

PRODUCT MANUAL

产品手册

江苏骏美兴和新材料有限公司
Jiangsu Junmei Xinghe New Material Co., Ltd.



COMPANY INTRODUCTION

公司简介

江苏骏美兴和新材料有限公司位于中国长江三角洲经济中心地带。是一个集科研、生产、经营为一体的股份制企业。公司北靠沪宁高速和京沪铁路，东南临太湖，西近京杭大运河，交通运输快捷方便。公司创建来，从无到有、从小到大，再由转至新、涅槃重生。骏美始终秉承“务实进取，追求卓越”的企业精神，鼓励员工和公司共同成长，从健全制度、再造流程、营造企业文化做起，为员工提供可持续发展的成长阶梯。我公司目前拥有资产9000多万元，占地17余万平方米，生产车间80000平方米，配套综合大楼10000多平方米，现有职工人数为260人，其中具有高级职称的有25人，中级职称的有50人，其它各类专业人才80多人。技术力量雄厚，经营规范，诚实信用，在同行业市场竞争中具有较高的知名度。质量体系符合GB/T 19001-2016 ISO9001：2015标准，环境体系符合GB/T24001-2004 ISO14001：2004标准。企业资质连年被评为AAA级企业。骏美本着以市场为导向、一切为顾客的理念，艰苦创业，以良好的产品质量和服务赢得了顾客的信赖。

我公司主要产品是铜包钢线系列、铝包钢系列及各种碳素弹簧钢丝。广泛应用于铁路、公路、电力、通信电子等行业。在全国用户中有较高的信誉，并远销国外。

欢迎各界人士莅临本公司参观指导及业务洽谈合作！



诚信为本

优质的产品 一流的技术服务
QUALITY PRODUCTS
FIRST-CLASS TECHNICAL SERVICES
HONESTY



Jiangsu Junmei Xinghe New Material Co., Ltd. is located in the economic center of Yangtze River Delta, which is a joint-stock enterprise with scientific research, manufacture and operation. It has a convenient transportation with Shanghai-Nanjing highway and Beijing-Shanghai railway to the north, Tai Lake to the southeast, Beijing-Hangzhou Grand Canal to the west.

Since founded, our company has rebuilt from nothing, from small to large scale. Junmei always upholds the enterprise spirit of "Honesty and Excellence, Pursuit of Progress" and encourages staffs to grow up with and company together by improving the management system, recon-structuring process and creating enterprise culture. What's more, it provides employees with sustainable development growth ladder.

At present, our company holds CNY 90,000,000 fixed assets and covers an area of more than 170,000 square meters, the workshop spreads over 80,000 square meters, and the comprehensive office is more than 10,000 square meters. We have 260 employees and 25 of them have senior technical titles, 50 of them have intermediate titles and more than 80 of them are other kinds of professional talents. We have high popularity in market competition by strong technical force, standardized operation and honesty credit. The quality system of our products conforms with GB/T19001-2008 ISO9001: 2008 standard and the environment system of our products conforms with GB/T24001-2004 ISO14001: 2004 standard. Our company has been appraised as AAA level for continuous several years.

Jiangsu Junmei Xinghe New Material Co., Ltd. wins the trust of customers by insisting on market orientation and the idea of "Customer is the center", with the three guiding principles: the Best Quality, the Best Service and Best Creditability.

Our main products including Copper Clad Steel Wire, Copper Clad Steel Strand Wire; Aluminum Clad Steel Wire, Aluminum Clad Steel Strand Wire, All Aluminum Conductor, ACSR/AW Wire and Spring Steel Wire which are widely used in railway, highway, electric power, communication and electronics and other industries. Our company enjoys high reputation among our customers in domestic and oversea. We export to lots of areas and countries including the Southeast Asia, Middle East, Sweden, Russia, Australia, Finland and etc.

We warmly welcome your visiting and it's our great honor that we can paint the blueprint of the cooperation and development!

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Aluminum Clad Steel Wire (AS)

铝包钢单线

剖面图

Illustration of cross section of AS wire



用途 Application

应用于铝绞线的加强芯，绞制铝包钢绞线，光缆复合架空地线。

Apply with intensify reinforced, and twist ACS, optical fiber ground wire(OPGW).

执行标准 Standards

GB/T17937, ASTM B415, ASTM B502, AS1222.2, IEC61232

规格型号及具体参数 Specification & Parameter

等级	型号	标称直径 Nominal Dia	最小抗拉强度 Min tensile strength	1%伸长时应力 Stress at 1.0% Extension min,	20°C时的电阻率 Resistivity at 20°C≤
Type		mm	Mpa	Mpa	Ωmm ² /m
LB14		2.25 < d ≤ 3.00	1590	1410	123.15 (14%IACS)
		3.00 < d ≤ 3.50	1550	1380	
		3.50 < d ≤ 4.75	1520	1340	
		4.75 < d ≤ 5.50	1500	1270	
LB20	A	1.24 < d ≤ 3.25	1340	1200	84.80 (20.3%IACS)
		3.25 < d ≤ 3.45	1310	1180	
		3.45 < d ≤ 3.65	1270	1140	
		3.65 < d ≤ 3.95	1250	1100	
		3.95 < d ≤ 4.10	1210	1100	
		4.10 < d ≤ 4.40	1180	1070	
		4.40 < d ≤ 4.60	1140	1030	
		4.60 < d ≤ 4.75	1100	1000	
	B	1.24 < d ≤ 5.50	1320	1100	
	LB23		2.50 < d ≤ 5.00	1220	
LB27		2.50 < d ≤ 5.00	1080	800	63.86(27%IACS)
LB30		2.50 < d ≤ 5.00	880	650	57.47(30%IACS)
LB35		2.50 < d ≤ 5.00	810	590	49.26(35%IACS)
LB40		2.50 < d ≤ 5.00	680	500	43.10(40%IACS)



铝包钢线物理常数 The Physical Constant Of AS Wire

导电率 Conductivity %LACS	电阻率 Resistivity at 20°CnΩ.ms	弹性模量 Modulus of Elasticity Gpa	线膨胀系数 Coefficient of Linear expansion K-1	铝层厚度 Coating thickness		铝钢截面比 Ratio of cross Sectional area
				平均厚度ATT	最后厚度MAT	
14	123.15	170	12.0×10-6	3.4	2.2	13:87
20.3	84.80	162	12.6×10-6	6.7	5.0	25:75
23	74.96	150	12.9×10-6	8.2	5.5	30:70
27	63.86	140	13.4×10-6	10.25	7.0	37:63
30	57.47	132	13.8×10-6	12.25	7.5	43:57
35	49.26	122	14.5×10-6	15.4	10.3	52:48
40	43.10	109	15.5×10-6	19.2	12.5	62:38

铝包钢线美国标准 American Standard Of Aluminum Clad Steel Wire

ASTM B415

Approximate Properties of Hard-drawn 20.3% Conductivity Aluminum-Clad steel Wire (20.3%导电率铝包钢线的性能)

标称直径 Nominal Dia		规格 Size	计算截面积 Calculated cross sectional area		最小抗拉强度 Min tensile strength		计算拉断力 Calculated breaking load	最小铝层厚度 Mincoating thickness	直流电阻 D.C resistance at 20°C≤		单位长度质量 Weight	
in.	mm	AWG	mm ²	cmils	Mpa	psi	kn	mm	Ω/1000ft	Ω/km	kg/km	lb/1000ft
0.2043	5.189	4	21.150	41740	1070	155000	22.60	0.259	1.222	4.009	139.32	93.63
0.1880	4.775	4	17.908	35342	1100	160000	19.70	0.239	1.443	4.735	118.01	79.31
0.1819	4.620	5	16.767	33090	1140	165000	18.10	0.231	1.541	5.056	110.48	74.25
0.1729	4.392	5	15.150	29899	1170	170000	17.73	0.220	1.706	5.597	99.84	67.10
0.1620	4.115	6	13.296	26240	1210	175000	16.00	0.206	1.943	6.375	87.61	58.88
0.1549	3.934	6	12.155	23989	1240	180000	15.07	0.197	2.126	6.976	80.10	53.83
0.1443	3.665	7	10.549	20820	1280	185000	13.50	0.183	2.450	8.038	69.47	46.69
0.1369	3.477	7	9.495	18739	1310	190000	12.44	0.174	2.722	8.931	62.57	42.05
0.1285	3.264	8	8.366	16510	1340	195000	11.20	0.163	3.089	10.135	55.15	37.03
0.1144	2.906	9	6.633	13090	1340	195000	8.92	0.145	3.896	12.783	43.70	29.37
0.1019	2.588	10	5.260	10380	1340	195000	7.07	0.129	4.912	16.116	34.66	23.29
0.0907	2.304	11	4.170	8230	1340	195000	5.61	0.115	6.194	20.323	27.48	18.47
0.0808	2.052	12	3.309	6530	1340	195000	4.45	0.103	7.811	25.628	21.80	14.65



