

## ZTT GROUP

Established in 1992, ZTT started from optical fiber communications and was listed on Shanghai Stock Exchange (SSE) in 2002 (Stock Code in SSE: 600522). ZTT has pictured a diversified industrial portfolio for marine equipment, renewable energy, new materials, smart grid, optical communications and other diversified industrial products. ZTT Group is now hosting 80 subsidiary companies and over 16,000 employees, operating 5 overseas plants located in India, Brazil, Indonesia, Morocco and Turkey. ZTT owns more than 2500 patents with independent intellectual property rights, presided over or participated in more than 500 international and national industry standards. The products of ZTT are exported to 160 countries and regions. The company has ranked among the top 500 Chinese enterprises for consecutive years and broke through \$ 12.5 billion in sales revenue in 2021. ZTT follows the new economic model of fostering cleaner production and accelerating green and low-carbon development, works hard to serve as the pioneer of persistent endeavor to achieve national goal involving carbon dioxide emissions peaking by 2030 and carbon neutrality by 2060, emerging as a green manufacturing technology group assuming regional economy.



## Aluminum-Clad Steel Conductors



# Company Profile

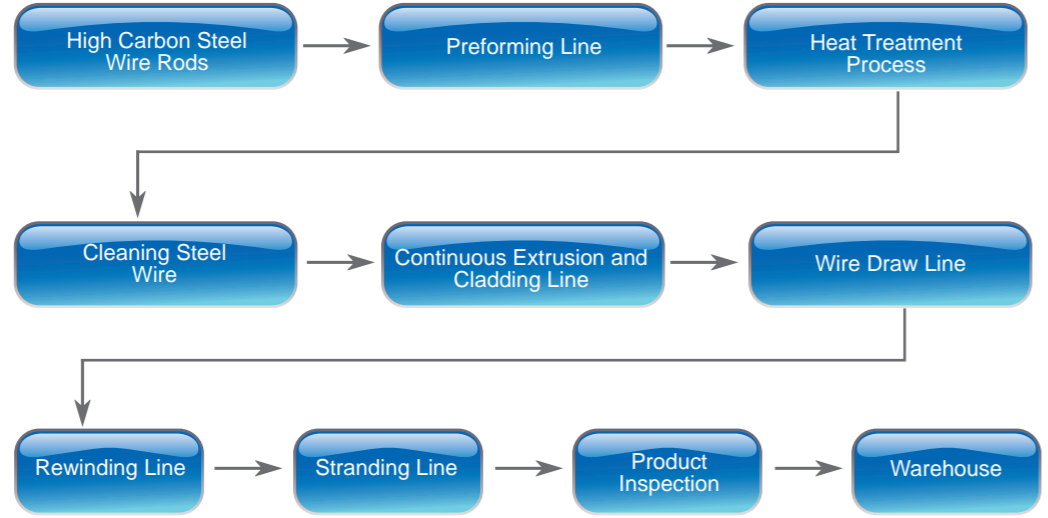
ZTT Aluminum-Clad Steel Wire Factory specializes in researching and manufacturing of Aluminum-clad steel products including Aluminum-clad steel wire, Aluminum-clad steel conductor and high strength Aluminum-clad steel wire.

ZTT Aluminum-clad steel wire conductivity consists of 10%IACS, 14%IACS, 20.3%IACS, 23%IACS, 27%IACS, 30%IACS, 35%IACS, 40%IACS specification products. The special continuous-extrusion and clad machines can ensure Aluminum-clad completely coated. Special drawing machines can produce 10%IACS high strength Aluminum-clad steel wire through 12 model drawing and prolongation machine.

Now the series of Aluminum-clad products which are produced by ZTT have been widely used in State Grid Corporation of China, urban and rural transmission line construction and have been exported to America, Russia, Korea, Indonesia, India and Malaysia etc.

ZTT will consistently serve the telecommunication and power grid industry relying on its sales & services network in China and all over the world.

