



In any infrastructure, safety features designed to mitigate loss of human life and damage to property are not just required by regulations worldwide, but represent the gold standard in construction. One of these staple features supplied by Prysmian are Fire Performance cables, which connect critical building systems such as fire alarms, emergency lighting, PA & CCTV systems, emergency power supplies and smoke & fire shutters.

Fire Performance cables are crucial in an emergency situation, ensuring that under mechanical stress and high heat, these systems will continue to operate to effectively conduct an orderly evacuation of the premise and aid emergency services in gaining quick & effective entry to deal with the hazard.

Prysmian Group has been manufacturing the widest range of industry-leading Fire Performance cables, known as MAX FOH™ in ASEAN, for over twenty years.

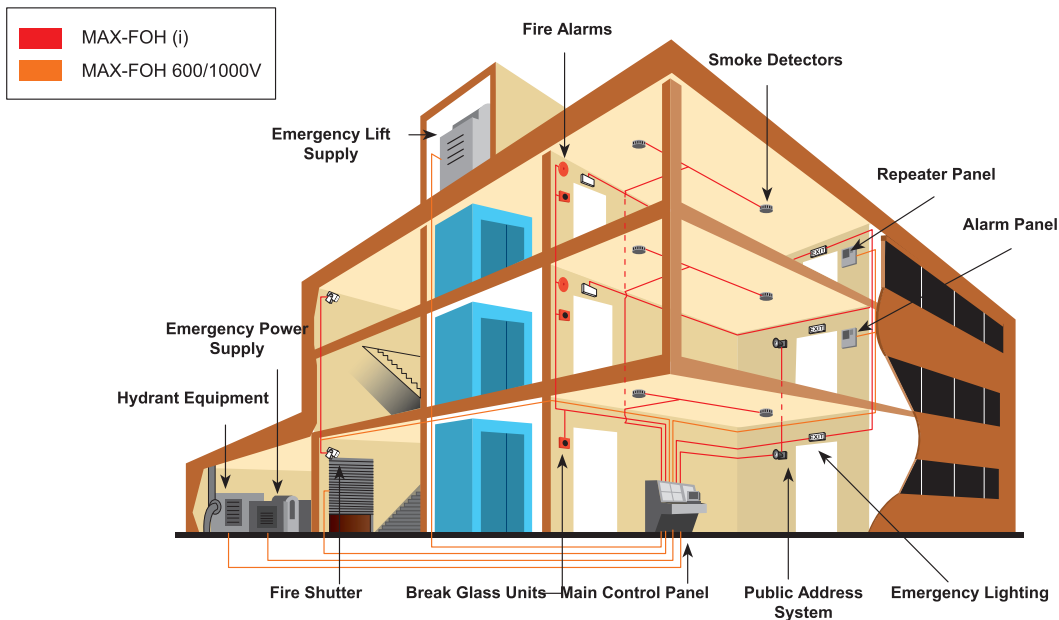
Prysmian Means Performance

6 advantages of buying MAX-FOH over OEM & substitutes:

1. **Original manufacturer certification** eliminates OEM-related problems like consistency and warranty.
2. **Full-sized conductors, insulation and sheathing** are used; that means no cutting corners with cheaper undersized ones.
3. **Multi-layered Mica fire barrier tape** meets industry standards, exceeds those of competitor makes.
4. Insulated by **Low Smoke Halogen Free (LSHF) material, an industry standard** for flame retardant cables.
5. Only the **best flame and smoke suppressants** are used. Cheap polymers save cost, but are not worth the **safety risk**.
6. All MAX-FOH products undergo **recognised 3rd party standards and approvals**, meeting various International Electrotechnical Commission and British Standards.



