



**OmanCables**  
**الكابلات العمانية**



## Overhead Line Conductors

TRULY  
OMANI  
TRUSTED GLOBALLY

## Oman Cables Industry (SAOG)

Oman Cables Industry (SAOG) develops, manufactures and markets a totally integrated product range of various cable types.

OCI was established in 1984 by the current Chairman, Mr. Mustafa Mukhtar Al Lawati and the Vice Chairman and Managing Director, Mr. Hussain Salman Al Lawati. The factories are situated in Muscat, the capital of the Sultanate of Oman, in the Rusayl Industrial Estate, which is the largest industrial complex in the country. OCI office buildings and factory presently occupy an expansive area of around 135000 square meters and it is still expanding.

The company offers an unrivalled experience and a vast product range developed organically at the leading edge of technology. It manufactures a variety of products, which include medium voltage power cables, low voltage power & control cables, instrumentation cables, pilot cables, overhead power transmission line conductors, building wires. It also offers cables with special features like flame retardant properties, low smoke and fume (LSF) properties, cables with anti-termite sheaths, UV resistant outer sheath etc., suitable for different types of applications or environmental conditions.

OCI manufactures its products in accordance with all relevant International standards like BS, IEC, ASTM etc, as well as customer specified standards. The complete range of OCI products have been type tested and approved by independent bodies such as BSI, KEMA, VDE and TAG Corporation. OCI quality management system is certified by BASEC, UK as per ISO 9001 standard. OCI also boasts its' own in-house type test facilities.

It has won His Majesty Sultan Qaboos trophy for the best industry 5 times in 1991, 1992, 1996, 1997 and 2005. The company was judged on many factors including product quality, training & safety, sales turnover, export, financial strength, use of local manpower and resources and others.

It has also won the Flame of Excellence and Exporter of the Year awards two years in succession, it has recently won the Corporate Governance Award in 2011.

OCI has maintained an enviable growth record year on year. The products manufactured by OCI are sold not only in the region but also beyond to Australia, Japan, South Korea, East & Western African countries, Europe and The United Kingdom.

They have been installed in a variety of applications including Power plants, Sub-stations, Oil Refineries, Fertilizer complexes, Petroleum & Gas handling facilities, Metro Rails, Hospitals, Shopping Malls, Hotels and Airports.

The company is driven by a central philosophy based upon 3 key factors, Partnership, Innovation and Quality. We take pride in our ability to offer products to each of our customers by meeting their specific needs – quickly, efficiently & with an assurance of product quality.





**Winners of His Majesty's  
"Best Industry" Trophy  
for the Years 1991, 1992, 1996, 1997 & 2005**

## OVERHEAD LINE CONDUCTORS

### Contents

	Page
<b>INTRODUCTION</b>	<b>1</b>
<b>AAC - All Aluminium Conductors</b>	<b>5-11</b>
• British Sizes BS 215 Part 1	6
• British Sizes BS EN 50182	6
• IEC Sizes IEC 61089	7
• American Sizes ASTM B 231 / B 231M	8
• German Sizes DIN 48 201 Part 5	9
• Oman Sizes OES 25D	10
<b>ACSR - Aluminium Conductors Steel Reinforced</b>	<b>12-17</b>
• British Sizes BS 215 Part 2	13
• British Sizes BS EN 50182	13
• IEC Sizes IEC 61089	14
• American Sizes ASTM B 232 / B 232M	15-16
• German Sizes DIN 48 204	17
<b>AAAC - All Aluminium Alloy Conductors</b>	<b>18-22</b>
• British Sizes BS EN 50182	19
• IEC Sizes IEC 61089	20
• American Sizes ASTM B 399 / B 399M	21
• German Sizes DIN 48 201 Part 6	22
<b>HDBC - Hard Drawn Bare Copper Conductors</b>	<b>23-24</b>
• British Sizes BS 7884	24
<b>PVC Covered Copper Conductors</b>	<b>25-26</b>
• British Sizes BS 6485	26
<b>Drum Handling Instructions</b>	<b>27-28</b>



**Stranding Machine**



## ALL - ALUMINIUM CONDUCTORS

### AAC

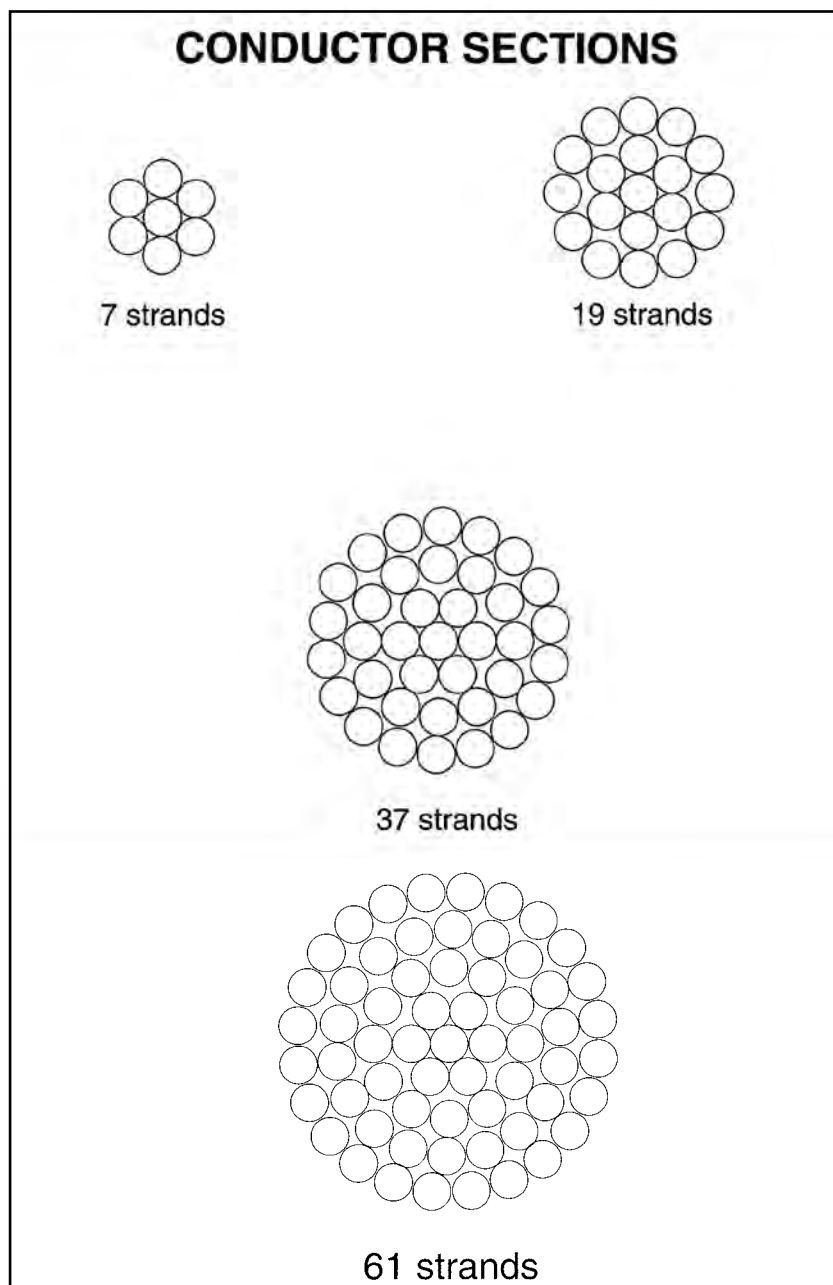
All-aluminium conductors are the most favoured type for use in the construction of relatively short span distribution schemes and are in common use on lines for voltage up to 60 kV.

Another frequent application for all-aluminium conductors is in flexible busbar connections.

Although aluminium to copper connections can be made, it is better to use aluminium conductors for service connections, as various forms of covered cables are available for this purpose.

This catalogue shows the most common sizes of conductor but other sizes, to any recognized standards or customer specification can also be supplied.

AAC insulated with XLPE or PVC can also be supplied as per customer's requirements.





## ALL-ALUMINIUM CONDUCTORS

**AAC**

### BS 215 : Part 1

**TABLE 1A**

### BRITISH SIZES

Code Name	Nominal Area	No. / Nominal diameter of wires	Approximate Overall Diameter	Total Area	Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20°C	Current Rating (*)
	mm <sup>2</sup>	No./mm	mm	mm <sup>2</sup>	kg/km	KN	ohm/km	A
Midge	22	7/2.06	6.18	23.33	64	3.99	1.22700	106
Ant	50	7/3.10	9.30	52.83	145	8.28	0.54190	175
Fly	60	7/3.40	10.20	63.55	174	9.90	0.45050	196
Wasp	100	7/4.39	13.17	106.00	290	16.00	0.27020	268
Hornet	150	19/3.25	16.25	157.60	434	25.70	0.18250	342
Chafer	200	19/3.78	18.90	213.20	587	32.40	0.13490	412
Cockroach	250	19/4.22	21.10	265.70	731	40.40	0.10830	471
Butterfly	300	19/4.65	23.25	322.70	888	48.75	0.08916	530
Centipede	400	37/3.78	26.46	415.20	1145	63.10	0.06944	616

### Other Popular Sizes BS EN 50182

**TABLE 1B**

Code Name	Nominal Area	No. / Nominal diameter of wires	Approximate Overall Diameter	Total Area	Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20°C	Current Rating (*)
	mm <sup>2</sup>	No./mm	mm	mm <sup>2</sup>	kg/km	KN	ohm/km	A
Gnat	--	7/2.21	6.63	26.9	73	4.83	1.0643	115
Mosquito	--	7/2.59	7.77	36.9	101	6.27	0.7749	140
Ladybird	--	7/2.79	8.37	42.8	117	7.28	0.6678	154
Bluebottle	--	7/3.66	10.98	73.6	201	11.78	0.3880	215
Earwig	--	7/3.78	11.34	78.6	215	12.57	0.3638	223
Grasshopper	--	7/3.91	11.73	84.1	230	13.45	0.3400	233
Clegg	--	7/4.17	12.51	95.6	261	15.30	0.2989	252
Beetle	--	19/2.67	13.35	106.4	292	18.08	0.2701	269
Bee	--	7/4.90	14.70	132.0	361	21.12	0.2165	307
Caterpillar	--	19/3.53	17.65	185.9	511	29.75	0.1546	379
Spider	--	19/3.99	19.95	237.6	653	38.01	0.1210	440
Moth	--	19/5.00	25.00	373.1	1025	59.69	0.0770	579
Drone	--	37/3.58	25.06	372.4	1027	59.59	0.0774	577
Maybug	--	37/4.09	28.63	486.1	1341	77.78	0.0593	677
Scorpion	--	37/4.27	29.89	529.8	1461	84.77	0.0544	713
Cicada	--	37/4.65	32.55	628.3	1733	100.54	0.0459	788

(\*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre<sup>2</sup>, ambient temperature of 50° C & conductor temperature of 80° C.