# Manufacturing Processes:



# Value for Aluminium-Clad Steel Wires

## Technical Requirement

Class	Type	Nominal Diameter(mm)		Min Tensile Strength (MPa)	Min stress at 1% elongation (MPa)	Max. resistivity at 20°C (nΩ.m)
		More than	Less than & equal			
10%IACS	-	1.24	3.00	1630	1460	172.41
		3.00	3.50	1590	1410	
		3.50	4.75	1550	1380	
		4.75	5.50	1450	1240	
14%IACS	A	1.24	3.00	1590	1410	123.15
		3.00	3.50	1550	1380	
		3.50	4.75	1520	1340	
		4.75	5.50	1400	1200	
	B	2.10	4.00	1770	1550	
	20%IACS	-	1.24	3.25	1340	
3.25			3.45	1310	1180	
3.45			3.65	1270	1140	
3.65			3.95	1250	1100	
3.95			4.10	1210	1100	
4.10			4.40	1180	1070	
4.40			4.60	1140	1030	
4.60			4.75	1100	1000	
B		1.24	5.50	1320	1100	
23%IACS		-	2.50	5.00	1220	980
27%IACS	-	2.50	5.00	1080	800	63.86
30%IACS	-	2.50	5.00	880	650	57.47
35%IACS	A	2.50	5.00	810	590	49.26
	B	2.50	5.00	880	650	
40%IACS	A	2.50	5.00	680	500	43.10
	B	2.50	5.00	750	550	

## Physical Constant

Class	10%IACS	14%IACS	20%IACS		23%IACS	27%IACS	30%IACS	35%IACS	40%IACS
Type	-	-	A	B	-	-	-	-	-
Final Modulus of Elasticity (GPa)	180	170	162	155	149	140	132	122	109
Coefficient of Linear Expansion(/°C)	11.7x10 <sup>-6</sup>	12.0x10 <sup>-6</sup>	13.0x10 <sup>-6</sup>	12.6x10 <sup>-6</sup>	12.9x10 <sup>-6</sup>	13.4x10 <sup>-6</sup>	13.8x10 <sup>-6</sup>	14.5x10 <sup>-6</sup>	15.5x10 <sup>-6</sup>
Temperature Coefficient (K <sup>-1</sup> )	0.0034	0.0034	0.0036	0.0036	0.0036	0.0036	0.0038	0.0039	0.0040

## Density

Class	10%IACS	14%IACS	20%IACS-A	20%IACS-B	23%IACS	27%IACS	30%IACS	35%IACS	40%IACS
Density at 20°C g/mm <sup>3</sup>	7.55	7.14	6.59	6.53	6.27	5.91	5.61	5.15	4.64

## Aluminum-Clad-Steel Conductors

Construction and Approximate Properties(20%IACS, Type A)

Nominal section (mm <sup>2</sup> )	Structure No./Dia n/mm	Cross-section Area (mm <sup>2</sup> )			Diameter (mm)	DC Resistance (Ω/km)	RTS (KN)	Weight (kg/km)
		Al.	steel	total				
16	3/2.60	3.98	11.95	15.93	5.60	5.367	21.34	105.8
25	3/3.25	6.22	18.67	24.89	7.00	3.435	33.35	165.3
35	3/3.85	8.73	26.19	34.92	8.30	2.448	43.65	232.0
50	3/4.60	12.46	37.40	49.86	9.91	1.714	56.84	331.2
16	7/1.70	3.97	11.92	15.89	5.10	5.391	21.29	105.8
25	7/2.15	6.35	19.06	25.41	6.45	3.370	34.05	169.1
30	7/2.30	7.27	21.81	29.08	6.90	2.945	38.97	193.6
35	7/2.50	8.59	25.77	34.36	7.50	2.493	46.04	228.7
40	7/2.75	10.40	31.18	41.58	8.25	2.060	57.72	276.7
50	7/3.00	12.57	37.11	49.68	9.00	1.731	66.30	329.3
55	7/3.20	14.08	42.22	56.30	9.60	1.521	75.44	374.7
65	7/3.50	16.84	50.51	67.35	10.50	1.272	85.53	448.3
70	7/3.60	17.81	53.44	71.25	10.80	1.202	90.48	474.2
80	7/3.80	19.85	59.54	79.39	11.40	1.079	99.23	528.4
95	7/4.16	23.79	71.35	95.14	12.48	0.900	112.26	633.3
80	19/2.32	20.08	60.24	80.32	11.60	1.071	107.62	536.7
100	19/2.60	25.22	75.66	100.88	13.00	0.852	135.18	674.1
120	19/2.85	30.30	90.91	121.21	14.25	0.709	162.42	809.9
150	19/3.15	37.02	111.05	148.07	15.75	0.581	198.41	989.4
185	19/3.50	45.70	137.10	182.80	17.50	0.470	232.15	1221.5
210	19/3.75	52.46	157.39	209.85	18.75	0.410	262.31	1402.3
240	19/4.00	59.69	179.07	238.76	20.00	0.360	288.89	1595.5
300	37/3.20	74.39	223.18	297.57	22.40	0.291	398.74	2000.2
400	37/3.70	99.46	298.37	397.83	25.90	0.217	497.28	2674.1
500	37/4.16	125.72	377.18	502.90	29.12	0.172	593.42	3380.4
630	61/3.63	157.82	473.48	631.30	32.67	0.138	801.75	4272.6
800	61/4.10	201.33	604.02	805.35	36.90	0.108	974.48	5450.6

