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# Scope

In recent years, the evolution of underground cables with extruded insulations, like crosslinked polyethylene (XLPE), and their enhanced performance has shifted the focus of attention from the installation of ordinary overhead lines to the installation of underground Extra-High Voltage (EHV) and High Voltage (HV) transmission circuits. The liberalization of the energy market and the need to connect new power plants to grids has stimulated growing requirements to extend existing transmission systems.

However, the choice of whether to use overhead line (OHL) or underground cable (UGC) must be consistent with safety, reliability and operational constraints to ensure that the capacity of the transmission grid efficiently matches the supply and demand of electrical energy. The choice between OHL and UGC is driven by technical, environmental and economic considerations.

Today's transmission system is being operated at power flow levels that reach the voltage, stability and thermal limits of cables and conductors. Transmission constraints and instabilities can cause negative impacts on the entire power system. Transmission lines require endurance against higher electrical and mechanical stresses in order to maintain the reliability of system operations.

Overhead transmission networks are an essential part of a country's infrastructure and are generally massive undertakings implemented in the developing regions.



Overhead conductors are classified by the types of materials used for conductors, types of reinforcing cores used, and either it is bare or insulated.

This catalogue contains design, construction and technical data of **MED Cables** whole range of overhead conductors including bare soft or hard drawn copper conductors; aluminum conductors; aluminum-alloy conductors; aluminum conductors, steel reinforced; aluminum conductors, aluminum-clad steel reinforced; aluminum conductors, aluminum-alloy reinforced; and weather-resistant XLPE insulated service drop cables.

The conductors designs detailed in this catalogue are in accordance with the relevant DIN, IEC, ASTM, BS and BS EN standards. However, **MED Cables** can also supply a range of alternative designs to meet customer-specified requirements.

It is essential that the type of conductor ordered is suitable for its intended use. Conductor choice will be based on the whole range of factors including transmission voltages, installation specifications, environmental conditions in the project terrain, and the performance characteristics of appropriate conductor types. It is therefore not possible to provide a conclusive guide to conductor selection. Contact us for specialist advice on suitable conductor designs that meet your specific needs.

Approximate conductor diameters are provided in this catalogue in order to give you an idea for selecting appropriate installation accessories. However, as finished diameters may sometimes vary, please contact our technical department for actual dimensions of all finished products. Similarly, conductor weights may vary and the data supplied in this catalogue should be considered approximate.



# Definitions

## 1. Aluminum

Aluminum is used as a generic term to mean hard drawn aluminum and aluminum alloy.

## 2. Wire

Filament of drawn metal having constant circular cross-section.

## 3. Conductor

Material intended to be used for carrying electric current consisting of multiple uninsulated wires twisted together.

## 4. Concentric-lay-stranded conductor

A conductor composed of a central core surrounded by one or more adjacent layers of wires laid helically in opposite directions.

### Standards

## 5. Direction of lay

The direction of twist of a layer of wires as it moves away from the viewer. A right-hand lay is in clockwise direction and a left-hand lay is in anti-clockwise direction.

## 6. Lay length

The axial length of one complete turn of the helix formed by an individual wire in a stranded conductor.

## 7. Lay ratio

Means the ratio of the lay length to the external diameter of the corresponding layer of wires in the stranded conductor.

## 8. Steel ratio

The ratio of steel area to aluminum area as a percentage in ACSR conductors.

## 9. Rated tensile strength

Estimate of the conductor breaking load calculated using the specified tensile properties of the component wires.

# Materials Properties

## Metals Used For Conductors

ELECTRICAL PROPERTIES			
Metal	Relative Conductivity Copper 100	Electrical Resistivity at 20 °C $\Omega \cdot \text{mm}^2 / \text{m}$	Temperature Coefficient of Resistance per °C
Annealed copper	100	0.017241	0.00393
Hard drawn copper	97.0	0.017770	0.00393
Hard drawn aluminum	61.0	0.028264	0.00403
Aluminum alloy - Type A	52.5	0.032840	0.00360
Aluminum alloy - Type B	53.0	0.032530	0.00360
Alumoweld - 20SA - A	20.3	0.084800	0.00360
Galvanized steel	-	-	-

PHYSICAL PROPERTIES			
Metal	Density at 20 °C $\text{kg} / \text{m}^3$	Coeff. of Linear Expansion Per °C $\times 10^{-6}$	Final Modulus of Elasticity MPa *
Annealed copper	8.890	17.0	98 100
Hard drawn copper	8.890	17.0	122 600
Hard drawn aluminum	2.703	23.0	68 000
Aluminum alloy - Type A	2.703	23.0	68 000
Aluminum alloy - Type B	2.703	23.0	68 000
Alumoweld - 20SA - A	6.590	13.0	162 000
Galvanized steel	7.780	11.5	207 000

\* 1 MPa = 1 N/mm<sup>2</sup>

# Bare Stranded Soft-Drawn Copper Conductors

## CONSTRUCTION

Bare stranded soft-drawn (annealed) copper conductor is a concentric-lay-stranded conductor consisting of annealed copper wires available in both single layer and multi-layer constructions.

## APPLICATION

Bare stranded soft-drawn (annealed) copper conductor is suitable for uninsulated hook up, jumpers and grounding conductors in electrical construction, where high conductivity and flexibility are required.

## APPLICABLE STANDARD

Bare stranded soft-drawn (annealed) copper conductor can be supplied to meet various International Standards as follows:

- IEC 60228
- BS EN 60228

However, **MED Cables** can also supply a range of alternative designs to meet customer-specified requirements.



## TECHNICAL DATA

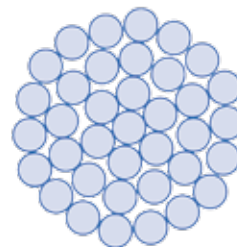
Composition	Coeff. of Linear Expansion Per °C x 10 <sup>-6</sup>
7	17.0
19	17.0
37	17.0
61	17.0



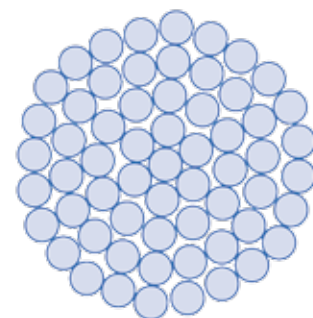
7 Wires



19 Wires



37 Wires



61 Wires

Bare Stranded Soft-Drawn Copper Conductors

IEC 60228 / BS EN 60228 Standards

Nominal cross sectional area	Conductor construction	Approx. overall diameter	Approx. overall weight	Max. DC Resistance at 20 °C
mm <sup>2</sup>	No. x Ø ( mm )	mm	Kg / km	Ω / km
1.5	7 x 0.52	1.56	13.5	12.1000
2.5	7 x 0.67	2.01	22.4	7.41000
4	7 x 0.85	2.55	36.0	4.61000
6	7 x 1.04	3.12	54.0	3.08000
10	7 x 1.34	4.02	90.0	1.83000
16	7 x 1.68	5.04	141.0	1.15000
25	7 x 2.14	6.42	228.0	0.72700
35	7 x 2.52	7.56	317.0	0.52400
50	19 x 1.78	8.90	429.0	0.38700
70	19 x 2.14	10.70	619.0	0.26800
95	19 x 2.50	12.50	845.0	0.19300
120	37 x 2.05	14.35	1109.0	0.15300
150	37 x 2.25	15.75	1336.0	0.12400
185	37 x 2.50	17.50	1649.0	0.09910
240	61 x 2.25	20.25	2206.0	0.07540
300	61 x 2.50	22.50	2724.0	0.06010
400	61 x 2.90	26.10	3665.0	0.04700
500	61 x 3.23	29.00	4546.0	0.03660

# Bare Stranded Hard-Drawn Copper Conductors

## CONSTRUCTION

Bare stranded hard-drawn copper conductor is a concentric-lay-stranded conductor consisting of hard-drawn copper wires available in both single layer and multi-layer constructions.

## APPLICATION

Bare stranded hard-drawn copper conductor is suitable for overhead transmission and distribution networks applications, where the highest electrical conductivity per unit area and good strength-to-weight ratio are required.

## APPLICABLE STANDARD

Bare stranded hard-drawn copper conductor can be supplied to meet various International Standards as follows :

- BS 7884
- DIN 48201 / 1

However, **MED Cables** can also supply a range of alternative designs to meet customer-specified requirements.



## TECHNICAL DATA

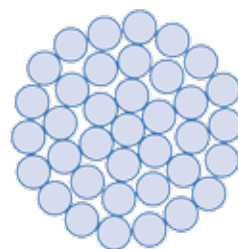
Composition	Final Modulus of Elasticity MPa	Coeff. of Linear Expansion Per °C x 10 <sup>-6</sup>
7	112 800	17.0
19	104 900	17.0
37	104 900	17.0
61	100 000	17.0



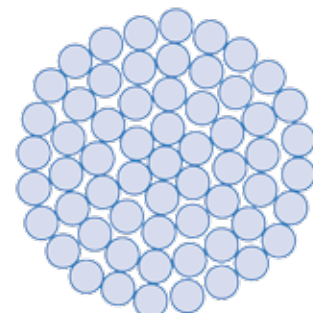
7 Wires



19 Wires



37 Wires



61 Wires



Bare Stranded Hard-Drawn Copper Conductors

BS 7884 Standard

Nominal cross sectional area	Conductor construction	Approx. overall diameter	Approx. overall weight	Max. DC Resistance at 20 °C	Minimum breaking load
mm <sup>2</sup>	No. x Ø ( mm )	mm	Kg / km	Ω / km	N
10	7 x 1.35	4.05	89.8	1.82900	3752
14	7 x 1.60	4.80	126.2	1.30300	5267
16	3 x 2.65	5.70	148.3	1.10600	6194
16	7 x 1.70	5.10	142.4	1.15400	5946
25	7 x 2.10	6.30	217.3	0.75630	9073
32	3 x 3.75	8.06	296.9	0.55200	12 400
32	7 x 2.46	7.38	298.2	0.54970	12 442
35	7 x 2.50	7.50	308.0	0.53370	12 860
50	7 x 3.00	9.00	443.5	0.37060	18 520
50	19 x 1.80	9.00	435.8	0.38190	17 700
70	7 x 3.55	10.65	621.1	0.26460	25 930
70	19 x 2.10	10.50	593.2	0.28060	24 090
95	19 x 2.50	12.50	840.7	0.19800	34 140
100	7 x 4.30	12.90	911.2	0.18100	36 540
120	19 x 2.80	14.00	1055.0	0.15780	42 830
125	19 x 2.90	14.50	1131.0	0.14710	45 940
150	19 x 3.20	16.00	1377.0	0.12080	55 940
150	37 x 2.25	15.75	1334.0	0.12640	53 880
185	19 x 3.55	17.75	1695.0	0.09815	68 860
185	37 x 2.50	17.50	1647.0	0.10240	66 490

Bare Stranded Hard-Drawn Copper Conductors

DIN 48201/1 Standard

Nominal cross sectional area	Conductor construction	Approx. overall diameter	Approx. overall weight	Max. DC Resistance at 20 °C	Ampacity ( * )	Calculated breaking load
mm <sup>2</sup>	No. x Ø ( mm )	mm	Kg / km	Ω / km	A	KN
10	7 x 1.35	4.1	90	1.80600	90	4.02
16	7 x 1.70	5.1	143	1.13850	125	6.37
25	7 x 2.10	6.3	218	0.74610	160	9.72
35	7 x 2.50	7.5	310	0.52640	200	13.77
50	7 x 3.00	9.0	446	0.37590	250	19.84
50	19 x 1.80	9.0	437	0.38880	250	19.38
70	19 x 2.10	10.5	594	0.27620	310	26.38
95	19 x 2.50	12.5	845	0.19490	380	37.39
120	37 x 2.00	14.0	1060	0.15540	425	46.90
150	37 x 2.25	15.8	1337	0.12380	510	58.93
185	37 x 2.50	17.5	1640	0.10030	585	72.76
240	61 x 2.25	20.3	2209	0.07530	700	97.23
300	61 x 2.50	22.5	2725	0.06100	800	120.04
400	61 x 2.89	26.0	3640	0.04560	960	160.42
500	61 x 3.23	29.1	4545	0.03650	1110	200.38

\* Standard values applicable up to 60 Hz at wind velocity of 0.6 m/s and solar effects for an original ambient temperature of 35 °C and a final conductor temperature of 70 °C. Reduce the values by an average of approximately 30% in case of special locations at still air.

# All Aluminum Conductors

## CONSTRUCTION

All Aluminum Conductors (AAC) is a concentric-lay-stranded conductor consisting of hard drawn aluminum wires available in both single layer and multi-layer constructions.

## APPLICATION

All Aluminum Conductors (AAC) can be used as a bare overhead conductor for distribution lines. Because of its low strength-to-weight ratio, (AAC) has limited use in transmission lines. AAC is extensively used in urban areas where spans are usually short but high conductivity is required.

