1999
1348800	61/3.78	684.55	194	0.0489	34.02	1878
1259600	61/3.65	638.27	181	0.0525	32.85	1751
1165100	61/3.51	590.25	167	0.0568	31.59	1620
1077400	61/3.38	547.34	155	0.0612	30.42	1502
927200	37/4.02	469.62	135	0.0713	28.14	1289
740800	37/3.59	374.53	107	0.0894	25.13	1028
652400	19/4.71	331.04	97.0	0.1012	23.55	908
559500	19/4.36	283.67	83.1	0.1181	21.80	778
465400	19/3.98	236.38	69.2	0.1417	19.90	649
394500	19/3.66	199.90	58.6	0.1676	18.30	549
312800	19/3.26	158.59	46.5	0.2112	16.30	435
246900	7/4.77	125.09	37.8	0.2678	14.31	343
195700	7/4.25	99.30	30.0	0.3373	12.75	273
155400	7/3.78	78.55	23.8	0.4264	11.34	216
123300	7/3.37	62.44	18.9	0.5365	10.11	171
77470	7/2.67	39.19	12.4	0.8547	8.01	108
48690	7/2.12	24.71	7.83	1.3557	6.36	68
30580	7/1.68	15.52	4.92	2.1588	5.04	43

Technical Specification A STM B399

Size of conductor	Structure	Calculated area	Rated strength	DC resistance at 20°C	Overall diameter	Approx weight
cmil/AWG	No./mm	mm²	kN	Ω/km	mm	kg/km
1750000	61/4.30	885.84	251	0.0378	38.70	2431
1500000	61/3.98	758.90	215	0.0441	35.82	2082
1250000	61/3.63	631.30	179	0.0531	32.67	1732
1000000	37/4.18	507.74	146	0.0660	29.26	1393
900000	37/3.96	455.70	131	0.0735	27.72	1250
800000	37/3.73	404.31	116	0.0829	26.11	1109
750000	37/3.62	380.81	109	0.0880	25.34	1045
700000	37/3.49	353.95	101	0.0946	24.43	971
650000	37/3.37	330.03	94.6	0.1015	23.59	906
600000	37/3.23	303.18	91.0	0.1105	22.61	832
550000	37/3.10	279.26	83.9	0.1200	21.70	766
500000	19/4.12	253.30	74.2	0.1322	20.60	695
450000	19/3.91	228.14	66.8	0.1468	19.55	626
400000	19/3.69	203.19	59.5	0.1649	18.45	558
350000	19/3.45	177.62	52.0	0.1886	17.25	487

300000	19/3.19	151.85	46.6	0.2206	15.95	417
250000	19/2.91	126.37	38.8	0.2651	14.55	347
4/0	7/4.42	107.41	32.5	0.3119	13.26	295
3/0	7/3.93	84.91	25.7	0.3945	11.79	233
2/0	7/3.50	67.35	20.4	0.4974	10.50	185
1/0	7/3.12	53.52	17.0	0.6259	9.36	147
2	7/2.47	33.54	10.6	0.9987	7.41	92
4	7/1.96	21.12	6.69	1.5860	5.88	58
6	7/1.55	13.21	4.18	2.5361	4.65	36

Technical Specification A STM B399

Size of conductor	Structure	Calculated area	Rated strength	DC resistance at 20°C	Overall diameter	Approx weight
mm²	No./mm	mm²	kN	Ω/km	mm	kg/km
630	37/4.66	631.05	181	0.0531	32.62	1732
560	37/4.39	560.04	161	0.0598	30.73	1537
500	37]4.15	500.48	143	0.0669	29.05	1373
450	37]3.94	451.11	129	0.0743	27.58	1238
400	37/3.71	399.98	115	0.0837	25.97	1098
355	37/3.50	355.98	102	0.0941	24.50	977
315	37/3.29	314.55	90.2	0.1065	23.03	863
280	37/3.10	279.26	83.9	0.1200	21.70	766
250	19/4.09	249.63	73.1	0.1342	20.45	685
224	19/3.87	223.49	65.5	0.1499	19.35	613
200	19/3.66	199.90	58.6	0.1676	18.30	549
180	19]3.47	179.68	52.6	0.1864	17.35	493
160	19/3.27	159.57	46.7	0.2099	16.35	438
140	19/3.06	139.73	42.9	0.2397	15.30	383
125	19]2.89	124.64	38.3	0.2688	14.45	342
112	7/4.51	111.83	33.8	0.2996	13.53	307
100	7/4.26	99.77	30.2	0.3357	12.78	274
80.0	7/3.81	79.81	24.1	0.4197	11.43	219
63.0	7/3.39	63.18	19.1	0.5302	10.17	173
50.0	7/3.02	50.14	15.9	0.6681	9.06	138
40.0	7/2.70	40.08	12.7	0.8358	8.10	110
31.5	7/2.39	31.40	10.0	1.0667	7.17	86
25.0	7/2.13	24.94	7.90	1.3430	6.39	68
20.0	7/1.91	20.06	6.35	1.6702	5.73	55
16.0	7/1.71	16.08	5.09	2.0837	5.13	44

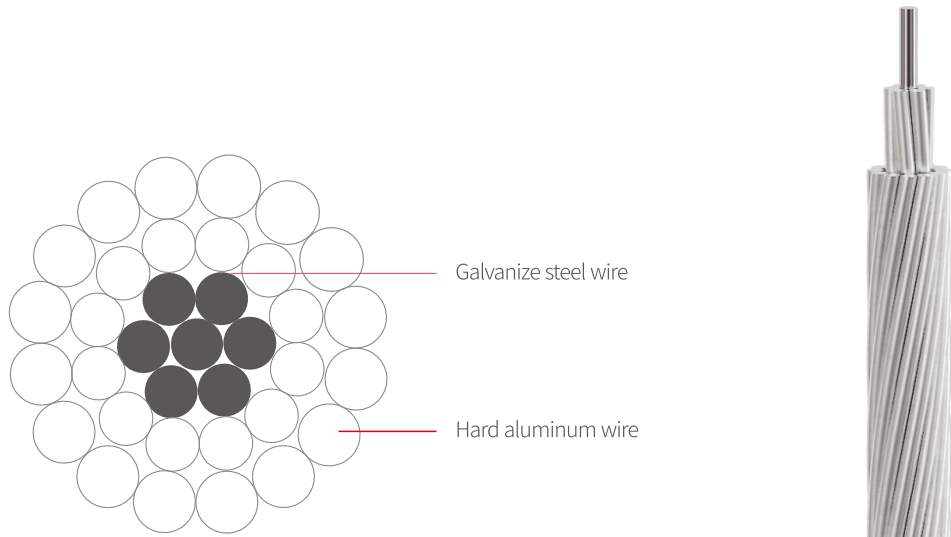
Technical details EN 50182

New code	Old code	Size of conductor	No.	Diameter		Approx. weight	Rated strength	DC resistance at 20°C
		Wire		Conductor				
		mm²		mm	mm	kg/km	kN	Ω/km
24-AL3	25	24.2	7	2.10	6.30	66.2	7.15	1.3566
34-AL3	35	34.4	7	2.50	7.50	93.8	10.14	0.9572
49-AL3	50	49.5	7	3.00	9.00	135.1	14.60	0.6647
66-AL3	70	65.8	19	2.10	10.50	180.7	19.41	0.5026
93-AL3	95	93.3	19	2.50	12.50	256.0	27.51	0.3546
117-AL3	120	117.0	19	2.80	14.00	321.2	34.51	0.2827
147-AL3	150	147.1	37	2.25	15.75	405.3	43.40	0.2256
182-AL3	185	181.6	37	2.50	17.50	500.3	53.58	0.1827
243-AL3	240	242.5	61	2.25	20.25	670.3	71.55	0.1373
299-AL3	300	299.4	61	2.50	22.50	827.6	88.33	0.1112
400-AL3	400	400.1	61	2.89	26.01	1105.9	118.04	0.0832
452-AL3	450	451.5	61	3.07	27.63	1247.9	133.20	0.0737
500-AL3	500	499.8	61	3.23	29.07	1381.4	147.45	0.0666
626-AL3	626.2	626.2	91	2.96	32.56	1737.8	184.73	0.0534
802-AL3	802.1	802.1	91	3.35	36.85	2225.8	236.62	0.0417
1000-AL3	1000	999.7	91	3.74	41.14	2774.3	294.92	0.0334

Technical details EN 50182

New code	Old code	Size of conductor	No.	Diameter		Approx. weight	Rated strength	DC resistance at 20°C
				Wire	Conductor			
		mm²		mm	mm	kg/km	kN	Ω/km
19-AL3	BOX	18.8	7	1.85	5.55	51.4	5.55	1.7480
24-AL3	ACACIA	23.8	7	2.08	6.24	64.9	7.02	1.3828
30-AL3	ALMOND	30.1	7	2.34	7.02	82.2	8.88	1.0926
35-AL3	CEDAR	35.5	7	2.54	7.62	96.8	10.46	0.9273
42-AL3	DEODAR	42.2	7	2.77	8.31	115.2	12.44	0.7797
48-AL3	FIR	47.8	7	2.95	8.85	130.6	14.11	0.6875
60-AL3	HAZE	59.9	7	3.30	9.90	163.4	17.66	0.5494
72-AL3	PINE	71.6	7	3.61	10.83	195.6	21.14	0.4591
84-AL3	HOLLY	84.1	7	3.91	11.73	229.5	24.80	0.3913
90-AL3	WILLOW	89.7	7	4.04	12.12	245.0	26.47	0.3665
119-AL3	OAK	118.9	7	4.65	13.95	324.5	35.07	0.2767
151-AL3	MULBERRY	150.9	19	3.18	15.90	414.3	44.52	0.2192
181-AL3	ASH	180.7	19	3.48	17.40	496.1	53.31	0.1830
211-AL3	ELM	211.0	19	3.76	18.80	579.2	62.24	0.1568
239-AL3	POPLAR	239.4	37	2.87	20.09	659.4	70.61	0.1387
303-AL3	SYCAMORE	303.2	37	3.23	22.61	835.2	89.44	0.1095
362-AL3	UPAS	362.1	37	3.53	24.71	997.5	106.82	0.0917
479-AL3	YEW	479.0	37	4.06	28.42	1319.6	141.31	0.0693
498-AL3	TOTARA	498.1	37	4.14	28.98	1372.1	146.93	0.0666
587-AL3	RUBUS	586.9	61	3.50	31.50	1622.0	173.13	0.0567
659-AL3	SORBUS	659.4	61	3.71	33.39	1822.5	194.53	0.0505
821-AL3	ARAUCARIA	821.1	61	4.14	37.26	2269.4	242.24	0.0406
996-AL3	REDWOOD	996.2	61	4.56	41.04	2753.2	293.88	0.0334

High Voltage-Aluminum Alloy Conductors Steel Core Aluminum Wire



RoHS

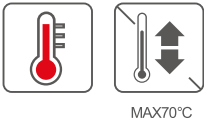
Steel core aluminum wire stranded by aluminum and steel wire applies to overhead transmission line. Steel "core" is in its interior, and aluminum wire is twisted around the steel core; the steel core mainly plays the role of increasing the strength; the aluminum wire transmits power energy.