铝包钢线美国标准 American Standard Of Aluminum Clad Steel Wire

ASTM B415

Approximate Properties of Hard-drawn 27% Conductivity Aluminum-Clad steel Wire (27%导电率铝包钢线的性能)												
标称直径 Nominal Dia		规格 Size	计算截面积 Calculated cross sectional area		最小抗拉强度 Min tensile strength		计算拉断力 Calculated breaking load	最小铝层厚度 Mincoating thickness	直流电阻 D.C resistance at 20°Cs		单位长度质量 Weight	
in.	mm	AWG	mm ²	cmils	Mpa	psi	kn	mm	Ω/1000ft	Ω/km	kg/km	lb/1000ft
0.2043	5.189	4	21.150	41740	862	125000	18.20	0.363	0.920	3.019	124.99	84.00
0.1880	4.775	4	17.908	35342	889	129000	15.92	0.334	1.087	3.566	105.83	71.12
0.1819	4.620	5	16.767	33090	917	133000	15.40	0.323	1.161	3.809	99.09	66.59
0.1729	4.392	5	15.150	29899	945	137000	14.32	0.307	1.285	4.215	89.54	60.17
0.1620	4.115	6	13.296	26240	972	141000	12.90	0.288	1.464	4.803	78.57	52.80
0.1549	3.934	6	12.155	23989	1000	145000	12.16	0.275	1.601	5.254	71.84	48.28
0.1443	3.665	7	10.549	20820	1034	150000	10.90	0.257	1.845	6.053	62.33	41.89
0.1369	3.477	7	9.495	18739	1062	154000	10.08	0.243	2.050	6.726	56.12	37.71
0.1285	3.264	8	8.366	16510	1076	156000	9.00	0.228	2.326	7.632	49.43	33.22
0.1144	2.906	9	6.633	13090	1076	156000	7.13	0.203	2.934	9.626	39.19	26.34
0.1019	2.588	10	5.260	10380	1076	156000	5.66	0.181	3.700	12.140	31.08	20.89
0.0907	2.304	11	4.170	8230	1076	156000	4.48	0.161	4.667	15.312	24.63	16.55
0.0808	2.052	12	3.309	6530	1076	156000	3.56	0.144	5.882	19.299	19.55	13.14

铝包钢线美国标准 American Standard Of Aluminum Clad Steel Wire

ASTM B415

Approximate Properties of Hard-drawn 30% Conductivity Aluminum-Clad steel Wire (30%导电率铝包钢线的性能)												
标称直径 Nominal Dia		规格 Size	计算截面积 Calculated cross sectional area		最小抗拉强度 Min tensile strength		计算拉断力 Calculated breaking load	最小铝层厚度 Mincoating thickness	直流电阻 D.C resistance at 20°Cs		单位长度质量 Weight	
in.	mm	AWG	mm ²	cmils	Mpa	psi	kn	mm	Ω/1000ft	Ω/km	kg/km	lb/1000ft
0.2043	5.189	4	21.150	41740	703	102000	14.90	0.389	0.828	2.717	118.64	79.73
0.1880	4.775	4	17.908	35342	731	106000	13.09	0.358	0.978	3.209	100.46	67.51
0.1819	4.620	5	16.767	33090	758	110000	12.70	0.347	1.045	3.429	94.06	63.21
0.1729	4.392	5	15.150	29899	786	114000	11.91	0.329	1.156	3.793	84.99	57.12
0.1620	4.115	6	13.296	26240	786	118000	10.50	0.309	1.317	4.321	74.59	50.13
0.1549	3.934	6	12.155	23989	814	122000	9.89	0.295	1.441	4.728	68.19	45.83
0.1443	3.665	7	10.549	20820	841	126000	8.87	0.275	1.660	5.446	59.18	39.77
0.1369	3.477	7	9.495	18739	869	128000	8.25	0.261	1.845	6.053	53.27	35.80
0.1285	3.264	8	8.366	16510	883	128000	7.38	0.245	2.094	6.870	46.95	31.55
0.1144	2.906	9	6.633	13090	883	128000	5.85	0.218	2.642	8.668	37.20	25.00
0.1019	2.588	10	5.260	10380	883	128000	4.47	0.194	3.329	10.922	29.52	19.84
0.0907	2.304	11	4.170	8230	883	128000	3.68	0.173	4.203	13.79	23.38	15.71
0.0808	2.052	12	3.309	6530	883	128000	2.92	0.154	5.295	17.373	18.57	12.48



铝包钢线美国标准 American Standard Of Aluminum Clad Steel Wire

ASTM B415

Approximate Properties of Hard-drawn 40% Conductivity Aluminum-Clad steel Wire (40%导电率铝包钢线的性能)

标称直径 Nominal Dia		规格 Size	计算截面积 Calculated cross sectional area		最小抗拉强度 Min tensile strength		计算拉断力 Calculated breaking load	最小铝层厚度 Mincoating thickness	直流电阻 D.C resistance at 20°C≤		单位长度质量 Weight	
in.	mm	AWG	mm ²	cmils	Mpa	psi	kn	mm	Ω/1000ft	Ω/km	kg/km	lb/1000ft
0.2043	5.189	4	21.150	41740	552	80000	11.70	0.649	0.621	2.038	98.10	65.93
0.1880	4.775	4	17.908	35342	579	84000	10.37	0.597	0.734	2.407	83.09	55.84
0.1819	4.620	5	16.767	33090	607	88000	10.20	0.578	0.784	2.572	77.78	52.27
0.1729	4.392	5	15.150	29899	634	92000	9.61	0.549	0.867	2.845	70.30	47.24
0.1620	4.115	6	13.296	26240	662	96000	8.80	0.514	0.988	3.242	61.66	41.44
0.1549	3.934	6	12.155	23989	676	96000	8.22	0.492	1.081	3.546	56.40	37.90
0.1443	3.665	7	10.549	20820	676	98000	7.13	0.458	1.245	4.085	48.93	32.88
0.1369	3.477	7	9.495	18739	686	98000	6.51	0.435	1.383	4.539	44.06	29.61
0.1285	3.264	8	8.366	16510	686	99500	5.74	0.408	1.571	5.154	38.81	26.08
0.1144	2.906	9	6.633	13090	686	99500	4.55	0.363	1.981	6.500	30.77	20.68
0.1019	2.588	10	5.260	10380	686	99500	3.61	0.323	2.498	8.196	24.40	16.40
0.0907	2.304	11	4.170	8230	686	99500	2.86	0.288	3.151	10.338	19.33	12.99
0.0808	2.052	12	3.309	6530	686	99500	2.27	0.257	3.971	13.029	15.36	10.32

铝包钢线澳大利亚标准 Australia Standard Of Aluminum Clad Steel Wire

AS1222.2

直径 Diameter			截面积 Cross section	单位长度质量 Unit length Weight	最小拉断力 Min breaking load	最小抗拉强度 Min tensile Strength	20°C时的电阻率 Resistivity at 20°C
标称 Nominal	最大 Max	最小 Min					
			mm ²	kg/km	kN	MPa	Ω/km s
2.75	2.791	2.709	5.940	39.1	7.96	1340	14.3
3.00	3.045	2.955	7.069	46.6	9.47	1340	12.0
3.25	3.299	3.201	8.296	54.7	11.1	1340	10.2
3.75	3.806	3.694	11.04	72.8	13.8	1250	7.70
4.25	4.313	4.186	14.19	93.5	16.7	1180	5.98



Aluminum Clad Steel Strand Wire

铝包钢绞线

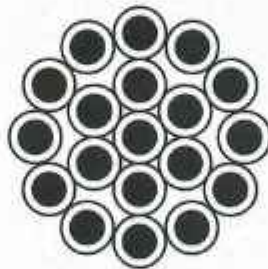
Profile >>
剖面图



3AS



7AS



19AS



37AS

用途 Application

用于大跨越输电线，良导体避雷地线，防冰雪导线，倍容导线，自阻尼导线，电气化铁路接触网承力索。

ACS used for over head electrical conductors, extra high voltage overhead, spon transmit electricity, ect.,

执行标准 Standards

GB/T1179, ASTM B416, AS1222.2, IEC61089



规格型号及具体参数 Specification & Parameter

型号及规格 The Structures And Features Of As Strand Wire (Jlb20a)

