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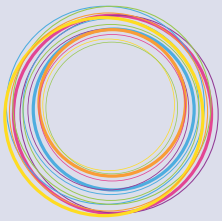

Jeddah cables COMPANY®
A Company of Energya Cables

Low Voltage Cables

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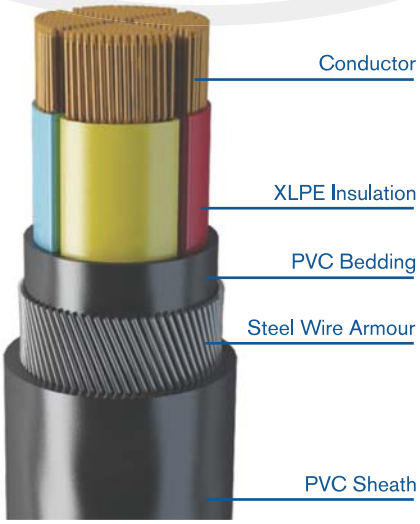
Introduction

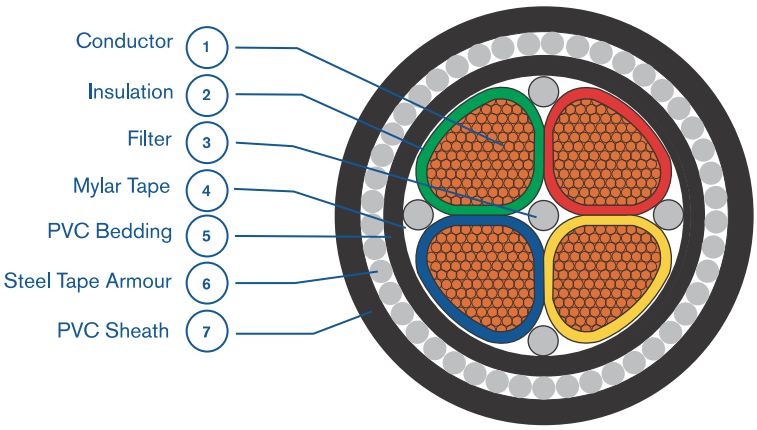
Low Voltage Power Cables are used to transmit electrical energy from one location to another. Low Voltage Power Cables are usually employed in the distribution process of electricity to various loads such as house holds.

In this catalogue, we cover all technical aspects of Jeddah Cable Company Low Voltage Power Cables. We included design considerations such as type of insulation material (i.e. PVC and XLPE), insulation thickness, type of armour ,armour diamensions, sheath material and sheath thickness. Cables Electrical Parameters such as Conductor DC Resistance and current ratings are included as well.

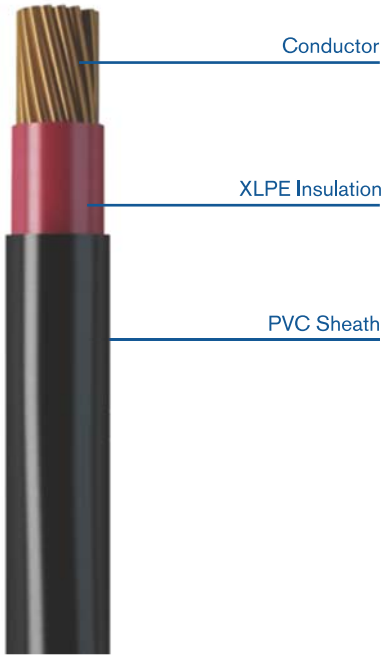
Jeddah Cable Company Low Voltage Power Cables are manufactured based on international standards such as IEC 60502-1, BS 5467and BS 6346. We are also capable of manufacturing according to client requirements and needs.

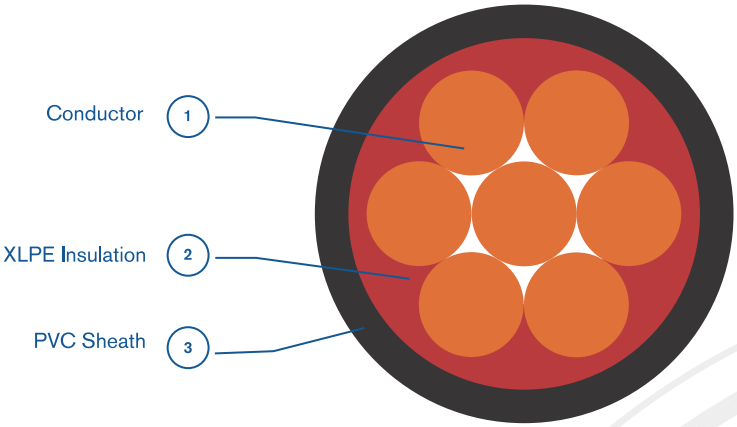
Low Voltage Cables





Sector Shape 4 Cores





Round Shape 1 Core

Low Voltage Power Cables - Design and Testing

Low voltage power cables are normally either single core or multi-core (i.e three-core or four-core).

- Conductor Design

  Conductors are made of copper or aluminum . They are circular stranded, compacted or non-compacted, or shaped (i.e. sectors). Our conductor design is in compliance with the requirements of IEC 60228 and BS 6360 specifications.

- Insulation

  - XLPE material, and complies with the requirements of IEC 60502-1 and BS 5467 Specifications.
  - PVC material, and complies with the requirements of IEC 60500-1, BS 6346, and SASO 1694 specifications.

Assembly

All cable cores are laid-up together with usage of non-hygroscopic filler material and are temperature compatible with all different cable layers such as insulation, bedding, and sheath.

Armoring

Armoring material can be either Aluminum for single core cables or Steel for multi-core cables. Armor can be either wires or tape .Our cable armoring is in compliance with the requirements of IEC 60502-1, BS 5467, and BS 6346 Specifications.

Ourter Sheath / Jacket

Our cables sheathes are made of extruded layers of PVC or PE material and is in compliance with the requirements of IEC 60502-1 and BS 7655 Specifications . We are also capable of providing cable sheaths with special requirements to be:

- Termite retardant
- Oil & Gasoline retardant
- Ozone / acid / alkali retardant
- Flame retardant and in compliance with requirements of IEC 60332-1 and IEC 61034-2
- Low Smoke Halogen Free and in compliance with requirements of BS 7211 and BS 6724.

Testing of Low Voltage Power Cables

We Jeddah Cable Company are capable of performing all standard routine tests and sample tests that are normally carried out in accordance to IEC 60502 standards. We have all necessary equipment for such tests such as high voltage labs and special oven. We are also capable of performing tests in accordance with international or national requirements as agreed upon with our customers.

- Routine Tests
  - Voltage Test
  - Measurement of the electrical resistance of conductors
- Sample Tests
  - Conductor examination
  - Check of dimensions
  - Hot set test for XLPE insulations

General Information

Selecting A Power Cables

The following factors are important when selecting a suitable cable construction which is required to transport electrical energy from the power station to the consumer:

- Maximum operating voltage
- Insulation level
- Frequency
- Load to be carried
- Magnitude and duration of possible overload
- Magnitude and duration of short-circuit current
- Voltage drop
- Length of line
- Mode of installation
  * underground (direct or in ducts)
  * in air
- Chemical and physical properties of soil
- Max. and min. ambient air temperature and soil temperatures
- Specification and requirements to be met

Voltage

The standard rated voltage of a cable is denoted by U_O/U (Um), i.e. "0.6/1 (1.2)" where:
U_O: is the rated power-frequency voltage between conductor and earth
U: is the rated power-frequency voltage between conductors.
Um: is the maximum continuously permissible operating voltage of a cable at any time or in any part of the network.

Standards

The cables described in this catalogue are all standard types, and their performance has been proved in operation. Construction and tests are in accordance with the recommendation of IEC publications where applicable.
Power cables in accrdance to other standards (e.g. BS, VDE, NEMA) can be manufactured upon customer's request.

Variation in Production and Delivery Options

- The provided data are approximate
- Delivery length tolerance is ± 5% and subject to manufacturing tolerance
- Other sizes are available upon request.

Jacket Marking

Standard embossed outer jacket marking consisting of:
1 - Name of manufacturer
2 - Type designation, size of conductor, rated voltage and standard.
3 - Continuous length marking every meter.
4 - Year of manufacture.

Laying Information

Minimum Bending Radius During Installation

During laying, the bending radius should not be smaller than values given below.
The radius depends on the outer diameter (Do) of the cable.

PVC and XLPE insulated Cables up to 3.6 kV

Conductor	Construction	Outer diameter (mm)	Min. Radius
Stranded aluminum or copper	Armoured or Unarmoured	Any	8 Do

Maximum Tensile Forces During laying

Means of Pulling	Type of Cable	Formula	Factor
With pulling head attached to the conductors	All types of cables	$P = \sigma . A$	$\sigma = 50\ N/mm^2$ (Copper conductor) $\sigma = 30\ N/mm^2$ (Al conductor)
with pulling stocking	Un-armoured cables	$P = \sigma . A$	$\sigma = 50\ N/mm^2$ (Copper conductor) $\sigma = 30\ N/mm^2$ (Al conductor)
	Armoured cables	$P = k . d^2$	$k = 9N/mm$

P = Pull in N
A = Total cross sectional area in mm^2 of all conductors
d = Outside diameter of the cable in mm
σ = Permissible tensile stress of conductor in N/mm^2
k = Emperically derived factor in N/mm^2

Electrical Parameters Of The Cables

DC Resistance of Conductor

The Maximum DC resistance values of conductors at 20°C are as per "IEC 60228" standard.

DC resistance per unit length of the conductor at other conductor temperature is given by:

$$R = R_o [1 + \alpha_{20°C} (t - 20°C)]$$

Where :

R = DC resistance at temperature t °CΩ/km

Ro = D.C resistance at temperature 20°C

Ω/km (given in the relative tables for each type of cable)

t = Conductor temperature °C

$\alpha_{20°C}$ = Temperature coefficient at 20°C 1/°C

For copper conductor $\alpha_{20°C} = 0.00393$

For aluminum conductor $\alpha_{20°C} = 0.00403$

A.C. Resistance of Conductor

The AC Resistance per unit length of the conductor (effective resistance) at its maximum operating temperature is made up of the DC resistance at this temperature and the extra resistance which takes into account additional losses caused by the current displacement in the conductor (skin effect, proximity effect). The AC resistance is given in the relative tables for each type of cable.