Features

- Simple structure
- Easy erection and maintenance
- Large transmission capacity
- Good conductivity and sufficient mechanical strength

Applications

Overhead transmission lines



Structure Parameters

Technical details Type A IEC 61089

Code number	Size of conductor	Structure		Calculated area			Rated strength			DC resistance at 20℃	Overall diameter	Approx weight
		Al	Alloy	Al	Alloy	Total	S1A	S2A	S3A			
	mm²	No./mm	No./mm	mm²	mm²	mm²	kN	kN	kN			
16	10/7	6/1.84	1/1.84	15.95	2.66	18.61	6.07	6.44	6.82	1.7934	5.52	64.6
25	15/10	6/2.30	1/2.30	24.93	4.15	29.08	9.11	9.69	10.23	1.1477	6.90	100.9
40	24/20	6/2.91	1/2.91	39.91	6.65	46.56	14.38	15.31	16.18	0.7173	8.73	161.7
63	40/30	6/3.66	1/3.66	63.13	10.52	73.65	21.65	22.39	24.18	0.4555	10.98	255.7
100	60/45	6/4.61	1/4.61	100.15	16.69	116.84	34.36	35.53	38.37	0.2869	13.83	405.7

125	125/7	18/2.97	1/2.97	124.70	6.93	131.63	29.15	30.12	31.02	0.2304	14.85	397.5
125	125/20	26/2.47	7/1.92	124.58	20.27	144.85	45.59	48.42	51.26	0.2310	15.64	502.0
160	160/9	18/3.36	1/3.36	159.60	8.87	168.47	36.15	37.39	38.64	0.1800	16.80	508.8
160	160/26	26/2.80	7/2.18	160.10	26.13	186.22	57.77	61.43	65.09	0.1805	17.74	645.7
200	200/11	18/3.76	1/3.76	199.87	11.10	210.97	44.21	44.99	46.88	0.1440	18.80	637.2
200	200/32	26/3.13	7/2.43	200.06	32.46	232.52	70.01	74.55	78.77	0.1444	19.81	805.5
250	250/25	22/3.80	7/2.11	249.51	24.48	273.98	68.64	72.06	75.49	0.1154	21.53	878.6
250	250/40	26/3.50	7/2.72	250.15	40.67	290.82	87.62	93.31	98.60	0.1155	22.16	1007.8
315	315/22	45/2.99	7/1.99	315.97	21.77	337.74	79.02	82.07	85.12	0.0917	23.91	1042.2
315	315/50	26/3.93	7/3.05	315.39	51.14	366.53	106.66	113.82	120.98	0.0917	24.87	1269.5
400	400/28	45/3.36	7/2.24	399.01	27.59	426.59	98.28	102.14	106.00	0.0722	26.88	1316.8
400	400/50	54/3.07	7/3.07	399.73	51.82	451.54	123.00	130.25	137.51	0.0723	27.63	1509.3
450	450/30	45/3.57	7/2.38	450.44	31.14	481.58	107.50	111.86	115.91	0.0642	28.56	1486.6
450	450/60	54/3.26	7/3.26	450.73	58.43	509.16	138.52	146.70	154.88	0.0643	29.34	1701.8
500	500/35	45/3.76	7/2.51	499.67	34.64	534.30	119.49	124.33	128.84	0.0578	30.09	1649.8
500	500/65	54/3.43	7/3.43	498.97	64.68	563.65	153.65	162.70	171.76	0.0578	30.87	1884.0
560	560/40	45/3.98	7/2.65	559.85	38.61	598.46	133.61	139.02	144.04	0.0516	31.83	1847.0
560	560/70	54/3.63	19/2.18	558.85	70.92	629.77	172.57	182.50	192.43	0.0516	32.68	2100.1
630	630/45	45/4.22	7/2.81	629.40	43.41	672.81	150.29	156.37	162.01	0.0459	33.75	2076.5
630	630/80	54/3.85	19/2.31	628.65	79.63	708.27	191.58	202.72	213.08	0.0459	34.65	2361.2
710	710/50	45/4.48	7/2.99	709.35	49.15	758.50	169.63	176.51	182.90	0.0407	35.85	2341.9
710	710/90	54/4.09	19/2.45	709.47	89.57	799.04	215.71	228.25	239.90	0.0407	36.79	2662.4
800	800/35	72/3.76	7/2.51	799.46	34.64	834.10	167.49	172.33	176.84	0.0361	37.61	2479.2
800	800/65	84/3.48	7/3.48	798.97	66.58	865.55	205.24	214.56	223.88	0.0362	38.28	2729.2
800	800/100	54/4.34	19/2.61	798.85	101.65	900.50	243.89	258.12	271.33	0.0362	39.09	3004.1
900	900/40	72/3.99	7/2.66	900.26	38.90	939.16	188.35	193.79	198.85	0.0321	39.90	2791.0
900	900/75	84/3.69	7/3.69	898.30	74.86	973.16	226.34	231.58	244.31	0.0322	40.59	3068.5
1000	1000/45	72/4.21	7/2.80	1002.28	43.10	1045.38	209.14	215.17	220.77	0.0289	42.08	3105.7
1120	1120/50	72/4.45	19/1.78	1119.81	47.28	1167.09	234.52	241.14	247.76	0.0258	44.50	3464.3
1120	1120/90	84/4.12	19/2.47	1119.86	91.04	1210.90	282.99	295.73	307.57	0.0258	45.31	3810.0
1250	1250/50	72/4.70	19/1.88	1249.16	52.74	1301.91	261.71	269.09	276.48	0.0231	47.00	3864.5
1250	1250/100	84/4.35	19/2.61	1248.39	101.65	1350.04	315.89	330.12	343.33	0.0232	47.85	4248.5

Technical details ASTM B232

Code number	Size of conductor	Structure		Calculated area			Rated strength	DC resistance at 20℃	Overall diameter	Approx weight
		Al	Alloy	Al	Alloy	Total				
	mm²	No./mm	No./mm	mm²	mm²	mm²				
Thrasher	2312000	76/4.43	19/2.07	1171.42	63.94	1235.36	252	0.0246	45.79	3764
Kiwi	2167000	72/4.41	7/2.94	1099.77	47.52	1147.29	222	0.0262	44.10	3435
Bluebird	2156000	84/4.07	19/2.44	1092.85	88.84	1181.69	268	0.0262	44.76	3740
Chukar	1780000	84/3.70	19/2.22	903.18	73.54	976.72	228	0.0317	40.70	3092
Falcon	1590000	54/4.36	19/2.62	806.23	102.43	908.66	243	0.0353	39.26	3048
Lapwing	1590000	45/4.78	7/3.18	807.53	55.60	863.13	187	0.0354	38.22	2673
Parrot	1510500	54/4.25	19/2.55	766.06	97.03	863.09	231	0.0372	38.25	2894
Nuthatch	1510500	45/4.65	7/3.10	764.20	52.83	817.04	178	0.0374	37.20	2532
Plover	1431000	54/4.14	19/2.48	726.92	91.78	818.70	218	0.0392	37.24	2744
Bobolink	1431000	45/4.53	7/3.02	725.27	50.14	775.41	171	0.0394	36.24	2403
Martin	1351500	54/4.02	19/2.41	685.39	86.67	772.06	206	0.0415	36.17	2588

Dipper	1351500	45/4.40	7/2.93	684.24	47.20	731.44	161	0.0418	35.19	2266
Pheasant	1272000	54/3.90	19/2.34	645.08	81.71	726.79	194	0.0441	35.10	2437
Bittern	1272000	45/4.27	7/2.85	644.41	44.66	689.06	152	0.0443	34.17	2136
Skylark	1272000	36/4.78	1/4.78	646.02	17.95	663.97	117	0.0445	33.46	1922
Grackle	1192500	54/3.77	19/2.27	602.79	76.89	679.69	184	0.0472	33.97	2281
Bunting	1192500	45/4.14	7/2.76	605.76	41.88	647.64	142	0.0472	33.12	2007
Finch	1113000	54/3.65	19/2.19	565.03	71.57	636.60	175	0.0504	32.85	2135
Bluejay	1113000	45/4.00	7/2.66	565.49	38.90	604.39	133	0.0505	31.98	1872
Curlew	1033500	54/3.51	7/3.51	522.52	67.73	590.25	161	0.0542	31.59	1978
Ortolan	1033500	45/3.85	7/2.57	523.87	36.31	560.18	123	0.0546	30.81	1736
Tanager	1033500	36/4.30	1/4.30	522.79	14.52	537.32	94.8	0.0550	30.10	1555
Cardinal	954000	54/3.38	7/3.38	484.53	62.81	547.34	150	0.0585	30.42	1834
Rail	954000	45/3.70	7/2.47	483.85	33.54	517.39	116	0.0591	29.61	1604
Catbird	954000	36/4.14	1/4.14	484.61	13.46	498.07	87.9	0.0593	28.98	1442
Canary	900000	54/3.28	7/3.28	456.28	59.15	515.43	141	0.0621	29.52	1727
Ruddy	900000	45/3.59	7/2.40	455.50	31.67	487.17	109	0.0627	28.74	1510
Mallard	795000	30/4.14	19/2.48	403.84	91.78	495.62	171	0.0693	28.96	1841
Condor	795000	54/3.08	7/3.08	402.33	52.15	454.49	124	0.0704	27.72	1523
Tern	795000	45/3.38	7/2.25	403.77	27.83	431.61	97.5	0.0708	27.03	1337
Drake	795000	26/4.44	7/3.45	402.56	65.44	468.00	140	0.0700	28.11	1627
Cuckoo	795000	24/4.62	7/3.08	402.33	52.15	454.49	124	0.0704	27.72	1523
Coot	795000	36/3.77	1/3.77	401.86	11.16	413.02	72.9	0.0715	26.39	1196
Redwing	715500	30/3.92	19/2.35	362.06	82.41	444.47	154	0.0773	27.43	1651
Starling	715500	26/4.21	7/3.28	361.93	59.15	421.08	126	0.0779	26.68	1466
Stilt	715500	24/4.39	7/2.92	363.27	46.88	410.15	113	0.0780	26.32	1373
Gannet	666600	26/4.07	7/3.16	338.26	54.90	393.16	117	0.0833	25.76	1367
Flamingo	666600	24/4.23	7/2.82	337.27	43.72	380.99	105	0.0840	25.38	1277
Egret	636000	30/3.70	19/2.22	322.56	73.54	396.11	141	0.0868	25.90	1472
Scoter	636000	30/3.70	7/3.70	322.56	75.26	397.83	136	0.0867	25.90	1484
Grosbeak	636000	26/3.97	7/3.09	321.84	52.49	374.34	112	0.0876	25.15	1302
Rook	636000	24/4.14	7/2.76	323.07	41.88	364.95	101	0.0877	24.84	1223
Swift	636000	36/3.38	1/3.38	323.02	8.97	331.99	60.7	0.0890	23.66	961
Kingbird	636000	18/4.78	1/4.78	323.01	17.95	340.96	69.7	0.0890	23.90	1031
Teal	605000	30/3.61	19/2.16	307.06	69.62	376.69	133	0.0912	25.24	1398
Wood Duck	605000	30/3.61	7/3.61	307.06	71.65	378.71	129	0.0911	25.27	1413
Squab	605000	26/3.87	7/3.01	305.83	49.81	355.64	108	0.0922	24.51	1237
Peacock	605000	24/4.03	7/2.69	306.13	39.78	345.92	95.9	0.0925	24.19	1160
Eagle	556500	30/3.46	7/3.46	282.07	65.82	347.89	123	0.0991	24.22	1298
Dove	556500	26/3.72	7/2.89	282.59	45.92	328.50	101	0.0998	23.55	1142
Parakeet	556500	24/3.87	7/2.58	282.31	36.60	318.90	88.3	0.1003	23.22	1069
Osprey	556500	18/4.47	1/4.47	282.47	15.69	298.17	61.0	0.1017	22.35	902
Hen	477000	30/3.20	7/3.20	241.27	56.30	297.57	105	0.1159	22.40	1110
Hawk	477000	26/3.44	7/2.67	241.65	39.19	280.84	86.4	0.1167	21.77	976
Flicker	477000	24/3.58	7/2.39	241.58	31.40	272.99	76.8	0.1172	21.49	915
Pelican	477000	18/4.14	1/4.14	242.31	13.46	255.77	52.3	0.1186	20.70	773
Lark	397500	30/2.92	7/2.92	200.90	46.88	247.78	90.3	0.1392	20.44	925
Ibis	397500	26/3.14	7/2.44	201.34	32.73	234.07	72.1	0.1400	19.88	814
Brant	397500	24/3.27	7/2.18	201.56	26.13	227.68	64.7	0.1405	19.62	763
Chickadee	397500	18/3.77	1/3.77	200.93	11.16	212.09	43.4	0.1430	18.85	641