企标

标称截面 Nominal Sectional Area	结构 根数/直径 Structure No/Dia	计算截面 Calculated Area	外径 Overall Dia	直流电阻 D.C. Resistance ≤at 20°C	计算拉力 Calculated Breaking Load	计算质量 Calculated Weight
mm ²	n/mm	mm ²	mm	Ω/km	kN	kg/km
30	7/2.30	29.08	6.90	2.954	38.97	194.2
35	7/2.50	34.36	7.50	2.500	46.04	229.4
45	7/2.90	46.24	8.70	1.858	61.96	308.7
50	7/3.00	49.48	9.00	1.736	66.30	330.3
55	7/3.20	56.30	9.60	1.526	75.44	375.9
65	7/3.50	67.35	10.50	1.276	85.53	449.6
70	7/3.60	71.25	10.80	1.206	90.49	475.7
80	7/3.80	79.39	11.40	1.082	99.24	530.0
	19/2.30	78.94	11.50	1.094	105.78	529.6
95	19/2.50	93.27	12.50	0.927	124.98	625.7
100	19/2.60	100.88	13.00	0.856	135.17	676.7
120	19/2.85	121.21	14.25	0.712	162.42	813.1
150	19/3.15	148.07	15.75	0.583	198.41	993.3
180	19/3.50	182.80	17.50	0.472	232.16	1226.3
210	19/3.75	209.85	18.75	0.412	262.31	1407.8
240	19/4.00	238.76	20.00	0.362	288.90	1601.8
300	37/3.20	297.57	22.40	0.291	398.75	2001.0
400	37/3.70	397.83	25.90	0.217	497.28	2675.2
465	37/4.00	464.96	28.00	0.186	562.60	3126.6
510	37/4.20	512.61	29.40	0.169	604.88	3447.0



型号及规格 Structures of AS Strand Wire (JLB23)

企标

标称截面 Nominal Sectional Area	结构 根数/直径 Structure No/Dia	计算截面 Calculated Area	外径 Overall Dia	直流电阻 D.C. Resistance ≤at 20°C	计算拉断力 Calculated Breaking Load	计算质量 Calculated Weight
mm ²	n/mm	mm ²	mm	Ω/km	kN	kg/km
30	7/2.30	29.08	6.90	2.611	35.48	184.8
35	7/2.50	34.36	7.50	2.210	41.92	218.3
45	7/2.90	46.24	8.70	1.642	56.41	293.7
50	7/3.00	49.48	9.00	1.535	60.37	314.3
55	7/3.20	56.30	9.60	1.349	68.68	357.6
65	7/3.50	67.35	10.50	1.127	82.16	427.8
70	7/3.60	71.25	10.80	1.065	86.93	452.6
80	7/3.80	79.39	11.40	0.957	96.85	504.3
90	19/4.00	87.96	12.00	0.846	107.32	558.7
95	19/2.50	93.27	12.50	0.818	113.78	595.4
100	19/2.60	100.88	13.00	0.756	123.07	644.0
120	19/2.85	121.21	14.25	0.629	147.87	773.7
150	19/3.15	148.07	15.75	0.515	180.64	945.1
180	19/3.50	182.80	17.50	0.418	223.02	1166.8
210	19/3.75	209.85	18.75	0.363	256.02	1339.5
240	19/4.00	238.76	20.00	0.319	291.29	1524.0
300	37/3.20	297.57	22.40	0.257	363.04	1903.9
400	37/3.70	397.83	25.90	0.192	485.35	2545.3
465	37/4.00	464.96	28.00	0.165	567.25	2974.8
510	37/4.20	512.61	29.40	0.149	625.39	3279.6



型号及规格 The Structures And Features Of AS Strand Wire (JLB27)

企标

标称截面 Nominal Sectional Area	结构 根数/直径 Structure No/Dia	计算截面 Calculated Area	外径 Overall Dia	直流电阻 D.C. Resistance ≤at 20°C	计算拉断力 Calculated Breaking Load	计算质量 Calculated Weight
mm ²	n/mm	mm ²	mm	Ω/km	kN	kg/km
30	7/2.30	29.08	6.90	2.225	31.41	174.1
35	7/2.50	34.36	7.50	1.883	37.11	205.7
45	7/2.90	46.24	8.70	1.399	49.94	276.9
50	7/3.00	49.48	9.00	1.308	53.44	296.3
55	7/3.20	56.30	9.60	1.150	60.80	337.1
65	7/3.50	67.35	10.50	0.961	72.74	403.3
70	7/3.60	71.25	10.80	0.908	76.95	426.6
	7/3.80	79.39	11.40	0.815	85.74	475.4
80	19/2.30	78.94	11.50	0.824	85.26	475.0
90	7/4.00	87.96	12.00	0.736	95.00	526.7
95	19/2.50	93.27	12.50	0.697	100.73	561.2
100	19/2.60	100.88	13.00	0.645	108.95	607.0
120	19/2.85	121.21	14.25	0.536	130.91	729.3
125	19/2.90	125.50	14.50	0.518	135.54	755.1
150	19/3.15	148.07	15.75	0.439	159.91	890.8
180	19/3.50	182.80	17.50	0.355	197.42	1099.8
210	19/3.75	209.85	18.75	0.310	226.64	1262.6
240	19/4.00	238.76	20.00	0.272	257.86	1436.5
300	37/3.20	297.57	22.40	0.219	321.38	1794.5
400	37/3.70	397.83	25.90	0.164	429.66	2399.2
465	37/4.00	464.96	28.00	0.140	502.16	2804.0
510	37/4.20	512.61	29.40	0.127	553.62	3091.3



型号及规格 The Structures And Features Of AS Strand Wire (JLB30)

企标

标称截面 Nominal Sectional Area	结构 根数/直径 Structure No/Dia	计算截面 Calculated Area	外径 Overall Dia	直流电阻 D.C. Resistance ≤at 20°C	计算拉断力 Calculated Breaking Load	计算质量 Calculated Weight
mm ²	n/mm	mm ²	mm	Ω/km	kN	kg/km
35	7/2.50	34.36	7.50	1.694	30.24	195.3
45	7/2.90	46.24	8.70	1.259	40.69	262.8
50	7/3.00	49.48	9.00	1.177	43.54	281.3
55	7/3.20	56.30	9.60	1.034	49.54	320.0
65	7/3.50	67.35	10.50	0.865	59.27	382.8
70	7/3.60	71.25	10.80	0.818	62.70	404.9
80	7/3.80	79.39	11.40	0.733	69.86	451.2
90	19/4.00	87.96	12.00	0.662	77.40	499.9
95	19/2.50	93.27	12.50	0.628	82.08	532.7
100	19/2.60	100.88	13.00	0.580	88.77	576.2
120	19/2.85	121.21	14.25	0.483	106.66	692.3
125	19/2.90	125.50	14.50	0.466	110.44	716.8
150	19/3.15	148.07	15.75	0.395	130.30	845.6
180	19/3.50	182.80	17.50	0.320	160.86	1044.1
210	19/3.75	209.85	18.75	0.279	184.67	1198.5
240	19/4.00	238.76	20.00	0.245	210.11	1363.6
300	37/3.20	297.57	22.40	0.197	261.86	1703.6
400	37/3.70	397.83	25.90	0.147	350.09	2277.4
465	37/4.00	464.96	28.00	0.126	409.16	2661.7
510	37/4.20	512.61	29.40	0.114	451.11	2934.5



型号及规格 The Structures And Features Of AS Strand Wire (JLB35)

企标

标称截面 Nominal Sectional Area	结构 根数/直径 Structure No/Dia	计算截面 Calculated Area	外径 Overall Dia	直流电阻 D.C. Resistance ≤at 20°C	计算拉断力 Calculated Breaking Load	计算质量 Calculated Weight
mm ²	n/mm	mm ²	mm	Ω/km	kN	kg/km
35	7/2.50	34.36	7.50	1.452	27.83	179.3
45	7/2.90	46.24	8.70	1.079	37.45	241.3
50	7/3.00	49.48	9.00	1.008	40.08	258.2
55	7/3.20	56.30	9.60	0.887	45.60	293.7
65	7/3.50	67.35	10.50	0.741	54.55	351.4
70	7/3.60	71.25	10.80	0.700	57.71	371.7
80	7/3.80	79.39	11.40	0.629	64.30	414.2
90	19/4.00	87.96	12.00	0.568	71.25	458.9
100	19/2.60	100.88	13.00	0.497	81.71	528.9
120	19/2.85	121.21	14.25	0.414	98.18	635.5
125	19/2.90	125.50	14.50	0.400	101.65	658.0
150	19/3.15	148.07	15.75	0.339	119.94	776.3
180	19/3.50	182.80	17.50	0.274	148.07	958.4
210	19/3.75	209.85	18.75	0.239	169.98	1100.3
240	19/4.00	238.76	20.00	0.210	193.40	1251.8
300	37/3.20	297.57	22.40	0.169	241.03	1563.7
400	37/3.70	397.83	25.90	0.126	322.24	2090.6
465	37/4.00	464.96	28.00	0.108	376.61	2443.4
510	37/4.20	512.61	29.40	0.098	415.22	2693.8



型号及规格 The Structures And Features Of AS Strand Wire (JLB40)

