



Powering the Future

الأمريكية للكابلات



# Low Voltage Cables

## Catalogue

Since starting operations in 1994, Incom America established a reputation as a quality leader for power cords and wiring harness assemblies for the home appliance industry. Responding to the overwhelming market demand, we made the strategic decision to transfer our operations to Alexandria, Egypt in 2002, bringing us within close proximity to major markets. Operating under the A.G. Singer group of companies as Incom Egypt, our new facility saw steady growth and positive exposure in the market. Recognizing an opportunity, we expanded our portfolio with the introduction of electrical cables in 2004, shortly followed by the polymer compound plant, Sacom Industries in 2012. Today, Incom and Sacom provide electrical cables and PVC insulation and sheathing/jacketing compound in accordance with the strictest international standards and hold a respectable customer portfolio.

With clear vision and direction, we entered into the next expansion phase and proudly introduced the Low Voltage Power Cable plant in 2021. With an area of 29,158m<sup>2</sup> and dedicated workforce of 419, our facilities consistently supply certified quality cables, power cords, wiring assemblies and polymer compounds for various applications to a multitude of fields including the construction and development sector.

Today, Incom holds several quality and type test certificates for our product ranges including UL, CSA, IEC, VDE, KEMA-KEUR, GCC, SASO, RoHS and ISO 9001. Since the launch our power cables division, we have successfully obtained type test certificates for our power cables through the Extra High Voltage Research Center in Egypt.

Undergoing third party audits as well as internal audits, we implement a stringent quality policy to ensure exacting product compliance and customer satisfaction. Our commitment to excellence and exceptional quality is driven by our continuous improvement policy and company philosophy of creating mutually successful partnerships with our clients and supply partners.



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## Definitions

### Definitions of Dimensional Values

#### 1. Nominal Value

- Value by which a quantity is designated and which is often used in tables. Usually, in IEC standard, nominal.
- Values give rise to values to be checked by measurements taking into account specified tolerances.

#### 2. Approximate Value

- Value which is neither guaranteed nor checked; it is used, for example, for the calculation of other dimensional values.

#### 3. Median Value

- When several test results have been obtained and ordered in an increasing ( or decreasing ) succession, the median value is the middle value if the number of available values is odd, and the mean of the two middle values if the number is even.

#### 4. Fictitious Value

- Value calculated according to the "fictitious method" described in annex A in IEC 60502.

### Definitions concerning Tests

#### 1. Routine Tests

- Tests made by the manufacturer on each manufactured length of cable to check that each length meets the specified requirements.

#### 2. Sample Tests

- Tests made by the manufacturer on samples of completed cable or components taken from a completed cable, at a specified frequency, so as to verify that the finished product meets the specified requirements.

#### 3. Type Tests

- Test made before supplying, on a general commercial basis, a type of cable covered by this standard, in order to demonstrate satisfactory performance characteristics to meet the intended application.
- These tests are of such a nature that, after they have been made, they need not be repeated, unless changes are made in the cable materials or design or manufacturing process, which might change the performance characteristics.

#### 4. Electrical Test After Installation

- Tests made to demonstrate the integrity of the cable and its accessories as installed.

## Technical Data & Cables Parameters

### 1. Resistance

- The values of conductor DC resistance given in the following tables are based on 20 °C.

In case the DC resistance is required at any other temperature the following formula is used

$$R_{\theta} = R_{20} [ 1 + \alpha (\theta - 20) ] \quad \Omega/\text{km}$$

Where

$R_{\theta}$  : Conductor DC resistance at  $\theta$  °C

$R_{20}$  : Conductor DC resistance at 20 °C  $\Omega/\text{km}$

$\theta$  : Operating temperature °C

$\alpha$  : Resistance temperature coefficient  $1 / ^\circ\text{C}$

= 0.00393 for Copper

= 0.00403 for Aluminium

To get AC resistance of the conductor at its operating temperature the following formula is used

$$R_{AC} = R_{\theta} ( 1 + y_p + y_s )$$

Where

$y_p$  and  $y_s$  are proximity and skin effect factors respectively

$y_p$  and  $y_s$  to be calculated according to IEC 60287-1-1

## Technical Data & Cables Parameters

### 2. Insulation Resistance

- The Insulation Resistance is formulated as follow

$$R = K \ln(D/d) \quad M\Omega/km$$

Where

R	: Insulation resistance	MΩ/km
K	: Constant depends on the insulation material	
D	: Diameter of the conductor	mm
d	: Diameter of the insulated core	mm

### 3. Charging Current

- The charging current is the capacitive current which flows when AC voltage is applied to the cables as a result of the capacitance between the conductor and earth, and for a multicore cable in which cores are not screened, between conductors. The value can be derived from the following equation.

$$I_C = U_0 \omega C \cdot 10^{-6} \quad A/km$$

Where

I <sub>C</sub>	: Charging current	A/km
U <sub>0</sub>	: Voltage between phase and earth	V
ω	: 2 π f	
f	: Frequency	Hz
C	: Capacitance to neutral	μf/km

## Technical Data & Cables Parameters

### 4. Dielectric Losses

- The dielectric losses of an AC cable are proportional to the capacitance, the frequency, the phase voltage and the power factor.

The value can be derived from the following equation.

$$W_D = 2 \pi f C U_o^2 \tan \delta 10^{-6} \quad \text{M}\Omega/\text{km}$$

Where

$W_D$	: Dielectric losses	watt/km/phase
$f$	: Frequency	Hz
$C$	: Capacitance to neutral	$\mu\text{f}/\text{km}$
$U_o$	: Voltage between phase and earth	V
$\tan \delta$	: Dielectric power factor	

### 5. Cable Ampacity

- Cable ampacity or current carrying capacity is defined as the continuous maximum current the cable can carry at its maximum operating temperature.

- In the technical information tables the following installation conditions were assumed during the current calculation:

$$I_C = U_o \omega C 10^{-6} \quad \text{A}/\text{km}$$

● Ambient air temperature	= 40 °C
● Ground temperature	= 35 °C
● Ground thermal resistivity	= 120 °C.cm/Watt
● Burial depth	= 0.5 mt.

- In case of installation conditions are different from the stated, derating factors tabulated in tables 3 to 11 must be used for calculating the new current carrying capacity.

- All cable ampacities are based on IEC 60287.

## Technical Data & Cables Parameters

### 6. Cable Short Circuit Capacity

- Tables 13-16 give the short circuit current for conductor based on the following conditions
- A- Short circuit starts from the maximum operating conductor temperature.
- B- Maximum temperature during short circuit
- C- Maximum short circuit current duration is 5 seconds.

- If the short circuit current is required at duration not mentioned in the catalogue, it is obtained by dividing the short circuit current for 1 second by the square root of the required duration as follows:

$$I_{s.c.t} = I_{s.c.1} / t^{0.5} \quad \text{A/km}$$

Where

- $I_{s.c.t}$  : Dielectric losses KA
- $I_{s.c.1}$  : Frequency KA
- $t$  : Capacitance to neutral Sec.

### 7. Voltage Drop

- When current flows in a cable conductor there is a voltage drop between the ends of the conductor which is the product of the current and the impedance.
- The following equations should be used to calculate the voltage drop:

A. Single phase circuit.  $V_d = 2 I (R \cos \phi + X \sin \phi) \quad V$

B. Three phase circuit.  $V_d = 3^{0.5} I (R \cos \phi + X \sin \phi) \quad V$

Where

- $V_d$  : Voltage drop V
- $I$  : Load current A
- $R$  : AC Resistance  $\Omega/\text{km}$
- $X$  : Reactance  $\Omega/\text{km}$
- $\text{COS}\phi$  : Power factor
- $l$  : Length km
- $X$  :  $\omega L$  10-3  $\Omega/\text{km}$
- $\omega$  :  $2 \pi f$
- $L$  : From Tables mh/km

COS $\phi$	1.0	0.9	0.8	0.71	0.6	0.5
Sin $\phi$	0.0	0.44	0.6	0.71	0.8	0.87

- L.V. cable systems should be planned so as not to exceed voltage drop 3-5 % in normal operating conditions.
- Voltage drop data for L.V. Cable (Single & Multi Core) are tabulated in Tables 17 & 18.



## Metals Used for Cables

**Table 1**  
Electrical Properties

Metal	Relative Conductivity Copper 100%	Electrical Resistivity at 20 °C ohm.m(10-8)	Temperature Coefficient of Resistance per °C
Copper (annealed)	100	1.7241	0.00393
Copper (hard drawn)	97	1.777	0.00393
Tinned copper	95 - 97	1.741 - 1.814	0.00393
Aluminium	61	2.8264	0.00403

**Table 2**  
Physical Properties

Property	Unit	Copper	Aluminium
Density at 20 °C	kg / m3	8890.0	2703.0
Coeff. thermal expansion	Per °C x 10-6	17.0	23.0
Melting point	°C	1083.0	659.0
Melting point	W/cm °C	3.8	2.4
Ultimate tensile strength	N/mm2	225.0	70-90

## Derating Factors

**Table 3**

Ground temperature derating factors

Ground temperature °C	15	20	25	30	35	40	45	50	55
PVC cables rated 70 °C	1.25	1.19	1.13	1.07	1.00	0.93	0.85	0.76	0.65
XLPE cables rated 90 °C	1.16	1.13	1.09	1.04	1.00	0.90	0.90	0.85	0.80

**Table 4**

Air temperature derating factors

Air temperature °C	15	20	25	30	35	40	45	50	55
PVC cables rated 70 °C	1.33	1.29	1.22	1.15	1.08	0.95	0.85	0.82	0.71
XLPE cables rated 90 °C	1.20	1.18	1.14	1.10	1.05	0.90	0.90	0.89	0.84

**Table 5**

Burial depth derating factors

Depth of laying mt.	Cables cross section		
	Up to 70 mm <sup>2</sup>	95 Up to 240 mm <sup>2</sup>	300 mm <sup>2</sup> & above
0.50	1.00	1.00	1.00
0.60	0.99	0.98	0.97
0.80	0.97	0.96	0.94
1.00	0.95	0.93	0.92
1.25	0.95	0.92	0.89
1.50	0.93	0.90	0.87
1.75	0.92	0.89	0.86
2.00	0.91	0.88	0.85

**Table 6**

Soil thermal resistivity derating factors

Soil thermal resistivity in °C. Cm/Watt	80	90	100	120	150	200	250	300
PVC cables rated 70 °C	1.17	1.12	1.07	1.00	0.91	0.80	0.73	0.67

## Derating Factors

Table 7

PVC rated temperature de-rating factors

Type of PVC rated temperature °C	70	90	105
De-rating factors for cable in air	1	1.26	1.42
Copper (hard drawn)	1	1.20	1.30

Table 8

Trefoil or Flat Formation Derating Factors for Three Single Core Cables Laid Direct in Ground





Number of Circuits	 Trefoil formation		 Flat formation			
	Touching		Spacing = 0.15 M		Spacing = 0.30 M	
nr	Trefoil	Flat	Trefoil	Flat	Trefoil	Flat
2	0.77	0.80	0.82	0.58	0.88	0.91
3	0.66	0.69	0.73	0.76	0.80	0.83
4	0.60	0.63	0.68	0.71	0.74	0.77
5	0.56	0.59	0.64	0.67	0.72	0.75
6	0.53	0.57	0.61	0.64	0.70	0.73

Table 9

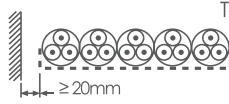
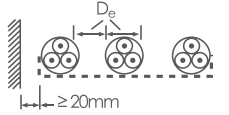
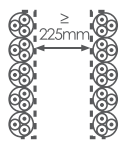
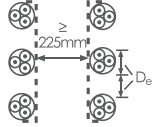
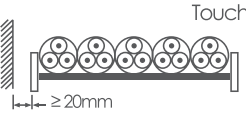
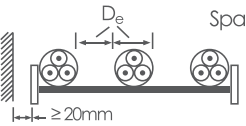
Trefoil Formation Derating Factors for Multi-core Core Cables Laid Direct in Ground

Number of Circuits	 Trefoil formation		 Flat formation			
	Touching		Spacing = 0.15 M		Spacing = 0.30 M	
nr	Trefoil	Flat	Trefoil	Flat	Trefoil	Flat
2	0.81	0.81	0.87	0.87	0.91	0.91
3	0.69	0.70	0.67	0.78	0.82	0.74
4	0.62	0.63	0.81	0.74	0.77	0.81
5	0.58	0.60	0.66	0.70	0.73	0.78
6	0.54	0.56	0.63	0.67	0.71	0.76

## Derating Factors

Table 10

Reduction factors for groups of more than one multi-core cable in air  
To be applied to the current-carrying capacity for one multi-core cable in free air

Number of Trays	Number of Cables						Method of installation	
	1	2	3	4	6	9		
1	1.00	0.88	0.82	0.79	0.76	0.73	Cables on vertical perforated trays  Touching	
2	1.00	0.87	0.80	0.77	0.73	0.68		
3	1.00	0.86	0.79	0.76	0.71	0.66		
1	1.00	1.00	0.98	0.95	0.91	-		 Spaced
2	1.00	0.99	0.96	0.92	0.87	-		
3	1.00	0.98	0.95	0.91	0.91	-		
1	1.00	0.88	0.82	0.78	0.73	0.72	Cables on perforated trays  Touching	
2	1.00	0.88	0.81	0.67	0.71	0.70		
1	1.00	0.91	0.81	0.76	0.71	0.70	 Spaced	
2	1.00	0.91	0.89	0.88	0.87	-		
1	1.00	0.88	0.82	0.79	0.76	0.73	Cables on ladder supports, cleats, etc.  Touching	
2	1.00	0.87	0.80	0.77	0.73	0.68		
3	1.00	0.86	0.79	0.76	0.71	0.66		
1	1.00	1.00	0.98	0.95	0.91	-		 Spaced
2	1.00	0.99	0.96	0.92	0.87	-		
3	1.00	0.98	0.95	0.91	0.85	-		

NOTE 1 : Values given are averages for the cable types and range of conductor sizes considered. The spread of values is generally less than 5%

NOTE 2 : Factors apply to single layer groups of cables as shown above and do not apply when cables are installed in more than one layer touching each other.

Values for such installations may be significantly lower and must be determined by an appropriate method.

NOTE 3 : Values are given for vertical spacing between trays of 300 mm and at least 20 mm between trays and wall. For closer spacing the factors should be reduced.

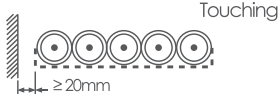
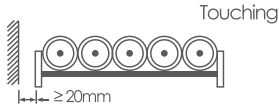
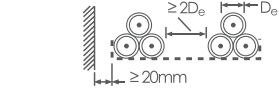
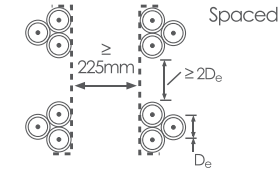
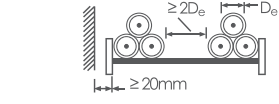
NOTE 4 : Values are given for horizontal spacing between trays of 225 mm with trays mounted back to back. For closer spacing the factors should be reduced.

## Derating Factors

Table 11

Reduction factors for groups of more than one circuit of single-core cables (Note 2)

To be applied to the current-carrying capacity for one circuit of single-core cables in free air

Number of Trays	Number of Cables			Use as a multiplier to rating for	Method of installation
	1	2	3		
1	1.00	0.88	0.82	Three cables in horizontal formation	Perforated trays (Note 3) 
2	1.00	0.87	0.80		
3	1.00	0.86	0.79		
1	1.00	1.00	0.98	Three cables in horizontal formation	Ladder supports, cleats, etc. (Note 3) 
2	1.00	0.99	0.96		
3	1.00	0.98	0.95		
1	1.00	0.88	0.82		Perforated trays (Note 3) 
2					
3	1.00	0.88	0.81		
1	1.00	0.91	0.81	Three cables in horizontal formation	Perforated trays (Note 3) 
2	1.00	0.91	0.89		
1	1.00	0.88	0.82		Ladder supports, cleats, etc. (Note 3) 
2	1.00	0.87	0.80		
3	1.00	0.86	0.79		

NOTE 1 Values given are averages for the cable types and range of conductor sizes considered. The spread of values is generally less than 5%

NOTE 2 Factors are given for single layers of cables (or trefoil groups) as shown in the table and do not apply when cables are installed in more than one layer touching each other. Values for such installations may be significantly lower and should be determined by an appropriate method.

NOTE 3 Values are given for vertical spacings between trays of 300 mm. For closer spacing, the factors should be reduced.

NOTE 4 Values are given for horizontal spacing between trays of 225 mm with trays mounted back to back. For closer spacing, the factors should be reduced.

NOTE 5 For circuits having more than one cable in parallel per phase, each three phase set of conductors should be considered as a circuit for the purpose of this table.

## Short Circuit Current

Table 12

Max. Short Circuit Temperature for Cable Components

Material	Item	Temperature °C
Insulation	PVC insulation	140 For C.S.A >300 mm <sup>2</sup>
		160 For C.S.A ≤ 300 mm <sup>2</sup>
Jacket	XLPE insulation	250
	PVC sheathing (ST1 and ST2)	200
	LLDPE sheathing (ST3)	150
	HDPE sheathing (ST7)	180
Metal	Copper	250
	Aluminum	250

Table 13

KA Short Circuit Current- Copper Conductor- PVC Insulated.