Construction and Approximate Properties(10%IACS)

Nominal section (mm <sup>2</sup> )	Structure No./Dia n/mm	Cross-section Area (mm <sup>2</sup> )			Diameter (mm)	DC Resistance (Ω/km)	RTS (KN)	Weight (kg/km)
		Al.	steel	total				
16	3/2.60	0.80	15.13	15.93	5.60	10.911	25.97	121.2
25	3/3.25	1.24	23.62	24.89	7.00	6.983	39.57	189.4
35	3/3.85	1.75	33.17	34.92	8.30	4.976	54.13	265.8
50	3/4.60	2.49	47.37	49.86	9.91	3.486	77.28	379.4
16	7/1.70	0.79	15.10	15.89	5.10	10.960	25.90	121.2
25	7/2.15	1.27	24.14	25.41	6.45	6.852	41.42	193.8
30	7/2.30	1.45	27.63	29.08	6.90	5.987	47.41	221.8
35	7/2.50	1.72	32.64	34.36	7.50	5.068	56.01	262.0
40	7/2.75	2.08	39.50	41.58	8.25	4.188	67.77	317.0
50	7/3.00	2.47	47.01	49.48	9.00	3.519	80.65	377.3
55	7/3.20	2.82	53.48	56.30	9.60	3.093	89.51	429.3
65	7/3.50	3.37	63.98	67.35	10.50	2.586	107.08	513.6
70	7/3.60	3.56	67.69	71.25	10.80	2.444	110.44	543.3
80	7/3.80	3.97	75.42	79.39	11.40	2.193	123.05	605.4
95	7/4.16	4.76	90.38	95.14	12.48	1.830	147.47	725.5
80	19/2.32	4.02	76.30	80.32	11.60	2.177	130.92	614.9
100	19/2.60	5.04	95.84	100.88	13.00	1.733	164.43	772.3
120	19/2.85	6.06	115.15	121.21	14.25	1.442	197.57	927.9
150	19/3.15	7.40	140.67	148.07	15.75	1.181	235.43	1133.6
185	19/3.50	9.14	173.66	182.80	17.50	0.956	290.65	1399.5
210	19/3.75	10.49	199.36	209.85	18.75	0.833	325.27	1606.5
240	19/4.00	11.94	226.82	238.76	20.00	0.732	370.08	1827.9
300	37/3.20	14.88	282.69	297.57	22.40	0.591	473.14	2291.6
400	37/3.70	19.89	377.94	397.83	25.90	0.442	616.63	3063.7
500	37/4.16	25.15	477.75	502.90	29.12	0.350	779.49	3872.8
630	61/3.63	31.57	599.73	631.30	32.67	0.280	978.51	4895.0
800	61/4.10	40.27	765.08	805.35	36.90	0.220	1248.30	6244.6

Construction and Approximate Properties (14%IACS, Type A)

