

Contact Us:

E-mail: info@qingzhou-cable.com

Phone/Whatsapp/WeChat: +86 18625503172

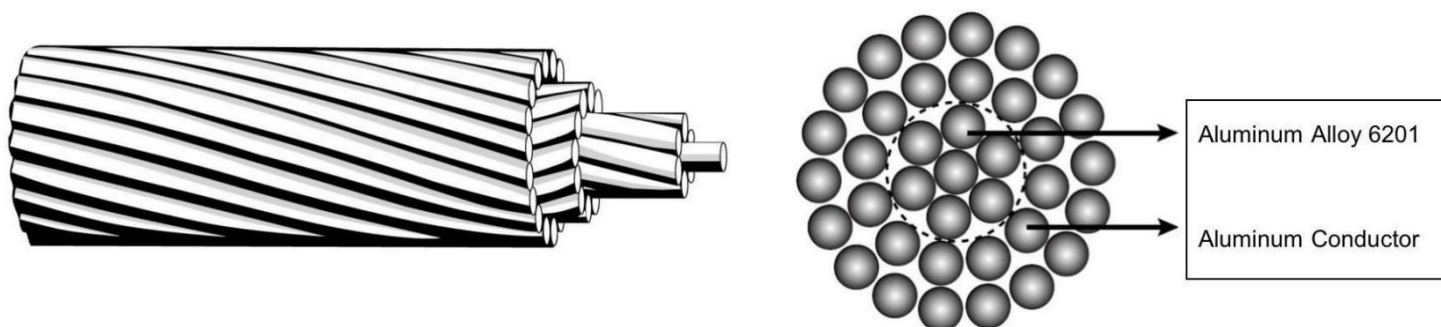
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IEC61089 A1/A2 Standard Aluminum Conductor Aluminum Alloy Reinforced (ACAR) Cables

Application

Used as bare overhead transmission cable and as primary and secondary distribution cable. A good strength-to-weight ratio makes ACAR applicable where both ampacity and strength are prime considerations in line design; for equal weight, ACAR offers higher strength and ampacity than ACSR.

Construction



Aluminum 1350-H19 wires, concentrically stranded about an aluminum-alloy 6201-T81 core. Although the alloy strands generally comprise the core of the conductor, in some constructions they are distributed in layers throughout the aluminum 1350-H19 strands.

Electrical Properties

Density: 20°C	Aluminium/Alloy: 2.703 kg/dm
Temperature Coefficient: 20°C	Aluminium: 0.00403 (°C) Alloy: 0.00306(°C)
Resistivity: 20°C	Aluminium: Should not exceed 0.028264 Alloy: should not exceed 0.032840
Linear Expansivity	Aluminium: 23 x10 (°C)

Service Conditions

Ambient Temperature	-5°C - 50°C
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Wind Pressure

80 – 130kg/m²

Seismic Acceleration

0.12 - 0.05g

Isokeraunic Level

10 – 18

Relative Humidity

5 – 100%

Construction Parameters

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Code Number	Diameter		No. of Wires		Area			Linear Mass kg/km	Rated Strength kN	D.C. Resistance at 20°C ohm/km
	Wire mm	Cond mm	Alum.	Alloy	Alum.	Alloy	Total			
					mm ²	mm ²	mm ²			
16	1.76	5.28	4	3	9.73	7.3	17	46.6	3.85	1.7896
25	2.2	6.6	4	3	15.2	11.4	26.6	72.8	5.93	1.1453
40	2.78	8.35	4	3	24.3	18.3	42.6	116.5	9.25	0.7158
63	3.49	10.5	4	3	38.3	28.7	67.1	183.5	14.38	0.4545
100	4.4	13.2	4	3	60.8	45.6	106	291.2	22.52	0.2863
125	2.97	14.9	12	7	83.3	48.6	132	362.7	27.79	0.2302
160	3.36	16.8	12	7	107	62.2	169	464.2	35.04	0.1798
200	3.76	18.8	12	7	133	77.8	211	580.3	43.13	0.1439
250	4.21	21	12	7	167	97.2	264	725.3	53.92	0.1151
250	3.04	21.3	18	19	131	138	269	742.2	60.39	0.1154
315	3.34	23.4	30	7	263	61.3	324	892.6	60.52	0.0916
315	3.42	23.9	18	19	165	174	339	935.1	76.09	0.0916
400	3.76	26.3	30	7	334	77.8	411	1133.5	75.19	0.0721



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400	3.85	27	18	19	210	221	431	1187.5	95.58	0.0721
450	3.99	27.9	30	7	375	87.6	463	1275.2	84.59	0.0641
450	4.08	28.6	18	19	236	249	485	1335.9	107.52	0.0641
500	4.21	29.4	30	7	417	97.3	514	1416.9	93.98	0.0577
500	4.31	30.1	18	19	262	277	539	1484.3	119.47	0.0577
560	4.45	31.2	30	7	467	109	576	1586.9	105.26	0.0515
560	3.45	31	54	7	504	65.4	570	1571.9	101.54	0.0516
630	3.71	33.4	42	19	454	205	660	1820	130.25	0.0458
630	3.79	34.1	24	37	271	417	688	1897.5	160.19	0.0458
710	3.94	35.5	42	19	512	232	743	2051.2	146.78	0.0407
710	4.02	36.2	24	37	305	470	775	2138.4	180.53	0.0407
800	4.18	37.6	42	19	577	261	838	2311.2	162.39	0.0361
800	4.27	38.4	24	37	344	530	873	2409.5	203.41	0.0361
900	4.43	39.9	42	19	649	294	942	2600.1	186.06	0.0321
900	3.66	40.2	54	37	567	388	955	2638.4	199.54	0.0321
1000	3.8	41.8	72	19	816	215	1032	2849.1	190.94	0.0289
1000	3.85	42.4	54	37	630	432	1061	2931.6	221.71	0.0289
1120	4.02	44.2	72	19	914	241	1155	3191	213.85	0.0258
1120	4.08	44.9	54	37	705	483	1189	3283.4	248.32	0.0258
1250	4.25	46.7	72	19	1020	269	1289	3561.4	238.68	0.0231
1250	4.31	47.4	54	37	787	539	1327	3664.5	277.14	0.0231
1400	4.5	49.4	72	19	1143	302	1444	3988.8	267.32	0.0207



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