

ELSEWEDY
CABLES



FIRE CABLES

 by ELSEWEDY ELECTRIC



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Elsewedy Electric

□ About us □

75 years ago, we started with a clear vision to position Elsewedy Electric for successful growth, inspired by innovation, determination and spirit of hardworking staff, empowered and liberated by a strong enterprise system.

Since Elsewedy Electric started, we made the decision to never sacrifice integrity for growth; this same motto did not change till today... Behind our success is a professional dedicated team and latest technologies which deliver comprehensive product portfolio and unmatched services. Elsewedy Electric always delivers top-rated products and services customers need with the best results they deserve. Our creative solutions help corporations and organizations to quickly adapt to new technologies that enhance business productivity and enable them to stay ahead of the competition.

At Elsewedy Electric, we focus on three pillars of sustainability: Human, Environment, and Technology.

We are working to produce the best products and offer a wider selection of solutions in order to meet growing energy demands.

We are striving to reduce our impact on the environment, conserve natural resources, and reducing our operating costs in the process.

Our heritage, as an energy solutions provider, runs deep. What began with Elsewedy Cables more than 30 years ago and became Elsewedy Electric has transformed into a global diversified company with more than 10,000 employees and 30 production facilities. We are one of the top Energy Solutions companies in Middle East and Africa operating in 5 diversified energy segments; Cables & Accessories, Electrical Products, Energy Measurement & Management, Transformers, Engineering & Construction.

We are proud of what we have achieved so far but recognize that there is much work to be done to meet the aggressive goals we have set for ourselves. Elsewedy Electric has the capacity and the will to lead. We will continue to work and fight for those things that make the world a better place.

We remain dedicated to penetrate new markets with a vision of providing the best products and services to our clients and shareholders and create a good working environment for our employees. That's Performance with purpose. That's what every business owner should strive for



Elsewedy Cables

About us

One of the major companies under the umbrella of Elsewedy Electric holding company; it is also considered the mother company of the Cables Segment.

Elsewedy Cables is one of the leading worldwide manufacturers producing a wide range of cable, wires, special cables, fire resistance cables, fiber optic cables, network cables, cables accessories and integrated solutions. The company has been able to maximize its commitment to improve efficiency by ensuring that its management possesses the expertise and talent necessary for the most critical business needs and has thus succeeded in maintaining a solid financial position.

Dedicating an area over 34316m² and more than 900 employees for serving the complete process of the instrumentation, control, fire alarm, fire resistant cables, coaxial, LAN cables and winding wires manufacturing.

Our production facilities are among the most advanced in the region offering value added products, resulting in a total annual production capacities of 20,000 ton/ annum.



General Information & Technical Data

Definitions

When it comes to selecting the wiring systems of all industrial, residential or commercial buildings it becomes more than ever important for owners and authorities to choose the proper cables for their applications.

Fire resistant cables maintain circuit integrity and continue to work for a specified time under defined conditions without the interruption of the electric power transfer. Fire resistant cables continue to operate in the presence of a fire and are commonly referred to as circuit integrity cables. This is significant for the critical circuits required for life safety or a safe and immediate plant shut down. Additionally, Fire resistant cables can be used to replace expensive fire rated structures, blankets or wraps and the difficult to install MI cable.

These cables are ideal for use in environments where high performance, reliability, and protection of life and equipment are required. Applications for cable are virtually endless. The advantages of this product make it an ideal candidate for use in a broad range of applications including:

- Houses, multi-story buildings, stores, shops, hotels, theaters, cinemas, schools, hospitals, airports, etc.
- Fire warning plants, alarm systems, ventilation system, escalators, lifts, safety lights, operation and intensive stations, maintenance equipment.
- Underground railways and other railway plants
- Power stations and industrial plants with high valuable machines and materials or risky potentials
- Emergency power supply works

Fire Resistant Cables have the following features, advantages & benefits:

Features

- Zero Halogen content
- Low smoke production
- Highly flame-retardant
- Excellent electrical properties
- Excellent mechanical properties

Advantages

- When burned – very low smoke production & non-corrosive
- No thermoplastic dripping
- Low toxicity
- Good moisture and fluid resistance, flexible superior cut-through, crush and abrasion resistance and slick finish – low coefficient of friction

Benefits

- Reduced vision impairing smoke, no harm to individuals from halogenated acid gases, no harm to electrical & electronic equipment from halogenated acid gases
- Reduced Flame propagation
- Good electrical insulator dependable long-term performance
- Can be used in a broad range of demanding applications, easy to bend and install
- Good for use in harsh environments & easy to pull

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

Tests made before supplying, on a general commercial basis, a type of cable covered by 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

Fire Fighting Cables

Flame Retardant Cables

In Fire condition; traditional cables act as a network to propagate the flame along their length to distances far from the fire area.

Using special flame retardant grades of the non-metallic components of the cable will significantly increase the cable ability to prevent flame spread “this is called flame retardant”

The key definitions of the flame retardant cables are:

Cables which doesn't spread fire

Cables which are self-extinguishing

Testing flame retardant cables is done in accordance with BS EN 60332 or IEC 60332 (the most widely applied tests) which specifies different parts for the test depending on the number of cables or wires, single or bunched as the following:

BS EN / IEC 60332-1 & 2: it's a test on a single insulated vertical wire or electric and fiber optic cable. A 60 cm long cable sample is fixed vertically inside a metallic box and the lower end is exposed to a gas burner angled at 45° to the horizontal. After burning cease, the charred or affected position does not reach within 50mm of the lower edge of the top clamp which is equivalent to 425mm above the point of flame application.

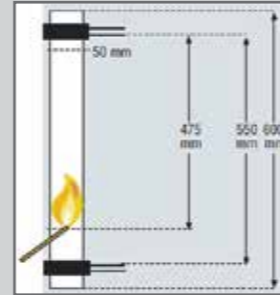
The test method is not suitable for the testing of some small wires due to the melting of the conductors during the time of application of the flame.

BS EN / IEC 60332-3: it's a test for bunched wires and cables and basically categorized in three grades A, B & C, the three grades have the same test procedures and the same test purpose, the cable is considered as flame retardant if the flame did not propagate along the cable for more than 2.5 m after the flame is ceased but it all depends on the number of samples as above:

BS EN / IEC 60332-3-22 (CAT A): it's the most severe test and the number of test samples requires providing a total volume of 7 liters of non-metallic material which shall be bunched on a ladder exposed to flame for 40 minutes.

BS EN / IEC 60332-3-23 (CAT B): The number of test samples requires providing a total volume of 3.5 liters of non-metallic material which shall be bunched on a ladder and exposed to flame for 40 minutes.

BS EN / IEC 60332-3-24 (CAT C): The number of test samples requires providing a total volume of 1.5 liters of non-metallic material which shall be bunched on a ladder and exposed to flame for 20 minutes



Fire Resistant Cables

Fire resistant cables: are used when the cables are required to keep circuit integrity and continue to operate in the presence of a fire for a specified time under defined conditions, these cables are called fire resistant cables. The cables are tested based on the following standards:

IEC 60331 Fire Resistance Test

A sample is connected to an electrical supply at its rated voltage. Fire is applied for a period of 1.5 hours. The temperature on the cable is 750°C, The test shall continue for the flame application time, after which the flame shall be extinguished but the cable sample shall remain energized for a further 15 min. the cable must maintain its circuit integrity.

BS6387 Fire Resistance Test

The test method given in this British Standard consists of three component Protocols, designated C, W and Z.

When separate test pieces from the same sample of cable are tested to each of these three protocols, these together comprise the full test. When the requirements of each one of the protocols are met, the cable may be designated as “category CWZ”.

It details the following methods to categorize the cables according to cable withstand capacities.

Resistance to fire alone:

Protocol C: subjects the cable under test to a flame via direct impingement corresponding to a temperature attack of 950 °C ±40 °C for 3 hours.

Resistance to fire with water:

Category W: Cables are subjected to fire at 650°C±40 °C for 15 minutes, then at 650°C with water spray for a further 15 minutes.

Resistance to fire with mechanical shock:

Protocol Z: subjects the cable under test to a flame via direct impingement corresponding to a temperature attack of 950 °C ±40 °C for 15 min. with indirect application of mechanical shock.

*Product standards might refer to only one of the protocols C or W or Z, but, in such cases, may not use the designation “Category CWZ”.



Fire alarm cables

In addition to the fire resistant cables in the fire and emergency systems, another type of cables is required which transmit signals to the notification (Indicating) device Circuits such as alarm sounders, horns, strobes and other remote signaling equipment.

Fire alarm cables work under high temperature each to 105°C to do it's function in energizing or send the signals to specific device and it is observed that the fire resistant cables work under extreme conditions, the main difference between fire alarm and fire resistance cables is that fire alarm cables doesn't require to maintain circuit integrity under fire conditions; it only turns on the alarm systems at the beginning of the fire.

Fire alarm cable is specified in the article 760 of the American national electric code "NEC" and Elsewedy electric is a UL certified as recognized manufacturer.

Low Smoke and Halogen free Cables

In all fire disasters, smoke, halogen and toxic fumes of traditional PVC sheathed cables are the main obstacles to safe evacuation of a building or an area. In addition to the fire resistance and flame retardant tests there are some tests to ensure maximum safe evacuation of people with no harmful effects.

Smoke Emission Tests: (IEC 61034, BS EN 61034)

This test is for determination of smoke density. A 1m length of cable is placed in a 3m³ enclosure (It is called 3 meter cube test) and exposed to a beam of light through a clear window. This light travels across the enclosure to a photocell connected to recording equipment in the window on the other end. A minimum light transmission value greater than 60% is acceptable after a fire is generated. The higher the light transmittance, the less smoke emitted during a fire.

Acid Gas Emission Tests: (IEC 60754, BS EN 50267)

A corrosive halogen gases can be generated by burning PVC or chlorine containing material. HCL gas combines with the water in the eyes, mouth, throat, nose and lungs to form hydrochloric acid that has harmful effects and increasing potential fatalities by inhalation of carbon monoxide and oxygen depletion, additional dangers exist on all metallic materials and devices in the proximity of a fire.

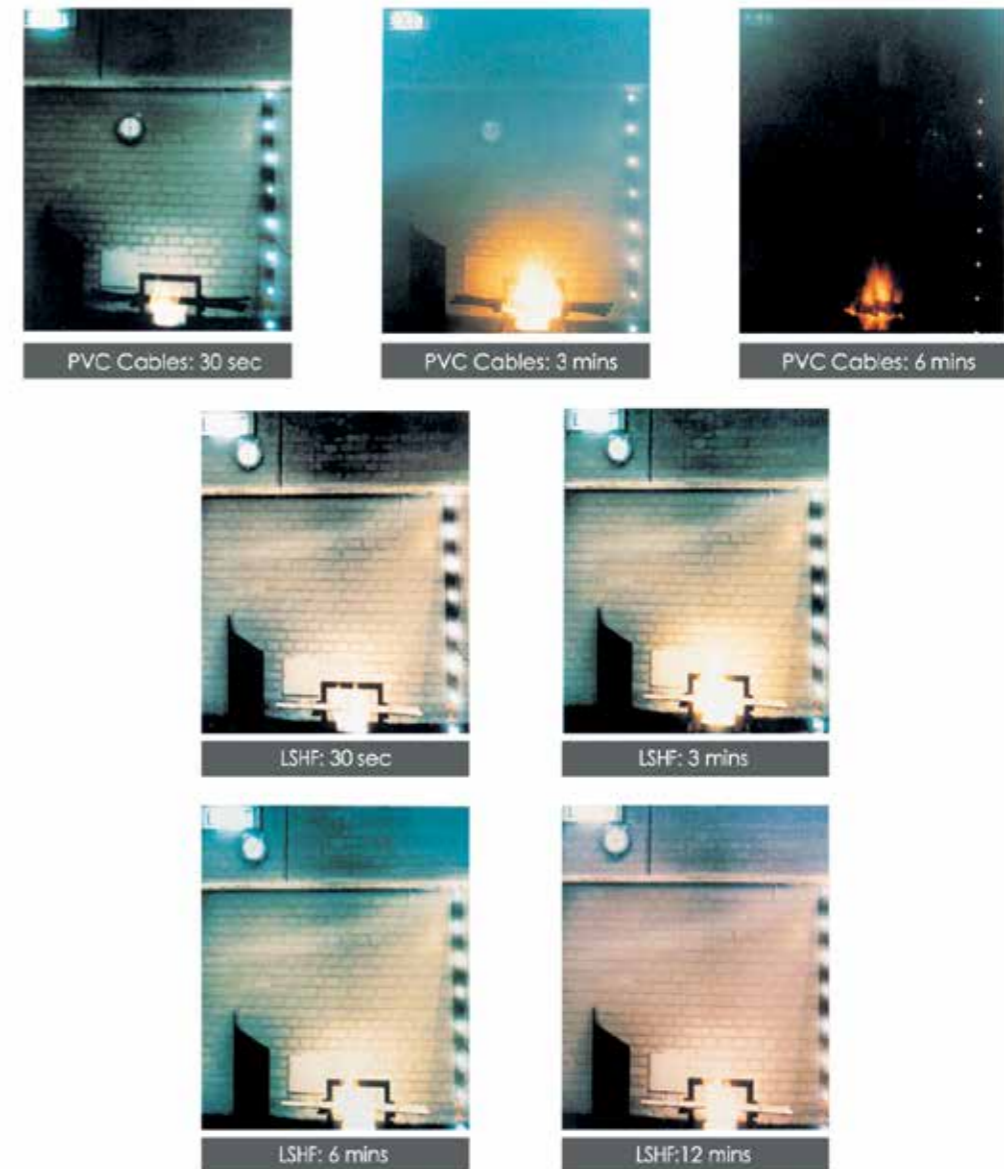
IEC 60754-1, BE EN 50267 specifies a method in determining the amount of halogen acid gas other than the hydrofluoric acid evolved during combustion of compound based on halogenated polymers and compounds containing halogenated additives taken from cable constructions. Halogen includes Fluorine, Chlorine, Bromine, Iodine and Astatine. If the hydrochloric acid yield is less than 5 mg/g, the cable specimen is categorized as LSZH.

IEC 60754-2 specifies a method in determining the degree of acidity of gases evolved during the combustion of materials taken from electric cables by measuring pH and conductivity. This standard requires the weighted pH value of not less than 4.3 when related to 1 liter of water, and the weighted value of conductivity should not exceed 10µS/mm.



The 3 Meter Cube Smoke Test Chamber

Photos in the upper side for PVC sheathed cables and lower side shows the LSHF sheathed cables.



Comparisn between traditional PVC & Low Smoke Halogen Free Cables when tested in accordance to IEC 61034

The comparative figure above shows the difference between the behaviour of traditional PVC and low smoke halogen free sheathed cables when tested for low smoke emission according to IEC 61034. This property helps making the public places like underground tunnels, hospitals, hotels, etc, more safer and easier for evacuation during the fire conditions.

Fire Resistant Cables – Keep Human Life Safe...

Fire in high rise in urban area is recently becoming a big social problem throughout the world.

Major accidents as occurred in the past which have resulted in the deaths of many people would have been avoided if there had been effective fire preventive feature designed and installed to minimize such injuries and damages and to save and protect human life and properties.

Major accidents which have resulted in the deaths of many innocent people, have taught us that the safety of the occupants and users in public, commercial and industrial environments is of paramount importance. Every possible safety feature designed to prevent and protect against loss of life and damage to property should be specified and installed.

