ACAR

Aluminum Conductor. Aluminum Alloy Reinforced. Bare.

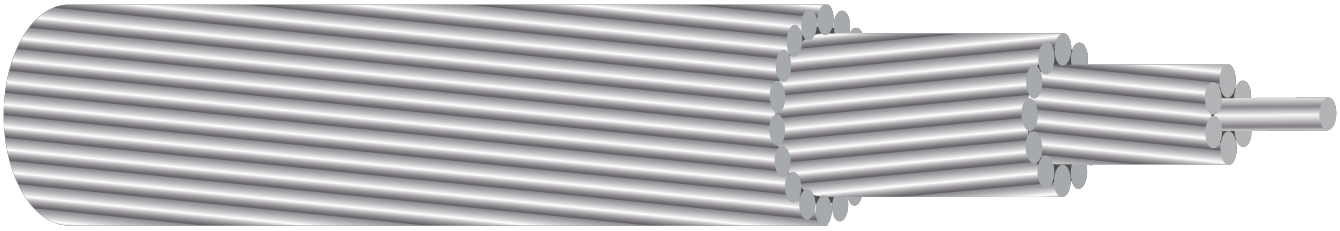

Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** 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.

APPLICATIONS AND FEATURES:

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.

SPECIFICATIONS:

- ASTM B230 Aluminum, 1350-H19 Wire for Electrical Purposes
- ASTM B398 Standard Specification for Aluminum-Alloy 6201-T81 and 6201-T83 Wire for Electrical Purposes
- ASTM B524 Concentric-Lay-Stranded Aluminum Conductors, Aluminum-Alloy Reinforced (ACAR, 1350/6201)

Table 1 – Weights and Measurements

Stock Number	Size	Stranding	Indiv. Wire 6201 Dia.	Indiv. Wire 1350 Dia.	Overall OD	Overall Weight
	(AWG or kcmil)	EC/6201	inch	inch	inch	lbs/1,000'
504027	355	12/7	0.1367	0.1367	0.683	332.1
	465.9	12/7	0.1566	0.1566	0.783	435.8
	503.6	12/7	0.1628	0.1628	0.814	471.1
	653.1	12/7	0.1854	0.1854	0.927	611
	739.8	30/7	0.1414	0.1414	0.99	692.7
	739.8	18/19	0.1414	0.1414	0.99	691.6
	853.7	30/7	0.1519	0.1519	1.063	799.3
	853.7	18/19	0.1519	0.1519	1.063	798
	927.2	30/7	0.1583	0.1583	1.108	868.2
	927.2	18/19	0.1583	0.1583	1.108	866.7
488551	1024.5	30/7	0.1664	0.1664	1.165	959.3
	1024.5	18/19	0.1664	0.1664	1.165	957.7
	1081	30/7	0.1709	0.1709	1.196	1012.1
	1081	18/19	0.1709	0.1709	1.196	1010.5
	1109	30/7	0.1731	0.1731	1.212	1038.4
	1109	18/19	0.1731	0.1731	1.212	1036.6
	1172	30/7	0.178	0.178	1.246	1097.3
	1172	18/19	0.178	0.178	1.246	1095.5
	1197	30/7	0.1799	0.1799	1.259	1120.8
	1197	18/19	0.1799	0.1799	1.259	1118.9
	1280	30/7	0.186	0.186	1.302	1198.5
	1280	18/19	0.186	0.186	1.302	1196.5
	1361	42/19	0.1494	0.1494	1.344	1273.6
	1527	42/19	0.1582	0.1582	1.424	1428.8
	1703	42/19	0.1671	0.1671	1.504	1593.5
	1933	42/19	0.178	0.178	1.602	1808.8
	2267	42/19	0.1928	0.1928	1.735	2142
	2493	72/19	0.1655	0.1655	1.821	2356.9
	2493	54/37	0.1655	0.1655	1.821	2354.5

Table 2 - Electrical and Engineering Data

Stock Number	Size	Rated Strength	DC Resistance @ 20C	AC Resistance @ 75C	Allowable Ampacity+
	(AWG or kcmil)	lbs	Ohms/1,000'	Ohms/1,000'	Amps
504027	355	8500	0.0514	0.0624	519
	465.9	11000	0.0392	0.0477	616
	503.6	11900	0.0362	0.0441	646
	653.1	15400	0.0279	0.0342	760
	739.8	15300	0.024	0.0296	831
	739.8	18800	0.0252	0.0308	814
	853.7	17500	0.0208	0.0257	907
	853.7	21500	0.0218	0.0268	890
	927.2	19000	0.0192	0.0238	955
	927.2	23400	0.0201	0.0247	936
488551	1024.5	20900	0.0173	0.0216	1015
	1024.5	25800	0.0182	0.0225	995
	1081	22100	0.0164	0.0205	1048
	1081	27200	0.0172	0.0213	1028
	1109	22700	0.016	0.02	1065
	1109	27900	0.0168	0.0208	1044
	1172	24000	0.0152	0.019	1101
	1172	29500	0.0159	0.0198	1080
	1197	24500	0.0148	0.0187	1115
	1197	30200	0.0156	0.0194	1094
	1280	26200	0.0139	0.0175	1160
	1280	32200	0.0146	0.0182	1139
	1361	30300	0.0133	0.0168	1196
	1527	33600	0.0118	0.0151	1314
	1703	37500	0.0106	0.0137	1363
	1933	42500	0.00936	0.0123	1465
	2267	49900	0.00806	0.0108	1594
	2493	50400	0.00722	0.0099	1687
	2493	57600	0.00743	0.0101	1670

+ Conductor temperature of 75°C, ambient temperature 25°C, emissivity 0.5, wind 2 ft./sec., in sun.