

ACAR - Aluminum Conductor Alloy Reinforced

Bare overhead conductor for standard-based line selection

ACAR - Aluminum Conductor Alloy Reinforced is prepared for preliminary product selection and quotation review. This product is used for overhead line routes where conductor material, stranding, rated strength and DC resistance must be reviewed against the selected project standard. Final selection should consider span length, mechanical loading, route environment and local utility requirements.



VOLTAGE

Not voltage-rated; selected by conductor standard and line design

CONDUCTOR

Aluminum / aluminum alloy conductor route, confirmed by technical table

TYPICAL USE

Overhead transmission and distribution lines

STANDARDS

ASTM B524; ASTM B230;
IEC 61089

DATA SCOPE

5 technical table(s) included for preliminary selection

SELECTION NOTE

Confirm standard route, conductor size, stranding, strength and line design.

For quotation review, provide cable type, standard, size, quantity and project destination.

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Application & Selection Summary

Typical applications

- Overhead transmission and distribution lines
- utility feeder routes
- substation or busbar connections
- replacement projects requiring standard-based bare conductor selection.

Selection logic

- Review the required standard route first.
- Compare conductor area, stranding, rated strength, DC resistance and overall diameter.
- For higher tension or long spans, compare with reinforced or alloy conductor alternatives.

Construction Overview

Item	Website-ready content
Product route	Concentric-lay stranded bare conductor. Material and reinforcement depend on the selected product type and standard route.
Voltage	Reviewed according to selected product standard
Conductor	Aluminum / aluminum alloy conductor route, confirmed by technical table
Standards	ASTM B524; ASTM B230; IEC 61089
Confirmation	Final structure, dimensions and packing should follow selected standard, quotation review and order specification.

Readable Data Index

Data route	Size / rating range	Construction	Diameter / OD	Resistance / weight / rating
ACAR - Aluminum Conductor Alloy Reinforced - Technical Tab	16 - 250	See table	5.28 - 21.30	1.7896 - 0.1154
ACAR - Aluminum Conductor Alloy Reinforced - Technical Tab	315 - 800	See table	23.40 - 38.40	0.0916 - 0.0361
ACAR - Aluminum Conductor Alloy Reinforced - Technical Tab	355 - 927.2	12/7 - 18/19	0.683 - 1.108	0.0514 - 0.0201
ACAR - Aluminum Conductor Alloy Reinforced - Technical Tab	1024.5 - 1280	7/30 - 18/19	1.165 - 1.302	0.0173 - 0.0146

Data boundary: these tables support website launch, quotation review and preliminary product selection. For project execution, final dimensions, electrical performance, packing and compliance documents should be confirmed against the selected project standard and order specification.

ACAR - Aluminum Conductor Alloy Reinforced - Technical Table 1

Reference table for preliminary selection and quotation review.

Nominal Area (mm²)	Construction (Al/Alloy x Wire Dia.)	Overall Diameter (mm)	Weight (kg/km)	Rated Strength (kN)	DC Resistance at 20°C (Ω/km)
16	4/3 x 1.76	5.28	46.6	3.85	1.7896
25	4/3 x 2.20	6.60	72.8	5.93	1.1453
40	4/3 x 2.78	8.35	116.5	9.25	0.7158
63	4/3 x 3.49	10.50	183.5	14.38	0.4545
100	4/3 x 4.40	13.20	291.2	22.52	0.2863
125	12/7 x 2.97	14.90	362.7	27.79	0.2302
160	12/7 x 3.36	16.80	464.2	35.04	0.1798
200	12/7 x 3.76	18.80	580.3	43.13	0.1439
250	12/7 x 4.21	21.00	725.3	53.92	0.1151
250	18/19 x 3.04	21.30	742.2	60.39	0.1154

ACAR - Aluminum Conductor Alloy Reinforced - Technical Table 2

Reference table for preliminary selection and quotation review.

Nominal Area (mm²)	Construction (Al/Alloy x Wire Dia.)	Overall Diameter (mm)	Weight (kg/km)	Rated Strength (kN)	DC Resistance at 20°C (Ω/km)
315	30/7 x 3.34	23.40	892.6	60.52	0.0916
315	18/19 x 3.42	23.90	935.1	76.09	0.0916
400	30/7 x 3.76	26.30	1133.5	75.19	0.0721
400	18/19 x 3.85	27.00	1187.5	95.58	0.0721
450	30/7 x 3.99	27.90	1275.2	84.59	0.0641
450	18/19 x 4.08	28.60	1335.9	107.52	0.0641
500	30/7 x 4.21	29.40	1416.9	93.98	0.0577
500	18/19 x 4.31	30.10	1484.3	119.47	0.0577
560	30/7 x 4.45	31.20	1586.9	105.26	0.0515
560	54/7 x 3.45	31.00	1571.9	101.54	0.0516
630	42/19 x 3.71	33.40	1820.0	130.25	0.0458
630	24/37 x 3.79	34.10	1897.5	160.19	0.0458
710	42/19 x 3.94	35.50	2051.2	146.78	0.0407
710	24/37 x 4.02	36.20	2138.4	180.53	0.0407
800	42/19 x 4.18	37.60	2311.2	162.39	0.0361
800	24/37 x 4.27	38.40	2409.5	203.41	0.0361