企标

标称截面 Nominal Sectional Area	结构 根数/直径 Structure No/Dia	计算截面 Calculated Area	外径 Overall Dia	直流电阻 D.C. Resistance ≤at 20°C	计算拉断力 Calculated Breaking Load	计算质量 Calculated Weight
mm ²	n/mm	mm ²	mm	Ω/km	kN	kg/km
25	3/3.20	24.13	6.90	1.800	16.41	112.9
30	3/3.50	28.86	7.55	1.505	19.62	135.0
50	7/3.00	49.48	9.00	0.883	33.65	232.6
55	7/3.20	56.30	9.60	0.775	38.29	264.7
65	7/3.50	67.35	10.50	0.648	45.80	316.6
70	7/3.60	71.25	10.80	0.613	48.45	334.9
80	7/3.80	79.39	11.40	0.550	53.99	373.2
90	7/4.00	87.96	12.00	0.497	59.81	413.5
95	7/4.16	95.14	12.50	0.458	64.69	447.3
100	19/2.60	100.88	13.00	0.435	68.60	476.5
120	19/2.85	121.21	14.25	0.362	82.42	572.6
150	19/3.15	148.07	15.75	0.296	100.69	699.4
180	19/3.50	182.80	17.50	0.240	124.30	863.5
210	19/3.75	209.85	18.75	0.209	142.70	991.2
240	19/4.00	238.76	20.00	0.184	162.36	1127.9
300	37/3.20	297.57	22.40	0.148	202.35	1408.9
400	37/3.70	397.83	25.90	0.111	270.52	1883.6
465	37/4.00	464.96	28.00	0.095	316.17	2201.5
510	37/4.20	512.61	29.40	0.086	348.57	2427.1



铝包钢绞线美国标准 American Standard Of Aluminum Clad Steel Wire

ASTM B416

根数 /线规 NO /AWG	线径 Diameter		外径 Overall Diameter		拉断力 Breaking Strength		线性密度 Linear Density		直流电阻 D.C resistance ≤ at 20°C		标称截面 Nominal Sectional Area	
	mm	in.	mm	in.	kN	lb	kg/km	lb/1000ft	Ω/km	Ω/1000ft	mm ²	cmils
37/5	4.620	0.1819	32.258	1.27	635.42	142800	4169.8	2802	0.1393	0.04247	620.7	1225000
37/6	4.115	0.1620	28.702	1.13	534.86	120200	3306.7	2222	0.1757	0.05356	492.2	971300
37/7	3.665	0.1443	25.654	1.01	448.09	100700	2622.1	1762	0.2216	0.06754	390.3	770300
37/8	3.264	0.1285	22.835	0.899	374.67	84200	2080.4	1398	0.2794	0.08516	309.5	610900
37/9	2.906	0.1144	20.345	0.801	297.11	66770	1648.9	1108	0.3524	0.1074	245.5	484400
37/10	2.588	0.1019	18.11	0.713	235.61	52950	1308.1	879.0	0.4442	0.1354	194.6	384200
19/5	4.620	0.1819	23.114	0.910	326.39	73350	2128.1	1430	0.2698	0.08224	318.7	628900
19/6	4.115	0.1620	20.574	0.810	274.55	61700	1687.6	1134	0.3402	0.1037	252.7	498800
19/7	3.665	0.1443	18.313	0.721	230.18	51730	1338.6	899.5	0.4292	0.1308	200.4	395500
19/8	3.264	0.1285	16.307	0.642	192.41	43240	1061.8	713.5	0.541	0.1649	159.0	313700
19/9	2.906	0.1144	14.529	0.572	152.58	34290	842	565.8	0.6821	0.2079	126.1	248800
19/10	2.588	0.1019	12.927	0.509	120.99	27190	667.7	448.7	0.8603	0.2622	99.97	197300
7/5	4.620	0.1819	13.868	0.546	120.28	27030	781.1	524.9	0.7428	0.2264	117.4	231700
7/6	4.115	0.1620	12.344	0.486	101.14	22730	619.5	416.3	0.9197	0.2803	93.13	183800
7/7	3.665	0.1443	10.998	0.433	84.81	19060	491.1	330.0	1.1598	0.3535	73.83	145700
7/8	3.264	0.1285	9.779	0.385	70.88	15930	389.6	261.8	1.4627	0.4458	58.57	115600
7/9	2.906	0.1144	8.712	0.343	56.2	12630	308.9	207.6	1.8443	0.5621	46.44	91650
7/10	2.588	0.1019	7.724	0.306	44.59	10020	245.1	164.7	2.3256	0.7088	36.83	72680
7/11	2.464	0.0907	6.909	0.272	35.35	7945	194.4	130.6	2.9326	0.8938	29.18	57590
7/12	2.052	0.0808	6.147	0.242	28.04	6301	154.2	103.6	3.6977	1.127	23.16	45710
3/5	4.620	0.1819	9.957	0.392	54.42	12230	334.1	224.5	1.6986	0.5177	50.32	99310
3/6	4.115	0.1620	8.864	0.349	45.74	10280	265	178.1	2.1418	0.6528	39.9	78750
3/7	3.665	0.1443	7.899	0.311	38.36	8621	210.1	141.2	2.7009	0.8232	31.64	62450
3/8	3.264	0.1285	7.036	0.277	32.06	7206	166.7	112.0	3.4057	1.038	25.1	49530
3/9	2.906	0.1144	6.274	0.247	25.43	5715	132.2	88.81	4.2948	1.309	19.9	39280
3/10	2.588	0.1019	5.588	0.220	20.17	4532	104.8	70.43	5.4169	1.651	15.78	31150



铝包钢绞线澳大利亚标准 Australia Standard Of As Strand Wire

AS1222.2

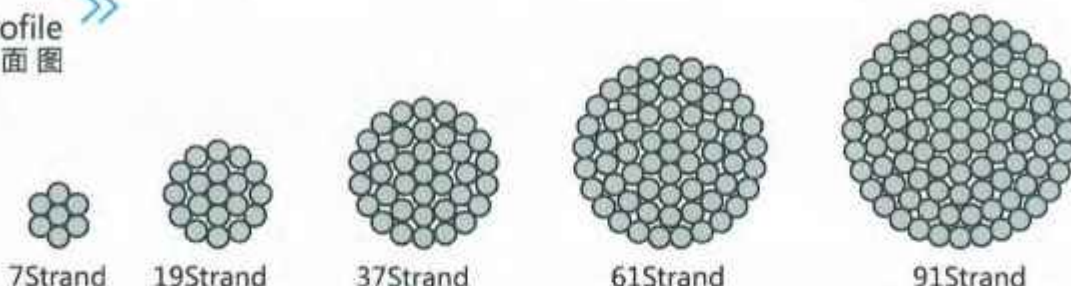
绞线结构 Sstructural	外径 Overall Dia	截面积 Cross-Section	单位长度质量 Weight	计算拉断力 Calculated breaking load	直流电阻 D.Cresistance
mm	mm	mm ²	kg/km	kN	Ω/kms
3/2.75	5.93	17.82	118	22.7	4.80
3/3.00	6.47	21.21	141	27.0	4.02
3/3.25	7.00	24.79	165	31.6	3.42
3/3.75	8.08	33.12	220	39.3	2.58
7/2.75	8.25	41.58	277	50.1	2.06
7/3.00	9.00	49.48	330	59.7	1.73
7/3.25	9.75	58.07	387	69.9	1.47
7/3.75	11.3	77.28	515	86.9	1.11
7/4.25	12.8	99.33	662	105	0.864
19/2.75	13.8	112.9	755	136	0.764
19/3.00	15.0	134.3	899	162	0.642
19/3.25	16.3	157.6	1060	189	0.545
19/3.75	18.8	209.8	1410	236	0.411
19/4.25	21.3	269.6	1800	286	0.320



All Aluminium Conductors

全铝绞线

Profile >>
剖面图



用途 Application

此产品广泛用于各种电压级的架空输配电线路中。

Application: AAC conductors to be used mainly for overhead distribution lines, overhead feeders and buses.

规格型号及具体参数 Specification & Parameter

铝绞线 All Aluminium Conductors (AAC)

GB/T1179

标称截面 Nominal Cross-Sectional Area	结构 根数/直径 Structure No/Dia	计算截面 Calculated Cross-Section Area	标称直径 Nominal Dia	直流电阻 D.C. Resistance at20°C	计算拉断力 Calculated Breaking Load	单位长度 Calculated Weight
mm ²	n/mm	mm ²	mm ²	Ω/km	kN	kg/km
16	7/1.70	15.89	5.10	1.802	2.840	43.5
25	7/2.15	58.41	6.45	1.127	4.355	69.9
35	7/2.50	34.36	7.50	0.8332	5.760	94.1
50	7/3.00	49.48	9.00	0.5786	7.930	135.5
70	7/3.60	71.25	10.80	0.4018	10.950	195.1
95	7/4.16	95.14	12.48	0.3009	14.450	260.5
120	19/2.85	121.21	14.25	0.2373	19.420	333.5
150	19/3.15	148.07	15.75	0.1943	23.310	407.4
185	19/3.50	182.80	17.50	0.1574	28.440	503.0
210	19/3.75	209.85	18.75	0.1371	32.260	577.4
240	19/4.00	238.76	20.22	0.1205	36.260	656.9
300	37/3.20	297.57	22.40	0.09689	46.850	820.4
400	37/3.70	397.83	25.90	0.07247	61.150	1097
500	37/4.16	502.90	29.12	0.05733	76.370	1387
630	61/3.63	631.30	32.67	0.04577	91.940	1744
800	61/4.10	805.36	36.90	0.03588	115.900	2225