## APPLICABLE STANDARD

All Aluminum Conductors (AAC) can be supplied to meet various International Standards as follows:

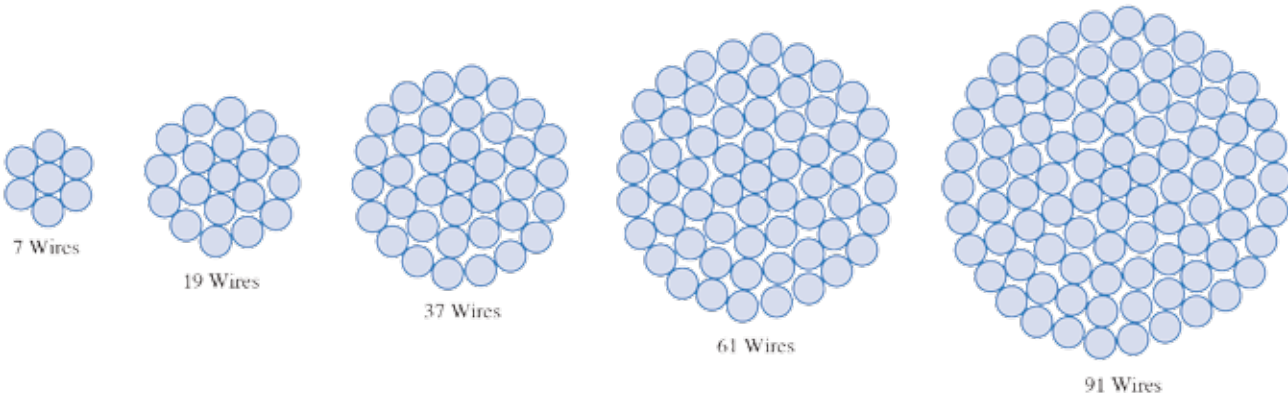
- BS 215 / 1
- IEC 61089
- ASTM B 231
- DIN 48201 / 5

However, **MED Cables** can also supply a range of alternative designs to meet customer-specified requirements.



## TECHNICAL DATA

Composition	Final Modulus of Elasticity MPa	Coeff. of Linear Expansion Per °C x 10 <sup>-6</sup>
7	63 300	23.0
19	61 200	23.0
37	58 900	23.0
61	58 300	23.0
91	58 300	23.0



All Aluminum Conductors ( AAC )

BS 215 / 1 Standard

Code Name	Nominal cross sectional area	Conductor construction	Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Calculated breaking load
	mm <sup>2</sup>	No. x Ø ( mm )	mm	Kg / km	Ω / km	KN
MIDGE	22	7 x 2.06	6.18	64	1.22700	3.99
ANT	50	7 x 3.10	9.30	145	0.54190	8.28
FLY	60	7 x 3.40	10.20	174	0.45050	9.90
WASP	100	7 x 4.39	13.17	290	0.27020	16.00
HORNET	150	19 x 3.25	16.25	434	0.18250	25.70
CHAFER	200	19 x 3.78	18.90	587	0.13490	32.40
COCKROACH	250	19 x 4.22	21.10	731	0.10830	40.40
BUTTERFLY	300	19 x 4.65	23.25	888	0.08916	48.75
CENTIPEDE	400	37 x 3.78	26.46	1145	0.06944	63.10

All Aluminum Conductors ( AAC ) - A1 Conductors

IEC 61089 Standard

Code Number	Nominal cross sectional area	Conductor construction	Approx. overall diameter	Approx. overall weight	Max. DC Resistance at 20 °C	Rated strength
	mm <sup>2</sup>	No. x Ø ( mm )	mm	Kg / km	Ω / km	KN
16	16	7 x 1.71	5.12	43.8	1.78960	3.04
25	25	7 x 2.13	6.40	68.4	1.14530	4.50
40	40	7 x 2.70	8.09	109.4	0.71580	6.80
63	63	7 x 3.39	10.20	172.3	0.45450	10.39
100	100	19 x 2.59	12.90	274.8	0.28770	17.00
125	125	19 x 2.89	14.50	343.6	0.23020	21.25
160	160	19 x 3.27	16.40	439.8	0.17980	26.40
200	200	19 x 3.66	18.30	549.7	0.14390	32.00
250	250	19 x 4.09	20.50	687.1	0.11510	40.00
315	315	37 x 3.29	23.00	867.9	0.09160	51.97
400	400	37 x 3.71	26.00	1102.0	0.07210	64.00
450	450	37 x 3.94	27.50	1239.8	0.06410	72.00
500	500	37 x 4.15	29.00	1377.6	0.05770	80.00
560	560	37 x 4.39	30.70	1542.9	0.05150	89.60
630	630	61 x 3.63	32.60	1738.3	0.04580	100.80
710	710	61 x 3.85	34.60	1959.1	0.04070	113.60
800	800	61 x 4.09	36.80	2207.4	0.03610	128.00
900	900	61 x 4.33	39.00	2483.3	0.03210	144.00
1000	1000	61 x 4.57	41.10	2759.2	0.02890	160.00
1120	1120	91 x 3.96	43.50	3093.5	0.02580	179.20

# All Aluminum Conductors

All Aluminum Conductors ( AAC )

ASTM B 231 Standard

Code Word	Nominal cross sectional area		Conductor construction	Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Rated strength
	AWG / MCM #	mm <sup>2</sup>	No. x Ø ( mm )	mm	Kg / km	Ω / km	KN
Rose	4	21.1	7 x 1.96	5.88	58.2	1.36505	3.91
Iris	2	33.6	7 x 2.47	7.41	92.6	0.85954	5.99
Pansy	1	42.4	7 x 2.78	8.34	116.6	0.67853	7.30
Poppy	1/0	53.5	7 x 3.12	9.36	147.2	0.53871	8.84
Aster	2/0	67.4	7 x 3.50	10.50	185.7	0.42808	11.10
Phlox	3/0	85.0	7 x 3.93	11.79	233.9	0.33953	13.50
Oxlip	4/0	107.2	7 x 4.42	13.26	295.2	0.26842	17.00
Valerian	250.0	126.7	19 x 2.91	14.55	348.6	0.22815	20.70
Sneezewort	250.0	126.7	7 x 4.80	14.40	348.8	0.22760	20.10
Laurel	266.8	135.2	19 x 3.01	15.05	372.2	0.21324	22.10
Daisy	266.8	135.2	7 x 4.96	14.88	372.3	0.21316	21.40
Peony	300.0	152.0	19 x 3.19	15.95	418.3	0.18986	24.30
Tulip	336.4	170.5	19 x 3.38	16.90	469.5	0.16911	27.30
Daffodil	350.0	177.3	19 x 3.45	17.25	487.9	0.16232	28.40
Canna	397.5	201.4	19 x 3.67	18.35	554.9	0.14344	31.60
Goldentuft	450.0	228.0	19 x 3.91	19.55	627.6	0.12637	35.00
Syringa	477.0	241.7	37 x 2.88	20.16	664.8	0.11961	38.60
Cosmos	477.0	241.7	19 x 4.02	20.10	664.8	0.11955	37.00
Hyacinth	500.0	253.3	37 x 2.95	20.65	696.8	0.11400	40.50
Zinnia	500.0	253.3	19 x 4.12	20.60	697.1	0.11382	38.90
Mistletoe	556.5	282.0	37 x 3.12	21.84	775.7	0.10192	44.30
Dahlia	556.5	282.0	19 x 4.35	21.75	775.8	0.10210	43.30
Meadowsweet	600.0	304.0	37 x 3.23	22.61	836.3	0.09509	47.50
Orchid	636.0	322.3	37 x 3.33	23.31	886.9	0.08947	50.40
Heuchera	650.0	329.4	37 x 3.37	23.59	907.4	0.08736	51.70
Flag	700.0	354.7	61 x 2.72	24.48	975.8	0.08134	57.10
Verbena	700.0	354.7	37 x 3.49	24.43	975.7	0.08145	55.40
Nasturtium	715.5	362.6	61 x 2.75	24.75	998.5	0.07959	58.40
Violet	715.5	362.6	37 x 3.53	24.71	998.5	0.07962	56.70
Cattail	750.0	380.0	61 x 2.82	25.38	1046.0	0.07567	60.30
Petunia	750.0	380.0	37 x 3.62	25.34	1046.0	0.07571	58.60
Lilac	795.0	402.8	61 x 2.90	26.10	1110.0	0.07155	63.80
Arbutus	795.0	402.8	37 x 3.72	26.04	1109.0	0.07169	61.80
Snapdragon	900.0	456.0	61 x 3.09	27.81	1256.0	0.06302	70.80
Cockscomb	900.0	456.0	37 x 3.96	27.72	1256.0	0.06327	68.40
Goldenrod	954.0	483.4	61 x 3.18	28.62	1331.0	0.05951	75.00
Magnolia	954.0	483.4	37 x 4.08	28.56	1331.0	0.05960	72.60
Camellia	1000.0	506.7	61 x 3.25	29.25	1394.0	0.05697	78.30
Hawkweed	1000.0	506.7	37 x 4.18	29.26	1395.0	0.05678	76.20
Larkspur	1033.5	523.7	61 x 3.31	29.79	1442.0	0.05493	81.30
Bluebell	1033.5	523.7	37 x 4.25	29.75	1441.0	0.05493	78.80
Marigold	1113.0	564.0	61 x 3.43	30.87	1553.0	0.05115	87.30
Hawthorn	1192.5	604.2	61 x 3.55	31.95	1662.0	0.04775	93.50
Narcissus	1272.0	644.5	61 x 3.67	33.03	1774.0	0.04468	98.10
Columbine	1351.0	694.8	61 x 3.78	34.02	1884.0	0.04212	104.00

► Cont'd

All Aluminum Conductors ( AAC )

ASTM B 231 Standard

Code Word	Nominal cross sectional area		Conductor construction	Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Rated strength
	AWG / MCM *	mm <sup>2</sup>	No. x Ø ( mm )	mm	Kg / km	Ω / km	KN
Carnation	1431.0	725.1	61 x 3.89	35.01	1997.0	0.03977	108.00
Gladiolus	1510.5	765.4	61 x 4.00	36.00	2108.0	0.03761	114.00
Coreopsis	1590.0	805.7	61 x 4.10	36.90	2216.0	0.03580	120.00
Jessamine	1750.0	886.7	61 x 4.30	38.70	2442.0	0.03255	132.00
Cowslip	2000.0	1013.0	91 x 3.77	41.47	2787.0	0.02866	153.00
Sagebrush	2250.0	1140.0	91 x 3.99	43.89	3166.0	0.02559	167.00
Lupine	2500.0	1267.0	91 x 4.21	46.31	3519.0	0.02298	186.00
Bitterroot	2750.0	1393.0	91 x 4.42	48.62	3872.0	0.02085	205.00

\* For small sizes the conductor cross-section is expressed in AWG number (American Wire Gauge) and for large sizes in MCM (milli-circular-mil)

All Aluminum Conductors ( AAC )

DIN 48201 / 5 Standard

Nominal cross sectional area	Conductor construction	Approx. overall diameter	Approx. overall weight	Max. DC Resistance at 20 °C	Ampacity ( * )	Calculated breaking load
mm <sup>2</sup>	No. x Ø ( mm )	mm	Kg / km	Ω / km	A	KN
16	7 x 1.70	5.1	43	1.80180	110	2.84
25	7 x 2.10	6.3	66	1.18080	145	4.17
35	7 x 2.50	7.5	94	0.83320	180	5.78
50	7 x 3.00	9.0	135	0.57860	225	7.94
50	19 x 1.80	9.0	133	0.59500	225	8.45
70	19 x 2.10	10.5	181	0.43710	270	11.32
95	19 x 2.50	12.5	256	0.30840	340	15.68
120	19 x 2.80	14.0	322	0.24590	390	18.78
150	37 x 2.25	15.8	406	0.19600	455	25.30
185	37 x 2.50	17.5	500	0.15870	520	30.54
240	61 x 2.25	20.3	670	0.11910	625	39.51
300	61 x 2.50	22.5	827	0.09649	710	47.70
400	61 x 2.89	26.0	1104	0.07221	855	60.86
500	61 x 3.23	29.1	1379	0.05781	990	74.67
625	91 x 2.96	32.6	1732	0.04625	1140	95.25
800	91 x 3.35	36.9	2218	0.03611	1340	118.39
1000	91 x 3.74	41.1	2767	0.02897	1540	145.76

\* Standard values applicable up to 60 Hz at wind velocity of 0.6 m/s and solar effects for an original ambient temperature of 35 °C and a final conductor temperature of 80 °C. Reduce the values by an average of approximately 30% in case of special locations at still air.

# All Aluminum-Alloy Conductors

## CONSTRUCTION

All Aluminum-Alloy Conductors (AAAC) is a concentric-lay-stranded conductor consisting of aluminum-alloy wires available in both single layer and multi-layer constructions.

## APPLICATION

All Aluminum-Alloy Conductors (AAAC) can be used in Medium, High and Extra-High voltage transmission lines. AAAC offers better sag performance due to the high strength-to-weight ratio provided by the aluminum-alloy. In addition, AAAC provides a higher corrosion resistance than ACSR conductors.

## APPLICABLE STANDARD

All Aluminum-Alloy Conductors (AAAC) can be supplied to meet various International Standards as follows :

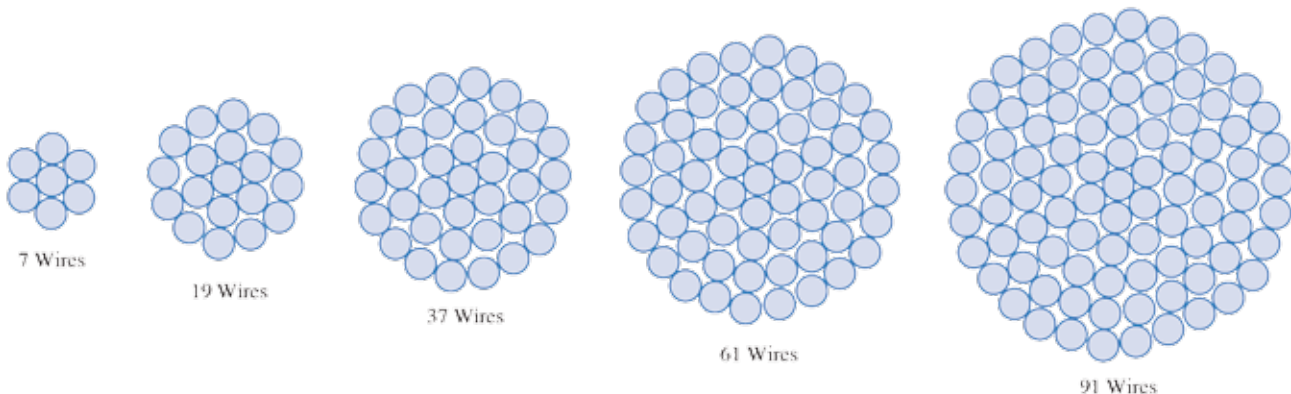
- IEC 61089
- ASTM B 399
- BS EN 50182
- DIN 48201 / 6

However, **MED Cables** can also supply a range of alternative designs to meet customer-specified requirements.