Inductance

The values of the inductance for both multi cores and three single core cables have been calculated based on the following equation

L = K+0.2 In (2S /d) (mH/km)

Where:

K = a constant relating to the conductor formation (mH/km).

d = the conductor diameter (mm)

S = axial spacing between conductors for cables in trefoil formation (mm)

= 1.26 x axial spacing between conductors for cables in flat formation (mm)

The values for inductance of single core cables has been calculated based on one cable diameter between cables in flat formation.

Operation Capacitance

The values of operating capacitance for cables has been calculated based on the following presump-

$$C = \frac{\varepsilon r}{18 \text{ In } (D / d)} (\mu f/km)$$

Where :

εr = Relative permativity of insulation

D = External diameter of insulation (mm)

d = Conductor diameter (mm)

Operation Temperature for XLPE Insulated Cables

90°C for continuous normal operation

105°C for emergency overload conditions.

250°C for short circuit conditions .

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:

1- Single phase system

$V_d = 2(R \cos\phi + X \sin\phi)$ (Volt/amp/meter)

2-Three phase system

$V_d = \sqrt{3}(R \cos\phi + X \sin\phi)$ (Volt/amp/meter)

Where:

V_d = Voltage drop (V/A.m)

R = AC resistance of conductor at a maximum conductor temperature (Ω/km)

X = Inductive reactance of cable (Ω/km)

$\cos\phi$ = power factor of load

* Voltage drop data for L.V cables are tabulated in tables 16 to 23.

Cable Short Circuit Capacity

The permissible short-circuit as presented in tables 12 to 15 are calculated in accordance with IEC 724, which are based on the following conditions:

1- Short circuit starts from the maximum operating temperature.

2- Maximum temperature during short circuit XLPE = 250 °C, PVC =160°C

3- Maximum short circuit current duration is 5 seconds.

The short - circuit current (I) shall be calculated from the formula.

$$I_2 = \frac{K^2 \times S^2}{T} \times \ln\left[\frac{\theta_1 + ß}{\theta_2 + ß}\right]$$

Where:

I = Short circuit current (A)

T = Duration of short circuit (Second)

K = Constant for the material of the conductor

S = Area of conductor (mm^2)

θ_1 = Final temperature (°C)

θ_2 = Initial temperature (°C)

ß = Reciprocal of the temperature coefficient of resistance ( ) of the conductor.

Current Ratings

Recommendations For Currnet Ratings

The current rating of power cables is defined by the maximum intensity of current (in amperes), which can flow continuously through the cable, under permanent loading conditions without any risk of damaging the insulation or deterioration of its electrical properties.

- Current carrying capacities have been calculated in accordance with IEC 60287 (calculation of the continous current rating of cables)
- The values given in the tables are valid for one circuit in three phase system under conditions specified. For grouping cables rating factors must be used.

- It is to be observed that the current carrying capacities presented in JCC technical data sheets are intended as a guide to assist operating engineers in selecting cables for safety and reliability.

- Basic assumptions and conditions of installation:
* Ambient ground temperature: 20°C
* Ambient air temperature : 30°C
* Depth of cable burial : 1.0 m
* Thermal resistivity of soil : 120°C. cm/ W
- Cables in air are assumed to be proteced from direct solar radiation.

- Single core cables are installed as indicated in the technical information tables . Spacing between cables in flat fromation is assumed to be one cable diameter.
- For three and four core cables, it is usual to assume the same current carrying capacity for four cores cables as for three core cables. Our calculated values are based actually on three core cables. These values are suitable with enough accuracy also for four cores cables in most cases.

- The inner diameter of ducts has been assumed to be at least 1.5 times the diamter of the cables.

To obtain the maximum current carrying capacity of a cable operating at different conditions from the standards, you have to mulitply the values of the current given in the technical information for the corresponding cable by the rating factors mentioned in the tables from 1 to 11, as follows:

Ia = Kt. Is in amperes
where:
Ia : Current rating at actual operating conditions (amperes)
Is : Current rating at standard operating condtions (amperes).
Kt : Rating factor given in the tables 1 to 11. it has to be noted that Kt is the total rating factor : Kt = K1 K2 ...Kn
You may have a multiplication of so many partial rating factors, as many as the difference of laying and operating conditions from standard conditions.

Table 1
RATING FACTORS K FOR VARIATION IN GROUND TEMPERATURE

GROUND TEMPERATURE °C	20	25	30	35	40	45	50	55
PVC cables rated 70°C	1.00	0.95	0.90	0.84	0.78	0.71	0.63	0.54
PVC cables rated 85°C	1.00	0.96	0.92	0.87	0.83	0.78	0.73	0.67
XLPE cables rated 90°C	1.00	0.96	0.92	0.88	0.84	0.79	0.75	0.70

Table 2
RATING FACTORS K FOR VARIATION IN AIR TEMPERATURE

AIR TEMPERATURE °C	25	30	35	40	45	50	55
PVC cables rated 70°C	1.07	1.00	0.93	0.87	0.79	0.70	0.61
PVC cables rated 85°C	1.04	1.00	0.95	0.90	0.85	0.80	0.74
XLPE cables rated 90°C	1.04	1.00	0.96	0.91	0.87	0.82	0.76

Table 3
RATING FACTORS K FOR VARIATION IN GROUND DEPTH

DEPTH OF LAYING (m)	0.6	0.7	0.8	0.9	1.0	1.1	1.2
k	1.05	1.03	1.02	1.01	1.0	0.99	0.98

Table 4
RATING FACTORS K FOR VARIATION IN SOIL RESISTIVITY

SOIL RESISTIVITY (°C. cm/W)	80	90	100	120	150	200	250
k	1.17	1.12	1.07	1.0	0.91	0.80	0.73

Table 5
RATING FACTORS K FOR VARIATION OF MAX. OPERATING TEMPERATURES FOR PVC INSULATING CABLES

PVC RATED TEMPERATURE	70	85	105
RATING FACTOR	0.84	1.00	1.18

Table 6

TREFOIL OR FLAT FORMATION DERATING FACTORS FOR THREE SINGLE CORE CABLES LAID DIRECT IN GROUND

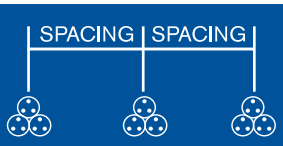
NUMBER OF CIRCUITS	SPACING SPACING  TREFOIL FORMATION				SPACING SPACING  TREFOIL FORMATION	
	TOUCHING		SPACING = 0.15 M		SPACING = 0.30 M	
NR	TREFOIL	FLAT	TREFOIL	FLAT	TREFOIL	FLAT
2	0.77	0.80	0.82	0.85	0.88	0.91
3	0.66	0.69	0.73	0.76	0.80	0.83
4	0.60	0.63	0.68	0.71	0.74	0.77
5	0.56	0.59	0.64	0.67	0.72	0.75
6	0.53	0.57	0.61	0.64	0.70	0.73

Table 7

TREFOIL OR FLAT FORMATION DERATING FACTORS FOR MULTI-CORE CABLES LAID DIRECT IN GROUND

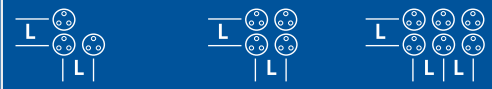
NUMBER OF CABLES	 TREFOIL FORMATION				 FLAT FORMATION	
	TOUCHING		SPACING = 0.15 M		SPACING = 0.30 M	
NR	TREFOIL	FLAT	TREFOIL	FLAT	TREFOIL	FLAT
2	0.81	0.81	0.87	0.87	0.91	0.91
3	0.69	0.70	0.76	0.78	0.82	0.84
4	0.62	0.63	0.72	0.74	0.77	0.81
5	0.58	0.60	0.66	0.70	0.73	0.78
6	0.54	0.56	0.63	0.67	0.70	0.76

Table 8

FLAT FORMATION DERATING FACTORS FOR THREE SINGLE CORE CABLES LAID IN FREE AIR

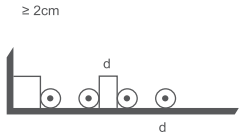
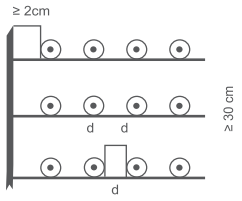
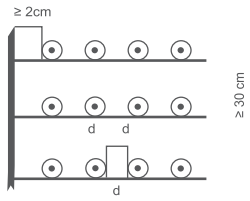
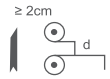
Clearance = Cable diameter (d)		Number of circuits			
Clearance from the wall 2 cm		1	2	3	
Laid on the Floor		0.92	0.89	0.88	
Laid cables troughs (circulation of air is restricted)	Number of troughs 1	0.92	0.89	0.88	
	2	0.87	0.84	0.83	
	3	0.84	0.82	0.81	
	6	0.82	0.80	0.79	
Laid on cable racks	Number of racks 1	1.00	0.97	0.96	
	2	0.97	0.94	0.93	
	3	0.96	0.93	0.92	
	6	0.94	0.91	0.90	
Arranged near the wall		0.94	0.91	0.89	
Arranged on the wall		0.89	0.86	0.84	

Table 9

TREFOIL TOUCHING FORMATION DERATING FACTORS FOR THREE SINGLE CORE CABLES IN FREE AIR

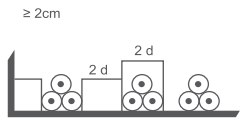
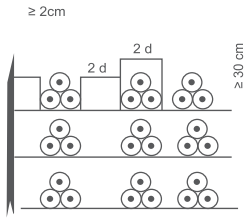
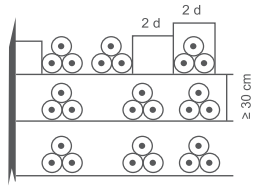
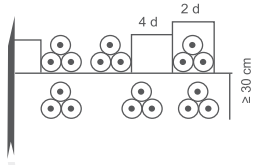
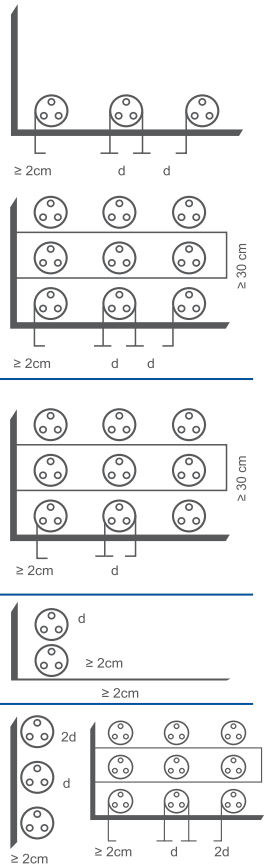
Clearance = 2 (d)		Number of circuits			
Clearance from the wall 2 cm		1	2	3	
Laid on the Floor		0.95	0.90	0.88	
Laid cables troughs (circulation of air is restricted)	Number of troughs 1	0.95	0.90	0.88	
	2	0.80	0.85	0.83	
	3	0.88	0.83	0.81	
	6	0.86	0.81	0.79	
Laid on cable racks	Number of racks 1	1.00	0.97	0.96	
	2	0.97	0.94	0.93	
	3	0.96	0.93	0.92	
	6	0.94	0.91	0.90	
Arrangements for which reduction of the current is not necessary					