Chickadee	397500	18/3.77	1/3.77	200.93	11.16	212.09	43.4	0.1430	18.85	641
Oriole	336400	30/2.69	7/2.69	170.50	39.78	210.28	77.4	0.1640	18.83	785
Linnet	336400	26/2.89	7/2.25	170.55	27.83	198.39	62.8	0.1653	18.31	690
Merlin	336400	18/3.47	1/3.47	170.22	9.46	179.68	38.2	0.1688	17.35	543
Ostrich	300000	26/2.73	7/2.12	152.19	24.71	176.90	56.6	0.1852	17.28	615
Partridge	266800	26/2.57	7/2.00	134.87	21.99	156.87	50.2	0.2090	16.28	546
Waxwing	266800	18/3.09	1/3.09	134.98	7.50	142.48	30.3	0.2129	15.45	431
Penguin	211600	6/4.77	1/4.77	107.22	17.87	125.09	37.1	0.2667	14.31	433
Cochin	211300	12/3.37	7/3.37	107.04	62.44	169.47	91.8	0.2481	16.85	785
Brahma	203200	16/2.86	19/2.48	102.79	91.78	194.57	127	0.2478	18.12	1003
Dorking	190800	12/3.20	7/3.20	96.51	56.30	152.81	82.8	0.2751	16.00	707
Dotterel	176900	12/3.08	7/3.08	89.41	52.15	141.56	76.7	0.2970	15.40	655
Pigeon	167800	6/4.25	1/4.25	85.12	14.19	99.30	29.4	0.3359	12.75	344
Guinea	159000	12/2.92	7/2.92	80.36	46.88	127.24	71.1	0.3304	14.60	589
Leghorn	134600	12/2.69	7/2.69	68.20	39.78	107.98	60.7	0.3893	13.45	500
Quail	133100	6/3.78	1/3.78	67.33	11.22	78.55	23.3	0.4247	11.34	272
Minorca	110800	12/2.44	7/2.44	56.11	32.73	88.84	50.2	0.4732	12.20	411
Raven	105600	6/3.37	1/3.37	53.52	8.92	62.44	19.4	0.5343	10.11	216
Petrel	101800	12/2.34	7/2.34	51.61	30.10	81.71	46.2	0.5145	11.70	378
Robin	83690	6/3.00	1/3.00	42.41	7.07	49.48	15.8	0.6742	9.00	171
Grouse	80000	8/2.54	1/4.24	40.54	14.12	54.66	22.9	0.7089	9.32	222
Sparate	66360	7/2.47	1/3.30	33.54	8.55	42.09	16.1	0.8525	8.24	159
Sparrow	66360	6/2.67	1/2.67	33.59	5.60	39.19	12.7	0.8512	8.01	136
Swanate	41740	7/1.96	1/2.61	21.12	5.35	26.47	10.5	1.3539	6.53	100
Swan	41740	6/2.12	1/2.12	21.18	3.53	24.71	8.30	1.3501	6.36	86
/	33090	6/1.89	1/1.89	16.83	2.81	19.64	6.68	1.6987	5.67	68
Turkey	26240	6/1.68	1/1.68	13.30	2.22	15.52	5.28	2.1499	5.04	54

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Size of conductor	Structure		Calculated area			Rated strength	DC resistance at 20°C	Overall diameter	Approx weight
	A1	St	A1	St	Total				
mm²	No./mm	No./mm	mm²	mm²	mm²	kN	Ω/km	mm	kg/km
1250	84/4.35	19/2.61	1248.39	101.65	1350.04	306	0.0230	47.85	4274
1250	76/4.58	19/2.14	1252.09	68.34	1320.43	269	0.0230	47.34	4023
1250	72/4.70	7/3.13	1249.16	53.86	1303.02	250	0.0231	46.99	3901
1120	84/4.12	19/2.47	1119.86	91.04	1210.90	275	0.0256	45.31	3833
1120	76/4.33	19/2.02	1119.13	60.89	1180.02	240	0.0257	44.74	3595
1120	72/4.45	7/2.97	1119.81	48.50	1168.30	226	0.0257	44.51	3499
1000	84/3.89	19/2.33	998.32	81.01	1079.33	245	0.0287	42.77	3416
1000	72/4.21	7/2.81	1002.28	43.41	1045.69	202	0.0288	42.11	3132
900	84/3.69	19/2.21	898.30	72.88	971.19	226	0.0319	40.57	3073
900	72/3.99	7/2.66	900.26	38.90	939.16	181	0.0320	39.90	2812
800	54/4.34	19/2.60	798.85	100.88	899.72	240	0.0356	39.04	3015
800	45/4.76	7/3.17	800.79	55.25	856.03	186	0.0357	38.07	2652
710	54/4.09	19/2.45	709.47	89.57	799.04	213	0.0401	36.79	2678
710	45/4.48	7/2.99	709.35	49.15	758.50	167	0.0403	35.85	2351
630	54/3.85	19/2.31	628.65	79.63	708.27	189	0.0453	34.65	2375
630	45/4.22	7/2.81	629.40	43.41	672.81	148	0.0454	33.75	2084

560	54/3.63	19/2.18	558.85	70.92	629.77	173	0.0509	32.68	2112
560	45/3.98	7/2.65	559.85	38.61	598.46	132	0.0511	31.83	1854
500	54/3.43	7/3.43	498.97	64.68	563.65	154	0.0568	30.87	1889
500	45/3.76	7/2.51	499.67	34.64	534.30	118	0.0572	30.09	1656
450	54/3.26	7/3.26	450.73	58.43	509.16	139	0.0628	29.34	1706
450	45/3.57	7/2.38	450.44	31.14	481.58	108	0.0634	28.56	1492
400	30/4.12	19/2.47	399.95	91.04	490.99	170	0.0700	28.83	1824
400	26/4.43	7/3.45	400.75	65.44	466.19	139	0.0703	28.07	1622
400	24/4.61	7/3.07	400.59	51.82	452.41	123	0.0707	27.65	1515
355	30/3.88	19/2.33	354.71	81.01	435.73	151	0.0789	27.17	1620
355	26/4.17	7/3.24	355.09	57.71	412.80	123	0.0794	26.40	1435
355	24/4.34	7/2.89	355.04	45.92	400.96	111	0.0798	26.03	1343
315	30/3.66	19/2.20	315.63	72.23	387.85	138	0.0887	25.64	1443
315	26/3.93	7/3.06	315.39	51.48	366.87	110	0.0894	24.90	1277
315	24/4.09	7/2.73	315.32	40.97	356.29	98.7	0.0898	24.55	1194
315	18/4.72	1/4.72	314.95	17.50	332.45	68.0	0.0912	23.60	1005
280	30/3.45	7/3.45	280.45	65.44	345.88	122	0.0997	24.15	1291
280	26/3.70	7/2.88	279.56	45.60	325.16	100	0.1008	23.44	1131
280	24/3.85	7/2.57	279.40	36.31	315.71	87.5	0.1014	23.11	1058
280	18/4.45	1/4.45	279.95	15.55	295.50	60.4	0.1026	22.25	893
250	30/3.26	7/3.26	250.41	58.43	308.84	109	0.1117	22.82	1152
250	26/3.50	7/2.72	250.15	40.67	290.82	89.5	0.1127	22.16	1011
250	24/3.64	7/2.43	249.75	32.46	282.21	79.4	0.1134	21.85	946
250	18/4.21	1/4.21	250.57	13.92	264.49	54.1	0.1147	21.05	800
224	30/3.08	7/3.08	223.52	52.15	275.67	97.4	0.1251	21.56	1029
224	26/3.31	7/2.57	223.73	36.31	260.04	80.0	0.1260	20.95	904
224	24/3.45	7/2.30	224.36	29.08	253.44	72.0	0.1262	20.70	849
224	18/3.98	1/3.98	223.94	12.44	236.38	48.3	0.1283	19.90	715
200	30/2.91	7/2.91	199.53	46.56	246.08	89.7	0.1402	20.37	918
200	26/3.13	7/2.43	200.06	32.46	232.52	71.5	0.1409	19.81	808
200	24/3.26	7/2.17	200.33	25.89	226.21	64.2	0.1414	19.55	758
200	18/3.76	1/3.76	199.87	11.10	210.97	43.1	0.1438	18.80	638
180	30/2.76	7/2.76	179.49	41.88	221.37	80.7	0.1558	19.32	826
180	26/2.97	7/2.31	180.13	29.34	209.46	65.4	0.1565	18.81	729
180	24/3.09	7/2.06	179.98	23.33	203.31	57.8	0.1574	18.54	681
180	18/3.57	1/3.57	180.18	10.01	190.19	40.4	0.1595	17.85	575
160	30/2.61	7/2.61	160.51	37.45	197.96	72.9	0.1742	18.27	739
160	26/2.80	7/2.18	160.10	26.13	186.22	58.9	0.1761	17.74	648
160	24/2.91	7/1.94	159.62	20.69	180.31	52.0	0.1775	17.46	604
160	18/3.36	1/3.36	159.60	8.87	168.47	35.8	0.1800	16.80	509
140	26/2.62	7/2.04	140.17	22.88	163.05	52.2	0.2011	16.60	567
140	24/2.73	7/1.82	140.48	18.21	158.70	46.4	0.2016	16.38	532
140	18/3.15	1/3.15	140.28	7.79	148.07	31.5	0.2048	15.75	448
125	26/2.47	7/1.92	124.58	20.27	144.85	46.9	0.2263	15.64	504
125	24/2.58	7/1.72	125.47	16.26	141.74	41.5	0.2258	15.48	475
125	18/2.97	1/2.97	124.70	6.93	131.63	28.8	0.2304	14.85	398
100	16/2.82	19/2.44	99.93	88.84	188.78	123	0.2550	17.84	972
100	12/3.26	7/3.26	100.16	58.43	158.59	85.9	0.2651	16.30	734
100	6/4.61	1/4.61	100.15	16.69	116.84	34.6	0.2855	13.83	405

100	6/4.61	1/4.61	100.15	16.69	116.84	34.6	0.2855	13.83	405
90	12/3.09	7/3.09	89.99	52.49	142.48	77.2	0.2950	15.45	660
80	12/2.91	7/2.91	79.81	46.56	126.37	70.6	0.3327	14.55	585
80	6/4.12	1/4.12	79.99	13.33	93.32	27.6	0.3575	12.36	323
71	12/2.74	7/2.74	70.76	41.28	112.03	62.9	0.3752	13.70	519
63	12/2.59	7/2.59	63.22	36.88	100.10	56.2	0.4200	12.95	463
63	6/3.66	1/3.66	63.13	10.52	73.65	22.1	0.4530	10.98	255
56	12/2.44	7/2.44	56.11	32.73	88.84	50.2	0.4732	12.20	411
50	12/2.30	7/2.30	49.86	29.08	78.94	45.4	0.5325	11.50	365
50	6/3.26	1/3.26	50.08	8.35	58.43	18.1	0.5710	9.78	202
40	8/2.52	1/4.20	39.90	13.85	53.76	22.5	0.7202	9.24	218
40	6/2.91	1/2.91	39.91	6.65	46.56	14.9	0.7166	8.73	161
31.5	7/2.39	1/3.19	31.40	7.99	39.40	15.1	0.9105	7.97	148
31.5	6/2.59	1/2.59	31.61	5.27	36.88	11.9	0.9046	7.77	128
25	7/2.13	1/2.84	24.94	6.33	31.28	12.3	1.1464	7.10	118
25	6/2.30	1/2.30	24.93	4.15	29.08	9.7	1.1471	6.90	101
20	7/1.91	1/2.55	20.06	5.11	25.16	10.0	1.4257	6.37	95
20	6/2.06	1/2.06	20.00	3.33	23.33	7.84	1.4299	6.18	81
16	6/1.84	1/1.84	15.95	2.66	18.61	6.33	1.7923	5.52	65
12.5	6/1.63	1/1.63	12.52	2.09	14.61	4.97	2.2838	4.89	51

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New code	Old code	Calculated area			No.		Diameter			Approx weight kg/km	Rated strength kN	DC resistance at 20°C Ω/km
		A1	St	Total	A1	St	A1	St	conductor			
		mm²	mm²	mm²			mm	mm	mm			
15-AL1/3-ST1A	16/2.5	15.27	2.54	17.81	6	1	1.80	1.80	5.40	61.6	5.80	1.8769
24-AL1/4-ST1A	25/4	23.86	3.98	27.83	6	1	2.25	2.25	6.75	96.3	8.95	1.2012
34-AL1/6-ST1A	35/6	34.35	5.73	40.08	6	1	2.70	2.70	8.10	138.7	12.37	0.8342
44-AL1/32-ST1A	44/32	43.98	31.67	75.65	14	7	2.00	2.40	11.20	369.3	44.24	0.6574
48-AL1/8-ST1A	50/8	48.25	8.04	56.30	6	1	3.20	3.20	9.60	194.8	16.81	0.5939
51-AL1/30-ST1A	50/30	51.17	29.85	81.01	12	7	2.33	2.33	11.65	374.7	42.98	0.5644
70-AL1/11-ST1A	70/12	69.89	11.40	81.29	26	7	1.85	1.44	11.72	282.2	26.27	0.4132
94-AL1/15-ST1A	95/15	94.39	15.33	109.73	26	7	2.15	1.67	13.61	380.6	34.93	0.3060
97-AL1/56-ST1A	95/55	96.51	56.30	152.81	12	7	3.20	3.20	16.00	706.8	77.85	0.2992
106-AL1/76-ST1A	105/75	105.67	75.55	181.21	14	19	3.10	2.25	17.45	885.3	105.82	0.2742
122-AL1/20-ST1A	120/20	121.57	19.85	141.42	26	7	2.44	1.90	15.46	491.0	44.50	0.2376
122-AL1/71-ST1A	120/70	122.15	71.25	193.40	12	7	3.60	3.60	18.00	894.5	97.92	0.2364
128-AL1/30-ST1A	125/30	127.92	29.85	157.76	30	7	2.33	2.33	16.31	587.0	56.41	0.2260
149-AL1/24-ST1A	150/25	148.86	24.25	173.11	26	7	2.70	2.10	17.10	600.8	53.67	0.1940
172-AL1/40-ST1A	170/40	171.77	40.08	211.85	30	7	2.70	2.70	18.90	788.2	74.89	0.1683
184-AL1/30-ST1A	185/30	183.78	29.85	213.63	26	7	3.00	2.33	18.99	741.0	65.27	0.1571
209-AL1/34-ST1A	210/35	209.10	34.09	243.19	26	7	3.20	2.49	20.27	844.1	73.36	0.1381
212-AL1/49-ST1A	210/50	212.06	49.48	261.54	30	7	3.00	3.00	21.00	973.1	92.46	0.1363
231-AL1/30-ST1A	230/30	230.91	29.85	260.75	24	7	3.50	2.33	20.99	870.9	72.13	0.1250
243-AL1/39-ST1A	240/40	243.05	39.49	282.54	26	7	3.45	2.68	21.84	980.1	85.12	0.1188
264-AL1/34-ST1A	265/35	263.66	34.09	297.75	24	7	3.74	2.49	22.43	994.4	81.04	0.1095
304-AL1/49-ST1A	300/50	304.26	49.48	353.74	26	7	3.86	3.00	24.44	1227.3	105.09	0.0949
305-AL1/39-ST1A	305/40	304.62	39.49	344.10	54	7	2.68	2.68	24.12	1151.2	96.80	0.0949