## TECHNICAL DATA

Composition	Final Modulus of Elasticity MPa	Coeff. of Linear Expansion Per °C x 10 <sup>-6</sup>
7	63 300	23.0
19	61 200	23.0
37	58 900	23.0
61	58 300	23.0
91	58 300	23.0



All Aluminum-Alloy Conductors ( AAAC ) - A2 Conductors

IEC 61089 Standard

Code Number	Nominal cross sectional area		Conductor construction	Approx. overall diameter	Approx. overall weight	Max. DC Resistance at 20 °C	Rated strength
	mm <sup>2</sup>		No. x Ø ( mm )	mm	Kg / km	Ω / km	KN
16	18.4		7 x 1.83	5.49	50.4	1.78960	5.43
25	28.8		7 x 2.29	6.86	78.7	1.14530	8.49
40	46.0		7 x 2.89	8.68	125.9	0.71580	13.58
63	72.5		7 x 3.63	10.90	198.3	0.45450	21.39
100	115.0		19 x 2.78	13.90	316.3	0.28770	33.95
125	144.0		19 x 3.10	15.50	395.4	0.23020	42.44
160	184.0		19 x 3.51	17.60	506.1	0.17980	54.32
200	230.0		19 x 3.93	19.60	632.7	0.14390	67.91
250	288.0		19 x 4.39	22.00	790.8	0.11510	84.88
315	363.0		37 x 3.53	24.70	998.9	0.09160	106.95
400	460.0		37 x 3.98	27.90	1268.4	0.07210	135.81
450	518.0		37 x 4.22	29.60	1426.9	0.06410	152.79
500	575.0		37 x 4.45	31.20	1585.5	0.05770	169.76
560	645.0		61 x 3.67	33.00	1778.4	0.05160	190.14
630	725.0		61 x 3.89	35.00	2000.7	0.04580	213.90
710	817.0		61 x 4.13	37.20	2254.8	0.04070	241.07
800	921.0		61 x 4.38	39.50	2540.6	0.03610	271.62
900	1036.0		91 x 3.81	41.80	2861.1	0.03210	305.58
1000	1151.0		91 x 4.01	44.10	3179.0	0.02890	339.53
1120	1289.0		91 x 4.25	46.70	3560.5	0.02580	380.27
1250	1439.0		91 x 4.49	49.40	3973.7	0.02310	424.41

All Aluminum-Alloy Conductors ( AAAC )

ASTM B 399 Standard

Code Word	Nominal cross sectional area		Conductor construction	Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Rated strength
	MCM	mm <sup>2</sup>	No. x Ø ( mm )	mm	Kg / km	Ω / km	KN
Alton	48.69	24.7	7 x 2.12	6.36	67.8	1.35568	7.83
Ames	77.47	39.2	7 x 2.67	8.02	107.5	0.85469	12.40
Azusa	123.30	62.4	7 x 3.37	10.11	171.3	0.53650	18.90
Anaheim	155.40	78.6	7 x 3.78	11.35	215.6	0.42643	23.80
Amherst	195.70	99.3	7 x 4.25	12.75	272.5	0.33733	30.00
Alliance	246.90	125.0	7 x 4.77	14.31	343.2	0.26779	37.80
Butte	312.80	159.0	19 x 3.26	16.30	435.1	0.21122	46.50
Canton	394.50	200.0	19 x 3.66	18.30	548.5	0.16758	58.60
Cairo	465.40	236.0	19 x 3.98	19.88	648.6	0.14171	69.20
Darien	559.50	284.0	19 x 4.36	21.79	778.3	0.11809	83.10
Elgin	652.40	331.0	19 x 4.71	23.54	908.3	0.10119	97.00
Flint	740.80	375.0	37 x 3.59	25.16	1028.0	0.08944	107.00
Greeley	927.20	470.0	37 x 4.02	28.14	1289.0	0.07133	135.00

→ Cont'd

# All Aluminum-Alloy Conductors

All Aluminum-Alloy Conductors ( AAAC )

ASTM B 399 Standard

Nominal cross sectional area		Conductor construction	Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Rated strength
MCM	mm <sup>2</sup>	No. x Ø ( mm )	mm	Kg / km	Ω / km	KN
41.74	21.1	7 x 1.96	5.88	57.9	1.58600	6.69
66.36	33.5	7 x 2.47	7.41	92.0	0.99870	10.60
105.60	53.5	7 x 3.12	9.36	146.8	0.62592	17.00
133.10	67.3	7 x 3.50	10.50	184.8	0.49738	20.40
167.80	84.9	7 x 3.93	11.79	233.0	0.39450	25.70
211.60	107.0	7 x 4.42	13.26	294.7	0.31188	32.50
250.00	126.0	19 x 2.91	14.55	346.7	0.26509	38.80
300.00	152.0	19 x 3.19	15.95	416.7	0.22059	46.60
350.00	178.0	19 x 3.45	17.25	487.3	0.18860	52.00
400.00	203.0	19 x 3.69	18.45	557.5	0.16486	59.50
450.00	228.0	19 x 3.91	19.55	626.0	0.14683	66.80
500.00	253.0	19 x 4.12	20.60	695.0	0.13224	74.20
550.00	279.0	37 x 3.10	21.70	766.2	0.11995	83.90
600.00	303.0	37 x 3.23	22.16	831.9	0.11049	91.00
650.00	330.0	37 x 3.37	23.59	905.5	0.10150	94.90
700.00	354.0	37 x 3.49	24.43	971.2	0.09464	101.00
750.00	381.0	37 x 3.62	25.34	1045.0	0.08796	109.00
800.00	404.0	37 x 3.73	26.11	1109.0	0.08285	116.00
900.00	456.0	37 x 3.96	27.72	1250.0	0.07351	131.00
1000.00	508.0	37 x 4.18	29.26	1393.0	0.06597	146.00
1250.00	631.0	61 x 3.63	32.67	1732.0	0.05306	179.00
1500.00	759.0	61 x 3.98	35.82	2082.0	0.04414	215.00
1750.00	886.0	61 x 4.30	38.70	2431.0	0.03781	251.00

All Aluminum-Alloy Conductors ( AAAC ) - AL3 Conductors - U.K.

BS EN 50182 Standard

Code	Old Code	Nominal cross sectional area	Conductor construction	Approx. overall diameter	Approx. overall weight	Max. DC Resistance at 20 °C	Calculated breaking load
		mm <sup>2</sup>	No. x Ø ( mm )	mm	Kg / km	Ω / km	KN
19-AL3	BOX	18.8	7 x 1.85	5.55	51.4	1.74800	5.55
24-AL3	ACACIA	23.8	7 x 2.08	6.24	64.9	1.38280	7.02
30-AL3	ALMOND	30.1	7 x 2.34	7.02	82.2	1.09260	8.88
35-AL3	CEDAR	35.5	7 x 2.54	7.62	96.8	0.92730	10.46
42-AL3	DEODAR	42.2	7 x 2.77	8.31	115.2	0.77970	12.44
48-AL3	FIR	47.8	7 x 2.95	8.85	130.6	0.68750	14.11
60-AL3	HAZEL	59.9	7 x 3.30	9.90	163.4	0.54940	17.66
72-AL3	PINE	71.6	7 x 3.61	10.80	195.6	0.45910	21.14
84-AL3	HOLLY	84.1	7 x 3.91	11.70	229.5	0.39130	24.79
90-AL3	WILLOW	89.7	7 x 4.04	12.10	245.0	0.36650	26.47
119-AL3	OAK	118.9	7 x 4.65	14.00	324.5	0.27670	35.07
151-AL3	MULBERRY	150.9	19 x 3.18	15.90	414.3	0.21920	44.52
181-AL3	ASH	180.7	19 x 3.48	17.40	496.1	0.18300	53.31

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All Aluminum-Alloy Conductors ( AAAC ) - AL3 Conductors - U.K.

BS EN 50182 Standard

Code	Old Code	Nominal cross sectional area	Conductor construction	Approx. overall diameter	Approx. overall weight	Max. DC Resistance at 20 °C	Calculated breaking load
		mm <sup>2</sup>	No. x Ø ( mm )	mm	Kg / km	Ω / km	KN
211-AL3	ELM	211.0	19 x 3.76	18.80	579.2	0.15680	62.24
239-AL3	POPLAR	239.4	37 x 2.87	20.10	659.4	0.13870	70.61
303-AL3	SYCAMORE	303.2	37 x 3.23	22.60	835.2	0.10950	89.40
362-AL3	UPAS	362.1	37 x 3.53	24.70	997.5	0.09170	106.82
479-AL3	YEW	479.0	37 x 4.06	28.40	1319.6	0.06930	141.31
498-AL3	TOTARA	498.1	37 x 4.14	29.00	1372.1	0.06660	146.93
587-AL3	RUBUS	586.9	61 x 3.50	31.50	1622.0	0.05670	173.13
659-AL3	SORBUS	659.4	61 x 3.71	33.40	1822.5	0.05050	194.53
821-AL3	ARAUCARIA	821.1	61 x 4.14	37.30	2269.4	0.04060	242.24
996-AL3	REDWOOD	996.2	61 x 4.56	41.00	2753.2	0.03340	293.88

All Aluminum-Alloy Conductors ( AAAC )

DIN 48201 / 6 Standard

Nominal cross sectional area	Conductor construction	Approx. overall diameter	Approx. overall weight	Max. DC Resistance at 20 °C	Ampacity (*)	Calculated breaking load
mm <sup>2</sup>	No. x Ø ( mm )	mm	Kg / km	Ω / km	A	KN
16	7 x 1.70	5.1	43	2.0910	105	4.44
25	7 x 2.10	6.3	66	1.37030	135	6.77
35	7 x 2.50	7.5	94	0.96690	170	9.60
50	7 x 3.00	9.0	135	0.67140	210	13.82
50	19 x 1.80	9.0	133	0.69050	210	13.50
70	19 x 2.10	10.5	181	0.50730	255	18.38
95	19 x 2.50	12.5	256	0.35790	320	26.05
120	19 x 2.80	14.0	322	0.28540	365	32.68
150	37 x 2.25	15.8	406	0.22740	425	41.09
185	37 x 2.50	17.5	500	0.18420	490	50.73
240	61 x 2.25	20.3	670	0.13830	585	67.74
300	61 x 2.50	22.5	827	0.11200	670	83.63
400	61 x 2.89	26.0	1104	0.08380	810	111.76
500	61 x 3.23	29.1	1379	0.06700	930	139.60
625	91 x 2.96	32.6	1732	0.05360	1075	174.90
800	91 x 3.35	36.9	2218	0.04180	1255	224.02
1000	91 x 3.74	41.1	2767	0.03360	1450	279.22

\* Standard values applicable up to 60 Hz at wind velocity of 0.6 m/s and solar effects for an original ambient temperature of 35 °C and a final conductor temperature of 80 °C. Reduce the values by an average of approximately 30% in case of special locations at still air.

# Aluminum Conductors, Steel-Reinforced

## CONSTRUCTION

Aluminum Conductors, Steel-Reinforced (ACSR) is a concentric-lay-stranded conductor consisting of galvanized steel central core with one or more layers of hard drawn stranded aluminum wires laid helically over the steel core. Steel core wires are protected from corrosion by galvanization.

## APPLICATION

Aluminum Conductors, Steel-Reinforced (ACSR) can be used in Medium, High and Extra-High voltage transmission lines; also used for primary and secondary distribution lines. The combination of aluminum and steel in the conductor design offers both efficient conductivity and high tensile strength making ACSR the most economical solution for overhead power transmission and distribution projects.

## APPLICABLE STANDARD

Aluminum Conductors, Steel-Reinforced (ACSR) can be supplied to meet various International Standards as follows :

- BS 215 / 2
- IEC 61089
- DIN 48204
- ASTM B 232



However, **MED Cables** can also supply a range of alternative designs to meet customer-specified requirements.