Applications

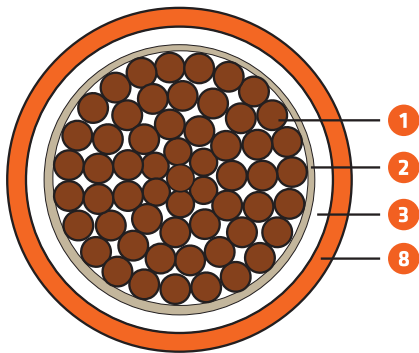


MAX-FOH cables are specially designed to facilitate a quick and orderly evacuation of the building occupants in the event of an emergency. Purpose-designed to maintain circuit integrity within a system of critical safety devices from emergency power supply to fire alarms, MAX-FOH cables are a vital component of building safety.

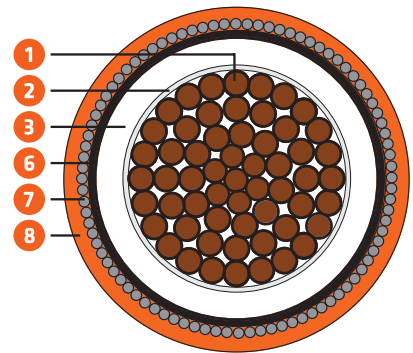
The special characteristics of the MAX-FOH range make it suitable for an almost infinite number of applications and environments.

The diagram below illustrates common safety systems in a building which should be fitted with MAX-FOH cables.

Construction of Cable



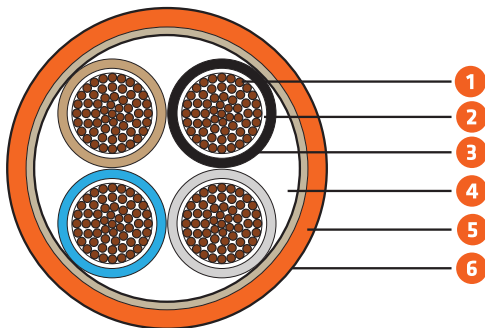
SINGLE CORE, UNARMoured



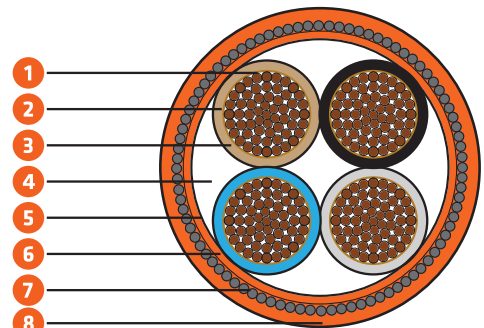
SINGLE CORE, ARMoured

#	1	2	3	4*	5*	6*	7*	8*
Construction	Conductor	Fire Barrier	Insulation	Filler	Binder Tape	Bedding	Armour	Sheath
Material	Stranded Annealed Copper	Mica Tape	Low Smoke Halogen-Free (LSHF) / Crosslinked Polyethylene (XLPE) compound	LSHF or Polypropylene Split Yarn	Polyester	LSHF compound	Galvanised Steel or Aluminium Wire (Braiding Optional)	LSHF compound

*optional to cable construction



MULTI-CORE, UNARMoured



MULTI-CORE, ARMoured

Core Identification

Core Numbers	1	2	3	4	5	6 and above
Colour configurations	White	 or 	 or 	 or 	 or 	Black with white numbers

These are standard configurations. Customisations to any component is available upon request.

Standards and Approvals

Draka cables are certified by multiple internationally recognised cable standards. Here are the listed IEC, SS and BS standards categorised by type of fire test.

Fire Resistance Tests

These tests are used to determine if a cable is capable of maintaining circuit integrity under:



Fire



Fire with water



Fire with mechanical shock

These tests use a number of alternative time and temperature parameters and depending on the level achieved by the cable, a corresponding letter is assigned to denote the category that the cable passes.