## ALL-ALUMINIUM CONDUCTORS

AAC

IEC : 61089

TABLE 2

IEC SIZES

Code Name	Nominal Area	No./ Nominal diameter of wires	Approximate Overall Diameter	Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20°C	Current Rating (*)
	mm <sup>2</sup>	No./mm	mm	kg/km	KN	ohm/km	A
10	10	7/1.35	4.05	27.4	1.95	2.8633	62
16	16	7/1.71	5.13	43.8	3.04	1.7896	84
25	25	7/2.13	6.39	68.4	4.50	1.1453	110
40	40	7/2.70	8.10	109.4	6.80	0.7158	147
63	63	7/3.39	10.17	172.3	10.39	0.4545	195
100	100	19/2.59	12.95	274.8	17.00	0.2877	259
125	125	19/2.89	14.45	343.6	21.25	0.2302	297
160	160	19/3.27	16.35	439.8	26.40	0.1798	345
200	200	19/3.66	18.30	549.7	32.00	0.1439	396
250	250	19/4.09	20.45	687.1	40.00	0.1151	454
315	315	37/3.29	23.03	867.9	51.97	0.0916	522
400	400	37/3.71	25.97	1102.0	64.00	0.0721	603
450	450	37/3.94	27.58	1239.8	72.00	0.0641	647
500	500	37/4.15	29.05	1377.6	80.00	0.0577	688
560	560	37/4.39	30.73	1542.9	89.60	0.0515	736
630	630	61/3.63	32.67	1738.3	100.80	0.0458	789
710	710	61/3.85	34.65	1959.1	113.60	0.0407	845
800	800	61/4.09	36.81	2207.4	128.00	0.0361	905
900	900	61/4.33	38.97	2483.3	144.00	0.0321	967
1000	1000	61/4.57	41.13	2759.2	160.00	0.0289	1026
1120 \$	1120	91/3.96	43.56	3093.5	179.20	0.0258	1091
1250 \$	1250	91/4.18	45.98	3452.6	200.00	0.0231	1157
1400 \$	1400	91/4.43	48.73	3866.9	224.00	0.0207	1226
1500 \$	1500	91/4.58	50.38	4143.1	240.00	0.0193	1270

\$ The items marked with "\$" are not in our current product range and the details are for information only.

(\*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre<sup>2</sup>, ambient temperature of 50° C & conductor temperature of 80° C.





## ALL-ALUMINIUM CONDUCTORS

AAC

ASTM B 231/B 231M

TABLE 3

AMERICAN SIZES

Code Name	Nominal Area		No./Nominal diameter of wires	Approximate Overall Diameter	Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20° C	Current Rating (*)
	AWG or MCM	mm <sup>2</sup>	No./mm	mm	kg/km	KN	ohm/km	A
Peachbell	6.0	13.30	7/1.56	4.68	36.6	2.53	2.1477	75
Rose	4.0	21.10	7/1.96	5.88	58.2	3.91	1.3606	99
Iris	2.0	33.60	7/2.47	7.41	92.6	5.99	0.8567	132
Pansy	1.0	42.40	7/2.78	8.34	116.6	7.30	0.6763	153
Poppy	1/0.0	53.50	7/3.12	9.36	147.2	8.84	0.5369	176
Aster	2/0.0	67.40	7/3.50	10.50	185.7	11.10	0.4267	203
Phlox	3/0.0	85.00	7/3.93	11.79	233.9	13.50	0.3384	234
Oxlip	4/0.0	107.20	7/4.42	13.26	295.2	17.00	0.2675	270
Valerian	250.00	126.70	19/2.91	14.55	348.6	20.70	0.2274	299
Sneezewort	250.00	126.70	7/4.80	14.40	348.8	20.10	0.2269	299
Laurel	266.80	135.20	19/3.01	15.05	372.2	22.10	0.2125	312
Daisy	266.80	135.20	7/4.96	14.88	372.3	21.40	0.2125	311
Peony	300.00	152.00	19/3.19	15.95	418.3	24.30	0.1892	335
Tulip	336.40	170.50	19/3.38	16.90	469.5	27.30	0.1686	359
Daffodil	350.00	177.30	19/3.45	17.25	487.9	28.40	0.1618	369
Canna	397.50	201.40	19/3.67	18.35	554.9	31.60	0.1430	397
Goldentuft	450.00	228.00	19/3.91	19.55	627.6	35.00	0.1260	429
Syringa	477.00	241.70	37/2.88	20.16	664.8	38.60	0.1192	444
Cosmos	477.00	241.70	19/4.02	20.10	664.8	37.00	0.1192	444
Hyacinth	500.00	253.30	37/2.95	20.65	696.8	40.50	0.1136	458
Zinnia	500.00	253.30	19/4.12	20.60	697.1	38.90	0.1134	458
Dahlia	556.50	282.00	19/4.35	21.75	775.8	43.30	0.1018	489
Mistletoe	556.50	282.00	37/3.12	21.84	775.7	44.30	0.1016	490
Meadowsweet	600.00	304.00	37/3.23	22.61	836.3	47.50	0.0948	511
Orchid	636.00	322.30	37/3.33	23.31	886.9	50.40	0.0892	530
Heuchera	650.00	329.40	37/3.37	23.59	907.4	51.70	0.0871	538
Flag	700.00	354.70	61/2.72	24.48	975.8	57.10	0.0811	561
Varbena	700.00	354.70	37/3.49	24.43	975.7	55.40	0.0812	561
Nasturtium	715.50	362.60	61/2.75	24.75	998.5	58.40	0.0793	569
Violet	715.50	362.60	37/3.53	24.71	998.5	56.70	0.0794	568
Cattail	750.00	380.00	61/2.82	25.38	1046.0	60.30	0.0754	587
Petunia	750.00	380.00	37/3.62	25.34	1046.0	58.60	0.0755	586
Lilac	795.00	402.80	61/2.90	26.10	1110.0	63.80	0.0713	607
Arbutus	795.00	402.80	37/3.72	26.04	1109.0	61.80	0.0715	605
Snapdragon	900.00	456.00	61/3.09	27.81	1256.0	70.80	0.0628	654
Cockscomb	900.00	456.00	37/3.96	27.72	1256.0	68.40	0.0631	652
Goldenrod	954.00	483.40	61/3.18	28.62	1331.0	75.00	0.0593	677
Magnolia	954.00	483.40	37/4.08	28.56	1331.0	72.60	0.0594	676
Camellia	1000.00	506.70	61/3.25	29.25	1394.0	78.30	0.0568	695
Hawkweed	1000.00	506.70	37/4.18	29.26	1395.0	76.20	0.0566	696
Larkspur	1033.50	523.70	61/3.31	29.79	1442.0	81.30	0.0547	710
Bluebell	1033.50	523.70	37/4.25	29.75	1441.0	78.80	0.0547	710
Marigold	1113.00	564.00	61/3.43	30.87	1553.0	87.30	0.0510	740
Hawthorn	1192.50	604.20	61/3.55	31.95	1662.0	93.50	0.0476	771
Narsissus	1272.00	644.50	61/3.67	33.03	1774.0	98.10	0.0445	802
Columbine	1351.00	694.80	61/3.78	34.02	1884.0	104.00	0.0420	829
Carnation	1431.00	725.10	61/3.89	35.01	1997.0	108.00	0.0396	858
Gladiolus	1510.50	765.40	61/4.00	36.00	2108.0	114.00	0.0375	885
Coreopsis	1590.00	805.70	61/4.10	36.90	2216.0	120.00	0.0357	911
Jassamine	1750.00	886.70	61/4.30	38.70	2442.0	132.00	0.0324	962
Cowslip \$	2000.00	1013.00	91/3.77	41.47	2787.0	153.00	0.0286	1032
Sagebrush \$	2250.00	1140.00	91/3.99	43.89	3166.0	167.00	0.0255	1099
Lupine \$	2500.00	1267.00	91/4.21	46.31	3519.0	186.00	0.0229	1163
Bitterrot \$	2750.00	1393.00	91/4.42	48.62	3872.0	205.00	0.0208	1223
Trillium \$	3000.00	1520.00	127/3.90	50.70	4226.0	223.00	0.0193	1271
Bluebonnet \$	3500.00	1773.00	127/4.22	54.86	4977.0	261.00	0.0165	1373

\$ The items marked with "\$" are not in our current product range and the details are for information only.