Material	Duration sec.									
	0.1	0.2	0.3	0.4	0.5	1.0	2.0	3.0	4.0	5.0
16	5.8	4.1	3.4	2.9	1.8	1.8	1.3	1.1	0.9	0.8
25	9.1	6.4	5.2	4.5	2.9	2.9	2.0	1.7	1.4	1.3
35	12.7	9.0	7.3	6.4	4.0	4.0	2.8	2.3	2.0	1.8
50	18.2	12.9	10.5	9.1	5.8	5.8	4.1	3.3	2.9	2.6
70	25.5	18.0	14.7	12.7	8.1	8.1	5.7	4.6	4.0	3.6
95	34.5	24.4	19.9	17.3	10.9	10.9	7.7	6.3	5.5	4.9
120	43.6	30.9	25.2	21.8	13.8	13.8	9.8	8.0	6.9	6.2
150	54.5	38.6	31.5	27.3	17.3	17.3	12.2	10.0	8.6	7.7
185	67.3	47.6	38.8	33.6	21.3	21.3	15.0	12.3	10.6	9.5
240	87.3	61.7	50.4	43.6	27.6	27.6	19.5	15.9	13.8	12.3
300	109.1	77.1	63.0	54.5	34.5	34.5	24.4	19.9	17.3	15.4
400	130.0	91.9	75.1	65.0	41.1	41.1	29.1	23.7	20.6	18.4
500	162.5	114.9	93.8	81.3	51.4	51.4	36.3	29.7	25.7	23.0
630	204.8	144.8	118.2	102.4	64.8	64.8	45.8	37.4	32.4	29.0

## Short Circuit Current

Table 14

KA Short Circuit Current - Aluminium Conductor – PVC Insulated

C.S.A. mm <sup>2</sup>	Duration sec.									
	0.1	0.2	0.3	0.4	0.5	1.0	2.0	3.0	4.0	5.0
16	3.8	2.7	2.2	1.9	1.7	1.2	0.9	0.7	0.6	0.5
25	6.0	4.2	3.5	3.0	2.7	1.9	1.3	1.1	1.0	0.8
35	8.4	5.9	4.9	4.2	3.9	2.7	1.98	1.5	1.3	1.2
50	12.0	8.5	6.9	6.0	5.4	3.8	2.7	2.2	1.9	1.7
70	16.8	11.9	9.7	8.4	7.5	5.3	3.8	3.1	2.7	2.4
95	22.8	16.1	13.2	11.4	10.2	7.2	5.1	4.2	3.6	3.2
120	28.8	20.4	16.7	14.4	12.9	9.1	6.4	5.3	4.6	4.1
150	36.0	25.5	20.8	18.0	16.1	11.4	8.1	6.6	5.7	5.1
185	44.5	31.4	25.7	22.2	19.9	14.1	9.9	8.1	7.0	6.3
240	57.7	40.8	33.3	28.8	25.8	18.2	12.9	10.5	9.1	8.2
300	72.1	51.0	41.6	36.0	32.2	22.8	16.1	13.2	11.4	10.2
400	86.0	60.8	49.7	43.0	38.5	27.2	19.2	15.7	13.6	12.2
500	107.5	76.0	62.1	53.8	48.1	34.0	24.0	19.6	17.0	15.2
630	135.5	95.8	78.2	67.7	60.6	42.8	30.3	24.7	21.4	19.2

Table 15

KA Short Circuit Current - Copper Conductor - XLPE Insulated

C.S.A. mm <sup>2</sup>	Duration sec.									
	0.1	0.2	0.3	0.4	0.5	1.0	2.0	3.0	4.0	5.0
16	7.2	5.1	4.2	3.6	3.2	2.3	1.6	1.3	1.1	10.02
25	11.3	8.0	6.5	5.7	5.1	3.6	2.5	2.1	1.8	1.6
35	15.8	11.2	9.1	7.9	7.1	5.0	3.5	2.9	2.5	2.2
50	22.6	16.0	13.1	11.3	100.1	7.2	5.1	4.1	3.6	3.2
70	31.7	22.4	18.3	15.821.5	14.2	10.0	7.1	5.8	5.0	4.5
95	43.0	30.4	24.8	27.1	19.2	13.6	9.6	7.8	6.8	6.1
120	54.3	38.4	31.3	33.9	24.3	17.2	12.1	9.9	8.6	7.7
150	7.8	48.4	39.3	41.8	30.3	21.5	15.2	12.4	10.7	9.6
185	83.7	59.2	48.3	54.3	37.4	26.5	18.7	15.3	13.2	11.8
240	108.5	76.7	62.7	54.3	48.5	34.3	24.3	19.8	17.2	15.3
300	135.7	95.9	78.3	67.8	60.7	42.9	30.3	24.8	21.5	19.2
400	180.9	127.9	104.4	90.4	80.9	57.2	40.4	33.0	28.6	25.6
500	226.1	159.9	130.5	113.1	101.1	71.5	50.6	41.3	35.8	32.0
630	284.9	201.4	164.5	142.4	127.4	90.1	63.7	52.0	45.0	40.3

## Short Circuit Current

Table 16

KA Short Circuit Current - Aluminium Conductor – XLPE Insulated

C.S.A. mm <sup>2</sup>	Duration sec.									
	0.1	0.2	0.3	0.4	0.5	1.0	2.0	3.0	4.0	5.0
16	4.7	3.4	2.7	2.4	2.1	1.5	1.1	0.9	0.75	0.67
25	7.41	5.2	4.3	3.7	3.3	2.3	1.7	1.4	1.2	1.0
35	10.4	7.3	6.0	5.2	4.6	3.3	2.3	1.9	1.6	1.5
50	14.8	10.5	8.6	7.4	6.6	4.7	3.3	2.7	2.3	2.1
70	20.7	14.7	12.0	10.4	9.3	6.6	4.6	3.8	3.3	2.9
95	28.1	19.9	16.3	14.1	12.6	8.9	6.3	5.1	4.5	4.0
120	35.6	25.1	20.5	17.8	15.9	11.2	8.	6.5	5.6	5.0
150	44.4	31.4	25.7	22.2	19.9	14.1	9.9	8.1	7.0	6.3
185	54.6	38.8	31.6	27.4	24.5	17.3	12.3	10.0	8.7	7.8
240	71.1	50.3	41.1	35.6	31.8	22.5	15.9	13.0	11.2	10.1
300	88.9	62.9	51.3	44.4	39.8	28.1	19.9	16.2	14.1	12.6
400	118.5	83.8	68.4	59.3	53.0	37.5	26.5	21.6	18.7	16.8
500	148.5	104.8	85.5	73.1	66.3	46.9	33.1	27.0	23.4	21.0
630	186.7	132.0	107.8	96.3	83.5	59.0	41.7	34.1	29.5	26.4



## Voltage Drop

Table 17

Voltage Drop for Single Core LV Cables (Copper Conductor)

C.S.A. mm <sup>2</sup>	Copper Conductor Voltage Drop (mv / AMP / Meter)			
	PVC Insulation & PVC Sheathed		XLPE Insulation & PVC Sheathed	
	Flat	Trefoil	Flat	Trefoil
4	7.830	7.770	8.337	8.277
6	5.287	5.226	5.628	5.568
10	3.184	3.124	3.401	3.341
16	2.068	2.008	2.203	2.142
25	1.357	1.297	1.440	1.380
35	1.034	0.971	1.085	1.024
50	0.793	0.732	0.836	0.776
70	0.595	0.534	0.624	0.564
95	0.469	0.408	0.490	0.430
120	0.410	0.349	0.417	0.357
150	0.354	0.294	0.366	0.305
185	0.312	0.252	0.322	0.262
240	0.272	0.211	0.278	0.218
300	0.247	0.187	0.253	0.192
400	0.224	0.164	0.220	0.159
500	0.208	0.148	0.211	0.150
630	0.194	0.134	0.191	0.131

Table 18

Voltage Drop for Single Core LV Cables (Aluminium Conductor)

C.S.A. mm <sup>2</sup>	Aluminium Conductor Voltage Drop (mv / AMP / Meter)			
	PVC Insulation & PVC Sheathed		XLPE Insulation & PVC Sheathed	
	Flat	Trefoil	Flat	Trefoil
16	3.343	3.283	3.561	3.500
25	2.161	2.100	2.296	2.235
35	1.602	1.542	1.700	1.640
50	1.222	1.162	1.291	1.230
70	0.890	0.830	0.937	0.877
95	0.686	0.623	0.719	0.655
120	0.569	0.509	0.594	0.534
150	0.490	0.430	0.511	0.451
185	0.420	0.360	0.437	0.377
240	0.353	0.293	0.367	0.307
300	0.312	0.252	0.322	0.262
400	0.274	0.214	0.278	0.218
500	0.245	0.185	0.260	0.199
630	0.222	0.162	0.223	0.163

## Voltage Drop

Table 19

Voltage Drop for Single Core LV Cables (Copper Conductor)

C.S.A. mm <sup>2</sup>	Copper Conductor Voltage Drop (mv / AMP / Meter)	
	PVC Insulation & PVC Sheathed	XLPE Insulation & PVC Sheathed
1.5	20.345	20.341
2.5	12.397	13.197
4.0	7.741	7.731
6.0	5.199	5.191
10.0	3.101	3.094
16.0	1.988	1.982
25.0	1.280	1.276
35.0	0.959	0.955
50.0	0.720	0.715
70.0	0.524	0.520
95.0	0.398	0.394
120.0	0.341	0.337
150.0	0.285	0.282
185.0	0.244	0.241
240.0	0.204	0.201
300.0	0.180	0.177
400.0	0.157	0.155

Table 20

Voltage Drop for Multi Core LV Cables (Aluminium Conductor)

C.S.A. mm <sup>2</sup>	Copper Conductor Voltage Drop (mv / AMP / Meter)	
	PVC Insulation & PVC Sheathed	XLPE Insulation & PVC Sheathed
16	3.263	3.479
25	2.084	2.218
35	1.527	1.624
50	1.150	1.217
70	0.819	0.865
95	0.613	0.645
120	0.500	0.524
150	0.421	0.442
185	0.352	0.369
240	0.286	0.299
300	0.245	0.255
400	0.208	0.211

## Conversion Table

Multiply	By	To obtain
<b>Weight-Imperial</b>		
Ounces	28.3495	Grams
Pounds (Av)	453.59	Grams
Pounds (Av)	0.45359	Kilograms
Tons (short)	907.19	Kilograms
Tons (long)	1016.05	Kilograms
<b>Weight-Metric</b>		
Grams	0.03527	Ounces
Grams	0.002205	Pounds
Kilograms	35.274	Ounces
Kilograms	2.2046	Pounds
Kilograms	0.001102	Tons (short)
Kilograms	0.0009842	Tons (long)
<b>Weight-Metric</b>		
Pounds per 1000 feet	1.48816	Kg/km
Pounds per mile	0.28185	Kg/km
Pounds per square inch	0.0007031	Kg. per square mm.
Pounds per square inch	0.07031	Kg. per square cm.
Pounds per cubic	27.68	Grams per cubic cm.
Feet per second	18.288	Meters per minute.
Feet per second	1.09728	Kilometers per hour.
Miles per hour	1.60935	Kilometers per hour.
Ohms per 1000 feet	3.28083	Ohms per kilometer.
Ohms per mile	0.62137	Ohms per kilometer.
Decibels per 1000 feet	3.28083	Decibels per kilometer.
Decibels per mile	0.62137	Decibels per kilometer.
Decibels	0.1153	Nepers.
<b>Temperature</b>		
° Fahrenheit	$5/9 (oF)-32$	° Celsius
° Celsius	$9/5(oC)+32$	° Fahrenheit
<b>Length-Imperial</b>		
Mils	0.001	Inches.
Mils	0.0254	mm.
Inches	1000	Mils.

Multiply	By	To obtain
Inches	25.40	mm.
Inches	2.54	cm.
Feet	30.48	cm.
Feet	0.3048	Meters.
Feet (thousands of)	0.3048	Kilometers.
Yards	0.9144	Meters.
Miles	1.6093	Kilometers
<b>Length- Metric</b>		
Millimeters	39.37	Mils.
Millimeters	0.03937	Inches.
Centimeters	0.3937	Inches.
Centimeters	0.032808	Feet.
Meters	39.37	Inches.
Meters	3.2808	Feet.
Meters	1.0936	Yards.
Kilometers	3280.83	Feet.
Kilometers	0.62137	Miles.
<b>Area-Imperial</b>		
Square mils	1.2732	Circular mils
Square mils	0.000001	Square inches
Circular mils	0.7854	Square mils
Circular mils	0.0000007854	Square inches
Square mils	0.0005067	Square mm.
Square inches	1000000	Square mils
Square inches	1273240	Circular mils
Square inches	654.16	Square mm.
Square inches	6.4516	Square cm.
Square feet	0.09290	Square meters.
Square yards	0.8361	Square meters.
<b>Area-Metric</b>		
Square millimeters		
Square millimeters		
Square centimeters		
Square meters		
Square meters		
<b>Volume-U.S.</b>		
Quarts (liquid)	0.9463	Liters
Gallons	3.7854	Liters.
<b>Volume-Metric</b>		
Cubic cm	0.06102	Cubic inches.
Cubic meters	35.3145	Cubic feet.
Liters	1.05668	Quarts (liquid U.S)
Liters	0.26417	Gallons (U.S.)

## Standards Related to Power Cables

## IEC Standards

S/N	No. of IEC	Subject
1	60028	International standard of resistance for copper.
2	60060	High-voltage test techniques
3	60104	Aluminum-magnesium-silicon alloy wire for overhead line conductors
4	60121	Recommendation for commercial annealed aluminum electrical conductor wire.
5	60173	Colours of the cores of flexible cables and cores.
6	60183	Guide to the selection of high voltage cables.
7	60227	Polyvinyl chloride insulated cables of rated voltage up to and including 450/750 V
8	60228	Conductors of insulated cables.
9	60229	Electric cables – Tests on extruded oversheaths with a special protective function
10	60230	Impulse tests on cables and their accessories.
11	60270	High-Voltage test techniques – Partial discharge measurements
12	60287	Electric cables - Calculation of the current rating.
13	60304	standard colours for insulation for low-frequency cables and wires
14	60331	Tests for electric cables under fire conditions - Circuit integrity
15	60332	Tests on electric and optical fibre cables under fire conditions
16	60502-1	Power cables with extruded insulation and their accessories for rated voltages from 1 kV ( $U_m = 1,2$ kV up to 30 kV ( $U_m = 36$ kV) - Part 1: Cables for rated voltages of 1 kV ( $U_m = 1,2$ kV) and 3 kV ( $U_m = 3,6$ kV)
17	60502-2	Power cables with extruded insulation and their accessories for rated voltages from 1 kV ( $U_m = 1,2$ kV) up to 30 kV ( $U_m = 36$ kV) – Part 2: Cables for rated voltages from 6 kV ( $U_m = 7,2$ kV) up to 30 kV ( $U_m = 36$ kV)
18	60719	Calculation of the lower and upper limits for the average outer dimensions of cables with circular copper conductors and of rated voltages up to and including 450/750 V.
19	60724	Short-circuit temperature limits of electric cables with rated voltages of 1kV ( $U_m=1.2$ kV) and 3 kV ( $U_m=3.6$ kV).
20	60754	Test on gases evolved during combustion of materials from cables.
21	60811	Electric and optical fibre cables - Test methods for non-metallic materials.
22	60840	Power cables with extruded insulation and their accessories for rated voltages above 30 kV ( $U_m = 36$ kV) up to 150 kV ( $U_m = 170$ kV) – Test methods and requirements.
23	60853	Calculation of the cyclic and emergency current rating of cables

## Standards Related to Power Cables

## IEC Standards

S/N	No. of IEC	Subject
24	60865	Short circuit currents - calculation of effects
25	60885	Electrical test methods for electric cables.
26	60888	Zinc-Coated steel wires for stranded conductors
27	60889	Hard drawn aluminum wire for overhead line conductors
28	60949	Calculation of thermally permissible short-circuits currents, taking into account non-adiabatic heating effects.
29	60986	Short-circuit temperature limits of electric cables with rated voltages from 6kV ( $U_m=7.2$ kV) and to 30 kV ( $U_m=36$ kV).
30	61034	Measurement of smoke density of cables burning under defined conditions.
31	61089	Round wire concentric lay overhead electrical stranded conductors
32	61232	Aluminum – clad steel wires for electrical purposes.
33	61394	Overhead lines - Characteristics of greases for aluminum, aluminum alloy and steel bare conductors.
34	61443	Short circuit temperature limits of electric cables with rated voltages above 30 kV ( $U_m=36$ kV).
35	61597	Overhead electrical conductors – calculation methods for stranded bare conductors.
36	TR 61901	Tests recommended on cables with a longitudinally applied metal foil for rated voltages above 30 kV ( $U_m = 36$ kV) up to and including 500 kV ( $U_m = 550$ kV).
37	62067	Power cables with extruded insulation and their accessories for rated voltages above 150 kV ( $U_m = 170$ kV) up to 500 kV ( $U_m = 550$ kV) – Test methods and requirements.
38	62095	Electric Cables –Calculations for current ratings – Finite element method.
39	62230	Electric cables – Spark-test method
40	62440	Electric cables with a rated voltage not exceeding 450/750 V - Guide to use.

## Standards Related to Power Cables

## BS Standards

S/N	No. of IEC	Subject
1	2627	Wrought aluminum for electrical purposes. Wire.
2	4553	600/1000 V single-phase split concentric electric cables.
3	5467	Thermosetting insulated, armoured cables of rated voltages of 600/1000 V and 1900/3 300 V for fixed installations. Specification
4	6231	Electric cables - Single core PVC insulated flexible cables of rated voltage 600/1000V for switchgear and control gear wiring
5	6387	Test method for resistance to fire of cables required to maintain circuit integrity under fire conditions
6	6485	PVC-covered conductors for overhead power lines. equipment intended for domestic, office and similar environments
7	6622	Electric cables - Armoured cables with thermosetting insulation for rated voltages from 3.8/6.6kV to 19/33kV - Requirements and test methods.
8	6724	Thermosetting insulated, armoured cables of rated voltages of 600/1000 V and 1900/3 300 V for fixed installations, having low emission of smoke and corrosive gases when affected by fire. Specification
9	7655	Specification for insulating and sheathing materials for cables.
10	7671	Requirements for Electrical Installations
11	7835	Armoured cables with thermosetting insulation for rated voltages from 3.8/6.6 kV to 19/33 kV having low emission of smoke and corrosive gases when affected by fire. Requirements and test methods
12	7846	Thermosetting insulated, armoured, fire-resistant cables of rated voltage 600/1 000 V for fixed installations, having low emission of smoke and corrosive gases when affected by fire. Specification
13	7870	LV and MV polymeric insulated cables for use by distribution and generation utilities.
14	7884	Copper and copper-cadmium stranded conductors for overhead electric traction and power transmission systems.
15	7889	Thermosetting insulated, non-armoured cables with a voltage of 600/1 000 V, for fixed installations.
16	8573	Thermosetting insulated, non-armoured cables with a voltage of 600/1 000V, for fixed installations, having low emissions of smoke and corrosive gases when affected by fire
17	EN 10244	Steel wire and wire products - Non-ferrous metallic coatings on steel wire



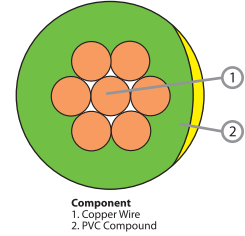
# Single Core Cables

- 450/750 V Indoor wires.
- Unarmoured Cables. (CU or AL/PVC/PVC)
- Unarmoured Cables. (CU or AL/XLPE/PVC)
- Aluminum Tape Armoured. (CU or AL/PVC/ATA/PVC)
- Aluminum Wire Armoured. (CU or AL/PVC/AWA/PVC)
- XLPE insulation, Aluminium Tape Armoured, and PVC Sheathed. (CU or AL/XLPE/ATA/PVC)
- XLPE insulation, Aluminium Wire Armoured, and PVC Sheathed. (CU or AL/XLPE/AWA/PVC)



## CU / PVC ( SINGLE CORE )

Copper Conductors, PVC Insulated, Non-Sheathed Cable, 450 / 750V.





