XINLAN®

Aluminum Conductor Steel Reinforced (ACSR) Cables

BS 215-2

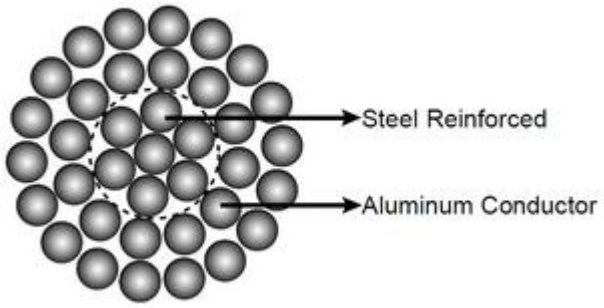
Application

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.

Standard

Basic design to BS 215-2 standards

Cable 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@20ºC	Aluminium: 2.703 kg/dm
	Galvanised 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)
	Galvanized Steel: 11.5 x10 (1/°C)

Service Conditions

Ambient Temperature	-5°C - 50°C
Wind Pressure	80 – 130kg/m²
Seismic Acceleration	0.12 - 0.05g
Isokeraunic Level	10 – 18
Relative Humidity	5 – 100%

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Technical Data

Numbers of Wires		Final Modules of Elasticity		Coefficient of linear Expansion	
AL	Steel	Kg/mm²	lb/in²	1/C°	1/F°
6	1	81	11.5 x106	19.1 x10-6	10.6 x10-6
6	7	77	11.0 x106	19.8 x10-6	11.0 x10-6
12	7	107	15.2 x106	15.3 x10-6	8.5 x10-6
18	1	67	9.5 x106	21.2 x10-6	11.8 x10-6
24	7	74	10.5 x106	19.6 x10-6	10.9 x10-6
26	7	77	10.9 x106	18.9 x10-6	10.5 x10-6
28	7	79	11.2 x106	18.4 x10-6	10.2 x10-6
30	7	82	11.6 x106	17.8 x10-6	9.9 x10-6
30	19	80	11.4 x106	18.0 x10-6	10.0 x10-6
32	19	82	11.7 x106	17.5 x10-6	9.7 x10-6
54	7	70	9.9 x106	19.3 x10-6	10.7 x10-6
54	19	68	9.7 x106	19.4 x10-6	10.8 x10-6

Construction Parameters

BS 215-2

Code	Nominal Area				Stranding		Overall Diameter		Weight(CU)			Rated Strength	Electrical Resistance @20℃
	AL		Steel	Total	AL	Steel	Core	Total	AL	Steel	Total		
	Nominal	Teorical											
	mm²	mm²	mm²	mm²	No./mm	No./mm	mm	mm	Kg/Km	Kg/Km	Kg/Km	KN	Ω/Km
Mole	10	10.62	1.77	12.39	6/1.50	1/1.50	1.50	4.5	29	14	43	4.14	2.706
Squirrel	20	20.94	3.49	24.43	6/2.11	1/2.11	2.11	6.33	57	28	85	7.88	1.368
Gopher	25	26.24	4.38	30.62	6/2.36	1/2.36	2.36	7.08	71	35	106	9.61	1.093
Weasel	30	31.61	5.27	36.88	6/2.59	1/2.59	2.59	7.77	87	41	128	11.45	0.9077
Fox	35	36.66	6.11	42.77	6/2.79	1/2.79	2.79	8.37	101	48	149	13.2	0.7822
Ferret	40	42.41	7.07	49.48	6/3.00	1/3.00	3.0	9.0	117	55	172	15.2	0.6766
Rabbit	50	52.88	8.82	61.7	6/3.35	1/3.35	3.35	10.05	145	69	214	18.35	0.5426
Mink	60	63.18	10.53	73.71	6/3.66	1/3.66	3.66	10.98	171	84	255	2.18	0.4545
Shunk	60	63.27	37.03	100.3	12/2.59	7/2.59	7.77	12.95	178	287	465	5.3	0.4567
Beaver	70	74.82	12.47	87.29	6/3.99	1/3.99	3.99	11.97	203	99	302	2.57	0.3825
Horse	70	73.37	42.63	116.2	12/2.79	7/2.79	8.37	13.95	203	335	538	61.2	0.3936
Racoon	75	79.2	13.2	92.4	6/4.1	1/4.1	4.1	12.3	216	104	320	27.2	0.3622
Otter	80	83.88	13.98	97.86	6/4.22	1/4.22	4.22	13.98	226	113	339	28.8	0.3419
Cat	90	95.44	15.86	111.3	6/4.5	1/4.5	4.5	15.9	258	128	386	32.7	0.3007

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Hare	100	105	17.5	122.5	6/4.72	1/4.72	4.72	17.5	284	141	425	36.0	0.2733
Dog	100	105	13.5	118.5	6/4.72	7/1.57	4.71	14.15	288	106	394	32.7	0.2733
Hyena	100	105.8	20.4	126.2	7/4.39	7/1.93	5.79	14.57	250	200	450	40.9	0.2712
Leoperd	125	131.3	16.8	148.1	8/5.28	7/1.75	5.25	15.81	310	182	492	40.7	0.2184
Coyotte	125	132.1	20.1	152.2	26/2.54	7/1.91	5.73	15.89	410	112	522	46.4	0.2187
Congar	125	130.3	7.2	137.5	18/3.05	1/3.05	3.05	15.25	361	58	419	29.8	0.2189
Tiger	125	131.1	30.6	161.7	30/2.36	7/2.36	7.08	16.52	365	237	602	58	0.2202
Wolf	150	158.1	36.8	194.9	30/2.59	7/2.59	7.77	18.13	441	285	726	69.2	0.1828
Dingo	150	158.7	8.8	167.5	18/3.35	1/3.35	3.35	16.75	437	69	506	35.7	0.1815
Lynx	175	183.4	42.8	226.2	30/2.79	7/2.79	8.37	19.53	507	335	842	79.8	0.1576
Caracal	175	184.3	10.2	194.5	18/3.61	1/3.61	3.61	18.05	507	80	587	41.1	0.1563
Panther	200	212.1	49.4	261.5	30/3.00	7/3.00	9.0	21.0	586	388	974	92.25	0.1363
Jaguar	200	210.6	11.7	222.3	18/3.86	1/3.86	3.86	19.3	580	91	671	46.55	0.1367
Lion	225	238.5	55.7	294.2	30/3.18	7/3.18	9.54	22.26	657	438	1095	100.6	0.1212
Bear	250	264	61.6	325.6	30/3.35	7/3.35	10.05	23.45	728	485	1213	111.1	0.1090
Goat	300	324.3	75.7	400	30/3.71	7/3.71	11.13	25.79	894	595	1489	135.7	0.0891
Sheep	350	374.1	87.3	461.4	30/3.99	7/3.99	11.97	27.93	1031	687	1718	155.9	0.0770
Antilope	350	373.1	48.4	421.5	54/2.97	7/2.97	8.91	26.73	1040	371	1411	118.2	0.0772
Bizon	350	381.8	49.5	431.3	54/3.00	7/3.00	9.0	27.0	1064	380	1444	120.9	0.7573
Zebra	400	428.9	55.6	484.5	54/3.18	7/3.18	9.54	28.62	1185	436	1621	131.9	0.0674

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