Nominal section (mm <sup>2</sup> )	Structure No./Dia n/mm	Cross-section Area (mm <sup>2</sup> )			Diameter (mm)	DC Resistance (Ω/km)	RTS (KN)	Weight (kg/km)
		Al.	steel	total				
16	3/2.60	2.07	13.86	15.93	5.60	7.794	25.33	114.6
25	3/3.25	3.24	21.65	24.86	7.00	4.988	38.58	179.1
35	3/3.85	4.54	30.38	34.92	8.30	3.554	53.09	251.3
50	3/4.60	6.48	43.38	49.86	9.91	2.490	75.78	358.8
16	7/1.70	2.07	13.82	15.89	5.10	7.828	25.26	114.6
25	7/2.15	3.30	22.11	25.41	6.45	4.894	40.41	183.3
30	7/2.30	3.78	25.30	29.08	6.90	4.277	46.24	209.7
35	7/2.50	4.47	29.89	34.36	7.50	3.620	54.63	247.8
40	7/2.75	5.41	36.17	41.58	8.25	2.992	66.11	299.8
50	7/3.00	6.43	43.05	49.48	9.00	2.514	78.67	356.8
55	7/3.20	7.32	48.98	56.30	9.60	2.209	87.26	406.0
65	7/3.50	8.76	58.59	67.35	10.50	1.847	104.39	485.7
70	7/3.60	9.26	61.99	71.25	10.80	1.746	108.30	513.8
80	7/3.80	10.32	69.07	79.39	11.40	1.567	120.67	572.5
95	7/4.16	12.37	82.77	95.14	12.48	1.307	144.62	686.1
80	19/2.32	10.44	69.88	80.32	11.60	1.555	127.71	581.5
100	19/2.60	13.11	87.77	100.88	13.00	1.238	160.39	730.3
120	19/2.85	15.76	105.45	121.21	14.25	1.030	192.72	877.5
150	19/3.15	19.25	128.82	148.07	15.75	0.843	229.51	1072.0
185	19/3.50	23.76	159.04	182.80	17.50	0.683	283.34	1323.5
210	19/3.75	27.28	182.57	209.85	18.75	0.595	318.97	1519.3
240	19/4.00	31.04	207.72	238.76	20.00	0.523	362.92	1728.6
300	37/3.20	38.68	258.89	297.57	22.40	0.422	461.24	2167.2

Construction and Approximate Properties (14%IACS, Type A)

Nominal section (mm <sup>2</sup> )	Structure No./Dia n/mm	Cross-section Area (mm <sup>2</sup> )			Diameter (mm)	DC Resistance (Ω/km)	RTS (KN)	Weight (kg/km)
		Al.	steel	total				
400	37/3.70	51.72	346.11	397.83	25.90	0.316	604.79	2897.3
500	37/4.16	65.38	437.52	502.90	29.12	0.250	764.40	3662.5
630	61/3.63	82.07	549.23	631.30	32.67	0.200	959.57	4629.2
800	61/4.10	105.09	700.26	808.35	36.90	0.157	1224.14	5905.5

Construction and Approximate Properties (14%IACS, Type B)

Nominal section (mm <sup>2</sup> )	Structure No./Dia n/mm	Cross-section Area (mm <sup>2</sup> )			Diameter (mm)	DC Resistance (Ω/km)	RTS (KN)	Weight (kg/km)
		Al.	steel	total				
25	7/2.15	3.30	22.11	25.41	6.45	4.894	40.41	183.3
30	7/2.30	3.78	25.30	29.08	6.90	4.277	46.24	209.7
35	7/2.50	4.47	29.89	34.36	7.50	3.620	54.63	247.8
40	7/2.75	5.41	36.17	41.58	8.25	2.992	66.11	299.8
50	7/3.00	6.43	43.05	49.48	9.00	2.514	78.67	356.8
55	7/3.20	7.32	48.98	56.30	9.60	2.209	87.26	406.0
65	7/3.50	8.76	58.59	67.35	10.50	1.847	104.39	485.7
70	7/3.60	9.26	61.99	71.25	10.80	1.746	108.30	513.8
80	7/3.80	10.32	69.07	79.39	11.40	1.567	120.67	572.5
100	19/2.60	13.11	87.77	100.88	13.00	1.238	160.39	730.3
120	19/2.85	15.76	105.45	121.21	14.25	1.030	192.72	877.5
150	19/3.15	19.25	128.82	148.07	15.75	0.843	229.51	1072.0
185	19/3.50	23.76	159.04	182.80	17.50	0.683	283.34	1323.5
210	19/3.75	27.28	182.57	209.85	18.75	0.595	318.97	1519.3
240	19/4.00	31.04	207.72	238.76	20.00	0.523	362.92	1728.6