### Description

- Solid or stranded Copper conductors insulated with PVC compound rated 70°C or 90°C.

### Application

- For indoor fixed installations in dry locations, laid in conduits, as well as in steel support brackets.

Nominal Cross Sectional Area	Max. Conductor Resistance		Current Rating in Air		Approx. Overall Diameter	Approx. Weight
	DC at 20 °C	AC at 70 °C	Free 	In Pipes 		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	mm	kg/km
1.5 re	12.1000	14.6000	17	13	2.8	20
1.5 rm	12.1000	14.6000	17	13	3.0	21
2 re	9.1500	10.9000	19	15	3.2	27
2 rm	9.1500	10.9000	19	15	3.4	28
2.5 re	7.4100	8.8900	24	19	3.4	31
2.5 rm	7.4100	8.8900	24	19	3.6	33
3 re	6.1000	7.4100	27	21	3.6	37
3 rm	6.1000	7.4100	27	21	3.8	39
4 re	4.6100	5.5100	32	23	3.9	47
4 rm	4.6100	5.5100	32	23	4.2	50
6 re	3.0800	3.6800	40	29	4.4	68
6 rm	3.0800	3.6800	40	29	4.7	71
10 rm	1.8300	2.1700	57	41	6.1	117
16 rm	1.1500	1.3700	76	54	7.1	177
25 rm	0.7270	0.8600	103	70	8.8	278
35 rm	0.5240	0.6300	128	87	9.9	371
50 rm	0.3870	0.4600	156	106	11.8	514
70 rm	0.2680	0.3200	200	131	13.5	711
95 rm	0.1930	0.2300	251	166	15.7	967
120 rm	0.1530	0.1900	293	190	17.4	1240
150 rm	0.1240	0.1500	335	219	19.4	1500
185 rm	0.0991	0.1200	390	250	21.5	1852
240 rm	0.0754	0.0920	471	300	24.7	2457
300 rm	0.0601	0.0750	540	340	27.2	2977

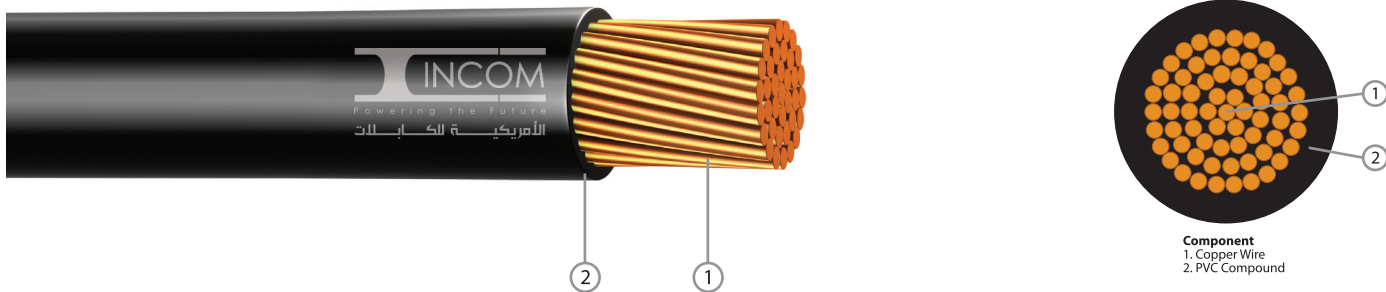
The above data is approximate and subjected to manufacturing tolerance.

re : round, Solid  
rm : round, Stranded



## CU / PVC ( SINGLE CORE )

Copper Conductors, PVC Insulated, Non-Sheathed Cable, 450 / 750V.





### Description

- Copper fine wires, bunched together in subunits or stranded bunched groups into a main units.

### Application

- For indoor fixed installations in dry locations, where particular flexibility is required. For electrical panels connection or for electrical apparatus they can be laid in groups around steel sheets.

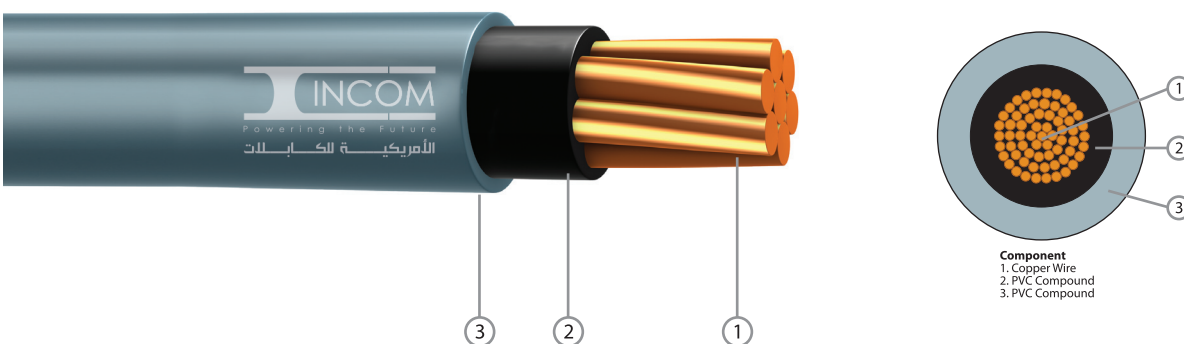
Nominal Cross Sectional Area mm <sup>2</sup>	Max. Conductor Resistance		Current Rating in Air		Approx. Overall Diameter mm	Approx. Weight kg/km	
	DC at 20 °C Ω/km	AC at 70 °C Ω/km	Free  A	In Pipes  A			
1.5	0.26	13.3000	15.9500	17	13	3.0	21
2.5	0.26	7.9800	9.5600	24	19	3.7	34
4	0.31	4.9500	5.9300	32	23	4.5	50
6	0.31	3.3000	3.9500	40	29	5.1	71
10	0.41	1.9100	2.2900	57	41	6.9	120
16	0.41	1.2100	1.4500	76	54	7.6	179
25	0.41	0.7800	0.9400	103	70	9.5	276
35	0.41	0.5540	0.6630	128	87	11.0	375
50	0.41	0.3860	0.4620	156	106	12.6	542
70	0.51	0.2720	0.3260	200	131	14.6	733
95	0.51	0.2060	0.2470	251	166	16.8	957
120	0.51	0.1610	0.1930	293	190	18.9	1243
150	0.51	0.1290	0.1550	335	219	21.2	1548
185	0.51	0.1060	0.1270	390	250	23.4	1895
240	0.51	0.0801	0.0960	471	300	26.7	2400

The above data is approximate and subjected to manufacturing tolerance

re : round, Solid  
rm : round, Stranded

### CU / PVC / PVC ( SINGLE CORE )

Copper Conductors, PVC Insulated, PVC Sheathed Cable, 0.6/1kV.



#### Description

- Copper conductor. Insulated with PVC compound rated 70 °C , and sheathed with PVC Compound layer.

#### Application

- For outdoor and indoor installations in damp and wet locations. They are normally used for power distribution in urban networks, industrial plants, as well as in thermopower and hydropower stations.

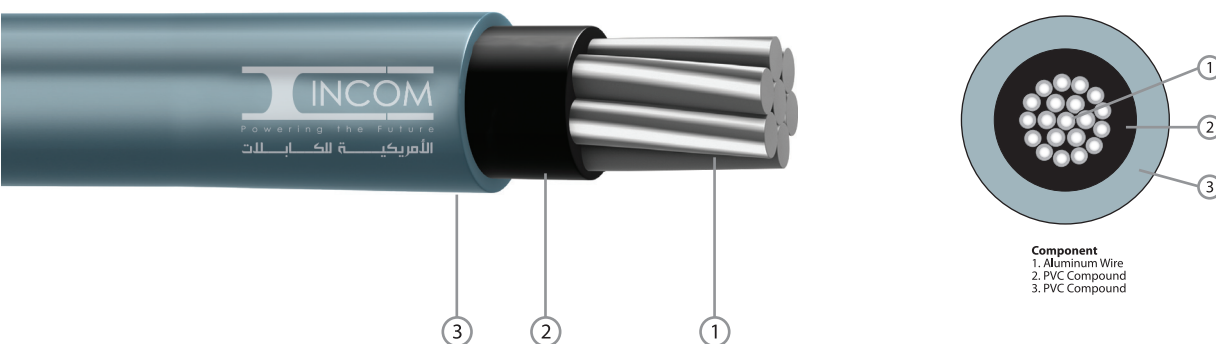
#### CU/PVC/PVC

Nominal Cross Sectional Area mm <sup>2</sup>	Max. Conductor Resistance DC at 20 °C    AC at 70 °C Ω/km    Ω/km		Current Rating						Approx. Overall Diameter mm	Approx. Weight kg/km
			Laid in Ground			Laid in Free Air				
			Flat ∞∞	Trefoil ⊖	Duct ⊗	Flat Separated ○	Flat Touched ∞∞	Trefoil Touched ⊖		
4	4.6100	5.5100	42	40	32	37	33	29	7.0	86
6	3.0800	3.6800	52	50	40	48	42	38	7.9	115
10	1.8300	2.1700	70	67	52	66	58	51	8.9	165
16	1.1500	1.3700	90	85	65	80	75	65	9.9	231
25	0.7270	0.8600	115	110	85	105	95	90	11.6	343
35	0.5240	0.6300	135	130	105	130	125	110	12.7	445
50	0.3870	0.4600	160	155	125	160	150	135	14.6	600
70	0.2680	0.3200	200	190	155	200	190	170	16.3	805
95	0.1930	0.2300	235	225	185	250	240	210	18.7	1085
120	0.1530	0.1900	270	255	210	285	275	245	20.4	1350
150	0.1240	0.1500	300	285	235	330	320	280	22.6	1654
185	0.0991	0.1200	345	325	270	380	370	320	24.9	2030
240	0.0754	0.0920	400	375	310	480	460	385	28.3	2675
300	0.0601	0.0750	450	420	350	550	530	450	31.1	3280
400	0.0470	0.0590	515	475	390	630	615	520	35.3	4350
500	0.0366	0.0480	580	525	435	720	700	600	38.8	5355
630	0.0283	0.0390	660	590	495	830	810	680	42.7	6685

The above data is approximate and subjected to manufacturing tolerance.

### AL / PVC / PVC ( SINGLE CORE )

Aluminium Conductors,PVC Insulated, PVC Sheathed Cable, 0.6/1kV.



Component  
1. Aluminum Wire  
2. PVC Compound  
3. PVC Compound

#### Description

- Aluminium conductor. Insulated with PVC compound rated 70 °C , and sheathed with PVC Compound layer.

#### Application

- For outdoor and indoor installations in damp and wet locations.
- They are normally used for power distribution in urban networks, industrial plants, as well as in thermopower and hydropower stations.

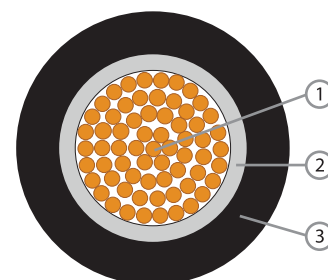
#### AL/PVC/PVC

Nominal Cross Sectional Area mm <sup>2</sup>	Max. Conductor Resistance DC at 20 °C AC at 70 °C Ω/km		Current Rating						Approx. Overall Diameter mm	Approx. Weight kg/km
			Laid in Ground			Laid in Free Air				
			Flat ∞	Trefoil ⊗	Duct ⊗	Flat Separated ○	Flat Touched ∞	Trefoil Touched ⊗		
16	1.9100	2.2900	65	63	50	65	60	45	9.9	132
25	1.2000	1.4400	85	83	65	85	80	65	11.6	185
35	0.8680	1.0400	105	102	80	105	100	85	12.7	250
50	0.6410	0.7700	125	120	95	125	120	105	14.6	295
70	0.4430	0.5330	155	145	120	165	155	125	16.3	375
95	0.3200	0.3850	185	175	135	205	195	160	18.7	500
120	0.2530	0.3050	210	200	165	235	225	185	20.4	605
150	0.2060	0.2480	235	225	180	265	255	210	22.6	725
185	0.1640	0.1980	265	255	205	310	300	245	24.8	900
240	0.1250	0.1510	310	295	240	365	355	290	28.3	1150
300	0.1000	0.1220	355	335	270	420	405	335	31.1	1420
400	0.0778	0.0954	410	380	310	500	480	390	35.3	1750
500	0.0605	0.0751	465	430	355	580	560	460	38.8	2220
630	0.0469	0.0595	535	490	405	680	660	535	42.7	2750

The above data is approximate and subjected to manufacturing tolerance.

## CU / XLPE / PVC ( SINGLE CORE )

Copper Conductor, XLPE Insulated, PVC Sheathed Cable, 0.6 / 1kV.



**Component**  
1. Copper Wire  
2. Cross-linked Polyethylene Compound  
3. PVC Compound

### Description

- Copper conductor, Insulated with XLPE compound covered with a layer of PVC compound to form the overall jacket.

### Application

- For outdoor and indoor installations in damp and wet locations. They are normally used for power distribution in urban networks, in industrial plants, as well as in Thermopower and Hydropower stations.

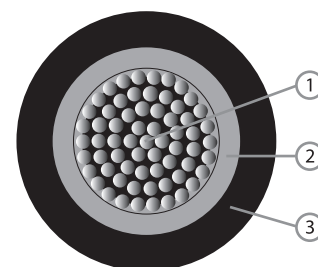
## CU/XLPE/PVC

Nominal Cross Sectional Area	Max. Conductor Resistance		Current Rating						Approx. Overall Diameter	Approx. Weight
			Laid in Ground			Laid in Free Air				
	DC at 20 °C	AC at 90 °C	Flat	Trefoil	Duct	Flat Separated	Flat Touched	Trefoil Touched		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	A	A	A		
4	4.6100	5.8800	55	51	40	53	47	40	76.8	80
6	3.0800	3.9300	68	65	53	65	59	53	7.3	102
10	1.8300	2.3300	98	86	68	84	79	68	8.3	150
16	1.1500	1.4700	116	111	87	116	110	95	9.3	210
25	0.7270	0.9270	150	142	110	143	137	121	11.0	315
35	0.5240	0.6690	179	172	137	179	173	152	12.1	410
50	0.3870	0.4940	210	200	163	221	210	184	13.8	555
70	0.2680	0.3430	263	247	200	278	268	236	15.7	760
95	0.1930	0.2480	310	294	242	347	336	289	17.7	1015
120	0.1530	0.1970	357	336	273	404	394	341	19.6	1280
150	0.1240	0.1600	394	373	310	457	446	389	21.8	1570
185	0.0991	0.1290	452	425	352	530	520	441	23.9	1920
240	0.0754	0.0990	520	488	404	651	641	536	27.1	2530
300	0.0601	0.0810	588	546	457	824	756	620	29.7	3105
400	0.0470	0.0638	672	620	515	893	872	714	33.9	4135
500	0.0366	0.0517	761	693	572	1008	987	814	37.4	5110
630	0.0283	0.0425	872	777	651	1155	1134	956	41.9	6455

The above data is approximate and subjected to manufacturing tolerance.

## AL / XLPE / PVC ( SINGLE CORE )

Aluminium Conductor, XLPE Insulated, PVC Sheathed Cable, 0.6 / 1kV.



**Component**  
1. Aluminum Wire  
2. Cross-linked Polyethylene Compound  
3. PVC Compound

### Description

- Aluminium conductor, Insulated with XLPE compound covered with a layer of PVC compound to form the overall jacket.

### Application

- For outdoor and indoor installations in damp and wet locations.

They are normally used for power distribution in urban networks, industrial plants, as well as in thermopower and hydropower stations.

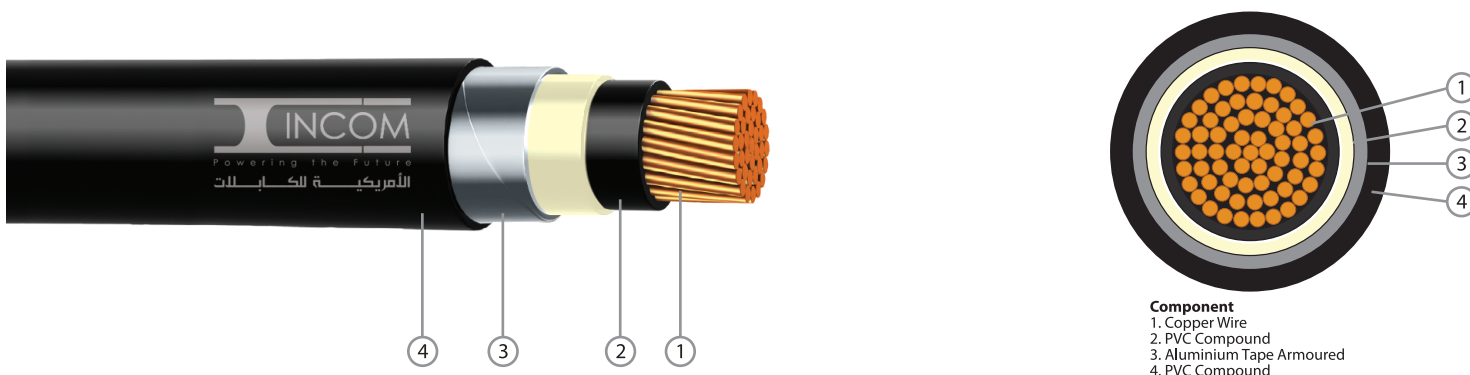
### AL/XLPE/PVC

Nominal Cross Sectional Area	Max. Conductor Resistance		Current Rating						Approx. Overall Diameter	Approx. Weight
			Laid in Ground			Laid in Free Air				
	DC at 20 °C	AC at 70 °C	Flat ∞	Trefoil ⊗	Duct ⊗	Flat Separated ○	Flat Touched ∞	Trefoil Touched ⊗		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	A	A	A	mm	kg/km
16	1.9100	2.4500	89	87	66	89	84	63	9.3	115
25	1.2000	1.5400	113	110	84	116	110	95	11.0	165
35	0.8680	1.1130	137	131	105	142	137	121	12.1	205
50	0.6410	0.8220	163	155	121	173	168	147	13.8	260
70	0.4430	0.5690	200	189	152	221	215	179	15.7	340
95	0.3200	0.4110	236	226	179	284	273	215	17.7	450
120	0.2530	0.3250	278	263	215	326	315	242	19.6	550
150	0.2060	0.2650	310	294	236	373	362	299	21.8	670
185	0.1640	0.2120	352	336	267	436	420	336	23.9	830
240	0.1250	0.1630	410	389	315	515	499	399	27.1	1050
300	0.1000	0.1310	467	436	357	578	567	462	29.7	1300
400	0.0778	0.1000	541	504	410	693	677	541	33.9	1610
500	0.0605	0.0870	609	567	467	809	788	630	37.4	2000
630	0.0469	0.0620	698	646	536	945	924	746	41.9	2520

The above data is approximate and subjected to manufacturing tolerance.