339-AL1/30-ST1A	340/30	339.3	29.8	369.1	48	7	3.00	2.33	24.99	1171.2	91.71	0.0852
382-AL1/49-ST1A	380/50	381.70	49.48	431.18	54	7	3.00	3.00	27.00	1442.5	121.30	0.0758
386-AL1/34-ST1A	385/35	386.04	34.09	420.13	48	7	3.20	2.49	26.67	1333.6	102.56	0.0749
434-AL1/56-ST1A	435/55	434.29	56.30	490.59	54	7	3.20	3.20	28.80	1641.3	133.59	0.0666
449-AL1/39-ST1A	450/40	448.71	39.49	488.20	48	7	3.45	2.68	28.74	1549.1	119.05	0.0644
490-AL1/64-ST1A	490/65	490.28	63.55	553.83	54	7	3.40	3.40	30.60	1852.9	150.81	0.0590
494-AL1/34-ST1A	495/35	494.36	34.09	528.45	45	7	3.74	2.49	29.91	1632.6	117.96	0.0584
511-AL1/45-ST1A	510/45	510.54	45.28	555.82	48	7	3.68	2.87	30.69	1765.3	133.31	0.0566
550-AL1/71-ST1A	550/70	549.65	71.25	620.91	54	7	3.60	3.60	32.40	2077.3	166.32	0.0526
562-AL1/49-ST1A	560/50	561.70	49.48	611.18	48	7	3.86	3.00	32.16	1939.5	146.28	0.0515
571-AL1/39-ST1A	570/40	571.16	39.49	610.64	45	7	4.02	2.68	32.16	1887.1	136.40	0.0506
653-AL1/45-ST1A	650/45	653.49	45.28	698.78	45	7	4.30	2.87	34.41	2159.9	156.18	0.0442
679-AL1/86-ST1A	680/85	678.59	85.95	764.54	54	19	4.00	2.40	36.00	2549.7	206.56	0.0426
1046-AL1/45-ST1A	1045/45	1045.59	45.28	1090.87	72	7	4.30	2.87	43.01	3248.2	218.92	0.0277

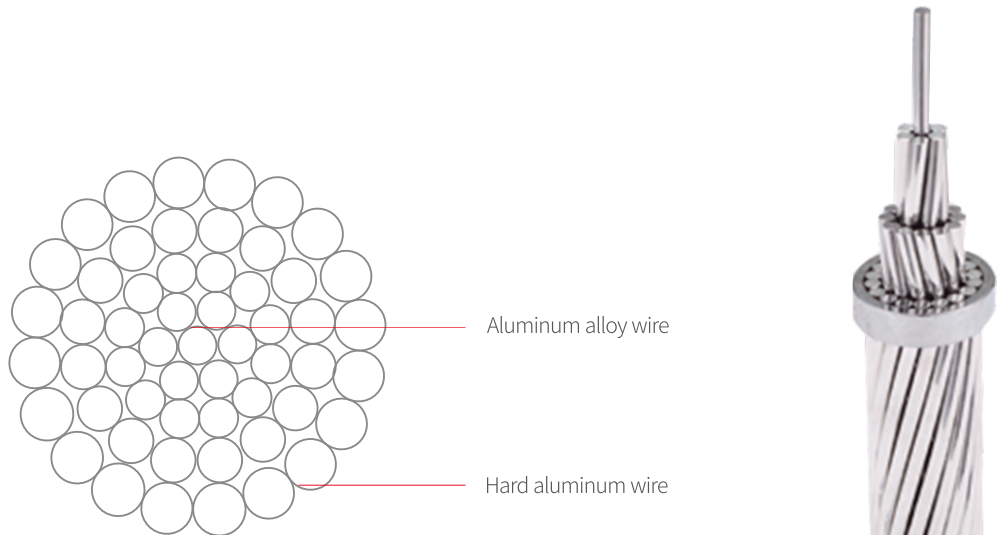
324-AL1/76-ST1A	GOAT	324.3	75.7	462.6	30	7	3.71	3.71	25.97	1488.2	135.13	0.0891
375-AL1/88-ST1A	SHEEP	375.1	87.5	422.6	30	7	3.99	3.99	27.93	1721.3	156.30	0.0771
374-AL1/48-ST1A	ANTELOPE	374.1	48.5	431.2	54	7	2.97	2.97	26.73	1413.8	118.88	0.0773
382-AL1/49-ST1A	BISON	381.7	49.5	529.8	54	7	3.00	3.00	27.00	1442.5	121.30	0.0758
430-AL1/100-ST1A	DEER	429.6	100.2	484.5	30	7	4.27	4.27	29.89	1971.4	179.00	0.0673
429-AL1/56-ST1A	ZEBRA	428.9	55.6	588.5	54	7	3.18	3.18	28.62	1620.8	131.92	0.0674
477-AL1/111-ST1A	ELK	477.1	111.3	537.7	30	7	4.50	4.50	31.50	2189.5	198.80	0.0606
476-AL1/62-ST1A	CAMEL	476.0	61.7	597.0	54	7	3.35	3.35	30.15	1798.8	146.40	0.0608
528-AL1/69-ST1A	MOOSE	528.5	68.5		54	7	3.53	3.53	31.77	1997.3	159.92	0.0547

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New code	Old code	Calculated area			No.		Diameter			Approx weight kg/km	Rated strength kN	DC resistance at 20°C Ω/km
		A1	St	Total	A1	St	A1	St	conductor			
		mm²	mm²	mm²			mm	mm	mm			
11-AL1/2-ST1A	MOLE	10.6	1.8	12.4	6	1	1.50	1.50	4.50	42.8	4.14	2.7027
21-AL1/3-ST1A	SQUIRREL	21.0	3.5	24.5	6	1	2.11	2.11	6.33	84.7	7.87	1.3659
26-AL1/4-ST1A	GOPHER	26.2	4.4	30.6	6	1	2.36	2.36	7.08	106.0	9.58	1.0918
32-AL1/5-ST1A	WEASEL	31.6	5.3	36.9	6	1	2.59	2.59	7.77	127.6	11.38	0.9065
37-AL1/6-ST1A	FOX	36.7	6.1	42.8	6	1	2.79	2.79	8.37	148.1	13.21	0.7812
42-AL1/7-ST1A	FERRET	42.4	7.1	49.5	6	1	3.00	3.00	9.00	171.2	15.27	0.6757
53-AL1/9-ST1A	RABBIT	52.9	8.8	61.7	6	1	3.35	3.35	10.05	213.5	18.42	0.5419
63-AL1/11-ST1A	MINK	63.1	10.5	73.6	6	1	3.66	3.66	10.98	254.9	21.67	0.4540
63-AL1/37-ST1A	SKUNK	63.2	36.9	100.1	12	7	2.59	2.59	12.95	463.0	52.79	0.4568
75-AL1/13-ST1A	BEAVER	75.0	12.5	87.5	6	1	3.99	3.99	11.97	302.9	25.76	0.3820
73-AL1/43-ST1A	HORSE	73.4	42.8	116.2	12	7	2.79	2.79	13.95	537.3	61.26	0.3936
79-AL1/13-ST1A	RACCOON	78.8	13.1	92.0	6	1	4.09	4.09	12.27	318.3	27.06	0.3635
84-AL1/14-ST1A	OTTER	83.9	14.0	97.9	6	1	4.22	4.22	12.66	338.8	28.81	0.3415
95-AL1/16-ST1A	CAT	95.4	15.9	111.3	6	1	4.50	4.50	13.50	385.3	32.76	0.3003
105-AL1/17-ST1A	HARE	105.0	17.5	122.5	6	1	4.72	4.72	14.16	423.8	36.04	0.2730
105-AL1/14-ST1A	DOG	105.0	13.6	118.5	6	7	4.72	1.57	14.15	394.0	32.65	0.2733
132-AL1/20-ST1A	COYOTE	131.7	20.1	151.8	26	7	2.54	1.91	15.89	520.7	45.86	0.2192
132-AL1/7-ST1A	COUGAR	131.5	7.3	138.8	18	1	3.05	3.05	15.25	418.8	29.74	0.2188
131-AL1/31-ST1A	TIGER	131.2	30.6	161.9	30	7	2.36	2.36	16.52	602.2	57.87	0.2202
158-AL1/37-ST1A	WOLF	158.1	36.9	194.9	30	7	2.59	2.59	18.13	725.3	68.91	0.1829
159-AL1/9-ST1A	DINGO	158.7	8.8	167.5	18	1	3.35	3.35	16.75	505.2	35.87	0.1814
183-AL1/43-ST1A	LYNX	183.4	42.8	226.2	30	7	2.79	2.79	19.53	841.6	79.97	0.1576
184-AL1/10-ST1A	CARACAL	184.2	10.2	194.5	18	1	3.61	3.61	18.05	586.7	40.74	0.1562
212-AL1/49-ST1A	PANTHER	212.1	49.5	261.5	30	7	3.00	3.00	21.00	973.1	92.46	0.1363
211-AL1/12-ST1A	JAGUAR	210.6	11.7	222.3	18	1	3.86	3.86	19.30	670.8	46.57	0.1366
238-AL1/56-ST1A	LION	238.3	55.6	293.9	30	7	3.18	3.18	22.26	1093.4	100.47	0.1213
264-AL1/62-ST1A	BEAR	264.4	61.7	326.1	30	7	3.35	3.35	23.45	1213.4	111.50	0.1093

High Voltage-Aluminum Alloy Conductors

Aluminum Alloy Core Aluminum Wire



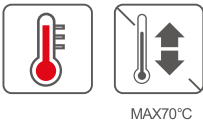
Aluminum alloy core aluminum wire is an overhead transmission wire concentrically twisted by high-strength aluminum alloy as a reinforcing core and rigid aluminum wire. Compared with conventional wires, aluminum alloy core aluminum wire boasts light weight, high carrying capacity, good corrosion resistance, low loss, etc.