Construction and Approximate Properties(23%IACS)

Nominal section (mm <sup>2</sup> )	Structure No./Dia n/mm	Cross-section Area (mm <sup>2</sup> )			Diameter (mm)	DC Resistance (Ω/km)	RTS (KN)	Weight (kg/km)
		Al.	steel	total				
16	3/2.60	4.78	11.15	15.93	5.60	4.743	19.43	100.7
25	3/3.25	7.47	17.42	24.89	7.00	3.036	30.36	157.3
35	3/3.85	10.48	24.44	34.92	8.30	2.164	42.60	220.7
50	3/4.60	14.96	34.90	49.86	9.91	1.515	60.83	315.1
35	7/2.50	10.31	24.05	34.36	7.50	2.203	41.92	217.6
40	7/2.75	12.47	29.11	41.58	8.25	1.821	50.72	263.3
50	7/3.00	14.84	34.64	49.48	9.00	1.530	60.36	313.3
55	7/3.20	16.89	39.41	56.30	9.60	1.345	68.69	356.5
65	7/3.50	20.20	47.15	67.35	10.50	1.124	82.17	426.5
70	7/3.60	21.38	49.87	71.25	10.80	1.063	86.93	451.2
80	7/3.80	23.82	55.57	79.39	11.40	0.954	96.86	502.7
95	7/4.16	28.54	66.60	95.14	12.48	0.796	116.07	602.5

Construction and Approximate Properties(23%IACS)

Nominal section (mm <sup>2</sup> )	Structure No./Dia n/mm	Cross-section Area (mm <sup>2</sup> )			Diameter (mm)	DC Resistance (Ω/km)	RTS (KN)	Weight (kg/km)
		Al.	steel	total				
100	19/2.60	30.26	70.62	100.88	13.00	0.754	123.07	641.4
120	19/2.85	36.36	84.85	121.21	14.25	0.627	147.87	770.6
150	19/3.15	44.42	103.65	148.07	15.75	0.513	180.64	941.4
185	19/3.50	54.84	127.96	182.80	17.50	0.416	223.02	1162.2
210	19/3.75	62.96	146.89	209.85	18.75	0.362	256.02	1334.2
240	19/4.00	71.63	167.13	238.76	20.00	0.318	262.16	1518.0
300	37/3.20	89.27	208.30	297.57	22.40	0.257	363.03	1903.1
400	37/3.70	119.35	278.48	397.83	25.9	0.192	485.35	2545.3
500	37/4.16	150.87	352.03	502.90	29.12	0.152	613.54	3216.2
630	61/3.63	189.39	441.91	631.30	32.67	0.122	770.19	4065.1
800	61/4.10	241.61	563.74	805.35	36.90	0.096	982.53	5185.9

Construction and Approximate Properties(27%IACS)