Table 10

HORIZONTAL OR VERTICAL FORMATION DERATING FACTORS FOR MULTI-CORE CABLES LAID IN FREE AIR

Clearance = Cable diameter (d) Clearance from the wall ≥ 2 cm		Number of Cables 1	2	3	6	9
Laid on the Floor		0.95	0.90	0.88	0.85	0.84
	Number of troughs					
Laid cables	1	0.95	0.90	0.88	0.85	0.84
troughs	2	0.90	0.85	0.83	0.81	0.80
(circulation of air	3	0.88	0.83	0.81	0.79	0.78
is restricted)	6	0.86	0.81	0.79	0.77	0.76
	Number of racks					
Laid cables						
on cable racks	1	1.00	0.98	0.96	0.93	0.92
	2	1.00	0.95	0.93	0.90	0.89
	3	1.00	0.94	0.92	0.89	0.88
	6	1.00	0.93	0.90	0.87	0.86
Arranged near the wall		1.00	0.93	0.90	0.87	0.86



Arrangements for which reduction of the current is not necessary	Clearance from the wall	Clearance between cables
	≥ 2 cm	≥ 2d

Table 11

DERATING FACTORS FOR MULTI-CORE CABLES TOUCHING AND IN CONTACT WITH THE WALL IN FREE AIR

Clearance touching troughs and contact with wall		Number of Cables 1	2	3	6	9
Laid on the ground		0.90	0.84	0.80	0.75	0.73
	Number of troughs					
Laid cables	1	0.95	0.84	0.80	0.75	0.73
troughs	2	0.95	0.80	0.76	0.71	0.69
(circulation of air	3	0.95	0.78	0.74	0.70	0.68
is restricted)	6	0.95	0.76	0.72	0.68	0.66
	Number of racks					
	1	0.95	0.84	0.80	0.75	0.73
	2	0.95	0.80	0.76	0.71	0.69
Laid	3	0.95	0.78	0.74	0.70	0.68
on cable racks	6	0.95	0.76	0.72	0.68	0.66
Arranged near the wall		0.95	0.78	0.73	0.68	0.66

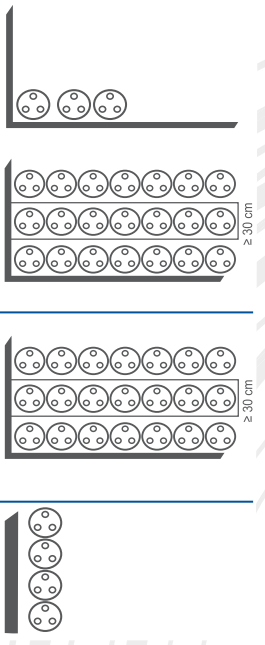


Table 12

SHORT CIRCUIT CURRENT FOR COPPER CONDUCTORS - XLPE INSULATED (KA) at (90/250)°C

Area (mm^2)	TIME (s)									
	0.1	0.2	0.3	0.4	0.5	1	2	3	4	5
16	7.24	5.12	4.18	3.62	3.24	2.29	1.62	1.32	1.14	1.02
25	11.31	8.00	6.53	5.66	5.06	3.58	2.53	2.07	1.79	1.60
35	15.84	11.20	9.14	7.92	7.08	5.01	3.54	2.89	2.50	2.24
50	22.62	16.00	13.06	11.31	10.11	7.15	5.06	4.13	3.58	3.20
70	31.67	22.40	18.29	15.84	14.16	10.02	7.08	5.78	5.01	4.48
95	42.98	30.39	24.82	21.49	19.22	13.59	9.61	7.85	6.80	6.08
120	54.30	38.39	31.34	27.15	24.28	17.17	12.14	9.91	8.59	7.68
150	67.87	47.99	39.19	33.94	30.35	21.46	15.18	12.39	10.73	9.60
185	83.71	59.19	48.33	41.85	37.42	26.47	18.72	15.28	13.24	11.94
240	108.59	76.79	62.70	54.30	48.56	34.34	24.28	19.83	17.17	15.36
300	135.74	95.98	78.37	67.87	60.71	42.93	30.35	24.78	21.46	19.20

Table 13

SHORT CIRCUIT CURRENT FOR ALUMINIUM CONDUCTORS - XLPE INSULATED (KA) at (90/250)°C

Area (mm^2)	TIME (s)									
	0.1	0.2	0.3	0.4	0.5	1	2	3	4	5
16	4.78	3.38	2.76	2.39	2.14	1.51	1.07	0.87	0.76	0.68
25	7.47	5.28	4.31	3.73	3.34	2.36	1.67	1.36	1.18	1.06
35	10.46	7.40	6.04	5.23	4.68	3.31	2.34	1.91	1.65	1.48
50	14.94	10.56	8.63	7.47	6.68	4.72	3.34	2.73	2.36	2.11
70	20.91	14.79	12.08	10.46	9.35	6.61	4.68	3.82	3.31	2.96
95	28.38	20.07	16.39	14.19	12.69	8.98	6.35	5.18	4.49	4.01
120	35.85	25.35	20.70	17.93	16.03	11.34	8.02	6.55	5.67	5.07
150	44.82	31.69	25.88	22.41	20.04	14.17	10.02	8.18	7.09	6.34
185	55.28	39.09	31.91	27.64	24.72	17.48	12.36	10.09	8.74	7.82
240	71.71	50.71	41.40	35.85	32.07	22.68	16.03	13.09	11.34	10.14
300	89.64	63.38	51.75	44.82	40.09	28.35	20.04	16.37	14.17	12.68

Table 14

SHORT CIRCUIT CURRENT FOR COPPER CONDUCTORS - PVC INSULATED (TYPE 5), AS PER TABLE 1 OF BS 6746 (KA) at (85/160)°C

Area (mm^2)	TIME (s)									
	0.1	0.2	0.3	0.4	0.5	1	2	3	4	5
16	5.25	3.71	3.03	2.63	2.35	1.66	1.17	0.96	0.83	0.74
25	8.20	5.80	4.74	4.10	3.67	2.59	1.83	1.50	1.30	1.16
35	11.49	8.12	6.63	5.74	5.14	3.63	2.57	2.10	1.82	1.62
50	16.41	11.60	9.47	8.20	7.34	5.19	3.67	3.00	2.59	2.32
70	22.97	16.24	13.26	11.49	10.27	7.26	5.14	4.19	3.63	3.25
95	31.18	22.05	18.00	15.59	13.94	9.86	6.97	5.69	4.93	4.41
120	39.38	27.85	22.74	19.69	17.61	12.45	8.81	7.19	6.23	5.57
150	49.23	34.81	28.42	24.61	22.01	15.57	11.01	8.99	7.78	6.96
185	60.71	42.93	35.05	30.36	27.15	19.20	13.58	11.08	9.60	8.59
240	78.76	55.69	45.47	39.38	35.22	24.91	17.61	14.38	12.45	11.14
300	98.45	69.62	56.84	49.23	44.03	31.13	22.01	17.97	15.57	13.92

Table 15

SHORT CIRCUIT CURRENT FOR ALUMINUM CONDUCTORS - PVC INSULATED (TYPE 5) as per TABLE 1 OF BS 6746 (KA) at (85/165) °C

Area (mm^2)	TIME (s)									
	0.1	0.2	0.3	0.4	0.5	1	2	3	4	5
16	3.47	2.45	2.00	1.74	1.55	1.10	0.78	0.63	0.55	0.49
25	5.42	3.83	3.13	2.71	2.43	1.71	1.21	0.99	0.86	0.77
35	7.59	5.37	4.38	3.80	3.40	2.40	1.70	1.39	1.20	1.07
50	10.85	7.67	6.26	5.42	4.85	3.43	2.43	1.98	1.71	1.53
70	15.18	10.74	8.77	7.59	6.79	4.80	3.40	2.77	2.40	2.15
95	20.61	14.57	11.90	10.30	9.22	6.52	4.61	3.76	3.26	2.91
120	26.03	18.41	15.03	13.01	11.64	8.23	5.82	4.75	4.12	3.68
150	32.54	23.01	18.79	16.27	14.55	10.29	7.28	5.94	5.14	4.60
185	40.13	28.38	23.17	20.06	17.95	12.69	8.97	7.33	6.34	5.68
240	52.06	36.81	30.06	26.03	23.28	16.46	11.64	9.50	8.23	7.36
300	65.07	46.01	37.57	32.54	29.10	20.58	14.55	11.88	10.29	9.20

Table 16

0.6/1 KV Cables
Single Core Unarmoured Cables, With Stranded Circular Copper Conductor, XLPE Insulated and PVC Sheathed

Cross Section Area (mm^2)	D.C. Resistance (Ω/km)	A.C. Resistance (Ω/km)		Voltage Drop (mV/Amp/meter)	
					
4	4.61	5.878	5.878	10.22	10.146
6	3.08	3.927	3.927	6.894	6.826
10	1.83	2.333	2.333	4.170	4.097
16	1.15	1.466	1.466	2.687	2.614
25	0.727	0.927	0.927	1.766	1.693
35	0524	0.668	0.668	1.321	1.248
50	0.387	0.493	0.494	1.025	0.953
70	0.268	0.342	0.343	0.765	0.693
95	0.193	0.247	0.248	0.272	0.529
120	0.153	0.196	0.197	0.510	0.438
150	0.124	0.159	0.160	0.447	0.376
185	0.0991	0.127	0.129	0.393	0.322
240	0.0754	0.098	0.100	0.342	0.272
300	0.0601	0.078	0.081	0.310	0.241
400	0.0470	0.062	0.066	0.278	0.211
500	0.0366	0.050	0.054	0.256	0.191
630	0.0283	0.040	0.045	0.237	0.173