## TECHNICAL DATA

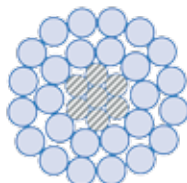
Composition (AL / ST)	Final Modulus of Elasticity MPa	Coeff. of Linear Expansion Per °C x 10 <sup>6</sup>
6 / 1	79 000	19.1
6 / 7	75 000	19.8
26 / 7	74 200	18.9
30 / 7	80 000	17.8
30 / 19	78 500	18.0
54 / 7	67 100	19.3
54 / 19	69 700	19.5



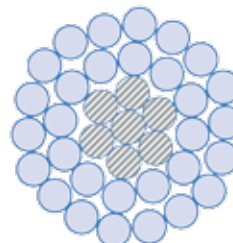
6/1 Wires



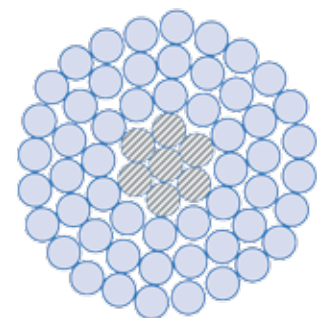
18/1 Wires



26/7 Wires



30/7 Wires



54/7 Wires

Aluminum Conductors, Steel-Reinforced ( ACSR )

BS 215 / 2 Standard

Code Name	Nominal cross sectional area	Conductor construction		Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Calculated breaking load
		Aluminum	Steel				
	mm <sup>2</sup>	No. x Ø ( mm )		mm	Kg / km	Ω / km	KN
GOPHER	25	6 x 2.36	1 x 2.36	7.08	106	1.09300	9.61
WEASEL	30	6 x 2.59	1 x 2.59	7.77	128	0.90770	11.45
FERRET	40	6 x 3.00	1 x 3.00	9.00	172	0.67660	15.20
RABBIT	50	6 x 3.35	1 x 3.35	10.05	214	0.54260	18.35
HORSE	70	12 x 2.79	7 x 2.79	13.95	538	0.39360	61.20
DOG	100	6 x 4.72	7 x 1.57	14.15	394	0.27330	32.70
WOLF	150	30 x 2.59	7 x 2.59	18.13	726	0.18280	69.20
DINGO	150	18 x 3.35	1 x 3.35	16.75	506	0.18150	35.70
LYNX	175	30 x 2.79	7 x 2.79	19.53	842	0.15760	79.80
CARACAL	175	18 x 3.61	1 x 3.61	18.05	587	0.15630	41.10
PANTHER	200	30 x 3.00	7 x 3.00	21.00	974	0.13630	92.25
JAGUAR	200	18 x 3.86	1 x 3.86	19.30	671	0.13670	46.55
ZEBRA	400	54 x 3.18	7 x 3.18	28.62	1621	0.06740	131.90

Aluminum Conductors, Steel-Reinforced ( ACSR ) - A1/S1A Conductors

IEC 61089 Standard

Code Number	Steel ratio	Nominal cross sectional area		Conductor construction		Approx. overall diameter	Approx. overall weight	Max. DC Resistance at 20 °C	Rated strength
		Al	St	Al	St				
	%	mm <sup>2</sup>		No. x Ø ( mm )		mm	Kg / km	Ω / km	KN
16	17	16	2.67	6 x 1.84	1 x 1.84	5.53	64.6	1.79340	6.08
25	17	25	4.17	6 x 2.30	1 x 2.30	6.91	100.9	1.14780	9.13
40	17	40	6.67	6 x 2.91	1 x 2.91	8.74	161.5	0.71740	14.40
63	17	63	10.50	6 x 3.66	1 x 3.66	11.00	254.4	0.45550	21.63
100	17	100	16.70	6 x 4.61	1 x 4.61	13.80	403.8	0.28690	34.33
125	6	125	6.94	18 x 2.97	1 x 2.97	14.90	397.9	0.23040	29.17
125	16	125	20.40	26 x 2.47	7 x 1.92	15.70	503.9	0.23100	45.69
160	6	160	8.89	18 x 3.36	1 x 3.36	16.80	509.3	0.18000	36.18
160	16	160	26.10	26 x 2.80	7 x 2.18	17.70	644.9	0.18050	57.69
200	6	200	11.10	18 x 3.76	1 x 3.76	18.80	636.7	0.14400	44.22
200	16	200	32.60	26 x 3.13	7 x 2.43	19.80	806.2	0.14440	70.13
250	10	250	24.60	22 x 3.80	7 x 2.11	21.60	880.6	0.11540	68.72
250	16	250	40.70	26 x 3.50	7 x 2.72	22.20	1007.7	0.11550	87.67
315	7	315	21.80	45 x 2.99	7 x 1.99	23.90	1039.6	0.09170	79.03
315	16	315	51.30	26 x 3.93	7 x 3.05	24.90	1269.7	0.09170	106.83
400	7	400	27.70	45 x 3.36	7 x 2.24	26.90	1320.1	0.07220	98.36
400	13	400	51.90	54 x 3.07	7 x 3.07	27.60	1510.3	0.07230	123.04
450	7	450	31.10	45 x 3.57	7 x 2.38	28.50	1485.2	0.06420	107.47
450	13	450	58.30	54 x 3.26	7 x 3.26	29.30	1699.1	0.06430	138.42
500	7	500	34.60	45 x 3.76	7 x 2.51	30.10	1650.2	0.05780	119.41
500	13	500	64.80	54 x 3.43	7 x 3.43	30.90	1887.9	0.05780	153.50

➔ Cont'd

# Aluminum Conductors, Steel-Reinforced

Aluminum Conductors, Steel-Reinforced ( ACSR ) - A1 / S1A Conductors

IEC 61089 Standard

Code Number	Steel ratio	Nominal cross sectional area		Conductor construction		Approx. overall diameter	Approx. overall weight	Max. DC Resistance at 20 °C	Rated strength
		Al	St	Al	St				
	%	mm <sup>2</sup>		No. x Ø ( mm )		mm	Kg / km	Ω / km	KN
560	7	560	38.70	45 x 3.98	7 x 2.65	31.80	1848.2	0.05160	133.74
560	13	560	70.90	54 x 3.63	19 x 2.18	32.70	2103.4	0.05160	172.59
630	7	630	43.60	45 x 4.22	7 x 2.81	33.80	2079.2	0.04590	150.45
630	13	630	79.80	54 x 3.85	19 x 2.31	34.70	2366.3	0.04590	191.77
710	7	710	49.10	45 x 4.48	7 x 2.99	35.90	2343.2	0.04070	169.56
710	13	710	89.90	54 x 4.09	19 x 2.45	36.80	2666.8	0.04070	216.12
800	4	800	34.60	72 x 3.76	7 x 2.51	37.60	2480.2	0.03610	167.41
800	8	800	66.70	84 x 3.48	7 x 3.48	38.30	2732.7	0.03620	205.33
800	13	800	101.0	54 x 4.34	19 x 2.61	39.10	3004.9	0.03620	243.52
900	4	900	38.90	72 x 3.99	7 x 2.66	39.90	2790.2	0.03210	188.33
900	8	900	75.00	84 x 3.69	7 x 3.69	40.60	3074.2	0.03220	226.50
1000	4	1000	43.20	72 x 4.21	7 x 2.80	42.10	3100.3	0.02890	209.26
1120	4	1120	47.30	72 x 4.45	19 x 1.78	44.50	3464.9	0.02580	234.53
1120	8	1120	91.20	84 x 4.12	19 x 2.47	45.30	3811.5	0.02580	283.17
1250	8	1250	102.0	84 x 4.35	19 x 2.61	47.90	4253.9	0.02320	316.04
1250	4	1250	52.80	72 x 4.70	19 x 1.88	47.00	3867.1	0.02310	261.75

Aluminum Conductors, Steel-Reinforced ( ACSR )

DIN 48204 Standard

Nominal cross sectional area	Nominal cross sectional area		Conductor construction		Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Ampacity ( ° )	Rated strength
	Al	St	Al	St					
	mm <sup>2</sup>		No. x Ø ( mm )		mm	Kg / km	Ω / km	A	KN
16 / 2.5	15.27	2.54	6 x 1.80	1 x 1.80	5.4	62	1.87930	105	5.81
25 / 4	23.86	3.98	6 x 2.25	1 x 2.25	6.8	97	1.20280	140	9.02
35 / 6	34.35	5.73	6 x 2.70	1 x 2.70	8.1	140	0.83530	170	12.70
44 / 32	43.98	31.67	14 x 2.00	7 x 2.40	11.2	373	0.65730	195	45.46
50 / 8	48.25	8.04	6 x 3.20	1 x 3.20	9.6	196	0.59460	210	17.18
50 / 30	51.17	29.85	12 x 2.33	7 x 2.33	11.7	378	0.56440	213	44.28
70 / 12	69.89	11.40	26 x 1.85	7 x 1.44	11.7	284	0.41300	290	26.31
95 / 15	94.39	15.33	26 x 2.15	7 x 1.67	13.6	383	0.30580	350	35.17
95 / 55	96.61	66.30	12 x 3.20	7 x 3.20	16.0	714	0.29920	367	80.20
105 / 75	105.67	75.55	14 x 3.10	19 x 2.25	17.5	899	0.27360	394	106.69
120 / 20	121.57	19.85	26 x 2.44	7 x 1.90	15.5	494	0.23740	410	44.94
120 / 70	122.15	71.25	12 x 3.60	7 x 3.60	18.0	904	0.23640	724	98.16
125 / 30	127.92	29.85	30 x 2.33	7 x 2.33	16.3	590	0.22590	425	57.86
150 / 25	148.86	24.25	26 x 2.70	7 x 2.10	17.1	604	0.19390	470	54.37
170 / 40	171.77	40.08	30 x 2.70	7 x 2.70	18.9	794	0.16820	520	77.01
185 / 30	183.78	29.85	26 x 3.00	7 x 2.33	19.0	744	0.15710	535	66.28

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Aluminum Conductors, Steel-Reinforced ( ACSR )

DIN 48204 Standard

Nominal cross sectional area	Nominal cross sectional area		Conductor construction		Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Ampacity ( * )	Rated strength
	Al	St	Al	St					
	mm <sup>2</sup>		No. x Ø ( mm )						
210 / 35	209.10	34.09	26 x 3.20	7 x 2.49	20.3	848	0.13800	590	74.94
210 / 50	212.06	49.48	30 x 3.00	7 x 3.00	21.0	979	0.13630	610	92.25
230 / 30	230.91	28.85	24 x 3.50	7 x 2.33	21.0	874	0.12490	630	73.09
240 / 40	243.05	39.49	26 x 3.45	7 x 2.68	21.8	985	0.11880	645	86.46
265 / 35	263.66	34.09	24 x 3.74	7 x 2.49	22.4	998	0.10940	680	82.94
300 / 50	304.26	49.48	26 x 3.85	7 x 3.00	24.5	1233	0.09490	740	105.09
305 / 40	304.62	39.49	54 x 2.68	7 x 2.68	24.1	1155	0.09490	740	99.30
340 / 30	339.29	29.85	48 x 3.00	7 x 2.33	25.0	1174	0.08510	790	92.56
380 / 50	381.70	49.48	54 x 3.00	7 x 3.00	27.0	1448	0.07570	840	120.91
385 / 35	386.04	34.09	48 x 3.20	7 x 2.49	26.7	1336	0.07480	850	104.31
435 / 55	434.29	56.30	54 x 3.20	7 x 3.20	28.8	1647	0.06660	900	136.27
450 / 40	448.71	39.49	48 x 3.45	7 x 2.68	28.7	1553	0.06440	920	120.19
490 / 65	490.29	63.55	54 x 3.40	7 x 3.40	30.6	1860	0.05900	960	152.85
495 / 35	494.36	34.09	45 x 3.74	7 x 2.49	29.9	1636	0.05840	985	120.31
510 / 45	510.54	45.28	48 x 3.68	7 x 2.87	30.7	1770	0.05660	995	134.33
550 / 70	549.65	71.25	54 x 3.60	7 x 3.60	32.4	2085	0.05260	1020	167.42
560 / 50	561.7	49.48	48 x 3.86	7 x 3.00	32.2	1943	0.05140	1040	146.28
570 / 40	571.16	39.49	45 x 4.02	7 x 2.68	32.2	1889	0.05060	1050	137.98
650 / 45	653.49	45.28	45 x 4.30	7 x 2.87	34.4	2163	0.04420	1120	155.52
680 / 85	678.58	85.95	54 x 4.00	19 x 2.40	36.0	2564	0.04260	1150	209.99

\* Standard values applicable up to 60 Hz at wind velocity of 0.6 m/s and solar effects for an original ambient temperature of 35 °C and a final conductor temperature of 80 °C. Reduce the values by an average of approximately 30% in case of special locations at still air.