One such safety feature is the use of fire performance cables for critical safety systems, including fire alarms, emergency lighting, PA systems, CCTV systems, emergency power supplies and smoke & fire shutters.

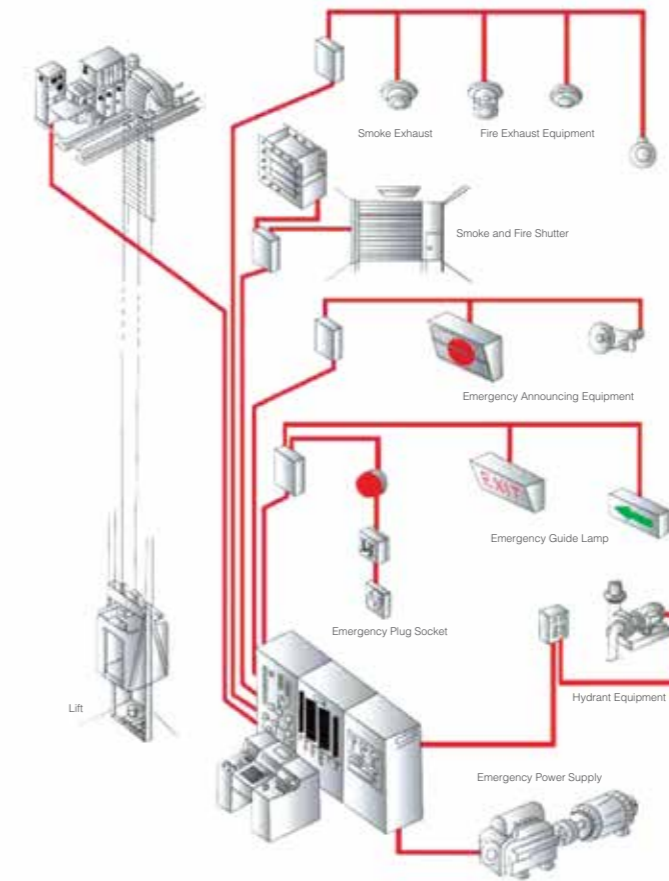
The correct selection and installation of these “life saving” cables helps ensure that in the event of an emergency, vital safety systems will continue to operate to assist an orderly evacuation of the premises and to aid the emergency services in gaining quick and effective entry to deal with the hazard.

Today's modern architect is constantly aiming to build higher and larger structures, incorporating complex interiors within which we can both live and work. The construction of these new “super” structures inevitably means accommodating more people, with the added responsibility for their safety and well being resting with the specifiers and consultants responsible for the project.

At ELSEWEDY CABLES, we understand what is required from a fire performance cable and we appreciate the pressures faced by specifiers and consultants in selecting the correct cable from the range available

ELSEWEDY CABLES, Fire Resistant Cables & fire performance cables are specifically designed to facilitate the quick and orderly evacuation of the buildings occupants in the events of an emergency. Purpose designed to maintain circuit integrity to a host of critical safety systems, including fire alarms, emergency lights, CCTV systems and emergency power supplies, Fire Resistant cables form a vital component of any safety system.

The special characteristics of the FR Cables range make it suitable for an almost infinite number of applications and environments such as:



ELSEWEDY CABLES Fire Resistant

- Allows people to see and breathe safely for longer time.
- Increase time for people to escape.
- Reduces damage of buildings and electronic equipment.
- ELSEWEDY CABLES, Fire Resistant Cables improves safety and human survival in a fire.

International Standards Compliance

The most important feature during fire condition is that the fire alarm circuit is working under the fire, in case the cables connecting the fire alarm circuits are burnt the whole alarm system is useless.

So there was a great need for a type of cables which operate under the fire conditions, fire resistant cables provide a good system for emergency circuits where the integrity of the electric network is maintained during the fire conditions.

Testing of this property is conducted according to IEC 60331 which requires one meter of cable to be hanged and subjected to flame at 750 C for 90 min. and also according to BS 6387 which requires a sample length of the cable to be hanged and subjected to flame at 950 ± 40 C for 180 min.

Elsewedy Fire Resistance Classes

	Fire Guard 1000 Plus®	Fire Guard 1000®	Fire Guard 100®
Standards	BS 7846-F120 BS 8519 BS 8491	BS 7846-F2 BS 6387 - CWZ BS 50200 BS 8434-2	BS 6387 - CWZ BS 50200 BS 8434-2
Approval	LPCB approved and listed in red book		
Bending Radius	6 x Dcable (Round conductors) 8 x Dcable (shaped conductors)		4 x Dcable (Dca ≤ 8 mm) 6 x Dcable (Dca > 8 mm)
Temperature range	- 25 to 90 °C		
Mechanical impact	Very Good	Very Good	Requires protection
Flame propagation	BS EN 60332-3-24 IEC 60332-1-2		IEC 60332-1-2
Flexibility	Rigid	Rigid	Semi Flexible
Halogen Free	EN 60754-1		
Low corrosive gas	EN 60754-2		
Low smoke emission	BS EN 61043-2 BS 7846	BS EN 61043-2	
Light Transmittance	over 70 %	over 60 %	

Fire Resistant Testing Facilities



Category "C"



Category "W"



Category "Z"



Category "F-120"



Category PH-120 with water



Category "PH-120"



Flame Test BS 60332-1



Flame Test BS EN 60332-3



Smoke Density test BS EN 61034

Technical Data & Cables Parameters

1. Resistance

The conductor DC resistance values given in this catalog are based on 20°C. in case of the conductor DC resistance is required at different temperature, the following formula shall be used:

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

where

- R_{θ} : conductor DC resistance at $\theta^{\circ}\text{C}$ Ω/Km
- R_{20} : conductor DC resistance at 20°C Ω/Km
- θ : operating temperature $^{\circ}\text{C}$
- α : temperature coefficient $1/^{\circ}\text{C}$
= 0.00393 for Copper
= 0.00403 for Aluminum

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

$$R_{AC} = R_{\theta} (1 + Y_p + Y_s) \Omega/\text{Km}$$

where

- Y_p and Y_s are proximity and skin effect factors respectively

2. Inductance:

The self and mutual inductances are formulated as following:

$$L = K + 0.2 \ln\left(\frac{2S}{d}\right) \text{ mh/Km}$$

where

- L : Inductance mh/Km
- K : Constant (as self inductance) mh/Km
- d : Conductor diameter mm
- S : Axial spacing between cables in trefoil and in case of flat formation multiply the spacing by 1.26 mm

3. capacitance:

The capacitance is formulated as following:

$$C = \frac{\epsilon_r}{18 \ln\left(\frac{D}{d}\right)} \mu\text{f/Km}$$

where

- C : Capacitance $\mu\text{f/Km}$
- ϵ_r : relative permittivity of insulation material
- D : Diameter over Insulation mm
- d : Diameter under insulation mm

4. Insulation resistance:

The insulation resistance is formulated as following:

$$R = K \ln(D/d) \text{ M}\Omega/\text{Km}$$

where

- R : insulation resistance $\text{M}\Omega/\text{Km}$
- K : Constant depending on the insulation material
- d : diameter under the insulation mm
- D : diameter over the insulation mm

5. Charging Current:

The charging current is the capacitive current which flows through the dielectric layers when AC voltage is applied. The value can be calculated from the following equation:

$$I_c = U_0 \omega C 10^{-6} \text{ A/Km}$$

where

- I_c : Charging current A/Km
- U_0 : Rated phase voltage V
- ω : Angular of velocity ($2\pi f$)
- f : Frequency Hz
- C : Capacitance $\mu\text{f/Km}$

6. Dielectric losses

The dielectric losses of an AC cable are proportional to the capacitance, the frequency, the phase voltage squared and the power factor. The value can be derived from the following equation:

$$W_d = \omega C U_0^2 \tan\delta 10^{-6} \text{ watt/Km/phase}$$

where

- W_d : Dielectric losses watt/Km/phase
- f : Frequency Hz
- C : Capacitance $\mu\text{f/Km}$
- U_0 : Rated phase voltage V
- $\tan\delta$: Dielectric power factor
- ω : Angular of velocity ($2\pi f$)

7. Cable Ampacity:

Cable ampacity or current carrying capacity is defined as the continuous maximum current that cable can carry at its maximum operating temperature. The following installation conditions were assumed for the enclosed cable ampacity:

- Ambient air temperature 30(shaded) °C
- Ground temperature 20 °C
- Ground thermal resistivity 100 K.cm/Watt
- Burial depth 0.5 m
- Inner diameter of duct is 1.5 multiplied by outer cable diameter/ diameter of cables group
- Drying out of the soil is ignored.
- In case of installation conditions are different from the assumption stated. Derating factors tabulated in tables 3 to 11 shall be used for calculating the required current capacity.
- All cables ampacities are based on IEC 60287

8. Cable short circuit capacity:

Tables 13-17 give the short circuit current for both copper and aluminum conductor insulated by PVC & XLPE in accordance to table 13.

If the short circuit is required at duration not mentioned in the catalog, it is obtained by the following formula:

$$I_{s.c.t} = \frac{I_{s.c.1}}{\sqrt{t}} \quad \text{KA}$$

where
 $I_{s.c.t}$: short circuit current for t second KA
 $I_{s.c.1}$: short circuit current for 1 second KA
 t : duration Sec

9. Voltage drop:

When current flows in a cable there is a voltage drop between the ends of the cable 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

$$V_d = 2I_l(R \cos\phi + X \sin\phi) \quad \text{v}$$

B. Three phase circuit

$$V_d = \sqrt{3}I_l(R \cos\phi + X \sin\phi) \quad \text{v}$$

where

V_d : Voltage drop V
 I : Load current A
 R : AC resistance Ω/Km
 X : Reactance Ω/Km
 $\text{Cos}\phi$: Power factor
 l : Length Km
 $X = \omega L^{10^{-3}}$ Ω/Km
 L : Inductance
 Relation between $\text{Cos}\phi$ & $\text{Sin}\phi$

Cosφ	1.0	0.9	0.8	0.71	0.6	0.5
Sinφ	0.0	0.44	0.6	0.71	0.8	0.87

- LV cable systems should be designed so as not to exceed voltage drop 3-5 % in normal operating conditions.

- Voltage drop data for LV cable (single & multi-core) are tabulated in tables 18 & 19.

10. Frequency:

Values in this catalog are based on 50 HZ frequency.

11. Load factor:

It is defined as the average power divided by the peak power, over a period of time. In this catalog current values are calculated based on unity load factor.

Electrical and physical properties of Metals:

Electrical properties

Table 1

Metal	IACS 100 %	Electric alresistivity @ 20 °C $\Omega.m (10^{-8})$	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
Aluminum	61	2.8264	0.00403
Lead	8	21.4	0.004

Electrical properties

Table 2

Property	Units	Copper	Aluminum	Lead
Density @ 20 °C	Kg/m ³	8890	2703	11340
Coeff. Of thermal expansion	1/°C X	17	23	29
Melting point	10 ⁶ °C	1083	659	327
Thermal conductivity	W/cm °C	3.8	2.4	0.34
Ultimate tensile strength	Mn/mm ²	225	70-90	---

Derating Factors:

Air temprature derating factors

Table 3

Air temperature	15	20	25	30	35	40	45	50	55
PVC cables rated 70°C	1.21	1.15	1.07	1	0.92	0.84	0.75	0.66	0.55
XLPE cables rated 90°C	1.15	1.1	1.05	1	0.95	0.9	0.84	0.78	0.72

Ground temprature derating factors

Table 4

Air temperature	15	20	25	30	35	40	45	50	55
PVC cables rated 70°C	1.05	1	0.95	0.89	0.84	0.77	0.71	0.63	0.55
XLPE cables rated 90°C	1.04	1	0.96	0.93	0.89	0.85	0.8	0.76	0.71

Derating Factors:

Burial depth de-rating factors

Table 5

Depth of laying m	Direct buried			Duct		
	Single core		Three cores	Single core		Three cores
	<= 185	> 185		<= 185	> 185	
0.5	1	1	1	1	1	1
0.6	0.98	0.98	0.99	0.98	0.98	0.99
0.8	0.96	0.94	0.96	0.96	0.95	0.97
1	0.94	0.92	0.94	0.94	0.92	0.96
1.25	0.92	0.9	0.92	0.92	0.9	0.94
1.5	0.91	0.88	0.91	0.91	0.89	0.93
1.75	0.9	0.86	0.9	0.9	0.88	0.92
2	0.89	0.85	0.89	0.89	0.87	0.91
2.5	0.88	0.83	0.88	0.88	0.85	0.9
3	0.87	0.81	0.87	0.87	0.84	0.89

Soil thermal resistivity de-rating factors

Table 6

soil thermal resistivity K.°C/watt	0.8	0.9	1	1.2	1.5	2	2.5	3
de-rating factors	1.1	1.05	1	0.92	0.83	0.73	0.66	0.6

PVC rated temperature de-rating factors

Table 7

Type of PVC rated temperature °C	70	90	105
De-rating factors for cable directly buried in ground	1	1.15	1.24
De-rating factors for cable in air	1	1.28	1.46
De-rating factors for cable in duct	1	1.2	1.34

Trefoil or flat formation De-rating factors for three single core cables laid direct in ground

Table 8

Number of circuits						
	Trefoil Formation			Flat Formation		
	Touching		Spacing = 0.15 m	Spacing = 0.15 m		Spacing = 0.3 m
	Trefoil	Flat	Trefoil	Flat	Trefoil	Flat
nr						
2	0.77	0.8	0.82	0.85	0.88	0.91
3	0.66	0.69	0.73	0.76	0.8	0.83
4	0.6	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	0.7	0.73

*L= Spacing

Short Circuit Current

Short Circuit current in kA for Copper Conductors PVC insulated

Table 9

CSA mm ²	Duration in second									
	0.1	0.2	0.3	0.4	0.5	1	2	3	4	5
1.5	0.5	0.4	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1
2.5	0.9	0.6	0.5	0.5	0.4	0.3	0.2	0.2	0.1	0.1
4	1.5	1	0.8	0.7	0.7	0.5	0.3	0.3	0.2	0.2
6	2.2	1.5	1.3	1.1	1	0.7	0.5	0.4	0.3	0.3
10	3.6	2.6	2.1	1.8	1.6	1.2	0.8	0.7	0.6	0.5
16	5.8	4.1	3.4	2.9	2.6	1.8	1.3	1.1	0.9	0.8
25	9.1	6.4	5.2	4.5	4.1	2.9	2	1.7	1.4	1.3
35	12.7	9	7.3	6.4	5.7	4	2.8	2.3	2	1.8
50	18.2	12.9	10.5	9.1	8.1	5.8	4.1	3.3	2.9	2.6
70	25.5	18	14.7	12.7	11.4	8.1	5.7	4.6	4	3.6
95	34.5	24.4	19.9	17.3	15.5	10.9	7.7	6.3	5.5	4.9
120	43.6	30.9	25.2	21.8	19.5	13.8	9.8	8	6.9	6.2
150	54.6	38.6	31.5	27.3	24.4	17.3	12.2	10	8.6	7.7
185	67.3	47.6	38.8	33.6	30.1	21.3	15	12.3	10.6	9.5
240	87.3	61.7	50.4	43.6	39	27.6	19.5	15.9	13.8	12.3
300	109.1	77.1	63	54.6	48.8	34.5	24.4	19.9	17.3	15.4
400	130	92	75.1	65	58.2	41.1	29.1	23.7	20.6	18.4
500	162.5	114.9	93.8	81.3	72.7	51.4	36.3	29.7	25.7	23
630	204.8	144.8	118.2	102.4	91.6	64.8	45.8	37.4	32.4	29
800	260.1	183.9	150.2	130	116.3	82.2	58.2	47.5	41.1	36.8