Standard	Part / Category	Resistance to	Temperature	Time
IEC 60331	60331-21	Fire	750°C	At least 90 mins
	60331-1	Fire	850°C	At least 120 mins
BS 6387 : 2013	Protocol C	Fire	950°C	For 3 hours
	Protocol W	Fire & Water	650°C	Fire for 15 minutes Fire and water for 15 minutes
	Protocol Z	Fire with Mechanical Shock	950°C	For 15 minutes, with 30 second hammer blows
SS299 : Part 1	Category C	Fire	950°C	For 3 hours
	Category W	Fire & Water	650°C	Fire for 15 minutes Fire and water for 15 minutes
	Category Z	Fire with Mechanical Shock	950°C	For 15 minutes, with 30 second hammer blows

Flame Propagation Tests

This test defines the ability of bunched cables to restrict vertical flame propagation when laid in trunking, cable trays or conduit. The test comprises of 4 categories each determined by the amount of combustible material in a 1 metre sample.



The cable samples are placed vertically next to one another on a vertical ladder where they are exposed to fire from a ribbon gas burner for the pre-arranged times.

After burning, the samples are cleaned to examine for char (the crumbling) on the cable surface. The charring should not have reached a height exceeding 2.5m above the bottom edge of the burner.

Standard	Single / Bunched	Standard & Category	Amount of Combustible Material in 1 metre Sample in Litres	Time of Exposure in Minutes
IEC	Single	60332-1-2	-	-
	Bunched	60332-3-22 Category A	7.0	40
	Bunched	60332-3-23 Category B	3.5	40
	Bunched	60332-3-24 Category C	1.5	20
	Bunched	60332-3-25 Category D	0.5	20
BS	Single	EN 60332-1-2	-	-
	Bunched	EN 60332-3-22 Category A	7.0	40
	Bunched	EN 60332-3-23 Category B	3.5	40
	Bunched	EN 60332-3-24 Category C	1.5	20
	Bunched	EN 60332-3-25 Category D	0.5	20

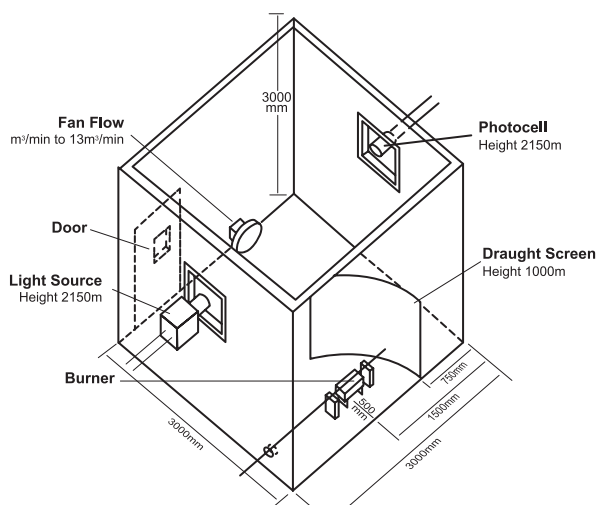
Corrosive & Acid Gas Emission Test

To address the concerns of toxic acid gases which could be produced when cables are burnt, this international test was developed to determine the amount of gas evolved by burning cables.

The recommended values of the test state that the weighted pH value should be more than 4.3, with relation of 1 litre of water. The weighted value of conductivity should not exceed 10µS/cm.

Standard	Test Item	Standard	Requirement
IEC	Acid Gas Emission	60754-1 60754-2	≤ 0.5% HCl
	Fluorine Content	60684-2	≤ 0.1%
	pH Conductivity	EN 60754-2	pH ≥ 4.3 Conductivity ≤ 10 µ S/mm
BS	Corrosive & Acid Gas	EN 60754-1 EN 60754-2	≤ 0.5% HCl

Smoke Emission Tests



The test is aimed at determining the density of smoke in the process of cable burning under defined conditions.