Features

- Light weight
- High carrying capacity
- Good corrosion resistance
- Low loss

Applications

Newly erected wire, transformation of old wires



Structure Parameters

Technical Specification Type A IEC 61089

Code number	Size of conductor	Structure		Calculated area			Rated strength	DC resistance at 20°C	Overall diameter	Approx. weight
		Al	Alloy	Al	Alloy	Total				
	mm²	No./mm	No./mm	mm²	mm²	mm²				
16	10/7	4/1.76	3/1.76	9.73	7.30	17.03	4.05	1.7896	5.28	46.6
25	15/10	4/2.21	3/2.21	15.34	11.51	26.85	6.31	1.1454	6.63	73.5
40	24/20	4/2.79	3/2.79	24.45	18.34	42.80	9.82	0.7159	8.37	117.1
63	40/30	4/3.50	3/3.50	38.48	28.86	67.35	15.26	0.4545	10.50	184.3
100	60/45	4/4.41	3/4.41	61.10	45.82	106.92	23.49	0.2863	13.23	292.4
125	80/50	12/2.98	7/2.98	83.70	48.82	132.52	29.30	0.2302	14.90	364.2
160	105/60	12/3.37	7/3.37	107.04	62.44	169.47	36.94	0.1798	16.85	465.8
200	135/80	12/3.77	7/3.77	133.95	78.14	212.09	44.82	0.1439	18.85	583.0

250	170/95	12/4.21	7/4.21	167.05	97.44	264.49	55.89	0.1151	21.05	726.9
250	130/140	18/3.05	19/3.05	131.51	138.82	270.33	64.56	0.1154	21.35	744.8
315	265/60	30/3.34	7/3.34	262.85	61.33	324.18	62.31	0.0916	23.38	893.2
315	165/175	18/3.43	19/3.43	166.32	175.56	341.89	81.65	0.0916	24.01	941.9
400	335/80	30/3.77	7/3.77	334.88	78.14	413.02	76.96	0.0721	26.39	1137.9
400	210/220	18/3.86	19/3.86	210.64	222.34	432.98	100.24	0.0721	27.02	1192.9
450	375/85	30/3.99	7/3.99	375.11	87.53	462.63	86.21	0.0641	27.93	1274.6
450	235/250	18/4.10	19/4.10	237.65	250.85	488.50	113.09	0.0641	28.70	1345.8
500	415/95	30/4.21	7/4.21	417.62	97.44	515.06	95.98	0.0577	29.47	1419.1
500	260/275	18/4.32	19/4.32	263.83	278.49	542.33	125.55	0.0577	30.24	1494.2
560	465/110	30/4.46	7/4.46	468.69	109.36	578.05	107.72	0.0515	31.22	1592.6
560	505/65	54/3.45	7/3.45	504.80	65.44	570.24	103.50	0.0516	31.05	1573.4
630	455/205	42/3.72	19/3.72	456.48	206.50	662.99	134.83	0.0458	33.48	1829.3
630	270/420	24/3.80	37/3.80	272.19	419.62	691.81	169.12	0.0458	34.20	1908.8
710	514/230	42/3.95	19/3.95	514.68	232.83	747.51	152.02	0.0407	35.55	2062.5
710	307/470	24/4.03	37/4.03	306.13	471.96	778.09	190.21	0.0407	36.27	2146.9
800	580/260	42/4.19	19/4.19	579.12	261.98	841.10	171.06	0.0361	37.71	2320.7
800	345/530	24/4.28	37/4.28	345.29	532.33	877.62	214.55	0.0361	38.52	2421.5
900	650/295	42/4.44	19/4.44	650.29	294.18	944.47	192.08	0.0321	39.96	2605.9
900	570/390	54/3.66	37/3.66	568.13	389.27	957.40	207.39	0.0321	40.26	2644.4
1000	820/215	72/3.80	19/3.80	816.56	215.48	1032.05	195.13	0.0289	41.80	2850.6
1000	630/430	54/3.86	37/3.86	631.92	432.98	1064.90	230.68	0.0289	42.46	2941.3
1120	915/240	72/4.02	19/4.02	913.85	241.16	1155.01	218.38	0.0258	44.22	3190.2
1120	705/485	54/4.09	37/4.09	709.47	486.12	1195.58	258.98	0.0258	44.99	3302.3
1250	1020/270	72/4.25	19/4.25	1021.41	269.54	1290.95	244.09	0.0231	46.75	3565.7
1250	790/540	54/4.32	37/4.32	791.50	542.33	1333.83	288.93	0.0231	47.52	3684.2
1400	1145/300	72/4.50	19/4.50	1145.11	302.18	1447.30	273.65	0.0207	49.50	3997.6

Technical Specification Type A IEC 61089

Code number	Size of conductor	Structure		Calculated area			Rated strength	DC resistance at 20°C	Overall diameter	Approx. weight
		Al	Alloy	Al	Alloy	Total				
	mm²	No./mm	No./mm	mm²	mm²	mm²				
16	10/7	4/1.76	3/1.76	9.73	7.30	17.03	3.85	1.7896	5.28	46.6
25	15/10	4/2.20	3/2.20	15.21	11.40	26.61	5.93	1.1454	6.60	72.8
40	24/20	4/2.78	3/2.78	24.28	18.21	42.49	9.23	0.7159	8.34	116.2
63	40/30	4/3.49	3/3.49	38.27	28.70	66.96	14.36	0.4545	10.47	183.2
100	60/45	4/4.40	3/4.40	60.82	45.62	106.44	22.52	0.2863	13.20	291.2
125	80/50	12/2.97	7/2.97	83.14	48.50	131.63	27.72	0.2302	14.85	361.8
160	105/60	12/3.36	7/3.36	106.40	62.07	168.47	34.95	0.1798	16.80	463.1
200	135/80	12/3.76	7/3.76	133.24	77.73	210.97	43.10	0.1439	18.80	579.8
250	170/95	12/4.21	7/4.21	167.05	97.44	264.49	54.04	0.1151	21.05	726.9
250	130/140	18/3.04	19/3.04	130.65	137.91	268.56	60.21	0.1154	21.28	739.9
315	265/60	30/3.34	7/3.34	262.85	61.33	324.18	60.56	0.0916	23.38	893.2
315	165/175	18/3.42	19/3.42	165.35	174.54	339.90	76.20	0.0916	23.94	936.5
400	335/80	30/3.76	7/3.76	333.11	77.73	410.84	75.08	0.0721	26.32	1131.8
400	210/220	18/3.85	19/3.85	209.55	221.19	430.74	95.52	0.0721	26.95	1186.7
450	375/85	30/3.99	7/3.99	375.11	87.53	462.63	84.55	0.0641	27.93	1274.6
450	235/250	18/4.08	19/4.08	235.33	248.41	483.74	107.27	0.0641	28.56	1332.8
500	415/95	30/4.21	7/4.21	417.62	97.44	515.06	94.13	0.0577	29.47	1419.1
500	260/275	18/4.31	19/4.31	262.61	277.20	539.82	119.70	0.0577	30.17	1487.2
560	465/110	30/4.45	7/4.45	466.59	108.87	575.46	105.16	0.0515	31.15	1585.4

560	505/65	54/3.45	7/3.45	504.80	65.44	570.24	101.63	0.0516	31.05	1573.4
630	455/205	42/3.71	19/3.71	454.03	205.40	659.43	130.21	0.0458	33.39	1819.4
630	270/420	24/3.79	37/3.79	270.76	417.42	688.18	160.30	0.0458	34.11	1898.8
710	514/230	42/3.94	19/3.94	512.07	231.65	743.73	146.85	0.0407	35.46	2052.1
710	307/470	24/4.02	37/4.02	304.62	469.62	774.24	180.35	0.0407	36.18	2136.2
800	580/260	42/4.18	19/4.18	576.36	260.73	837.09	165.29	0.0361	37.62	2309.6
800	345/530	24/4.27	37/4.27	343.68	529.84	873.53	203.48	0.0361	38.43	2410.2
900	650/295	42/4.43	19/4.43	647.36	292.85	940.22	185.65	0.0321	39.87	2594.2
900	570/390	54/3.66	37/3.66	568.13	389.27	957.40	199.99	0.0321	40.26	2644.4
1000	820/215	72/3.80	19/3.80	816.56	215.48	1032.05	191.04	0.0289	41.80	2850.6
1000	630/430	54/3.85	37/3.85	628.65	430.74	1059.38	221.30	0.0289	42.35	2926.1
1120	915/240	72/4.02	19/4.02	913.85	241.16	1155.01	213.80	0.0258	44.22	3190.2
1120	705/485	54/4.08	37/4.08	706.00	483.74	1189.74	248.53	0.0258	44.88	3286.1
1250	1020/270	72/4.25	19/4.25	1021.41	269.54	1290.95	238.96	0.0231	46.75	3565.7
1250	790/540	54/4.31	37/4.31	787.84	539.82	1327.66	277.34	0.0231	47.41	3667.1
1400	1145/300	72/4.50	19/4.50	1145.11	302.18	1447.30	267.90	0.0207	49.50	3997.6

Technical Specification ASTM B524

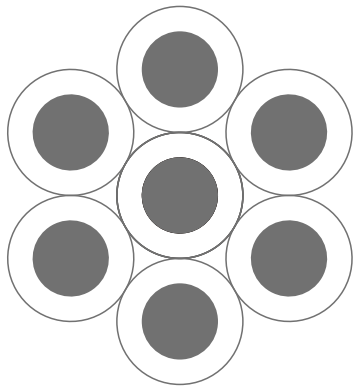
Size of conductor	Structure		Calculated area			Rated strength	DC resistance at 20°C	Overall diameter	Approx. weight
	Al	Alloy	Al	Alloy	Total				
kcmil	No./mm	No./mm	mm²	mm²	mm²	kN	Ω/km	mm	kg/km
3000	54/4.61	37/4.61	901.34	617.58	1518.92	306	0.0203	50.71	4222
2750	54/4.41	37/4.41	824.83	565.16	1389.99	280	0.0222	48.51	3864
2500	54/4.21	37/4.21	751.71	515.06	1266.77	256	0.0243	46.31	3522
2493	54/4.20	37/4.20	748.14	512.61	1260.75	254	0.0244	46.20	3505
2338	54/4.97	37/4.97	1047.60	717.80	1765.40	356	0.0174	44.73	4908
2250	54/3.99	37/3.99	675.20	462.63	1137.83	230	0.0271	43.89	3163
2000	54/3.76	37/3.76	599.60	410.84	1010.44	204	0.0302	41.36	2782
2000	42/4.60	19/4.60	698.00	315.76	1013.76	195	0.0297	41.40	2792
1933	42/4.52	19/4.52	673.93	304.87	978.80	188	0.0307	40.68	2696
1900	42/4.48	19/4.48	662.06	299.50	961.56	185	0.0313	40.32	2649
1800	42/4.36	19/4.36	627.07	283.67	910.74	175	0.0330	39.24	2508
1798	42/4.36	19/4.36	627.07	283.67	910.74	175	0.0330	39.24	2508
1750	42/4.30	19/4.30	609.93	275.92	885.85	170	0.0339	38.70	2440
1703	42/4.24	19/4.24	593.02	268.27	861.29	166	0.0349	38.16	2372
1700	42/4.24	19/4.24	593.02	268.27	861.29	166	0.0349	38.16	2372
1600	42/4.11	19/4.11	557.22	252.07	809.29	156	0.0372	36.99	2229
1534.4	42/4.03	19/4.03	535.74	242.36	778.10	150	0.0386	36.27	2143
1500	42/3.98	19/3.98	522.52	236.38	758.90	146	0.0396	35.82	2090
1400	42/3.85	19/3.85	488.95	221.19	710.14	137	0.0423	34.65	1956
1361.5	42/3.79	19/3.79	473.83	214.35	688.18	132	0.0437	34.11	1895
1300	42/3.71	19/3.71	454.03	205.40	659.43	129	0.0456	33.39	1816
1300	18/4.76	19/4.76	320.32	338.11	658.43	145	0.0471	33.32	1812
1277	42/3.68	19/3.68	446.72	202.09	648.81	127	0.0463	33.12	1787
1250	42/3.63	19/3.63	434.66	196.63	631.29	123	0.0476	32.67	1739
1250	30/4.67	7/4.67	513.86	119.90	633.76	113	0.0466	32.69	1747
1200	42/3.56	19/3.56	418.06	189.12	607.18	119	0.0495	32.04	1672
1200	18/4.57	19/4.57	295.25	311.66	606.91	134	0.0511	31.99	1670
1198	18/4.57	19/4.57	295.25	311.66	606.91	134	0.0511	31.99	1670
1172	18/4.52	19/4.52	288.83	304.87	593.70	131	0.0522	31.64	1633
1109	18/4.40	19/4.40	273.70	288.90	562.60	124	0.0551	30.80	1548