Short Circuit current in kA for Copper Conductors XLPE insulated

Table 10

CSA mm ²	Duration in second									
	0.1	0.2	0.3	0.4	0.5	1	2	3	4	5
1.5	0.7	0.5	0.4	0.3	0.3	0.2	0.2	0.1	0.1	0.1
2.5	1.1	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.2	0.2
4	1.8	1.3	1	0.9	0.8	0.6	0.4	0.3	0.3	0.3
6	2.7	1.9	1.6	1.4	1.2	0.9	0.6	0.5	0.4	0.4
10	4.5	3.2	2.6	2.3	2	1.4	1	0.8	0.7	0.6
16	7.2	5.1	4.2	3.6	3.2	2.3	1.6	1.3	1.1	1
25	11.3	8	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	3.5	2.9	2.5	2.2
50	22.6	16	13.1	11.3	10.1	7.2	5.1	4.1	3.6	3.2
70	31.7	22.4	18.3	15.8	14.2	10	7.1	5.8	5	4.5
95	43	30.4	24.8	21.5	19.2	13.6	9.6	7.8	6.8	6.1
120	54.3	38.4	31.3	27.1	24.3	17.2	12.1	9.9	8.6	7.7
150	67.9	48	39.2	33.9	30.4	21.5	15.2	12.4	10.7	9.6
185	83.7	59.2	48.3	41.9	37.4	26.5	18.7	15.3	13.2	11.8
240	108.6	76.8	62.7	54.3	48.6	34.3	24.3	19.8	17.2	15.4
300	135.7	96	78.4	67.9	60.7	42.9	30.4	24.8	21.5	19.2
400	181	128	104.5	90.5	80.9	57.2	40.5	33	28.6	25.6
500	226.2	160	130.6	113.1	101.2	71.5	50.6	41.3	35.8	32
630	285.1	201.6	164.6	142.5	127.5	90.1	63.7	52	45.1	40.3
800	362	256	209	181	161.9	114.5	80.9	66.1	57.2	51.2

Short Circuit current in kA for Aluminum Conductors PVC insulated

Table 11

CSA mm ²	Duration in second									
	0.1	0.2	0.3	0.4	0.5	1	2	3	4	5
1.5	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
2.5	0.6	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.1
4	1	0.7	0.6	0.5	0.4	0.3	0.2	0.2	0.2	0.1
6	1.4	1	0.8	0.7	0.6	0.5	0.3	0.3	0.2	0.2
10	2.4	1.7	1.4	1.2	1.1	0.8	0.5	0.4	0.4	0.3
16	3.8	2.7	2.2	1.9	1.7	1.2	0.9	0.7	0.6	0.5
25	6	4.3	3.5	3	2.7	1.9	1.3	1.1	1	0.9
35	8.4	6	4.9	4.2	3.8	2.7	1.9	1.5	1.3	1.2
50	12	8.5	6.9	6	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	16.2	13.2	11.4	10.2	7.2	5.1	4.2	3.6	3.2
120	28.9	20.4	16.7	14.4	12.9	9.1	6.5	5.3	4.6	4.1
150	36.1	25.5	20.8	18	16.1	11.4	8.1	6.6	5.7	5.1
185	44.5	31.5	25.7	22.2	19.9	14.1	9.9	8.1	7	6.3
240	57.7	40.8	33.3	28.9	25.8	18.2	12.9	10.5	9.1	8.2
300	72.1	51	41.6	36.1	32.3	22.8	16.1	13.2	11.4	10.2
400	86	60.2	49.6	43	38.5	27.2	19.2	15.7	13.6	12.2
500	107.5	76	62.1	53.7	48.1	34	24	19.6	17	15.2
630	135.4	95.8	78.2	67.7	60.6	42.8	30.3	24.7	21.4	19.2
800	172	121.6	99.3	86	76.9	54.4	38.5	31.4	27.2	24.3

Short Circuit current in kA for Aluminum Conductors XLPE insulated





Table 12





CSA mm ²	Duration in second									
	0.1	0.2	0.3	0.4	0.5	1	2	3	4	5
1.5	0.4	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1
2.5	0.7	0.5	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.1
4	1.2	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.2	0.2
6	1.8	1.3	1	0.9	0.8	0.6	0.4	0.3	0.3	0.3
10	3	2.1	1.7	1.5	1.3	0.9	0.7	0.5	0.5	0.4
16	4.8	3.4	2.8	2.4	2.1	1.5	1.1	0.9	0.8	0.7
25	7.5	5.3	4.3	3.7	3.3	2.4	1.7	1.4	1.2	1.1
35	10.5	7.4	6	5.2	4.7	3.3	2.3	1.9	1.7	1.5
50	14.9	10.6	8.6	7.5	6.7	4.7	3.3	2.7	2.4	2.1
70	20.9	14.8	12.1	10.5	9.4	6.6	4.7	3.8	3.3	3
95	28.4	20.1	16.4	14.2	12.7	9	6.3	5.2	4.5	4
120	35.9	25.4	20.7	17.9	16	11.3	8	6.5	5.7	5.1
150	44.8	31.7	25.9	22.4	20	14.2	10	8.2	7.1	6.3
185	55.3	39.1	31.9	27.6	24.7	17.5	12.4	10.1	8.7	7.8
240	71.7	50.7	41.4	35.9	32.1	22.7	16	13.1	11.3	10.1
300	89.6	63.4	51.8	44.8	40.1	28.3	20	16.4	14.2	12.7
400	119.5	84.5	69	59.8	53.4	37.8	26.7	21.8	18.9	16.9
500	149.4	105.6	86.3	74.7	66.8	47.2	33.4	27.3	23.6	21.1
630	188.2	133.1	108.7	94.1	84.2	59.5	42.1	34.4	29.8	26.6
800	239	169	138	119.5	106.9	75.6	53.4	43.6	37.8	33.8

Voltage Drop

Voltage drop for single core L.V. cables

Table 13

CSA mm ²	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

CSA mm ²	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

The above data are based on:
 - Max. operating temp: 90 °C for XLPE & 70 °C for PVC
 - Power factor: 0.8 Rated frequency: 50 HZ
 - Cables are touched in flat formation

Voltage Drop for Multi core L.V Cables

Table 14

CSA mm ²	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	7.741	7.731
6	5.199	5.191
10	3.101	3.094
16	1.275	1.282
25	0.957	1.009
35	0.726	0.764
50	0.526	0.552
70	0.402	0.418
95	0.334	0.347
120	0.287	0.297
150	0.246	0.254
185	0.207	0.212
240	0.182	0.185
300	0.160	0.163
400	0.144	0.145

CSA mm ²	Aluminium 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

The above data are based on:
 Max. operating temp: 90 °C for XLPE & 70 °C for PVC
 Power factor : 0.8 Rated frequency: 50 HZ
 Cables are touched in flat formation



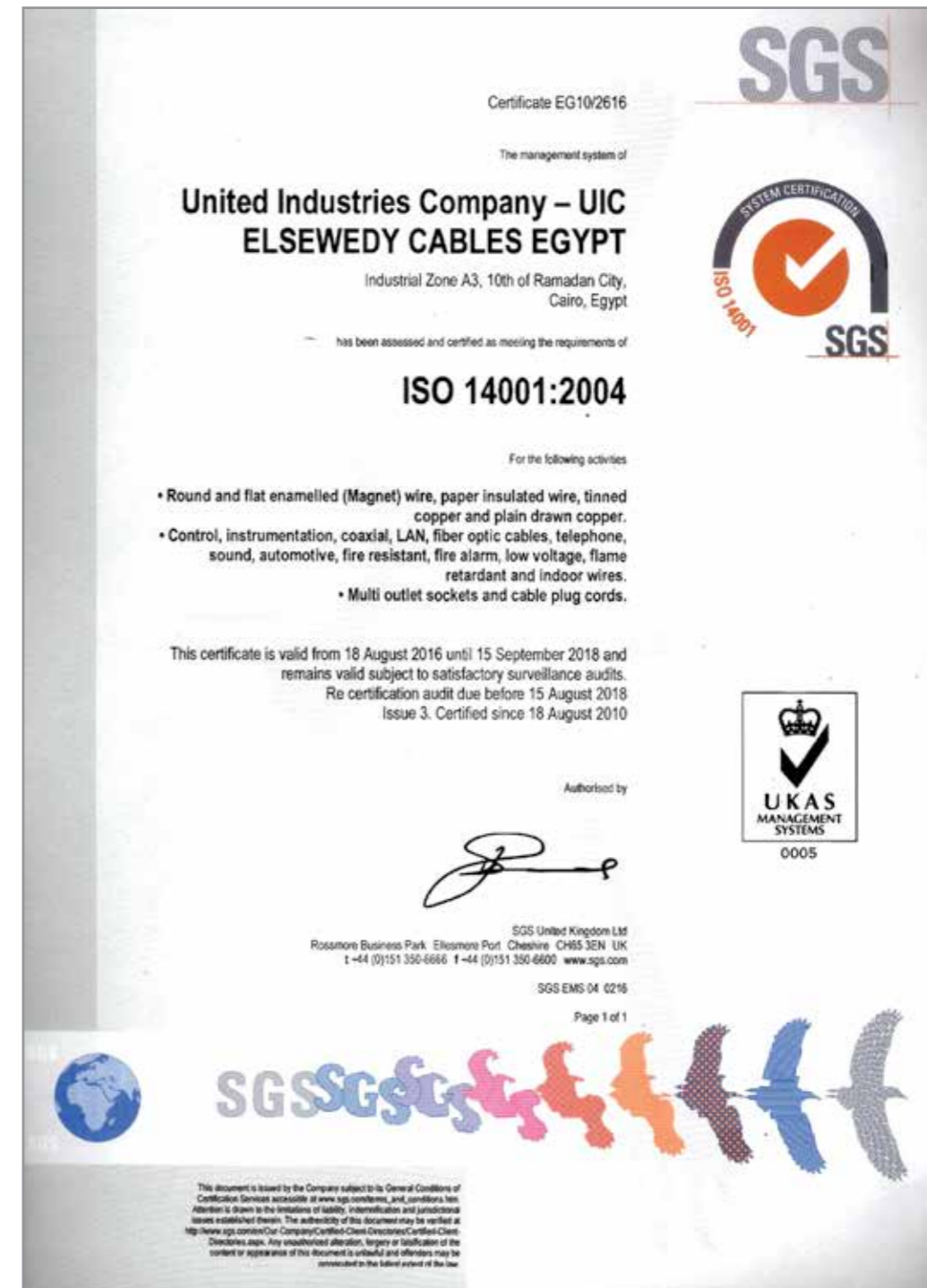
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System & Products
Approvals

SGS Approval - UIC



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SGS Approval - Doha Cables

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BASEC Approval



BASEC Approval

BASEC
BRITISH APPROVALS SERVICE FOR CABLES

Product Certification Schedule

Schedule No: 140/002/034
 Licensee: EL SEWEDY CABLES GROUP, 10TH OF RAMADAN CITY, INDUSTRIAL ZONE A3, EGYPT
 Factory: UNITED INDUSTRIES COMPANY, 10TH OF RAMADAN CITY, INDUSTRIAL ZONE A3, CAIRO, EGYPT
 Specification: BS EN 50525-3-41:2011 Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (Uo/U) - Part 3-41: Cables with special fire performance - Single core non-sheathed cables with halogen-free crosslinked insulation, and low emission of smoke
 Type of Cable: Heat resistant cables (90°C)
 Clause 4.1 - Cables for fixed wiring - H07Z-U and H07Z-R
 Table B.1 - Cables with rigid conductor (450/750 V)
 HAR Document: Not applicable
 HAR Specification: Not applicable
 Range of Approval: 1.5sqmm to 10sqmm nominal cross-sectional area of conductors inclusive. Single-core. Class 1 conductor.
 1.5sqmm to 16sqmm nominal cross-sectional area of conductors inclusive. Single-core. Class 2 conductor.
 Insulation - EI5.
 Origin Thread: Not applicable
 Origin Mark: =EL SEWEDY CABLES= or 140/002

PERMISSIBLE MARKS

 **BASEC** **YELLOW ACETATE THREAD**

Please refer to the BASEC Product Certification Requirements

Expiry Date: 04/11/2020

Signed for and on behalf of the British Approvals Service for Cables
 Date 05/11/2017

This Certificate and Schedule(s) remains the property of BASEC, and shall be returned when required.


BASEC Approval

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BRITISH APPROVALS SERVICE FOR CABLES

Product Certification Schedule

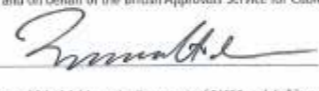
Schedule No: 140/002/038
 Licensee: EL SEWEDY CABLES GROUP, 10TH OF RAMADAN CITY, INDUSTRIAL ZONE A3, CAIRO, EGYPT
 Factory: UNITED INDUSTRIES COMPANY, 10TH OF RAMADAN CITY, INDUSTRIAL ZONE A3, CAIRO, EGYPT
 Specification: BS 6724:2016 Incorporating Corrigenda Nos. 1 and 2 Electric cables - Thermosetting insulated, armoured cables for voltages of 600/1000V and 1900/3300V for fixed installations, having low emission of smoke and corrosive gases when affected by fire - Specification.
 Type of Cable: Table 9 600/1000V armoured auxiliary cables with copper conductors
 HAR Document: Not applicable
 HAR Specification: Not applicable
 Range of Approval: 1.5sqmm to 2.5sqmm nominal cross-sectional area of conductors inclusive. 7-core to 37-core inclusive. Sheath - LTS1. Insulation - GP8.
 Origin Thread: Not applicable
 Origin Mark: =EL SEWEDY CABLES= or 140/002

PERMISSIBLE MARKS



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Expiry Date: 04/11/2020

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BRITISH APPROVALS SERVICE FOR CABLES

Product Certification Schedule

Schedule No: 216/001/002
 Licensee: DOHA CABLES, MIC COMMUNITY AREA, MESAIEED, PO BOX 22487, DOHA, QATAR
 Factory: DOHA CABLES, MIC COMMUNITY AREA, MESAIEED, PO BOX 22487, DOHA, QATAR
 Specification: BS 7846:2015 Electric cables - Thermosetting insulated, armoured, fire resistant cables of rated voltage 600/1000 V for fixed installations, having low emission of smoke and corrosive gases when affected by fire - Specification
 Type of Cable: Tables 4, 5 and 6
 Two-core, three-core and four-core 600/1000V cables with copper conductors
 HAR Document: Not applicable
 HAR Specification: Not applicable
 Range of Approval: 4sqmm to 400sqmm nominal cross-sectional area of conductors inclusive. Two-core to four-core inclusive. Class 2 conductor. Resistance to fire categories F2 & F120. Tested bend radius 8D. Sheath - LTS1. Insulation - GP8.
 Origin Thread: Not applicable
 Origin Mark: DOHA CABLES

PERMISSIBLE MARKS

 **BASEC** 
 Please refer to the BASEC Product Certification Requirements

Expiry Date: 02/06/2018

Signed for and on behalf of the British Approvals Service for Cables
 Date 4/9/2016

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BASEC
BRITISH APPROVALS SERVICE FOR CABLES

CERTIFICATE OF CONFORMITY

This is to certify that the

Quality Management System

of

**Doha Cables
 MIC Community Area
 Mesaieed
 PO Box 22487
 Doha
 Qatar**

conforms to the requirements of

BASEC Product Certification Requirements
 Including Clause 2.6 (Formerly BA 2250:1996 Parts 1 & 2)
 'Enhanced Quality Management Systems For Product Related Functions'

SCOPE OF CERTIFICATION

The design, manufacture and supply of:

Low Voltage PVC Single Core Building Wires. Low Smoke Zero Halogen Single Core Building Wires. PVC Flexible Multicore Cables. Low Voltage XLPE Insulated with Armouring & PVC Sheathed Power Cables. Low Voltage XLPE Insulated with Armouring & Low Smoke Zero Halogen Sheathed Power Cables.

