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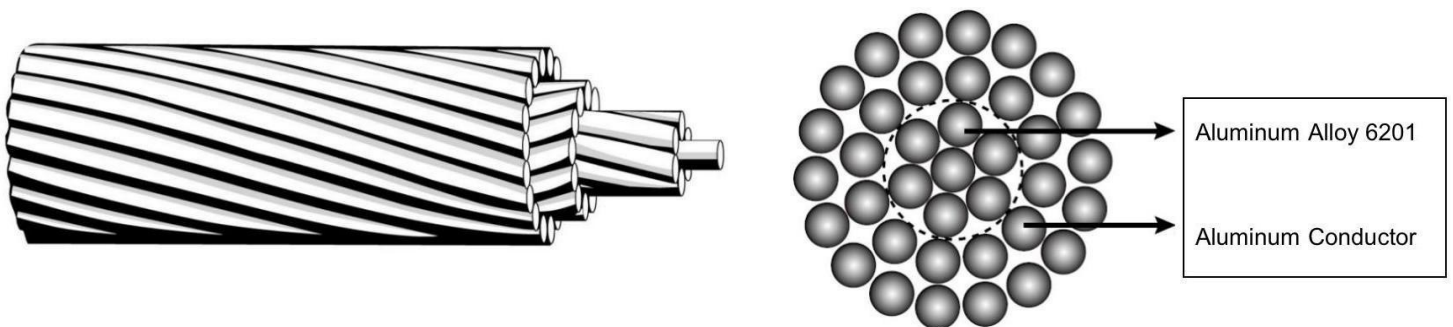
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IEC61089 A1/A3 Standard Aluminum Conductor Aluminum Alloy Reinforced (ACAR) Cables

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/m ²
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	Cond.	Alum.	Alloy	Alum.	Alloy	Total			
	mm	mm			mm ²	mm ²	mm ²			
16	1.76	5.29	4	3	9.78	7.33	17.1	46.8	4.07	1.7896
25	2.21	6.62	4	3	15.3	11.5	26.7	73.1	6.29	1.1453
40	2.79	8.37	4	3	24.4	18.3	42.8	117	9.82	0.7158
63	3.5	10.5	4	3	38.5	28.9	67.4	184.3	14.8	0.4545
100	4.41	13.2	4	3	61.1	45.8	107	292.5	23.49	0.2863
125	2.98	14.9	12	7	83.7	48.8	132	364.1	29.29	0.2302
160	3.37	16.8	12	7	107	62.5	170	466	36.95	0.1798
200	3.77	18.8	12	7	134	78.1	212	582.5	44.78	0.1439
250	4.21	21.1	12	7	167	97.6	265	728.1	55.98	0.1151
250	3.05	21.4	18	19	132	139	271	746	64.67	0.1154
315	3.34	23.4	30	7	263	61.4	325	894.4	62.4	0.0916
315	3.43	24	18	19	166	175	341	940	81.48	0.0916
400	3.77	26.4	30	7	334	78	412	1135.8	76.82	0.0721



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400	3.86	27	18	19	211	222	433	1193.7	100.3	0.0721
450	3.99	28	30	7	376	87.7	464	1277.8	86.42	0.0641
450	4.1	28.7	18	19	237	250	487	1342.9	112.84	0.0641
500	4.21	29.5	30	7	418	97.5	515	1419.8	96.03	0.0577
500	4.32	30.2	18	19	263	278	542	1492.1	125.38	0.0577
560	4.46	31.2	30	7	468	109	577	1590.1	107.55	0.0515
560	3.45	31.1	54	7	505	65.5	570	1573.9	103.53	0.0516
630	3.72	33.4	42	19	456	206	662	1826	134.59	0.0458
630	3.8	34.2	24	37	272	420	692	1909	169.14	0.0458
710	3.95	35.5	42	19	514	232	746	2057.8	151.68	0.0407
710	4.03	36.3	24	37	307	473	780	2151.4	190.61	0.0407
800	4.19	37.7	42	19	579	262	840	2318.7	170.9	0.0361
800	4.28	38.5	24	37	346	533	879	2424.2	214.78	0.0361
900	4.44	40	42	19	651	294	945	2608.5	192.27	0.0321
900	3.66	40.3	54	37	569	390	959	2649.5	207.79	0.0321
1000	3.8	41.8	72	19	818	216	1034	2855.4	195.47	0.0289
1000	3.86	42.5	54	37	632	433	1066	2943.9	230.88	0.0289
1120	4.02	44.3	72	19	916	242	1158	3198.1	218.92	0.0258
1120	4.09	45	54	37	708	485	1194	3297.2	258.58	0.0258
1250	4.25	46.8	72	19	1022	270	1292	3569.3	244.33	0.0231
1250	4.32	47.5	54	37	791	542	1332	3679.9	288.6	0.0231
1400	4.5	49.5	72	19	1145	302	1447	3997.6	273.65	0.0207



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