Table 17

0.6/1 KV Cables
Single Core Unarmoured Cables, With Stranded Circular Aluminum Conductor, XLPE Insulated and PVC Sheathed

Cross Section Area (mm^2)	D.C. Resistance (Ω/km)	A.C. Resistance (Ω/km)		Voltage Drop (mV/Amp/meter)	
					
16	1.91	2.449	2.449	4.361	4.287
25	1.20	1.538	1.538	0.808	2.735
35	0.868	1.113	1.113	2.079	2.006
50	0.641	0.822	0.822	1.590	1.517
70	0.443	0.568	0.568	1.154	1.081
95	0.320	0.410	0.411	0.884	0.081
120	0.253	0.324	0.325	0.734	0.662
150	0.206	0.264	0.265	0.632	0.560
185	0.164	0.211	0.212	0.540	0.469
240	0.125	0.161	0.162	0.452	0.381
300	0.100	0.129	0.131	0.398	0.327
400	0.0778	0.101	0.103	0.349	0.279
500	0.0605	0.079	0.082	0.311	0.242
630	0.0469	0.062	0.066	0.280	0.213

The above data are based on:

- Max. operating temperature : 90 °C
- Power factor : 85
- Rated frequency : 60 Hz
- Distance between cables in flat formation: One cable diameter

Table 18

(0.6/1 KV Cable)
Single Core Unarmoured Cables, With Stranded Circular Copper Conductor, PVC Sheathed Insulated and PVC Sheathed

Cross Section Area (mm^2)	D.C. Resistance (Ω/km)	A.C. Resistance (Ω/km)		Voltage Drop (mV/Amp/meter)	
					
4	4.61	5.787	5.787	10.07	9.996
6	3.08	3.866	3.866	6.794	6.721
10	1.83	2.297	2.297	4.115	4.041
16	1.15	1.433	1.433	2.654	2.581
25	0.727	0.913	0.913	1.746	1.673
35	0524	0.658	0.658	1.307	1.234
50	0.387	0.486	0.486	1.018	0.945
70	0.268	0.337	0.337	0.758	0.686
95	0.193	0.243	0.244	0.597	0.526
120	0.153	0.193	0.194	0.509	0.437
150	0.124	0.156	0.158	0.446	0.375
185	0.0991	0.125	0.127	0.393	0.322
240	0.0754	0.096	0.098	0.341	0.271
300	0.0601	0.077	0.080	0.308	0.239
400	0.0470	0.062	0.065	0.280	0.212
500	0.0366	0.049	0.053	0.257	0.191
630	0.0283	0.039	0.045	0.237	0.173

Table 19

(0.6/1 KV Cables)
Single Core Unarmoured Cables, With Stranded Circular Aluminum Conductor, PVC Insulated and PVC Sheathed

Cross Section Area (mm^2)	D.C. Resistance (Ω/km)	A.C. Resistance (Ω/km)		Voltage Drop (mV/Amp/meter)	
					
16	1.91	2.410	2.410	4.297	4.224
25	1.20	1.514	1.514	0.769	2.695
35	0.868	1.095	1.095	2.051	2.978
50	0.641	0.809	0.809	1.567	1.494
70	0.443	0.559	0.559	1.137	1.064
95	0.320	0.404	0.405	0.872	0.799
120	0.253	0.319	0.320	0.459	0.653
150	0.206	0.260	0.261	0.623	0.551
185	0.164	0.207	0.208	0.532	0.461
240	0.125	0.158	0.160	0.447	0.376
300	0.100	0.127	0.129	0.393	0.322
400	0.0778	0.099	0.102	0.344	0.275
500	0.0605	0.078	0.081	0.307	0.239
630	0.0469	0.062	0.066	0.275	0.208

The above data are based on :
- Max. operating temperature : 90 °C
- Power factor : 0.85
- Rated frequency : 60 Hz
- Distance between cables in flat formation : One cable diameter

Table 20

(0.6/1 KV Cable)
Multcore Cables, With Stranded Copper Conductor, XLPE Insulated and PVC Sheathed

Cross Section Area (mm^2)	D.C. Resistance (Ω/km)	A.C. Resistance (Ω/km)	Voltage Drop (mV/Amp/meter)
1.5	12.1	15.428	22.82
2.5	7.41	9.448	14.01
4.0	4.61	5.878	8.747
6.0	3.08	3.927	5.871
10	1.83	2.333	3.519
16	1.15	1.446	2.239
25	0.727	0.927	1.446
35	0.524	0.669	1.063
50	0.387	0.494	0.809
70	0.268	0.343	0.585
95	0.193	0.248	0.444
120	0.153	0.197	0.368
150	0.124	0.161	0.315
185	0.0991	0.130	0.270
240	0.0754	0.101	0.226
300	0.0601	0.083	0.198
400	0.0470	0.067	0.176
500	0.0366	0.056	0.158

Table 21

(0.6/1 KV Cables)
Multicore Cables, With Stranded Aluminum Conductor, XLPE Insulated and PVC Sheathed

Cross Section Area (mm^2)	D.C. Resistance (Ω/km)	A.C. Resistance (Ω/km)	Voltage Drop (mV/Amp/meter)
16	1.91	2.449	3.686
25	1.20	1.538	2.347
35	0.868	1.113	1.717
50	0.641	0.822	1.292
70	0.443	0.568	0.918
95	0.320	0.411	0.684
120	0.253	0.326	0.557
150	0.206	0.266	0.469
185	0.164	0.212	0.391
240	0.125	0.163	0.317
300	0.100	0.132	0.271
400	0.0778	0.104	0.230
500	0.0605	0.083	0.199

The above data are based on:

- Max. operating temperature : 90 °C
- Power factor : 0.85
- Rated frequency : 60 Hz

Table 22

(0.6/1KV Cable)
Multcore Cables, With Stranded Copper Conductor, PVC Insulated and PVC Sheathed

Cross Section Area (mm^2)	D.C. Resistance (Ω/km)	A.C. Resistance (Ω/km)	Voltage Drop (mV/Amp/ meter)
1.5	12.1	15.191	22.476
2.5	7.41	9.303	13.800
4.0	4.61	5.787	8.624
6.0	3.08	3.867	5.791
10	1.83	2.297	3.474
16	1.15	1.444	2.212
25	0.727	0.913	1.430
35	0.524	0.658	1.053
50	0.387	0.486	0.803
70	0.268	0.337	0.581
95	0.193	0.244	0.443
120	0.153	0.194	0.367
150	0.124	0.158	0.315
185	0.0991	0.128	0.269
240	0.0754	0.099	0.226
300	0.0601	0.081	0.199
400	0.0470	0.066	0.176
500	0.0366	0.055	0.159

Table 23

(0.6/1KV Cable)
Multicore Cables, With Stranded Aluminum Conductor, PVC Insulated and PVC Sheathed

Cross Section Area (mm^2)	D.C. Resistance (Ω/km)	A.C. Resistance (Ω/km)	Voltage Drop (mV/Amp/ meter)
16	1.91	2.410	3.635
25	1.20	1.514	2.315
35	0.868	1.096	1.696
50	0.641	0.809	1.278
70	0.443	0.560	0.908
95	0.320	0.405	0.680
120	0.253	0.321	0.554
150	0.206	0.262	0.466
185	0.164	0.209	0.389
240	0.125	0.161	0.316
300	0.100	0.130	0.271
400	0.0778	0.103	0.230
500	0.0605	0.082	0.199

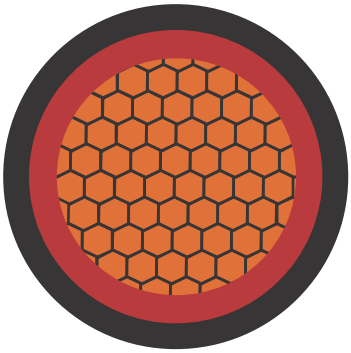
The above data are based on:

- Max. operating temperature : 90 °C
- Power factor : 0.85
- Rated frequency : 60 Hz

Single core cable

For outdoor installations in damp and wet locations

Type : CU/XLPE/PVC
Standard : IEC 60502-1
Rated Voltage : 0.6/1 KV
Conductor : Soft annealed stranded copper wires
Insulation : XLPE compound (or PVC or LSHF)
Jacketing : PVC compound (or LSHF or PE)



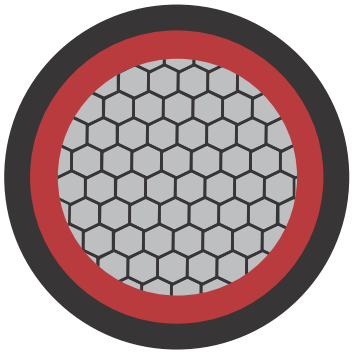
TECHNICAL INFORMATION

Nominal Cross Section	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx overall Diameter	Approx Cable Weight	Max DC Resistance at 20°C	CURRENT RATING					
						Laid in ground			Laid in Free Air		
						⊙⊙⊙	⊙⊙	⊙	⊙	⊙⊙⊙	⊙⊙
NR x mm^2	mm	mm	mm	kg/km	ohm/km	A	A	A	A	A	A
STRANDED COPPER CONDUCTORS											
4	0.7	1.4	6.72	80	4.6100	59	56	43	59	53	44
6	0.7	1.4	7.13	100	3.0810	74	71	57	73	66	59
10	0.7	1.4	8.2	150	1.8300	97	93	74	94	88	76
16	0.7	1.4	9.2	205	1.1500	125	121	95	129	123	105
25	0.9	1.4	11	310	0.7270	163	154	120	159	152	135
35	0.9	1.4	12	400	0.5240	194	187	148	199	193	170
50	1.0	1.4	13	515	0.3870	228	217	177	246	234	205
70	1.1	1.4	15	720	0.2680	285	268	217	310	298	263
95	1.1	1.5	16.7	980	0.1930	336	319	262	386	374	322
120	1.2	1.5	18.4	1210	0.1530	388	371	296	450	439	380
150	1.4	1.6	20.5	1500	0.1240	428	405	336	509	497	433
185	1.6	1.6	22.5	1840	0.0991	490	462	382	591	579	491
240	1.7	1.7	25.4	2400	0.0754	564	530	439	725	714	597
300	1.8	1.8	27.8	2995	0.0601	638	593	496	918	842	690
400	2.0	1.9	31.2	3800	0.0470	735	673	559	995	971	796
500	2.2	2.0	34.7	4750	0.0366	827	752	621	1203	1100	907
630	2.4	2.2	41.7	6275	0.0283	946	844	707	1287	1264	1065
800	2.6	2.3	46.8	8260	0.0221	1060	935	798	1463	1439	1217
1000	2.8	2.4	51.1	9745	0.0176	1174	1015	866	1615	1591	1346