Certificate No: **PCR-251** Issue date: 3rd June 2015
 Date of original certification: 3rd June 2015 Expiry Date: 2nd June 2018

This certificate is issued subject to and in accordance with BASEC Regulations and continued compliance.
 Includes requirements for Environmental issues directly relating to the Product and Manufacturing processes as well as limited Health & Safety issues directly relating to the Product and Manufacturing processes

Signed for and on behalf of the British Approvals Service for Cables
 Date 24/9/2015



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BASEC Approval

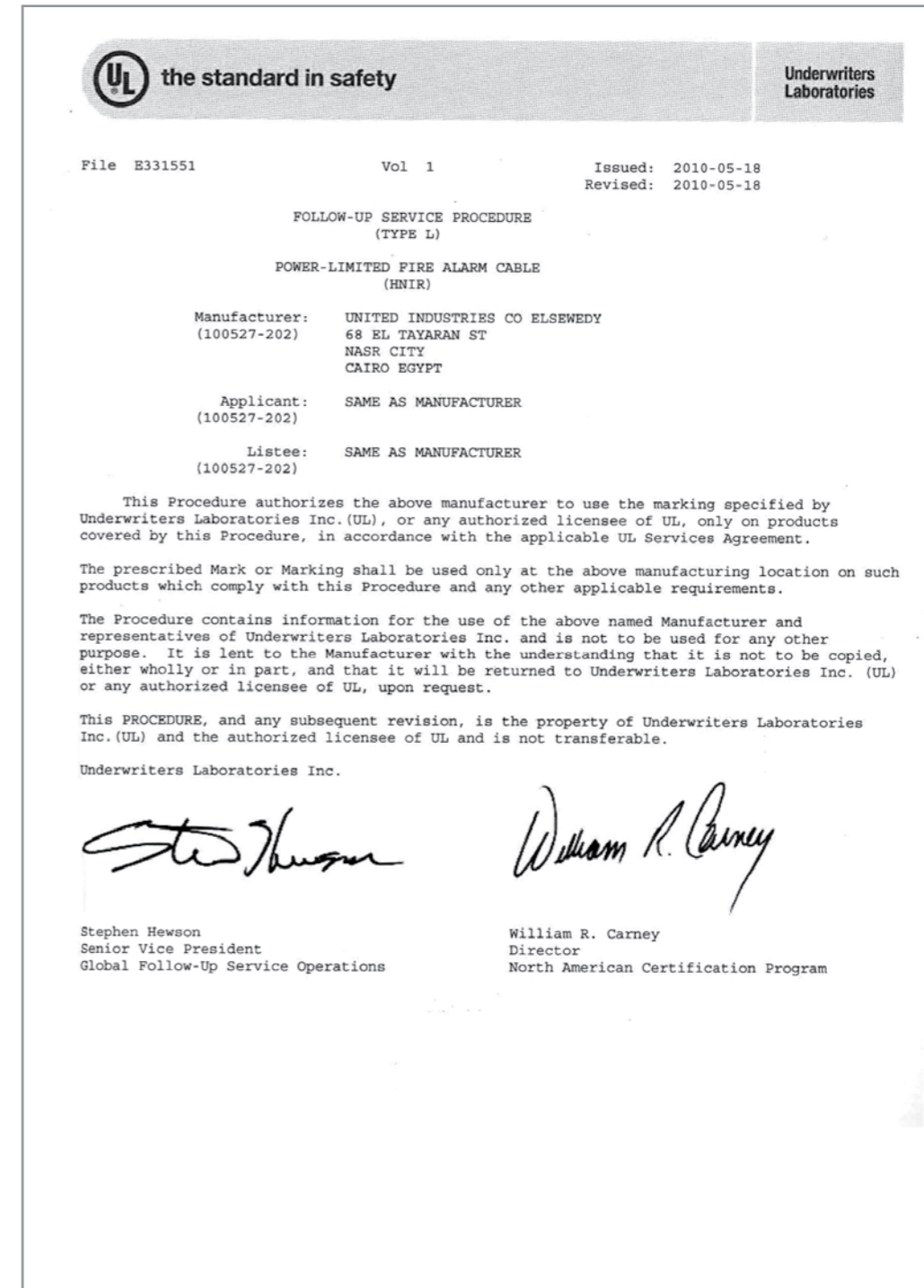


ISO/IEC 17025 (Lab Accreditation)





ISO/IEC 17025 (Lab Accreditation)



UL - Fire Alarms



KEMA Approval

KEMA Approval

	
REPORT OF PERFORMANCE	TIC 1619-12
OBJECT	2-core control cable
TYPE	500 V, 2x1,5 mm ² CU/MICA/XLPE/OS/LSHF
MANUFACTURER	United Industries-Elsewedy 10th of Ramadan City, Egypt
CLIENT	Elsewedy Cables Group, Cairo, Egypt
TESTED BY	KEMA HIGH-VOLTAGE LABORATORY Amhem, The Netherlands
DATE OF TESTS	1 to 6 November 2012
TEST PROGRAMME	Several fire test based on client's instructions: Flame spread test on single cables in accordance with IEC 60332-1-2, Tests for electric cables required to maintain circuit integrity under fire conditions in accordance with BS 6387 (1994) and smoke emission test in accordance with IEC 61034-2 (2005).
SUMMARY AND CONCLUSION	The object passed the tests.
<p>This Report of Performance applies only to the object tested. The responsibility for conformity of any object having the same designations with that tested rests with the Manufacturer.</p> <p>This report consists of 14 pages in total.</p> <p><small>© Copyright: Only integral reproduction of this report is permitted without written permission from KEMA. Electronic copies in e.g. PDF-format or scanned version of this report may be available and have the status "for information only". The sealed and bound version of the report is the only valid version.</small></p> <p style="text-align: right;">KEMA Nederland B.V.  S. M. Verhoeven Director Testing, Inspections & Certification The Netherlands Amhem, 8 July 2013</p>	

	
REPORT OF PERFORMANCE	TIC 1610-11
OBJECT	Single-core power cable
TYPE	0,6/1 kV, 1x300 mm ² CU/MICA/XLPE/AWA/LSHF
MANUFACTURER	El Sewedy Cables 10 th of Ramadan City, Egypt
CLIENT	El Sewedy Cairo, Egypt
TESTED BY	KEMA HIGH-VOLTAGE LABORATORY Amhem, The Netherlands
DATE OF TESTS	28 September 2011
TEST PROGRAMME	Fire tests in accordance with BS 6387:1994.
SUMMARY AND CONCLUSION	The object passed the tests.
<p>This Report of Performance applies only to the object tested. The responsibility for conformity of any object having the same designations with that tested rests with the Manufacturer.</p> <p>This report consists of 11 pages in total.</p> <p><small>© Copyright: Only integral reproduction of this Certificate is permitted without written permission from KEMA. Electronic copies in e.g. PDF-format or scanned version of this Certificate may be available and have the status "for information only". The sealed and bound version of the Certificate is the only valid version.</small></p> <p style="text-align: right;">KEMA Nederland B.V.  S. M. Verhoeven Director Testing, Inspections & Certification The Netherlands Amhem, 20 January 2012</p>	

LPCB Approval - Doha Cables

LPCB Approval - Doha Cables

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Certificate of Product Approval
 Certificate Number: 1281b Issue: 02

Doha Cables
 MIC Community Area
 Mesaieed,
 Qatar 22487
 Doha,
 Qatar

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s) Cable Types as listed below: FIRE GUARD 100* See Certificate Appendix for details	Standard(s) (see Appendix for details) BS 6387:2013 CWZ EN 60754-1:2014 EN 60754-2:2014 EN 61034-2:2005 IEC 60331-21:1999 EN 50200:2006 (Class PH120) EN 50200:2006 Annex E (30 mins) BS 8434-2:2003+A2:2009 (120 mins) IEC 60332-1-2:2004
--	--

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Damien Ward 25 May 2016 17 May 2016
 Signed for LPCB Certification Scheme Manager Date of Issue Date of First Issue

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Certificate of Product Approval
 Certificate Number: 1281a Issue: 02

Doha Cables
 MIC Community Area
 Mesaieed 22487
 QATAR

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s) Cable Types as listed below: FIRE GUARD 1000 PLUS See Certificate Appendix for details	Standard(s) (see Appendix for details) BS 7846:2009 Cat F2 & F120 EN 60754-1:2014 EN 60754-2:2014 BS 8519:2010
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This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Damien Ward 27 May 2016 17 February 2015
 Signed for LPCB Certification Scheme Manager Date of Issue Date of First Issue

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LPCB Approval - EGYTECH

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Certificate of Product Approval
 Certificate Number: 1285a Issue: 02

**EI SEWEDY CABLES – EGYPT
 (EGYTECH CABLES)**

3rd Industrial Zone A3
 10TH of Ramadan City
 EGYPT

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s) Cable Types as listed below: FIRE GUARD 1000 See Certificate Appendix for details	Standard(s) (see Appendix for details) BS 7846:2009 Cat F2 & F120
--	---

This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

Damien Ward 12 April 2016 03 December 2015
 Signed for LPCB Certification Scheme Manager Date of Issue Date of First Issue

BF1345 Rev. 0.3 Page 1 of 3 © BRE Global Ltd, 2015

The Loss Prevention Certification Board (LPCB) has been working with industry for more than 100 years to set the standards needed to ensure that fire and security products and services perform effectively. LPCB offers third-party approval confirming that products and services have met and will continue to meet these standards.

LPCB® www.redbooklive.com

Certificate of Product Approval
 Certificate Number: 1290a Issue: 01

EL SEWEDY CABLES





10TH of Ramadan City
 Zone A3
 44629
 EGYPT

is authorised to use the LPCB mark in association with the product(s) listed in this certificate and appendix having complied with the requirements of the standard(s) detailed below:

Product(s) Cable Types as listed below: FIRE GUARD 1000 See Certificate Appendix for details	Standard(s) (see Appendix for details) BS 7846:2009 Cat F2 EN 50200:2006 (Class PH60)
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This Certificate is maintained and held in force through regular surveillance activities and subject to the corresponding ISO 9001 Certificate being maintained.

David Hoare 26 March 2015 26 March 2015
 Signed for LPCB Certification Scheme Manager Date of Issue Date of First Issue

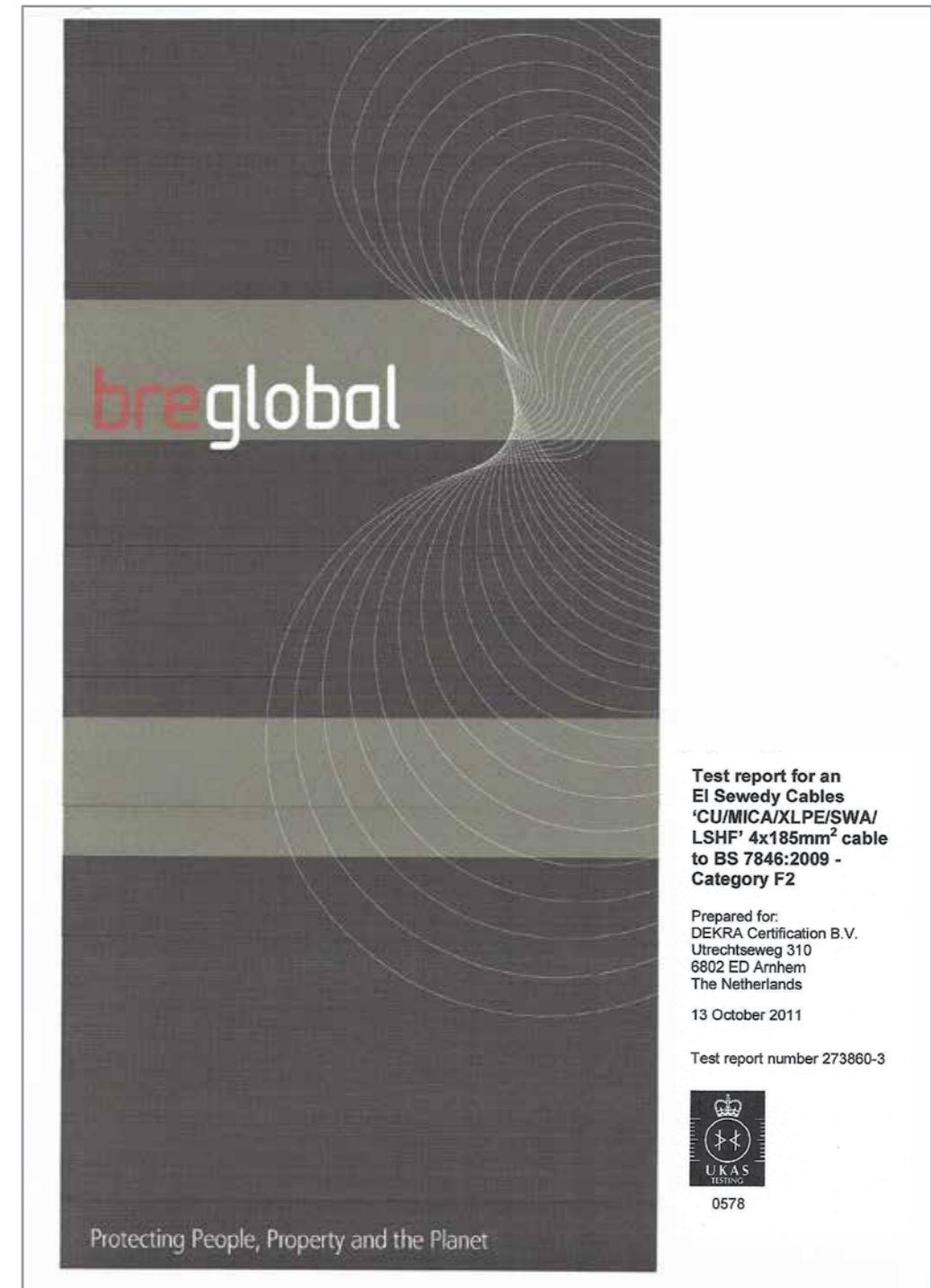
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The Loss Prevention Certification Board (LPCB) has been working with industry for more than 100 years to set the standards needed to ensure that fire and security products and services perform effectively. LPCB offers third-party approval confirming that products and services have met and will continue to meet these standards.


breglobal Approval - Elsewedy Electric



breglobal Approval - Elsewedy Electric



breglobal Approval - Elsewedy Electric




**Test report for an
El Sewedy Cables
'CU/MICA/XLPE/AWA/
LSHF' 1x500mm² cable
to BS 7846:2009 -
Category F2**

Prepared for:
DEKRA Certification B.V.
Utrechtseweg 310
6802 ED Arnhem
The Netherlands

13 October 2011


Test report number 273860-2



0578

Protecting People, Property and the Planet

Bureau Veritas



**Industry & Facilities Division
Third Party Inspection Report**

Page 1 of 5

INSPECTION REPORT Nr 01		Revision Nr 0	
<input type="checkbox"/> Initial <input type="checkbox"/> Interim <input checked="" type="checkbox"/> Final <input type="checkbox"/> Resident			
Inspection requested by: EL SEWEDY CABLES-EGYPT			
Inspection performed as Recognised Authority: <input type="checkbox"/> Yes, :(Recognition) <input checked="" type="checkbox"/> No			
BV Job Nr: 6067851 - 01/2018			

Project: Fire resistance test(CWZ) on single core cables	IPO Ref (if applicable): (BV internal P/o)
BV Client: ELSEWEDY CABLES - EGYPT	P/o nr: (client to BV)
Manufacturer/Vendor: UNITED INDUSTRIES COMPANY(UIC) – EL SEWEDY	P/o nr: (client to Manufacturer)
Sub-Vendor (if applicable): N/A	
Inspection Location: 10 th OF RAMADAN CITY, INDUSTRIAL ZONE, A3, EGYPT.	Previous Inspection: N/A
Inspection performed on : January 9,10, 2018	Next Inspection: By client request

MATERIAL / SUBJECT OF INSPECTION	ITEM / TAG Nr	QTY As per P/O	QTY Offered for inspection
Single core cable CWZ. CU/MICA/LSHF. 3 mm ² 1. 0.6/1 Kv 2. 450/750 V	Drum No. – Work Order 1. SD 41 – 924/2017/02 2. 924/2012431–	1 1	1 1

A – INSPECTION RESULT

Satisfactory (Without comments) Satisfactory with comments (Any of trailing Punch or Non Conformity items is still open) Not Satisfactory (NCR raised during the inspection)

Inspection Summary: (for details refer to section E)

The inspection carried out on 2 CABLE DRUMS 3mm² - 0.6/1kv and 450/750V - CU/MICA/LSHF. 2 DRUMS were selected for witness tests according to the ITP. Drums Serial NO.: (1) SD 41 (2) SD 244.