### CU / PVC / ATA / PVC ( SINGLE CORE )

Copper Conductors, PVC insulation, Aluminum Tape Armoured, and PVC Sheathed. 0.6 / 1kV.



#### Description

- Copper conductor, insulated with PVC compound rated 70 °C, Aluminum Tape Armoured and sheathed with PVC compound layer.

#### Application

- For outdoor and indoor installation in damp and wet locations where mechanical damages are expected to occur.

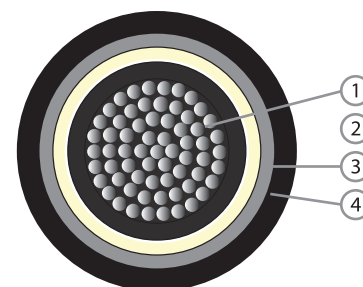
#### Cu/PVC/ATA/PVC

Nominal Cross Sectional Area mm <sup>2</sup>	Max. Conductor Resistance		Current Rating						Approx. Overall Diameter mm	Approx. Weight kg/km
			Laid in Ground			Laid in Free Air				
	DC at 20 °C Ω/km	AC at 70 °C Ω/km	Flat ∞	Trefoil ⊖	Duct ⊗	Flat Separated ○	Flat Touched ∞	Trefoil Touched ⊖		
25	0.727	0.8700	144	146	108	151	124	120	14.8	465
35	0.524	0.6272	173	175	131	185	151	147	15.9	565
50	0.387	0.4634	204	207	156	223	183	179	17.6	715
70	0.268	0.3212	249	253	192	280	230	224	19.2	935
95	0.193	0.2317	297	302	232	340	281	274	21.1	1220
120	0.153	0.1841	337	343	265	392	325	317	22.5	1470
150	0.1240	0.1497	377	384	300	445	371	362	24.3	1770
185	0.0991	0.1203	425	433	343	509	427	416	26.4	2155
240	0.0754	0.0926	489	500	400	599	506	494	29.4	2765
300	0.0601	0.0750	548	562	456	648	581	569	32.2	3385
400	0.0470	0.0601	615	633	523	779	669	656	36.0	4330
500	0.0366	0.0488	687	711	594	889	769	756	40.0	5475
630	0.0283	0.0402	761	791	671	1007	872	862	43.5	6800
800	0.0221	0.0340	829	867	746	1121	978	970	48.4	8770
1000	0.0176	0.0298	889	939	836	1236	1090	1088	55.9	10935

The above data is approximate and subjected to manufacturing tolerance.

### AL / PVC / ATA / PVC ( SINGLE CORE )

Aluminum Conductors, PVC insulation, Aluminum Tape Armoured, and PVC Sheathed. 0.6 / 1kV.



**Component**  
1. Aluminum Wire  
2. PVC Compound  
3. Aluminium Tape Armoured  
4. PVC Compound

#### Description

- Aluminum conductor, insulated with PVC compound rated 70 °C, Aluminum Tape Armoured and sheathed with PVC compound layer.

#### Application

- For outdoor and indoor installation in damp and wet locations where mechanical damages are expected to occur.

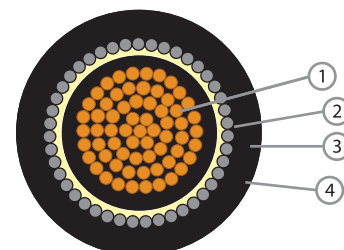
#### AL/PVC/ATA/PVC

Nominal Cross Sectional Area	Max. Conductor Resistance		Current Rating						Approx. Overall Diameter	Approx. Weight
			Laid in Ground			Laid in Free Air				
	DC at 20 °C	AC at 70 °C	Flat	Trefoil	Duct	Flat Separated	Flat Touched	Trefoil Touched		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	A	A	A	mm	kg/km
16	1.910	2.2950	87	88	65	90	73	71	13.3	260
25	1.200	1.4419	112	113	84	118	96	94	14.8	315
35	0.868	1.0430	134	136	101	144	117	114	15.9	360
50	0.641	0.7704	158	160	121	174	142	139	17.6	435
70	0.443	0.5326	194	197	150	218	179	174	19.2	525
95	0.320	0.3850	231	235	180	265	219	213	21.1	645
120	0.253	0.3046	263	267	207	306	253	247	22.5	745
150	0.206	0.2483	294	299	233	348	289	281	24.3	880
185	0.164	0.1981	333	339	268	400	334	325	26.4	1040
240	0.125	0.1517	385	392	314	472	397	387	29.3	1295
300	0.100	0.1221	433	443	359	542	459	447	32.1	1555
400	0.0778	0.0959	493	505	417	626	535	523	36.0	1970
500	0.0605	0.0759	559	575	480	724	624	611	39.9	2415
630	0.0469	0.0606	630	651	549	833	721	708	43.4	2930

The above data is approximate and subjected to manufacturing tolerance.

## CU / PVC / AWA / PVC ( SINGLE CORE )

Copper Conductor, PVC Insulated, PVC Bedded, Aluminium Wire Armoured, PVC Sheathed Cable.



**Component**  
1. Copper Wire  
2. PVC Compound  
3. Aluminium Wire Armoured  
4. PVC Compound

### Description

- Copper conductor, insulated with PVC compound rated 70 °C, Aluminum Wire Armoured and sheathed with PVC compound layer.

### Application

- For outdoor and indoor installation in damp and wet locations where mechanical damages are expected to occur.

### CU/PVC/AWA/PVC

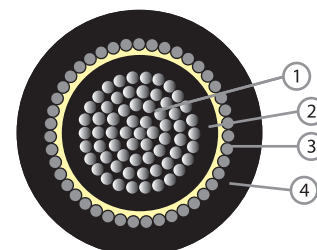
Nominal Cross Sectional Area	Max. Conductor Resistance		Current Rating						Approx. Overall Diameter	Approx. Weight
			Laid in Ground			Laid in Free Air				
	DC at 20 °C	AC at 70 °C	Flat	Trefoil	Duct	Flat Separated	Flat Touched	Trefoil Touched		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	A	A	A	mm	kg/km
25	0.727	0.870	145	148	112	156	130	126	17.1	555
35	0.524	0.6272	174	177	134	190	158	154	18.2	670
50	0.387	0.4634	205	208	159	228	190	185	19.9	825
70	0.268	0.3212	250	254	196	283	237	231	21.5	1055
95	0.193	0.2316	296	302	236	340	287	281	23.4	1350
120	0.153	0.1840	334	342	267	389	330	323	24.8	1620
150	0.124	0.1496	372	382	303	437	374	367	26.6	1930
185	0.0991	0.1202	415	428	342	493	427	420	28.7	2325
240	0.0754	0.0924	473	491	397	568	499	493	31.7	2955
300	0.0601	0.0747	519	544	446	630	563	561	34.8	3630
400	0.0470	0.0598	572	605	502	699	636	639	38.4	4585
500	0.0366	0.0484	626	669	565	776	716	726	42.4	5740
630	0.0283	0.0397	677	732	623	850	794	812	46.1	7110

The above data is approximate and subjected to manufacturing tolerance.



## AL / PVC / AWA / PVC ( SINGLE CORE )

Aluminum Conductor, PVC Insulated, PVC Bedded, Aluminium Wire Armoured, PVC Sheathed Cable.



**Component**  
1. Aluminum Wire  
2. PVC Compound  
3. Aluminium Wire Armoured  
4. PVC Compound

### Description

- Aluminum conductor, insulated with PVC compound rated 70 °C, Aluminum Wire Armoured and sheathed with PVC compound layer.

### Application

- For outdoor and indoor installation in damp and wet locations where mechanical damages are expected to occur.

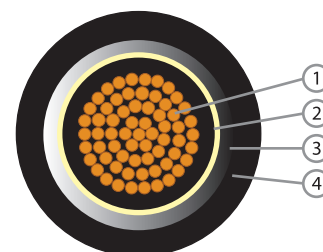
### AL/PVC/AWA/PVC

Nominal Cross Sectional Area	Max. Conductor Resistance		Current Rating						Approx. Overall Diameter	Approx. Weight
			Laid in Ground			Laid in Free Air				
	DC at 20 °C	AC at 70 °C	Flat	Trefoil	Duct	Flat Separated	Flat Touched	Trefoil Touched		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	A	A	A	mm	kg/km
16	1.9100	2.2949	88	89	67	93	77	75	15.6	330
25	1.2000	1.4419	113	115	87	122	101	98	17.1	405
35	0.8680	1.043	135	137	104	148	123	119	18.2	465
50	0.6410	0.7703	159	162	125	178	148	144	19.9	545
70	0.4430	0.5326	195	198	152	222	185	180	21.5	650
95	0.3200	0.3849	231	236	184	268	224	219	23.4	780
120	0.2530	0.3046	262	268	209	308	259	253	24.8	895
150	0.2060	0.2483	292	299	237	347	294	287	26.6	1040
185	0.1640	0.198	329	337	270	395	337	331	28.7	1210
240	0.1250	0.1515	377	389	315	459	397	390	31.6	1485
300	0.1000	0.1219	420	435	357	517	454	448	34.7	1800
400	0.0778	0.0957	470	491	408	585	522	518	38.4	2225
500	0.0605	0.0757	525	553	467	662	598	598	42.3	2680
630	0.0469	0.0603	580	617	526	740	678	683	46.0	3240

The above data is approximate and subjected to manufacturing tolerance.

## CU / XLPE / ATA / PVC ( SINGLE CORE )

Copper Conductor, XLPE Insulated, PVC Bedded, Aluminium Tape Armoured, PVC Sheathed Cable.



**Component**  
1. Copper Wire  
2. Cross-linked Polyethylene Compound  
3. Aluminium Tape Armoured  
4. PVC Compound

### Description

- Copper conductor, insulated with XLPE compound rated 90 °C, Aluminum Tape Armoured and sheathed with PVC compound layer.

### Application

- For outdoor and indoor installation in damp and wet locations where mechanical damages are expected to occur.

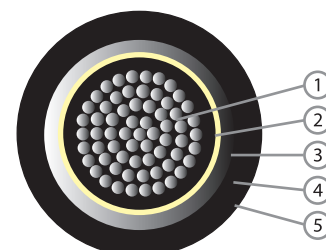
### CU/XLPE/ATA/PVC

Nominal Cross Sectional Area mm <sup>2</sup>	Max. Conductor Resistance DC at 20 °C AC at 90 °C Ω/km		Current Rating						Approx. Overall Diameter mm	Approx. Weight kg/km
			Laid in Ground			Laid in Free Air				
			Flat ∞∞	Trefoil ⊗	Duct ⊗	Flat Separated ○	Flat Touched ∞∞	Trefoil Touched ⊗		
25	0.727	0.9272	168	170	126	190	154	150	14.2	430
35	0.524	0.6684	201	204	151	233	188	183	15.3	525
50	0.387	0.4938	237	241	181	281	229	222	16.8	660
70	0.268	0.3423	290	297	223	352	287	279	18.6	880
95	0.193	0.2469	346	351	269	429	351	341	20.1	1140
120	0.153	0.1962	392	399	309	495	406	395	21.7	1395
150	0.124	0.1595	439	447	352	563	465	452	23.5	1680
185	0.0991	0.1281	494	504	400	646	536	522	25.6	2055
240	0.0754	0.0985	570	593	470	762	636	620	28.2	2615
300	0.0601	0.0797	640	656	533	872	732	715	31.0	3220
400	0.0470	0.0638	719	739	613	997	845	828	34.6	4120
500	0.0366	0.0516	805	831	698	1141	975	957	38.6	5230
630	0.0283	0.0423	892	926	792	1291	1110	1094	42.7	6575

The above data is approximate and subjected to manufacturing tolerance.

## AL / XLPE / ATA / PVC ( SINGLE CORE )

Aluminum Conductor, XLPE Insulated, PVC Bedded, Aluminium Tape Armoured, PVC Sheathed Cable.



**Component**  
1. Aluminium Wire  
2. Cross-linked Polyethylene Compound  
3. Aluminium Tape Armoured  
4. PVC Compound

### Description

- Aluminum conductor, insulated with XLPE compound rated 90 °C, Aluminum Tape Armoured and sheathed with PVC compound layer.

### Application

- For outdoor and indoor installation in damp and wet locations where mechanical damages are expected to occur.

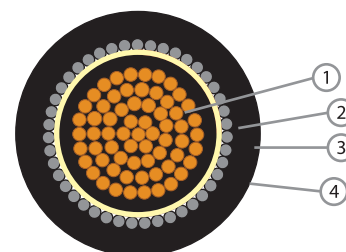
#### AL/XLPE/ATA/PVC

Nominal Cross Sectional Area	Max. Conductor Resistance		Current Rating						Approx. Overall Diameter	Approx. Weight
			Laid in Ground			Laid in Free Air				
	DC at 20 °C	AC at 90 °C	Flat	Trefoil	Duct	Flat Separated	Flat Touched	Trefoil Touched		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	A	A	A	mm	kg/km
16	1.91	2.4489	102	103	76	112	90	88	12.7	230
25	1.2	1.5386	130	132	98	148	120	116	14.2	280
35	0.868	1.113	156	158	117	180	146	142	15.3	320
50	0.641	0.822	184	187	140	218	177	172	16.8	380
70	0.443	0.5683	225	228	174	274	223	217	18.6	475
95	0.32	0.4108	269	273	209	333	272	265	20.1	570
120	0.253	0.325	305	310	240	386	316	308	21.7	670
150	0.206	0.2649	341	347	273	439	362	352	23.5	790
185	0.164	0.2113	386	384	313	506	419	408	25.6	940
240	0.125	0.1617	447	456	368	599	498	485	28.1	1145
300	0.1	0.1301	504	515	417	689	577	561	30.9	1390
400	0.0778	0.1022	574	588	488	798	675	658	34.6	1760
500	0.0605	0.0808	652	670	563	925	788	770	38.5	2165
630	0.0469	0.0643	735	759	648	1064	913	895	42.6	2705

The above data is approximate and subjected to manufacturing tolerance.

## CU/ XLPE / AWA / PVC ( SINGLE CORE )

Copper Conductor, XLPE Insulated, PVC Bedded, Aluminium Wire Armoured, PVC Sheathed Cable.



**Component**  
1. Copper Wire  
2. Cross-linked Polyethylene Compound  
3. Aluminium Wire Armoured  
4. PVC Compound

### Description

- Copper conductor, insulated with XLPE compound rated 90 °C, Aluminum Wire Armoured and sheathed with PVC compound layer.

### Application

- For outdoor and indoor installation in damp and wet locations where mechanical damages are expected to occur.

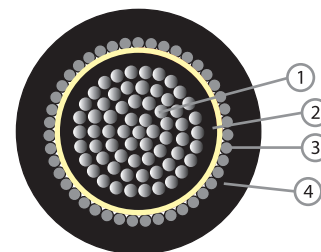
### CU/XLPE/AWA/PVC

Nominal Cross Sectional Area mm <sup>2</sup>	Max. Conductor Resistance		Current Rating						Approx. Overall Diameter mm	Approx. Weight kg/km
			Laid in Ground			Laid in Free Air				
	DC at 20 °C Ω/km	AC at 90 °C Ω/km	Flat ∞	Trefoil ⊖	Duct ⊕	Flat Separated ○	Flat Touched ∞	Trefoil Touched ⊖		
25	0.727	0.9271	170	172	130	198	162	158	16.5	515
35	0.524	0.6684	203	206	157	240	197	192	17.6	625
50	0.387	0.4938	239	243	187	288	238	232	19.1	770
70	0.268	0.3422	291	296	230	358	297	289	20.9	1000
95	0.193	0.2468	345	352	275	431	360	351	22.4	1275
120	0.153	0.1960	389	399	314	493	414	405	24.0	1530
150	0.124	0.1593	434	445	354	555	471	461	25.8	1830
185	0.0991	0.1279	485	500	401	628	538	529	27.9	2220
240	0.0754	0.0983	552	573	466	726	630	622	30.7	2810
300	0.0601	0.0794	614	640	528	814	717	711	33.5	3435
400	0.0470	0.0635	673	710	593	898	809	810	37.2	4375
500	0.0366	0.0512	738	787	668	997	9 13	923	41.2	5510
630	0.0283	0.0418	801	864	745	1097	1019	1038	45.1	6860

The above data is approximate and subjected to manufacturing tolerance.

## AL / XLPE / AWA / PVC ( SINGLE CORE )

Aluminum Conductor, XLPE Insulated, PVC Bedded, Aluminium Wire Armoured, PVC Sheathed Cable.



**Component**  
1. Aluminum Wire  
2. Cross-linked Polyethylene Compound  
3. Aluminium Wire Armoured  
4. PVC Compound

### Description

- Aluminium conductor, insulated with XLPE compound rated 90 °C, Aluminium Wire Armoured and sheathed with PVC compound layer.

### Application

- For outdoor and indoor installations in damp and wet locations. They are normally used for power distribution in urban networks, industrial plants, as well as in thermopower and hydropower stations.

#### AL/XLPE/AWA/PVC

Nominal Cross Sectional Area	Max. Conductor Resistance		Current Rating						Approx. Overall Diameter	Approx. Weight
			Laid in Ground			Laid in Free Air				
	DC at 20 °C	AC at 90 °C	Flat	Trefoil	Duct	Flat Separated	Flat Touched	Trefoil Touched		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	A	A	A	mm	kg/km
16	1.9100	2.4489	103	104	78	118	96	93	15.00	295
25	1.2000	1.5386	132	134	101	154	126	123	16.50	365
35	0.8680	1.1130	157	160	122	187	153	149	17.60	420
50	0.6410	0.8220	186	189	145	225	185	180	19.10	490
70	0.4430	0.5683	228	230	179	280	231	225	20.90	595
95	0.3200	0.4107	269	274	214	338	281	274	22.40	700
120	0.2530	0.3249	305	311	246	389	325	317	24.00	805
150	0.2060	0.2648	340	348	277	439	369	360	25.80	940
185	0.1640	0.2112	383	393	315	501	425	415	27.90	1105
240	0.1250	0.1616	440	453	368	585	500	491	30.60	1345
300	0.1000	0.1299	492	509	419	661	573	564	33.40	1600
400	0.0778	0.1020	551	674	480	749	661	655	37.20	2015
500	0.0605	0.0805	616	647	550	847	759	757	41.10	2445
630	0.0469	0.0640	683	724	625	951	865	868	45.00	2990

The above data is approximate and subjected to manufacturing tolerance.