Single core cable

For outdoor and indoor installations in damp and wet locations

Type : AL/XLPE/PVC
Standard : IEC 60502-1
Rated Voltage : 0.6/1 KV
Conductor : Stranded Aluminum wires
Insulation : XLPE compound (or PVC or LSHF)
Jacketing : PVC compound (or LSHF or PE)

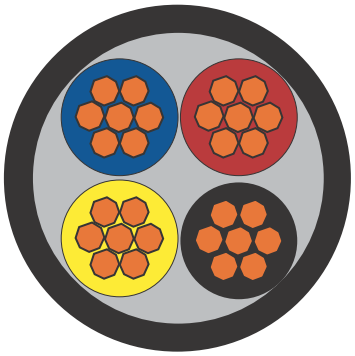


TECHNICAL INFORMATION

Nominal Cross Section	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx overall Diameter	Approx Cable Weight	Max DC Resistance at 20°C	CURRENT RATING					
						Laid in ground			Laid in Free Air		
						⊙⊙⊙	⊙⊙	⊙	⊙	⊙⊙⊙	⊙⊙
mm²***	mm	mm	mm	kg/km	ohm/km	A	A	A	A	A	A
STRANDED COPPER CONDUCTORS											
16	0.7	1.4	9.21	115	1.9100	97	95	72	99	94	70
25	0.9	1.4	11.3	165	1.2000	123	120	91	129	123	105
35	0.9	1.4	12.01	205	0.8680	148	143	114	158	152	135
50	1.0	1.4	13.0	260	0.6410	177	169	131	193	187	164
70	1.1	1.4	16.0	340	0.4430	217	205	165	246	240	199
95	1.1	1.5	16.7	450	0.3200	257	245	194	316	304	240
120	1.2	1.5	18.4	550	0.2530	302	285	234	363	351	269
150	1.4	1.6	20.5	570	0.2060	336	319	257	415	404	333
185	1.6	1.6	24.2	830	0.1640	382	365	291	486	468	374
240	1.7	1.7	27.0	1050	0.1250	445	422	342	573	556	445
300	1.8	1.8	27.8	1300	0.1000	507	473	388	644	632	515
400	2.0	1.9	33.2	1610	0.0778	587	547	445	772	755	606
500	2.2	2.0	36.2	2000	0.0605	661	616	507	901	878	702
630	2.4	2.2	42.2	2520	0.0469	758	701	581	1053	1030	831
800	2.6	2.3	46.8	3150	0.0367	855	764	650	1193	1170	948
1000	2.8	2.4	51.8	3870	0.0291	946	832	707	1310	1287	1076

Multicore cable

For outdoor and indoor installations in damp and wet locations



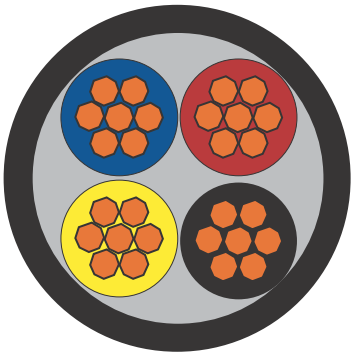
Type : CU/PVC/PVC
Standard : IEC 60502-1
Rated Voltage : 0.6/1 KV
Conductor : Soft annealed stranded copper wires (or Aluminum)
Insulation : PVC compound
Bedding : PVC compound (or LSHF or PE)
Jacketing : PVC compound (or LSHF or PE)

TECHNICAL INFORMATION

Nominal Cross Section	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx overall Diameter	Approx Cable Weight	Max DC Resistance at 20°C	CURRENT RATING		
						Laid Direct in ground	Laid in Ducts	Laid in Free Air
NR X mm²	mm	mm	mm	kg/km	ohm/km	A	A	A
2*1.5	0.8	1.8	11.9	190	12.100	33	27	27
2*2.5	0.8	1.8	12.8	230	7.410	41	35	35
2*4	1.0	1.8	14.7	315	4.610	55	45	49
2*6	1.0	1.8	16.0	390	3.080	68	56	63
2*10	1.0	1.8	17.6	515	1.830	89	77	84
2*16	1.0	1.8	19.7	695	1.150	116	91	112
2*25	1.2	1.8	23.12	995	0.727	150	119	147
2*35	1.2	1.7	25.1	1020	0.524	177	147	182
3*1.5	0.8	1.8	12.4	215	12.100	29	25	22
3*2.5	0.8	1.8	13.4	270	7.410	37	32	28
3*4	1.0	1.8	15.4	370	4.610	49	42	39
3*6	1.0	1.8	16.7	460	3.080	61	50	49
3*10	1.0	1.8	18.6	630	1.830	82	67	64
3*16	1.0	1.8	20.8	860	1.150	102	84	91
3*25	1.2	1.8	24.5	1215	0.727	136	112	119
3*35	1.2	1.8	27.0	1615	0.524	163	133	140
	ph/N				ph/N			
3*10+6	1.0	1.8	19.6	715	1.83/3.08	82	67	67
3*16+10	1.0	1.8	22.0	983	1.15/1.83	102	84	91
3*25+16	1.2/1.0	1.8	25.7	1455	0.727/1.15	136	112	119
3*35+16	1.2/1.0	1.8	27.6	1740	0.524/1.15	163	133	140
4*1.5	0.8	1.8	13.2	250	12.100	29	25	22
4*2.5	0.8	1.8	14.3	315	7.410	37	32	28
4*4	1.0	1.8	16.8	440	4.610	49	42	39
4*6	1.0	1.8	18.0	550	3.080	61	50	49
4*10	1.0	1.8	20.2	775	1.830	82	67	64
4*16	1.0	1.8	22.6	1065	1.150	102	84	91
4*25	1.2	1.8	26.8	1580	0.727	136	112	119
4*35	1.2	1.8	29.4	2025	0.524	163	133	140
5*1.5	0.8	1.8	12.9	235	12.100	29	25	22
5*2.5	0.8	1.8	14.1	360	7.410	37	32	28
5*4	1.0	1.8	17.9	525	4.610	49	42	39
5*6	1.0	1.8	19.4	620	3.080	61	50	49

Multicore cable

For outdoor and indoor installations in damp and wet locations



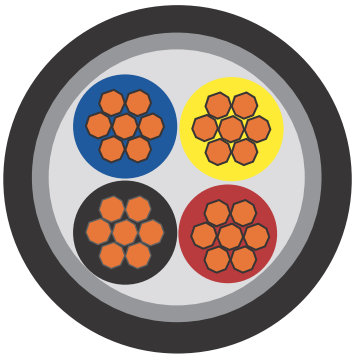
Type	:	CU/XLPE/PVC
Standard	:	IEC 60502-1
Rated Voltage	:	0.6/1 KV
Conductor	:	Soft annealed stranded copper wires (or Aluminum)
Insulation	:	XLPE compound
Bedding	:	PVC compound (or LSHF or PE)
Jacketing	:	PVC compound (or LSHF or PE)

TECHNICAL INFORMATION

Nominal Cross Section	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx overall Diameter	Approx Cable Weight	Max DC Resistance at 20°C	CURRENT RATING		
						Laid Direct in ground	Laid in Ducts	Laid in Free Air
NR x mm^2	mm	mm	mm	kg/km	ohm/km	A	A	A
2*1.5	0.7	1.8	11.5	170	12.100	34	29	28
2*2.5	0.7	1.8	12.4	205	7.410	42	37	37
2*4	0.7	1.8	13.5	260	4.610	57	47	51
2*6	0.7	1.8	14.6	325	3.080	72	61	67
2*10	0.7	1.8	16.4	455	1.830	93	81	88
2*16	0.7	1.8	18.4	620	1.150	121	97	117
2*25	0.9	1.8	22.0	920	0.727	158	125	154
2*35	0.9	1.8	24.1	1140	0.524	189	157	185
3*1.5	0.7	1.8	12.0	190	12.100	30	27	25
3*2.5	0.7	1.8	13.0	235	7.410	40	34	36
3*4	0.7	1.8	14.1	315	4.610	51	42	46
3*6	0.7	1.8	15.3	400	3.080	65	53	56
3*10	0.7	1.8	17.3	555	1.830	86	70	76
3*16	0.7	1.8	19.5	770	1.150	111	88	99
3*25	0.9	1.8	23.3	1150	0.727	146	119	135
3*35	0.9	1.8	25.6	1480	0.524	177	140	161
3*10+6	0.7	1.8	18.1	625	1.83/3.08	86	70	76
3*16+10	0.7	1.8	20.4	880	1.15/1.83	111	88	99
3*25+16	0.9/0.7	1.8	24.2	1305	0.727/1.15	146	119	135
3*35+16	0.9/0.7	1.8	26.2	1620	0.524/1.15	177	140	161
4*1.5	0.7	1.8	12.8	225	12.100	30	27	25
4*2.5	0.7	1.8	14.0	290	7.410	40	34	36
4*4	0.7	1.8	15.2	375	4.610	51	42	46
4*6	0.7	1.8	16.6	480	3.080	65	53	56
4*10	0.7	1.8	18.6	675	1.830	86	70	76
4*16	0.7	1.8	21.1	955	1.150	111	88	99
4*25	0.9	1.8	25.3	1435	0.727	146	119	135
4*35	0.9	1.9	28.0	1865	0.524	177	140	161
5*1.5	0.7	1.8	13.6	255	12.100	30	27	25
5*2.5	0.7	1.8	14.8	330	7.410	40	34	36
5*4	0.7	1.8	16.3	430	4.610	51	42	46
5*6	0.7	1.8	17.8	600	3.080	65	53	56

Multicore cable

For outdoor and indoor installations in damp and wet locations



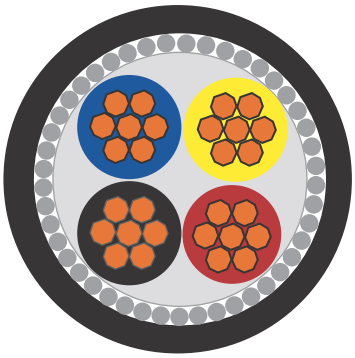
Type	:	CU/XLPE/STA/PVC
Strandard	:	IEC 60502-1
Rated Voltage	:	0.6/ 1 KV
Conductor	:	Soft annealed stranded copper wires (or Aluminum)
Insulation	:	XLPE compound
Bedding	:	PVC compound (or LSHF or PE)
Armouring	:	Steel Tape
Jacketing	:	PVC compound (or LSHF or PE)