Nominal section (mm <sup>2</sup> )	Structure No./Dia n/mm	Cross-section Area (mm <sup>2</sup> )			Diameter (mm)	DC Resistance (Ω/km)	RTS (KN)	Weight (kg/km)
		Al.	steel	total				
35	7/2.50	12.71	21.65	34.36	7.50	1.883	37.10	205.7
40	7/2.75	15.38	26.20	41.58	8.25	1.556	44.91	248.9
50	7/3.00	18.31	31.17	49.48	9.00	1.308	53.43	296.3
55	7/3.20	20.83	35.47	56.30	9.60	1.146	60.80	336.1
65	7/3.50	24.92	42.43	67.35	10.50	0.958	72.74	402.0
70	7/3.60	26.36	44.89	71.25	10.80	0.908	76.95	426.6
80	7/3.80	29.37	50.02	79.39	11.40	0.815	85.74	475.3
95	7/4.16	35.20	59.94	95.14	12.48	0.680	102.75	569.6
100	19/2.60	37.33	63.55	100.88	13.00	0.644	108.95	604.5
120	19/2.85	44.85	76.36	121.21	14.25	0.536	130.90	729.2
150	19/3.15	54.79	93.28	148.07	15.75	0.439	159.91	890.8
185	19/3.50	67.64	115.16	182.80	17.50	0.356	197.42	1099.8
210	19/3.75	77.64	132.21	209.85	18.75	0.310	226.63	1262.5
240	19/4.00	88.34	150.42	238.76	20.00	0.272	257.86	1436.5
300	37/3.20	110.10	187.47	297.57	22.40	0.219	321.37	1794.5
400	37/3.70	147.20	250.63	397.83	25.90	0.164	429.65	2399.1
500	37/4.16	186.07	316.83	502.90	29.12	0.130	543.13	3032.8
630	61/3.63	233.58	397.72	631.30	32.67	0.103	681.80	3812.7
800	61/4.10	297.98	507.37	805.35	36.90	0.081	869.78	4888.2

Construction and Approximate Properties(30%IACS)

Nominal section (mm <sup>2</sup> )	Structure No./Dia n/mm	Cross-section Area (mm <sup>2</sup> )			Diameter (mm)	DC Resistance (Ω/km)	RTS (KN)	Weight (kg/km)
		Al.	steel	total				
35	7/2.50	14.77	19.59	34.36	7.50	1.689	30.23	194.7
40	7/2.75	17.88	23.70	41.58	8.25	1.396	36.59	235.6
50	7/3.00	21.28	28.20	49.48	9.00	1.173	43.54	280.4
55	7/3.20	24.21	32.09	56.30	9.60	1.031	49.54	319.0
65	7/3.50	28.96	38.39	67.35	10.50	0.862	59.27	381.6
70	7/3.60	30.64	40.61	71.25	10.80	0.815	62.70	403.7
80	7/3.80	34.14	45.25	79.39	11.40	0.731	69.86	449.8
95	7/4.16	40.91	54.23	95.14	12.48	0.610	83.72	539.1
100	19/2.60	43.38	57.50	100.88	13.00	0.578	88.77	573.8
120	19/2.85	52.12	69.09	121.21	14.25	0.481	106.66	689.5
150	19/3.15	63.67	84.80	148.07	15.75	0.394	130.30	842.3
185	19/3.50	78.60	104.20	182.80	17.50	0.319	160.86	1039.9
210	19/3.75	90.24	119.61	209.85	18.75	0.278	184.66	1193.7
240	19/4.00	102.67	136.09	238.76	20.00	0.244	210.10	1358.2
300	37/3.20	127.96	169.61	297.57	22.40	0.197	261.86	1702.8
400	37/3.70	171.07	226.76	397.83	25.90	0.147	350.29	2276.4
500	37/4.16	216.25	286.65	502.90	29.12	0.117	442.55	2877.7
630	61/3.63	271.46	359.84	631.30	32.67	0.093	555.54	3637.2
800	61/4.10	346.30	459.05	805.35	36.90	0.073	708.71	4640.0

Construction and Approximate Properties(35%IACS, Type A)