Aluminum Conductors, Steel-Reinforced ( ACSR )

ASTM B 232 Standard

Code Word	Nominal cross sectional area		Conductor construction		Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Rated strength
	MCM	mm <sup>2</sup>	Al	St				
			No. x Ø ( mm )					
Turkey	26.24	13.30	6 x 1.68	1 x 1.68	5.04	53.6	2.15703	5.28
Swan	41.74	21.15	6 x 2.12	1 x 2.12	6.36	85.3	1.35457	8.30
Swanate	41.74	21.15	7 x 1.96	1 x 2.61	6.53	99.6	1.35836	10.53
Sparrow	66.36	33.62	6 x 2.67	1 x 2.67	8.01	135.7	0.85399	12.69
Sparate	66.36	33.62	7 x 2.47	1 x 3.30	8.24	158.7	0.85533	16.14
Grouse	80.00	40.54	8 x 2.54	1 x 4.24	9.32	221.4	0.71122	22.86
Robin	83.69	42.41	6 x 3.00	1 x 3.00	9.00	171.1	0.67644	15.81
Petrel	101.80	51.58	12 x 2.34	7 x 2.34	11.70	377.7	0.56140	46.16
Raven	105.60	53.51	6 x 3.37	1 x 3.37	10.11	216.1	0.53606	19.35
Minorca	110.80	56.14	12 x 2.44	7 x 2.44	12.20	411.1	0.51632	50.19
Quail	133.10	67.44	6 x 3.78	1 x 3.78	11.34	272.0	0.42608	23.27

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# Aluminum Conductors, Steel-Reinforced

Aluminum Conductors, Steel-Reinforced ( ACSR )

ASTM B 232 Standard

Code Word	Nominal cross sectional area		Conductor construction		Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Rated strength
	MCM	mm <sup>2</sup>	Al	St				
			No. x Ø ( mm )		mm	Kg / km	Ω / km	KN
Leghorn	134.60	68.20	12 x 2.69	7 x 2.69	13.45	499.2	0.42481	60.67
Guinea	159.00	80.57	12 x 2.92	7 x 2.92	14.60	549.5	0.36053	71.10
Pigeon	167.80	85.02	6 x 4.25	1 x 4.25	12.75	343.0	0.33705	29.42
Dotterel	176.90	89.64	12 x 3.08	7 x 3.08	15.40	656.1	0.32404	76.68
Dorking	190.80	96.68	12 x 3.20	7 x 3.20	16.00	707.8	0.30019	82.77
Brahma	203.20	102.96	16 x 2.86	19 x 2.48	18.12	1003.8	0.28186	126.52
Cochin	211.30	107.07	12 x 3.37	7 x 3.37	16.85	783.9	0.27067	91.79
Penguin	211.60	107.22	6 x 4.77	1 x 4.77	14.31	432.7	0.26757	37.06
Waxwing	266.80	135.19	18 x 3.09	1 x 3.09	15.45	430.2	0.21358	30.27
Partridge	266.80	135.19	26 x 2.57	7 x 2.00	16.28	545.9	0.21480	50.23
Ostrich	300.0	152.01	26 x 2.73	7 x 2.12	17.28	613.4	0.19036	56.55
Merlin	336.4	170.45	18 x 3.47	1 x 3.47	17.35	542.8	0.16937	38.17
Linnet	336.4	170.45	26 x 2.89	7 x 2.25	18.31	687.5	0.16987	62.76
Oriole	336.4	170.45	30 x 2.69	7 x 2.69	18.83	783.3	0.17034	77.43
Chickadee	397.5	201.41	18 x 3.77	1 x 3.77	18.85	641.3	0.14348	43.37
Brant	397.5	201.41	24 x 3.27	7 x 2.18	19.62	761.0	0.14374	64.72
Ibbs	397.5	201.41	26 x 3.14	7 x 2.44	19.88	812.4	0.14390	72.05
Lark	397.5	201.41	30 x 2.92	7 x 2.92	20.44	925.2	0.14456	90.30
Pelican	477.0	241.70	18 x 4.14	1 x 4.14	20.70	769.7	0.11898	52.30
Flicker	477.0	241.70	24 x 3.58	7 x 2.39	21.49	913.5	0.11992	76.78
Hawk	477.0	241.70	26 x 3.44	7 x 2.67	21.77	975.1	0.11989	86.36
Hen	477.0	241.70	30 x 3.20	7 x 3.20	22.40	1110.6	0.12037	105.16
Osprey	556.5	281.98	18 x 4.47	1 x 4.47	22.35	897.7	0.10206	60.97
Parakeet	556.5	281.98	24 x 3.87	7 x 2.58	23.22	1065.6	0.10262	88.29
Dove	556.5	281.98	26 x 3.72	7 x 2.89	23.55	1138.6	0.10252	101.10
Eagle	556.5	281.98	30 x 3.46	7 x 3.46	24.22	1295.6	0.10296	122.94
Peacock	605.0	306.55	24 x 4.03	7 x 2.69	24.19	1158.9	0.09464	95.86
Squab	605.0	306.55	26 x 3.87	7 x 3.01	24.51	1237.0	0.09473	108.14
Wood Duck	605.0	306.55	30 x 3.61	7 x 3.61	25.27	1408.4	0.09458	129.02
Teal	605.0	306.55	30 x 3.61	19 x 2.16	25.24	1396.6	0.09458	133.37
Kingbird	636.0	322.26	18 x 4.78	1 x 4.78	23.90	1026.6	0.08925	69.72
Swift	636.0	322.26	36 x 3.38	1 x 3.38	23.66	956.5	0.08925	60.65
Rook	636.0	322.26	24 x 4.14	7 x 2.76	24.84	1217.5	0.08967	101.04
Grosbeak	636.0	322.26	26 x 3.97	7 x 3.09	25.15	1300.8	0.09002	111.87
Scoter	636.0	322.26	30 x 3.70	7 x 3.70	25.90	1480.7	0.09004	135.53
Egret	636.0	322.26	30 x 3.70	19 x 2.22	25.90	1469.0	0.09004	140.60
Flamingo	666.6	337.77	24 x 4.23	7 x 2.82	25.38	1276.6	0.08590	105.48
Gannet	666.6	337.77	26 x 4.07	7 x 3.16	25.76	1363.3	0.08565	117.26
Silt	715.5	362.54	24 x 4.39	7 x 2.92	26.32	1370.4	0.07975	113.35

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Aluminum Conductors, Steel-Reinforced ( ACSR )

ASTM B 232 Standard

Code Word	Nominal cross sectional area		Conductor construction		Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Rated strength
	MCM	mm <sup>2</sup>	Al	St				
			No. x Ø ( mm )		mm	Kg / km	Ω / km	KN
Starling	715.5	362.54	26 x 4.21	7 x 3.28	26.68	1463.7	0.08005	125.95
Redwing	715.5	362.54	30 x 3.92	19 x 2.35	27.43	1650.6	0.08021	153.66
Coot	795.0	402.83	36 x 3.77	1 x 3.77	26.39	1195.8	0.07174	72.88
Cuckoo	795.0	402.83	24 x 4.62	7 x 3.08	27.74	1522.2	0.07201	123.82
Drake	795.0	402.83	26 x 4.44	7 x 3.45	28.11	1626.4	0.07197	139.67
Tern	795.0	402.83	45 x 3.38	7 x 2.25	27.03	1331.8	0.07175	97.47
Condor	795.0	402.83	54 x 3.08	7 x 3.08	27.72	1520.7	0.07201	124.33
Mallard	795.0	402.83	30 x 4.14	19 x 2.48	28.96	1836.0	0.07191	171.22
Ruddy	900.0	456.03	45 x 3.59	7 x 2.40	28.73	1507.3	0.06360	109.38
Canary	900.0	456.03	54 x 3.28	7 x 3.28	29.52	1723.1	0.06350	141.00
Catbird	954.0	483.39	36 x 4.14	1 x 4.14	28.98	1434.4	0.05949	87.88
Rail	954.0	483.39	45 x 3.70	7 x 2.47	29.61	1598.1	0.05988	116.07
Cardinal	954.0	483.39	54 x 3.38	7 x 3.38	30.42	1825.9	0.05979	149.72
Tanager	1033.5	523.67	36 x 4.30	1 x 4.30	30.12	1553.5	0.05515	94.81
Ortolan	1033.5	523.67	45 x 3.85	7 x 2.57	30.81	1730.5	0.05530	123.28
Curlew	1033.5	523.67	54 x 3.51	7 x 3.51	31.62	1977.6	0.05545	161.46
Bluejay	1113.0	563.96	45 x 4.00	7 x 2.66	31.98	1866.0	0.05123	132.71
Finch	1113.0	563.96	54 x 3.65	19 x 2.19	32.85	2127.8	0.05152	174.60
Bunting	1192.5	604.24	45 x 4.14	7 x 2.76	33.12	1996.9	0.04783	142.42
Grackle	1192.5	604.24	54 x 3.77	19 x 2.27	33.97	2278.1	0.04830	184.19
Skylark	1272.0	644.52	36 x 4.78	1 x 4.78	33.46	1913.6	0.04463	117.16
Bittern	1272.0	644.52	45 x 4.27	7 x 2.85	34.16	2130.8	0.04496	151.63
Pheasant	1272.0	644.52	54 x 3.90	19 x 2.34	35.10	2431.4	0.04513	194.13
Dipper	1351.5	684.81	45 x 4.40	7 x 2.93	35.19	2263.2	0.04234	160.74
Martin	1351.5	684.81	54 x 4.02	19 x 2.41	36.17	2581.7	0.04248	206.08
Bobolink	1431.0	725.09	45 x 4.53	7 x 3.02	36.24	2397.2	0.03995	170.51
Plover	1431.0	725.09	54 x 4.14	19 x 2.48	37.24	2734.9	0.04005	218.40
Nuthatch	1510.5	765.37	45 x 4.65	7 x 3.10	37.20	2529.6	0.03791	177.64
Parrot	1510.5	765.37	54 x 4.25	19 x 2.55	38.25	2883.7	0.03800	230.53
Lapwing	1590.0	805.65	45 x 4.78	7 x 3.18	38.20	2663.5	0.03588	187.43
Falcon	1590.0	805.65	54 x 4.36	19 x 2.62	39.26	3038.5	0.03611	242.99
Chukar	1780.0	901.93	84 x 3.70	19 x 2.22	40.70	3083.1	0.03223	227.79
Bluebird	2156.0	1092.45	84 x 4.07	19 x 2.44	44.76	3731.9	0.02664	268.05
Kiwi	2167.0	1098.02	72 x 4.41	7 x 2.94	44.10	3423.9	0.02647	221.71
Thrasher	2312.0	1171.49	76 x 4.43	19 x 2.07	45.79	3754.2	0.02485	251.86

# Aluminum Conductors, Aluminum-Clad Steel Reinforced

## CONSTRUCTION

Aluminum Conductors, Aluminum-Clad Steel Reinforced (ACSR/AW) is a concentric-lay-stranded conductor consisting of aluminum-clad steel central core (Alumoweld) with one or more layers of hard drawn stranded aluminum wires. Alumoweld is a highly resistant steel rod, covered with a thick coating of pure aluminum, which is cold-drawn in order to obtain wires of the required diameters.

The design and dimensions of ACSR/AW conductors are identical to those of ordinary ACSR conductors, except the steel core in ACSR conductor, which is aluminum-clad steel core in ACSR/AW.

## APPLICATION

Aluminum Conductors, Aluminum-Clad Steel Reinforced (ACSR/AW) can be used in Medium, High and Extra-High voltage transmission lines; also used for earth wires. In comparison with ACSR conductors, ACSR/AW conductors have considerable technical and economical advantages in overhead lines. Its lower weight combined with its higher current carrying capacity and corrosion protection provide a longer life cycle, reduction in energy losses and significant cost saving during the operation of the line.

## APPLICABLE STANDARD

Aluminum Conductors, Aluminum-Clad Steel Reinforced (ACSR/AW) is designed and tested to meet:

- ASTM B 549

However, [MED Cables](#) can also supply a range of alternative designs to meet customer-specified requirements.



## TECHNICAL DATA

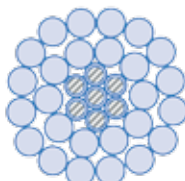
Composition (AL / AW)	Final Modulus of Elasticity MPa	Coeff. of Linear Expansion Per °C x 10 <sup>-6</sup>
6 / 1	74 500	19.3
6 / 7	71 600	20.0
26 / 7	71 600	19.1
30 / 7	74 500	18.0
30 / 19	72 500	18.2
54 / 7	65 700	19.5
54 / 19	63 700	19.6



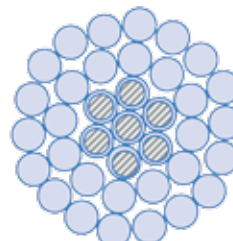
6/1 Wires



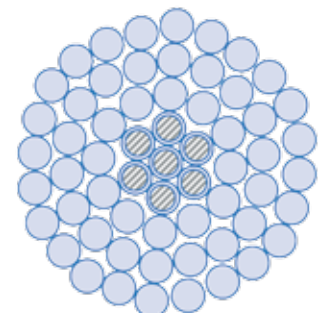
18/1 Wires



26/7 Wires



30/7 Wires



54/7 Wires



Aluminum Conductor, Aluminum-Clad Steel Reinforced (ACSR / AW)

ASTM B 549 Standard

Code Word	Nominal cross sectional area		Conductor construction		Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Rated strength
			Aluminum	AW				
	MCM	mm <sup>2</sup>	No. x Ø ( mm )		mm	Kg / km	Ω / km	KN
Swan / AW	41.74	21.15	6 x 2.12	1 x 2.12	6.36	81.0	1.28227	8.0
Swanate / AW	41.74	21.15	7 x 1.96	1 x 2.61	6.53	93.0	1.25114	10.0
Sparrow / AW	66.36	33.62	6 x 2.67	1 x 2.67	8.01	129.0	0.80840	12.0
Sparate / AW	66.36	33.62	7 x 2.47	1 x 3.30	8.24	149.0	0.78740	16.0
Grouse / AW	80.00	40.54	8 x 2.54	1 x 4.24	9.32	205.0	0.63591	22.0
Robin / AW	83.69	42.41	6 x 3.00	1 x 3.00	9.00	162.0	0.64034	15.0
Petrel / AW	101.80	51.58	12 x 2.34	7 x 2.34	11.70	342.0	0.46842	44.0
Raven / AW	105.60	53.51	6 x 3.37	1 x 3.37	10.11	205.0	0.50745	19.0
Minorca / AW	110.80	56.14	12 x 2.44	7 x 2.44	12.20	372.0	0.43081	48.0
Quail / AW	133.10	67.44	6 x 3.78	1 x 3.78	11.34	259.0	0.40334	23.0
Leghorn / AW	134.60	68.20	12 x 2.69	7 x 2.69	13.45	452.0	0.35445	58.0
Guinea / AW	159.00	80.57	12 x 2.92	7 x 2.92	14.60	534.0	0.30081	68.0
Pigeon / AW	167.80	85.02	6 x 4.25	1 x 4.25	12.75	326.0	0.31906	28.0
Dotterel / AW	176.90	89.64	12 x 3.08	7 x 3.08	15.40	594.0	0.27037	75.0
Dorking / AW	190.80	96.68	12 x 3.20	7 x 3.20	16.00	641.0	0.25047	81.0
Brahma / AW	203.20	102.96	16 x 2.86	19 x 2.48	18.12	894.0	0.21628	121.0
Cochin / AW	211.30	107.07	12 x 3.37	7 x 3.37	16.85	710.0	0.22584	88.0
Penguin / AW	211.60	107.22	6 x 4.77	1 x 4.77	14.31	412.0	0.25329	34.0
Waxwing / AW	266.80	135.19	18 x 3.09	1 x 3.09	15.45	421.0	0.20963	30.0
Partridge / AW	266.80	135.19	26 x 2.57	7 x 2.00	16.28	519.0	0.20351	48.0
Ostrich / AW	300.00	152.01	26 x 2.73	7 x 2.12	17.28	583.0	0.18040	54.0
Merlin / AW	336.40	170.45	18 x 3.47	1 x 3.47	17.35	531.0	0.16623	38.0
Linnet / AW	336.40	170.45	26 x 2.89	7 x 2.25	18.31	655.0	0.16093	60.0
Oriole / AW	336.40	170.45	30 x 2.69	7 x 2.69	18.83	737.0	0.15778	74.0
Chickadee / AW	397.50	201.41	18 x 3.77	1 x 3.77	18.85	628.0	0.14082	44.0
Brant / AW	397.50	201.41	24 x 3.27	7 x 2.18	19.62	731.0	0.13767	63.0
Ibbs / AW	397.50	201.41	26 x 3.14	7 x 2.44	19.88	774.0	0.13635	70.0
Lark / AW	397.50	201.41	30 x 2.92	7 x 2.92	20.44	869.0	0.13390	87.0
Pelican / AW	477.00	241.70	18 x 4.14	1 x 4.14	20.70	755.0	0.11678	51.0
Flicker / AW	477.00	241.70	24 x 3.58	7 x 2.39	21.49	877.0	0.11484	74.0
Hawk / AW	477.00	241.70	26 x 3.44	7 x 2.68	21.80	929.0	0.11358	84.0
Hen / AW	477.00	241.70	30 x 3.20	7 x 3.20	22.40	1043.0	0.11150	104.0
Osprey / AW	556.50	281.98	18 x 4.47	1 x 4.47	22.35	880.0	0.10017	59.0
Parakeet / AW	556.50	281.98	24 x 3.87	7 x 2.58	23.22	1022.0	0.09829	86.0