Aluminum Conductor, steel Reinforced (ACSR)

钢芯铝绞线

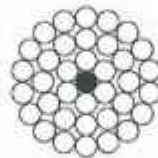
Profile >>
剖面图



6AL/1ST



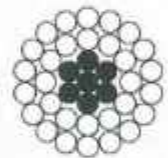
18AL/1ST



36AL/1ST



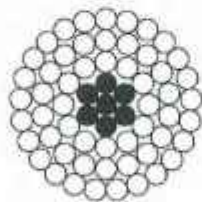
12AL/7ST



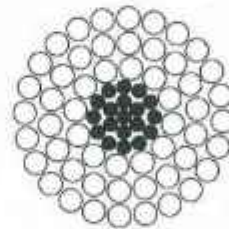
30AL/7ST



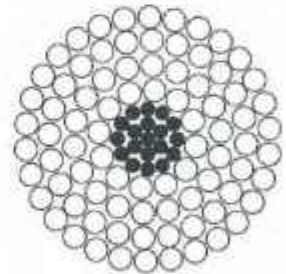
45AL/7ST



54AL/7ST



54AL/19ST



84AL/19ST

用途 Application

主要用于架空输配电线路。

The ACSR/AW conductors which could with stand high tensile load to be used mainly for overhead transmission lines, overhead distribution lines.

执行标准 Standards

GB/T1179, ASTM B232

规格型号及具体参数 Specification & Parameter

铝绞线 All Aluminium Condrctors (AAC)

GB/T1179

标称截面 Nominal Cross-Sectional Area	结构根数/直径 Structure NO/Dia N/mm		计算截面 mm ² Calculated area			外径 Overall Dia	直流电阻 20°C D.C. Resistance	额定拉断力 Calculated breaking load	单位长度 Calculated Weigh
	铝Al	钢St	铝Al	钢St	总计Total				
mm ²						mm	Ω/km≤	kN	kg/km
10/5	6/1.50	1/1.50	10.60	1.77	12.37	4.50	2.7062	4.14	42.8
16/3	6/1.85	1/1.85	16.13	2.69	18.82	5.55	1.7791	6.13	65.1
35/6	6/2.72	1/2.72	34.86	5.81	40.67	8.16	0.8230	12.55	140.8
50/8	6/3.20	1/3.20	48.25	8.04	56.29	9.60	0.5946	16.81	194.8
50/30	12/2.32	7/2.32	50.73	29.59	80.32	11.60	0.5693	42.61	371.1
70/10	6/3.80	1/3.80	68.05	11.34	79.39	11.40	0.4217	23.36	274.8
70/40	12/2.72	7/2.72	69.73	40.67	110.40	13.60	0.4141	58.22	510.2
95/15	26/2.15	7/1.67	94.39	15.33	109.72	13.60	0.3059	34.93	380.2
95/20	7/4.16	7/1.85	95.14	18.82	113.96	13.90	0.3020	37.24	408.2
95/55	12/3.20	7/3.20	96.51	56.30	152.81	16.00	0.2992	77.85	706.1
120/7	18/2.90	1/2.90	118.89	6.61	125.50	14.50	0.2422	27.74	378.5
120/20	26/2.38	7/1.85	115.67	18.82	134.49	15.10	0.2496	42.26	466.1
120/25	7/4.72	7/2.10	122.48	24.25	146.73	15.70	0.2346	47.96	525.7
120/70	12/3.60	7/3.60	122.15	71.25	193.40	18.00	0.2364	97.92	893.7
150/8	18/3.20	1/3.20	144.73	8.04	152.80	16.00	0.1990	32.73	460.9
150/20	24/2.78	7/1.85	145.68	18.82	164.50	16.70	0.1981	46.78	548.5
150/25	26/2.70	1/2.10	148.86	24.25	173.11	17.10	0.1940	53.67	600.1
150/35	30/2.50	7/2.50	148.26	34.36	181.62	17.50	0.1962	64.94	675.0
185/10	18/3.60	1/3.60	182.22	10.18	193.40	18.00	0.1572	40.51	583.3
185/25	24/3.15	7/2.10	187.04	24.25	211.29	18.90	0.1543	59.23	704.9
185/30	26/2.98	7/2.32	181.34	29.59	210.93	18.90	0.1592	64.56	731.4
185/45	30/2.80	7/2.80	184.73	43.10	227.83	19.60	0.1564	80.54	846.7
210/10	18/3.80	1/3.80	204.14	11.34	215.48	19.00	0.1411	45.14	649.9
210/25	24/3.33	7/2.22	209.02	27.10	236.12	20.00	0.1380	66.19	787.8
210/35	26/3.22	7/2.50	211.73	34.36	246.09	20.40	0.1364	74.11	852.5
210/50	30/2.98	7/2.98	209.24	48.82	258.06	20.90	0.1381	91.23	959.0
240/30	24/3.60	7/2.40	244.29	31.67	275.96	21.60	0.1181	75.19	920.7
240/40	36/3.42	7/2.66	238.85	38.90	277.75	21.70	0.1209	83.76	962.8
240/55	30/3.20	7/3.20	241.27	56.30	298.57	22.40	0.1198	101.74	1105.8
300/15	42/3.00	7/1.67	296.88	15.33	312.21	23.00	0.0973	68.41	938.7
300/20	45/2.93	7/1.95	303.42	20.91	324.33	23.40	0.0952	76.04	1000.8
300/25	48/2.85	7/2.22	306.21	27.10	333.31	23.80	0.0944	83.76	1057.0
300/40	24/3.99	7/2.66	300.09	38.90	338.99	23.90	0.0961	92.36	1131.0
300/50	16/3.83	7/2.98	299.54	48.82	348.36	24.30	0.0964	103.58	1207.7
300/70	30/3.60	7/3.60	305.36	71.25	376.61	25.20	0.0946	127.23	1399.6
400/20	42/3.51	7/1.95	406.40	20.91	427.31	26.90	0.0710	89.48	1284.3
400/25	45/3.33	7/2.22	391.91	27.10	419.01	26.60	0.0737	96.37	1293.5
400/35	48/3.22	7/2.50	390.88	34.36	425.24	26.80	0.0739	103.67	1347.5
400/65	26/4.42	7/3.44	398.94	65.06	464.00	28.00	0.0724	135.29	1608.7
400/95	30/4.16	19/2.50	407.75	93.27	501.02	29.10	0.0709	171.56	1856.7
500/45	48/3.60	7/2.80	488.58	43.10	531.68	30.00	0.0591	127.31	1685.5
630/55	48/4.12	7/3.20	639.92	56.30	696.22	34.30	0.0452	164.31	2206.4



Aluminum Conductor, Aluminum Clad Steel Reinforced (ACSR/AW)

铝包钢芯铝绞线

Profile >>
剖面图



6AL/1AS



4AL/3AS



3AL/4AS



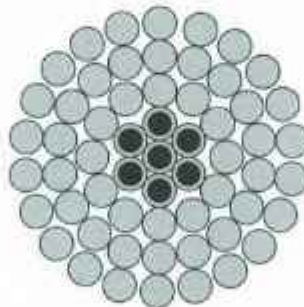
12AL/7AS



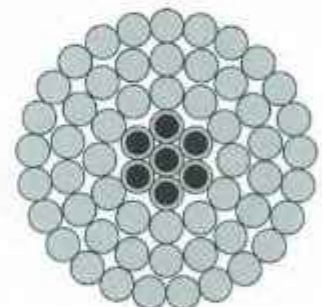
15AL/4ST



30AL/7AS



48AL/7AS



54AL/7AS

用途 Application

主要用于架空输配电线路。

The ACSR/AW conductors which could withstand high tensile load to be used mainly for overhead transmission lines, overhead distribution lines.