TECHNICAL INFORMATION

Nominal Cross Section	Nominal Insulation Thickness	Nominal Diameter of S.Tape	Nominal Sheath Thickness	Approx overall Diameter	Approx Cable Weight	Max DC Resistance at 20°C	CURRENT RATING		
							Laid Direct in ground	Laid in Ducts	Laid in Free Air
NR x mm^2	mm	mm	mm	mm	kg/km	ohm/km	A	A	A
2*6	0.7	0.20	1.8	15.4	415	3.080	71	60	66
2*10	0.7	0.20	1.8	17.2	550	1.830	92	80	87
2*16	0.7	0.20	1.8	19.3	725	1.150	120	96	115
2*25	0.9	0.20	1.8	22.8	1045	0.727	157	124	152
2*35	0.9	0.20	1.8	24.9	1305	0.524	187	154	183
3*6	0.7	0.20	1.8	16.1	485	3.080	64	51	55
3*10	0.7	0.20	1.8	18.1	655	1.830	84	69	75
3*16	0.7	0.20	1.8	20.1	885	1.150	109	87	98
3*25	0.9	0.20	1.8	24.1	1280	0.727	145	117	133
3*35	0.9	0.20	1.8	26.3	1630	0.524	174	139	159
3*10+6	0.7	0.20	1.8	18.9	735	1.83/3.08	84	69	75
3*16*+10	0.7	0.20	1.8	21.3	1005	0.15/1.83	109	87	98
3*25+16	0.9/0.7	0.20	1.8	25	1495	0.727/1.15	145	117	133
3*35+16	0.9/0.7	0.20	1.8	27	1800	0.524/1.15	174	139	159
4*6	0.7	0.20	1.8	17.3	575	3.080	64	51	55
4*10	0.7	0.20	1.8	18.6	675	1.830	84	69	75
4*16	0.7	0.20	1.8	21.1	955	1.150	109	87	98
4*25	0.9	0.20	1.8	25.3	1435	0.727	145	117	133
4*35	0.9	0.20	1.8	27.9	1860	0.524	174	139	159
5*4	0.7	0.20	1.8	16.3	430	4.610	50	41	44
5*6	0.7	0.20	1.8	17.8	600	3.0800	64	51	55

Multicore cable

For outdoor and indoor installations in damp and wet locations



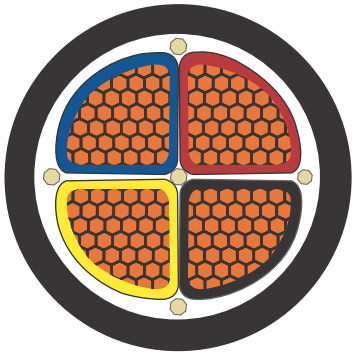
Type	:	CU / XLPE / SWA / PVC
Standartd	:	IEC 60502-1
Rated Voltage	:	0.6 / 1 KV
Conductor	:	Soft annealed stranded copper wires
Insulation	:	XLPE compoound (or PVC or LSHF)
Bedding	:	PVC compound (or LSHF or PE)
Armouring	:	Steel Wires
Jacketing	:	PVC compound (or LSHF or PE)

TECHNICAL INFORMATION

Nominal Cross Section	Nominal Insulation Thickness	Nominal Diameter of S.Wire	Nominal Sheath Thickness	Approx overall Diameter	Approx Cable Weight	Max DC Resistance at 20°C	CURRENT RATING		
							Laid Direct in ground	Laid in Ducts	Laid in Free Air
NR x mm^2	mm	mm	mm	mm	kg/km	ohm/km	A	A	A
2*1.5	0.7	0.9	1.8	13.3	345	12.100	35	30	29
2*2.5	0.7	0.9	1.8	14.2	395	7.410	43	39	39
2*4	0.7	0.9	1.8	15.2	470	4.610	58	48	53
2*6	0.7	0.9	1.8	16.4	555	3.080	73	62	68
2*10	0.7	0.9	1.8	18.2	700	1.830	95	82	89
2*16	0.7	0.9	1.8	20.2	905	1.150	122	98	118
2*25	0.9	1.60	1.8	25.1	1545	0.727	160	126	156
2*35	0.9	1.60	1.8	27.0	1845	0.524	192	158	187
3*1.5	0.7	0.9	1.8	13.8	385	12.100	31	28	26
3*2.5	0.7	0.9	1.8	14.7	435	7.410	41	35	37
3*4	0.7	0.9	1.8	15.9	525	4.610	52	43	47
3*6	0.7	0.9	1.8	17.1	635	3.080	66	54	57
3*10	0.7	0.9	1.8	19.1	825	1.830	87	71	77
3*16	0.7	0.9	1.8	21.3	1085	1.150	112	89	101
3*25	0.9	1.60	1.8	26.5	1825	0.727	148	121	136
3*35	0.9	1.60	1.8	28.8	2220	0.524	180	143	164
3*10+6	0.7	0.9	1.8	20.0	1000	1.83/3.08	87	71	77
3*16+10	0.7	1.60	1.8	22.2	1205	1.15/1.83	112	89	101
3*25+16	0.9/0.7	1.60	1.8	27.4	1920	727/1.15	148	121	136
3*35+16	0.9/0.7	1.60	1.8	29.13	2485	24/1.15	180	143	164
4*1.5	0.7	0.9	1.8	14.6	420	12.100	31	28	26
4*2.5	0.7	0.9	1.8	15.6	495	7.410	41	35	37
4*4	0.7	0.9	1.8	16.19	605	4.610	52	43	47
4*6	0.7	0.9	1.8	18.13	735	3.080	66	54	57
4*10	0.7	0.9	1.8	20.5	935	1.830	87	71	77
4*16	0.7	1.60	1.8	24.13	1505	1.150	112	89	101
4*25	0.9	1.60	1.8	28.5	2075	0.727	148	121	136
4*35	0.9	1.60	1.8	31.3	2570	0.524	180	143	164
5*1.5	0.7	0.9	1.8	15.4	450	12.100	31	28	26
5*2.5	0.7	0.9	1.8	16.6	535	7.410	41	35	37
5*4	0.7	0.9	1.8	18.1	700	4.610	52	43	47
5*6	0.7	0.9	1.8	19.6	855	3.080	66	54	57

Multicore cable

For outdoor and indoor installations in damp and wet locations



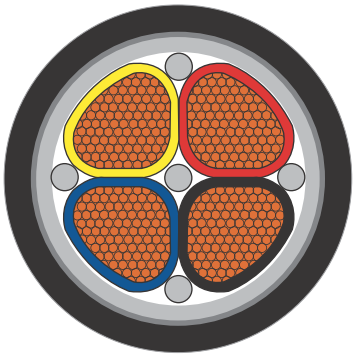
Type : CU / XLPE / PVC
Standard : IEC 60502-1
Rated Voltage : 0.6 / 1 KV
Conductor : Soft annealed stranded copper wires
Insulation : XLPE compoound (or PVC)
Bedding : PVC compound (LSHF or PE)
Jacketing : PVC compound (LSHF or PE)

TECHNICAL INFORMATION

Nominal Cross Section	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx overall Diameter	Approx Cable Weight	Max DC Resistance at 20°C	CURRENT RATING		
						Laid Direct in ground	Laid in Ducts	Laid in Free Air
NR x mm^2	mm	mm	mm	kg/km	ohm/km	A	A	A
3*50+25	1.0/0.9	1.8	25.8	1845	0.3870/0.727	211	170	199
3*70+35	1.1/0.9	1.9	29.6	2565	0.268/0.524	251	211	240
3*95+50	1.1/1.0	2.1	33.5	3465	0.1930/0.387	302	246	298
3*120+70	1.2/1.1	2.2	37.4	4385	0.153/0.268	348	287	345
3*150+70	1.4/1.1	2.3	41.2	5280	0.124/0.268	382	322	392
3*185+95	1.6/1.1	2.5	46.1	6645	0.0991/0.93	428	363	450
3*240+120	1.7/1.2	2.7	51.6	8610	0.0754/0.153	496	427	538
3*300+150	1.8/1.4	2.9	56.9	10720	0.0601/0.124	559	474	626
3*400+185	2.0/1.6	3.1	64.6	13635	0.0470/0.0991	638	544	720
3*500+240	2.2/1.7	3.3	71.8	17115	0.0336/0.0754	718	620	819
4*50	1.0	1.8	27	2010	0.387	211	170	199
4*70	1.1	2.0	31.3	2850	0.268	251	211	240
4*95	1.1	2.1	34.6	3885	0.193	302	246	298
4*120	1.2	2.3	39.6	4905	0.153	348	287	345
4*150	1.4	2.4	43.6	5055	0.124	382	322	392
4*185	1.6	2.6	48.6	7495	0.0991	428	363	440
4*240	1.7	2.8	54.4	9785	0.0754	496	427	538
4*300	1.8	3.0	60.0	12205	0.0601	559	474	626
4*400	2.0	3.3	68.6	155540	0.0470	638	544	720
4*500	2.2	3.5	76.2	19415	0.0366	718	620	819

Multicore cable

For outdoor and indoor installations in damp and wet locations



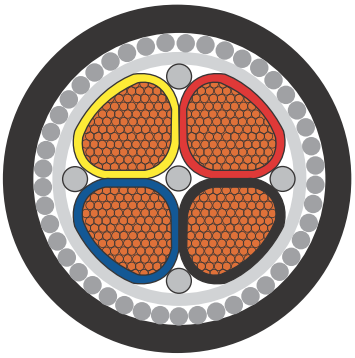
Type	:	CU / XLPE / STA/ PVC
Standard	:	IEC 60502-1
Rated Voltage	:	0.6/1 KV
Conductor	:	Soft annealed stranded copper wires
Insulation	:	XLPE compound (or PVC)
Bedding	:	PVC compound (or LSHF or PE)
Armouring	:	Steel Tape (or LSHF or PE)
Jacketing	:	PVC compound