All tests were performed with satisfactory result according ITP and International Standard BS 6387: 2013.

Open Non Conformities: <input type="checkbox"/> Yes, details in section G <input checked="" type="checkbox"/> No
Open Punch List Items: <input type="checkbox"/> Yes, details in section H <input checked="" type="checkbox"/> No
Release Note Issued: <input type="checkbox"/> Yes, number(s): 01 <input checked="" type="checkbox"/> No
BV Stamping: <input type="checkbox"/> Yes, <input checked="" type="checkbox"/> No

On behalf of Bureau Veritas BV Inspector: Ahmed Hal	On behalf of Bureau Veritas BV Coordinator: Akram Mortada
BV Office: CAIRO – EGYPT.	Inspection Report Date: 17/1/2018



Fire Cables

Fire Alarm Cables



Multi Core - Cu/PVC/PVC

Stranded Fire Alarm Cables 500 V Unscreened
Multi-Core cables to BS EN 50288-7



CABLE DESCRIPTION

Conductor

Plain annealed stranded copper

Core Insulation

PVC (Polyvinyl chloride) 105°C

Core Coding

Two Cores : Red, Black
Three Cores : Red, Yellow, Blue
Four Cores : Red, Yellow, Blue, Black

Assembly

Cores twisted together to form round cable.

Outer Sheath

PVC (Polyvinyl chloride)

Cable Marking

= EL SEWEDY CABLES = , Size , Cable short description , Voltage , manufacturing year , meter marking

APPLICATION

These cables are used for communication and signalling in fire alarm systems.

Product Code	No. of cores	Nominal Cross sectional area (mm ²)	Minimum Thickness of Insulation (mm)	Approx. Overall Diameter (mm)	Approx. Net Weight (kg/km)
FA009001	2	1.00	0.44	6.61	56.58
FA009002	3			6.99	72.6
FA009003	4			7.6	89.7
FA009004	2	1.50	0.44	7.15	69.31
FA009005	3			7.57	90.63
FA009006	4			8.46	117.3

The above data is approximate and subjected to manufacturing tolerance



Multi Core - Cu/PVC/OS/PVC

Stranded Fire Alarm Cables 500 V Over all Screening
Multi-Core cables to BS EN 50288-7



CABLE DESCRIPTION

Conductor

Plain annealed stranded copper

Core Insulation

PVC (Polyvinyl chloride) 105°C

Core Coding

Two Cores : Red, Black
Three Cores : Red, Yellow, Blue
Four Cores : Red, Yellow, Blue, Black

Assembly

Cores twisted together to form round cable.

Collective Screen

Aluminum / PET tape
in contact with tinned copper drain wire

Outer Sheath

PVC (Polyvinyl chloride)

Cable Marking

= EL SEWEDY CABLES = , Size , Cable short description , Voltage , manufacturing year , meter marking

APPLICATION

These cables are used for communication and signalling in fire alarm systems.

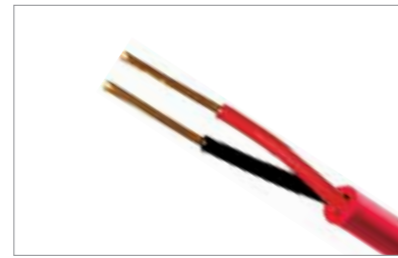
Product Code	No. of cores	Nominal Cross sectional area (mm ²)	Minimum Thickness of Insulation (mm)	Approx. Overall Diameter (mm)	Approx. Net Weight (kg/km)
FA002001	2	1.00	0.44	6.75	62.7
FA002002	3			7.15	80.75
FA002003	4			7.75	100.3
FA002004	2	1.50	0.44	7.3	75.5
FA002005	3			7.71	99.2
FA002006	4			8.6	128

The above data is approximate and subjected to manufacturing tolerance



Multi Core - Cu/PVC/PVC

Solid Fire Alarm Cables 500 V Unscreened
Multi-Core cables to BS EN 50288-7



CABLE DESCRIPTION

Conductor

Plain annealed solid copper

Core Insulation

PVC (Polyvinyl chloride) 105°C

Core Coding

Two Cores : Red, Black
Three Cores : Red, Yellow, Blue
Four Cores : Red, Yellow, Blue, Black

Assembly

Cores twisted together to form round cable.

Outer Sheath

PVC (Polyvinyl chloride)

Cable Marking

= EL SEWEDY CABLES = , Size , Cable short description , Voltage , manufacturing year , meter marking

APPLICATION

These cables are used for communication and signalling in fire alarm systems.

Product Code	No. of cores	Nominal Cross sectional area (mm ²)	Minimum Thickness of Insulation (mm)	Approx. Overall Diameter (mm)	Approx. Net Weight (kg/km)
FA009007	2	1.00	0.44	6.29	53.07
FA009008	3			6.64	67.94
FA009009	4			7.22	83.82
FA0090010	2	1.50	0.44	6.73	63.86
FA0090011	3			7.12	83.32
FA0090012	4			7.95	107.75

The above data is approximate and subjected to manufacturing tolerance



Multi Core - Cu/PVC/PVC

Flexible Fire Alarm Cables 500 V Unscreened
Multi-Core cables to BS EN 50288-7



CABLE DESCRIPTION

Conductor

Plain annealed flexible copper

Core Insulation

PVC (Polyvinyl chloride) 105°C

Core Coding

Two Cores : Red, Black
Three Cores : Red, Yellow, Blue
Four Cores : Red, Yellow, Blue, Black

Assembly

Cores twisted together to form round cable.

Outer Sheath

PVC (Polyvinyl chloride)

Cable Marking

= EL SEWEDY CABLES = , Size , Cable short description , Voltage , manufacturing year , meter marking

APPLICATION

These cables are used for communication and signalling in fire alarm systems.

Product Code	No. of cores	Nominal Cross sectional area (mm ²)	Minimum Thickness of Insulation (mm)	Approx. Overall Diameter (mm)	Approx. Net Weight (kg/km)
FA0090013	2	1.00	0.44	6.53	53.03
FA0090014	3			6.9	67.82
FA0090015	4			7.51	83.41
FA0090016	2	1.50	0.44	7.09	65.63
FA0090017	3			7.51	85.25
FA0090018	4			8.39	110.16

The above data is approximate and subjected to manufacturing tolerance



Single Core - Cu/MICA/LSOH

Fire Guard 100 - LPCB

Single core with copper conductors to BS 6387



CABLE DESCRIPTION

Conductor

Plain annealed copper

Core Insulation

Flame barrier mica tape & LSOH

Insulation Color

as per customer request

Cable Marking

EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year

Operation Voltage

0.45/0.75 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Single Core Cables, Fire Resistance Wires, With Stranded Copper Conductor Mica Glass Tape, and LSOH Insulated (FIRE GUARD 100)							
Product Code	Nominal Cross Sectional Area	Max. Conductor Resistance		Current Rating		Approximate overall Diameter	Approximate Weight
		DC at 20°C	AC at 90°C	Air			
				Free Air	Pipes		
mm ²	Ω/km	Ω/km	A	A	mm	kg/km	
MOD-T001-U04-00-00	1.5	12.1	15.430	21	19	3.9	30
MOD-T001-U06-00-00	2.5	7.41	9.450	30	25	4.5	40
MOD-T001-U08-00-00	4	4.61	5.880	40	33	5.0	55
MOD-T001-U09-00-00	6	3.08	3.930	49	43	5.6	75
MOD-T001-U10-00-00	10	1.83	2.330	69	62	6.6	120
MOD-T001-U11-00-00	16	1.15	1.470	94	84	7.6	175
MOD-T001-U12-00-00	25	0.727	0.927	118	81	9.1	270
MOD-T001-U13-00-00	35	0.524	0.669	147	100	10.2	360
MOD-T001-U14-00-00	50	0.387	0.494	197	122	11.9	490
MOD-T001-U15-00-00	70	0.268	0.343	230	151	13.8	685
MOD-T001-U16-00-00	95	0.193	0.247	289	191	15.4	940
MOD-T001-U17-00-00	120	0.153	0.197	337	219	16.8	1165
MOD-T001-U18-00-00	150	0.124	0.160	385	252	18.6	1430
MOD-T001-U19-00-00	185	0.099	0.129	449	288	20.7	1795
MOD-T001-U20-00-00	240	0.075	0.099	542	345	23.5	2335
MOD-T001-U30-00-00	300	0.060	0.081	621	391	26.3	2920
MOD-T001-U40-00-00	400	0.047	0.065	681	582	29.3	3730
MOD-T001-U50-00-00	500	0.037	0.053	760	629	33.1	4800
MOD-T001-U60-00-00	630	0.0283	0.044	853	714	36.6	6055

Single core fire resistant cables up to 70 mm² can be manufactured according to BS 8592*

Fire Cables

Fire Resistant Cables

The above data is approximate and subjected to manufacturing tolerance



Single Core - Cu/MICA/LSOH

Fire Guard 100 - LPCB

Single core with copper conductors to BS 6387



CABLE DESCRIPTION

Conductor

Plain annealed copper

Core Insulation

Flame barrier mica tape & LSOH

Insulation Color

as per customer request

Cable Marking

EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year

Operation Voltage

0.6/1 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

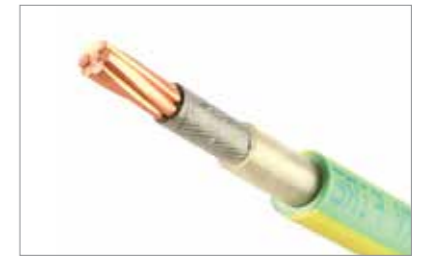
Single Core Cables, Fire Resistance Wires, With Stranded Copper Conductor Mica Glass Tape, and LSOH Insulated (FIRE GUARD 100)							
Product Code	Nominal Cross Sectional Area	Max. Conductor Resistance		Current Rating		Approximate overall Diameter	Approximate Weight
		DC at 20°C	AC at 90°C	Air			
				Free Air	Pipes		
mm ²	Ω/km	Ω/km	A	A	mm	kg/km	
MOD-T001-U04-00-00	1.5	12.1	15.430	21	19	3.9	30
MOD-T001-U06-00-00	2.5	7.41	9.450	30	25	4.5	40
MOD-T001-U08-00-00	4	4.61	5.880	40	33	5.0	55
MOD-T001-U09-00-00	6	3.08	3.930	49	43	5.6	75
MOD-T001-U10-00-00	10	1.83	2.330	69	62	6.6	120
MOD-T001-U11-00-00	16	1.15	1.470	94	84	7.6	175

The above data is approximate and subjected to manufacturing tolerance



Single Core - Cu/MICA/XLPE/LSOH

Single Core with Copper Conductors to BS 6387



CABLE DESCRIPTION

Conductor

Plain annealed stranded copper

Core Insulation

Flame barrier Mica tapes & XLPE

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Outer Sheath Color

Green / Yellow

Cable Marking

EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year

Operation Voltage

0.6/1 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Product Code	Nominal Cross sectional area	Maximum Conductor Resistance		Current Rating						Approximate Overall Diameter	Approximate Weight
		DC at 20°C	AC at 90°C	Laid in ground			(Laid in free air (Shaded				
				Flat	Trefoil	Duct	Flat Separated	Flat Touched	Trefoil Touched		
mm ²	Ω/Km	Ω/Km	A	A	A	A	A	A	mm	Kg/Km	
CB1-TL01-U08	4	4.61	5.88	55	51	40	53	47	40	7	80
CB1-TL01-U09	6	3.08	3.93	68	65	53	65	59	53	7.6	104
CB1-TL01-U10	10	1.83	2.33	98	86	68	84	79	68	8.2	142
CB1-TL01-U11	16	1.15	1.47	116	111	87	116	110	95	9.2	203

The above data is approximate and subjected to manufacturing tolerance



Single Core - Cu/MICA/XLPE/LSOH

Single Core with Copper Conductors to IEC 60331 & BS 6387



CABLE DESCRIPTION

Conductor

Plain annealed copper

Core Insulation

Flame barrier Mica tapes & XLPE

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Outer Sheath Color

Black

Cable Marking

EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year

Operation Voltage

0.6/1 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Product Code	Nominal Cross sectional area mm ²	Maximum Conductor Resistance		Current Rating						Approximate Overall Diameter mm	Approximate Weight Kg/Km
		DC at 20 °C Ω/Km	AC at 90 °C Ω/Km	Laid in ground			(Laid in free air (Shaded				
				Flat	Trefoil	Duct	Flat Separated	Flat Touched	Trefoil Touched		
MX1-TL01-U12	25	0.727	0.927	166	168	118	179	138	134	11.3	340
MX1-TL01-U13	35	0.524	0.668	199	201	143	220	171	166	12.4	435
MX1-TL01-U14	50	0.387	0.494	236	239	172	269	210	204	13.9	570
MX1-TL01-U15	70	0.268	0.342	288	292	214	340	268	260	15.7	785
MX1-TL01-U16	95	0.193	0.247	344	349	259	418	331	321	17.4	1055
MX1-TL01-U17	120	0.153	0.196	391	397	298	486	386	375	19	1310
MX1-TL01-U18	150	0.124	0.160	439	445	339	557	446	433	21	1605
MX1-TL01-U19	185	0.099	0.128	496	503	390	646	519	503	23.1	1980
MX1-TL01-U20	240	0.075	0.099	574	583	457	771	622	602	25.8	2565
MX1-TL01-U30	300	0.060	0.080	647	658	524	895	722	699	28.7	3175
MX1-TL01-U40	400	0.047	0.064	732	744	603	1044	842	815	31.9	4060
MX1-TL01-U50	500	0.037	0.052	826	840	695	1222	981	950	35.9	5195
MX1-TL01-U60	630	0.028	0.043	925	942	794	1420	1132	1096	40.2	6600