(\*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre<sup>2</sup>, ambient temperature of 50° C & conductor temperature of 80° C.

## ALL-ALUMINIUM CONDUCTORS

AAC

DIN 48201 Part 5

TABLE 4

GERMAN SIZES

Area		No./ Nominal diameter of wires	Approximate Overall Diameter	Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20° C	Current Rating (*)
Nominal	Actual						
mm <sup>2</sup>	mm <sup>2</sup>	No./mm	mm	kg/km	KN	ohm/km	A
16	15.89	7/1.70	5.1	43	2.84	1.8022	83
25	24.25	7/2.10	6.3	66	4.17	1.1810	108
35	34.36	7/2.50	7.5	94	5.78	0.8333	134
50	49.48	7/3.00	9.0	135	7.94	0.5787	168
50	48.35	19/1.80	9.0	133	8.45	0.5951	166
70	65.81	19/2.10	10.5	181	11.32	0.4372	200
95	93.27	19/2.50	12.5	256	15.68	0.3085	248
120	116.99	19/2.80	14.0	322	18.78	0.2459	285
150	147.11	37/2.25	15.8	406	25.30	0.1960	328
185	181.62	37/2.50	17.5	500	30.54	0.1588	373
240	242.54	61/2.25	20.3	670	39.51	0.1191	445
300	299.43	61/2.50	22.5	827	47.70	0.0965	506
400	400.14	61/2.89	26.0	1104	60.86	0.0722	602
500	499.83	61/3.23	29.1	1379	74.67	0.0578	688
625 \$	626.20	91/2.96	32.6	1732	95.25	0.0462	786
800 \$	802.09	91/3.35	36.9	2218	118.39	0.0360	907
1000 \$	999.71	91/3.74	41.1	2767	145.76	0.0289	1026

\$ The items marked with "\$" are not in our current product range and the details are for information only.

(\*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre<sup>2</sup>, ambient temperature of 50° C & conductor temperature of 80° C.

**XLPE COVERED ALL ALUMINIUM CONDUCTORS****AAC+XLPE****OES 25D****TABLE 5****OMAN SIZES**

Nominal Area	Section Area	No./Nominal diameter of wires	Approximate Conductor Diameter	Approximate Weight of Conductor	Average Insulation Thickness	Approximate Overall Diameter	Nominal UTS	Current Rating (*)
mm <sup>2</sup>	mm <sup>2</sup>	No./mm	mm	kg/km	mm	mm	kg	A
35	37.16	7/2.60	7.80	101.50	1.2	10.20	576.0	98
70	73.65	7/3.66	10.98	202.77	1.4	13.78	1216.0	138
120	119.51	19/2.83	14.15	329.39	1.6	17.35	1991.8	190
200	213.20	19/3.78	18.90	587.00	1.8	22.50	3240.0	276

(\*) Note:

The current rating mentioned above is based on ambient temp. of 50° C and max. conductor temp. of 80° C.



**Wire Drawing Machine**

## ALUMINIUM CONDUCTORS STEEL REINFORCED

## ACSR

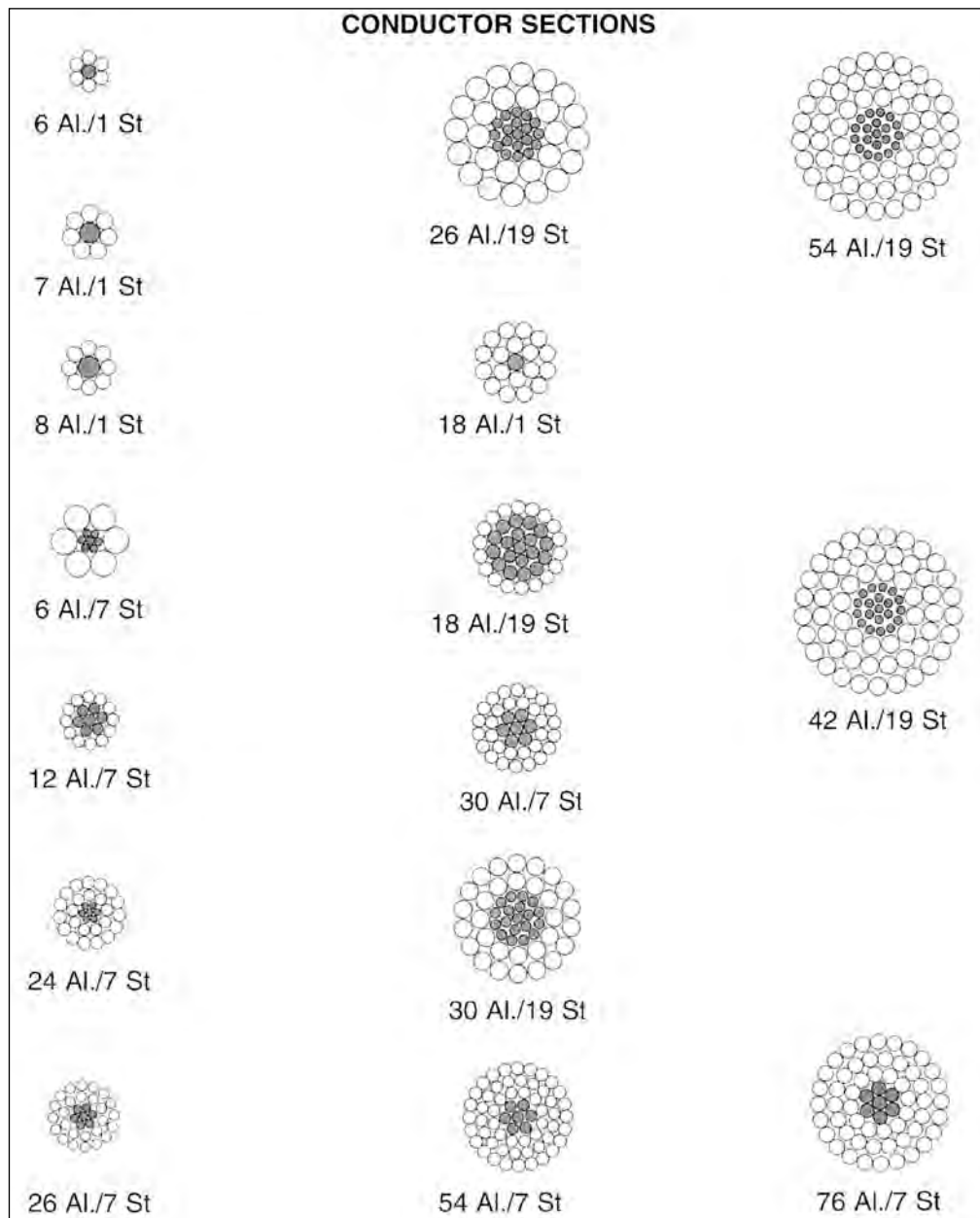
### Construction

The mixed construction of ACSR makes it a very flexible medium from the design point of view. By varying the relative proportions of aluminium and steel, the ideal conductor for any particular application can be produced. Generally, ACSR consists of a galvanized steel core of 1 wire, 7 wires or 19 wires surrounded by concentric layers of aluminium wire. When a conductor with a high current carrying capacity and comparatively low strength is required, special constructions are available with high aluminum content.

### Protection against corrosion

A coating of non-oxidizing grease is normally applied to the steel cores of all conductors, in addition to the protection offered by the galvanizing of the steel wires. One or more layers of the aluminium wires can, if required, be supplied partially or fully greased.

OCI ensures complete freedom from contamination by other metals during the entire manufacture of ACSR conductors.





## ALUMINIUM CONDUCTORS STEEL REINFORCED

ACSR

## BS 215 Part 2

TABLE 6A

## BRITISH SIZES

Code Name	Nominal Area	No./Nominal diameter of wires		Approximate Overall Diameter	Sectional Area			Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20° C	Current Rating (*)
		Aluminium	Steel		Aluminium	Steel	Total				
	mm <sup>2</sup>	No./mm	No./mm	mm	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>	kg/km	KN	ohm/km	A
Gopher	25	6/2.36	1/2.36	7.08	26.24	4.38	30.62	106	9.61	1.0930	115
Weasel	30	6/2.59	1/2.59	7.77	31.61	5.27	36.88	128	11.45	0.9077	129
Ferret	40	6/3.00	1/3.00	9.00	42.41	7.07	49.48	172	15.20	0.6766	155
Rabbit	50	6/3.35	1/3.35	10.05	52.88	8.82	61.70	214	18.35	0.5426	178
Horse	70	12/2.79	7/2.79	13.95	73.37	42.83	116.20	538	61.20	0.3936	225
Dog	100	6/4.72	7/1.57	14.15	105.00	13.50	118.50	394	32.70	0.2733	271
Dingo	150	18/3.35	1/3.35	16.75	158.70	8.80	167.50	506	35.70	0.1815	346
Wolf	150	30/2.59	7/2.59	18.13	158.10	36.80	194.90	726	69.20	0.1828	351
Lynx	175	30/2.79	7/2.79	19.53	183.40	42.80	226.20	842	79.80	0.1576	384
Caracal	175	18/3.61	1/3.61	18.05	184.30	10.20	194.50	587	41.10	0.1563	379
Panther	200	30/3.00	7/3.00	21.00	212.10	49.40	261.50	974	92.25	0.1363	420
Jaguar	200	18/3.86	1/3.86	19.30	210.60	11.70	222.30	671	46.55	0.1367	411
Zebra	400	54/3.18	7/3.18	28.62	428.90	55.60	484.50	1621	131.90	0.0674	636