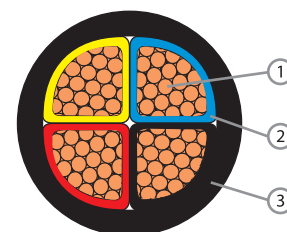


# Multicore Cables

- **PVC Insulated Unarmoured** (CU or AL/PVC/PVC)
- **XLPE Insulated and PVC Sheathed Unarmoured** (CU or AL/XLPE/PVC)
- **PVC Insulated, Steel Tape Armoured and PVC Sheathed** (CU or AL/PVC/STA/PVC)
- **XLPE Insulated, Steel Tape Armoured and PVC Sheathed** (CU or AL/XLPE/STA/PVC)
- **PVC Insulated, Steel Wire Armoured and PVC Sheathed** (CU or AL/PVC/SWA/PVC)
- **XLPE Insulated, Steel Wire Armoured and PVC Sheathed** (CU or AL/XLPE/SWA/PVC)

## CU / PVC / PVC ( Multicore Cable )

Copper Conductors, PVC Insulated and PVC Sheathed.



**Component**  
1-Copper Wire  
2-PVC Compound  
3-PVC Compound

### Description

- Multicore cables of stranded Copper conductors are insulated with PVC compound rated 70°C, assembled together, covered with overall jacket of PVC compound.

### Application

- For outdoor and indoor installations in damp and wet locations.

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 70 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 2 core cables - Cu/PVC/PVC

1.5 rm	12.1000	14.600	24	19	20	10.1	120
2.5 rm	7.4100	8.870	30	25	28	10.9	145
4 rm	4.6100	5.540	40	32	39	12.9	205
6 rm	3.0800	3.690	50	40	50	13.9	255
10 rm	1.8300	2.190	65	55	66	15.0	425
16 rm	1.1500	1.390	85	65	88	17.0	580
25 rm	0.7270	0.870	110	85	116	20.0	845
35 rm	0.5240	0.628	130	105	143	22.2	1090

#### 3 core cables - Cu/PVC/PVC

1.5 rm	12.1000	14.600	21	18	18	10.6	145
2.5 rm	7.4100	8.870	27	23	22	11.5	190
4 rm	4.6100	5.540	35	30	31	13.6	270
6 rm	3.0800	3.690	45	36	39	14.7	340
10 rm	1.8300	2.190	60	48	53	16.4	485
16 rm	1.1500	1.390	75	60	72	18.6	685
25 rm	0.7270	0.870	100	80	94	21.8	995
35 rm	0.5240	0.628	120	95	110	24.2	1300

The above data is approximate and subjected to manufacturing tolerance.

1/2

rm: Round, Stranded  
sm: Sector, Stranded

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 70 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 4 core cables - Cu/PVC/PVC

1.5 rm	12.1000	14.6000	21	18	18	11.4	180
2.5 rm	7.4100	8.8700	27	23	22	12.4	230
4 rm	4.6100	5.5400	35	30	31	14.8	335
6 rm	3.0800	3.6900	45	36	39	16.0	425
10 rm	1.8300	2.1900	60	48	53	17.9	635
16 rm	1.1500	1.3900	75	60	72	20.3	880
25 rm	0.7270	0.8700	100	80	94	23.9	1295
35 rm	0.5240	0.6280	120	95	110	26.6	1700
50 sm	0.3870	0.4640	145	115	138	29.3	2225
70 sm	0.2680	0.3220	175	145	171	32.9	3065
95 sm	0.1930	0.2320	210	165	209	37.8	4175
120 sm	0.1530	0.1850	240	195	242	41.2	5205
150 sm	0.1240	0.1510	270	220	275	45.9	6400
185 sm	0.0991	0.1210	300	245	314	50.7	7960
240 sm	0.0754	0.0840	345	290	374	57.0	10330
300 sm	0.0601	0.0770	390	320	440	63.3	12915
400 sm	0.0470	0.0606	453	376	507	70.1	16500

#### 4 core cables with reduced neutral - Cu/PVC/PVC

35 rm	16 rm	0.5240/1.1500	0.6280/1.3900	120	95	110	25.0	1505
50 sm	25 rm	0.3870/0.7270	0.4640/0.8700	145	115	138	28.1	2115
70 sm	35 rm	0.2680/0.5240	0.3220/0.6280	175	145	171	31.4	2725
95 sm	50 sm	0.1930/0.3870	0.2320/0.4640	210	165	209	36.1	3690
120 sm	70 sm	0.1530/0.2680	0.1850/0.3220	240	195	242	39.5	4675
150 sm	70 sm	0.1240/0.2680	0.1510/0.3220	270	220	275	43.5	5580
185 sm	95 sm	0.0991/0.1930	0.1210/0.2320	300	245	314	48.2	7025
240 sm	120 sm	0.0754/0.1530	0.0840/0.1850	345	290	374	54.2	9060
300 sm	150 sm	0.0601/0.1240	0.0770/0.1510	390	320	440	60.0	11280
400 sm	185 sm	0.0470/0.0991	0.0606/0.1210	453	376	507	66.0	15270

The above data is approximate and subjected to manufacturing tolerance.

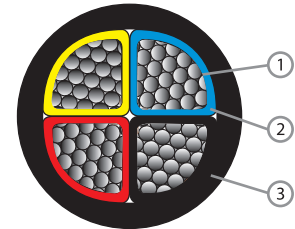
2/2

rm: Round, Stranded  
sm: Sector, Stranded



## AL / PVC / PVC ( Multicore Cable )

Aluminium Conductors, PVC Insulated and PVC Sheathed.



**Component**  
1-Aluminium Wire  
2-PVC Compound  
3-PVC Compound

### Description

- Multicore cables of stranded Aluminium conductors are insulated with PVC compound rated 70°C, assembled together, covered with overall jacket of PVC compound.

### Application

- For outdoor and indoor installations in damp and wet locations.

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 70 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 2 core cables - AL/PVC/PVC

16 rm	1.910	2.290	60	46	62	17.0	385
25 rm	1.200	1.440	77	60	81	20.0	540
35 rm	0.868	1.040	103	83	114	22.2	670

#### 3 core cables - AL/PVC/PVC

16 rm	1.910	2.290	53	42	50	18.6	400
25 rm	1.200	1.440	70	56	66	21.8	550
35 rm	0.868	1.040	95	75	88	24.2	680

The above data is approximate and subjected to manufacturing tolerance.

1/2

rm: Round, Stranded  
sm: Sector, Stranded

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 70 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

### 4 core cables - AL/PVC/PVC

16 rm	1.9100	2.2900	53	42	50	20.3	495
25 rm	1.2000	1.4400	70	56	66	23.9	700
35 rm	0.8680	1.0400	95	75	88	26.6	870
50 sm	0.6410	0.7710	115	85	105	29.3	1060
70 sm	0.4430	0.5330	135	110	132	32.9	1380
95 sm	0.3200	0.3850	165	130	160	37.8	1865
120 sm	0.2530	0.3050	185	150	187	41.2	2300
150 sm	0.2060	0.2490	210	170	215	45.9	2760
185 sm	0.1640	0.1990	235	195	248	50.7	3400
240 sm	0.1250	0.1510	275	225	292	57.0	4345
300 sm	0.1000	0.1230	310	260	347	63.3	5400
400 sm	0.0778	0.0962	361	300	405	70.1	6890

### 4 core cables with reduced neutral - AL/PVC/PVC

35 rm	16 rm	0.8680/1.9100	1.0430/2.2900	95	75	88	25.0	720
50 sm	25 rm	0.6410/1.2000	0.7710/1.4400	115	85	105	28.1	970
70 sm	35 rm	0.4430/0.8680	0.5330/1.0400	135	110	132	31.4	1240
95 sm	50 sm	0.3200/0.6410	0.3850/0.7710	165	130	160	36.1	1660
120 sm	70 sm	0.2530/0.4430	0.3050/0.5330	185	150	187	39.5	2040
150 sm	70 sm	0.2060/0.4430	0.2490/0.5330	210	170	215	43.5	2435
185 sm	95 sm	0.1640/0.3200	0.1990/0.3850	235	195	248	48.2	3025
240 sm	120 sm	0.1250/0.2530	0.1510/0.3050	275	225	292	54.2	3830
300 sm	150 sm	0.1000/0.2060	0.1230/0.2490	310	260	347	60.0	4720
400 sm	185 sm	0.0778/0.1640	0.0962/0.1990	361	300	405	66.0	5980

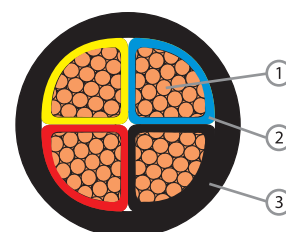
The above data is approximate and subjected to manufacturing tolerance.

2/2

rm: Round, Stranded  
sm: Sector, Stranded

## CU / XLPE / PVC ( Multicore Cable )

Copper Conductors, XLPE Insulated and PVC Sheathed



**Component**  
1-Copper Wire  
2- Cross-linked Polyethylene Compound  
3-PVC Compound

### Description

- Multicore cables of stranded Copper conductors are insulated with XLPE, assembled together, covered with overall jacket of PVC compound.

### Application

- For outdoor and indoor installations in damp and wet locations.

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 2 core cables - Cu/XLPE/PVC

1.5 rm	12.1000	15.4000	30	25	25	9.6	105
2.5 rm	7.4100	9.4500	37	32	34	10.5	135
4 rm	4.6100	5.8800	50	40	46	11.7	175
6 rm	3.0800	3.9300	63	52	60	12.7	225
10 rm	1.8300	2.3300	82	69	79	13.8	360
16 rm	1.1500	1.4700	106	83	105	15.8	505
25 rm	0.7270	0.9270	139	107	139	18.8	750
35 rm	0.5240	0.6690	166	134	166	21.0	980

#### 3 core cables - Cu/XLPE/PVC

1.5 rm	12.1000	15.4000	26	23	22	10.1	130
2.5 rm	7.4100	9.4500	35	29	32	11.0	165
4 rm	4.6100	5.8800	45	36	41	12.3	225
6 rm	3.0800	3.9300	57	45	50	13.4	295
10 rm	1.8300	2.3300	75	60	68	15.1	430
16 rm	1.1500	1.4700	97	75	89	17.3	620
25 rm	0.7270	0.9270	128	102	120	20.5	910
35 rm	0.5240	0.6690	155	120	145	22.9	1205

The above data is approximate and subjected to manufacturing tolerance.

1/2

rm: Round, Stranded  
sm: Sector, Stranded

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 70 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 4 core cables - Cu/PVC/PVC

1.5 rm	12.1000	14.6000	21	18	18	11.4	180
2.5 rm	7.4100	8.8700	27	23	22	12.4	230
4 rm	4.6100	5.5400	35	30	31	14.8	335
6 rm	3.0800	3.6900	45	36	39	16.0	425
10 rm	1.8300	2.1900	60	48	53	17.9	635
16 rm	1.1500	1.3900	75	60	72	20.3	880
25 rm	0.7270	0.8700	100	80	94	23.9	1295
35 rm	0.5240	0.6280	120	95	110	26.6	1700
50 sm	0.3870	0.4640	145	115	138	29.3	2225
70 sm	0.2680	0.3220	175	145	171	32.9	3065
95 sm	0.1930	0.2320	210	165	209	37.8	4175
120 sm	0.1530	0.1850	240	195	242	41.2	5205
150 sm	0.1240	0.1510	270	220	275	45.9	6400
185 sm	0.0991	0.1210	300	245	314	50.7	7960
240 sm	0.0754	0.0840	345	290	374	57.0	10330
300 sm	0.0601	0.0770	390	320	440	63.3	12915
400 sm	0.0470	0.0606	453	376	507	70.1	16500

#### 4 core cables with reduced neutral - Cu/PVC/PVC

35 rm	16 rm	0.5240/1.1500	0.6280/1.3900	120	95	110	25.0	1505
50 sm	25 rm	0.3870/0.7270	0.4640/0.8700	145	115	138	28.1	2115
70 sm	35 rm	0.2680/0.5240	0.3220/0.6280	175	145	171	31.4	2725
95 sm	50 sm	0.1930/0.3870	0.2320/0.4640	210	165	209	36.1	3690
120 sm	70 sm	0.1530/0.2680	0.1850/0.3220	240	195	242	39.5	4675
150 sm	70 sm	0.1240/0.2680	0.1510/0.3220	270	220	275	43.5	5580
185 sm	95 sm	0.0991/0.1930	0.1210/0.2320	300	245	314	48.2	7025
240 sm	120 sm	0.0754/0.1530	0.0840/0.1850	345	290	374	54.2	9060
300 sm	150 sm	0.0601/0.1240	0.0770/0.1510	390	320	440	60.0	11280
400 sm	185 sm	0.0470/0.0991	0.0606/0.1210	453	376	507	66.0	15270

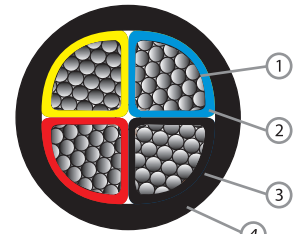
The above data is approximate and subjected to manufacturing tolerance.

2/2

rm: Round, Stranded  
sm: Sector, Stranded

## AL / XLPE / PVC ( Multicore Cable )

Aluminium Conductors, XLPE Insulated and PVC Sheathed



**Component**  
1- Aluminium Wire  
2- Cross-linked Polyethylene Compound  
3- PVC Compound

### Description

- Multicore cables of stranded Aluminium conductors are insulated with XLPE, assembled together, covered with overall jacket of PVC compound.

### Application

- For outdoor and indoor installations in damp and wet locations. They are normally used for power distribution in urban networks, in industrial plants, as well as in Thermopower and Hydropower Stations.

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 2 core cables - AL/XLPE/PVC

16 rm	1.9100	2.4500	74	58	73	15.8	310
25 rm	1.2000	1.5400	97	75	97	18.8	450
35 rm	0.8680	1.1130	128	106	120	21.0	565

#### 3 core cables - AL/XLPE/PVC

16 rm	1.9100	2.4500	68	52	62	17.3	330
25 rm	1.2000	1.5400	90	71	84	20.5	460
35 rm	0.8680	1.1130	120	95	105	22.9	580

The above data is approximate and subjected to manufacturing tolerance.

1/2

rm: Round, Stranded  
sm: Sector, Stranded

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 4 core cables - AL/XLPE/PVC

16 rm	1.9100	2.4500	68	52	62	18.9	405
25 rm	1.2000	1.5400	90	71	84	22.5	585
35 rm	0.8680	1.1130	120	95	110	25.2	745
50 sm	0.6410	0.8220	145	110	136	26.5	905
70 sm	0.4430	0.5690	175	140	168	30.8	1260
95 sm	0.3200	0.4110	210	165	205	33.5	1565
120 sm	0.2530	0.3250	235	190	236	37.6	1950
150 sm	0.2060	0.2650	265	215	278	42.1	2405
185 sm	0.1640	0.2120	290	240	315	47.1	2930
240 sm	0.1250	0.1630	340	280	378	52.9	3725
300 sm	0.1000	0.1310	390	325	446	58.5	4625
400 sm	0.0778	0.1025	461	379	526	66.9	5975
500 sm	0.0605	0.0809	527	441	615	74.4	7485

#### 4 core cables with reduced neutral - AL/XLPE/PVC

35 rm	16 rm	0.8680/1.9100	1.1130/2.4500	120	95	110	23.6	670
50 sm	25 rm	0.6410/1.2000	0.8220/1.5400	145	110	136	25.3	830
70 sm	35 rm	0.4430/0.8680	0.5690/1.1130	175	140	168	29.1	1120
95 sm	50 sm	0.3200/0.6410	0.4110/0.8220	210	165	205	33.0	1415
120 sm	70 sm	0.2530/0.4430	0.3250/0.5690	235	190	236	35.9	1770
150 sm	70 sm	0.2060/0.4430	0.2650/0.5690	265	215	278	39.7	2120
185 sm	95 sm	0.1640/0.3200	0.2120/0.4110	290	240	315	44.6	2590
240 sm	120 sm	0.1250/0.2530	0.1630/0.3250	340	280	378	49.9	3260
300 sm	150 sm	0.1000/0.2060	0.1310/0.2650	390	325	446	55.2	4065
400 sm	185 sm	0.0778/0.1640	0.1025/0.2120	461	379	526	62.8	5255

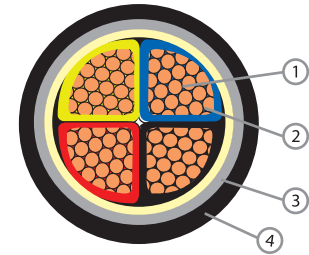
The above data is approximate and subjected to manufacturing tolerance.

2/2

rm: Round, Stranded  
sm: Sector, Stranded

## CU / PVC / STA / PVC ( Multicore Cable )

Copper Conductors, PVC Insulated, Steel Tape Armoured and PVC Sheathed



**Component**  
1-Copper Wire  
2-PVC Compound  
3-Galvanised Steel Tape Armoured  
4-PVC Compound

### Description

- Multicore cables of stranded Copper conductors are insulated with PVC compound rated 70 °C, assembled together, armoured with steel tape and covered with overall jacket of PVC compound.

### Application

- For outdoor installations in damp and wet locations, where mechanical damages are expected to occur.

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 70 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 2 core cables - CU/PVC/STA/PVC

6 rm	3.0800	3.6900	50	40	50	16.9	460
10 rm	1.8300	2.1900	65	55	66	17.0	560
16 rm	1.1500	1.3900	85	65	88	19.0	740
25 rm	0.7270	0.8700	110	85	116	22.0	1030
35 rm	0.5240	0.6280	130	105	143	24.2	1295

#### 3 core cables - CU/PVC/STA/PVC

4 rm	4.6100	5.5400	35	30	31	16.4	440
6 rm	3.0800	3.6900	45	36	39	17.5	525
10 rm	1.8300	2.1900	60	48	53	18.4	640
16 rm	1.1500	1.3900	75	60	72	20.6	860
25 rm	0.7270	0.8700	100	80	94	23.8	1200
35 rm	0.5240	0.6280	120	95	110	26.2	1530

The above data is approximate and subjected to manufacturing tolerance.