ACAR - Aluminum Conductor Alloy Reinforced - Technical Table 3

Reference table for preliminary selection and quotation review.

Size (kcmil)	Stranding	6201 / 1350 Wire Dia. (in.)	Overall Diameter (in.)	Weight (lb/1000ft)	Rated Strength (lb)	DC Resistance 20°C (Ω/1000ft)	Allowable Ampacity (A)
355	12/7	0.1367 / 0.1367	0.683	332.1	8500	0.0514	519
465.9	12/7	0.1566 / 0.1566	0.783	435.8	11000	0.0392	616
503.6	12/7	0.1628 / 0.1628	0.814	471.1	11900	0.0362	646
653.1	12/7	0.1854 / 0.1854	0.927	611.0	15400	0.0279	760
739.8	7/30	0.1414 / 0.1414	0.990	692.7	15300	0.0240	831
739.8	18/19	0.1414 / 0.1414	0.990	691.6	18800	0.0252	814
853.7	7/30	0.1519 / 0.1519	1.063	799.3	17500	0.0208	907
853.7	18/19	0.1519 / 0.1519	1.063	798.0	21500	0.0218	890
927.2	7/30	0.1583 / 0.1583	1.108	868.2	19000	0.0192	955
927.2	18/19	0.1583 / 0.1583	1.108	866.7	23400	0.0201	936

ACAR - Aluminum Conductor Alloy Reinforced - Technical Table 4

Reference table for preliminary selection and quotation review.

Size (kcmil)	Stranding	6201 / 1350 Wire Dia. (in.)	Overall Diameter (in.)	Weight (lb/1000ft)	Rated Strength (lb)	DC Resistance 20°C (Ω/1000ft)	Allowable Ampacity (A)
1024.5	7/30	0.1664 / 0.1664	1.165	959.3	20900	0.0173	1015
1024.5	18/19	0.1664 / 0.1664	1.165	957.7	25800	0.0182	995
1081	7/30	0.1709 / 0.1709	1.196	1012.1	22100	0.0164	1048
1081	18/19	0.1709 / 0.1709	1.196	1010.5	27200	0.0172	1028
1109	7/30	0.1731 / 0.1731	1.212	1038.4	22700	0.0160	1065
1109	18/19	0.1731 / 0.1731	1.212	1036.6	27900	0.0168	1044
1172	7/30	0.1780 / 0.1780	1.246	1097.3	24000	0.0152	1101
1172	18/19	0.1780 / 0.1780	1.246	1095.5	29500	0.0159	1080
1197	7/30	0.1799 / 0.1799	1.259	1120.8	24500	0.0148	1115
1197	18/19	0.1799 / 0.1799	1.259	1118.9	30200	0.0156	1094
1280	7/30	0.1860 / 0.1860	1.302	1198.5	26200	0.0139	1160
1280	18/19	0.1860 / 0.1860	1.302	1196.5	32200	0.0146	1139

ACAR - Aluminum Conductor Alloy Reinforced - Technical Table 5

Reference table for preliminary selection and quotation review.

Size (kcmil)	Stranding	6201 / 1350 Wire Dia. (in.)	Overall Diameter (in.)	Weight (lb/1000ft)	Rated Strength (lb)	DC Resistance 20°C (Ω/1000ft)	Allowable Ampacity (A)
1361	42/19	0.1494 / 0.1494	1.344	1273.6	30300	0.0133	1196
1527	42/19	0.1582 / 0.1582	1.424	1428.8	33600	0.0118	1314
1703	42/19	0.1671 / 0.1671	1.504	1593.5	37500	0.0106	1363
1933	42/19	0.1780 / 0.1780	1.602	1808.8	42500	0.00936	1465
2267	42/19	0.1928 / 0.1928	1.735	2142.0	49900	0.00806	1594
2493	72/19	0.1655 / 0.1655	1.821	2356.9	50400	0.00722	1687
2493	54/37	0.1655 / 0.1655	1.821	2354.5	57600	0.00743	1670