TECHNICAL INFORMATION

Nominal Cross	Nominal Insulation Thickness	Nominal Diameter of S.Tape	Nominal Sheath Thickness	Approx overall Diameter	Approx Cable Weight	Max DC Resistance at 20°C	CURRENT RATING		
							Laid Direct in ground	Laid in Ducts	Laid in Free Air
NR x mm2	mm	mm	mm	mm	kg/km	kg/km	A	A	A
3*50+25	1.0/0.9	0.20	1.9	28.8	2145	0.387/0.727	211	170	199
3*70+35	1.1/0.9	0.20	2.0	33.0	2945	0.268/0.524	251	211	240
3*95+50	1.1/1.0	0.20	2.2	38.1	4255	0.193/0.387	302	246	298
3*120+70	1.2/1.1	0.50	2.3	42.0	5240	0.153/0.268	348	287	345
3*150+70	1.4/1.1	0.50	2.4	46.2	6280	0.124/0.268	382	322	392
3*185+95	1.6/1.1	0.50	2.6	51.1	7750	0.0991/0.193	428	363	450
3*240+120	1.7/1.2	0.50	2.8	57	9905	0.0754/0.153	496	427	538
3*300+150	1.8/1.4	0.50	3.0	62.3	12140	0.0607/0.124	559	474	626
3*400+185	2.0/1.6	0.50	3.2	70.0	15090	0.0475/0.0991	638	544	720
3*500+240	2.2/1.7	0.50	3.2	77.2	18855	0.0366	718	620	819
4*50	1.0	0.20	1.9	30.0	2375	0.3870	211	170	199
4*70	1.1	0.20	2.1	34.7	3270	0.2680	251	211	240
4*95	1.1	0.50	2.2	39.6	4705	0.1930	302	246	298
4*120	1.2	0.50	2.4	43.7	5805	0.1530	348	287	345
4*150	1.4	0.50	2.6	48.8	7125	0.1240	382	322	392
4*185	1.6	0.50	2.7	53.6	8650	0.0991	428	363	450
4*240	1.7	0.50	2.9	60.2	11190	0.0754	496	427	538
4*300	1.8	0.50	3.1	65.4	13720	0.0601	559	474	626
4*400	2.0	0.50	3.4	74.8	17280	0.0470	638	544	720
4*500	2.2	0.50	3.7	82.2	21330	0.036	718	620	816

Multicore cable

For outdoor and indoor installations in damp and wet locations



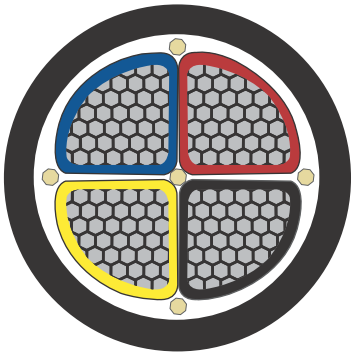
Type : CU / XLPE / SWA / PVC
Standard : IEC 60502-1
Rated Voltage : 0.6 / 1 KV
Conductor : Soft annealed stranded copper wires
Insulation : XLPE compound (or PVC or LSHF)
Bedding : PVC compound (or LSHF or PE)
Armouring : Steel Wires
Jacketing : PVC compound (or LSHF or PE)

TECHNICAL INFORMATION

Nominal Cross	Nominal Insulation	Nominal Diameter of S.Wire	Nominal Sheath Thickness	Approx overall Diameter	Approx Cable Weight	Max DC Resistance at 20°C	CURRENT RATING		
							Laid Direct in ground	Laid in Ducts	Laid in Free Air
NR x mm²	mm	mm	mm	kg/km	ohm/km	kg/km	A	A	A
3*50+25	1.0/0.9	1.6	1.9	31.6	2805	0.387/0.727	211	170	205
3*70+35	1.1/0.9	2.00	2.1	36.4	3950	0.268/0.524	251	211	246
3*95+50	1.1/1.0	2.00	2.2	40.1	5000	0.193/0.387	302	246	304
3*120+70	1.2/1.1	2.0	2.3	44.0	6115	0.153/0.268	348	287	351
3*150+70	1.4/1.1	2.50	2.5	49.4	7690	0.124/0.268	382	322	398
3*185+95	1.6/1.1	2.50	2.7	54.6	9265	0.0991/0.193	428	363	456
3*240+120	1.7/1.2	2.50	2.9	60.2	11600	0.0754/0.153	496	427	544
3*300+150	1.8/1.4	2.50	3.0	65.3	13940	0.0601/0.124	559	474	632
3*400+185	2.0/1.6	3.15	3.4	76.1	18370	0.0470/0.0991	638	544	725
3*500+240	2.2/1.7	3.15	3.6	82.3	22150	0.0366/0.0754	718	620	825
4*50	1.0	1.60	2.0	32.6	3035	0.3870	211	170	205
4*70	1.1	2.00	2.2	38.1	4315	0.2680	251	211	246
4-95	1.1	2.00	2.3	41.8	5530	0.1930	302	246	304
4*120	1.2	2.50	2.5	46.9	71112	0.1530	348	287	351
4*150	1.4	2.50	2.6	51.8	8555	0.1240	382	322	398
4*185	1.6	2.50	2.8	56.8	10250	0.0991	428	363	456
4*240	1.7	2.50	3.0	63.0	12945	0.0754	496	427	544
4*300	1.8	2.50	3.2	68.6	15675	0.0601	559	474	632
4*400	2.0	3.15	3.5	79.3	20630	0.0470	638	544	725
4*500	2.2	3.15	3.8	87.1	25120	0.0366	718	620	825

Multicore cable

For outdoor and indoor installations in damp and wet locations



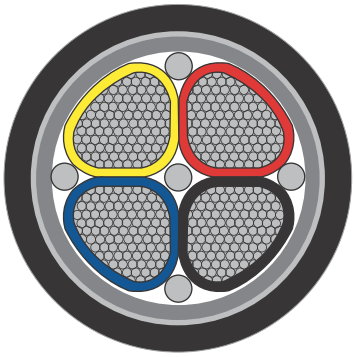
Type : AL / XLPE / PVC
Standard : IEC 60502-1
Rated Voltage : 0.6 / 1 KV
Conductor : Drawn Aluminum wires
Insulation : XLPE compound (or PVC or LSHF)
Bedding : PVC compound (or LSHF or PE)
Armouring : Steel Wires
Jacketing : PVC compound (or LSHF or PE)

TECHNICAL INFORMATION

Nominal Cross Section	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx overall Diameter	Approx. Cable Weight	Max DC Resistance at 20°C	CURRENT RATING		
						Laid Direct in ground	Laid in Ducts	Laid in Free Air
NR x mm^2	mm	mm	mm	kg/km	ohm/km	A	A	A
3*50+25	1.0/0.9	1.8	25.8	805	0.641/1.20	165	129	152
3*70+35	1.1/0.9	1.9	29.6	1105	0.443/0.868	200	164	187
3*95+50	1.1/1.0	2.1	33.5	1425	0.320/0.641	239	193	228
3*120+70	1.2/1.1	2.2	37.8	1795	0.253/0.443	268	222	263
3*150+70	1.4/1.1	2.3	41.9	2300	0.206/0.443	302	252	310
3*185+95	1.6/1.1	2.5	46.1	2670	0.164/0.320	331	281	351
3*240+120	1.7/1.2	2.7	51.6	3395	0.125/0.253	388	328	421
3*300+150	1.8/1.4	2.8	57.1	4175	0.100/0.206	445	369	497
3*400+185	2.0/1.6	3.1	65.0	5300	0.0778/0.164	513	433	573
3*500+240	2.2/1.7	3.4	71.8	7220	0.0605/0.125	581	497	655
4*50	1.0	1.8	27.0	860	0.6410	165	129	152
4*70	1.1	2.0	31.3	1100	0.4430	200	164	187
4-95	1.1	2.1	35.0	1565	0.3200	239	193	228
4*120	1.2	2.3	39.5	2020	0.2530	268	222	263
4*150	1.4	2.4	43.6	2470	0.2060	302	252	310
4*185	1.6	2.5	48.4	2965	0.1640	331	281	351
4*240	1.7	2.8	54.4	3825	0.1250	388	328	421
4*300	1.8	3.0	60.0	4685	0.1000	4445	369	497
4*400	2.0	3.3	72.2	6280	0.0778	513	433	573
4*500	2.2	3.5	76.5	7615	0.0605	581	497	655

Multicore cable

For outdoor and indoor installations in damp and wet locations



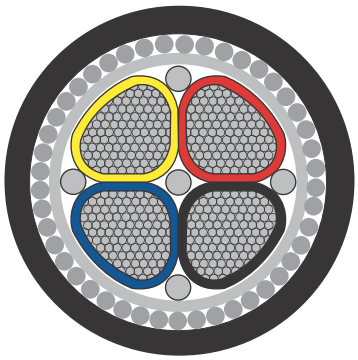
Type	:	AL / XLPE /STA/ PVC
Standard	:	IEC 60502-1
Rated Voltage	:	0.6 / 1 KV
Conductor	:	Drawn Aluminum Wires
Insulation	:	XLPE compoound (or PVC or LSHF)
Bedding	:	PVC compound (or LSHF or PE)
Jacketing	:	PVC compound (or LSHF or PE)

TECHNICAL INFORMATION

Nominal Cross Section	Nominal Insulation Thickness	Nominal Diameter of S.Tape	Nominal Sheath Thickness	Approx overall Diameter	Approx Cable Weight	Max DC Resistance at 20°C	CURRENT RATING		
							Laid Direct in ground	Laid in Ducts	Laid in Free Air
NR x mm^2	mm	mm	mm	mm	kg/km	ohm/km	A	A	A
3*50	1.0	0.20	0.20	27.0	1000	0.641	165	129	152
3*70	1.1	0.20	0.20	30.4	1210	0.443	200	164	187
3*95	1.1	0.20	0.20	34.2	1650	0.320	239	193	228
3*120	1.2	0.50	0.50	38.8	2340	0.253	268	222	263
3*150	1.4	0.50	0.50	42.5	2770	0.206	302	252	310
3*185	1.6	0.50	0.50	47.2	3350	0.1640	331	281	351
3*240	1.7	0.50	0.50	52.2	4280	0.1250	388	328	421
3*300	1.8	0.50	0.50	57.6	5020	0.1000	445	369	497
3*400	2.0	0.50	0.50	64.4	6230	0.0778	513	433	573
3*500	2.2	0.50	0.50	71.0	7540	0.0605	581	497	655
3*50+25	1.0/0.9	0.20	0.20	29.5	1200	0.641/1.20	165	129	152
3*70+35	1.1/0.9	0.20	0.20	33.5	1500	0.443/0.868	200	164	187
3*95+50	1.1/1.0	0.50	0.50	38.3	1970	0.320/0.641	239	193	228
3*120+70	1.2/1.1	0.50	0.50	42.2	2710	0.253/0.443	268	222	263
3*150+70	1.4/1.1	0.50	0.50	46.7	3180	0.206/0.443	302	252	310
3*185+95	1.6/1.1	0.50	0.50	51.4	3530	0.164/0.320	331	281	351
3*240+120	1.7/1.2	0.50	0.50	57.0	4600	0.125/0.253	388	328	421
3*300+150	1.8/1.4	0.50	0.50	62.8	5920	0.100/0.206	445	369	497
3*400+185	2.0/1.6	0.50	0.50	70.4	7200	0.0778/0.164	513	433	573
3*500+240	2.0/1.7	0.50	0.50	77.0	9040	0.0605/0.125	581	497	655
4*50	1.0	0.20	0.20	30.4	1210	0.6410	165	129	152
4*70	1.1	0.20	0.20	34.7	1595	0.4430	200	164	187
4*95	1.1	0.50	0.50	40.4	2540	0.3200	239	193	228
4*120	1.2	0.50	0.50	43.8	3020	0.2530	268	222	263
4*150	1.4	0.50	0.50	49.0	3670	0.2060	302	252	310
4*185	1.6	0.50	0.50	53.6	4380	0.1640	331	281	351
4*240	1.7	0.50	0.50	60.0	4430	0.1250	388	328	421
4*300	1.8	0.50	0.50	65.4	6125	0.1000	449	369	497
4*400	2.0	0.50	0.50	73.6	7550	0.0778	513	433	573
4*500	2.3	0.50	0.50	81.6	9990	0.0605	581	497	655