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# Aluminum Conductors, Aluminum-Clad Steel Reinforced

Aluminum Conductor, Aluminum-Clad Steel Reinforced (ACSR /AW)

ASTM B 549 Standard

Code Word	Nominal cross sectional area		Conductor construction		Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Rated strength
			Aluminum	AW				
	MCM	mm <sup>2</sup>	No. x Ø ( mm )		mm	Kg / km	Ω / km	KN
Dove / AW	556.50	281.98	26 x 3.72	7 x 2.89	23.55	1083.0	0.09715	97.0
Eagle / AW	556.50	281.98	30 x 3.46	7 x 3.46	24.22	1217.0	0.09537	119.0
Peacock / AW	605.00	306.55	24 x 4.03	7 x 2.69	24.19	1112.0	0.09063	93.0
Squab / AW	605.00	306.55	26 x 3.87	7 x 3.01	24.51	1177.0	0.08976	105.0
Wood Duck/AW	605.00	306.55	30 x 3.61	7 x 3.61	25.27	1323.0	0.08761	126.0
Teal / AW	605.00	306.55	30 x 3.61	19 x 2.16	25.24	1314.0	0.08780	127.0
Kingbird / AW	636.00	322.26	18 x 4.78	1 x 4.78	23.90	1006.0	0.08760	67.0
Swift / AW	636.00	322.26	36 x 3.38	1 x 3.38	23.66	946.0	0.08842	61.0
Rook / AW	636.00	322.26	24 x 4.14	7 x 2.76	24.84	1168.0	0.08589	98.0
Grosbeak / AW	636.00	322.26	26 x 3.97	7 x 3.09	25.15	1238.0	0.08528	110.0
Scoter / AW	636.00	322.26	30 x 3.70	7 x 3.70	25.90	1391.0	0.08340	130.0
Egret / AW	636.00	322.26	30 x 3.70	19 x 2.22	25.90	1381.0	0.08355	133.0
Flamingo / AW	666.60	337.77	24 x 4.23	7 x 2.82	25.38	1225.0	0.08227	103.0
Gannet / AW	666.60	337.77	26 x 4.07	7 x 3.16	25.76	1298.0	0.08117	116.0
Stilt / AW	715.50	362.54	24 x 4.39	7 x 2.92	26.32	1314.0	0.07640	110.0
Starling / AW	715.50	362.54	26 x 4.21	7 x 3.28	26.68	1393.0	0.07583	122.0
Redwing / AW	715.50	362.54	30 x 3.92	19 x 2.35	27.43	1552.0	0.07444	149.0
Coot / AW	795.00	402.83	36 x 3.77	1 x 3.77	26.39	1183.0	0.07107	74.0
Cuckoo / AW	795.00	402.83	24 x 4.62	7 x 3.08	27.74	1460.0	0.06897	122.0
Drake / AW	795.00	402.83	26 x 4.44	7 x 3.45	28.11	1549.0	0.06820	136.0
Tem / AW	795.00	402.83	45 x 3.38	7 x 2.25	27.03	1298.0	0.07011	96.0
Condor / AW	795.00	402.83	54 x 3.08	7 x 3.08	27.72	1458.0	0.06897	124.0
Mallard / AW	795.00	402.83	30 x 4.14	19 x 2.48	28.96	1726.0	0.06675	165.0
Ruddy / AW	900.00	456.03	45 x 3.59	7 x 2.40	28.73	1470.0	0.06213	107.0
Canary / AW	900.00	456.03	54 x 3.28	7 x 3.28	29.52	1653.0	0.06081	138.0
Catbird / AW	954.00	483.39	36 x 4.14	1 x 4.14	28.98	1420.0	0.05894	87.0
Rail / AW	954.00	483.39	45 x 3.70	7 x 2.47	29.61	1558.0	0.05850	113.0
Cardinal / AW	954.00	483.39	54 x 3.38	7 x 3.38	30.42	1752.0	0.05727	146.0
Tanager / AW	1033.50	523.67	36 x 4.30	1 x 4.30	30.12	1537.0	0.05463	94.0
Ortolan / AW	1033.50	523.67	45 x 3.85	7 x 2.57	30.81	1688.0	0.05403	121.0
Curlew / AW	1033.50	523.67	54 x 3.51	7 x 3.51	31.62	1896.0	0.05310	158.0
Bluejay / AW	1113.00	563.96	45 x 4.00	7 x 2.66	31.98	1819.0	0.05006	130.0
Finch / AW	1113.00	563.96	54 x 3.65	19 x 2.19	32.85	2043.0	0.04939	167.0
Bunting / AW	1192.50	604.24	45 x 4.14	7 x 2.76	33.12	1948.0	0.04673	139.0

► Cont'd

# Aluminum Conductors, Aluminum-Alloy Reinforced

## CONSTRUCTION

Aluminum Conductors, Aluminum-Alloy Reinforced (ACAR) is a concentric-lay-stranded conductor consisting of stranded aluminum alloy central core with one or more layers of hard drawn stranded aluminum wires. The diameters of all wires are the same. Aluminum and aluminum-alloy wires can be mixed in the same layer.

## APPLICATION

Aluminum Conductors, Aluminum-Alloy Reinforced (ACAR) can be used as bare overhead transmission conductor or primary or secondary distribution conductor. When higher capacity and strength for equal weight are prime line considerations, ACAR is the solution over ACSR due to its better strength-to-weight ratio.

## APPLICABLE STANDARD

Aluminum Conductors, Aluminum-Alloy Reinforced (ACAR) can be supplied to meet various International Standards as follows :

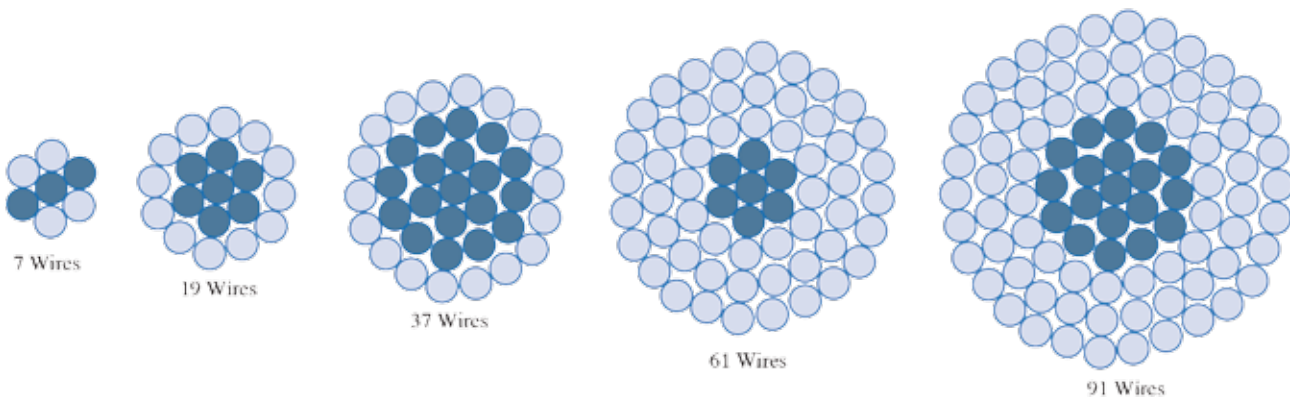
- IEC 61089
- ASTM B 524

However, [MED Cables](#) can also supply a range of alternative designs to meet customer- specified requirements.



## TECHNICAL DATA

Composition (AL + ALLOY)	Final Modulus of Elasticity MPa	Coeff. of Linear Expansion Per °C x 10 <sup>-6</sup>
7	63 300	23.0
19	61 200	23.0
37	58 900	23.0
61	58 300	23.0
91	58 300	23.0



Aluminum Conductors, Aluminum-Alloy Reinforced ( ACAR ) - A1 / A2 Conductors

IEC 61089 Standard

Code Number	Nominal cross sectional area		Conductor construction		Approx. overall diameter	Approx. overall weight	Max DC Resistance at 20 °C	Rated strength
	Al	Alloy	Al	Alloy				
	mm <sup>2</sup>		No. x Ø ( mm )		mm	Kg / km	Ω / km	KN
16	9.73	7.30	4 x 1.76	3 x 1.76	5.28	46.6	1.78960	3.85
25	15.20	11.40	4 x 2.20	3 x 2.20	6.60	72.8	1.14530	5.93
40	24.30	18.30	4 x 2.78	3 x 2.78	8.35	116.5	0.71580	9.25
63	38.30	28.70	4 x 3.49	3 x 3.49	10.50	183.5	0.45450	14.38
100	60.80	45.60	4 x 4.40	3 x 4.40	13.20	291.2	0.28630	22.52
125	83.30	48.60	12 x 2.97	7 x 2.97	14.90	362.7	0.23020	27.79
160	107.00	62.20	12 x 3.36	7 x 3.36	16.80	464.2	0.17980	35.04
200	133.00	77.80	12 x 3.76	7 x 3.76	18.80	580.3	0.14390	43.13
250	167.00	97.20	12 x 4.21	7 x 4.21	21.00	725.3	0.11510	53.92
250	131.00	138.00	18 x 3.04	19 x 3.04	21.30	742.2	0.11540	60.39
315	263.00	61.30	30 x 3.34	7 x 3.34	23.40	892.6	0.09160	60.52
315	165.00	174.00	18 x 3.42	19 x 3.42	23.90	935.1	0.09160	76.09
400	334.00	77.80	30 x 3.76	7 x 3.76	26.30	1133.5	0.07210	75.19
400	210.00	221.00	18 x 3.85	19 x 3.85	27.00	1187.5	0.07210	95.58
450	375.00	87.60	30 x 3.99	7 x 3.99	27.90	1275.2	0.06410	84.59
450	236.00	249.00	18 x 4.08	19 x 4.08	28.60	1335.9	0.06410	107.52
500	417.00	97.30	30 x 4.21	7 x 4.21	29.40	1416.9	0.05770	93.98
500	262.00	277.00	18 x 4.31	19 x 4.31	30.10	1484.3	0.05770	119.47
560	467.00	109.00	30 x 4.45	7 x 4.45	31.20	1586.9	0.05150	105.26
560	504.00	65.40	54 x 3.45	7 x 3.45	31.00	1571.9	0.05160	101.54
630	454.00	205.00	42 x 3.71	19 x 3.71	33.40	1820.0	0.04580	130.25
630	271.00	417.00	24 x 3.79	37 x 3.79	34.10	1897.5	0.04580	160.19
710	512.00	232.00	42 x 3.94	19 x 3.94	35.50	2051.2	0.04070	146.78
710	305.00	470.00	24 x 4.02	37 x 4.02	36.20	2138.4	0.04070	180.53
800	577.00	261.00	42 x 4.18	19 x 4.18	37.60	2311.2	0.03610	165.39
800	344.00	530.00	24 x 4.27	37 x 4.27	38.40	2409.5	0.03610	203.41
900	649.00	294.00	42 x 4.43	19 x 4.43	39.90	2600.1	0.03210	186.06
900	567.00	388.00	54 x 3.66	37 x 3.66	40.20	2638.4	0.03210	199.54
1000	816.00	215.00	72 x 3.80	19 x 3.80	41.80	2849.1	0.02890	190.94
1000	630.00	432.00	54 x 3.85	37 x 3.85	42.40	2931.6	0.02890	221.71
1120	914.00	241.00	72 x 4.02	19 x 4.02	44.20	3191.0	0.02580	213.85
1120	705.00	483.00	54 x 4.08	37 x 4.08	44.90	3283.4	0.02580	248.32
1250	1020.00	269.00	72 x 4.25	19 x 4.25	46.70	3561.4	0.02310	238.68
1250	787.00	539.00	54 x 4.31	37 x 4.31	47.40	3664.5	0.02310	277.14
1400	1143.00	302.00	72 x 4.50	19 x 4.50	49.40	3988.8	0.02070	267.32