## Other Popular Sizes

## BS EN 50182

TABLE 6B

Code Name	No./Nominal diameter of wires		Approximate Overall Diameter	Sectional Area			Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20° C	Current Rating (*)
	Aluminium	Steel		Aluminium	Steel	Total				
	No./mm	No./mm	mm	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>	kg/km	KN	ohm/km	A
Mole	6/1.50	1/1.50	4.50	10.6	1.77	12.4	42.8	4.14	2.7027	66
Squirrel	6/2.11	1/2.11	6.33	21.0	3.50	24.5	84.7	7.87	1.3659	101
Fox	6/2.79	1/2.79	8.37	36.7	6.11	42.8	148.1	13.21	0.7812	142
Mink	6/3.66	1/3.66	10.98	63.1	10.50	73.6	254.9	21.67	0.4540	199
Skunk	12/2.59	7/2.59	12.95	63.2	36.90	100.1	463.0	52.79	0.4568	206
Beaver	6/3.99	1/3.99	11.97	75.0	12.50	87.5	302.9	25.76	0.3820	221
Racoon	6/4.09	1/4.09	12.27	78.8	13.10	91.9	318.3	27.06	0.3635	228
Otter	6/4.22	1/4.22	12.66	83.9	14.00	97.9	338.8	28.81	0.3415	237
Cat	6/4.50	1/4.50	13.50	95.4	15.90	111.3	385.3	32.76	0.3003	256
Hare	6/4.72	1/4.72	14.16	105.0	17.50	122.5	423.8	36.04	0.2730	271
Coyote	26/2.54	7/1.91	15.89	131.7	20.10	151.8	520.7	45.86	0.2192	311
Cougar	18/3.05	1/3.05	15.25	131.5	7.31	138.8	418.8	29.74	0.2188	308
Tiger	30/2.36	7/2.36	16.52	131.2	30.60	161.8	602.2	57.87	0.2202	313
Lion	30/3.18	7/3.18	22.26	238.3	55.60	293.9	1093.4	100.47	0.1213	450
Bear	30/3.35	7/3.35	23.45	264.4	61.70	326.1	1213.4	111.50	0.1093	480
Goat	30/3.71	7/3.71	25.97	324.3	75.70	400.0	1488.2	135.13	0.0891	543
Sheep	30/3.99	7/3.99	27.93	375.1	87.50	462.6	1721.3	156.30	0.0771	592
Antelope	54/2.97	7/2.97	26.73	374.1	48.50	422.6	1413.8	118.88	0.0773	586
Bison	54/3.00	7/3.00	27.00	381.7	49.50	431.2	1442.5	121.30	0.0758	593
Deer	30/4.27	7/4.27	29.89	429.6	100.20	529.8	1971.4	179.00	0.0673	643
Elk	30/4.50	7/4.50	31.50	477.1	111.30	588.4	2189.5	198.80	0.0606	684
Camel	54/3.35	7/3.35	30.15	476.0	61.70	537.7	1798.8	146.40	0.0608	677
Moose	54/3.53	7/3.53	31.77	528.5	68.50	597.0	1997.3	159.92	0.0547	720

(\*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre<sup>2</sup>, ambient temperature of 50° C & conductor temperature of 80° c.



## ALUMINIUM CONDUCTORS STEEL REINFORCED

**ACSR**

IEC 61089

**TABLE 7**

**IEC SIZES**

Code Number	Nominal Area			No./Nominal diameter of wires		Approximate Overall Diameter	Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20° C	Current Rating (*)
	Aluminium	Steel	Total	Aluminium	Steel					
	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>	No./mm	No./mm					
16	16	2.67	18.7	6/1.84	1/1.84	5.52	64.6	6.08	1.7934	85
25	25	4.17	29.2	6/2.30	1/2.30	6.90	100.9	9.13	1.1478	112
40	40	6.67	46.7	6/2.91	1/2.91	8.73	161.5	14.40	0.7174	150
63	63	10.50	73.5	6/3.66	1/3.66	10.98	254.4	21.63	0.4555	198
100	100	16.70	117.0	6/4.61	1/4.61	13.83	403.8	34.33	0.2869	263
125	125	6.94	132.0	18/2.97	1/2.97	14.85	397.9	29.17	0.2304	299
125	125	20.40	145.0	26/2.47	7/1.92	15.64	503.9	45.69	0.2310	302
160	160	8.89	169.0	18/3.36	1/3.36	16.80	509.3	36.18	0.1800	347
160	160	26.10	186.0	26/2.80	7/2.18	17.74	644.9	57.69	0.1805	351
200	200	11.10	211.0	18/3.76	1/3.76	18.80	636.7	44.22	0.1440	398
200	200	32.60	233.0	26/3.13	7/2.43	19.81	806.2	70.13	0.1444	402
250	250	24.60	275.0	22/3.80	7/2.11	21.53	880.6	68.72	0.1154	458
250	250	40.70	291.0	26/3.50	7/2.72	22.16	1007.7	87.67	0.1155	461
315	315	21.80	337.0	45/2.99	7/1.99	23.91	1039.6	79.03	0.0917	526
315	315	51.30	366.0	26/3.93	7/3.05	24.87	1269.7	106.83	0.0917	530
400	400	27.70	428.0	45/3.36	7/2.24	26.88	1320.1	98.36	0.0722	607
400	400	51.90	452.0	54/3.07	7/3.07	27.63	1510.3	123.04	0.0723	610
450	450	31.10	481.0	45/3.57	7/2.38	28.56	1485.2	107.47	0.0642	651
450	450	58.30	508.0	54/3.26	7/3.26	29.34	1699.1	138.42	0.0643	655
500	500	34.60	535.0	45/3.76	7/2.51	30.09	1650.2	119.41	0.0578	693
500	500	64.80	565.0	54/3.43	7/3.43	30.87	1887.9	153.80	0.0578	697
560	560	38.70	599.0	45/3.98	7/2.65	31.83	1848.2	133.74	0.0516	741
560 \$	560	70.90	631.0	54/3.63	19/2.18	32.68	2103.4	172.59	0.0516	745
630	630	43.60	674.0	45/4.22	7/2.81	33.75	2079.2	150.45	0.0459	794
630 \$	630	79.80	710.0	54/3.85	19/2.31	34.65	2366.3	191.77	0.0459	798
710	710	49.10	759.0	45/4.48	7/2.99	35.85	2343.2	169.56	0.0407	851
710 \$	710	89.90	800.0	54/4.09	19/2.45	36.79	2666.8	216.12	0.0407	856
800 \$	800	34.60	835.0	72/3.76	7/2.51	37.61	2480.2	167.41	0.0361	910
800 \$	800	66.70	867.0	84/3.48	7/3.48	38.28	2732.7	205.33	0.0362	912
800 \$	800	101.00	901.0	54/4.34	19/2.61	39.09	3004.9	243.52	0.0362	916
900 \$	900	38.90	939.0	72/3.99	7/2.66	39.90	2790.2	188.33	0.0321	972
900 \$	900	75.00	975.0	84/3.69	7/3.69	40.59	3074.2	226.50	0.0322	974
1000 \$	1000	43.20	1043.0	72/4.21	7/2.80	42.08	3100.3	209.26	0.0289	1031
1120 \$	1120	47.30	1167.0	72/4.45	19/1.78	44.50	3464.9	234.53	0.0258	1096
1120 \$	1120	91.20	1211.0	84/4.12	19/2.47	45.31	3811.5	283.17	0.0258	1100
1250 \$	1250	102.00	1352.0	84/4.35	19/2.61	47.85	4253.9	316.04	0.0232	1165
1250 \$	1250	52.80	1303.0	72/4.70	19/1.88	47.00	3867.1	261.75	0.0231	1163

\$ The items marked with "\$" are not in our current product range and the details are for information only.

(\*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre<sup>2</sup>, ambient temperature of 50° C & conductor temperature of 80° C.