1100	42/3.41	19/3.41	383.57	173.52	557.09	109	0.0540	30.69	1534
1100	18/4.38	19/4.38	271.21	286.28	557.49	123	0.0556	30.66	1534
1080.6	18/4.34	19/4.34	266.28	281.08	547.36	120	0.0566	30.38	1506
1024.5	18/4.23	19/4.23	252.96	267.01	519.97	114	0.0596	29.61	1431
1000	42/3.25	19/3.25	348.42	157.62	506.04	101	0.0594	29.25	1394
1000	18/4.18	19/4.18	247.01	260.73	507.74	112	0.0611	29.26	1397
950	18/4.07	19/4.07	234.18	247.19	481.37	106	0.0644	28.49	1324
927.2	18/4.02	19/4.02	228.46	241.16	469.62	103	0.0660	28.14	1292
900	18/3.96	19/3.96	221.69	234.01	455.70	100	0.0680	27.72	1254
853.7	18/3.86	19/3.86	210.64	222.34	432.98	95	0.0716	27.02	1191
850	18/3.85	19/3.85	209.55	221.19	430.74	95	0.0720	26.95	1185
800	18/3.73	19/3.73	196.69	207.62	404.31	90	0.0767	26.11	1112
750	18/3.62	19/3.62	185.26	195.55	380.81	85	0.0814	25.34	1048
739.8	18/3.59	19/3.59	182.20	192.32	374.52	83	0.0828	25.13	1030
700	18/3.49	19/3.49	172.19	181.76	353.95	79	0.0876	24.43	974
653.1	12/4.71	7/4.71	209.08	121.96	331.04	68	0.0916	23.55	912
650	18/3.37	19/3.37	160.55	169.47	330.02	73	0.0939	23.59	908
649.5	18/3.37	19/3.37	160.55	169.47	330.02	73	0.0939	23.59	908
600	18/3.23	19/3.23	147.49	155.69	303.18	69	0.1022	22.61	834
600	12/4.51	7/4.51	191.70	111.83	303.53	62	0.0999	22.55	836
587.2	12/4.47	7/4.47	188.32	109.85	298.17	61	0.1017	22.35	821
550	18/3.10	19/3.10	135.86	143.41	279.27	64	0.1110	21.70	768
550	12/4.32	7/4.32	175.89	102.60	278.49	57	0.1089	21.60	767
503.6	12/4.14	7/4.14	161.54	94.23	255.77	53	0.1186	20.70	704
500	18/2.95	19/2.95	123.03	129.86	252.89	59	0.1226	20.65	696
500	12/4.12	7/4.12	159.98	93.32	253.30	52	0.1197	20.60	698
450	12/3.91	7/3.91	144.09	84.05	228.14	47	0.1329	19.55	628
400	12/3.69	7/3.69	128.33	74.86	203.19	42	0.1492	18.45	560
350	12/3.45	7/3.45	112.18	65.44	177.62	37	0.1707	17.25	489
300	12/3.19	7/3.19	95.91	55.95	151.86	32	0.1997	15.95	418
250	12/2.91	7/2.91	79.81	46.56	126.37	27	0.2400	14.55	348
246.9	4/4.77	3/4.77	71.48	53.61	125.09	27	0.2446	14.31	344
211.6	4/4.42	3/4.42	61.38	46.03	107.41	23	0.2849	13.26	296
195.7	4/4.25	3/4.25	56.75	42.56	99.31	21	0.3081	12.75	273
167.8	4/3.93	3/3.93	48.52	36.39	84.91	18	0.3604	11.79	234
155.4	4/3.78	3/3.78	44.89	33.67	78.56	17	0.3895	11.34	216
133.1	4/3.50	3/3.50	38.48	28.86	67.34	15	0.4544	10.50	185
123.3	4/3.37	3/3.37	35.68	26.76	62.44	14	0.4901	10.11	172
105.6	4/3.12	3/3.12	30.58	22.94	53.52	12	0.5718	9.36	147
77.47	4/2.67	3/2.67	22.40	16.80	39.20	9	0.7806	8.01	108
66.36	4/2.47	3/2.47	19.17	14.37	33.54	8	0.9123	7.41	92
48.69	4/2.12	3/2.12	14.12	10.59	24.71	6	1.2384	6.36	68
41.74	4/1.96	3/1.96	12.07	9.05	21.12	5	1.4488	5.88	58
30.58	4/1.68	3/1.68	8.87	6.65	15.52	4	1.9716	5.04	43

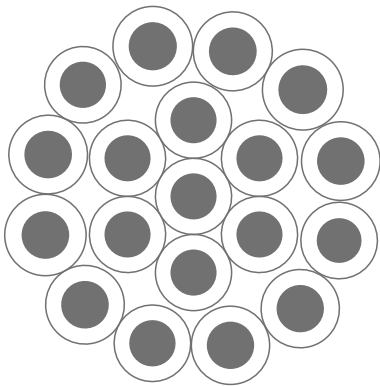
Technical Specification ASTM B524

Size of conductor	Structure		Calculated area			Rated strength	DC resistance at 20°C	Overall diameter	Approx. weight
	Al	Alloy	Al	Alloy	Total				
mm²	No./mm	No./mm	mm²	mm²	mm²	kN	Ω/km	mm	kg/km
1600	54/4.73	37/4.73	948.87	650.15	1599.02	323	0.0194	52.03	4488
1400	54/4.43	37/4.43	832.32	570.30	1402.62	283	0.0220	48.73	3899
1250	54/4.18	37/4.18	741.03	507.74	1248.77	252	0.0247	45.98	3471
1120	54/3.96	37/3.96	665.08	455.70	1120.78	226	0.0275	43.56	3116
1000	54/3.74	37/3.74	593.24	406.48	999.72	204	0.0305	41.14	2752
1000	42/4.57	19/4.57	688.93	311.66	1000.59	192	0.0300	41.13	2756
900	42/4.33	19/4.33	618.47	279.78	898.25	173	0.0335	38.97	2474
800	42/4.09	19/4.09	551.81	249.63	801.44	154	0.0375	36.81	2207
710	42/3.85	19/3.85	488.95	221.19	710.14	137	0.0423	34.65	1956
630	42/3.63	19/3.63	434.66	196.63	631.29	123	0.0476	32.67	1739
630	18/4.66	19/4.66	307.00	324.05	631.05	139	0.0491	32.62	1736
560	42/3.42	19/3.42	385.83	174.54	560.37	110	0.0537	30.78	1543
560	18/4.39	19/4.39	272.45	287.59	560.04	123	0.0554	30.73	1541
500	42/3.23	19/3.23	344.15	155.69	499.84	100	0.0602	29.07	1377
500	18/4.15	19/4.15	243.48	257.00	500.48	110	0.0619	29.05	1377
450	18/3.94	19/3.94	219.46	231.65	451.11	99	0.0687	27.58	1241
400	18/3.71	19/3.71	194.59	205.40	399.99	89	0.0775	25.97	1101
355	18/3.50	19/3.50	173.18	182.80	355.98	79	0.0871	24.50	979
315	18/3.29	19/3.29	153.02	161.52	314.54	70	0.0986	23.03	865
280	18/3.10	19/3.10	135.86	143.41	279.27	64	0.1110	21.70	768
280	12/4.33	7/4.33	176.70	103.08	279.78	58	0.1084	21.65	770
250	18/2.93	19/2.93	121.37	128.11	249.48	58	0.1243	20.51	686
250	12/4.09	7/4.09	157.66	91.97	249.63	51	0.1215	20.45	687
224	12/3.87	7/3.87	141.15	82.34	223.49	46	0.1357	19.35	615
200	12/3.66	7/3.66	126.25	73.65	199.90	42	0.1517	18.30	550
180	12/3.47	7/3.47	113.48	66.20	179.68	38	0.1688	17.35	495
160	12/3.27	7/3.27	100.78	58.79	159.57	33	0.1900	16.35	439
140	12/3.06	7/3.06	88.25	51.48	139.73	30	0.2170	15.30	385
125	4/4.77	3/4.77	71.48	53.61	125.09	27	0.2446	14.31	344
112	4/4.51	3/4.51	63.90	47.93	111.83	24	0.2736	13.53	308
100	4/4.26	3/4.26	57.01	42.76	99.77	21	0.3067	12.78	275
80	4/3.81	3/3.81	45.60	34.20	79.80	17	0.3835	11.43	220
63	4/3.39	3/3.39	36.10	27.08	63.18	14	0.4843	10.17	174
50	4/3.02	3/3.02	28.65	21.49	50.14	11	0.6103	9.06	138
40	4/2.70	3/2.70	22.90	17.18	40.08	9	0.7635	8.10	110
31.5	4/2.39	3/2.39	17.95	13.46	31.41	7	0.9742	7.17	86
25	4/2.13	3/2.13	14.25	10.69	24.94	6	1.2270	6.39	69
20	4/1.91	3/1.91	11.46	8.60	20.06	5	1.5255	5.73	55
16	4/1.71	3/1.71	9.19	6.89	16.08	4	1.9030	5.13	44

High Voltage-Aluminum-clad steel wire



7pieces of aluminum-clad steel wire



19pieces of aluminum-clad steel wire



RoHS

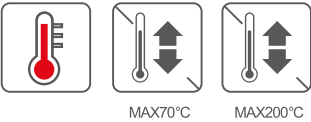
Aluminum-clad steel cable is stranded by aluminum-clad steel monofilament wire and generally used as ground wire in overhead lines; compared with steel wire, it boasts light weight, small overhead line sag, good corrosion resistance, good conductivity, etc.

Features

- Light weight
- Small Overhead Line Sag
- Good corrosion resistance
- Good conductivity

Applications

Generally replace steel wire as ground wire



Structure Parameters

Technical Specification Type A IEC 61089

Date for type SA1A conductor							
Code number	Size of conductor	Structure	Diameter		Approx.weight	Rated strength	DC resistance at 20°C
			wire	conductor			
	mm²	No.	mm	mm	kg/km	kN	Ω/km
4	12	7	1.48	4.43	80.1	16.08	7.1592
6.3	18.9	7	1.85	5.56	126.2	25.33	4.5455
10	30	7	2.34	7.01	200.3	40.20	2.8637
12.5	37.5	7	2.61	7.84	250.4	50.25	2.2910

16	48	7	2.95	8.86	320.5	64.32	1.7898
25	75	7	3.69	11.08	500.7	93.75	1.1455
40	120	7	4.67	14.02	801.2	132.00	0.7159
40	120	19	2.84	14.18	805.0	160.80	0.7194
63	189	19	3.56	17.79	1267.9	240.03	0.4568
100	300	37	3.21	22.49	2017.3	402.00	0.2884
125	375	37	3.59	25.15	2521.7	476.25	0.2307
160	480	37	4.06	28.45	3227.7	580.80	0.1803
200	600	37	4.54	31.81	4034.7	684.00	0.1442
200	600	61	3.54	31.85	4040.6	762.00	0.1444

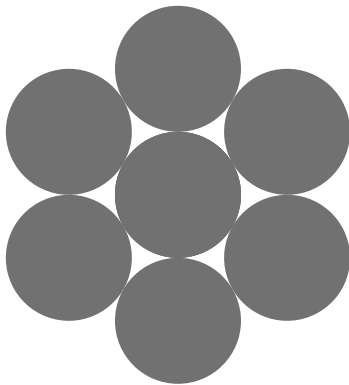
Date for type SA1B conductor							
Code number	Size of conductor	Structure	Diameter		Approx.weight	Rated strength	DC resistance at 20°C
	mm²	No.	wire	conductor			
			mm	mm	kg/km	kN	Ω/km
4	12	7	1.48	4.43	79.4	15.84	7.1592
6.3	18.9	7	1.85	5.56	125.0	24.95	4.5455
10	30	7	2.34	7.01	198.5	39.60	2.8637
12.5	37.5	7	2.61	7.84	248.1	49.50	2.2910
16	48	7	2.95	8.86	317.5	63.36	1.7898
25	75	7	3.69	11.08	496.2	99.00	1.1455
40	120	7	4.67	14.02	793.9	158.40	0.7159
40	120	19	2.84	14.18	797.7	158.40	0.7194
63	189	19	3.56	17.79	1256.4	249.48	0.4568
100	300	37	3.21	22.49	1999.0	396.00	0.2884
125	375	37	3.59	25.15	2498.7	495.00	0.2307
160	480	37	4.06	28.45	3198.3	633.60	0.1803
200	600	37	4.54	31.81	3997.9	792.00	0.1442
200	600	61	3.54	31.85	4003.8	792.00	0.1444

Date for type SA2 conductor							
Code number	Size of conductor	Structure	Diameter		Approx.weight	Rated strength	DC resistance at 20°C
	mm²	No.	wire	conductor			
			mm	mm	kg/km	kN	Ω/km
16	36.2	7	2.56	7.69	216.4	39.04	1.7896
25	56.5	7	3.21	9.62	338.2	61.00	1.1454
40	90.4	7	4.05	12.2	541.1	97.61	0.7159
40	90.4	19	2.46	12.3	543.7	97.61	0.7193
63	142	19	3.09	15.4	856.4	153.73	0.4567
100	226	37	2.79	19.5	1362.6	244.02	0.2884
125	282	37	3.12	21.8	1703.2	305.02	0.2307
160	362	37	3.53	24.7	2180.1	390.43	0.1803
200	452	37	3.94	27.6	2725.1	488.03	0.1442
200	452	61	3.07	27.6	2729.1	488.03	0.1444