Multicore cable

For outdoor and indoor installations in damp and wet locations



Type	:	AL / XLPE / SWA / PVC
Standard	:	IEC 60502-1
Rated Voltage	:	0.6/1 KV
Conductor	:	Drawn Aluminum Wires
Insulation	:	XLPE compound (or PVC or LSHF)
Bedding	:	PVC compound (or LSHF or PE)
Armouring	:	Steel Tape
Jacketing	:	PVC compound (or LSHF or PE

Technical Information

Nominal Cross Section	Nominal Insulation Thickness	Nominal Diameter of S.Wire	Nominal Sheath Thickness	Approx overall Diameter	Approx Cable Weight	Max DC Resistance at 20°C	CURRENT RATING		
							Laid Direct in ground	Laid in Ducts	Laid in Free Air
NR x mm^2	mm	mm	mm	mm	kg/km	ohm/km	A	A	A
	ph/N					ph/N			
3*50+25	1.0/0.9	2.00	1.9	31.6	1870	0.641/1.20	165	129	158
3*70+35	1.1/0.9	2.00	2.1	36.8	2500	0.443/0.868	200	164	193
3*95+50	1.1/1.0	2.00	2.2	40.1	2955	0.320/0.641	239	193	234
3*120+70	1.2/1.1	2.50	2.3	44.2	3690	0.253/0.443	268	222	269
3*150+70	1.4/1.1	2.50	2.5	49.8	4525	0.206/0.443	302	252	316
3*185+95	1.6/1.1	2.50	2.7	55.0	5330	0.164/0.320	331	281	357
3*240+120	1.7/1.2	2.50	2.9	60.6	6445	0.125/0.253	388	328	427
3*300+150	1.8/1.4	2.50	3.0	65.3	7400	0.100/0.206	445	369	503
3*400+185	2.0/1.6	3.15	3.3	73.4	9450	0.0778/0.164	513	433	579
3*500+240	2.2/1.7	3.15	3.6	81.6	12270	0.0605/0.125	581	497	661
4*50	1.0	1.60	2.0	32.6	1880	0.6410	165	129	158
4*70	1.1	2.0	2.2	38.1	2660	0.4430	200	164	193
4*95	1.1	2.00	2.3	41.8	3170	0.3200	239	193	234
4*120	1.2	2.50	2.5	46.9	4195	0.2530	268	222	269
4*150	1.4	2.50	2.6	51.8	4915	0.2060	302	252	316
4*185	1.6	2.50	2.8	56.8	5750	0.1640	331	281	357
4*240	1.7	2.50	3.0	63.0	6980	0.1250	388	328	427
4*300	1.8	2.50	3.2	68.6	8155	0.1000	445	369	503
4*400	2.0	3.15	3.6	80.5	11315	0.0778	513	433	579
4*500	2.2	3.15	3.7	86.9	13025	0.0605	581	497	661

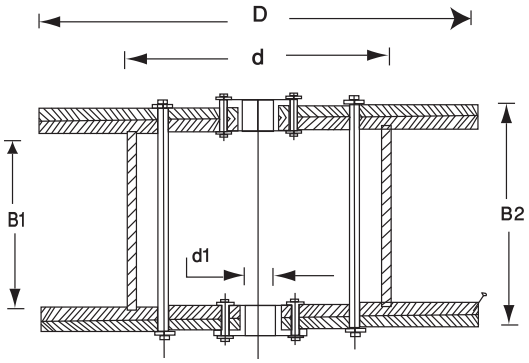
Conversion Table

Multiply	by	to obtain
WEIGHT - Imperial		
Ounces	28.3495	grams
Pounds (Av)	453.59	grams
Pounds (Av)	0.45359	kilograms
Tons (short)	907.19	kilograms
Tons (long)	1016.05	kilograms
WEIGHT - Metric		
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)
MISCELLANEOUS - Imperial		
Pounds per 1000 feet	1.48816	kilograms per kilometer
Pounds per mile	0.28185	kilograms per kilometer
Pounds per square inch	0.0007031	kilograms per square millimeter
Pounds per square inch	0.07031	kilograms per square centimeter
Feet per second	18.288	meters per minute
Feet per second	1.09728	kilometers per hour
Mils 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
Decibles	0.1153	nepers
MISCELLANEOUS - Metric		
Kilograms per kilometer	0.67197	pounds per 1000 feet
Kilograms per kilometer	3.54795	pounds per mile
Kilograms per square millimeter	1422.34	pounds per square inch
Kilograms per square centimeter	14.2234	pounds per square inch
Grams per cubic cm	0.03613	pounds per cubic inch
Meters per minute	0.05468	feet per second
Kilometer per hour	0.91134	feet per second
Kilometer per hour	0.62137	miles per hour
Ohms per kilometer	0.3048	ohms per 1000 feet
Ohms per kilometer	1.6093	ohms per mile
Decibels per kilometer	0.3048	decibels per 1000 feet
Decibels per kilometer	1.6093	decibles per mile
TEMPERATURE		
°Fahrenheit	5/9 (°F)-32	°Celsius
°Celsius	9/5 (°C) + 32	°Fahrenheit

Multiply	by	to obtain
LENGTH - Imperial		
Mils	0.001	inches
Mils	0.0254	millimeters
Inches	1000	mils
Inches	25.40	millimeters
Inches	2.54	centimeters
Feet	30.48	centimeters
Feet	0.3048	meters
Feet (thousands of)	0.3048	kilometers
Yards	0.9144	meters
Mils	1.6093	kilometers
LENGTH - Imperial		
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	mils
AREA - Imperial		
Square mils	1.2732	circular mills
Square mils	0.000001	square inches
Circular mils	0.7854	square mils
Circular mils	0.0000007854	square inches
Circular mils	0.00050657	square millimeters
Square inches	1000000	square mils
Square inches	1273240	circular mils
Square inches	645.16	square millimeters
Square inches	6.4516	square centimeters
Square inches	0.09290	square meters
Square inches	0.8361	square meters
AREA - Metric		
Square millimeters	1973.52	circular mills
Square millimeters	0.00155	square inches
Square centimeters	0.155	square inches
Square meters	10.7638	square feet
Square meters	1.19599	square yards
VOLUME - Imperial		
Cubic inches	16.38716	cubic centimeters
Cubic feet	0.028317	cubic meters
VOLUME - U.S.		
Quarts (liquid)	0.9463	cubic centimeters
Gallaons	3.7854	cubic meters
VOLUME - Metric		
Cubic centimeters	0.06102	cubic inches
Cubic meters	35.3145	cubic feet
Litres	1.05668	quarts (Liquid U.S.)
Litres	0.26417	gallons (U.S.)

Packing

International practice is to supply cables on wooden drums or as appropriate plastic spools. At the customers request we will also supply steel drums for improved on-site performance & handling.
The finished drums may be - when requested by our customer - closed with a continuous lagging with a wood having approximate thickness 2.00 mm.



Drum Dimensions:

D	d	d1	B1	B2
600	300	85	450	580
700	350	85	530	660
800	400	85	530	660
900	450	85	630	760
1000	500	85	630	772
1100	550	85	630	772
1200	600	85	850	992
1300	650	85	850	992
1400	700	85	850	992
1500	750	110	850	1020
1600	800	110	850	1020
1700	850	110	850	1020
1800	900	110	850	1032
1900	950	110	850	1032
2000	1000	110	980	1174
2100	1050	110	980	1174
2200	1100	110	1230	1274
2300	1150	110	1280	1432
2400	1200	110	1280	1482
2500	1250	110	1280	1482
2600	1300	110	1280	1432
2700	1350	110	1280	1482
2800	1400	110	1280	1482
2900	1450	110	1280	1482
3000	1500	110	1280	1482

Legend

D	=	Flange Diameter (mm)
d	=	Barrel Diameter (mm)
d1	=	Benz hole diameter (mm)
B1	=	Distance between flanges (mm)
B2	=	Overall Width (mm)

Selection Form: Low Voltage

This form needs to be filled in order to help Jeddah Cables Company prepare the right quotation:

Standard & Specification

- ☐ IEC
- ☐ BS
- ☐ Others: _____

Conductor

- Type
  - ☐ Copper
  - ☐ Aluminum
- Size (mm^2) _____
- Shape
  - ☐ Round Circular
  - ☐ Round Compacted
  - ☐ Compacted Sectoral
- Number of Cores: _____

Insulation Type

- ☐ PVC
- ☐ XLPE
- ☐ Low Smoke Halogen Free (LSHF)

Armoring Type (If Any)

- Single Core Cables:
  - ☐ Al Wire Armor (AWA)
  - ☐ Double Al Tape Armor (ATA)
- Multi Core Cables:
  - ☐ Steel Wire Armor (SWA)
  - ☐ Double Steel Tape Armor (STA)

Jacket Type

- ☐ PVC
- ☐ PE
- ☐ Low Smoke Halogen Free (LSHF)

Special Requirements _____

_____

_____

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