## ALUMINIUM CONDUCTORS STEEL REINFORCED

ACSR

ASTM B 232/B 232M

TABLE 8

AMERICAN SIZES

Code Name	Nominal Area			No./Nominal diameter of wires		Approximate Overall Diameter	Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20° C	Current Rating (*)
	Aluminium	Steel	Total	Aluminium	Steel					
	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>	No./mm	No./mm					
Turkey	13.30	2.22	15.52	6/1.68	1/1.68	5.04	53.6	4.98	2.1499	76
Swan	21.18	3.53	24.71	6/2.12	1/2.12	6.36	85.3	7.83	1.3501	101
Swanate	21.12	5.35	26.47	7/1.96	1/2.61	6.53	99.6	9.79	1.3539	102
Sparrow	33.59	5.60	39.19	6/2.67	1/2.67	8.01	135.7	11.92	0.8512	135
Sparate	33.54	8.55	42.09	7/2.47	1/3.30	8.24	158.7	15.08	0.8525	135
Robin	42.41	7.07	49.48	6/3.00	1/3.00	9.00	171.1	14.86	0.6742	156
Raven	53.52	8.92	62.44	6/3.37	1/3.37	10.11	216.1	18.33	0.5343	180
Quail	67.33	11.22	78.55	6/3.78	1/3.78	11.34	272.0	22.46	0.4247	207
Pigeon	85.12	14.19	99.31	6/4.25	1/4.25	12.75	343.0	28.02	0.3359	239
Penguin	107.22	17.87	125.09	6/4.77	1/4.77	14.31	432.7	35.36	0.2667	275
Waxwing	134.98	7.50	142.48	18/3.09	1/3.09	15.45	430.2	29.80	0.2129	313
Partridge	134.87	21.99	156.86	26/2.57	7/2.00	16.28	545.9	47.15	0.2141	316
Ostrich	152.19	24.71	176.90	26/2.73	7/2.12	17.28	613.4	53.38	0.1897	341
Merlin	170.22	9.46	179.68	18/3.47	1/3.47	17.35	542.8	37.36	0.1688	361
Linnet	170.55	27.83	198.38	26/2.89	7/2.25	18.31	687.5	59.16	0.1693	365
Oriole	170.50	39.78	210.28	30/2.69	7/2.69	18.83	783.3	72.06	0.1698	367
Chickadee	200.93	11.16	212.09	18/3.77	1/3.77	18.85	641.3	43.15	0.1430	400
Brant	201.56	26.13	227.69	24/3.27	7/2.18	19.62	761.0	61.83	0.1433	403
Ibis	201.34	32.73	234.07	26/3.14	7/2.44	19.88	812.4	68.05	0.1434	404
Lark	200.90	46.88	247.78	30/2.92	7/2.92	20.44	925.2	84.07	0.1441	406
Pelican	242.31	13.46	255.77	18/4.14	1/4.14	20.70	769.7	51.15	0.1186	448
Flicker	241.58	31.40	272.98	24/3.58	7/2.39	21.49	913.5	72.06	0.1195	450
Hawk	241.65	39.19	280.84	26/3.44	7/2.67	21.77	975.1	81.84	0.1195	451
Hen	241.27	56.30	297.57	30/3.20	7/3.20	22.40	1110.6	98.30	0.1200	453
Osprey	282.47	15.69	298.16	18/4.47	1/4.47	22.35	897.7	59.60	0.1017	492
Parakeet	282.31	36.60	318.91	24/3.87	7/2.58	23.22	1065.6	83.18	0.1023	495
Dove	282.59	45.92	328.51	26/3.72	7/2.89	23.55	1138.6	94.30	0.1022	497
Eagle	282.07	65.82	347.89	30/3.46	7/3.46	24.22	1295.6	114.76	0.1026	499
Peacock	306.13	39.78	345.91	24/4.03	7/2.69	24.19	1158.9	90.74	0.0943	520
Squab	305.83	49.81	355.64	26/3.87	7/3.01	24.51	1237.0	101.41	0.0944	521
Wood Duck	307.06	71.65	378.71	30/3.61	7/3.61	25.27	1408.4	121.43	0.0943	525
Teal \$	307.06	69.62	376.68	30/3.61	19/2.16	25.24	1396.6	124.54	0.0943	525
Kingbird	323.01	17.95	340.96	18/4.78	1/4.78	23.90	1026.6	68.05	0.0890	533
Swift	323.02	8.97	331.99	36/3.38	1/3.38	23.66	956.5	60.05	0.0890	532
Rook	323.07	41.88	364.95	24/4.14	7/2.76	24.84	1217.5	95.19	0.0894	537
Grosbeak	321.84	52.49	374.33	26/3.97	7/3.09	25.15	1300.8	104.97	0.0897	537
Scoter	322.56	75.26	397.82	30/3.70	7/3.70	25.90	1480.7	127.66	0.0897	541
Egret \$	322.56	73.54	396.10	30/3.70	19/2.22	25.90	1469.0	130.77	0.0897	541
Flamingo	337.27	43.72	380.99	24/4.23	7/2.82	25.38	1276.6	99.64	0.0856	551
Gannet	338.26	54.90	393.16	26/4.07	7/3.16	25.76	1363.3	110.31	0.0854	553
Stilt	363.27	46.88	410.15	24/4.39	7/2.92	26.32	1370.4	107.20	0.0795	576
Starling	361.93	59.15	421.08	26/4.21	7/3.28	26.68	1463.7	118.32	0.0798	577
Redwing \$	362.06	82.41	444.47	30/3.92	19/2.35	27.43	1650.6	143.23	0.0799	580
Coot	401.86	11.16	413.02	36/3.77	1/3.77	26.39	1195.8	73.39	0.0715	607
Tern	403.77	27.83	431.60	45/3.38	7/2.25	27.03	1331.8	94.30	0.0715	610
Condor	402.33	52.15	454.48	54/3.08	7/3.08	27.72	1520.7	118.32	0.0718	612
Cuckoo	402.33	52.15	454.48	24/4.62	7/3.08	27.72	1522.2	117.43	0.0718	612
Drake	402.56	65.44	468.00	26/4.44	7/3.45	28.11	1626.4	131.66	0.0717	615
Mallard \$	403.84	91.78	495.62	30/4.14	19/2.48	28.96	1836.0	159.24	0.0717	619



## ALUMINIUM CONDUCTORS STEEL REINFORCED

**ACSR**

ASTM B 232/B 232M

TABLE 8 (contd.)

AMERICAN SIZES

Code Name	Nominal Area			No./Nominal diameter of wires		Approximate Overall Diameter	Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20° C	Current Rating (*)
	Aluminium	Steel	Total	Aluminium	Steel					
	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>	No./mm	No./mm					
Ruddy	455.50	31.67	487.17	45/3.59	7/2.40	28.74	1507.3	104.53	0.0634	656
Canary	456.28	59.15	515.43	54/3.28	7/3.28	29.52	1723.1	134.33	0.0633	660
Catbird	484.61	13.46	498.07	36/4.14	1/4.14	28.98	1434.4	86.74	0.0593	679
Rail	483.84	33.54	517.38	45/3.70	7/2.47	29.61	1598.1	110.76	0.0597	680
Cardinal	484.53	62.81	547.34	54/3.38	7/3.38	30.42	1825.9	142.34	0.0596	685
Tanager	522.79	14.52	537.31	36/4.30	1/4.30	30.10	1553.5	93.85	0.0550	710
Orotlan	523.87	36.31	560.18	45/3.85	7/2.57	30.81	1730.5	118.32	0.0551	713
Curlew	522.51	67.73	590.24	54/3.51	7/3.51	31.59	1977.6	153.90	0.0553	716
Bluejay	565.49	38.90	604.39	45/4.00	7/2.66	31.98	1866.0	127.66	0.0511	745
Finch \$	565.03	71.57	636.60	54/3.65	19/2.19	32.85	2127.8	164.58	0.0514	748
Bunting	605.76	41.88	647.64	45/4.14	7/2.76	33.12	1996.9	136.55	0.0477	776
Grackle \$	602.79	76.89	679.68	54/3.77	19/2.27	33.97	2278.1	176.59	0.0481	777
Skylark	646.02	17.95	663.97	36/4.78	1/4.78	33.46	1913.6	115.65	0.0445	804
Bittern	644.40	44.66	689.06	45/4.27	7/2.85	34.17	2130.8	145.89	0.0448	805
Pheasant \$	645.08	81.71	726.79	54/3.90	19/2.34	35.10	2431.4	183.26	0.0450	808
Dipper	684.24	47.20	731.44	45/4.40	7/2.93	35.19	2263.2	154.79	0.0422	834
Martin \$	685.39	86.67	772.06	54/4.02	19/2.41	36.17	2581.7	194.82	0.0423	838
Bobolink	725.27	50.14	775.41	45/4.53	7/3.02	36.24	2397.2	164.13	0.0398	862
Plover \$	726.92	91.78	818.70	54/4.14	19/2.48	37.24	2734.9	206.39	0.0399	866
Nuthatch	764.20	52.83	817.03	45/4.65	7/3.10	37.20	2529.6	171.25	0.0378	888
Parrot \$	766.06	97.03	863.09	54/4.25	19/2.55	38.25	2883.7	217.51	0.0379	892
Lapwing	807.53	55.60	863.13	45/4.78	7/3.18	38.22	2663.5	180.14	0.0358	916
Falcon \$	806.23	102.43	908.66	54/4.36	19/2.62	39.26	3038.5	229.52	0.0360	919
Chukar \$	903.18	73.54	976.72	84/3.70	19/2.22	40.70	3083.1	217.51	0.0321	976
Bluebird \$	1092.84	88.84	1181.68	84/4.07	19/2.44	44.76	3731.9	256.65	0.0266	1083
Kiwi \$	1099.76	47.52	1147.28	72/4.41	7/2.94	44.10	3423.9	215.28	0.0264	1083
Thrasher \$	1171.42	63.94	1235.36	76/4.43	19/2.07	45.79	3754.2	243.75	0.0248	1122

## ACSR WITH HIGH STRENGTH STRANDING

Grouse	40.54	14.12	54.66	8/2.54	1/4.24	9.32	221.4	21.75	0.7089	153
Petrel	51.61	30.10	81.71	12/2.34	7/2.34	11.70	377.7	42.08	0.5595	181
Minorca	56.11	32.73	88.84	12/2.44	7/2.44	12.20	411.1	45.81	0.5146	191
Leghorn	68.20	39.78	107.98	12/2.69	7/2.69	13.45	499.2	55.16	0.4234	215
Guinea	80.36	46.88	127.24	12/2.92	7/2.92	14.60	589.7	64.94	0.3593	238
Dotterel	89.41	52.15	141.56	12/3.08	7/3.08	15.40	656.1	70.28	0.3230	254
Dorking	96.51	56.30	152.81	12/3.20	7/3.20	16.00	707.8	75.62	0.2992	267
Cochin	107.04	62.44	169.48	12/3.37	7/3.37	16.85	783.9	84.07	0.2698	284
Brahma \$	102.79	91.78	194.57	16/2.86	19/2.48	18.12	1003.8	114.76	0.2809	283

\$ The items marked with "\$" are not in our current product range and the details are for information only.

