

ACAR - Aluminum Conductor Alloy Reinforced

APPLICATION: Bare overhead conductor used as 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 alloy 1350--H19 wires, concentricallly stranded around an aluminum alloy 6201 core. Although the alloy strands generally comprise the core of the cable, in some constructions they are distributed in layers throughout the aluminum alloy 1350-H19 strands.

SPECIFICATIONS: ACAR bare conductor meets or exceeds the following ASTM specifications:

B-230 Aluminum 1350-H19 Wire for Electrical Purposes

B-398 Aluminum-Alloy 6201-T81 Wire for Electrical Purposes

B-524 Concentric-Lay-Stranded Aluminum Conductors, Aluminum Alloy Reinforced (ACAR, 1350/6201)

Conductor Size	Stranding	Diameter (in)			Weight	Rated Strength	Resistance**		Allowable Ampacity*
		Individual Strand		Complete Cable			DC @ 20°C	AC @ 75°C	
kcmil	1350/6201	1350	6201			lbs/kft	lbs	Ohms/kft	Ohms/kft
355.0	12/7	0.1367	0.1367	0.683	332	8,500	0.0514	0.0624	519
465.9	12/7	0.1566	0.1566	0.783	436	11,000	0.0392	0.0477	616
503.6	12/7	0.1628	0.1628	0.814	471	11,900	0.0362	0.0441	646
653.1	12/7	0.1854	0.1854	0.927	611	15,400	0.0279	0.0342	760
739.8	30/7	0.1414	0.1414	0.99	693	15,300	0.0240	0.0296	831
739.8	18/19	0.1414	0.1414	0.99	692	18,800	0.0252	0.0308	814
853.7	30/7	0.1519	0.1519	1.063	799	17,500	0.0208	0.0257	907
853.7	18/19	0.1519	0.1519	1.063	798	21,500	0.0218	0.0268	890
927.2	30/7	0.1583	0.1583	1.108	868	19,000	0.0192	0.0238	955
927.2	18/19	0.1583	0.1583	1.108	867	23,400	0.0201	0.0247	936
1024.5	30/7	0.1664	0.1664	1.165	959	20,900	0.0173	0.0216	1,015
1024.5	18/19	0.1664	0.1664	1.165	958	25,800	0.0182	0.0225	995
1081.0	30/7	0.1709	0.1709	1.196	1,012	22,100	0.0164	0.0205	1,048
1081.0	18/19	0.1709	0.1709	1.196	1,011	27,200	0.0172	0.0213	1,028
1109.0	30/7	0.1731	0.1731	1.212	1,038	22,700	0.0160	0.0200	1,065
1109.0	18/19	0.1731	0.1731	1.212	1,037	27,900	0.0168	0.0208	1,044

Conductor Size	Stranding	Diameter (in)			Weight	Rated Strength	Resistance**		Allowable Ampacity*
		Individual Strand		Complete Cable			DC @ 20°C	AC @ 75°C	
kcmil	1350/6201	1350	6201			lbs/kft	lbs	Ohms/kft	Ohms/kft
1172.0	30/7	0.1780	0.1780	1.246	1,097	24,000	0.0152	0.0190	1,101
1172.0	18/19	0.1780	0.1780	1.246	1,096	29,500	0.0159	0.0198	1,080
1197.0	30/7	0.1799	0.1799	1.259	1,121	24,500	0.0148	0.0187	1,115
1197.0	18/19	0.1799	0.1799	1.259	1,119	30,200	0.0156	0.0194	1,094
1280.0	30/7	0.1860	0.1860	1.302	1,199	26,200	0.0139	0.0175	1,160
1280.0	18/19	0.1860	0.1860	1.302	1,197	32,200	0.0146	0.0182	1,139
1361.0	42/19	0.1494	0.1494	1.344	1,274	30,300	0.0133	0.0168	1,196
1527.0	42/19	0.1582	0.1582	1.424	1,429	33,600	0.0118	0.0151	1,314
1703.0	42/19	0.1671	0.1671	1.504	1,594	37,500	0.0106	0.0137	1,363
1933.0	42/19	0.1780	0.1780	1.602	1,809	42,500	0.00936	0.0123	1,465
2267.0	42/19	0.1928	0.1928	1.735	2,142	49,900	0.00806	0.0108	1,594
2493.0	72/19	0.1655	0.1655	1.821	2,357	50,400	0.00722	0.0099	1,687
2493.0	54/37	0.1655	0.1655	1.821	2,355	57,600	0.00743	0.0101	1,670

All values are nominal and subject to correction

*Current ratings are based on 75°C conductor temperature, 25°C ambient temperature, with 2ft./sec. wind in the sun.

**DC resistance is based on electrical resistivity of 16.946 ohm.cmil/ft @ 20c (61.2% IACS) for 1350-H19 wires and 19.755 ohm.cmil/ft @ 20c (52.5% IACS) for 6201 wires.