1/2

rm: Round, Stranded  
sm: Sector, Stranded

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 70 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 4 core cables - CU/PVC/STA/PVC

4 rm	4.6100	5.5400	35	30	31	17.6	520
6 rm	3.0800	3.6900	45	36	39	18.8	630
10 rm	1.8300	2.1900	60	48	53	19.9	805
16 rm	1.1500	1.3900	75	60	72	22.3	1070
25 rm	0.7270	0.8700	100	80	94	25.9	1520
35 rm	0.5240	0.6280	120	95	110	28.6	1950
50 sm	0.3870	0.4640	145	115	138	32.7	2640
70 sm	0.2680	0.3220	175	145	171	37.5	3915
95 sm	0.1930	0.2320	210	165	209	42.4	5140
120 sm	0.1530	0.1850	240	195	242	46.2	6310
150 sm	0.1240	0.1510	270	220	275	50.9	7615
185 sm	0.0991	0.1210	300	245	314	56.1	9365
240 sm	0.0754	0.0840	345	290	374	62.6	12790
300 sm	0.0601	0.0770	390	320	440	68.7	14645
400 sm	0.0470	0.0606	444	373	500	74.9	18510

#### 4 core cables with reduced neutral - CU/PVC/STA/PVC

35 rm	16 rm	0.5240/1.1500	0.6280/1.3900	120	95	110	27.0	1740
50 sm	25 rm	0.3870/0.7270	0.4640/0.8700	145	115	138	30.9	2365
70 sm	35 rm	0.2680/0.5240	0.3220/0.6280	175	145	171	34.6	3155
95 sm	50 sm	0.1930/0.3870	0.2320/0.4640	210	165	209	40.7	4625
120 sm	70 sm	0.1530/0.2680	0.1850/0.3220	240	195	242	44.5	5730
150 sm	70 sm	0.1240/0.2680	0.1510/0.3220	270	220	275	48.5	6740
185 sm	95 sm	0.0991/0.1930	0.1210/0.2320	300	245	314	53.2	8300
240 sm	120 sm	0.0754/0.1530	0.0840/0.1850	345	290	374	59.6	10550
300 sm	150 sm	0.0601/0.1240	0.0770/0.1510	390	320	440	65.4	12920
400 sm	185 sm	0.0470/0.0991	0.0606/0.1210	444	373	500	70.8	16360

The above data is approximate and subjected to manufacturing tolerance.

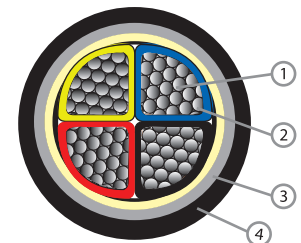
2/2

rm: Round, Stranded  
sm: Sector, Stranded



## AL / PVC / STA / PVC ( Multicore Cable )

Aluminium Conductors, PVC Insulated, Steel Tape Armoured and PVC Sheathed



**Component**  
1-Aluminium Wire  
2-PVC Compound  
3-Galvanised Steel Tape Armoured  
4-PVC Compound

### Description

- Multicore Cables, with Stranded Aluminium Conductors, PVC Insulated, Steel Tape Armoured and PVC Sheathed.

### Application

- For outdoor installations in damp wet locations, where mechanical damages are expected to occur.

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 70 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 2 core cables - AL/PVC/STA/PVC

16 mm	1.910	2.290	60	46	62	19.0	454
25 mm	1.200	1.440	77	60	81	22.0	730
35 mm	0.868	1.040	103	83	115	24.2	880

#### 3 core cables - AL/PVC/STA/PVC

16 mm	1.910	2.290	53	42	50	20.6	570
25 mm	1.200	1.440	70	56	66	23.8	750
35 mm	0.868	1.040	95	75	88	26.2	905

The above data is approximate and subjected to manufacturing tolerance.

1/2

rm: Round, Stranded  
sm: Sector, Stranded

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 70 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 4 core cables - AL/PVC/STA/PVC

16 rm	1.9100	2.2900	53	42	50	22.3	680
25 rm	1.2000	1.4400	70	56	66	25.9	920
35 rm	0.8680	1.0430	95	75	88	28.6	1120
50 sm	0.6410	0.7710	115	85	105	32.7	1475
70 sm	0.4430	0.5530	135	110	132	37.5	2225
95 sm	0.3200	0.3850	165	130	160	42.4	2830
120 sm	0.2530	0.3050	185	150	187	46.2	3360
150 sm	0.2060	0.2490	210	170	215	50.9	3975
185 sm	0.1640	0.1990	235	195	248	56.1	4815
240 sm	0.1250	0.1510	275	225	292	62.6	5925
300 sm	0.1000	0.1230	310	260	347	68.7	7125
400 sm	0.0778	0.0962	355	298	399	74.9	8950

#### 4 core cables with reduced neutral - AL/PVC/STA/PVC

35 rm	16 rm	0.8680/1.9100	1.0430/2.2900	95	75	88	27.0	61020
50 sm	25 rm	0.6410/1.2000	0.7710/1.4400	115	85	105	30.9	1330
70 sm	35 rm	0.4430/0.8680	0.5330/1.0400	135	110	132	34.6	1675
95 sm	50 sm	0.3200/0.6410	0.3850/0.7710	165	130	160	40.7	2585
120 sm	70 sm	0.2530/0.4430	0.3050/0.5330	185	150	187	44.5	3100
150 sm	70 sm	0.2060/0.4430	0.2490/0.5330	210	170	215	48.5	3590
185 sm	95 sm	0.1640/0.3200	0.1990/0.3850	235	195	248	53.2	4300
240 sm	120 sm	0.1250/0.2530	0.1510/0.3050	275	225	292	59.6	5325
300 sm	150 sm	0.1000/0.2060	0.1230/0.2490	310	260	347	65.4	6365
400 sm	185 sm	0.0778/0.1640	0.0962/0.1990	355	298	399	70.8	8000

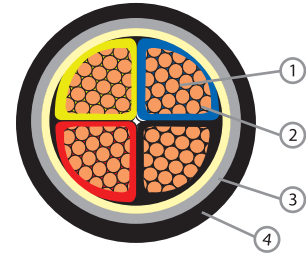
The above data is approximate and subjected to manufacturing tolerance.

2/2

rm: Round, Stranded  
sm: Sector, Stranded

## CU / XLPE / STA / PVC ( Multicore Cable )

Copper Conductors, XLPE Insulated, Steel Tape Armoured and PVC Sheathed.



**Component**  
1- Copper Wire  
2- Cross-linked Polyethylene Compound  
3- Galvanised Steel Tape Armoured  
4- PVC Compound

### Description

- Multicore cables of stranded Copper conductors are insulated with XLPE compound, assembled together, armoured with steel Tape and covered with an overall jacket of PVC compound.

### Application

- For outdoor installations in damp wet locations, where mechanical damages are expected to occur.

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 2 core cables - CU/XLPE/STA/PVC

6 mm	3.0800	3.9300	62	51	59	15.5	405
10 mm	1.8300	2.3300	81	68	78	15.6	490
16 mm	1.1500	1.4700	105	82	103	17.8	655
25 mm	0.7270	0.9270	138	106	137	20.8	935
35 mm	0.5240	0.6690	164	132	164	23.0	1185

#### 3 core cables - CU/XLPE/STA/PVC

6 mm	3.0800	3.9300	56	44	49	16.2	465
10 mm	1.8300	2.3300	74	59	67	17.1	575
16 mm	1.1500	1.4700	96	74	88	19.3	790
25 mm	0.7270	0.9270	127	100	120	22.5	1105
35 mm	0.5240	0.6690	153	119	143	24.9	1420

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 4 core cables - CU/XLPE/STA/PVC

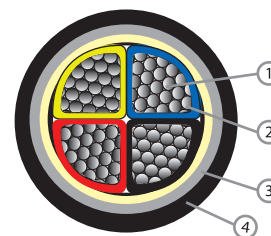
6 mm	3.0800	3.9300	56	44	49	17.4	555
10 mm	1.8300	2.3300	74	59	67	18.4	720
16 mm	1.1500	1.4700	96	74	88	20.9	975
25 mm	0.7270	0.9270	127	100	120	24.5	1385
35 mm	0.5240	0.6690	153	119	143	27.2	1775
50 sm	0.3870	0.4940	185	145	178	30.1	2415
70 sm	0.2680	0.3430	220	180	215	34.6	3335
95 sm	0.1930	0.2480	265	210	268	39.7	4815
120 sm	0.1530	0.1970	305	245	310	43.8	5910
150 sm	0.1240	0.1600	335	275	352	48.7	7195
185 sm	0.0991	0.1290	375	310	404	53.7	8830
240 sm	0.0754	0.0990	435	365	483	60.0	11285
300 sm	0.0601	0.0810	490	405	562	65.5	13835
400 sm	0.0470	0.0642	567	472	645	71.7	17515

#### 4 core cables with reduced neutral - CU/XLPE/STA/PVC

35 mm	16 mm	0.5240/1.1500	0.6690/1.4700	153	119	143	25.6	1615
50 sm	25 mm	0.3870/0.7270	0.4940/0.9270	185	145	178	28.7	2160
70 sm	35 mm	0.2680/0.5240	0.3430/0.6690	220	180	215	33.1	2960
95 sm	50 sm	0.1930/0.3870	0.2480/0.4940	265	210	268	38.0	4280
120 sm	70 sm	0.1530/0.2680	0.1970/0.3430	305	245	310	42.1	5365
150 sm	70 sm	0.1240/0.2680	0.1600/0.3430	335	275	352	46.3	6355
185 sm	95 sm	0.0991/0.1930	0.1290/0.2480	375	310	404	51.2	7865
240 sm	120 sm	0.0754/0.1530	0.0990/0.1970	435	365	483	57.1	10000
300 sm	150 sm	0.0601/0.1240	0.0810/0.1600	490	405	562	62.2	12205
400 sm	185 sm	0.0470/0.0991	0.0642/0.1290	567	472	645	67.8	15505

## AL / XLPE / STA / PVC ( Multicore Cable )

Aluminium Conductors, XLPE Insulated, Steel Tape Armoured and PVC Sheathed



**Component**  
1- Aluminium Wire  
2- Cross-linked Polyethylene Compound  
3- Galvanised Steel Tape Armoured  
4- PVC Compound

### Description

- Multicore cables of stranded Aluminium conductors are insulated with XLPE compound, assembled together, armoured with steel tape and covered with an overall jacket of PVC compound.

### Application

- For outdoor installations in damp wet locations where mechanical damages are expected to occur.

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 2 core cables - AL/XLPE/STA/PVC

16 m	1.9100	2.4500	73	57	72	17.8	460
25 m	1.2000	1.5400	96	74	96	20.8	630
35 m	0.8680	1.1130	129	105	126	23.0	770

#### 3 core cables - AL/XLPE/STA/PVC

16 m	1.9100	2.4500	67	52	62	19.3	495
25 m	1.2000	1.5400	89	70	84	22.5	650
35 m	0.8680	1.1130	120	95	110	24.9	795

The above data is approximate and subjected to manufacturing tolerance.

1/2

rm: Round, Stranded  
sm: Sector, Stranded

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 4 core cables - AL/XLPE/STA/PVC

16 rm	1.9100	2.4500	67	52	62	20.9	585
25 rm	1.2000	1.5400	89	70	84	24.5	780
35 rm	0.8680	1.1130	120	95	110	27.2	940
50 sm	0.6410	0.8220	145	110	136	30.1	1300
70 sm	0.4430	0.5690	175	140	168	34.6	1750
95 sm	0.3200	0.4110	210	165	205	39.7	2540
120 sm	0.2520	0.3250	235	190	236	43.8	3020
150 sm	0.2060	0.2650	265	215	278	48.7	3670
185 sm	0.1640	0.2120	290	240	315	53.7	4380
240 sm	0.1250	0.1630	340	280	378	60.0	4430
300 sm	0.1000	0.1310	390	325	446	65.5	6510
400 sm	0.0778	0.1025	453	377	515	71.7	7950
500 sm	0.0605	0.0809	498	425	604	80.6	10295

#### 4 core cables with reduced neutral - AL/XLPE/STA/PVC

35 rm	16 rm	0.8680/1.9100	1.1130/2.4500	120	95	110	25.6	890
50 sm	25 rm	0.6410/1.2000	0.8220/1.5400	145	110	136	28.7	1200
70 sm	35 rm	0.4430/0.8680	0.5690/1.1130	175	140	168	33.1	1550
95 sm	50 sm	0.3200/0.6410	0.4110/0.8220	210	165	205	38.0	1970
120 sm	70 sm	0.2530/0.4430	0.3250/0.5690	235	190	236	42.1	2710
150 sm	70 sm	0.2060/0.4430	0.2650/0.5690	265	215	278	46.3	3290
185 sm	95 sm	0.1640/0.3200	0.2120/0.4110	290	240	315	51.2	3980
240 sm	120 sm	0.1250/0.2530	0.1630/0.3250	340	280	378	57.1	4910
300 sm	150 sm	0.1000/0.2060	0.1310/0.2650	390	325	446	62.2	5920
400 sm	185 sm	0.0778/0.1640	0.1025/0.2120	453	377	515	67.6	7110

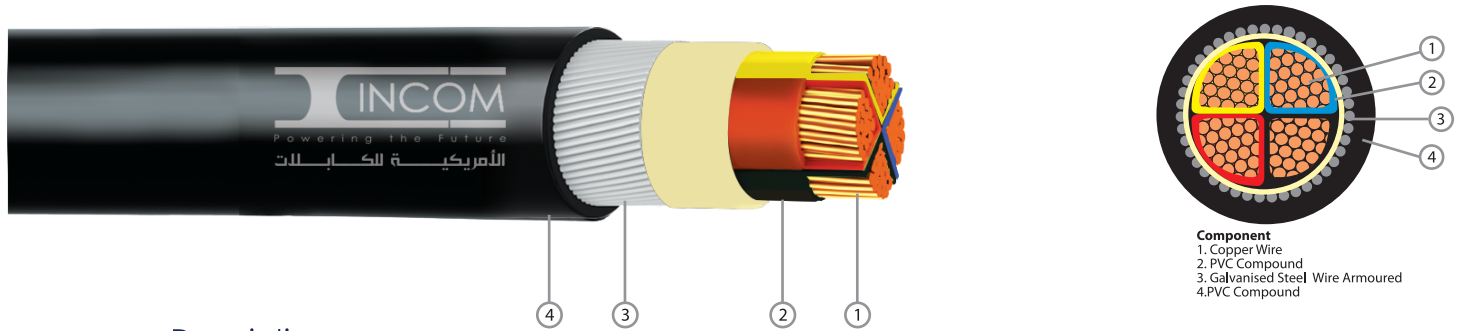
The above data is approximate and subjected to manufacturing tolerance.

2/2

rm: Round, Stranded  
sm: Sector, Stranded

## CU / PVC / SWA / PVC ( Multicore Cable )

Copper Conductors, PVC Insulated, PVC Bedded, Steel Wire Armoured and PVC Sheathed.



### Description

- Multicore cables of stranded Copper conductors are insulated with PVC compound rated 70°C, assembled together, armoured with steel wires and covered with overall jacket of PVC compound.

### Application

- For outdoor installations in damp wet locations where mechanical damages are expected to occur.

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 70 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 2 core cables - CU/PVC/SWA/PVC

4 rm	4.6100	5.5400	40	32	39	17.8	645
6 rm	3.0800	3.6900	50	40	50	18.8	735
10 rm	1.8300	2.1900	65	55	66	19.2	815
16 rm	1.1500	1.3900	85	65	88	21.2	1030
25 rm	0.7270	0.8700	110	85	116	25.3	1535
35 rm	0.5240	0.6280	130	105	143	27.5	1790

#### 3 core cables - CU/PVC/SWA/PVC

4 rm	4.6100	5.5400	35	30	31	18.5	730
6 rm	3.0800	3.6900	45	36	39	19.6	835
10 rm	1.8300	2.1900	60	48	53	20.6	920
16 rm	1.1500	1.3900	75	60	72	22.8	1175
25 rm	0.7270	0.8700	100	80	94	27.1	1765
35 rm	0.5240	0.6280	120	100	110	29.5	2145

The above data is approximate and subjected to manufacturing tolerance.

1/2

rm: Round, Stranded  
sm: Sector, Stranded

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 70 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 4 core cables - CU/PVC/SWA/PVC

4 rm	4.6100	5.5400	37	29	29	19.7	840
6 rm	3.0800	3.6900	47	37	37	20.9	965
10 rm	1.8300	2.1900	63	50	50	22.1	1115
16 rm	1.1500	1.3900	79	68	68	25.6	1590
25 rm	0.7270	0.8700	105	89	89	29.2	2125
35 rm	0.5240	0.6280	120	95	116	32.1	2635
50 sm	0.3870	0.4640	145	115	143	37.1	3870
70 sm	0.2680	0.3220	175	145	176	40.7	4900
95 sm	0.1930	0.2320	210	165	215	46.6	6665
120 sm	0.1530	0.1850	240	195	248	50.6	7990
150 sm	0.1240	0.1510	270	220	281	55.1	9445
185 sm	0.0991	0.1210	300	245	319	60.5	11425
240 sm	0.0754	0.0840	345	290	380	66.8	14205
300 sm	0.0601	0.0770	390	320	446	72.9	17870
400 sm	0.0470	0.0606	427	361	490	80.0	21275

#### 4 core cables with reduced neutral - CU/PVC/SWA/PVC

35 rm	16 rm	0.5240/1.1500	0.6280/1.3900	120	95	116	28.7	2310
50 sm	25 rm	0.3870/0.7270	0.4640/0.8700	145	115	143	35.5	3550
70 sm	35 rm	0.2680/0.5240	0.3220/0.6280	175	145	176	39.2	4480
95 sm	50 sm	0.1930/0.3870	0.2320/0.4640	210	165	215	42.6	5475
120 sm	70 sm	0.1530/0.2680	0.1850/0.3220	240	195	248	48.9	7385
150 sm	70 sm	0.1240/0.2680	0.1510/0.3220	270	220	281	52.7	8505
185 sm	95 sm	0.0991/0.1930	0.1210/0.2320	300	245	319	57.6	10260
240 sm	120 sm	0.0754/0.1530	0.0840/0.1850	345	290	380	64.0	12755
300 sm	150 sm	0.0601/0.1240	0.0770/0.1510	390	320	446	69.8	15330
400 sm	185 sm	0.0470/0.0991	0.0606/0.1210	427	361	490	75.9	19260

The above data is approximate and subjected to manufacturing tolerance.

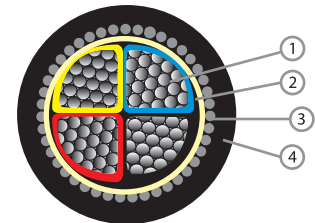
2/2

rm: Round, Stranded  
sm: Sector, Stranded



## AL / PVC / SWA / PVC ( Multicore Cable )

Aluminium Conductors, PVC Insulated, Steel Wire Armoured and PVC Sheathed



**Component**  
1. Aluminium Wire  
2. PVC Compound  
3. Galvanised Steel Wire Armoured  
4. PVC Compound

### Description

- Multicore cables of stranded Aluminium conductors are insulated with PVC compound rated 70°C, assembled together, armoured with steel wires and covered with overall jacket of PVC compound.