(\*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre<sup>2</sup>, ambient temperature of 50° C & conductor temperature of 80° C.

## ALUMINIUM CONDUCTORS STEEL REINFORCED

ACSR

DIN 48204

TABLE 9

GERMAN SIZES

Nominal Area		Sectional Area			No./Nominal diameter of wires		Approximate Overall Diameter	Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20° C	Current Rating (*)
Aluminium	Steel	Aluminium	Steel	Total	Aluminium	Steel					
mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>	No./mm	No./mm	mm	kg/km	KN	ohm/km	A
16	2.5	15.27	2.54	17.8	6/1.80	1/1.80	5.4	62	5.81	1.8793	83
25	4	23.86	3.98	27.8	6/2.25	1/2.25	6.8	97	9.02	1.2028	109
35	6	34.35	5.73	40.1	6/2.70	1/2.70	8.1	140	12.70	0.8353	136
44	32	43.98	31.67	75.7	14/2.00	7/2.40	11.2	373	45.46	0.6573	166
50	8	48.25	8.04	56.3	6/3.20	1/3.20	9.6	196	17.18	0.5946	168
50	30	51.17	29.85	81.0	12/2.33	7/2.33	11.7	378	44.28	0.5644	181
70	12	69.89	11.40	81.3	26/1.85	7/1.44	11.7	284	26.31	0.4130	211
95	15	94.39	15.33	109.7	26/2.15	7/1.67	13.6	383	35.17	0.3058	254
95	55	96.51	56.30	152.8	12/3.20	7/3.20	16.0	714	80.20	0.2992	267
105 \$	75	105.67	75.55	181.2	14/3.10	19/2.25	17.5	899	106.69	0.2736	284
120	20	121.57	19.85	141.4	26/2.44	7/1.90	15.5	494	44.94	0.2374	297
120	70	122.15	71.25	193.4	12/3.60	7/3.60	18.0	904	98.16	0.2364	308
125	30	127.92	29.85	157.8	30/2.33	7/2.33	16.3	590	57.86	0.2259	308
150	25	148.86	24.25	173.1	26/2.70	7/2.10	17.1	604	54.37	0.1939	336
170	40	171.77	40.08	211.9	30/2.70	7/2.70	18.9	794	77.01	0.1682	369
185	30	183.78	29.85	213.6	26/3.00	7/2.33	19.0	744	66.28	0.1571	382
210	35	209.10	34.09	243.2	26/3.20	7/2.49	20.3	848	74.94	0.1380	414
210	50	212.06	49.48	261.5	30/3.00	7/3.00	21.0	979	92.25	0.1363	420
230	30	230.91	29.85	260.8	24/3.50	7/2.33	21.0	874	73.09	0.1249	438
240	40	243.05	39.49	282.5	26/3.45	7/2.68	21.8	985	86.46	0.1188	453
265	35	263.66	34.09	297.8	24/3.74	7/2.49	22.4	998	82.94	0.1094	475
300	50	304.26	49.48	353.7	26/3.86	7/3.00	24.5	1233	105.09	0.0949	520
305	40	304.62	39.49	344.1	54/2.68	7/2.68	24.1	1155	99.30	0.0949	518
340	30	339.29	29.85	369.1	48/3.00	7/2.33	25.0	1174	92.56	0.0851	551
380	50	381.70	49.48	431.2	54/3.00	7/3.00	27.0	1448	120.91	0.0757	593
385	35	386.04	34.09	420.1	48/3.20	7/2.49	26.7	1336	104.31	0.0748	595
435	55	434.29	56.30	490.6	54/3.20	7/3.20	28.8	1647	136.27	0.0666	641
450	40	448.71	39.49	488.2	48/3.45	7/2.68	28.7	1553	120.19	0.0644	651
490	65	490.28	63.55	553.8	54/3.40	7/3.40	30.6	1860	152.85	0.0590	689
550	70	549.65	71.25	620.9	54/3.60	7/3.60	32.4	2085	167.42	0.0526	737
560	50	561.70	49.48	611.2	48/3.86	7/3.00	32.2	1943	146.28	0.0514	744
680 \$	85	678.58	85.95	764.5	54/4.00	19/2.40	36.0	2564	209.99	0.0426	834

\$ The items marked with "\$" are not in our current product range and the details are for information only.

(\*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre<sup>2</sup>, ambient temperature of 50° C & conductor temperature of 80° C.



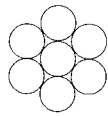
## ALL-ALUMINIUM ALLOY CONDUCTORS

### AAAC

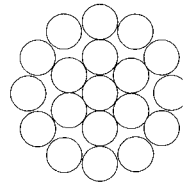
This section deals with heat-treatable magnesium silicon type aluminium alloys to the applicable International Standard, the electrical and mechanical properties of which all fall within the values suggested by relevant standard. Conductors to all other recognized specifications can also

be supplied. The alloys referred to have higher strength but lower conductivity than pure aluminium. Being lighter, alloy conductors can sometimes be used to advantage in place of the more conventional ACSR; Having lower breaking loads than the later, their use becomes particularly favourable when ice and wind loadings are low.

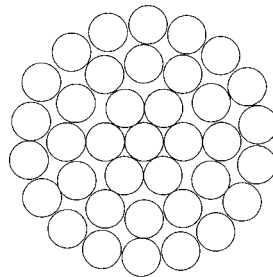
### CONDUCTOR SECTIONS



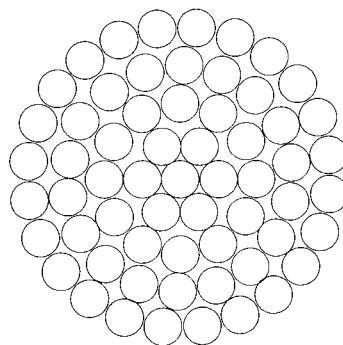
7 strands



19 strands



37 strands



61 strands

## ALL-ALUMINIUM ALLOY CONDUCTORS

AAAC

BS EN 50182

TABLE 10

BRITISH SIZES

Code Name	No./ Nominal diameter of wires	Approximate Overall Diameter	Nominal Area	Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20° C	Current Rating (*)
	No./mm	mm	mm <sup>2</sup>	kg/km	KN	ohm/km	A
Box	7/1.85	5.55	18.8	51.4	5.55	1.7480	87
Acacia	7/2.08	6.24	23.8	64.9	7.02	1.3828	101
Almond	7/2.34	7.02	30.1	82.2	8.88	1.0926	116
Cedar	7/2.54	7.62	35.5	96.8	10.46	0.9273	129
Deodar	7/2.77	8.31	42.2	115.2	12.44	0.7797	143
Fir	7/2.95	8.85	47.8	130.6	14.11	0.6875	155
Hazel	7/3.30	9.90	59.9	163.4	17.66	0.5494	178
Pine	7/3.61	10.83	71.6	195.6	21.14	0.4591	199
Holly	7/3.91	11.73	84.1	229.5	24.79	0.3913	219
Willow	7/4.04	12.12	89.7	245.0	26.47	0.3665	228
Oak	7/4.65	13.95	118.9	324.5	35.07	0.2767	272
Mulberry	19/3.18	15.90	150.9	414.3	44.52	0.2192	314
Ash	19/3.48	17.40	180.7	496.1	53.31	0.1830	351
Elm	19/3.76	18.80	211.0	579.2	62.24	0.1568	386
Poplar	37/2.87	20.09	239.4	659.4	70.61	0.1387	416
Sycamore	37/3.23	22.61	303.2	835.2	89.40	0.1095	480
Upas	37/3.53	24.71	362.1	997.5	106.82	0.0917	535
Yew	37/4.06	28.42	479.0	1319.6	141.31	0.0693	633
Totara	37/4.14	28.98	498.1	1372.1	146.93	0.0666	648
Rubus	61/3.50	31.50	586.9	1622.0	173.13	0.0567	714
Sorbus	61/3.71	33.39	659.4	1822.5	194.53	0.0505	764
Araucaria	61/4.14	37.26	821.1	2269.4	242.24	0.0406	868
Redwood	61/4.56	41.04	996.2	2753.2	293.88	0.0334	970

(\*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre<sup>2</sup>, ambient temperature of 50° C & conductor temperature of 80° C.



## ALL-ALUMINIUM ALLOY CONDUCTORS

**AAAC**

IEC 60189

**TABLE 11**

IEC SIZES

Code Number	Nominal Area	No./Nominal diameter of wires	Approximate Overall Diameter	Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20° C	Current Rating (*)
	mm <sup>2</sup>	No./mm	mm	kg/km	KN	ohm/km	A
16	18.4	7/1.83	5.49	50.4	5.43	1.7896	86
25	28.8	7/2.29	6.87	78.7	8.49	1.1453	113
40	46.0	7/2.89	8.67	125.9	13.58	0.7158	151
63	72.5	7/3.63	10.89	198.3	21.39	0.4545	200
100	115.0	19/2.78	13.90	316.3	33.95	0.2877	266
125	144.0	19/3.10	15.50	395.4	42.44	0.2302	305
160	184.0	19/3.51	17.55	506.1	54.32	0.1798	355
200	230.0	19/3.93	19.65	632.7	67.91	0.1439	407
250	288.0	19/4.39	21.95	790.8	84.88	0.1151	466
315	363.0	37/3.53	24.71	998.9	106.95	0.0916	535
400	460.0	37/3.98	27.86	1268.4	135.81	0.0721	618
450	518.0	37/4.22	29.54	1426.9	152.79	0.0641	663
500	575.0	37/4.45	31.15	1585.5	169.76	0.0577	706
560	645.0	61/3.67	33.03	1778.4	190.14	0.0516	755
630	725.0	61/3.89	35.01	2000.7	213.90	0.0458	809
710	817.0	61/4.13	37.17	2254.8	241.07	0.0407	866
800	921.0	61/4.38	39.42	2540.6	271.62	0.0361	928
900 \$	1036.0	91/3.81	41.91	2861.1	305.58	0.0321	992
1000 \$	1151.0	91/4.01	44.11	3179.0	339.53	0.0289	1051
1120 \$	1289.0	91/4.25	46.75	3560.5	380.27	0.0258	1118
1250 \$	1439.0	91/4.49	49.39	3973.7	424.41	0.0231	1185

\$ The items marked with "\$" are not in our current product range and the details are for information only.