Standard	Standard	Requirement
IEC	61034-2	≥ 60%

MAX-FOH-I 0.6/1kV

Insulated, non-sheathed



Insulation

Cross-linked Low Smoke
Halogen Free Compound (XLEVA)

Fire Barrier

Mica Glass Tape

Conductor

- Plain annealed copper
- Class 2
- Circular or compact

Application & Features

For use in most power and control circuits.
Halogen-free replacement for PVC insulation to
reduce hazardous gas emission and secondary
damage.

Thermal Characteristics

Operating Temperature

Installation Temperature

Short Circuit Temperature

-15°C to 90°C

0°C to 50°C

250°C

Identification



Insulation
colour

Optional Features



UV
Resistance



Anti- Termite



Anti- Rodent

Bending Radius

Minimum bending radius
6 x overall diameter

Performance Characteristics

Reference Standard:

BSEN 50525-3-41
IEC 60502-1

Circuit Integrity:

IEC 60331
SS 299-1 Cat C, W, Z
BS 6387 -Cat C, W, Z

Flame Retardant:

IEC 60332-1-2
IEC 60332-3-22
IEC 60332-3-23
IEC 60332-3-24

Corrosive gas-free:

IEC 60754-2

Halogen-free:

IEC 60754-1

Low Smoke Density:

IEC 61034-2

Cable Size	Insulation Thickness	Cable Overall Diameter	Cable Weight	Max Conductor Resistance at 20°C
mm ²	mm	mm	kg/km	ohm/km
1x1.5	0.7	3.8	28	12.10
1x2.5	0.8	4.4	41	7.41
1x4	0.8	5.0	57	4.61
1x6	0.8	5.5	78	3.08
1x10	1.0	6.8	120	1.83
1x16	1.0	7.8	180	1.15
1x25	1.2	9.6	280	0.727
1x35	1.2	10.8	370	0.524
1x50	1.4	12.6	500	0.387
1x70	1.4	14.3	690	0.268
1x95	1.6	16.6	950	0.193
1x120	1.6	18.1	1100	0.153
1x150	1.8	20.2	1400	0.124
1x185	2.0	22.4	1800	0.0991
1x240	2.2	25.3	2300	0.0754
1x300	2.4	28.4	2900	0.0601
1x400	2.6	31.7	3700	0.047
1x500	2.8	35.3	4700	0.0366
1x630	2.8	39.1	6000	0.0283

Current Rating refers to EIT Standard 2001-56, Chapter 5 Installation of cables and accessories Table 5-27 (see page 53)

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MAX-FOH 0.6/1kV

Insulated, sheathed



Sheath

LSHF Compound

Insulation

XLPE Compound

Fire Barrier

Mica Glass Tape

Conductor

- Plain annealed copper
- Class 2
- Circular or compact

Application & Features

For use in most power and control circuits. Features XLPE Insulation for high operating temperatures, thermal short circuit rating and durability.

Thermal Characteristics

Operating Temperature

-15°C to 90°C

Installation Temperature

0°C to 50°C

Short Circuit Temperature

250°C

Optional Features



UV
Resistance



Anti-Termite



Anti-Rodent

Identification



Outer Sheath



Insulation
Colour

Bending Radius

Minimum bending radius

6 x overall diameter

Performance Characteristics

Reference Standard:

IEC 60502-1
BS 7211

Circuit Integrity:

IEC 60331
SS 299-1 Cat C, W, Z
BS 6387 -Cat C, W, Z

Flame Retardant:

IEC 60332-1-2
IEC 60332-3-22
IEC 60332-3-23
IEC 60332-3-24

Corrosive gas-free:

IEC 60754-2

Halogen-free:

IEC 60754-1

Low Smoke Density:

IEC 61034-2

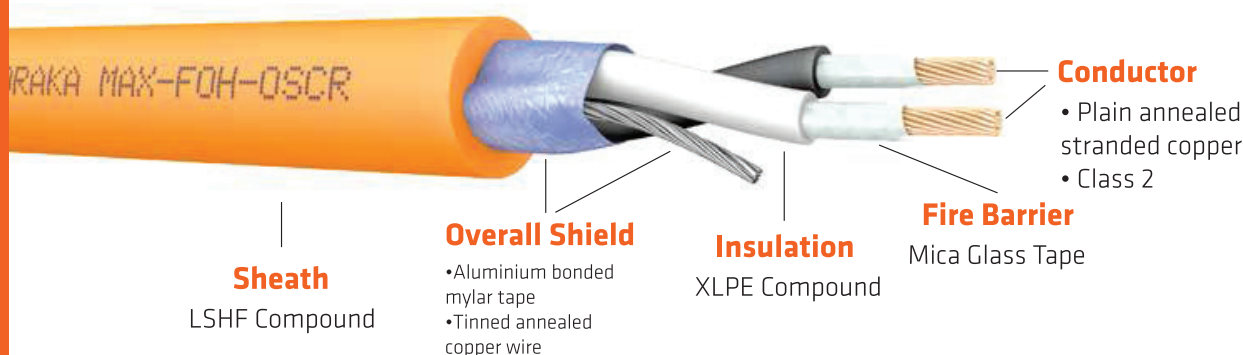
Cable Size	Insulation Thickness	Sheath Thickness	Cable Overall Diameter	Cable Weight	Max Conductor Resistance at 20°C
mm ²	mm	mm	mm	kg/km	ohm/km
1x1.5	0.7	1.4	6.7	63	12.10
1x2.5	0.7	1.4	7.1	75	7.41
1x4	0.7	1.4	7.7	96	4.61
1x6	0.7	1.4	8.2	110	3.08
1x10	0.7	1.4	9.1	160	1.83
1x16	0.7	1.4	10.2	220	1.15
1x25	0.9	1.4	11.9	330	0.727
1x35	0.9	1.4	13.3	460	0.524
1x50	1.0	1.4	14.7	600	0.387
1x70	1.1	1.4	16.7	810	0.268
1x95	1.1	1.5	18.8	1000	0.193
1x120	1.2	1.5	20.7	1300	0.153
1x150	1.4	1.6	22.8	1600	0.124
1x185	1.6	1.7	25.3	1900	0.0991
1x240	1.7	1.7	28.1	2500	0.0754
1x300	1.8	1.8	30.9	3200	0.0601
1x400	2.0	1.9	34.5	4000	0.047
1x500	2.2	2.1	38.5	5000	0.0366
1x630	2.4	2.2	43.1	6400	0.0283

Current Rating refers to IEC Standard 2001-56, Chapter 5 Installation of cables and accessories Table 5-27 and 5-32 (see page 53,56)

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MAX-FOH^{OSCR} 300/500V

Insulated, shielded, twisted pair



Application & Features

Most widely used fire-resistant speaker and audio/motor control cables, which is highly flexible due to the unique tubing design.

Thermal Characteristics

Operating Temperature

-15°C to 90°C

Installation Temperature

0°C to 50°C

Short Circuit Temperature

250°C

Identification



Outer Sheath



Insulation



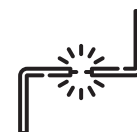
UV
Resistance



Anti-Termite



Anti-Rodent



Other Sheath colours
available

Optional Features

Bending Radius

Minimum bending radius
8 x overall diameter

Performance Characteristics

Reference Standard:

BS EN 50288-7
BS EN 60228

Circuit Integrity:

IEC 60331-21
BS 6387 -Cat C, W, Z

Flame Retardant:

IEC 60332-3-22

Halogen-free:

IEC 60754-1, 60754-2

Low Smoke Density:

IEC 61034-2

Cable Size	Nominal Insulation Thickness	Nominal Sheath Thickness	Approx Cable Overall Diameter	Approx Weight	Allowable Ampacities in free air at 40°C	Max Conductor Resistance at 20°C
mm ²	mm	mm	mm	kg/km	(Ambient)	ohm/km
1P x1.5	0.6	0.9	9.3	89	17 A	12.10
1P x2.5	0.7	1.0	10.7	121	31 A	7.41

Low Smoke, Halogen Free (LSHF) Building Wire

Low Smoke: When on fire, the cable does not liberate large volumes of dense black smoke. Improves safety in areas with limited means of escape or places with large crowds.