Single Core - Cu/MICA/XLPE/AWA/LSOH

Single Core with Copper Conductors to IEC 60331 & BS 6387



CABLE DESCRIPTION

Conductor

Plain annealed copper

Core Insulation

Flame barrier Mica tapes & XLPE

Armour

Aluminum Wire

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Outer Sheath Color

Black

Cable Marking

EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year

Operation Voltage

0.6/1 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Product Code	Nominal Cross sectional area mm ²	Maximum Conductor Resistance		Current Rating						Approximate Overall Diameter mm	Approximate Weight Kg/Km
		DC at 20 °C Ω/Km	AC at 90 °C Ω/Km	Laid in ground			(Laid in free air (Shaded				
				Flat	Trefoil	Duct	Flat Separated	Flat Touched	Trefoil Touched		
MX1-TL01-X12	25	0.727	0.927	170	172	130	198	162	158	17.2	560
MX1-TL01-X13	35	0.524	0.668	203	206	157	240	197	192	18.3	675
MX1-TL01-X14	50	0.387	0.494	239	243	187	288	238	232	20	840
MX1-TL01-X15	70	0.268	0.342	291	296	230	358	297	289	22	1095
MX1-TL01-X16	95	0.193	0.247	345	352	275	431	360	351	23.5	1385
MX1-TL01-X17	120	0.153	0.196	389	399	314	493	414	405	25.3	1675
MX1-TL01-X18	150	0.124	0.159	434	445	354	555	471	461	27.1	1995
MX1-TL01-X19	185	0.099	0.128	485	500	401	628	538	529	29.4	2415
MX1-TL01-X20	240	0.075	0.098	553	573	466	726	630	622	32.1	3045
MX1-TL01-X30	300	0.060	0.079	614	640	528	814	717	711	35	3705
MX1-TL01-X40	400	0.047	0.063	673	710	593	898	809	810	39.1	4740
MX1-TL01-X50	500	0.037	0.051	738	787	668	997	913	923	43.1	5955
MX1-TL01-X60	630	0.028	0.042	801	864	745	1097	1019	1038	47.2	7415



Multi Core - Cu/MICA/XLPE/SWA/LSOH

Multi cores with copper conductors to BS 7846 & 6387



CABLE DESCRIPTION

Conductor: Plain annealed stranded copper

Core Insulation: Flame barrier Mica tapes & XLPE

Assembly: Cores are assembled together to form round cable

Inner Sheath: LSOH (Low Smoke Zero Halogen)

Armour: Single layer of steel wire

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Outer Sheath Color

Black

Cable Marking

EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year

Operation Voltage

0.6/1 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Multi Core Cables, Fire Resistance, With Stranded Copper Conductor Mica Glass Tape, XLPE Insulated Galvanized Steel Wire armoured and LSOH Sheathed (FIRE GUARD 1000 PLUS)								
Product Code	Nominal Cross Sectional Area	Max. Conductor Resistance		Current Rating			Approximate overall Diameter	Approximate Weight
		DC at 20° C	AC at 90° C	Ground	Duct	Air		
	mm ²	Ω/km	Ω/km	A	A	A	mm	kg/km
Two Cores								
MX1-TL02-W08-00-00-F120	4	4.61	5.878	56	41	46	20.1	675
MX1-TL02-W09-00-00-F120	6	3.08	3.927	71	52	59	20.3	710
MX1-TL02-W10-00-00-F120	10	1.83	2.334	93	69	79	22.5	870
MX1-TL02-W11-00-00-F120	16	1.15	1.467	121	90	105	24.5	1050
MX1-TL02-W12-00-00-F120	25	0.727	0.927	187	139	161	24.4	1355
MX1-TL02-W13-00-00-F120	35	0.524	0.669	226	166	198	26.6	1830
MX1-TL02-W14-00-00-F120	50	0.387	0.494	274	198	240	26.2	1960
MX1-TL02-W15-00-00-F120	70	0.268	0.343	332	243	296	28.6	2455
MX1-TL02-W16-00-00-F120	95	0.193	0.247	402	297	369	32.9	3420
MX1-TL02-W17-00-00-F120	120	0.153	0.197	458	341	430	36.4	4075
MX1-TL02-W18-00-00-F120	150	0.124	0.160	512	385	488	39	4700
MX1-TL02-W19-00-00-F120	185	0.099	0.129	580	444	569	45.2	6010
MX1-TL02-W20-00-00-F120	240	0.075	0.099	667	515	666	49.3	7555
MX1-TL02-W30-00-00-F120	300	0.060	0.081	746	580	756	52.5	8980
MX1-TL02-W40-00-00-F120	400	0.047	0.065	839	662	868	58.4	11045

The above data is approximate and subjected to manufacturing tolerance



Product Code	Nominal Cross Sectional Area	Max. Conductor Resistance		Current Rating			Approximate overall Diameter	Approximate Weight
		DC at 20° C	AC at 90° C	Ground	Duct	Air		
	mm ²	Ω/km	Ω/km	A	A	A	mm	kg/km
Three Cores								
MX1-TL03-W08-00-00-F120	4	4.61	5.878	56	41	46	20.7	750
MX1-TL03-W09-00-00-F120	6	3.08	3.927	71	52	59	22.1	860
MX1-TL03-W10-00-00-F120	10	1.83	2.334	93	69	79	23.6	1025
MX1-TL03-W11-00-00-F120	16	1.15	1.467	121	90	105	26.0	1290
MX1-TL03-W12-00-00-F120	25	0.727	0.927	152	113	132	25.6	1895
MX1-TL03-W13-00-00-F120	35	0.524	0.669	183	137	162	28	2285
MX1-TL03-W14-00-00-F120	50	0.387	0.494	232	168	206	28.1	2610
MX1-TL03-W15-00-00-F120	70	0.268	0.343	286	209	262	32.4	3395
MX1-TL03-W16-00-00-F120	95	0.193	0.247	342	253	322	35.9	4650
MX1-TL03-W17-00-00-F120	120	0.153	0.197	390	290	375	39.1	5455
MX1-TL03-W18-00-00-F120	150	0.124	0.160	434	330	426	43.6	6955
MX1-TL03-W19-00-00-F120	185	0.099	0.129	490	375	490	47.6	8285
MX1-TL03-W20-00-00-F120	240	0.075	0.099	565	436	579	52.7	10300
MX1-TL03-W30-00-00-F120	300	0.060	0.081	634	496	663	57.6	12345
MX1-TL03-W40-00-00-F120	400	0.047	0.065	715	567	769	64.8	15330
Four Cores								
MX1-TL04-W08-00-00-F120	4	4.61	5.878	56	41	46	22.3	865
MX1-TL04-W09-00-00-F120	6	3.08	3.927	71	52	59	23.9	1005
MX1-TL04-W10-00-00-F120	10	1.83	2.334	93	69	79	25.4	1210
MX1-TL04-W11-00-00-F120	16	1.15	1.467	121	90	105	28.0	1535
MX1-TL04-W12-00-00-F120	25	0.727	0.927	154	116	136	27.6	2265
MX1-TL04-W13-00-00-F120	35	0.524	0.669	185	140	166	30.5	2765
MX1-TL04-W14-00-00-F120	50	0.387	0.494	238	174	218	31.8	3305
MX1-TL04-W15-00-00-F120	70	0.268	0.343	293	218	227	36.9	4660
MX1-TL04-W16-00-00-F120	95	0.193	0.247	350	260	337	39.4	5825
MX1-TL04-W17-00-00-F120	120	0.153	0.197	397	301	393	44.9	7515
MX1-TL04-W18-00-00-F120	150	0.124	0.160	446	341	451	49.4	8840
MX1-TL04-W19-00-00-F120	185	0.099	0.129	503	390	521	54.2	10685
MX1-TL04-W20-00-00-F120	240	0.075	0.099	579	456	614	60.2	13255
MX1-TL04-W30-00-00-F120	300	0.060	0.081	649	513	702	65.8	15890
MX1-TL04-W40-00-00-F120	400	0.047	0.065	725	584	810	75.9	20850

The above data is approximate and subjected to manufacturing tolerance



Multi Core - Cu/MICA/XLPE/SWA/LSOH

Multi cores with copper conductors to BS 7846 & 6387



CABLE DESCRIPTION

Conductor: Plain annealed stranded copper

Core Insulation: Flame barrier Mica tapes & XLPE

Assembly: Cores are assembled together to form round cable

Inner Sheath: LSOH (Low Smoke Zero Halogen)

Armour: Single Layer of Steel Wire

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Outer Sheath Color

Black

Cable Marking

EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year

Operation Voltage

0.6/1 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Multi Core Cables, Fire Resistance, With Stranded Copper Conductor Mica Glass Tape, XLPE Insulated Galvanized Steel Wire armoured and LSOH Sheathed (FIRE GUARD 1000)								
Product Code	Nominal Cross Sectional Area	Max. Conductor Resistance		Current Rating			Approximate overall Diameter	Approximate Weight
		DC at 20°C	AC at 90°C	Ground	Duct	Air		
	mm ²	Ω/km	Ω/km	A	A	A	mm	kg/km
Two Cores								
MX1-TL02-W04-00-00-F2	1.5	12.1	15.429	33	24	26	14.1	310
MX1-TL02-W06-00-00-F2	2.5	7.41	9.449	43	31	35	15.5	370
MX1-TL02-W08-00-00-F2	4	4.61	5.878	56	41	46	16.5	425
MX1-TL02-W09-00-00-F2	6	3.08	3.927	71	52	59	17.7	490
MX1-TL02-W10-00-00-F2	10	1.83	2.334	93	69	79	19.1	605
MX1-TL02-W11-00-00-F2	16	1.15	1.467	121	90	105	21.8	885
MX1-TL02-W12-00-00-F2	25	0.727	0.927	187	139	161	24.4	1165
MX1-TL02-W13-00-00-F2	35	0.524	0.669	226	166	198	26.6	1605
MX1-TL02-W14-00-00-F2	50	0.387	0.494	274	198	240	26.2	1795
MX1-TL02-W15-00-00-F2	70	0.268	0.343	332	243	296	28.6	2260
MX1-TL02-W16-00-00-F2	95	0.193	0.247	402	297	369	32.9	3210
MX1-TL02-W17-00-00-F2	120	0.153	0.197	458	341	430	36.4	3820
MX1-TL02-W18-00-00-F2	150	0.124	0.160	512	385	488	39	4500
MX1-TL02-W19-00-00-F2	185	0.099	0.129	580	444	569	45.2	5750
MX1-TL02-W20-00-00-F2	240	0.075	0.100	667	515	666	49.3	7215
MX1-TL02-W30-00-00-F2	300	0.060	0.081	746	580	756	52.5	8560
MX1-TL02-W40-00-00-F2	400	0.047	0.065	839	662	868	58.4	10550

The above data is approximate and subjected to manufacturing tolerance



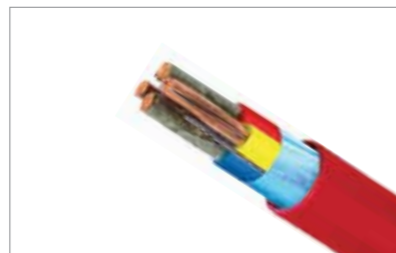
Product Code	Nominal Cross Sectional Area	Max. Conductor Resistance		Current Rating			Approximate overall Diameter	Approximate Weight
		DC at 20°C	AC at 90°C	Ground	Duct	Air		
	mm ²	Ω/km	Ω/km	A	A	A	mm	kg/km
Three Cores								
MX1-TL03-W04-00-00-F2	1.5	12.1	15.429	33	24	26	14.7	345
MX1-TL03-W06-00-00-F2	2.5	7.41	9.449	43	31	35	16.2	420
MX1-TL03-W08-00-00-F2	4	4.61	5.878	56	41	46	17.3	490
MX1-TL03-W09-00-00-F2	6	3.08	3.927	71	52	59	18.6	585
MX1-TL03-W10-00-00-F2	10	1.83	2.334	93	69	79	20.8	850
MX1-TL03-W11-00-00-F2	16	1.15	1.467	121	90	105	23.1	1085
MX1-TL03-W12-00-00-F2	25	0.727	0.927	152	113	132	25.6	1665
MX1-TL03-W13-00-00-F2	35	0.524	0.669	183	137	162	28	2005
MX1-TL03-W14-00-00-F2	50	0.387	0.494	232	168	206	28.1	2340
MX1-TL03-W15-00-00-F2	70	0.268	0.343	286	209	262	32.4	3095
MX1-TL03-W16-00-00-F2	95	0.193	0.247	342	253	322	35.9	4315
MX1-TL03-W17-00-00-F2	120	0.153	0.197	390	290	375	39.1	5125
MX1-TL03-W18-00-00-F2	150	0.124	0.160	434	330	426	43.6	6505
MX1-TL03-W19-00-00-F2	185	0.099	0.129	490	375	490	47.6	7845
MX1-TL03-W20-00-00-F2	240	0.075	0.100	565	436	579	52.7	9770
MX1-TL03-W30-00-00-F2	300	0.060	0.081	634	496	663	57.6	11745
MX1-TL03-W40-00-00-F2	400	0.047	0.065	715	567	769	64.8	14635
Four Cores								
MX1-TL04-W04-00-00-F2	1.5	12.1	15.429	33	24	26	15.7	395
MX1-TL04-W06-00-00-F2	2.5	7.41	9.449	43	31	35	17.3	480
MX1-TL04-W08-00-00-F2	4	4.61	5.878	56	41	46	18.5	575
MX1-TL04-W09-00-00-F2	6	3.08	3.927	71	52	59	20.9	805
MX1-TL04-W10-00-00-F2	10	1.83	2.334	93	69	79	22.3	1000
MX1-TL04-W11-00-00-F2	16	1.15	1.467	121	90	105	24.9	1305
MX1-TL04-W12-00-00-F2	25	0.727	0.927	154	116	136	27.6	1990
MX1-TL04-W13-00-00-F2	35	0.524	0.669	185	140	166	30.5	2450
MX1-TL04-W14-00-00-F2	50	0.387	0.494	238	174	218	31.8	2970
MX1-TL04-W15-00-00-F2	70	0.268	0.343	293	218	277	36.9	4325
MX1-TL04-W16-00-00-F2	95	0.193	0.247	350	260	337	39.4	5395
MX1-TL04-W17-00-00-F2	120	0.153	0.197	397	301	393	44.9	6965
MX1-TL04-W18-00-00-F2	150	0.124	0.160	446	341	451	49.4	8300
MX1-TL04-W19-00-00-F2	185	0.099	0.129	503	390	521	54.2	10055
MX1-TL04-W20-00-00-F2	240	0.075	0.100	579	456	614	60.2	12590
MX1-TL04-W30-00-00-F2	300	0.060	0.081	649	513	702	65.8	15135
MX1-TL04-W40-00-00-F2	400	0.047	0.065	725	584	810	75.9	19925

The above data is approximate and subjected to manufacturing tolerance



Multi Core - Cu/MICA/XLPE/OS/LSOH

Un Armoured Fire Resistant Cables 0.6/1 kV
Collective Screen Multi-Core cables to IEC 60502
& IEC 60331



CABLE DESCRIPTION

Conductor

Plain annealed stranded copper

Core Insulation

Flame barrier Mica tapes, XLPE
(Cross linked polyethylene)

Color Coding

Color coded or Black cores continuously numbered

Assembly

Cores twisted together to form round cable with fillers and binders if necessary.