执行标准 Standards

GB/T 1179 ASTM B 549

规格型号及具体参数 Specification & Parameter

美国标准 American Standard

ASTM B 549

Code name 代号	导体 尺寸	结构 structure		计算截面mm ² Calculated Area		直径Dia mm		铝包钢芯 铝绞线 ACSR/AW kg/km	最小抗拉力 Min Tensile Strength kN
		Size	铝线 AL	铝包钢线 AS	铝线 AL	铝包钢线 AS	铝包钢芯铝绞线 ACSR/AW		
Thrasher	2312000	76/4.43	19/2.07	1172	63.94	45.79	10.35	3679	246
Kiwi	2167000	72/4.41	7/2.94	1098	47.52	44.10	8.82	3366	218
Bluebird	2156000	84/4.07	19/2.44	1092	88.84	44.76	12.20	3627	262
Chukar	1780000	84/3.70	19/2.22	902	73.54	40.70	11.10	2996	220
Falcon	1590000	54/4.36	19/2.62	806	102.43	39.26	13.10	2917	236
Lapwing	1590000	45/4.78	7/3.18	806	55.60	38.19	9.54	2598	186
Parrot	1510500	54/4.25	19/2.55	765	97.03	38.22	12.75	2768	224
Nuthatch	1510500	45/4.65	7/3.10	765	52.83	37.21	9.30	2467	177
Plover	1431000	54/4.14	19/2.48	725	91.78	37.24	12.40	2625	212
Drake	795000	26/4.44	7/3.45	403	65.44	28.15	10.35	1549	136
Cuckoo	795000	24/4.62	7/3.08	403	52.15	27.72	9.24	1460	122
Redwing	715500	30/3.92	19/2.35	363	82.41	27.43	11.75	1552	149
Starling	715500	26/4.21	7/3.28	363	59.15	26.68	9.84	1393	122
Stilt	715500	24/4.39	7/2.92	363	46.88	26.32	8.76	1314	110
Gannet	666600	26/4.07	7/3.16	338	54.90	25.76	9.48	1298	116
Flamingo	666600	24/4.23	7/2.82	338	43.72	25.38	8.46	1225	103
Swift	636000	36/3.78	1/3.38	322	8.97	23.66	3.38	946	61
Egret	636000	30/3.70	19/2.22	322	73.54	25.89	11.10	1381	133
Sooter	636000	30/3.70	7/3.70	322	75.26	25.90	11.10	1391	130
Grosbeak	636000	26/3.97	7/3.09	322	52.49	25.15	9.27	1238	110
Rook	636000	24/4.14	7/2.76	322	41.88	24.84	8.28	1168	98
Kingbird	636000	18/4.78	1/4.78	322	17.95	23.90	4.78	1006	67
Teal	605000	30/3.61	19/2.16	307	69.62	25.24	10.80	1314	127
Woodduck	605000	30/3.61	7/3.61	307	71.65	25.27	10.83	1323	126
Squab	605000	26/3.87	7/3.01	307	49.81	24.51	9.03	1177	105
Peacock	605000	24/4.03	7/2.69	307	39.78	24.19	8.07	1112	93
Eagle	556500	30/3.46	7/3.46	282	65.82	24.22	10.38	1217	119



美国标准 American Standard

ASTM B 549

Code name 代号	导体 尺寸	结构 structure		计算截面mm ² Calculated Area		直径Dia mm		铝包钢芯 铝绞线 ACSR/AW	最小抗拉力 Min Tensile Strength
		Size	铝线 AL	铝包钢线 AS	铝线 AL	铝包钢线 AS	铝包钢芯铝绞线 ACSR/AW	铝包钢线 (芯线) AS	kg/km
Dove	556500	26/3.72	7/2.89	282	45.92	23.55	8.67	1083	97
Parakeet	556500	24/3.87	7/2.58	282	36.60	23.22	7.74	1022	86
Ospray	556500	18/4.47	1/4.47	282	15.69	22.35	4.47	880	59
Hen	477000	30/3.20	7/3.20	242	56.30	22.40	9.60	1043	104
Hawk	477000	26/3.44	7/2.68	242	34.49	21.80	8.04	929	84
Ficker	477000	24/3.58	7/2.39	242	31.40	21.49	7.17	877	74
Pelican	477000	18/4.14	1/4.14	242	13.46	20.70	4.14	755	51
Lark	397500	30/2.92	7/2.92	201	46.88	20.44	8.76	869	87
Lbis	397500	26/3.14	7/2.44	201	32.73	19.88	7.32	774	70
Brant	397500	24/3.27	7/2.18	201	26.13	19.62	6.54	731	63
Chickadee	397500	18/3.77	1/3.77	201	11.16	18.85	3.77	628	44
Oriole	336400	30/2.69	7/2.69	170	39.78	18.83	8.07	737	74
Linnet	336400	26/2.89	7/2.25	170	27.83	18.31	6.75	655	60
Merlin	336300	18/3.47	1/3.47	170	9.46	17.35	3.47	531	38
Ostrich	300000	26/2.73	7/2.12	152	24.71	17.28	6.36	583	54
Partridge	266800	26/2.57	7/2.00	135	21.99	16.28	6.00	519	48
Waxwing	266800	18/3.09	1/3.09	135	7.50	15.45	3.09	421	30
Dorking	190800	12/3.20	7/3.20	96.7	56.30	16.00	9.60	641	81
Dotterel	176900	12/3.08	7/3.08	89.6	52.15	15.40	9.24	594	75
Guinea	159000	12/2.92	7/2.92	80.6	46.88	14.60	8.76	534	68
Leghom	134600	12/2.69	7/2.69	68.2	39.78	13.45	8.07	452	58
Minorca	110800	12/2.44	7/2.44	56.1	32.73	12.20	7.32	372	48
Patrel	101800	12/2.34	7/2.34	51.6	30.10	11.70	7.02	342	44
Grouse	80000	8/2.54	1/4.24	40.5	14.11	9.32	4.24	205	22
Penguin	(4/0)	6/4.77	1/4.77	107	17.87	14.31	4.77	412	34
Pigeon	(3/0)	6/4.25	1/4.25	85.03	14.19	12.75	4.25	326	28
Quail	(2/0)	6/3.78	1/3.78	67.44	11.22	11.34	3.78	259	23

Copper-clad Steel Wire

铜包钢单线



/// 优点 Advantage

- 1、包覆法工艺生产的铜包钢线无污染。
 - 2、高强度: 适用于大跨越的架空输电线路。
 - 3、重量轻: 相同规格的铜包钢线长度大于铜线。
 - 4、衰减小: 线膨胀系数小, 耐高温性好, 成本低。
- 1、The copper clad steel wire by cladding is of no pollution.
 - 2、Hige tensile strength:this kind of wire is suitable for overhead transmission lines.
 - 3、Light weighe:The length of the copper clad steel wire is bigger than the pure copper wire for the same specification.
 - 4、Low loss: small linear expansion coefficient, good temperature endurance,low cost.

/// 应用领域 Application

电话入户线、被复线
 同轴电缆 (CATV线)、输电、通信架空线
 网络电缆、计算机电缆
 电子元器件插接线、载流承力索
 屏蔽地网、汽车用电线
 高温导线

Telephone wire,
 CATV cable, Electrical power,Communication overhead wire,
 Internet Cable,Computer Cable,
 Electronics contact fittings,
 Screen line of electric power cable.
 Hige temperature conductor

/// 执行标准 Standards

ASTM B452、ASTM B227、ASTM B869、BS 4087、SJ/T11411、用户标准和要求



/// 状态级别(以ASTM标准为例) Standard

- 21A、21HS——导电率为21%的退火和高强度铜包钢线
- 30A、30HS、30EHS——导电率为30%的退火、高强度和超高强度铜包钢线
- 40A、40HS、40EHS——导电率为40%的退火、高强度和超高强度铜包钢线
- 70A——导电率为70%的退火铜包钢线

According to the above standards and requirements of client Condition and Class(Take ASTM standard for example)

- 21A、21HS——Annealed, High Strength, 21% Conductivity
- 30A、30HS、30EHS——Annealed, High and Extra High Strength, 30% Conductivity
- 40A、40HS、40EHS——Annealed, High and Extra High Strength, 40% Conductivity
- 70A——Annealed, 70% Conductivity

/// 产品范围 The range of product:

本公司采用包覆焊接法生产的铜包钢线范围 $\phi 0.05 \sim \phi 5.2\text{mm}$,可根据用户要求生产特殊的铜包钢线
CCS made by clad-welding method, the range of CCS we can produce is 0.05-5.2mm, and we also can produce as customer's requirements.

/// 铜包钢线电阻率和密度

The Resistivity And Density Of Copper Clad Steel Wire Hao D

线的级别 Type	最大电阻率 $\Omega \cdot \text{mm}^2/\text{m}$ (在20°C时) Max Electrical Resistance At 20°C	20°C时密度 g/cm^3 Density at 20°C
21A、21HS	0.08210	7.98
30A、30HS、30EHS	0.058616	8.15
40A、30HS、30EHS	0.043970	8.24
70A	0.026524	8.58

/// 铜包钢线电阻率和密度

The Resistivity And Density Of Copper Clad Steel Wire Hao D

线的级别 Type	最小铜层厚度%直径 Min Copper Thickness% Diameter
21A、21HS	1.5
30A、30HS、30EHS	3
40A、30HS、30EHS	5.0
70A	15.0

电子产品用铜包钢线抗拉强度和伸长率要求
Requirements For Tensile Strength And Elongation
Of Copper Clad Steel Wire For Electronic Products