# Aluminum Conductors, Aluminum-Alloy Reinforced

Aluminum Conductors, Aluminum-Alloy Reinforced (ACAR) - A1 / A3 Conductors

IEC 61089 Standard

Code Number	Nominal cross sectional area		Conductor construction		Approx. overall diameter	Approx. overall weight	Max DC Resistance at 20 °C	Rated strength
	Al	Alloy	Al	Alloy				
	mm <sup>2</sup>		No. x Ø ( mm )		mm	Kg / km	Ω / km	KN
16	9.78	7.33	4 x 1.76	3 x 1.76	5.29	46.8	1.78960	4.07
25	15.30	11.50	4 x 2.21	3 x 2.21	6.62	73.1	1.14530	6.29
40	24.40	18.30	4 x 2.79	3 x 2.79	8.37	117.0	0.71580	9.82
63	38.50	28.90	4 x 3.50	3 x 3.50	10.50	184.3	0.45450	14.80
100	61.10	45.80	4 x 4.41	3 x 4.41	13.20	292.5	0.28630	23.49
125	83.70	48.80	12 x 2.98	7 x 2.98	14.90	364.1	0.23020	29.29
160	107.00	62.50	12 x 3.37	7 x 3.37	16.90	466.0	0.17980	36.95
200	134.00	78.10	12 x 3.77	7 x 3.77	18.80	582.5	0.14390	44.78
250	167.00	97.60	12 x 4.21	7 x 4.21	21.10	728.1	0.11510	55.98
250	132.00	139.00	18 x 3.05	19 x 3.05	21.40	746.0	0.11540	64.67
315	263.00	61.40	30 x 3.34	7 x 3.34	23.40	894.4	0.09160	62.40
315	166.00	175.00	18 x 3.43	19 x 3.43	24.00	940.0	0.09160	81.48
400	334.00	78.00	30 x 3.77	7 x 3.77	26.40	1135.8	0.07210	76.82
400	211.00	222.00	18 x 3.86	19 x 3.86	27.00	1193.7	0.07210	100.30
450	376.00	87.70	30 x 3.99	7 x 3.99	28.00	1277.8	0.06410	86.42
450	237.00	250.00	18 x 4.10	19 x 4.10	28.70	1342.9	0.06410	112.84
500	418.00	97.50	30 x 4.21	7 x 4.21	29.50	1419.8	0.05770	96.03
500	263.00	278.00	18 x 4.32	19 x 4.32	30.20	1492.1	0.05770	125.38
560	468.00	109.00	30 x 4.46	7 x 4.46	31.20	1590.1	0.05150	107.55
560	505.00	65.50	54 x 3.45	7 x 3.45	31.10	1573.9	0.05160	103.53
630	456.00	206.00	42 x 3.72	19 x 3.72	33.40	1826.0	0.04580	134.59
630	272.00	420.00	24 x 3.80	37 x 3.80	34.20	1909.0	0.04580	169.14
710	514.00	232.00	42 x 3.95	19 x 3.95	35.50	2057.8	0.04070	151.68
710	307.00	473.00	24 x 4.03	37 x 4.03	36.30	2151.4	0.04070	190.61
800	579.00	262.00	42 x 4.19	19 x 4.19	37.70	2318.7	0.03610	170.90
800	346.00	533.00	24 x 4.28	37 x 4.28	38.50	2424.2	0.03610	214.78
900	651.00	294.00	42 x 4.44	19 x 4.44	40.00	2608.5	0.03210	192.27
900	569.00	390.00	54 x 3.66	37 x 3.66	40.30	2649.5	0.03210	207.79
1000	818.00	216.00	72 x 3.80	19 x 3.80	41.80	2855.4	0.02890	195.47
1000	632.00	433.00	54 x 3.86	37 x 3.86	42.50	2943.9	0.02890	230.88
1120	916.00	242.00	72 x 4.02	19 x 4.02	44.30	3198.1	0.02580	218.92
1120	708.00	485.00	54 x 4.09	37 x 4.09	45.00	3297.2	0.02580	258.58
1250	1022.00	270.00	72 x 4.25	19 x 4.25	46.80	3569.3	0.02310	244.33
1250	791.00	542.00	54 x 4.32	37 x 4.32	47.50	3679.9	0.02310	288.60
1400	1145.00	302.00	72 x 4.50	19 x 4.50	49.50	3997.6	0.02070	273.65

The above data is approximate and subject to manufacturing tolerance.

We reserve the right to change the above figures as a result of product development and/or changes in standard.

Aluminum Conductors, Aluminum-Alloy Reinforced ( ACAR )

ASTM B 524 Standard

Nominal cross sectional area	Conductor construction		Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Rated strength
	Aluminum	Alloy				
mm <sup>2</sup>	No. x Ø ( mm )		mm	Kg / km	Ω / km	KN
16	4 x 1.71	3 x 1.71	5.13	44.2	1.90726	3.59
20	4 x 1.91	3 x 1.91	5.73	55.2	1.52875	4.48
25	4 x 2.13	3 x 2.13	6.39	68.6	1.22926	5.57
31.5	4 x 2.39	3 x 2.39	7.17	86.4	0.97635	7.01
40	4 x 2.70	3 x 2.70	8.10	110.3	0.76502	8.95
50	4 x 3.02	3 x 3.02	9.06	138.1	0.61149	11.20
63	4 x 3.39	3 x 3.39	10.17	173.9	0.48529	13.70
80	4 x 3.81	3 x 3.81	11.43	219.7	0.38420	17.20
100	4 x 4.26	3 x 4.26	12.78	274.6	0.30731	21.31
112	4 x 4.51	3 x 4.51	13.53	307.8	0.27419	23.90
125	4 x 4.77	3 x 4.77	14.31	344.3	0.24511	26.70
140	15 x 3.06	4 x 3.06	15.30	385.0	0.21257	26.50
140	12 x 3.06	7 x 3.06	15.30	384.0	0.21750	30.10
160	15 x 3.27	4 x 3.27	16.35	440.0	0.18614	29.80
160	12 x 3.27	7 x 3.27	16.35	439.0	0.19046	33.50
180	15 x 3.47	4 x 3.47	17.35	495.0	0.16530	33.60
180	12 x 3.47	7 x 3.47	17.35	495.0	0.16914	37.80
200	15 x 3.66	4 x 3.66	18.30	550.0	0.14858	36.90
200	12 x 3.66	7 x 3.66	18.30	550.0	0.15203	41.60
224	15 x 3.87	4 x 3.87	19.35	616.0	0.13290	40.60
224	12 x 3.87	7 x 3.87	19.35	615.0	0.13598	46.00
250	15 x 4.09	4 x 4.09	20.45	688.0	0.11898	45.30
250	12 x 4.09	7 x 4.09	20.45	687.0	0.12174	51.40
250	18 x 2.93	19 x 2.93	20.51	687.0	0.12447	57.40
250	24 x 2.93	13 x 2.93	20.51	686.0	0.12151	51.40
250	30 x 2.93	7 x 2.93	20.51	688.0	0.11869	46.60
250	33 x 2.93	4 x 2.93	20.51	688.0	0.11733	42.90
280	15 x 4.33	4 x 4.33	21.65	771.0	0.10616	50.80
280	12 x 4.33	7 x 4.33	21.65	771.0	0.10862	57.60
280	18 x 3.10	19 x 3.10	21.70	768.0	0.11119	64.20
280	24 x 3.10	13 x 3.10	21.70	769.0	0.10855	57.60
280	30 x 3.10	7 x 3.10	21.70	770.0	0.10603	52.10
280	33 x 3.10	4 x 3.10	21.70	770.0	0.10482	48.10
315	18 x 3.29	19 x 3.29	23.03	865.0	0.09872	70.20
315	24 x 3.29	13 x 3.29	23.03	866.0	0.09638	63.40

➤ Cont'd

# Aluminum Conductors, Aluminum-Alloy Reinforced

Aluminum Conductors, Aluminum-Alloy Reinforced (ACAR)

ASTM B 524 Standard

Nominal cross sectional area	Conductor construction		Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Rated strength
	Aluminum	Alloy				
mm <sup>2</sup>	No. x Ø (mm)		mm	Kg / km	Ω / km	KN
315	30 x 3.29	7 x 3.29	23.03	867.0	0.09414	57.90
315	33 x 3.29	4 x 3.29	23.03	867.0	0.09306	53.70
355	18 x 3.50	19 x 3.50	24.50	979.0	0.08723	79.50
355	24 x 3.50	13 x 3.50	24.50	980.0	0.08516	71.70
355	30 x 3.50	7 x 3.50	24.50	981.0	0.08318	65.50
355	33 x 3.50	4 x 3.50	24.50	982.0	0.08223	60.80
400	18 x 3.71	19 x 3.71	25.97	1100.0	0.07763	88.70
400	24 x 3.71	13 x 3.71	25.97	1102.0	0.07579	79.90
400	30 x 3.71	7 x 3.71	25.97	1103.0	0.07403	72.70
400	33 x 3.71	4 x 3.71	25.97	1103.0	0.07318	67.30
450	18 x 3.94	19 x 3.94	27.58	1242.0	0.06883	99.20
450	24 x 3.94	13 x 3.94	27.58	1242.0	0.06720	89.00
450	30 x 3.94	7 x 3.94	27.58	1243.0	0.06564	80.60
450	33 x 3.94	4 x 3.94	27.58	1244.0	0.06489	74.40
500	18 x 4.15	19 x 4.15	29.05	1377.0	0.06204	110.00
500	24 x 4.15	13 x 4.15	29.05	1379.0	0.06057	98.80
500	30 x 4.15	7 x 4.15	29.05	1379.0	0.05916	89.50
500	33 x 4.15	4 x 4.15	29.05	1380.0	0.05849	82.60
500	33 x 3.23	28 x 3.23	29.07	1376.0	0.06162	109.00
500	42 x 3.23	19 x 3.23	29.07	1377.0	0.06030	100.00
500	48 x 3.23	13 x 3.23	29.07	1377.0	0.05945	93.60
500	54 x 3.23	7 x 3.23	29.07	1378.0	0.05862	86.50
560	18 x 4.39	19 x 4.39	30.73	1541.0	0.05545	123.00
560	24 x 4.39	13 x 4.39	30.73	1542.0	0.05413	111.00
560	30 x 4.39	7 x 4.39	30.73	1544.0	0.05287	100.00
560	33 x 4.39	4 x 4.39	30.73	1544.0	0.05227	92.40
560	33 x 3.42	28 x 3.42	30.78	1542.0	0.05496	119.00
560	42 x 3.42	19 x 3.42	30.78	1544.0	0.05378	110.00
560	48 x 3.42	13 x 3.42	30.78	1545.0	0.05302	102.00
560	54 x 3.42	7 x 3.42	30.78	1545.0	0.05229	96.10
630	18 x 4.66	19 x 4.66	32.62	1736.0	0.04921	139.00
630	24 x 4.66	13 x 4.66	32.62	1737.0	0.04804	125.00
630	30 x 4.66	7 x 4.66	32.62	1740.0	0.04692	113.00
630	33 x 4.66	4 x 4.66	32.62	1740.0	0.04638	104.00
630	33 x 3.63	28 x 3.63	32.67	1737.0	0.04879	133.00

▶ Cont'd

Aluminum Conductors, Aluminum-Alloy Reinforced ( ACAR )

ASTM B 524 Standard

Nominal cross sectional area	Conductor construction		Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Rated strength
	Aluminum	Alloy				
mm <sup>2</sup>	No. x Ø ( mm )		mm	Kg / km	Ω / km	KN
630	42 x 3.63	19 x 3.63	32.67	1739.0	0.04774	123.00
630	48 x 3.63	13 x 3.63	32.67	1740.0	0.04707	114.00
630	54 x 3.63	7 x 3.63	32.67	1741.0	0.04641	107.00
710	33 x 3.85	28 x 3.85	34.65	1954.0	0.04337	148.00
710	42 x 3.85	19 x 3.85	34.65	1956.0	0.04244	137.00
710	48 x 3.85	13 x 3.85	34.65	1957.0	0.04184	126.00
710	54 x 3.85	7 x 3.85	34.65	1958.0	0.04126	118.00
800	33 x 4.09	28 x 4.09	36.81	2205.0	0.03843	167.00
800	42 x 4.09	19 x 4.09	36.81	2207.0	0.03761	154.00
800	48 x 4.09	13 x 4.09	36.81	2209.0	0.03707	142.00
800	54 x 4.09	7 x 4.09	36.81	2209.0	0.03656	133.00
900	33 x 4.33	28 x 4.33	38.97	2472.0	0.03429	187.00
900	42 x 4.33	19 x 4.33	38.97	2474.0	0.03355	173.00
900	48 x 4.33	13 x 4.33	38.97	2475.0	0.03308	159.00
900	54 x 4.33	7 x 4.33	38.97	2478.0	0.03262	148.00
1000	33 x 4.57	28 x 4.57	41.13	2781.0	0.03078	206.00
1000	42 x 4.57	19 x 4.57	41.13	2783.0	0.03012	192.00
1000	48 x 4.57	13 x 4.57	41.13	2786.0	0.02970	178.00
1000	54 x 4.57	7 x 4.57	41.13	2786.0	0.02928	166.00
1000	54 x 3.74	37 x 3.74	41.14	2779.0	0.03057	204.00
1000	63 x 3.74	28 x 3.74	41.14	2780.0	0.03013	190.00
1000	72 x 3.74	19 x 3.74	41.14	2782.0	0.02970	180.00
1120	54 x 3.96	37 x 3.96	43.56	3116.0	0.02754	226.00
1120	63 x 3.96	28 x 3.96	43.56	3118.0	0.02714	210.00
1120	72 x 3.96	19 x 3.96	43.56	3119.0	0.02675	198.00
1250	54 x 4.18	37 x 4.18	45.98	3472.0	0.02471	253.00
1250	63 x 4.18	28 x 4.18	45.98	3474.0	0.02436	234.00
1250	72 x 4.18	19 x 4.18	45.98	3476.0	0.02401	221.00
1400	54 x 4.43	37 x 4.43	48.73	3899.0	0.02200	283.00
1400	63 x 4.43	28 x 4.43	48.73	3901.0	0.02169	263.00
1400	72 x 4.43	19 x 4.43	48.73	3904.0	0.02138	248.00
1600	54 x 4.73	37 x 4.73	52.03	4488.0	0.01949	323.00
1600	63 x 4.73	28 x 4.73	52.03	4491.0	0.01921	300.00
1600	72 x 4.73	19 x 4.73	52.03	4493.0	0.01893	283.0



# Weather-Resistant XLPE Insulated Service Drop Cables

## CONSTRUCTION

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Service drop or secondary distribution cables are composed of one or more concentric-lay-stranded aluminum 1350 phase conductors insulated with an extruded layer of cross-linked polyethylene compound and assembled with one neutral conductor of All Aluminum Conductors (AAC); Aluminum-Alloy Conductors 620-1T81 (AAA C); Aluminum Conductors, Steel-Reinforced (ACSR); or Aluminum Conductors, Aluminum-Clad Steel Reinforced (ACSR/AW). The neutral conductor may be bare or covered with an extruded layer of cross-linked polyethylene compound.