Nominal section (mm <sup>2</sup> )	Structure No./Dia n/mm	Cross-section Area (mm <sup>2</sup> )			Diameter (mm)	DC Resistance (Ω/km)	RTS (KN)	Weight (kg/km)
		Al.	steel	total				
35	7/2.50	17.87	16.49	34.36	7.50	1.445	27.83	178.7
50	7/3.00	25.73	23.75	49.48	9.00	1.006	40.08	257.4
55	7/3.20	29.28	27.02	56.30	9.60	0.884	45.60	292.8
65	7/3.50	35.02	32.33	67.35	10.50	0.739	54.55	350.3
70	7/3.60	37.05	34.20	71.25	10.80	0.698	57.71	370.6
80	7/3.80	41.28	38.11	79.39	11.40	0.627	64.31	412.9
95	7/4.16	49.47	45.67	95.14	12.48	0.523	77.06	494.9
100	19/2.60	52.46	48.42	100.88	13.00	0.495	81.71	526.8
120	19/2.85	63.03	58.18	121.21	14.25	0.412	98.18	633.0
150	19/3.15	77.00	71.07	148.07	15.75	0.337	119.90	773.2
185	19/3.50	95.06	87.74	182.80	17.50	0.273	148.06	954.6
210	19/3.75	109.12	100.73	209.85	18.75	0.238	170.00	1095.9
240	19/4.00	124.16	114.60	238.76	20.00	0.209	193.40	1246.8
300	37/3.20	154.74	142.83	297.57	22.40	0.169	241.03	1563.1
400	37/3.70	206.87	190.96	397.83	25.90	0.126	322.24	2089.8
500	37/4.16	261.51	241.39	502.90	29.12	0.100	407.35	2641.7
630	61/3.63	328.28	303.02	631.30	32.67	0.080	511.35	3339.0
800	61/4.10	418.78	386.57	805.35	36.90	0.063	652.34	4259.6

Construction and Approximate Properties(35%IACS, Type B)

Nominal section (mm <sup>2</sup> )	Structure No./Dia n/mm	Cross-section Area (mm <sup>2</sup> )			Diameter (mm)	DC Resistance (Ω/km)	RTS (KN)	Weight (kg/km)
		Al.	steel	total				
35	7/2.50	17.87	16.49	34.36	7.50	1.445	30.24	178.7
50	7/3.00	25.73	23.75	49.48	9.00	1.006	43.54	257.4
55	7/3.20	29.28	27.02	56.30	9.60	0.884	49.54	292.8
65	7/3.50	35.02	32.33	67.35	10.50	0.739	59.27	350.3
70	7/3.60	37.05	34.20	71.25	10.80	0.698	62.70	370.6
80	7/3.80	41.28	38.11	79.39	11.40	0.627	69.86	412.9
95	7/4.16	49.47	45.67	95.14	12.48	0.523	83.73	494.9
100	19/2.60	52.46	48.42	100.88	13.00	0.495	88.77	526.8
120	19/2.85	63.03	58.18	121.21	14.25	0.412	106.66	633.0
150	19/3.15	77.00	71.07	148.07	15.75	0.337	130.30	773.2
185	19/3.50	95.06	87.74	182.80	17.50	0.273	160.87	954.6
210	19/3.75	109.12	100.73	209.85	18.75	0.238	184.67	1095.9
240	19/4.00	124.16	114.60	238.76	20.00	0.209	210.11	1246.8
300	37/3.20	154.74	142.83	297.57	22.40	0.169	261.86	1563.1
400	37/3.70	206.87	190.96	397.83	25.90	0.126	350.09	2089.8
500	37/4.16	261.51	241.39	502.90	29.12	0.100	442.55	2641.7
630	61/3.63	328.28	303.02	631.30	32.67	0.080	555.54	3339.0
800	61/4.10	418.78	386.57	805.35	36.90	0.063	708.71	4259.6

Construction and Approximate Properties(40%IACS, Type A)