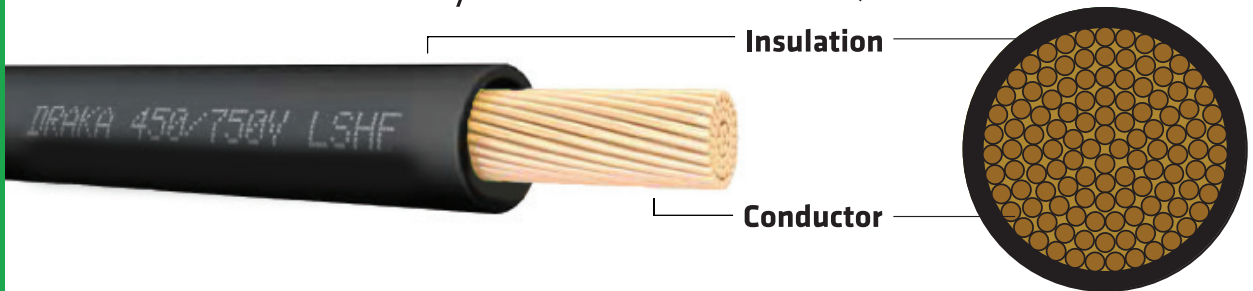
Halogen Free: When on fire, the cable does not emit any halogen gas, which are acidic and corrode equipment and human skin.

- Protects computers, electronic & communication equipment,
- Reduces toxicity of gases emitted from the fire.
- Reduce risk of incapacitation
- Facilitates safe escape and evacuation in an emergency

Cu/LSHF Single Core

450/750 V(*0.6/1 kV)

Cross-linked Polyolefin Insulated, Non-sheathed



Conductor	Insulation	Core Identification
Plain annealed copper wire	An extruded layer of cross-linked Polyolefin, E15	Black default

Installation Spec:

Minimum bending radius (mm):

6 x overall diameter

Maximum pulling tension (kgf):

7 x No. of Cores x Conductor Size

Electrical Characteristics:

Operating Voltage, U_o/U

* For fixed installations with mechanical protection, within switchgear and control gear

All other installations

600/1000V

450/750V

Max Operating Temperature:

90°C

Performance Characteristics

Design Standard:

BS EN 50525-3-41
(BS 7211)

Conductor:

IEC 60228
BS 6360
BS EN 60228

Flame Retardant:

IEC 60332-1-2,
60332-3-22
60332-3-24

Halogen-free:

IEC 60754-1, IEC 60684-2

Corrosive gas-free:

IEC 60754-2

Final Short Circuit Temperature:

250°C

Low Smoke Density:

IEC 61034-2

Test Voltage:

2.5kV for 15 mins

Dimension & Electrical Data:

Cable Size	Nom. Insulation Thickness	Nom. Overall Diameter	Approx. Cable Weight	Max d.c Resistance at 20°C
mm ²	mm	mm	kg/km	ohm/km
1 x 1.5	0.7	3.0	22	12.1
1 x 2.5	0.8	3.6	34	7.41
1 x 4	0.8	4.2	51	4.61
1 x 6	0.8	4.7	71	3.08
1 x 10	1.0	6.1	120	1.83
1 x 16	1.0	7.1	180	1.15
1 x 25	1.2	8.8	283	0.727
1 x 35	1.2	10.1	380	0.524
1 x 50	1.4	11.7	514	0.387
1 x 70	1.4	13.5	724	0.268
1 x 95	1.6	15.8	1000	0.193
1 x 120	1.6	17.4	1239	0.153
1 x 150	1.8	19.4	1524	0.124
1 x 185	2.0	21.6	1910	0.0991
1 x 240	2.2	24.7	2489	0.0754
1 x 300	2.4	27.5	3114	0.0601
1 x 400	2.6	30.9	3965	0.047
1 x 500	2.8	34.4	4979	0.0366
1 x 630	2.8	38.4	6339	0.0283