Note: Service drop or secondary distribution cables have many options in terms of the number of phase conductors used, the type of neutral conductor and either it is bare or insulated. This catalogue covers only the design and construction of Quadruplex cables with three concentric-lay-stranded aluminum 1350 phase conductors assembled with one bare full neutral conductor. However, we can provide all the necessary information for any other type or design upon a customer's request.

## APPLICATION

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Service drop cables are intended for use either as a service drop cable between a power pole and the service entrance, or as a secondary distribution cable between poles. The use of these service drop or secondary distribution cables is limited to circuits, not exceeding 600 volts phase-to-phase or 480 volts phase-to-ground, to a normal temperature rating of the service conductor temperature of 90 °C.

## APPLICABLE STANDARD

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Weather-resistant service drop cables are designed and tested to meet:

- ANSI / ICE A S-76-474

However, [MED Cables](#) can also supply a range of alternative designs to meet customer-specified requirements.

## TECHNICAL DATA

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- Nominal voltage
  - 480 Volts phase-to-ground
  - 600 Volts phase-to-phase
- Power frequency test voltage 3.0 kV for 1 minute
- Max. admissible temperature of conductor at normal operation 90 °C
- Max. admissible temperature of conductor at emergency operation 130 °C
- Max. admissible temperature of conductor at short circuit operation 250 °C



Quadruplex Service Drop Cables With Bare ( AAC ) Neutral Conductor

ANSI / ICE A S-76-474

Aluminum phase conductor size		Minimum phase insulation thickness mm	AAC Neutral conductor size		Approx. overall diameter mm	Approx. overall weight Kg / km	Phase conductor DC Resistance at 20 °C Ω / km	Neutral conductor Rated strength KN
MCM	mm <sup>2</sup>		MCM	mm <sup>2</sup>				
4	21.1	1.0	4	21.1	18.3	322	1.36505	3.91
2	33.6	1.0	2	33.6	21.9	485	0.85954	5.99
1/0	53.5	1.4	1/0	53.5	28.2	786	0.53871	8.84
2/0	67.4	1.4	2/0	67.4	30.9	966	0.42808	11.10
3/0	85.0	1.4	3/0	85.0	34.0	1192	0.33953	13.50
4/0	107.2	1.4	4/0	107.2	37.6	1478	0.26842	17.00
266.8	135.2	1.8	266.8	135.2	43.8	1871	0.21324	22.10
336.4	170.5	1.8	336.4	170.5	48.2	2306	0.16911	27.30
397.5	201.4	1.8	397.5	201.4	51.8	2694	0.14344	31.60
477.0	241.7	1.8	477.0	241.7	56.1	3149	0.11961	38.60

Quadruplex Service Drop Cables With Bare ( AA AC ) Neutral Conductor

ANSI / ICE A S-76-474

Aluminum phase conductor size		Minimum phase insulation thickness mm	AA AC Neutral conductor size		Approx. overall diameter mm	Approx. overall weight Kg / km	Phase conductor DC Resistance at 20 °C Ω / km	Neutral conductor Rated strength KN
MCM	mm <sup>2</sup>		MCM	mm <sup>2</sup>				
4	21.1	1.0	48.69	24.7	18.5	332	1.36505	7.83
2	33.6	1.0	77.47	39.2	22.3	499	0.85954	12.40
1/0	53.5	1.4	123.30	62.4	28.6	810	0.53871	18.90
2/0	67.4	1.4	155.40	78.6	31.4	995	0.42808	23.80
3/0	85.0	1.4	195.70	99.3	34.6	1230	0.33953	30.00
4/0	107.2	1.4	246.90	125.0	38.2	1526	0.26842	37.80
266.8	135.2	1.8	312.80	159.0	44.5	1934	0.21324	46.50
336.4	170.5	1.8	394.50	200.0	49.0	2385	0.16911	58.60
397.5	201.4	1.8	465.40	236.0	52.7	2788	0.14344	69.20
477.0	241.7	1.8	559.50	284.0	57.1	3263	0.11961	83.10

# Weather-Resistant XLPE Insulated Service Drop Cables

Quadruplex Service Drop Cables With Bare ( ACSR ) Neutral Conductor

ANSI /ICE A S-76-474

Aluminum phase conductor size		Minimum phase insulation thickness mm	ACSR Neutral conductor size		Approx. overall diameter mm	Approx. overall weight Kg / km	Phase conductor DC Resistance at 20 °C Ω / km	Neutral conductor Rated strength KN
MCM	mm <sup>2</sup>		MCM	mm <sup>2</sup>				
4	21.1	1.0	4	21.1	18.5	349	1.36505	8.30
2	33.6	1.0	2	33.6	22.3	528	0.85954	12.69
1/0	53.5	1.4	1/0	53.5	28.6	855	0.53871	19.35
2/0	67.4	1.4	2/0	67.4	31.4	1052	0.42808	23.27
3/0	85.0	1.4	3/0	85.0	34.6	1301	0.33953	29.42
4/0	107.2	1.4	4/0	107.2	38.2	1616	0.26842	37.06
266.8	135.2	1.8	266.8	135.2	44.0	1929	0.21324	30.27
336.4	170.5	1.8	336.4	170.5	48.4	2379	0.16911	38.17
397.5	201.4	1.8	397.5	201.4	52.1	2780	0.14344	43.37
477.0	241.7	1.8	477.0	241.7	56.4	3254	0.11961	52.30

Quadruplex Service Drop Cables With Bare ( ACSR / AW ) Neutral Conductor

ANSI /ICE A S-76-74

Aluminum phase conductor size		Minimum phase insulation thickness mm	ACSR / AW Neutral conductor size		Approx. overall diameter mm	Approx. overall weight Kg / km	Phase conductor DC Resistance at 20 °C Ω / km	Neutral conductor Rated strength KN
MCM	mm <sup>2</sup>		MCM	mm <sup>2</sup>				
4	21.1	1.0	4	21.1	18.5	345	1.36505	8.00
2	33.6	1.0	2	33.6	22.3	521	0.85954	12.00
1/0	53.5	1.4	1/0	53.5	28.6	844	0.53871	19.00
2/0	67.4	1.4	2/0	67.4	31.4	1039	0.42808	23.00
3/0	85.0	1.4	3/0	85.0	34.6	1284	0.33953	28.00
4/0	107.2	1.4	4/0	107.2	38.2	1595	0.26842	34.00
266.8	135.2	1.8	266.8	135.2	44.0	1920	0.21324	30.00
336.4	170.5	1.8	336.4	170.5	48.4	2368	0.16911	38.00
397.5	201.4	1.8	397.5	201.4	52.1	2767	0.14344	44.00
477.0	241.7	1.8	477.0	241.7	56.4	3240	0.11961	51.00

# References

## IEC Standards

1. IEC 60228 : Conductors of insulated cables.
2. IEC 61089 : Round wire concentric-lay overhead electrical stranded conductors.
3. IEC 60888 : Zinc-coated steel wires for stranded conductors.
4. IEC 60889 : Hard-drawn aluminum wire for overhead line conductors.
5. IEC 61232 : Aluminum-clad steel wires for electrical purposes.
6. IEC 61597 : Overhead electrical conductors - Calculation methods for stranded bare conductors.

## BS / BS EN Standards

1. BS EN 60228 : Conductors of insulated cables.
2. BS 7884 : Specification for copper and copper-cadmium stranded conductors for overhead electric traction and power transmission systems.
3. BS 1-215 : Specification for aluminum conductors and aluminum conductors, steel-reinforced for overhead power transmission. Aluminum stranded conductors.
4. BS 2-215 : Specification for aluminum conductors and aluminum conductors, steel-reinforced for overhead power transmission. Aluminum conductors, steel-reinforced.
5. BS EN 50182 : Conductors for overhead lines. Round wire concentric-lay stranded conductors.
6. BS EN 50183 : Conductors for overhead lines. Aluminum-magnesium-silicon alloy wires.
7. BS EN 50189 : Conductors for overhead lines. Zinc coated steel wires.

## DIN Standards

1. DIN 1 / 48201 : Stranded conductors - Copper cable.
2. DIN 5 / 48201 : Aluminum stranded conductors.
3. DIN 6 / 48201 : E-AlMgSi Stranded conductors.
4. DIN 48204 : Steel reinforced aluminum stranded conductors.

## ASTM Standards

1. ASTM B 230 : Standard Specification for Aluminum -1350H19 Wire for Electrical Purpose.
2. ASTM B 231 : Standard Specification for Concentric-Lay-Stranded Aluminum 1350 Conductors.
3. ASTM B 398 : Standard Specification for Aluminum Alloy -6201T81 Wire for Electrical Purpose.
4. ASTM B 399 : Standard Specification for Concentric-Lay-Stranded Aluminum Alloy -6201T81 Conductors.
5. ASTM B 232 : Standard Specification for Concentric-Lay-Stranded Aluminum Conductors, Coated-Steel Reinforced (ACSR).
6. ASTM B 498 : Standard specification for zinc-coated (galvanized) steel core wire for aluminum conductors, steel reinforced (ACSR).
7. ASTM B 549 : Standard specification for concentric-lay-stranded aluminum conductors, aluminum clad steel reinforced.
8. ASTM B 502 : Standard Specification Aluminum clad steel core wire for aluminum conductors, aluminum clad steel reinforced.
9. ASTM B 524 : Standard Specification for concentric-lay-stranded aluminum conductors, aluminum alloy reinforced (ACAR).

## ANSI / ICEA Standards

1. ANSI / ICEA S-7647-4 : Standard for neutral-supported power cable assemblies with weather-resistant extruded insulation rated 600 volts.

Aluminum Conductor, Aluminum-Clad Steel Reinforced (ACSR /AW)

ASTM B 549 Standard

Code Word	Nominal cross sectional area		Conductor construction		Approx. overall diameter	Approx. overall weight	Calculated DC Resistance at 20 °C	Rated strength
			Aluminum	AW				
	MCM	mm <sup>2</sup>	No. x Ø ( mm )		mm	Kg / km	Ω / km	KN
Grackle / AW	1192.50	604.24	54 x 3.77	19 x 2.27	33.97	2188.0	0.04628	179.0
Skylark / AW	1272.00	644.52	36 x 4.78	1 x 4.78	33.46	1893.0	0.04421	114.0
Bittern / AW	1272.00	644.52	45 x 4.27	7 x 2.85	34.16	2078.0	0.04392	149.0
Pheasant / AW	1272.00	644.52	54 x 3.90	19 x 2.34	35.10	2333.0	0.04326	189.0
Dipper / AW	1351.50	684.81	45 x 4.40	7 x 2.93	35.19	2207.0	0.04137	158.0
Martin / AW	1351.50	684.81	54 x 4.02	19 x 2.41	36.17	2478.0	0.04072	201.0
Bobolink / AW	1431.00	725.09	45 x 4.53	7 x 3.02	36.24	2336.0	0.03903	167.0
Plover / AW	1431.00	725.09	54 x 4.14	19 x 2.48	37.24	2625.0	0.03840	212.0
Nuthatch / AW	1510.50	765.37	45 x 4.65	7 x 3.10	37.20	2467.0	0.03704	177.0
Parrot / AW	1510.50	765.37	54 x 4.25	19 x 2.55	38.25	2768.0	0.03643	224.0
Lapwing / AW	1590.00	805.65	45 x 4.78	7 x 3.18	38.20	2598.0	0.03506	186.0
Falcon / AW	1590.00	805.65	54 x 4.36	19 x 2.62	39.26	2917.0	0.03461	236.0
Chukar / AW	1780.00	901.93	84 x 3.70	19 x 2.22	40.70	2996.0	0.03136	220.0
Bluebird / AW	2156.00	1092.45	84 x 4.07	19 x 2.44	44.76	3627.0	0.02592	262.0
Kiwi / AW	2167.00	1098.02	72 x 4.41	7 x 2.94	44.10	3366.0	0.02609	218.0
Thrasher / AW	2312.00	1171.49	76 x 4.43	19 x 2.07	45.79	3679.0	0.02440	246.0