Nominal section (mm <sup>2</sup> )	Structure No./Dia n/mm	Cross-section Area (mm <sup>2</sup> )			Diameter (mm)	DC Resistance (Ω/km)	RTS (KN)	Weight (kg/km)
		Al.	steel	total				
50	7/3.00	30.68	18.80	49.48	9.00	0.879	33.65	231.9
55	7/3.20	34.91	21.39	56.30	9.60	0.773	38.28	263.8
65	7/3.50	41.76	25.59	67.35	10.50	0.646	45.80	315.6
70	7/3.60	44.18	27.07	71.25	10.80	0.613	48.45	333.9
80	7/3.80	49.26	30.12	79.38	11.40	0.550	53.98	372.0
95	7/4.16	58.99	36.15	95.14	12.48	0.460	64.70	445.9
100	19/2.60	62.55	38.33	100.88	13.00	0.433	68.60	474.6
120	19/2.85	75.15	46.06	121.21	14.25	0.360	82.42	570.3
150	19/3.15	91.80	56.27	148.07	15.75	0.295	100.68	696.7
185	19/3.50	113.34	69.46	182.80	17.50	0.240	124.30	860.1
210	19/3.75	130.11	79.74	209.85	18.75	0.209	142.70	987.3
240	19/4.00	148.03	90.73	238.76	20.00	0.184	162.36	1123.4
300	37/3.20	184.49	113.08	297.57	22.40	0.148	202.35	1408.3
400	37/3.70	246.65	151.18	397.83	25.29	0.111	270.52	1882.8
500	37/4.16	311.80	191.10	502.89	29.12	0.087	348.77	2380.1
630	61/3.63	391.41	239.89	631.30	32.67	0.070	429.28	3008.3
800	61/4.10	499.32	306.03	805.35	36.90	0.055	547.64	3837.7

Construction and Approximate Properties(40%IACS, Type B)

Nominal section (mm <sup>2</sup> )	Structure No./Dia n/mm	Cross-section Area (mm <sup>2</sup> )			Diameter (mm)	DC Resistance (Ω/km)	RTS (KN)	Weight (kg/km)
		Al.	steel	total				
50	7/3.00	30.68	18.80	49.48	9.00	0.879	37.11	231.9
55	7/3.20	34.91	21.39	56.30	9.60	0.773	42.22	263.8
65	7/3.50	41.76	25.59	67.35	10.50	0.646	50.51	315.6
70	7/3.60	44.18	27.07	71.25	10.80	0.613	53.44	333.9
80	7/3.80	49.26	30.12	79.38	11.40	0.550	59.54	372.0
95	7/4.16	58.99	36.15	95.14	12.48	0.460	71.36	445.9
100	19/2.60	62.55	38.33	100.88	13.00	0.433	75.66	474.6
120	19/2.85	75.15	46.06	121.21	14.25	0.360	90.91	570.3
150	19/3.15	91.80	56.27	148.07	15.75	0.295	111.05	696.7
185	19/3.50	113.34	69.46	182.80	17.50	0.240	137.10	860.1
210	19/3.75	130.11	79.74	209.85	18.75	0.209	157.39	987.3
240	19/4.00	148.03	90.73	238.76	20.00	0.184	179.07	1123.4
300	37/3.20	184.49	113.08	297.57	22.40	0.148	223.18	1408.3
400	37/3.70	246.65	151.18	397.83	25.29	0.111	298.37	1882.8
500	37/4.16	311.80	191.10	502.89	29.12	0.087	377.17	2380.1
630	61/3.63	391.41	239.89	631.30	32.67	0.070	473.47	3008.3
800	61/4.10	499.32	306.03	805.35	36.90	0.055	604.02	3837.7

## ISO Certificates



ZTT has established a complete, advanced quality inspection center of controlling raw materials and products quality. To ensure high quality of conductors, ZTT always selects raw materials of international and domestic brands. ZTT also has received authentications of ISO 9001, ISO 14001 and ISO 45001.

## Product Introduction:

In order to ensure our products to satisfy with the customers' requirements, ZTT strengthen its quality control in the whole manufacturing processes and also has a strict final product inspection system. The testing items are as follows:

Test Item	AS wire	AS Stranding Conductors
Surface quality	✓	✓
Wire diameter	✓	✓
Resistance	✓	✓
Tensile strength	✓	✓
Stress at 1% elongation	✓	✓
Elongation	✓	✓
Torsion test	✓	✓
Thickness of the Aluminium	✓	✓
Number of wires	NA	✓
Diameter of single wire	NA	✓
The lay ratio	NA	✓
Direction of stranding	NA	✓
Surface quality for conductor	NA	✓
Length	✓	✓

## Reference

Products	Standard	ZTT Q/320623	GB/T	IEC	ASTM	EN
Aluminum-clad steel wire		AP 19	17937	61232	B415 B502	61232
Aluminum-clad conductor		AP 20	1179	61089	B416	50182