ASTM B452

直径 Dia mm	截面积 Sectional Area mm ²	抗拉强度 Tensile Strength MPa				最小伸长率% (250mm) Min Elongation Lo=250mm	
		30HS	30A	40HS	40A	30HS, 40HS	30A, 40A
1.83	2.63	875	345	758	310	1.5	15
1.63	2.08	875	345	758	310	1.5	15
1.45	1.65	875	345	758	310	1.5	15
1.29	1.31	875	345	758	310	1.5	15
1.15	1.04	875	345	758	310	1.5	15
1.02	0.823	875	345	758	310	1.0	15
0.912	0.653	875	345	758	310	1.0	15
0.813	0.519	875	345	758	310	1.0	15
0.724	0.412	875	380	758	345	1.0	15
0.643	0.324	875	380	758	345	1.0	15
0.574	0.259	875	380	758	345	1.0	15
0.511	0.205	875	380	758	345	1.0	10
0.455	0.162	875	380	758	345	1.0	10
0.404	0.128	875	380	758	345	1.0	10
0.361	0.102	875	380	758	345	1.0	10
0.320	0.0804	875	380	758	345	1.0	10
0.287	0.0647	875	380	758	345	1.0	10
0.254	0.0507	875	380	758	345	1.0	10
0.226	0.0401	875	380	758	345	1.0	10
0.203	0.0324	875	380	758	345	1.0	10
0.180	0.0255	875	380	758	345	1.0	10
0.160	0.0201	875	380	758	345	1.0	10
0.142	0.0159	875	380	758	345	1.0	10
0.127	0.0127	875	380	758	345	1.0	10
0.144	0.0103	875	380	758	345	1.0	10
0.102	0.00811	875	380	758	345	1.0	10
0.089	0.00621	875	380	758	345	1.0	10
0.079	0.00487	875	380	758	345	1.0	10

注：中间规格的线，抗拉强度取上界值，伸长率取下界值。*为断裂时总伸长率；断裂后伸长率数值小于0.5%。



硬铜包钢线抗拉强度和电阻要求

Tensile Strength And Resistance Of Hardness Copper Clad Steel Wire

ASTM B227

直径 mm	截面积 Sectional Area mm ²	抗拉强度 Tensile Strength MPa				20°C时最大直流电阻 D.C. Resistance Ω/km	
		40HS	40EHS	30HS	30EHS	40HS、40EHS	30HS、30EHS
5.189	21.15	745	1076	828	983	2.1431	2.8568
4.620	16.77	780		863	1038	2.7032	3.6025
4.191	13.79	814		897	1088	3.2843	4.3801
4.115	13.30	814		897	1088	3.4057	4.5442
3.665	10.55	849		932	1132	4.2948	5.7253
3.264	8.37	883		966	1173	5.4169	7.2215
3.251	8.30	883		966	1173	5.4596	7.2773
2.906	6.63	918		1001	1201	6.8343	9.1113
2.642	5.48	956		1042	1208	8.2714	11.0242
2.588	5.26	956		1042	1235	8.6126	11.4835
2.052	3.31	956		1042	1235	13.7999	18.3966
2.032	3.24	956		1042	1235	14.0821	18.7739
1.626	2.08	956		1042	1235	22.2157	29.6176
1.024	0.823	956		1042	1235	56.2035	74.9052
0.991	0.771	956		1042	1235	60.1079	80.1220
0.813	0.519	956		1042	1235	90.2931	120.3799

CATV引入线用铜包钢线 Applied In CATV

ASTM B869

标称直径 Nominal Dia	允许偏差 Tolerance	截面积 Sectional Area	20°C时最大直流电阻 Max D.C. Resistance	破断力 Broking Load	质量 Weight
mm	mm	mm ²	Ω/km	N	Kg/km
1.628	0.015	2.082	40.1890	1722	16.52
1.450	0.015	1.652	50.7636	1366	13.47
1.290	0.013	1.307	64.0484	1081	10.40
1.151	0.013	1.039	80.7388	859	8.27
1.024	0.010	0.823	101.7897	681	6.71
0.813	0.008	0.519	161.2612	427	4.12
0.724	0.008	0.411	203.7731	334	3.35

注:中间规格的线,抗拉强度取上界值。

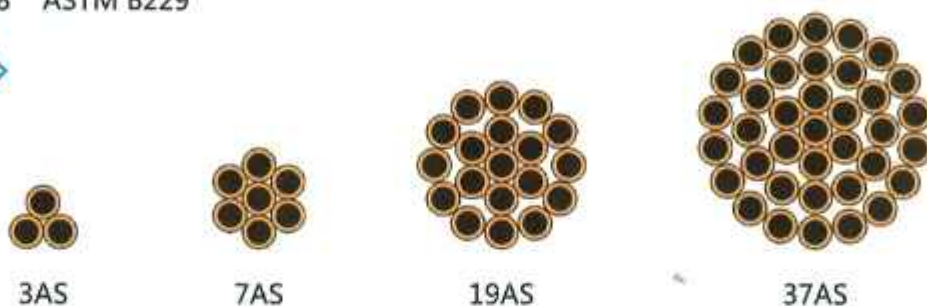
Copper Clad Steel Stranded Wire

铜包钢绞线

执行标准 Standards

ASTM B228 ASTM B229

Profile >>
剖面图



铜包钢绞线 Copper Clad Steel Stranded Wire

ASTM B228

标称截面 Nominal Sectional Area mm ²	结构 股/直径 No/dia mm	面积 Area mm ²	额定破断力 Breaking Load kg			20°C时最大直流电阻 Max D.C. Resistance Ω/km		线质量 Weight Kg/km	
			40HS	30HS	30EHS	40 %	30%	30%	40%
320	19/4.62	318.71	22788	25206	30350	0.1399	0.1865	2634.0	2660.8
250	19/4.12	252.71	18849	20788	25188	0.1764	0.2352	2087.9	2110.2
200	19/3.67	200.45	15599	17118	20797	0.2225	0.2966	1656.3	1674.2
160	19/3.26	158.97	12873	14079	17096	0.2805	0.3740	1313.6	1327.2
120	19/2.91	126.06	10609	11567	13884	0.3537	0.4715	1041.7	1052.6
150	7/5.19	148.06	10120	11240	13349	0.3000	0.4000	1218.7	1231.5
120	7/4.62	117.42	8396	9285	11181	0.3783	0.5043	966.41	976.53
90	7/4.12	93.097	6954	7661	9280	0.4771	0.6359	766.25	774.29
70	7/3.67	73.871	5747	6309	7661	0.6014	0.8019	608.06	614.46
60	7/3.26	58.561	4745	5189	6300	0.7586	1.0109	482.02	487.07
50	7/2.91	46.439	3908	4261	5116	0.9564	1.2750	382.16	386.18
35	7/2.59	36.826	3230	3519	4171	1.2061	1.6077	303.14	306.26
50	3/4.62	50.322	3798	4201	5380	0.8809	1.1743	413.41	417.73
40	3/4.12	39.903	3145	3465	4424	1.1106	1.4807	327.84	331.26
30	3/3.67	31.645	2600	2854	3593	1.4007	1.8672	259.98	262.66
25	3/3.26	25.097	2145	2347	2849	1.7662	2.3544	206.11	208.34
20	3/2.91	19.903	1768	1928	2326	2.2271	2.9690	163.55	165.19
15	3/2.59	15.781	1461	1592	1887	2.8082	3.7436	129.62	130.99
10	3/2.05	9.929	1014			4.4654		81.55	82.414





Tin-coated Copper-clad Steel Wire

镀锡铜包钢线



执行标准 Standards

ASTM B520 SJ/T 2421

镀锡线的性能 Properties Of Tin Plated Wire

标称直径 Nominal Dia	允许偏差 Tolerance	直流电阻20°C D.C. Resistance at 20°C	导电率 Conductivity	拉断力 Breaking Load	延伸率
mm	mm	Ω/m	%	N	%
0.10	±0.003	≤5.5984	40%	≥6.5	≥1
0.12	±0.003	≤3.8878	40%	≥9.4	≥1
0.16	±0.003	≤2.1869	40%	≥16.7	≥1
0.203	±0.003	≤1.3585	40%	≥24.0	≥1
0.24	±0.006	≤1.0000	40%	≥48.0	≥1
0.65	±0.006	≤0.13251	40%	≥252	≥1
0.81	±0.008	≤0.08533	40%	≥391	≥1