Collective Screen

Aluminum / PET tape
in contact with tinned copper drain wire

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Cable Marking

= EL SEWEDY CABLES =, Size, Cable short description, Voltage, manufacturing year, meter marking

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

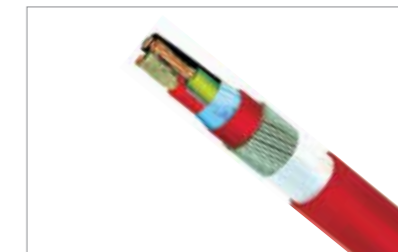
Product Code	No. of cores	Nominal Cross sectional area (mm ²)	Nominal Thickness of Insulation (mm)	Approx. Overall Diameter (mm)	Approx. Net Weight (kg/km)
FR064012	2	1.50	0.7	9.79	111.55
FR064013	3			10.32	139.53
FR064014	4			11.17	169.83
FR064015	5			12.09	206.98
FR064016	7			13.08	256.09
FR064017	10			16.37	352.12
FR064018	12			16.90	404.35
FR064019	19			19.66	593.69
FR064020	24			22.95	738.23
FR064021	30			24.30	893.31
FR064022	37	26.24	1076.83		
FR064023	2	2.50	0.7	10.69	138.13
FR064024	3			11.29	176.73
FR064025	4			12.26	217.97
FR064026	5			13.31	267.97
FR064027	7			14.43	336.4
FR064028	10			18.17	465.93
FR064029	12			18.77	538.9
FR064030	19			21.91	801.67
FR064031	24			25.65	999.93
FR064032	30			27.18	1216.97
FR064033	37	29.39	1473.13		

The above data is approximate and subjected to manufacturing tolerance



Multi Core - Cu/MICA/XLPE/OS/SWA/LSOH

Armoured Fire Resistant Cables 0.6/1 kV
Collective Screen Multi-Core cables to IEC 60502
& IEC 60331



CABLE DESCRIPTION

Conductor

Plain annealed stranded copper

Core Insulation

Flame barrier Mica tape, XLPE
(Cross linked polyethylene)

Color Coding

Color coded or Black cores continuously numbered

Assembly

Cores twisted together to form round Cable with fillers and binders if necessary.

Collective Screen

Aluminum / PET tape in contact with tinned copper drain wire

Inner Sheath

LSOH
(Low Smoke Zero Halogen)

Armour

Single layer of steel wires

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Cable Marking

= EL SEWEDY CABLES =, Size, Cable short description, Voltage, manufacturing year, meter marking

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

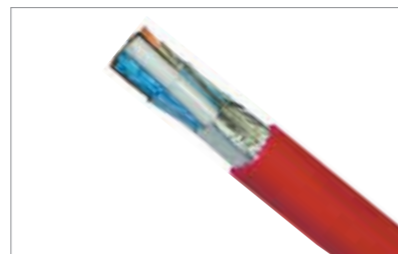
Product Code	No. of cores	Nominal Cross sectional area (mm ²)	Nominal Thickness of Insulation (mm)	Approx. Overall Diameter (mm)	Approx. Net Weight (kg/km)
FR069012	2	1.50	0.7	13.25	296.59
FR069013	3			13.78	334.53
FR069014	4			14.63	380.03
FR069015	5			15.55	432.65
FR069016	7			16.54	497.49
FR069017	10			20.73	795.16
FR069018	12			21.26	859.09
FR069019	19			24.02	1117
FR069020	24			28.01	1501.94
FR069021	30			29.42	1698.09
FR069022	37	31.47	1960.53		
FR069023	2	2.50	0.7	14.15	338.55
FR069024	3			14.75	387.4
FR069025	4			15.72	444.31
FR069026	5			16.77	514.21
FR069027	7			18.79	733.33
FR069028	10			22.53	954.52
FR069029	12			23.13	1039.47
FR069030	19			26.97	1529.81
FR069031	24			30.85	1862.93
FR069032	30			32.47	2140.27
FR069033	37	34.80	2463.66		

The above data is approximate and subjected to manufacturing tolerance



Multi-Pair Cu/MICA/OS/LSOH

Un-Armoured Fire Resistant Cables 500 V Collective Screen Multi-Pair cables to BS EN 50288-7 & IEC 60331



CABLE DESCRIPTION

Conductor

Plain annealed stranded copper

Core Insulation

Flame barrier Mica tapes, XLPE (Cross linked polyethylene)

Color Coding

Color Coded 1 Black, 1 White cores continuously numbered

Assembly

Pairs twisted together to form round cable with fillers and binders if necessary.

Collective Screen

Aluminum / PET tape in contact with tinned copper drain wire

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Cable Marking

= EL SEWEDY CABLES = , Size , Cable short description , Voltage , manufacturing year , meter marking

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

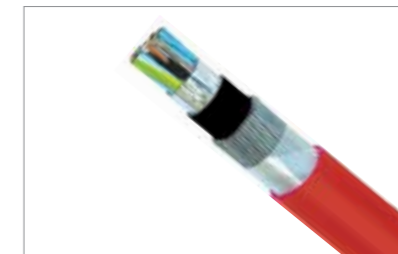
Product Code	No. of Pairs	Nominal Cross sectional area (mm ²)	Minimum Thickness of Insulation (mm)	Approx. Overall Diameter (mm)	Approx. Net Weight (kg/km)
FR064034	1	1.00	0.44	7.41	71.07
FR064035	2			11.07	130.66
FR064036	5			14.37	266.41
FR064037	10			20.52	507.08
FR064038	20			26.81	947.3
FR064039	50			40.98	2253.38
FR064040	1	1.50	0.44	7.95	85.17
FR064041	2			11.95	158.38
FR064042	5			15.76	338.69
FR064043	10			22.49	645.73
FR064044	20			29.37	1210.95
FR064045	40			39.71	2328.52
FR064046	1	2.50	0.53	9.21	118.18
FR064047	2			14.22	230.55
FR064048	5			18.75	500.96
FR064049	10			26.38	959.08
FR064050	20			35.28	1831.51
FR064051	30			42.05	2691.19

The above data is approximate and subjected to manufacturing tolerance



Multi-Pair - Cu/MICA/OS/SWA/LSOH

Armoured Fire Resistant Cables 500 V Collective Screen Multi-Pair cables to BS EN 50288-7 & IEC 60331



CABLE DESCRIPTION

Conductor

Plain annealed stranded copper

Core Insulation

Flame barrier Mica tapes, XLPE (Cross linked polyethylene)

Color Coding

color coded 1 Black, 1 White cores continuously numbered

Assembly

Pairs twisted together to form round cable with fillers and binders if necessary.

Collective Screen

Aluminum / PET tape in contact with tinned copper drain wire

Inner Sheath

LSOH (Low Smoke Zero Halogen)

Armour

Single layer of steel wires

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Cable Marking

= EL SEWEDY CABLES = , Size , Cable short description , Voltage , manufacturing year , meter marking

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Product Code	No. of Pairs	Nominal Cross sectional area (mm ²)	Minimum Thickness of Insulation (mm)	Approx. Overall Diameter (mm)	Approx. Net Weight (kg/km)
FR069034	1	1.00	0.44	12.67	300.63
FR069035	2			15.93	427.97
FR069036	5			19.43	648.16
FR069037	10			26.68	1202.35
FR069038	20			33.17	1850.8
FR069039	40			43.73	3311.5
FR069040	1	1.50	0.44	13.01	318.7
FR069041	2			16.81	472.27
FR069042	5			20.83	751.49
FR069043	10			28.65	1406.75
FR069044	20			36.63	2424.42
FR069045	30			42.49	3227.81
FR069046	1	2.50	0.53	14.07	371.77
FR069047	2			19.28	606.14
FR069048	5			24.71	1129
FR069049	10			33.19	1872.31
FR069050	20			42.94	3305.89

The above data is approximate and subjected to manufacturing tolerance



Multi-Triple - Cu/MICA/XLPE/OS/LSOH

Un-Armoured Fire Resistant Cables 500 V Collective Screen Multi-Triple cables to BS EN 50288-7 & IEC 60331



CABLE DESCRIPTION

Conductor

Plain annealed stranded copper

Core Insulation

Flame barrier Mica tapes, XLPE (Cross linked polyethylene)

Color Coding

Color Coded 1 Black, 1 White cores continuously numbered

Assembly

Triples twisted together to form round cable with fillers and binders if necessary.

Collective Screen

Aluminum / PET tape in contact with tinned copper drain wire

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Cable Marking

= EL SEWEDY CABLES = , Size , Cable short description , Voltage , manufacturing year , meter marking

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Product Code	No. of Triples	Nominal Cross sectional area (mm ²)	Minimum Thickness of Insulation (mm)	Approx. Overall Diameter (mm)	Approx. Net Weight (kg/km)
FR064052	1	1.00	0.44	7.84	91.77
FR064053	2			12.3	174.43
FR064054	5			16.23	377.5
FR064055	10			23.19	721.86
FR064056	20			30.3	1361.1
FR064057	40			40.99	2625.46
FR064058	1			1.50	0.44
FR064059	2	13.51	221.28		
FR064060	5	17.59	472.46		
FR064061	10	25.41	922.2		
FR064062	20	33.19	1745.56		
FR064063	30	39.58	2570.35		
FR064064	1	2.50	0.53		
FR064065	2			16.06	323.99
FR064066	5			20.97	705.31
FR064067	10			30.31	1378.87
FR064068	20			39.86	2649.62

The above data is approximate and subjected to manufacturing tolerance



Multi-Triple - Cu/MICA/XLPE/OS/SWA/LSOH

Armoured Fire Resistant Cables 500 V Collective Screen Multi-Triples cables to BS EN 50288-7 & IEC 60331



CABLE DESCRIPTION

Conductor

Plain annealed stranded copper

Core Insulation

Flame barrier Mica tapes, XLPE (Cross linked polyethylene)

Color Coding

color coded 1 Black, 1 White & red continuously numbered or ID tapes

Assembly

Triples twisted together to form round cable with fillers and binders if necessary.

Collective Screen

Aluminum/PET tape in contact with tinned copper drain wire

Inner Sheath

LSOH (Low Smoke Zero Halogen)

Armour

Single layer of steel wires

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Cable Marking

= EL SEWEDY CABLES = , Size , Cable short description , Voltage , manufacturing year , meter marking

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Product Code	No. of Triples	Nominal Cross sectional area (mm ²)	Minimum Thickness of Insulation (mm)	Approx. Overall Diameter (mm)	Approx. Net Weight (kg/km)		
FR069051	1	1.00	0.44	12.5	303.74		
FR069052	2			17.16	495.9		
FR069053	5			21.29	804		
FR069054	10			29.35	1498.77		
FR069055	20			37.56	2599.62		
FR069056	30			43.61	3494.75		
FR069057	1			1.50	0.44	13.09	337.82
FR069058	2	18.57	581.24				
FR069059	5	23.55	1071.47				
FR069060	10	31.77	1783.51				
FR069061	20	40.65	3112.75				
FR069062	1	2.50	0.53			14.65	426.65
FR069063	2					21.32	755.17
FR069064	5			27.13	1414.23		
FR069065	10			37.57	2617.55		
FR069066	15			43.08	3497.63		

The above data is approximate and subjected to manufacturing tolerance



Multi Cores - Cu/MICA/XLPE/LSOH

Multi Core with Copper Conductors to IEC 60331 & BS 6387



CABLE DESCRIPTION

Conductor

Plain annealed copper

Core Insulation

Flame barrier Mica tapes & XLPE

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Outer Sheath Color

As per customer request

Cable Marking

EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year

Operation Voltage

0.6/1 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

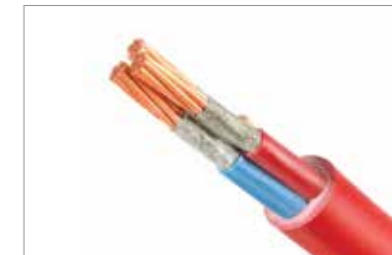
Product Code	Nominal Cross sectional area	Maximum Conductor Resistance		Current Rating			Approximate Overall Diameter	Approximate Weight
		DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
2 core cables - Cu/MICA/XLPE/LSOH								
CB1-TL02-U04	RM 1.5	12.1	15.43	30	25	25	10.2	135
CB1-TL02-U06	RM 2.5	7.41	9.45	37	32	34	11.1	170
CB1-TL02-U08	RM 4	4.61	5.88	50	40	46	12.2	216
CB1-TL02-U09	RM 6	3.08	3.93	63	52	60	13.6	279
CB1-TL02-U10	RM 10	1.83	2.33	82	69	79	14.5	370
CB1-TL02-U11	RM 16	1.15	1.47	106	83	105	16.5	523
MX1-TL02-U12	RM 25	0.727	0.927	188	133	154	22.1	980
MX1-TL02-U13	RM 35	0.524	0.669	227	162	189	24.3	1245
MX1-TL02-U14	SM 50	0.387	0.494	276	193	230	23.3	1250
MX1-TL02-U15	SM 70	0.268	0.343	337	236	286	25.3	1695
MX1-TL02-U16	SM 95	0.193	0.248	405	288	357	29.4	2320
MX1-TL02-U17	SM 120	0.153	0.197	463	336	419	32.9	2855
MX1-TL02-U18	SM 150	0.124	0.160	519	378	478	35.7	3465
MX1-TL02-U19	SM 185	0.099	0.129	590	438	560	40.7	4345
MX1-TL02-U20	SM 240	0.075	0.100	682	513	663	44.8	5555
MX1-TL02-U30	SM 300	0.060	0.081	767	582	757	48.6	6870
MX1-TL02-U40	SM 400	0.047	0.066	872	673	884	54.3	8790

The above data is approximate and subjected to manufacturing tolerance



Multi Cores - Cu/MICA/XLPE/LSOH

Multi Core with Copper Conductors to IEC 60331 & BS 6387



CABLE DESCRIPTION

Conductor

Plain annealed copper

Core Insulation

Flame barrier Mica tapes & XLPE

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Outer Sheath Color

As per customer request

Cable Marking

EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year

Operation Voltage

0.6/1 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Product Code	Nominal Cross sectional area	Maximum Conductor Resistance		Current Rating			Approximate Overall Diameter	Approximate Weight
		DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
3 core cables - Cu/MICA/XLPE/LSOH								
CB1-TL03-U04	RM 1.5	12.1	15.43	26	23	22	10.8	155
CB1-TL03-U06	RM 2.5	7.41	9.45	35	29	32	11.8	199
CB1-TL03-U08	RM 4	4.61	5.88	45	36	41	12.9	258
CB1-TL03-U09	RM 6	3.08	3.93	57	45	50	14.2	339
CB1-TL03-U10	RM 10	1.83	2.33	75	60	68	15.4	462
CB1-TL03-U11	RM 16	1.15	1.47	97	75	89	17.6	665
MX1-TL03-U12	RM 25	0.727	0.927	153	110	126	23.4	1230
MX1-TL03-U13	RM 35	0.524	0.669	184	132	156	25.8	1580
MX1-TL03-U14	SM 50	0.387	0.494	220	157	186	25.8	1755
MX1-TL03-U15	SM 70	0.268	0.343	270	195	236	29.7	2480
MX1-TL03-U16	SM 95	0.193	0.248	324	236	290	33	3310
MX1-TL03-U17	SM 120	0.153	0.197	368	272	337	35.4	4070
MX1-TL03-U18	SM 150	0.124	0.160	410	307	383	39.9	5030
MX1-TL03-U19	SM 185	0.099	0.129	464	351	441	43.9	6235
MX1-TL03-U20	SM 240	0.075	0.100	537	414	524	49.4	8090
MX1-TL03-U30	SM 300	0.060	0.081	605	471	602	54.3	10005
MX1-TL03-U40	SM 400	0.047	0.066	688	547	701	61.7	12890