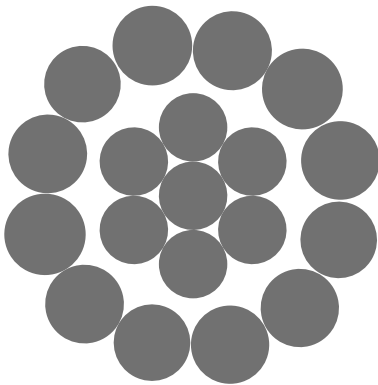
Technical Specification ASTM B416

Stranded aluminum-clad steel conductors (for information only)								
no. and size of wires	Nominal Diameter	Conductor diameter	Rated strength	Approx.weight		DC resistance at 20°C	Nominal Cross Section	
	in.	in.	lb	lb/1000ft	lb/mile		Ω/1000ft	cmils
37No.5AWG	0.1819	1.27	142800	2802	14800	0.04247	1225000	0.9619
37No.6AWG	0.1620	1.13	120200	2222	11730	0.05356	971300	0.7629
37No.7AWG	0.1443	1.01	100700	1762	9305	0.06754	770300	0.6050
37No.8AWG	0.1285	0.899	84200	1398	7379	0.08516	610900	0.4798
37No.9AWG	0.1144	0.801	66770	1108	5852	0.1074	484400	0.3805
37No.10AWG	0.1019	0.713	52950	879	4641	0.1354	384200	0.3017
19No.5AWG	0.1819	0.910	73350	1430	7552	0.08224	628900	0.4940
19No.6AWG	0.1620	0.810	61700	1134	5990	0.1037	498800	0.3917
19No.7AWG	0.1443	0.721	51730	899.5	4750	0.1308	395500	0.3107
19No.8AWG	0.1285	0.642	43240	713.5	3767	0.1649	313700	0.2464
19No.9AWG	0.1144	0.572	34290	565.8	2987	0.2079	248800	0.1954
19No.10AWG	0.1019	0.509	27190	448.7	2369	0.2622	197300	0.1549
7No.5AWG	0.1819	0.546	27030	524.9	2772	0.2264	231700	0.1820
7No.6AWG	0.1620	0.486	22730	416.3	2198	0.2803	183800	0.1443
7No.7AWG	0.1443	0.433	19060	330.0	1743	0.3535	145700	0.1145
7No.8AWG	0.1285	0.385	15930	261.8	1382	0.4458	115600	0.09077
7No.9AWG	0.1144	0.343	12630	207.6	1096	0.5621	91650	0.07198
7No.10AWG	0.1019	0.306	10020	164.7	869.4	0.7088	72680	0.05708
7No.11AWG	0.0907	0.272	7945	130.6	689.4	0.8938	57590	0.04523
7No.12AWG	0.0808	0.242	6301	103.6	546.8	1.127	45710	0.03590
3No.5AWG	0.1819	0.392	12230	224.5	1186.0	0.5177	99310	0.07800
3No.6AWG	0.1620	0.349	10280	178.1	940.2	0.6528	78750	0.06185
3No.7AWG	0.1443	0.311	8621	141.2	745.6	0.8232	62450	0.04905
3No.8AWG	0.1285	0.277	7206	112.0	591.3	1.038	49530	0.03890
3No.9AWG	0.1144	0.247	5715	88.81	468.9	1.309	39280	0.03085
3No.10AWG	0.1019	0.220	4532	70.43	371.8	1.651	31150	0.02446

High Voltage-Galvanized steel wire



7pieces of galvanized steel wire



19pieces of galvanized steel wire



RoHS

It is a power transmission line twisted by galvanized steel wire and is generally used as ground wire in overhead lines.

Features

- Simple structure
- Effective -corrosion resistance of galvanized coating
- Faster construction method
- Good reliability

Applications

Generally used for load-bearing cables, pull cables, reinforced core, ground wire, etc.



MAX70°C

MAX200°C

Structure Parameters

Technical Specification IEC 61089

Physical Properties of Zinc-Coated Steel Overhead Ground Wire Strand						
Nominal Diameter of Strand, in. [mm]	Number of Wires in Strand	Nominal Diameter of Coated Wire in Strand, in. [mm]A	Approximate Weight of Strand, lb/1000 ft [kg/km]	Minimum Breaking Strength of Strand, lbf [kN]		
				High-Strength Grade	Extra-High-Strength Grade	Utilities Grade
5/16 [7.94]	3	0.145 [3.68]	171 [255]	...	...	6500 [28.9]
5/16 [7.94]	7	0.104 [2.64]	205 [305]	8000 [35.6]	11 200 [49.8]	...
3/8 [9.52]	7	0.120 [3.05]	273 [407]	10 800 [48.0]	15 400 [68.4]	11 500 [51.2]
7/16 [11.11]	7	0.145 [3.68]	399 [595]	14 500 [64.5]	20 800 [92.5]	...
1/2 [12.7]	7	0.165 [4.19]	517 [770]	18 800 [83.6]	26 900 [119.6]	...

Technical Specification IEC 61089

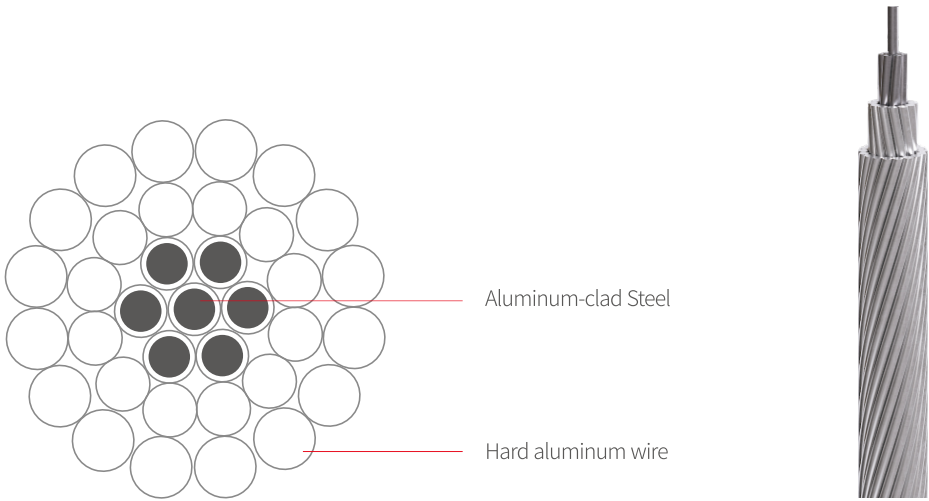
Date for type S1A conductor							
Code number	Size of conductor	Structure	Diameter		Approx.weight	Rated strength	DC resistance at 20°C
	mm²	No.	wire	conductor			
			mm	mm	kg/km	kN	Ω/km
4	27.1	7	2.22	6.66	213.3	36.3	7.1445
6.3	42.7	7	2.79	8.36	335.9	55.9	4.5362
10	67.8	7	3.51	10.53	533.2	87.4	2.8578
12.5	84.7	7	3.93	11.78	666.5	109.3	2.2862
16	108.4	7	4.44	13.32	853.1	139.9	1.7861
16	108.4	19	2.70	13.48	857.0	142.1	1.7944
25	169.4	19	3.37	16.85	1339.1	218.6	1.1484
40	271.1	19	4.26	21.31	2142.6	349.7	0.7177
40	271.1	37	3.05	21.38	2148.1	349.7	0.7196
63	427.0	37	3.83	26.83	3383.2	550.8	0.4569

Date for type S1B conductor							
Code number	Size of conductor	Structure	Diameter		Approx.weight	Rated strength	DC resistance at 20°C
	mm²	No.	wire	conductor			
			mm	mm	kg/km	kN	Ω/km
4	27.1	7	2.22	6.66	213.3	33.6	7.1445
6.3	42.7	7	2.79	8.36	335.9	51.7	4.5362
10	67.8	7	3.51	10.53	533.2	80.7	2.8578
12.5	84.7	7	3.93	11.78	666.5	100.8	2.2862
16	108.4	7	4.44	13.32	853.1	129.0	1.7861
16	108.4	19	2.70	13.48	857.0	131.2	1.7944
25	169.4	19	3.37	16.85	1339.1	201.6	1.1484
40	271.1	19	4.26	21.31	2142.6	322.6	0.7177
40	271.1	37	3.05	21.38	2148.1	322.6	0.7196
63	427.0	37	3.83	26.83	3383.2	508.1	0.4569

Date for type S2A conductor							
Code number	Size of conductor	Structure	Diameter		Approx.weight	Rated strength	DC resistance at 20°C
	mm²	No.	wire	conductor			
			mm	mm	kg/km	kN	Ω/km
4	27.1	7	2.22	6.66	213.3	33.6	7.1445
6.3	42.7	7	2.79	8.36	335.9	51.7	4.5362
10	67.8	7	3.51	10.53	533.2	80.7	2.8578
12.5	84.7	7	3.93	11.78	666.5	100.8	2.2862
16	108.4	7	4.44	13.32	853.1	129.0	1.7861
16	108.4	19	2.70	13.48	857.0	131.2	1.7944
25	169.4	19	3.37	16.85	1339.1	201.6	1.1484
40	271.1	19	4.26	21.31	2142.6	322.6	0.7177
40	271.1	37	3.05	21.38	2148.1	322.6	0.7196
63	427.0	37	3.83	26.83	3383.2	508.1	0.4569

			Date for type S3A conductor				
Code number	Size of conductor	Structure	Diameter		Approx.weight	Rated strength	DC resistance at 20°C
			wire	conductor			
	mm²	No.	mm	mm	kg/km	kN	Ω/km
4	27.1	7	2.22	6.66	213.3	43.9	7.1445
6.3	42.7	7	2.79	8.36	335.9	67.9	4.5362
10	67.8	7	3.51	10.53	533.2	103.0	2.8578
12.5	84.7	7	3.93	11.78	666.5	128.8	2.2862
16	108.4	7	4.44	13.32	853.1	164.8	1.7861
16	108.4	19	2.70	13.48	857.0	172.4	1.7944
25	169.4	19	3.37	16.85	1339.1	262.6	1.1484
40	271.1	19	4.26	21.31	2142.6	412.1	0.7177
40	271.1	37	3.05	21.38	2148.1	420.2	0.7196
63	427.0	37	3.83	26.83	3383.2	649.0	0.4569

High Voltage-Aluminum Conductors Aluminum-clad Steel Core Aluminum Wire



RoHS

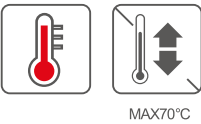
Aluminum-clad Steel Core Aluminum (ACSR/AW) is an overhead wire stranded by reinforced core made of aluminum-clad steel and rigid aluminum wire. Compared with ordinary steel core aluminum wires, ACSR boasts its 95% wire weight, 102-103% carrying capacity, 99%-98% sag and 94%-96% electric loss.

Features

- Good corrosion resistance
- Long life
- Simple structure
- Easy erection and maintenance
- Large transmission capacity

Applications

It applies to transmission lines at a variety of voltage levels and transmission lines requiring increasing aluminum and steel sectional ratio. It can also be applied to transmission lines in coastal areas, salt marshes and three, four level industrial pollution areas.