注:这是有代表性的用户标准,锡层厚度为1μm左右。

Sliver-coated Copper -clad Steel Wire

镀银铜包钢线

执行标准 Standards

ASTM B501 可按用户要求生产 Can be produced according to user requirements

镀银铜包钢线的性能 Properties Of Silver Plated Copper Clad Steel Wire ASTM B501

直径Dia mm	截面积 Sectioning area mm ²	银层厚度 Thickness of Sliver μm				
		1.25 %	2.5 %	4.0 %	6.1 %	8.0 %
1.829	2.63	4.47	8.94	14.45	22.25	29.41
1.628	2.08	3.96	7.95	12.88	19.79	26.19
1.450	1.65	3.53	7.09	11.46	17.63	23.32
1.290	1.31	3.15	6.30	10.19	15.70	20.75
1.151	1.04	2.82	5.64	9.09	14.00	18.49
1.024	0.823	2.49	5.00	8.08	12.45	16.46
0.912	0.653	2.24	4.47	7.21	11.10	14.66
0.813	0.519	1.98	3.96	6.43	9.88	13.08
0.724	0.412	1.78	3.53	5.72	8.81	11.63
0.643	0.324	1.57	3.15	5.08	7.82	10.34
0.574	0.259	1.40	2.82	4.55	6.99	9.22
0.511	0.205	1.24	2.49	4.04	6.20	8.20
0.455	0.162	1.12	2.24	3.58	5.54	7.32
0.404	0.128	0.99	1.98	3.20	4.90	6.50
0.361	0.102	0.89	1.75	2.84	4.39	5.79
0.320	0.0804	0.79	1.57	2.54	3.89	5.16
0.287	0.0647	0.71	1.40	2.26	3.48	4.62
0.254	0.0507	0.61	1.24	2.01	3.10	4.09
0.226	0.0401	0.56	1.12	1.78	2.74	3.63
0.203	0.0324		0.99	1.60	2.46	3.28
0.180	0.0255		0.89	1.42	2.18	2.90
0.160	0.0201		0.79	1.27	1.96	2.57
0.142	0.0159		0.66	1.12	1.73	2.29
0.127	0.0127		0.61	1.02	1.55	2.03
0.114	0.0103		0.56	0.91	1.40	1.83
0.102	0.00811			0.81	1.24	1.63
0.089	0.00621			0.71	1.09	1.42
0.079	0.00487			0.61	0.97	1.27

注: 镀银铜包钢线的性能符合ASTM B452中相应级别A状态或HS状态的要求。



Tinned Round Copper Wire

镀锡圆铜线



用途 Application

用于制造电线电缆及电器制品用的镀锡圆铜线。

Used in the manufacture of wire and cable and electrical products with tin plating round copper wire.

执行标准 Standards

GB/T4910

镀锡圆铜线的性能

Tinned Round Copper Wire Performance

标称直径 Nominal Dia mm	偏差 Tolerance mm	伸长率 (最小值)/%	电阻率 ρ_{20} (最大值) / ($\Omega \cdot \text{mm}^2/\text{m}$)	
			TXR	TXRH
$0.05 < d \leq 0.09$	+0.006 -0.003	6	0.01851	0.01851
$0.09 < d \leq 0.125$	+0.006 -0.003	12	0.01802	0.01831
$0.125 < d \leq 0.25$	+0.010 -0.004	12	0.01802	0.01831
$0.25 < d \leq 0.40$	+0.010 -0.004	15	0.01770	0.01793
$0.40 < d \leq 0.50$	+2%d -1%d	15	0.01770	0.01793
$0.50 < d \leq 2.00$	+2%d -1%d	20	0.01760	0.01775
$2.00 < d \leq 4.00$	+2%d -1%d	25	0.01760	0.01775

Spring Wire

弹簧钢丝



用途 Application

适用于制造静载荷和动载荷机械弹簧的圆形冷拉碳素弹簧钢丝

Applied to manufacture static load and dynamic load mechanical spring of circular cold-drawn spring steel wire

执行标准 Standards

GB/T4357 DIN 17223 ASTM A227 JIS G3522

制造弹簧钢丝用材料及产品等级

Material And Product Grade Of Manufacturing Spring Steel Wire

材料 Material	等级 Grade	定制特殊用途及 合金弹簧钢丝 Used in speial andalloy spring steel wire
65#、65Mn、70#、75#、72B、 80#、77B、82B等无扭控冷热轧盘条	SL、SM、SH、DH、DM	

弹簧钢丝化学成分

Chemical composition of spring steel wire

C	Si	Mn	P, 不大于 ≤	S, 不大于 ≤	Cu, 不大于 ≤
0.35~1.00	0.10~0.30	0.30~1.20	0.030	0.030	0.20
0.45~1.00	0.10~0.30	0.50~1.20	0.020	0.325	0.12



弹簧钢丝机械性能 Mechanical Properties Of Spring Steel Wire

钢丝公称直径 nominal diameter of steel wire mm	抗拉强度tensile strength MPa				
	SL型	SM型	DM型	SH型	DH型
2.00	1520~1750	1760~1970	1760~1970	1980~2200	1980~2200
2.10	1510~1730	1740~1960	1740~1960	1970~2180	1970~2180
2.25	1490~1710	1720~1930	1720~1930	1940~2150	1940~2150
2.40	1470~1690	1700~1910	1700~1910	1920~2130	1920~2130
2.50	1460~1680	1690~1890	1690~1890	1900~2110	1900~2110
2.60	1450~1660	1670~1880	1670~1880	1890~210	1890~2100
2.80	1420~1640	1650~1850	1650~1850	1860~2070	1860~2070
3.00	1410~1620	1630~1830	1630~1830	1840~2040	1840~2040
3.20	1390~1600	1610~1810	1610~1810	1820~2020	1810~2020
3.40	1370~1580	1590~1780	1590~1780	1790~1990	1790~1990
3.60	1350~1560	1570~1760	1570~1760	1770~1970	1770~1970
3.80	1340~1540	1550~1740	1550~1740	1750~1950	1750~1950
4.00	1320~1520	1530~1730	1530~1730	1740~1930	1740~1930
4.25	1310~1500	1510~1700	1510~1700	1710~1900	1710~1900
4.50	1290~1490	1500~1680	1500~1680	1690~1880	1690~1880
4.75	1270~1470	1480~1670	1480~1670	1680~1840	1680~1840
5.00	1260~1450	1460~1650	1460~1650	1660~1830	1660~1830
5.30	1240~1430	1440~1630	1440~1630	1640~1820	1640~1820
5.60	1230~1420	1430~1610	1430~1610	1620~1800	1620~1800
6.00	1210~1390	1400~1580	1400~1580	1590~1770	1590~1770
6.30	1190~1380	1390~1560	1390~1560	1570~1750	1570~1750
6.50	1180~1370	1380~1550	1380~1550	1560~1740	1560~1740
7.00	1160~1340	1350~1530	1350~1530	1540~1710	1540~1710
7.50	1140~1320	1330~1500	1330~1500	1510~1680	1510~1680
8.00	1120~1300	1310~1480	1310~1480	1490~1660	1490~1660
8.50	1110~1280	1290~1460	1290~1460	1470~1630	1470~1630
9.00	1090~1260	1270~1440	1270~1440	1450~1610	1450~1610
9.50	1070~1250	1260~1420	1260~1420	1430~1590	1430~1590
10.00	1060~1230	1240~1400	1240~1400	1410~1570	1410~1570
10.50		1220~1380	1220~1380	1390~1550	1390~1550
11.00		1210~1370	1210~1370	1380~1530	1380~1530
12.00	-	1180~1340	1180~1340	1350~1500	1350~1500
12.50		1170~1320	1170~1320	1330~1480	1330~1480
13.00		1160~1310	1160~1310	1320~1470	1320~1470

Some Engineering Instances

部分工程实例

- 青藏铁路格拉段工程
- 京泰博坤神朔工程
- 内蒙古鄂尔多斯乌绒 I、II 回线路工程
- 葛洲坝水利电建设工程
- 向家坝 ~ 上海 ±800 千伏特高压直流输电示范工程
- 西宁 ~ 日月山 ~ 乌兰 ~ 格尔木 750 千伏双回输变电工程
- 新疆与西北主网联网第二通道 750 千伏输变电工程
- 溪洛渡左岸 ~ 浙江金华 ±800 千伏特高压直流输电线路工程
- 宁夏宁东 ~ 浙江绍兴 ±800 千伏特高压直流输电线路工程
- Qinzhang Railway Gela Project
- Beijing Taibokun Shenshu Project
- Mongolia Erduosi Wurong
- Gezhouba Water Electricity Engineering Project
- Xiangjiaba-shanghai ±800kv High-voltage Direct Current Transmission Pilot Project
- Xining-riyue Mountain-uran-golmud 750kv Double Transmission And Transformation Project
- Xingjiang-northwest The Second Channel Of Main Net 750kv Transmission And Transformation Project
- Xiluodu Left-bank-zhejiang Jinhua ±800kv High-voltage Direct Current Transmission Project
- Ningxia Ningdong-zhejiang Shaoxing ±800kv High-voltage Direct Current Transmission Project

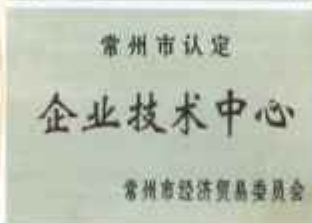




- 支持坦桑尼亚铁路建设工程
- 科威特电力建设工程
- 澳大利亚电力建设工程
- 沙特阿拉伯电力建设工程
- 铁道部渝怀线铁路工程
- 新长线铁路建设工程
- 500KV江苏武南至锡东输电线路工程
- 200KV福建棉花滩至凤园输电线路工程
- OPGW用铝包钢线

- The Railway Construction Engineering
- Power Engineering in Kuwait
- Power Construction In Australia
- Saudi Arabia Electric Power Project
- Huai Railway Line Engineering
- Chang Rail Way Line Engineering
- 500kv Power Transmission From WuNan To Xi Dong
- 200kv Power Transmission From Mian HuaTan To Feng Yuan
- Used in OPGW





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