The above data is approximate and subjected to manufacturing tolerance



Multi Cores - Cu/MICA/XLPE/LSOH

Multi Core with Copper Conductors to IEC 60331 & BS 6387



CABLE DESCRIPTION

Conductor

Plain annealed copper

Core Insulation

Flame barrier Mica tapes & XLPE

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Outer Sheath Color

As per customer request

Cable Marking

EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year

Operation Voltage

0.6/1 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Product Code	Nominal Cross sectional area	Maximum Conductor Resistance		Current Rating			Approximate Overall Diameter	Approximate Weight
		DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
		mm2	Ω/Km	Ω/Km	A	A		
4 core cables - Cu/MICA/XLPE/LSOH								
CB1-TL04-U04	RM 1.5	12.1	15.43	26	23	22	11.8	183
CB1-TL04-U06	RM 2.5	7.41	9.45	35	29	32	12.9	238
CB1-TL04-U08	RM 4	4.61	5.88	45	36	41	14.1	316
CB1-TL04-U09	RM 6	3.08	3.93	57	45	50	15.5	414
CB1-TL04-U10	RM 10	1.83	2.33	75	60	68	16.9	573
CB1-TL04-U11	RM 16	1.15	1.47	97	75	89	19.4	831
MX1-TL04-U12	RM 25	0.727	0.927	155	112	131	25.5	1540
MX1-TL04-U13	RM 35	0.524	0.669	186	136	161	28.1	1980
MX1-TL04-U14	SM 50	0.387	0.494	225	162	197	29.7	2300
MX1-TL04-U15	SM 70	0.268	0.343	276	204	249	34.2	3260
MX1-TL04-U16	SM 95	0.193	0.248	330	243	303	36.9	4340
MX1-TL04-U17	SM 120	0.153	0.197	374	282	352	41.4	5430
MX1-TL04-U18	SM 150	0.124	0.160	421	321	405	45.9	6620
MX1-TL04-U19	SM 185	0.099	0.129	475	369	467	50.9	8260
MX1-TL04-U20	SM 240	0.075	0.100	551	431	554	57.1	10690
MX1-TL04-U30	SM 300	0.060	0.081	621	493	636	62.7	13205
MX1-TL04-U40	SM 400	0.047	0.066	706	571	741	71.7	17100

The above data is approximate and subjected to manufacturing tolerance



Multi Cores - Cu/MICA/XLPE/LSOH

Multi Core with Copper Conductors to IEC 60331 & BS 6387



CABLE DESCRIPTION

Conductor

Plain annealed copper

Core Insulation

Flame barrier Mica tapes & XLPE

Outer Sheath

LSOH (Low Smoke Zero Halogen)

Outer Sheath Color

As per customer request

Cable Marking

EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year

Operation Voltage

0.6/1 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Product Code	Nominal Cross sectional area	Maximum Conductor Resistance		Current Rating			Approximate Overall Diameter	Approximate Weight
		DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
		mm2	Ω/Km	Ω/Km	A	A		
5 core cables - Cu/MICA/XLPE/LSOH								
CB1-TL05-U04	RM 1.5	12.1	15.43	18.2	16.1	16.5	12.8	219
CB1-TL05-U06	RM 2.5	7.41	9.45	24.5	20.3	24	14	288
CB1-TL05-U08	RM 4	4.61	5.88	31.5	25.2	30.7	15.4	380
CB1-TL05-U09	RM 6	3.08	3.93	39.9	31.5	37.5	17	507
CB1-TL05-U10	RM 10	1.83	2.33	52.5	42	51	18.5	705
CB1-TL05-U11	RM 16	1.15	1.47	67.9	52.5	66.7	21.3	1028
MX1-TLA5-U12	RM 25	0.727	0.927	151	109	128	27.7	1865
MX1-TLA5-U13	RM 35	0.524	0.669	182	133	157	30.7	2415
MX1-TLA5-U14	SM 50	0.387	0.494	220	158	193	33.8	2895
MX1-TLA5-U15	SM 70	0.268	0.343	270	199	244	37.5	4025
MX1-TLA5-U16	SM 95	0.193	0.248	323	238	296	42.3	5465
MX1-TLA5-U17	SM 120	0.153	0.197	366	276	344	46.5	6740
MX1-TLA5-U18	SM 150	0.124	0.160	412	314	396	51.3	8250
MX1-TLA5-U19	SM 185	0.099	0.129	465	361	457	57.5	10335
MX1-TLA5-U20	SM 240	0.075	0.100	539	422	542	64	13300
MX1-TLA5-U30	SM 300	0.060	0.081	608	483	623	70.7	16495
MX1-TLA5-U40	SM 400	0.047	0.066	691	559	726	80.2	21250

The above data is approximate and subjected to manufacturing tolerance



Multi Cores - Cu/MICA/XLPE/SWA/LSOH

Multi Core with Copper Conductors to IEC 60331 & BS 6387



CABLE DESCRIPTION

Conductor: Plain annealed copper
Core Insulation: Flame barrier Mica tapes & XLPE
Assembly: Cores are assembled together to form round cable
Inner Sheath: LSOH (Low Smoke Zero Halogen)
Armour: Single layer of steel wire

Outer Sheath
 LSOH (Low Smoke Zero Halogen)
Outer Sheath Color
 As per customer request
Cable Marking
 EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year
Operation Voltage
 0.6/1 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

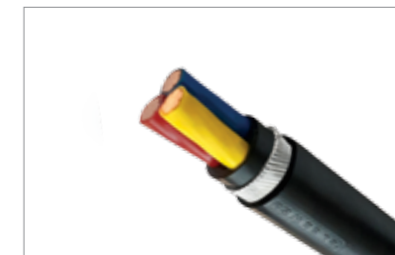
Product Code	Nominal Cross sectional area	Maximum Conductor Resistance		Current Rating			Approximate Overall Diameter	Approximate Weight
		DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
		mm2	Ω/Km	Ω/Km	A	A		
2 core cables - Cu/MICA/XLPE/SWA/LSOH								
CB1-TL02-W06	RM 1.5	12.1	15.43	28.5	23.7	23.7	13.7	318
CB1-TL02-W07	RM 2.5	7.41	9.45	35.1	30.4	32.3	14.6	368
CB1-TL02-W08	RM 4	4.61	5.88	51	41	47	15.6	433
CB1-TL02-W09	RM 6	3.08	3.93	64	53	61	16.8	515
CB1-TL02-W10	RM 10	1.83	2.33	83	70	80	18.8	756
CB1-TL02-W11	RM 16	1.15	1.47	107	84	106	20.8	954
MX1-TL02-W12	RM 25	0.727	0.927	187	139	161	25.7	1550
MX1-TL02-W13	RM 35	0.524	0.669	226	166	198	27.9	1875
MX1-TL02-W14	SM 50	0.387	0.494	274	198	240	26.9	1855
MX1-TL02-W15	SM 70	0.268	0.343	332	243	296	29.3	2390
MX1-TL02-W16	SM 95	0.193	0.248	402	297	369	34	3295
MX1-TL02-W17	SM 120	0.153	0.197	458	341	430	37.5	3960
MX1-TL02-W18	SM 150	0.124	0.160	512	385	488	40.3	4645
MX1-TL02-W19	SM 185	0.099	0.129	580	444	569	46.5	6105
MX1-TL02-W20	SM 240	0.075	0.100	667	515	666	50.6	7490
MX1-TL02-W30	SM 300	0.060	0.081	746	580	756	54.2	8940
MX1-TL02-W40	SM 400	0.047	0.066	839	662	868	60.1	11100

The above data is approximate and subjected to manufacturing tolerance



Multi Cores - Cu/MICA/XLPE/SWA/LSOH

Multi Core with Copper Conductors to IEC 60331 & BS 6387



CABLE DESCRIPTION

Conductor: Plain annealed copper
Core Insulation: Flame barrier Mica tapes & XLPE
Assembly: Cores are assembled together to form round cable
Inner Sheath: LSOH (Low Smoke Zero Halogen)
Armour: Single layer of steel wire

Outer Sheath
 LSOH (Low Smoke Zero Halogen)
Outer Sheath Color
 As per customer request
Cable Marking
 EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year
Operation Voltage
 0.6/1 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Product Code	Nominal Cross sectional area	Maximum Conductor Resistance		Current Rating			Approximate Overall Diameter	Approximate Weight
		DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
		mm2	Ω/Km	Ω/Km	A	A		
3 core cables - Cu/MICA/XLPE/SWA/LSOH								
CB1-TL03-W06	RM 1.5	12.1	15.43	24.7	21.8	20.9	14.2	348
CB1-TL03-W07	RM 2.5	7.41	9.45	33.2	27.5	30.4	15.2	411
CB1-TL03-W08	RM 4	4.61	5.88	46	37	42	16.3	485
CB1-TL03-W09	RM 6	3.08	3.93	58	46	51	17.6	590
CB1-TL03-W10	RM 10	1.83	2.33	76	61	69	19.8	871
CB1-TL03-W11	RM 16	1.15	1.47	98	76	90	21.9	1119
MX1-TL03-W12	RM 25	0.727	0.927	152	113	132	27	1835
MX1-TL03-W13	RM 35	0.524	0.669	183	137	162	29.4	2245
MX1-TL03-W14	SM 50	0.387	0.494	232	168	206	29.6	2435
MX1-TL03-W15	SM 70	0.268	0.343	286	209	262	34.3	3475
MX1-TL03-W16	SM 95	0.193	0.248	342	253	322	37.8	4430
MX1-TL03-W17	SM 120	0.153	0.197	390	290	375	40.2	5270
MX1-TL03-W18	SM 150	0.124	0.160	434	330	426	45.7	6745
MX1-TL03-W19	SM 185	0.099	0.129	490	375	490	49.7	8120
MX1-TL03-W20	SM 240	0.075	0.100	565	436	579	55.2	10230
MX1-TL03-W30	SM 300	0.060	0.081	634	496	663	60.1	12355
MX1-TL03-W40	SM 400	0.047	0.066	715	567	769	67.3	15505

The above data is approximate and subjected to manufacturing tolerance



Multi Cores - Cu/MICA/XLPE/SWA/LSOH

Multi Core with Copper Conductors to IEC 60331 & BS 6387



CABLE DESCRIPTION

Conductor: Plain annealed copper
Core Insulation: Flame barrier Mica tapes & XLPE
Assembly: Cores are assembled together to form round cable
Inner Sheath: LSOH (Low Smoke Zero Halogen)
Armour: Single layer of steel wire

Outer Sheath
 LSOH (Low Smoke Zero Halogen)
Outer Sheath Color
 As per customer request
Cable Marking
 EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year
Operation Voltage
 0.6/1 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Product Code	Nominal Cross sectional area	Maximum Conductor Resistance		Current Rating			Approximate Overall Diameter	Approximate Weight
		DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
		mm2	Ω/Km	Ω/Km	A	A		
4 core cables - Cu/MICA/XLPE/SWA/LSOH								
CB1-TL04-W06	RM 1.5	12.1	15.43	24.7	21.8	20.9	15.2	391
CB1-TL04-W07	RM 2.5	7.41	9.45	33.2	27.5	30.4	16.3	465
CB1-TL04-W08	RM 4	4.61	5.88	46	37	42	17.5	562
CB1-TL04-W09	RM 6	3.08	3.93	58	46	51	19.9	823
CB1-TL04-W10	RM 10	1.83	2.33	76	61	69	21.3	1015
CB1-TL04-W11	RM 16	1.15	1.47	98	76	90	24.3	1458
MX1-TL04-W12	RM 25	0.727	0.927	154	116	136	29.1	2205
MX1-TL04-W13	RM 35	0.524	0.669	185	140	166	31.9	2725
MX1-TL04-W14	SM 50	0.387	0.494	238	174	218	33.5	3095
MX1-TL04-W15	SM 70	0.268	0.343	293	218	277	39	4430
MX1-TL04-W16	SM 95	0.193	0.248	350	260	337	41.7	5595
MX1-TL04-W17	SM 120	0.153	0.197	397	301	393	47.2	7230
MX1-TL04-W18	SM 150	0.124	0.160	446	341	451	51.7	8590
MX1-TL04-W19	SM 185	0.099	0.129	503	390	521	56.7	10440
MX1-TL04-W20	SM 240	0.075	0.100	579	456	614	62.9	13160
MX1-TL04-W30	SM 300	0.060	0.081	649	513	702	68.5	15890
MX1-TL04-W40	SM 400	0.047	0.066	725	584	810	78.8	20970

The above data is approximate and subjected to manufacturing tolerance



Multi Cores - Cu/MICA/XLPE/SWA/LSOH

Multi Core with Copper Conductors to IEC 60331 & BS 6387



CABLE DESCRIPTION

Conductor: Plain annealed copper
Core Insulation: Flame barrier Mica tapes & XLPE
Assembly: Cores are assembled together to form round cable
Inner Sheath: LSOH (Low Smoke Zero Halogen)
Armour: Single layer of steel wire

Outer Sheath
 LSOH (Low Smoke Zero Halogen)
Outer Sheath Color
 As per customer request
Cable Marking
 EL SEWEDY CABLES, Size, Description, Voltage, Manufacturing Year
Operation Voltage
 0.6/1 KV

APPLICATION

These cables are used in hazardous areas where safety and circuit integrity are highly required during fire conditions.

Product Code	Nominal Cross sectional area	Maximum Conductor Resistance		Current Rating			Approximate Overall Diameter	Approximate Weight
		DC at 20 °C	AC at 90 °C	Laid in ground	Laid in duct	Laid in free air (Shaded)		
		mm2	Ω/Km	Ω/Km	A	A		
5 core cables - Cu/MICA/XLPE/SWA/LSOH								
CB1-TL05-W06	RM 1.5	12.1	15.43	17.2	15.2	15.6	16.2	446
CB1-TL05-W07	RM 2.5	7.41	9.45	23.2	19.2	22.8	17.4	535
CB1-TL05-W08	RM 4	4.61	5.88	32.2	25.9	31.5	19.7	779
CB1-TL05-W09	RM 6	3.08	3.93	40.6	32.2	38.2	21.3	950
CB1-TL05-W10	RM 10	1.83	2.33	53.2	42.7	51.7	22.9	1190
CB1-TL05-W11	RM 16	1.15	1.47	68.6	53.2	67.5	26.2	1706
MX1-TLA5-W12	RM 25	0.727	0.927	150	113	133	31.3	2595
MX1-TLA5-W13	RM 35	0.524	0.669	181	137	162	34.5	3245
MX1-TLA5-W14	SM 50	0.387	0.494	233	170	213	38.4	4025
MX1-TLA5-W15	SM 70	0.268	0.343	287	213	271	42.3	5310
MX1-TLA5-W16	SM 95	0.193	0.248	343	254	330	47.9	7285
MX1-TLA5-W17	SM 120	0.153	0.197	389	294	385	52.3	8750
MX1-TLA5-W18	SM 150	0.124	0.160	437	334	441	57.1	10470
MX1-TLA5-W19	SM 185	0.099	0.129	492	382	510	63.3	12810
MX1-TLA5-W20	SM 240	0.075	0.100	567	446	601	69.8	16065
MX1-TLA5-W30	SM 300	0.060	0.081	636	502	687	77.8	20295
MX1-TLA5-W40	SM 400	0.047	0.066	710	572	793	87.3	25515

The above data is approximate and subjected to manufacturing tolerance



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