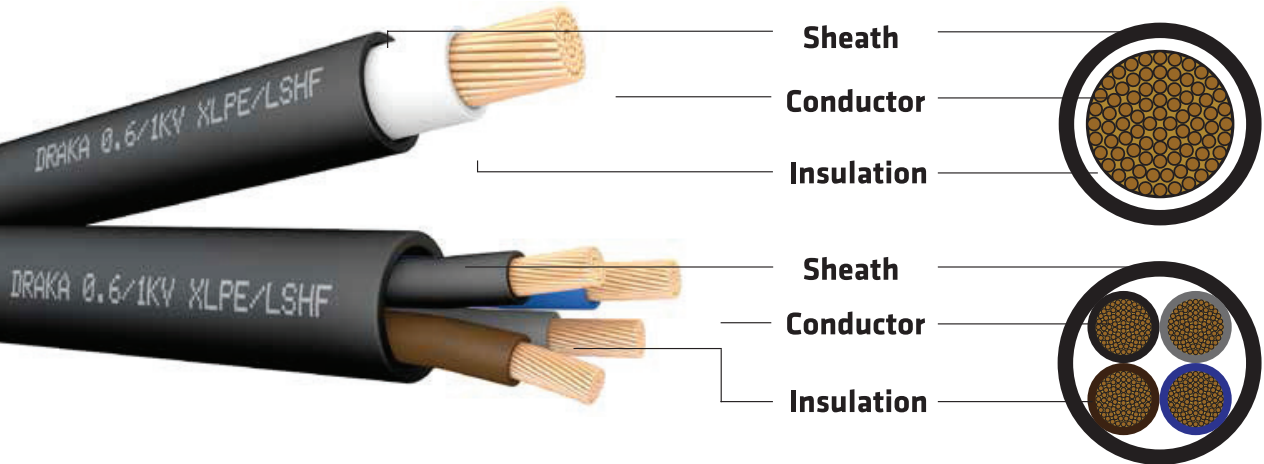
* Optional

Current Rating refers to EIT Standard 2001-56, Chapter 5 Installation of cables and accessories Table 5-27 (see page 53)

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Cu/XLPE/LSHF Single & Multi Core 0.6/1kV

XLPE Insulated, LSHF Sheathed Cable



Conductor	Insulation	Core Identification
Plain annealed copper wire	An extruded layer of cross-linked polyethylene (XLPE) compound	Single core: Black Multi core: See Page 7
Assembly**	Outer Sheath	Sheath Colour
Cores cabled together, supplied with filter* and covered with Polyester (PETP) binder tape*	A low smoke halogen free (LSHF) compound	Black

Installation Spec:

Minimum bending radius (mm):
6 x overall diameter (Single Core)
 Minimum bending radius (mm):
8 x overall diameter (2-, 3-, 4-, 5-, multicores)
 Maximum pulling tension (kgf):
7 x No. of Cores x Conductor Size

Electrical Characteristics:

Operating Voltage, Uo/U:

600/1000V

Max Operating Temperature:

90°C

Performance Characteristics

Design Standard: Halogen-Free:
[IEC 60502-1](#) [IEC 60754-1](#)
 Conductor: Corrosive Gas-Free:
[IEC 60228](#) [IEC 60754-2](#)
[BS 6360](#)
[BS EN 60228](#)
 Flame Retardant: Low Smoke Density:
[IEC 60332-1-2](#) [IEC 61034-2](#)
[IEC 60332-3-22](#)

Final Short Circuit Temperature:

250°C

Test Voltage:

3.5kV for 5 mins

* Optional

** Not available for single core cable