HENAN QINGZHOU ELECTRICAL CABLE CO.,LTD

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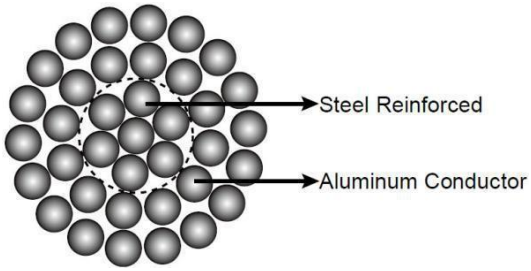
British Europe BS EN 50182 Standard Aluminum Conductor Steel reinforced (ACSR) Cables

Application

ACSR conductors are widely used for electrical power transmission over long distances, since they are ideal for long overhead lines spans. They are also used as a messenger for supporting overhead electrical cables.

Construction



ACSR conductors are formed by several wires of aluminium and galvanized steel, stranded in concentric layers. The wire or wires which form the core, are made of galvanized steel and the external layer or layers, are of aluminium. Galvanized steel core consist normally of 1, 7 or 19 wires. The diameters of steel and aluminium wires can be the same, or different.

By varying the relative proportions of aluminium and steel, the required characteristics for any particular application can be reached. A higher U. T. S. Can be obtained, by increasing steel content, and a higher current carrying capacity by increasing aluminium content.

Electrical Properties

Density:20℃	Aluminium: 2.703 kg/dm
	Galvanized Steel: 7.80 kg/dm
Temperature Coefficient:20°C	Aluminium: 0.00403 (°C)
Resistivity:20°C	Aluminium: Should not exceed 0.028264
Linear Expansivity	Aluminium: 23 x10 (°C)

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Galvanized Steel: 11.5 x10 (1/°C)

Service Conditions

Ambient Temperature	-5°C - 50°C
Wind Pressure	80 – 130kg/m^2
Seismic Acceleration	0.12 - 0.05g
Isokeraunic Level	10 – 18
Relative Humidity	5 – 100%

Construction Parameters

BS EN 50182

Code	Stranding		Sectional Area			Overall Diameter	Weight	Breaking Load	Electrical Resistance @20o	Current Rating *
	AL	Steel	AL	Steel	Total					
	No.×mm	No.×mm	mm^2	mm^2	mm^2	mm	Kg/Km	KN	Ω/Km	A
Mole	6/1.50	1/1.50	10.6	1.77	12.4	4.5	42.8	4.14	2.7027	66
Squirrel	6/2.11	1/2.11	21	3.5	24.5	6.33	84.7	7.87	1.3659	101
Fox	6/2.79	1/2.79	36.7	6.11	42.8	8.37	148.1	13.21	0.7812	142
Mink	6/3.66	1/3.66	63.1	10.5	73.6	10.98	254.9	21.67	0.454	199
Skunk	12/2.59	7/2.59	63.2	36.9	100.1	12.95	463	52.79	0.4568	206
Beaver	6/3.99	1/3.99	75	12.5	87.5	11.97	302.9	25.76	0.382	221
Racoon	6/4.09	1/4.09	78.8	13.1	91.9	12.27	318.3	27.06	0.3635	228
Otter	6/4.22	1/4.22	83.9	14	97.9	12.66	338.8	28.81	0.3415	237
Cat	6/4.50	1/4.50	95.4	15.9	111.3	13.5	385.3	32.76	0.3003	256
Hare	6/4.72	1/4.72	105	17.5	122.5	14.16	423.8	36.04	0.273	271

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Coyote	26/2.54	7/1.91	131.7	20.1	151.8	15.89	520.7	45.86	0.2192	311
Cougar	18/3.05	1/3.05	131.5	7.31	138.8	15.25	418.8	29.74	0.2188	308
Tiger	30/2.36	7/2.36	131.2	30.6	161.8	16.52	602.2	57.87	0.2202	313
Lion	30/3.18	7/3.18	238.3	55.6	293.9	22.26	1093.4	100.47	0.1213	450
Bear	30/3.35	7/3.35	264.4	61.7	326.1	23.45	1213.4			
Goat	30/3.71	7/3.71	324.3	75.7	400	25.97	1488.2	135.13	0.0891	543
Sheep	30/3.99	7/3.99	375.1	87.5	462.6	27.93	1721.3			
Antelope	54/2.97	7/2.97	374.1	48.5	422.6	26.73	1413.8	118.88	0.0773	586
Bison	54/3.00	7/3.00	381.7	49.5	431.2	27	1442.5			
Deer	30/4.27	7/4.27	429.6	100.2	529.8	29.89	1971.4	179	0.0673	643
Elk	30/4.50	7/4.50	477.1	111.3	588.4	31.5	2189.5			
Camel	54/3.35	7/3.35	476	61.7	537.7	30.15	1798.8	146.4	0.0608	677
Moose	54/3.53	7/3.53	528.5	68.5	597	31.77	1997.3			

*Note: *The values of current rating mentioned in above Table are based on windvelocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre2, ambient temperature of 50° C & conductor temperature of 80°C.*

Technical Data

Numbers of Wires		Final Modules of Elasticity		Coefficient of linear Expansion	
AL	Steel	Kg/mm^2	lb/in^2	1/Co	1/Fo

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6	1	81	11.5×10^{6}	19.1×10^{-6}	10.6×10^{-6}
6	7	77	11.0×10^{6}	19.8×10^{-6}	11.0×10^{-6}
12	7	107	15.2×10^{6}	15.3×10^{-6}	8.5×10^{-6}
18	1	67	9.5×10^{6}	21.2×10^{-6}	11.8×10^{-6}
24	7	74	10.5×10^{6}	19.6×10^{-6}	10.9×10^{-6}
26	7	77	10.9×10^{6}	18.9×10^{-6}	10.5×10^{-6}
28	7	79	11.2×10^{6}	18.4×10^{-6}	10.2×10^{-6}
30	7	82	11.6×10^{6}	17.8×10^{-6}	9.9×10^{-6}
30	19	80	11.4×10^{6}	18.0×10^{-6}	10.0×10^{-6}
32	19	82	11.7×10^{6}	17.5×10^{-6}	9.7×10^{-6}
54	7	70	9.9×10^{6}	19.3×10^{-6}	10.7×10^{-6}
54	19	68	9.7×10^{6}	19.4×10^{-6}	10.8×10^{-6}