(\*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre<sup>2</sup>, ambient temperature of 50° C & conductor temperature of 80° C.

## ALL-ALUMINIUM ALLOY CONDUCTORS

AAAC

ASTM B 399/B 399M

TABLE 12

AMERICAN SIZES

Nominal Area		No./Nominal diameter of wires	Approximate Overall Diameter	Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20° C	Current Rating (*)
AWG or MCM	mm <sup>2</sup>	No./mm	mm	kg/km	KN	ohm/km	A
6	13.2	7/1.55	4.65	36.2	4.18	2.53610	69
4	21.1	7/1.96	5.88	57.9	6.69	1.58600	93
2	33.5	7/2.47	7.41	92.0	10.60	0.99870	123
0	53.5	7/3.12	9.36	146.8	17.00	0.62592	165
2/0	67.3	7/3.50	10.50	184.8	20.40	0.49738	190
3/0	84.9	7/3.93	11.79	233.0	25.70	0.39450	219
4/0	107.0	7/4.42	13.26	294.7	32.50	0.31188	253
250	126.0	19/2.91	14.55	346.7	38.80	0.26509	280
300	152.0	19/3.19	15.95	416.7	46.60	0.22059	313
350	178.0	19/3.45	17.25	487.3	52.00	0.18860	345
400	203.0	19/3.69	18.45	557.5	59.50	0.16486	375
450	228.0	19/3.91	19.55	626.0	66.80	0.14683	402
500	253.0	19/4.12	20.60	695.0	74.20	0.13224	429
550	279.0	37/3.10	21.70	766.2	83.90	0.11995	455
600	303.0	37/3.23	22.61	831.9	91.00	0.11049	478
650	330.0	37/3.37	23.59	905.5	94.90	0.10150	504
700	354.0	37/3.49	24.43	971.2	101.00	0.09464	525
750	381.0	37/3.62	25.34	1045.0	109.00	0.08796	549
800	404.0	37/3.73	26.11	1109.0	116.00	0.08285	569
900	456.0	37/3.96	27.72	1250.0	131.00	0.07351	612
1000	508.0	37/4.18	29.26	1393.0	146.00	0.06597	653
1250	631.0	61/3.63	32.67	1732.0	179.00	0.05306	743
1500	759.0	61/3.98	35.82	2082.0	215.00	0.04414	827
1750	886.0	61/4.30	38.70	2431.0	251.00	0.03781	904

(\*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre<sup>2</sup>, ambient temperature of 50° C & conductor temperature of 80° C.



## ALL-ALUMINIUM ALLOY CONDUCTORS

**AAAC**

**DIN 48201 Part 6**

**TABLE 13**

**GERMAN SIZES**

Area		No./Nominal diameter of wires	Approximate Overall Diameter	Approximate Weight	Nominal Breaking Load	Nominal DC Resistance at 20° C	Current Rating (*)
Nominal	Actual						
mm <sup>2</sup>	mm <sup>2</sup>	No./mm	mm	kg/km	KN	ohm/km	A
16	15.89	7/1.70	5.1	43	4.44	2.0742	78
25	24.25	7/2.10	6.3	66	6.77	1.3593	102
35	34.36	7/2.50	7.5	94	9.60	0.9591	126
50	49.48	7/3.00	9.0	135	13.82	0.6660	158
50	48.35	19/1.80	9.0	133	13.50	0.6849	156
70	65.81	19/2.10	10.5	181	18.38	0.5032	189
95	93.27	19/2.50	12.5	256	26.05	0.3551	234
120	116.99	19/2.80	14.0	322	32.68	0.2831	269
150	147.11	37/2.25	15.8	406	41.09	0.2256	309
185	181.62	37/2.50	17.5	500	50.73	0.1828	352
240	242.54	61/2.25	20.3	670	67.74	0.1371	420
300	299.43	61/2.50	22.5	827	83.63	0.1110	477
400	400.14	61/2.89	26.0	1104	111.76	0.0831	568
500	499.83	61/3.23	29.1	1379	139.60	0.0665	649
625 \$	626.20	91/2.96	32.6	1732	174.90	0.0531	742
800 \$	802.09	91/3.35	36.9	2218	224.02	0.0415	857
1000 \$	999.71	91/3.74	41.1	2767	279.22	0.0333	971

\$ The items marked with "\$" are not in our current product range and the details are for information only.

(\*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre<sup>2</sup>, ambient temperature of 50° C & conductor temperature of 80° C.



## HARD DRAWN BARE COPPER CONDUCTORS

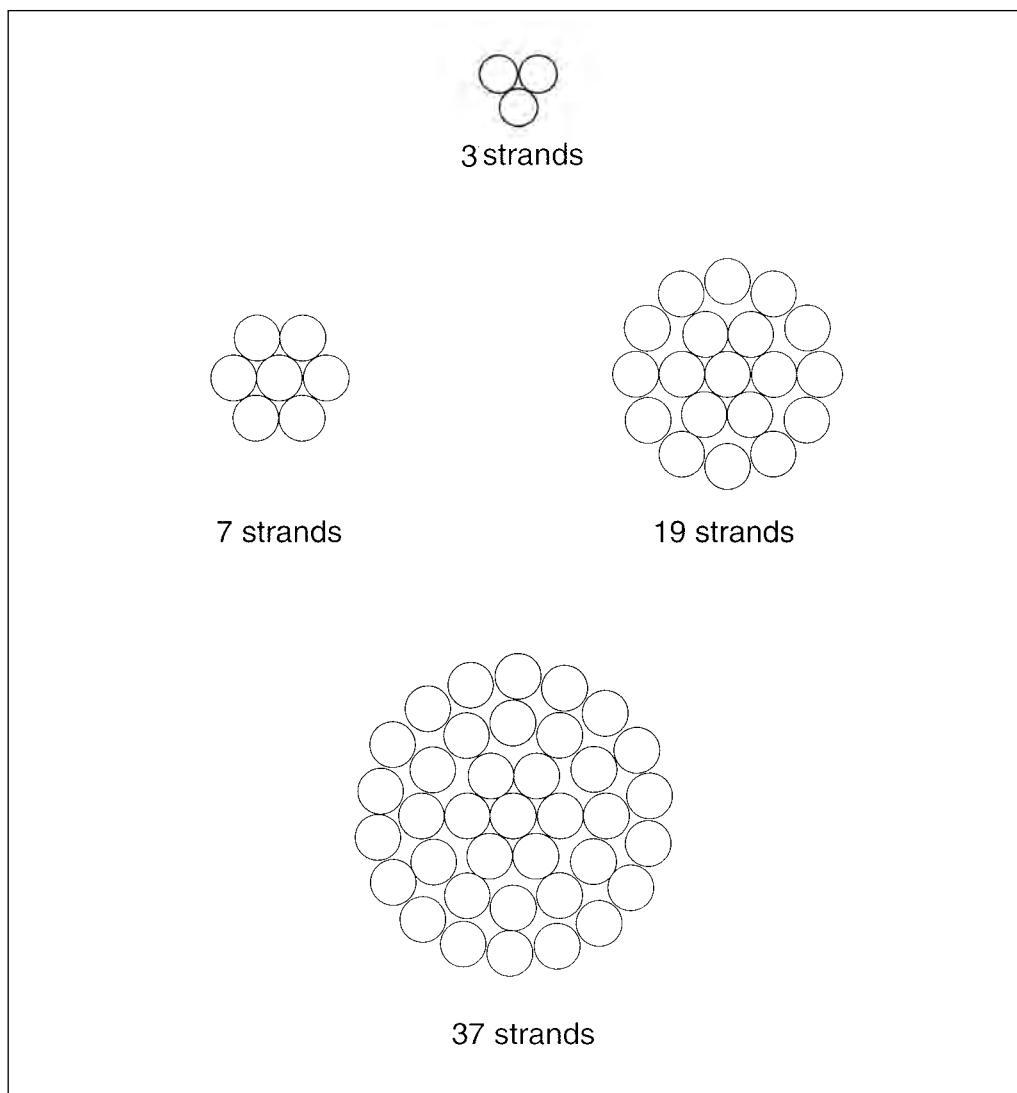
### HDBC

These are stranded circular hard drawn bare copper conductors mainly used for:-

- a) Overhead transmission system
- b) Overhead traction system
- c) Transformer earthing (occasionally)

While the tables give broad constructional details, BS 7884 covers all the details mentioned below:-

- a) Material composition
- b) Dimensions
- c) Mechanical properties
- d) Electrical resistance
- e) Stranding details
- f) Test details