### Application

- For outdoor installations in damp wet locations where mechanical damages are expected to occur.

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 70 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 2 core cables - AL/PVC/SWA/PVC

16 rm	1.9100	2.2900	60	46	62	21.2	835
25 rm	1.2000	1.4400	77	60	81	25.3	1235
35 rm	0.8680	1.0400	103	83	115	27.5	1370

#### 3 core cables - AL/PVC/SWA/PVC

16 rm	1.9100	2.2900	53	42	50	22.8	885
25 rm	1.2000	1.4400	70	56	66	27.1	1315
35 rm	0.8680	1.0400	95	75	88	29.5	1525

The above data is approximate and subjected to manufacturing tolerance.

1/2

rm: Round, Stranded  
sm: Sector, Stranded

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 70 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 4 core cables - AL/PVC/SWA/PVC

16 rm	1.9100	2.2900	53	42	50	25.6	1205
25 rm	1.2000	1.4400	70	56	66	29.2	1525
35 rm	0.8680	1.0430	95	75	88	32.1	1805
50 sm	0.6410	0.7710	115	85	105	37.1	3040
70 sm	0.4430	0.5530	135	110	138	40.7	3750
95 sm	0.3200	0.3850	165	130	165	46.6	4730
120 sm	0.2530	0.3050	185	150	193	50.6	5570
150 sm	0.2060	0.2490	210	170	220	55.1	6430
185 sm	0.1640	0.1990	235	195	253	60.5	7790
240 sm	0.1250	0.1510	275	225	297	66.8	9180
300 sm	0.1000	0.1230	310	260	352	72.9	10590
400 sm	0.0778	0.0962	348	294	397	80.0	11715

#### 4 core cables with reduced neutral - AL/PVC/SWA/PVC

35 rm	16 rm	0.8680/1.9100	1.0430/2.2900	95	75	94	28.7	1585
50 sm	25 rm	0.6410/1.2000	0.7710/1.4400	115	85	110	35.5	2300
70 sm	35 rm	0.4430/0.8680	0.5330/1.0400	135	110	138	39.2	2820
95 sm	50 sm	0.3200/0.6410	0.3850/0.7710	165	130	165	42.6	3410
120 sm	70 sm	0.2530/0.4430	0.3050/0.5330	185	150	193	48.9	4370
150 sm	70 sm	0.2060/0.4430	0.2490/0.5330	210	170	220	52.7	5080
185 sm	95 sm	0.1640/0.3200	0.1990/0.3850	235	195	253	57.6	5950
240 sm	120 sm	0.1250/0.2530	0.1510/0.3050	275	225	297	64.0	7230
300 sm	150 sm	0.1000/0.2060	0.1230/0.2490	310	260	352	69.8	8540
400 sm	185 sm	0.0778/0.1640	0.0962/0.1990	348	294	397	75.9	10870

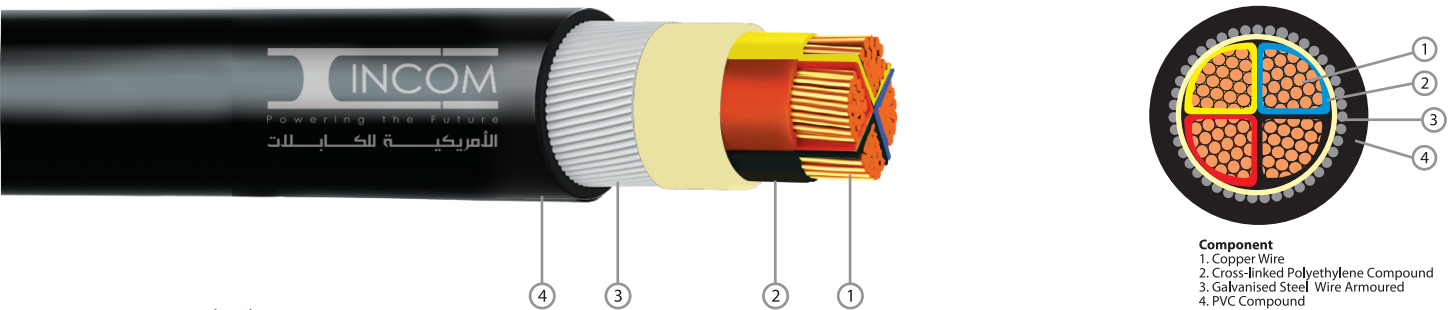
The above data is approximate and subjected to manufacturing tolerance.

2/2

rm: Round, Stranded  
sm: Sector, Stranded

## CU / XLPE / SWA / PVC ( Multicore Cable )

Copper Conductors, XLPE Insulated, Steel Wire Armoured and PVC Sheathed



### Description

- Multicore cables of stranded Copper conductors are insulated with XLPE compound, assembled together, armoured with steel wires and covered with an overall jacket of PVC compound.

### Application

- For outdoor installations in damp wet locations where mechanical damages are expected to occur.

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 2 core cables - CU/XLPE/SWA/PVC

4 rm	4.6100	5.8800	51	41	47	16.6	580
6 rm	3.0800	3.9300	64	53	61	17.6	660
10 rm	1.8300	2.3300	83	70	80	18.0	730
16 rm	1.1500	1.4700	107	84	106	20.0	925
25 rm	0.7270	0.9270	140	108	140	24.1	1410
35 rm	0.5240	0.6690	168	135	168	26.3	1715

#### 3 core cables - CU/XLPE/SWA/PVC

4 rm	4.6100	5.8800	46	37	42	17.2	650
6 rm	3.0800	3.9300	58	46	51	18.3	755
10 rm	1.8300	2.3300	76	61	69	19.3	825
16 rm	1.1500	1.4700	98	76	90	21.5	1070
25 rm	0.7270	0.9270	130	103	120	25.8	1620
35 rm	0.5240	0.6690	158	122	147	28.2	1990

The above data is approximate and subjected to manufacturing tolerance.

1/2

rm: Round, Stranded  
sm: Sector, Stranded

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 4 core cables - CU/XLPE/SWA/PVC

4 rm	4.6100	5.8800	46	37	42	18.3	740
6 rm	3.0800	3.9300	58	46	51	19.5	860
10 rm	1.8300	2.3300	76	61	69	20.6	990
16 rm	1.1500	1.4700	98	76	90	24.2	1450
25 rm	0.7270	0.9270	130	103	122	27.8	1975
35 rm	0.5240	0.6690	158	122	147	30.7	2465
50 sm	0.3870	0.4940	185	145	184	33.1	3200
70 sm	0.2680	0.3430	220	180	220	39.2	4645
95 sm	0.1930	0.2480	265	210	273	42.9	5870
120 sm	0.1530	0.1970	305	245	315	48.4	7555
150 sm	0.1240	0.1600	335	275	375	53.1	8985
185 sm	0.0991	0.1290	375	310	410	57.9	10760
240 sm	0.0754	0.0990	435	365	488	64.1	13480
300 sm	0.0601	0.0810	490	405	562	69.7	16215
400 sm	0.0470	0.0642	547	459	634	76.8	20190

#### 4 core cables with reduced neutral - CU/XLPE/SWA/PVC

35 rm	16 rm	0.5240/1.1500	0.6690/1.4700	158	122	147	28.9	2210
50 sm	25 rm	0.3870/0.7270	0.4940/0.9270	185	145	184	31.3	2860
70 sm	35 rm	0.2680/0.5240	0.3430/0.6690	220	180	220	37.5	4240
95 sm	50 sm	0.1930/0.3870	0.2480/0.4940	265	210	273	41.2	5290
120 sm	70 sm	0.1530/0.2680	0.1970/0.3430	305	245	315	45.3	6475
150 sm	70 sm	0.1240/0.2680	0.1600/0.3430	335	275	375	50.5	8055
185 sm	95 sm	0.0991/0.1930	0.1290/0.2480	375	310	410	55.4	9735
240 sm	120 sm	0.0754/0.1530	0.0990/0.1970	435	365	488	60.3	11780
300 sm	150 sm	0.0601/0.1240	0.0810/0.1600	490	405	562	66.4	14435
400 sm	185 sm	0.0470/0.0991	0.0642/0.1290	547	459	634	72.7	18500

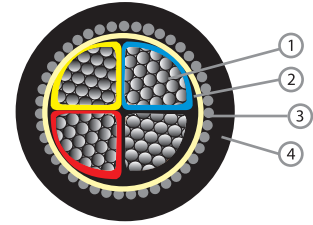
The above data is approximate and subjected to manufacturing tolerance.

2/2

rm: Round, Stranded  
sm: Sector, Stranded

## AL / XLPE / SWA / PVC ( Multicore Cable )

Aluminium Conductors, XLPE Insulated, Steel Wire Armoured and PVC Sheathed



**Component**  
1. Aluminium Wire  
2. Cross-linked Polyethylene Compound  
3. Galvanised Steel Wire Armoured  
4. PVC Compound

### Description

- Multicore cables of stranded Aluminium conductors are insulated with XLPE compound, assembled together, armoured with steel wire and covered with an overall jacket of PVC compound.

### Application

- For outdoor installations in damp wet locations where mechanical damages are expected to occur.

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 2 core cables - AL/XLPE/SWA/PVC

16 m	1.9100	2.4500	73	57	79	20.0	735
25 m	1.2000	1.5400	96	74	101	24.1	1110
35 m	0.8680	1.1130	129	105	131	26.3	1300

#### 3 core cables - AL/XLPE/SWA/PVC

16 m	1.9100	2.4500	67	52	67	21.5	780
25 m	1.2000	1.5400	89	70	89	25.8	1170
35 m	0.8680	1.1130	120	95	115	28.2	1365

The above data is approximate and subjected to manufacturing tolerance.

1/2

rm: Round, Stranded  
sm: Sector, Stranded

Nominal Cross Sectional Area	Maximum Conductor Resistance		Current Rating			Approx. Overall Diameter	Approx. Overall Diameter
	DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
mm <sup>2</sup>	Ω/km	Ω/km	A	A	A	mm	kg/km

#### 4 core cables - AL/XLPE/SWA/PVC

16 rm	1.9100	2.4500	67	52	67	24.2	1060
25 rm	1.2000	1.5400	89	70	89	27.8	1370
35 rm	0.8680	1.1130	120	95	115	30.7	1635
50 sm	0.6410	0.8220	145	110	141	33.1	2330
70 sm	0.4430	0.5690	175	140	173	39.2	2760
95 sm	0.3200	0.4110	210	165	210	42.9	3340
120 sm	0.2520	0.3250	235	190	241	48.4	4320
150 sm	0.2060	0.2650	265	215	283	53.1	5080
185 sm	0.1640	0.2120	290	240	320	57.9	5990
240 sm	0.1250	0.1630	340	280	383	64.1	7220
300 sm	0.1000	0.1310	390	325	451	69.7	8440
400 sm	0.0778	0.1025	444	373	513	76.8	10630

#### 4 core cables with reduced neutral - AL/XLPE/SWA/PVC

35 rm	16 rm	0.8680/1.9100	1.1130/2.4500	120	95	115	28.9	1490
50 sm	25 rm	0.6410/1.2000	0.8220/1.5400	145	110	141	31.3	1870
70 sm	35 rm	0.4430/0.8680	0.5690/1.1130	175	140	173	37.5	2600
95 sm	50 sm	0.3200/0.6410	0.4110/0.8220	210	165	210	41.2	3090
120 sm	70 sm	0.2530/0.4430	0.3250/0.5690	235	190	241	45.3	3690
150 sm	70 sm	0.2060/0.4430	0.2650/0.5690	265	215	283	50.5	4700
185 sm	95 sm	0.1640/0.3200	0.2120/0.4110	290	240	320	55.4	5550
240 sm	120 sm	0.1250/0.2530	0.1630/0.3250	340	280	383	60.3	6560
300 sm	150 sm	0.1000/0.2060	0.1310/0.2650	390	325	451	66.4	7820
400 sm	185 sm	0.0778/0.1640	0.1025/0.2120	444	373	513	72.7	9845

The above data is approximate and subjected to manufacturing tolerance.

2/2

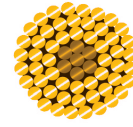
rm: Round, Stranded  
sm: Sector, Stranded



# Overhead Conductors

## Product Range

- 1- Bare hard drawn Copper
- 2- All Aluminium conductor (A.A. C)
- 3- All Aluminium alloy conductor (A.A.A.C.)
- 4- Aluminium conductor steel reinforced (A.C.S.R)
- 5- Aluminium Conductors & XLPE Insulated



## Description

- Plain bare soft drawn Copper conductors.
- Plain bare hard drawn Copper conductors.

## Application

- Soft drawn Copper conductors are used for grounding electrical systems, where high conductivity and flexibility are required.
- Hard drawn Copper conductors are used in overhead electrical distribution networks.

## Overhead Copper Conductors

Nominal Cross Sectional Area	Number and nominal diameter of wires	Max. DC. Resistance at 20 °C	Approx. overall diameter	Approx. weight
mm <sup>2</sup>	No x Ø (mm)	Ω/Km	mm	kg/ km

### a - Bare soft drawn

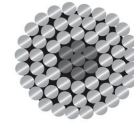
2.5	7x0.67	7.4100	2.0	23
4	7x0.84	4.6100	2.5	36
6	7x1.04	3.0800	3.1	54
10	7x1.33	1.8300	4.0	91
16	7x1.67	1.1500	5.1	145
25	7x2.12	0.7270	6.3	227
35	7x2.48	0.5240	7.4	318
50	19x1.80	0.3870	9.0	455
70	19x2.10	0.2680	10.5	635
95	19x2.48	0.1930	12.4	862
120	37x2.00	0.1530	14.0	1089
150	37x2.22	0.1240	15.5	1362
185	37x2.48	0.0991	17.3	16799
240	61x2.22	0.0754	19.9	2179
300	61x2.48	0.0601	22.3	2723
400	61x2.81	0.0470	25.2	3631
500	61x3.18	0.0366	28.6	4539

### b - Bare hard drawn

10	7x1.35	1.5030	4.5	93
16	7x1.70	1.1385	5.1	146
25	7x2.10	0.7461	6.4	231
35	7x2.50	0.5264	7.5	324
50	19x1.80	0.3659	9.0	463
70	19x2.10	0.2762	10.5	648
95	19x2.50	0.1949	12.5	880
120	37x2.00	0.1554	14.0	1111
150	37x2.25	0.1238	15.7	1389
185	37x2.50	0.1003	17.5	1713
240	61x2.25	0.0753	20.2	2222
300	61x2.50	0.0610	22.5	2778
400	61x2.89	0.0456	26.0	3704
500	61x3.23	0.0356	29.0	4630

- The above data is approximate and subjected to manufacturing tolerance.





### Description

- Hard drawn Aluminium wires, stranded in successive layers, in opposite direction to form the Aluminium stranded A.A.C. conductor.

### Application

- All Aluminium bare conductors are used for aerial distribut lines having relatively short spans, aerial feeders and bus bars of substations.

### All Aluminium Conductors

Nominal Cross Sectional Area	Number and nominal diameter of wires	Max. DC. Resistance at 20 °C	Calculated breaking load	Approx. overall diameter	Approx. weight
mm <sup>2</sup>	No x Ø (mm)	Ω/Km	kn	mm	kg/ km

#### a - According to DIN 48201

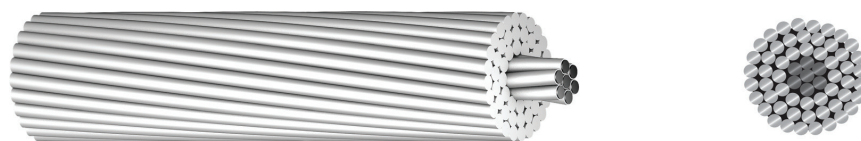
16	7 x 1.70	1.80170	2.80	5.10	44
25	7 x 2.10	1.18070	4.12	6.30	69
35	7 x 2.50	0.83310	5.71	7.50	96
50	7 x 3.00	0.57860	7.86	9.00	138
50	19 x 1.80	0.59490	8.60	9.00	133
70	19 x 2.10	0.43710	11.40	10.50	193
95	19 x 2.50	0.30840	15.60	12.50	262
120	19 x 2.80	0.24590	18.37	14.00	330
150	37 x 2.15	0.19600	25.10	15.70	413
185	37 x 2.50	0.15870	30.31	17.50	509
240	61 x 2.25	0.11910	39.25	20.20	661
300	61 x 2.50	0.09649	47.15	22.50	826
400	61 x 2.89	0.07220	60.35	26.00	1102
500	61x3.23	0.05781	74.27	29.00	1377
625	91 x 2.96	0.04625	95.05	32.50	1721
800	91 x 3.35	0.03611	118.19	36.80	2203
1000	91 x 3.74	0.02897	145.35	41.10	2754

Nominal Cross Sectional Area	Number and nominal diameter of wires	Max. DC. Resistance at 20 °C	Calculated breaking load	Approx. overall diameter	Approx. weight
mm <sup>2</sup>	No x Ø (mm)	Ω/Km	Kn	mm	kg/ km

#### b - According to BS 215

22	7x2.06	1.22700	3.99	6.18	64
50	7x3.10	0.54190	8.28	9.30	145
60	7x3.40	0.45050	9.90	10.20	174
100	7x4.39	0.27020	16.00	13.17	290
150	19x3.25	0.18250	24.70	16.25	434
200	19x3.78	0.13490	32.40	18.90	587
250	19x4.22	0.10830	40.40	21.10	731
300	19x4.65	0.08916	48.75	23.25	888
400	37x3.78	0.06944	63.10	26.46	1145

- The above data is approximate and subjected to manufacturing tolerance.



### Description

- All Aluminium alloy (ALMELEC) conductors, stranded in successive layers to form the stranded A.A.A.C. conductor.

### Application

- A.A.A.C. are mainly used for overhead lines, in transmission and distribution electrical networks, having relatively long spans. They are also used a messenger to support overhead electrical cables.