Structure Parameters

Technical Specification Type A IEC 61089

Code number	Structure		Calculated area			Rated strength kN	DC resistance at 20°C Ω/km	Overall diameter mm	Approx. weight kg/km
	Al	ACS	Al	Alloy	Total				
	No./mm	No./mm	mm ²	mm ²	mm ²				
16	6/1.81	1/1.81	15	2.57	17.6	5.94	1.8337	5.43	59.4
25	6/2.26	1/2.26	24	4.01	28.0	9.02	1.1472	6.78	92.7
40	6/2.85	1/2.85	38	6.38	44.4	14.16	0.7244	8.55	147.4
63	6/3.58	1/3.58	60	10.1	70.1	21.14	0.4588	10.70	232.6

100	6/4.51	1/4.51	96	16.0	112	31.80	0.2869	13.50	369.1
125	18/2.95	1/2.95	123	6.83	130	29.11	0.2309	14.80	384.0
125	26/2.43	7/1.89	121	19.6	141	44.67	0.2291	15.40	462.6
160	18/3.34	1/3.34	158	8.8	167	36.36	0.1798	16.70	492.2
160	26/2.74	7/2.13	153	24.9	178	55.99	0.1812	17.40	588.0
200	18/3.74	1/3.74	198	11.0	209	43.73	0.1434	18.70	617.2
200	26/3.07	7/2.39	192	31.4	223	69.44	0.1444	19.50	738.7
250	22/3.76	7/2.09	244	24.0	268	67.90	0.1153	21.30	831.9
250	26/3.43	7/2.67	240	39.2	279	86.67	0.1155	21.70	922.1
315	45/2.96	7/1.97	310	21.3	331	78.25	0.0916	23.70	995.9
315	26/3.85	7/2.99	303	49.2	352	107.41	0.0915	24.40	1160.2
400	45/3.34	7/2.22	394	27.1	421	97.57	0.0721	26.70	1267.7
400	54/3.02	7/3.02	387	50.1	437	123.99	0.0723	27.20	1400.5
450	45/3.54	7/2.36	443	30.6	474	107.61	0.0641	28.30	1425.2
450	54/3.21	7/3.21	437	56.7	494	140.09	0.0641	28.90	1582.3
500	45/3.73	7/2.49	492	34.1	526	119.58	0.0577	29.90	1582.9
500	54/3.38	7/3.38	485	62.8	548	154.06	0.0577	30.40	1754.4
560	45/3.95	7/2.63	551	38.0	589	133.87	0.0515	31.60	1773.8
560	54/3.58	19/2.15	544	69.0	613	169.75	0.0515	32.20	1959.9
630	45/4.19	7/2.79	620	42.8	663	150.64	0.0458	33.50	1996.0
630	54/3.79	19/2.28	609	77.6	687	190.56	0.0460	34.10	2198.3
710	45/4.44	7/2.96	697	48.2	745	169.28	0.0407	35.50	2241.9
710	54/4.03	19/2.42	689	87.4	776	215.08	0.0407	36.30	2483.4
800	72/3.74	7/2.49	791	34.1	825	167.46	0.0362	37.40	2410.8
800	84/3.45	7/3.45	785	65.4	850	206.79	0.0361	38.00	2604.2
800	54/4.28	19/2.57	777	98.6	876	242.58	0.0361	38.50	2801.0
900	72/3.97	7/2.65	891	38.6	930	188.93	0.0321	39.70	2717.7
900	84/3.66	7/3.66	884	73.7	958	222.42	0.0321	40.30	2930.8
1000	72/4.18	7/2.79	988	42.8	1031	209.45	0.0290	41.80	3012.9
1120	72/4.43	19/1.77	1110	46.8	1157	233.66	0.0258	44.30	3376.4
1120	84/4.08	19/2.45	1098	89.6	1188	283.20	0.0258	44.90	3631.2
1250	72/4.68	19/1.87	1239	52.2	1291	260.78	0.0231	46.80	3768.2
1250	84/4.31	19/2.59	1226	100	1326	316.20	0.0231	47.40	4053.0

Technical Specification Type A IEC 61089

Code number	Size of conductor	Structure		Calculated area			Rated strength	DC resistance at 20°C	Overall diameter	Approx. weight
		Al	ACS	Al	ACS	Total				
	cmil	No./mm	No./mm	mm²	mm²	mm²	kN	Ω/km	mm	kg/km
Thrasher	2312000	76/4.430	19/2.068	1171.42	63.82	1235.24	246	0.0243	45.78	3687
Kiwi	2167000	72/4.407	7/2.939	1098.27	47.49	1145.76	218	0.0260	44.07	3374
Bluebird	2156000	84/4.069	19/2.441	1092.31	88.92	1181.23	262	0.0258	44.76	3633
Chukar	1780000	84/3.698	19/2.220	902.20	73.54	975.75	221	0.0313	40.68	3001
Falcon	1590000	54/4.359	19/2.616	805.86	102.12	907.98	236	0.0345	39.23	2922
Lapwing	1590000	45/4.775	7/3.183	805.84	55.70	861.54	185	0.0350	38.20	2603
Parrot	1510500	54/4.247	19/2.548	764.98	96.88	861.86	224	0.0364	38.22	2774
Nuthatch	1510500	45/4.653	7/3.101	765.19	52.87	818.06	176	0.0369	37.22	2471
Plover	1431000	54/4.135	19/2.482	725.16	91.93	817.09	212	0.0384	37.22	2630
Bobolink	1431000	45/4.529	7/3.020	724.95	50.14	775.09	167	0.0389	36.23	2342
Martin	1351500	54/4.018	19/2.410	684.71	86.67	771.38	200	0.0406	36.16	2482
Dippe	1351500	45/4.402	7/2.934	684.86	47.33	732.19	158	0.0412	35.21	2212
Pheasant	1272000	54/3.899	19/2.339	644.75	81.64	726.39	188	0.0431	35.09	2338
Bittern	1272000	45/4.270	7/2.847	644.41	44.56	688.97	148	0.0438	34.16	2082
Skylark	1272000	36/4.775	1/4.775	644.67	17.91	662.58	114	0.0442	33.43	1897
Grackler	1192500	54/3.774	19/2.266	604.07	76.62	680.70	177	0.0460	33.97	2191

Bunting	1192500	45/4.135	7/2.756	604.30	41.76	646.06	139	0.0467	33.08	1952
Finch	1113000	54/3.647	19/2.189	564.10	71.50	635.61	167	0.0493	32.83	2046
Bluejay	1113000	45/3.995	7/2.664	564.08	39.02	603.09	130	0.0500	31.96	1822
Curlew	1033500	54/3.513	7/3.513	523.41	67.85	591.26	155	0.0528	31.62	1900
Ortolan	1033500	45/3.848	7/2.565	523.33	36.17	559.50	120	0.0539	30.78	1690
Tanager	1033500	36/4.303	1/4.303	523.52	14.54	538.07	93.5	0.0544	30.12	1540
Cardinal	954000	54/3.376	7/3.376	483.38	62.66	546.04	145	0.0572	30.38	1755
Rail	954000	45/3.698	7/2.466	483.32	33.43	516.76	113	0.0584	29.59	1561
Catbird	954000	36/4.135	1/4.135	483.44	13.43	496.87	86.4	0.0589	28.95	1422
Canary	900000	54/3.279	7/3.279	456.00	59.11	515.11	137	0.0607	29.51	1655
Ruddy	900000	45/3.592	7/2.395	456.01	31.54	487.55	107	0.0619	28.74	1473
Mallard	795000	30/4.135	19/2.482	402.87	91.93	494.80	165	0.0667	28.95	1729
Condor	795000	54/3.081	7/3.081	402.59	52.19	454.78	123	0.0687	27.73	1462
Tern	795000	45/3.376	7/2.250	402.82	27.83	430.65	94.5	0.0700	27.01	1301
Drake	795000	26/4.442	7/3.454	402.92	65.59	468.51	136	0.0679	28.13	1551
Cuckoo	795000	24/4.623	7/3.081	402.86	52.19	455.04	122	0.0687	27.74	1462
Coot	795000	36/3.774	1/3.774	402.71	11.19	413.90	72.3	0.0707	26.42	1185
Redwing	715500	30/3.922	19/2.352	362.43	82.55	444.98	148	0.0741	27.45	1555
Starling	715500	26/4.214	7/3.277	362.62	59.04	421.66	122	0.0755	26.69	1396
Stilt	715500	24/4.387	7/2.924	362.78	47.00	409.78	110	0.0762	26.32	1317
Gannet	666600	26/4.067	7/3.162	337.76	54.97	392.73	115	0.0810	25.75	1300
Flamingo	666600	24/4.234	7/2.822	337.91	43.78	381.69	103	0.0819	25.40	1227
Egret	636000	30/3.698	19/2.220	322.22	73.54	395.76	133	0.0834	25.89	1383
Scoter	636000	30/3.698	7/3.698	322.22	75.18	397.40	131	0.0832	25.89	1393
Grosbeak	636000	26/3.973	7/3.089	322.33	52.46	374.79	110	0.0849	25.16	1241
Rook	636000	24/4.135	7/2.756	322.29	41.76	364.05	97.8	0.0858	24.81	1170
Swift	636000	36/3.376	1/3.376	322.25	8.95	331.21	59.9	0.0883	23.63	948
Kingbird	636000	18/4.775	1/4.775	322.34	17.91	340.24	66.7	0.0875	23.88	1007
Teal	605000	30/3.607	19/2.164	306.55	69.88	376.43	127	0.0876	25.25	1315
Wood Duck	605000	30/3.607	7/3.607	306.55	71.53	378.08	127	0.0875	25.25	1325
Squab	605000	26/3.874	7/3.012	306.47	49.88	356.34	105	0.0893	24.53	1180
Peacock	605000	24/4.034	7/2.690	306.74	39.78	346.53	93.1	0.0902	24.21	1114
Eagle	556500	30/3.459	7/3.459	281.91	65.78	347.69	119	0.0951	24.21	1219
Dove	556500	26/3.716	7/2.891	281.98	45.95	327.93	97.8	0.0970	23.54	1086
Parakeet	556500	24/3.868	7/2.578	282.02	36.54	318.56	85.6	0.0981	23.21	1024
Osprey	556500	18/4.465	1/4.465	281.84	15.66	297.50	58.8	0.1001	22.33	881
Hen	477000	30/3.203	7/3.203	241.73	56.40	298.13	104	0.1109	22.42	1045
Hawk	477000	26/3.439	7/2.675	241.51	39.34	280.85	83.7	0.1133	21.78	930
Flicker	477000	24/3.581	7/2.388	241.72	31.35	273.07	74.5	0.1144	21.49	878
Pelican	477000	18/4.135	1/4.135	241.72	13.43	255.15	50.9	0.1167	20.68	755
Lark	397500	30/2.924	7/2.924	201.45	47.00	248.45	87.2	0.1331	20.47	871
Ibis	397500	26/3.139	7/2.441	201.21	32.76	233.97	69.7	0.1360	19.88	775
Brant	397500	24/3.269	7/2.179	201.43	26.10	227.54	62.1	0.1373	19.61	731
Chickadee	397500	18/3.774	1/3.774	201.36	11.19	212.54	42.7	0.1401	18.87	629
Oriole	336400	30/2.690	7/2.690	170.50	39.78	210.28	74.6	0.1573	18.83	737
Linnet	336400	26/2.888	7/2.245	170.32	27.71	198.03	59.8	0.1607	18.29	656
Merlin	336400	18/3.472	1/3.472	170.42	9.47	179.89	37.6	0.1655	17.36	533
Ostrich	300000	26/2.728	7/2.121	151.97	24.73	176.70	54.1	0.1801	17.28	585
Partridge	266800	26/2.573	7/2.002	135.19	22.04	157.22	48.1	0.2024	16.30	521
Waxwing	266800	18/3.091	1/3.091	135.07	7.50	142.57	30.0	0.2088	15.46	422
Penguin	211600	6/4.770	1/4.770	107.22	17.87	125.09	34.1	0.2525	14.31	412
Pigeon	167800	6/4.247	1/4.247	85.00	14.17	99.16	28.0	0.3185	12.74	327
Quail	133100	6/3.782	1/3.782	67.40	11.23	78.64	22.6	0.4017	11.35	259
Raven	105600	6/3.371	1/3.371	53.55	8.93	62.48	18.8	0.5056	10.11	206
Robin	83690	6/3.000	1/3.000	42.41	7.07	49.48	15.3	0.6384	9.00	163
Sparate	66360	7/2.474	1/3.299	33.65	8.55	42.20	15.6	0.7827	8.25	149
Sparrow	66360	6/2.672	1/2.672	33.64	5.61	39.25	12.3	0.8048	8.02	129
Swallow	52620	6/2.380	1/2.380	26.69	4.45	31.14	9.89	1.0143	7.14	103
Swanate	41740	7/1.961	1/2.614	21.14	5.37	26.51	10.2	1.2459	6.54	93
Swan	41740	6/2.118	1/2.118	21.14	3.52	24.66	7.93	1.2807	6.35	81

SUCCESSFUL CASES

- ① 1000kV Shanxi East-Nanyang-Jingmen Optical Cable Transformation Line of UHV AC pilot demonstration project 1000kV
- ② Ximeng - Shandong UHV AC Transmission Line Project
- ③ Xiangjiaba ~ Shanghai ± 800 kV HVDC transmission line project
- ④ Ning Dong in Ningxia - Shaoxing ± 800 kV HVDC transmission line project
- ⑤ Jiuquan - Hunan, North Shanxi - Nanjing ± 800 kV HVDC transmission line project
- ⑥ Hulunbeier (Yimin)-Liaoning (Mujia) ± 500 kV DC transmission line project
- ⑦ Inner Mongolia Ximeng-Taizhou in Jiangsu, Shanghai temple-
- ⑧ Shandong ± 800 kV HVDC transmission line project
- ⑨ Brazilian Amazon large-span OPGW project
- ⑩ Ethiopian power grid renovation OPGW project
- ⑪ India power grid J & K OPGW project