## HARD DRAWN BARE COPPER CONDUCTORS

**HDBC**
**BS 7884**
**TABLE 14**
**BRITISH SIZES**

Nominal Area	No./Nominal diameter of wires	Approximate Overall Diameter	Nominal Mass	Max. DC Resistance at 20°C	Minimum Breaking Load	Current rating (*)
mm <sup>2</sup>	No./mm	mm	kg/km	ohm/km	KN	A
10	7/1.35	4.05	89.82	1.82900	3.752	80
14	7/1.60	4.80	126.20	1.30300	5.267	99
16	3/2.65	5.70	148.30	1.10600	6.194	112
16	7/1.70	5.10	142.40	1.15400	5.946	106
25	7/2.10	6.30	217.30	0.75630	9.073	138
32	3/3.75	8.06	296.90	0.55200	12.400	171
32	7/2.46	7.38	298.20	0.54970	12.442	168
35	7/2.50	7.50	308.00	0.53370	12.860	171
50	7/3.00	9.00	443.50	0.37060	18.520	215
50	19/1.80	9.00	435.80	0.38190	17.700	212
70	7/3.55	10.65	621.10	0.26460	25.930	264
70	19/2.10	10.50	593.20	0.28060	24.090	256
95	19/2.50	12.50	840.70	0.19800	34.140	317
100	7/4.30	12.90	911.20	0.18100	36.540	334
120	19/2.80	14.00	1055.00	0.15780	42.830	364
125	19/2.90	14.50	1131.00	0.14710	45.940	380
150	19/3.20	16.00	1377.00	0.12080	55.940	429
150	37/2.25	15.75	1334.00	0.12640	53.880	418
185	19/3.55	17.75	1695.00	0.09815	68.860	486
185	37/2.50	17.50	1647.00	0.10240	66.490	475

(\*) Note: The values of current rating mentioned in above Table are based on wind velocity of 0.6 metre/second, solar heat radiation of 1200 watt/metre<sup>2</sup>, ambient temperature of 50° C & conductor temperature of 80° C.

## PVC-COVERED COPPER CONDUCTORS AS PER BS 6485

### HDBC + PVC

These conductors are meant for Overhead Power Lines. In these conductors two types of insulations are used.

- 1) Type 8 PVC insulation is used for maximum 650 V r.m.s between conductor to conductor and 250 V r.m.s. between conductor and earth. These are used :-
  - a. To guard against contact with telecommunication lines
  - b. For Lines accessible from residential buildings
- 2) Type 16 PVC insulation is used for voltage above 650 V r.m.s. and upto 11 kV r.m.s. between conductors.

These are also used in proximities to telecommunication lines and crossings with them.



3 strands



7 strands

## PVC COVERED COPPER CONDUCTOR

**HDBC + PVC**
**BS 6485**
**TABLE 15**
**BRITISH SIZES**

Nominal Area	No./Nominal diameter of wires	Approximate Conductor Diameter	Maximum DC Resistance at 20°C	Approximate Breaking Load	Approximate Overall Diameter		Approximate Mass of Covered Conductor		Current Rating (**)
mm <sup>2</sup>	No. /mm	mm	ohm/km	KN	Type - 8 * mm	Type - 16 ~ mm	Type - 8 kg/km	Type - 16 kg/km	A
14	7/1.60	4.80	1.3030	5.744	6.8	8.4	160	190	56
16	3/2.65	5.70	1.1060	6.590	7.7	9.3	180	220	66
32	3/3.75	8.06	0.5520	12.710	10.5	12.1	350	390	102
35	7/2.50	7.50	0.5337	14.097	9.9	11.5	360	400	103
70	7/3.55	10.65	0.2646	26.880	13.5	14.7	690	750	153
100	7/4.30	12.90	0.1810	37.640	15.7	16.9	990	1060	196

\* Type - 8 is intended for use only where the operating voltage of power lines does not exceed 650 V r.m.s. between any two conductors or 250 V r.m.s. between any conductor & earth.

~ Type - 16 is intended for use only where the operating voltage of power lines exceed 650 V r.m.s. between any two conductors or 250 V r.m.s. between any conductor & earth but does not exceed 11 kV r.m.s. between conductors or 6.6 kV r.m.s between any conductor and earth.

Thickness of insulation

Type - 8 : 0.8 mm

Type - 16: 1.6 mm

(\*\*) Note: The current rating mentioned above is based on ambient temp. of 50° C and max. conductor temp. of 70° C.

## DRUM HANDLING INSTRUCTIONS (Packing, Transportation, Storage, Unwinding)

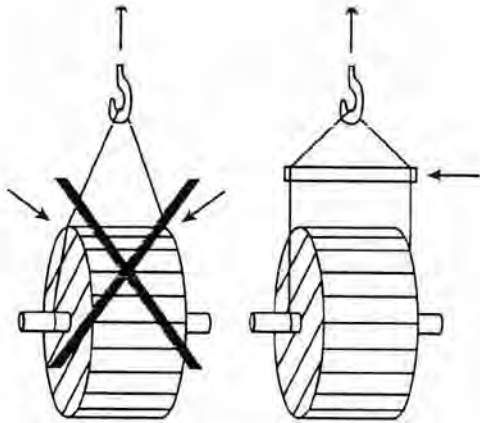
Following Instructions should be followed for handling conductor drums:-

- 1) Generally conductor ends should be available for inspection and testing.
- 2) During unloading operation drums must not be thrown or dropped from a height from trailers, trucks or ships. A ramp, forklift or crane may be used for unloading operation. If neither is available a temporary ramp may be arranged.
- 3) The drums should be rolled in the direction indicated by the arrow mark on the drum. Rolling in the opposite direction will result in the conductor unwinding and becoming loose.
- 4) The drums should be stored on a firm surface (preferably a concrete surface). Storage of drums on a soft surface may result in drums sinking, making it extremely difficult to move the drums later on.
- 5) The drums should never be stored flat i.e. the flanges being kept horizontal to the ground. The conductor should also never be unwound from this position, as this may result in the conductor getting twisted which is not rectifiable.
- 6) If for some reason it is necessary to rewind the conductor on a different drum, the barrel of the new drum should not be less than the existing drum.

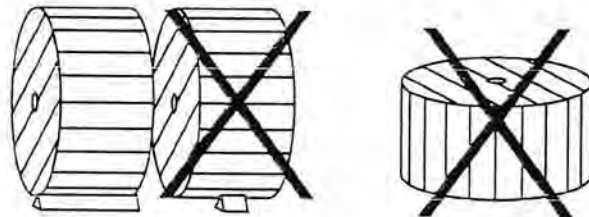




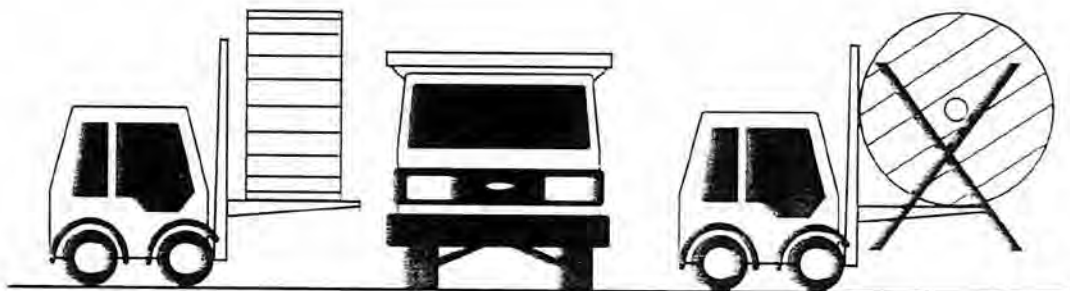
## DRUM HANDLING INSTRUCTIONS



Lifting cable drums using crane



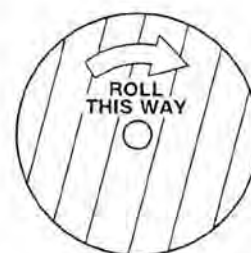
Do not lay drums flat on their sides, use proper wedges to prevent drums rolling



Lift drums on fork trucks correctly



Secure drums adequately before transportation



Roll in the direction shown by the arrow

# TRULY OMANI

## TRUSTED GLOBALLY

---

### FACTORY & HEAD OFFICE & LOCAL SALES OFFICE

Plot No 206, Road No 2, PO Box 25, Rusayl, 124 PC 124 Sultanate of Oman

Tel : +968 2444 3100

Fax : +968 2444 6096 | +968 2444 6411

E-mail : [omancables@omancables.com](mailto:omancables@omancables.com) | [marketing@omancables.com](mailto:marketing@omancables.com)

### SALALAH OFFICE

Road 23, Al Salam Building, 5th Floor, Flat 17

Tel : +968 2320 1544

Fax : +968 2320 1588

E-mail : [salalah.office@omancables.com](mailto:salalah.office@omancables.com)

### UAE OFFICE

Sharjah Office (covers United Arab Emirates)

Flat 1201, Crystal Plaza (Office Tower), Buheira Corniche, Sharjah, UAE

Tel : +971 6544 8445

Fax : +971 6544 7901

E-mail : [sharjah.office@omancables.com](mailto:sharjah.office@omancables.com)

### QATAR OFFICE

(covers Qatar, Bahrain)

Sales - Regional Division, P.O. Box 24410, Salwa Road, Doha, Qatar

Tel : +974 4468 8384

Fax : +974 4468 7663

E-mail : [doha.office@omancables.com](mailto:doha.office@omancables.com)

### SAUDI ARABIA OFFICE

Riyadh (covers Kingdom of Saudi Arabia)

Sales - Regional Division, Diamond D Building Sitteen Street

Malaz, 4th Floor Office # 42, P.O.Box 26993, Riyadh 11496, Riyadh, Kingdom of Saudi Arabia

Tel : +966 11 2068055

Fax : +966 11 2142730

E-mail : [riyadh.office@omancables.com](mailto:riyadh.office@omancables.com)