### Overhead Copper Conductors

Nominal Cross Sectional Area	Number and nominal diameter of wires	Max. DC. Resistance at 20 °C	Calculated breaking load	Approx. overall diameter	Approx. weight
mm <sup>2</sup>	No x Ø (mm)	Ω/Km	kn	mm	kg/ km

#### a -According to IEC 61089

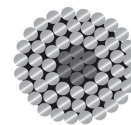
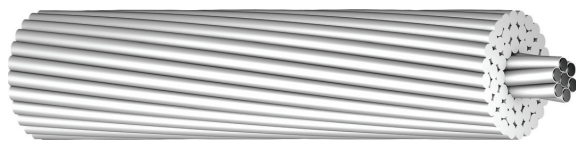
16	7x1.70	2.0910	4.50	5.10	44
25	7x2.10	1.3703	6.80	6.30	67
35	7x2.50	0.9669	9.60	7.50	94
50	7x3.00	0.6714	13.80	9.00	135
50	19x1.80	0.6905	13.50	9.00	133
70	19x2.10	0.5073	18.40	10.50	181
95	19x2.50	0.3580	26.10	12.50	256
120	19x2.80	0.2851	32.70	14.00	322
150	37x2.15	0.2274	41.10	15.70	406
185	37x2.50	0.1842	50.70	17.50	501
240	61x2.25	0.1383	67.80	20.20	670
300	61x2.50	0.1120	83.60	22.50	827
400	61x2.89	0.0838	111.80	26.00	1105
500	61x3.23	0.0671	139.90	29.10	1381
625	91x2.96	0.0537	174.90	32.60	1733
800	91x3.35	0.0419	224.00	36.80	2219
1000	91x3.74	0.0336	279.20	41.10	2766

Nominal Cross Sectional Area	Number and nominal diameter of wires	Max. DC. Resistance at 20 °C	Calculated breaking load	Approx. overall diameter	Approx. weight
mm <sup>2</sup>	No x Ø (mm)	Ω/Km	Kn	mm	kg/ km

#### b - According to BS 3242

25	7x2.34	1.22700	8.40	7.02	82
30	7x2.54	0.54190	9.90	7.62	97
40	7x2.95	0.45050	13.40	8.58	131
50	7x3.30	0.27020	16.80	9.90	164
100	7x4.65	0.18250	33.30	13.95	325
150	19x3.48	0.13490	50.60	17.40	497
175	19x3.76	0.10830	59.10	18.80	580
300	19x3.53	0.08916	101.50	24.71	997

- The above data is approximate and subjected to manufacturing tolerance.



### Description

- An outer layer of Aluminium conductor concentrically stranded over the central core of galvanized solid or stranded steel wires to form Aluminium steel reinforced conductor. As per DIN 48204, BS 215 or ASTM B 232.

### Application

- A.C.S.R. conductors are widely used for electrical power transmission over long distances, since they are ideal for long overhead lines spans. They are also used as a messenger for supporting overhead electrical cables.

Nominal Cross Sectional Area	Number and nominal diameters of wires		Max. DC. resistance at 20 °C	Calculated breaking load	Approx. Overall Diameter	Approx. weight
	Aluminium	Steel				
mm <sup>2</sup>	nr x Ø (mm)	nr x Ø (mm)	Ω/Km	Kn	mm	kg/km

#### a - According to DIN 48204

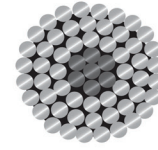
16 / 2.5	6 x 1.80	1 x 1.80	1.8750	5.62	5.4	62
25 / 4	6 x 2.25	1 x 2.25	1.2060	8.39	6.8	97
35 / 6	6 x 2.70	1 x 2.70	0.8365	11.92	8.1	139
50 / 8	6 x 3.20	1 x 2.20	0.5941	16.72	9.6	196
70 / 12	26 x 1.80	7 x 1.45	0.4130	24.97	11.6	276
95 / 15	26 x 2.10	7 x 1.65	0.3058	32.19	13.40	269
120 / 21	26 x 2.45	7 x 1.95	0.2530	41.43	15.70	507
150 / 25	26 x 2.70	7 x 2.15	0.1939	52.34	17.30	630
185 / 32	26 x 3.00	7 x 2.40	0.1640	64.78	19.20	762
210 / 36	26 x 2.20	7 x 2.55	0.1410	73.44	20.50	865
240 / 40	26 x 3.40	7 x 2.70	0.1188	82.58	21.70	974
380 / 50	54 x 3.00	7 x 3.00	0.0757	120.90	27.00	1448

Nominal Cross Sectional Area	Number and nominal diameters of wires		Max. DC. resistance at 20 °C	Calculated breaking load	Approx. Overall Diameter	Approx. weight
	Aluminium	Steel				
mm <sup>2</sup>	nr x Ø (mm)	nr x Ø (mm)	Ω/Km	Kn	mm	kg/km

#### b -According to BS 215

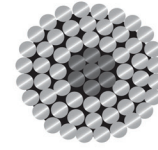
25	6 / 2.36	1 / 2.36	1.09.0	9.61	7.08	106
30	6 / 2.59	1 / 2.59	0.9077	11.45	7.77	128
40	6 / 3.00	1 / 3.00	0.6766	15.20	9.00	172
50	6 / 3.35	1 / 3.35	0.5426	18.40	10.5	214
70	12 / 2.79	7 / 2.97	0.3936	61.20	13.95	538
100	6 / 4.72	7 / 1.57	0.2733	32.70	14.15	394
150	30 / 2.59	7 / 2.59	0.1828	69.20	18.13	726
150	18 / 3.35	1 / 3.55	0.1815	35.70	16.75	506
175	30 / 2.79	7 / 2.79	0.1576	79.80	19.53	842
175	18 / 3.61	1 / 3.61	0.1563	41.10	18.05	587
200	30 / 3.86	7 / 3.00	0.1363	92.25	21.00	974
200	18 / 3.86	1 / 3.86	0.1367	46.60	19.30	671
400	54 / 3.18	7 / 3.18	0.0674	131.90	28.62	1621

- The above data is approximate and subjected to manufacturing tolerance.



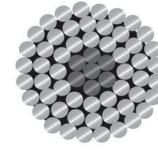
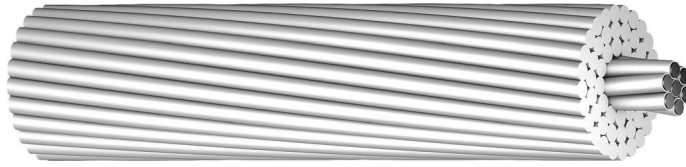
NOMINAL	AREA			STRANDING AND WIRE DIAMETER		APPROX. OVERALL DIAMETER	WEIGHT			NOMINAL BREAKING LOAD	NOMINAL DC RESISTANCE AT 20 DEG.	STANDARD LENGTH
	ALUM.	STEEL	TOTAL	ALUMINIUM	STEEL		ALUM.	STEEL	TOTAL			
AWGorMCM	(MM2)	(MM2)	(MM2)	(MM)	(MM)	(MM)	(KG/KM)	(KG/KM)	(KG/KM)	(KN)	(OHM/KM)	(M+/-5%)
6	13.29	2.19	15.48	6/1.68	1/1.68	5.04	37	17	54	5.24	2.1586	3000
4	21.16	3.55	24.71	6/2.12	1/2.12	6.36	58	27	85	8.32	1.3557	3000
4	21.16	5.35	26.51	7/1.96	1/2.61	6.53	58	42	100	10.53	1.3557	3000
2	33.61	5.61	39.22	6/2.67	1/2.67	8.01	92	44	136	12.70	0.8535	3000
2	33.61	8.52	42.13	7/2.47	1/3.30	8.24	92	67	159	16.11	0.8535	2500
1	42.39	7.10	49.49	6/3.00	1/3.00	9.00	116	55	171	15.85	0.6767	2500
1/0	53.48	8.90	62.38	6/3.37	1/3.37	10.11	147	69	216	19.32	0.5364	2000
2/0	67.42	11.23	78.65	6/3.78	1/3.78	11.34	185	88	273	23.62	0.4255	3000
3/0	85.03	14.19	99.22	6/4.25	1/4.25	12.75	233	110	343	29.41	0.3373	2500
4/0	107.23	17.87	125.10	6/4.77	1/4.77	14.31	294	139	433	37.06	0.2675	2000
266.8	135.16	7.48	142.64	18/3.09	1/3.09	15.45	373	58	431	30.27	0.2133	3500
266.8	135.16	22.00	157.16	26/2.57	7/2.00	16.28	374	172	546	50.29	0.2143	2500
300	152.00	24.71	176.71	26/2.73	7/2.12	17.28	421	193	614	56.52	0.1906	3000
336.4	170.45	9.48	179.93	18/3.47	1/3.47	17.35	470	74	544	38.23	0.1691	2000
336.4	170.45	27.81	198.26	26/2.89	7/2.25	18.31	472	217	689	62.71	0.1699	2500
336.4	170.45	39.81	210.26	30/2.69	7/2.69	18.83	473	311	784	77.27	0.1704	3000
397.5	201.42	11.16	212.58	18/3.77	1/3.77	18.85	555	87	642	43.99	0.1431	2500
397.5	201.42	26.13	227.55	24/3.27	7/2.18	19.61	558	204	762	64.69	0.1438	2000
397.5	201.42	32.77	234.19	26/3.14	7/2.44	19.88	558	256	814	72.11	0.1438	2500
397.5	201.42	46.97	248.39	30/2.92	7/2.92	20.44	560	367	927	88.69	0.1442	2500
477	241.68	13.42	255.10	18/4.14	1/4.14	20.70	666	105	771	52.16	0.1193	2000
477	241.68	31.29	272.97	24/3.58	7/2.39	21.49	670	245	915	76.66	0.1199	3000

- The above data is approximate and subjected to manufacturing tolerance.



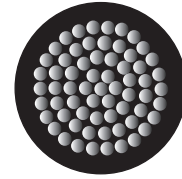
NOMINAL	AREA			STRANDING AND WIRE DIAMETER		APPROX. OVERALL DIAMETER	WEIGHT			NOMINAL BREAKING LOAD	NOMINAL DC RESISTANCE AT 20 DEG.	STANDARD LENGTH
	ALUM.	STEEL	TOTAL	ALUMINIUM	STEEL		ALUM.	STEEL	TOTAL			
AWGorMCM	(MM <sup>2</sup> )	(MM <sup>2</sup> )	(MM <sup>2</sup> )	(MM)	(MM)	(MM)	(KG/KM)	(KG/KM)	(KG/KM)	(KN)	(OHM/KM)	(M+/-5%)
477	241.68	39.42	281.10	26/3.44	7/2.67	21.79	670	308	978	86.65	0.1199	2000
477	241.68	56.39	298.07	30/3.20	7/3.20	22.40	671	441	1112	105.34	0.1201	2000
556.5	282.00	15.68	297.68	18/4.47	1/4.47	22.35	777	122	899	60.88	0.1022	2000
556.5	282.00	36.58	318.58	24/3.87	7/2.58	23.22	781	286	1067	88.22	0.1027	3000
556.5	282.00	45.94	327.94	26/3.72	7/2.89	23.55	781	359	1140	101.03	0.1027	3000
556.5	282.00	65.81	347.81	30/3.46	7/3.46	24.21	783	515	1298	122.92	0.1030	3500
605	306.58	39.74	346.32	24/4.03	7/2.69	24.20	849	311	1160	95.88	0.0945	3000
605	306.58	49.94	356.52	26/3.87	7/3.01	24.51	850	390	1240	108.14	0.0945	3000
605	306.58	71.55	378.13	30/3.61	7/3.61	25.25	851	560	1411	128.84	0.0947	3000
605	306.58	69.87	376.45	30/3.61	19/2.16	25.24	851	548	1399	133.59	0.0947	2000
636	322.26	17.90	340.16	18/4.78	1/4.78	23.88	889	139	1028	69.55	0.08945	2000
636	322.26	41.81	364.07	24/4.14	7/2.76	24.84	893	326	1219	100.83	0.08989	2500
636	322.26	52.45	374.71	26/3.97	7/3.09	25.15	893	409	1302	111.80	0.08989	3000
636	322.26	75.22	397.48	30/3.70	7/3.70	25.88	895	589	1484	135.44	0.09011	3000
636	322.26	73.55	395.81	30/3.70	19/2.22	25.90	894	576	1470	140.30	0.09011	3000
636	322.26	8.96	331.22	36/3.38	1/3.38	23.62	888	70	958	60.52	0.08945	2000
666.6	337.74	43.81	381.55	24/4.23	7/2.82	25.40	936	342	1278	105.66	0.08577	2500
666.6	337.74	55.03	392.77	26/4.07	7/3.16	25.76	936	429	1365	117.33	0.08577	2500
715.5	362.58	46.97	409.55	24/4.39	7/2.92	26.31	1005	367	1372	113.35	0.07989	2000
715.5	362.58	59.03	421.61	26/4.21	7/3.28	26.68	1005	461	1466	125.91	0.07989	2500

- The above data is approximate and subjected to manufacturing tolerance.



NOMINAL	AREA			STRANDING AND WIRE DIAMETER		APPROX. OVERALL DIAMETER	WEIGHT			NOMINAL BREAKING LOAD	NOMINAL DC RESISTANCE AT 20 DEG.	STANDARD LENGTH
	ALUM.	STEEL	TOTAL	ALUM.	STEEL		ALUM.	STEEL	TOTAL			
	(MM <sup>2</sup> )	(MM <sup>2</sup> )	(MM <sup>2</sup> )	(MM)	(MM)		(KG/KM)	(KG/KM)	(KG/KM)			
AWGorMCM	(MM <sup>2</sup> )	(MM <sup>2</sup> )	(MM <sup>2</sup> )	(MM)	(MM)	(MM)	(KG/KM)	(KG/KM)	(KG/KM)	(KN)	(OHM/KM)	(M+/-5%)
715.5	362.58	82.58	445.16	30/3.92	19/2.35	27.43	1006	647	1653	153.94	0.08009	2000
795	402.84	27.87	430.71	45/3.38	7/2.25	27.03	1116	217	1333	97.37	0.07191	2500
795	402.84	52.19	455.03	54/3.08	7/3.08	27.72	1116	408	1524	124.45	0.07191	3000
795	402.84	52.19	455.03	24/4.62	7/3.08	27.74	1116	408	1524	123.94	0.07191	2000
795	402.84	65.51	468.45	26/4.44	7/3.45	28.11	1116	512	1628	139.92	0.07191	2000
795	402.84	11.16	414	36/3.77	1/3.77	26.41	1110	88	1198	74.34	0.07156	3000
795	402.84	91.87	484.71	30/4.14	19/2.48	28.96	1119	719	1838	171.18	0.07208	2500
900	456.06	31.54	487.60	45/3.59	7/2.40	28.73	1263	247	1510	108.96	0.06351	2000
900	456.06	59.10	515.16	54/3.28	7/3.28	29.52	1263	461	1724	140.95	0.06351	2000
954	483.42	33.42	516.84	45/3.70	7/2.47	29.61	1339	262	1601	115.63	0.05992	2000
954	483.42	13.42	496.84	36/4.14	1/4.14	28.95	1333	105	1438	87.66	0.05962	2500
954	483.42	62.65	546.07	54/3.38	7/3.38	30.42	1339	490	1829	149.36	0.05992	2500
1033.5	523.68	36.19	559.87	45/3.85	7/2.57	30.81	1451	283	1734	123.10	0.05531	2000
1033.5	523.68	14.51	538.19	36/4.30	1/4.30	30.12	1443	113	1556	94.93	0.05504	2000
1033.5	523.68	67.87	591.55	54/3.52	7/3.52	31.68	1451	530	1981	161.80	0.05531	2000
1113	563.93	39.03	602.96	45/4.00	7/2.66	31.98	1563	385	1868	132.63	0.05136	2500
1113	563.93	71.55	635.48	54/3.65	19/2.19	32.85	1570	580	2130	174.41	0.05161	2000
1192.5	604.26	41.55	645.81	45/4.14	7/2.76	33.12	1674	327	2001	141.79	0.04793	2500
1192.5	604.26	76.58	680.84	54/3.77	19/2.27	33.97	1682	600	2282	186.38	0.04817	2000
1272	644.51	44.52	689.03	45/4.27	7/2.85	34.17	1785	349	2134	151.48	0.04494	2500

- The above data is approximate and subjected to manufacturing tolerance.



Component  
1. Aluminium Wire  
2. Cross-linked Polyethylene Compound

NOMINAL	AREA			STRANDING AND WIRE DIAMETER		APPROX. OVERALL DIAMETER	WEIGHT			NOMINAL BREAKING LOAD (KN)	NOMINAL DC RESISTANCE AT 20 DEG. (OHM/KM)	STANDARD LENGTH (M+/-5%)
	ALUM.	STEEL	TOTAL	ALUM.	STEEL		ALUM.	STEEL	TOTAL			
AWGorMCM	(MM2)	(MM2)	(MM2)	(MM)	(MM)	(MM)	(KG/KM)	(KG/KM)	(KG/KM)	(KN)	(OHM/KM)	(M+/-5%)
1272	644.51	81.63	726.19	54/3.90	19/2.34	35.10	1795	638	2433	194.00	0.04516	2000
1272	644.51	17.87	662.38	36/4.78	1/4.78	33.42	1777	140	1917	115.85	0.04472	2000
1351.5	684.84	47.10	731.94	45/4.40	7/2.92	35.16	1898	368	2266	160.70	0.04230	2000
1351.5	684.84	88.71	771.55	54/4.02	19/2.41	36.17	1906	679	2585	206.05	0.04250	2000
1431	725.10	50.32	775.42	45/4.53	7/3.02	36.24	2009	393	2402	170.71	0.03994	2000
1431	725.10	91.87	816.97	54/4.14	19/2.48	37.24	2019	719	2738	218.24	0.04013	2500
1510.5	765.35	52.90	818.25	45/4.65	7/3.10	37.20	2120	414	2534	177.89	0.03784	2000
1510.5	765.35	96.84	862.19	54/4.25	19/2.55	38.25	2131	759	2890	230.20	0.03802	2000
1590	805.68	55.48	861.16	45/4.77	7/3.18	38.16	2232	435	2667	187.02	0.03595	2000
1590	805.68	102.13	907.81	54/4.36	19/2.62	39.26	2243	799	3042	242.55	0.03613	2000
<b>HIGH STRENGTH STRANDINGS</b>												
80	40.52	14.13	54.65	8/2.54	1/4.24	9.32	112	110	222	23.60	0.7115	2500
101.8	51.61	30.06	81.67	12/2.34	7/2.34	11.71	143	235	378	41.75	0.5613	2000
110.8	56.13	32.77	88.90	12/2.44	7/2.44	12.22	156	256	412	51.25	0.5161	2000
134.6	68.19	39.81	108.00	12/2.69	7/2.69	13.46	189	311	500	61.70	0.4248	2000
159	80.58	46.97	127.55	12/2.92	7/2.92	14.63	223	367	590	72.55	0.3595	2000
176.9	89.48	52.19	141.67	12/3.08	7/3.08	15.42	248	409	657	78.50	0.3237	2000
190.8	96.71	56.39	153.10	12/3.20	7/3.20	16.03	268	441	709	84.80	0.2995	3000
203.2	102.97	91.87	194.84	16/2.86	19/2.48	18.14	285	722	1007	128.80	0.2813	2500
211.8	107.10	62.45	169.55	12/3.37	7/3.37	16.84	297	488	785	93.90	0.2705	3000

- The above data is approximate and subjected to manufacturing tolerance.



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