# FIRE RESISTANT MUSCAT

# Fireflex® CABLES

MADE IN ENGLAND

## CIVIL DEFENCE APPROVED

Fire Performance:

BS 6387 cat. B
IEC 331
(3 h at 750 C)
BS 4066 part. 1 and 3
IEC 332-3 cat. C
BS 6425 part. 1
IEC 754-1
BS 6724

ISO 9000
REGISTERED FIRM

| Fireflex® CABLES MADE IN ENGLAND | Designation | Standard | Nominal voltage [V] | Number of cores | Cross sections [mm²] | Application |
|---|---|---|---|---|---|---|
| **HALOGEN-FREE LOW SMOKE POWER CABLES** | | | | | | |
|  | **1-CHKE-R** | Refer to individual product description | 600/1000 | 1<br>2<br>3<br>4-5<br>7<br>10 | 25-300<br>1.5-2.5<br>1.5-16<br>1.5-150<br>1.5-2.5<br>1.5 | EPR insulated and halogen-free thermoplastic compound sheathed power and auxiliary control cables for the supply of electric energy. Special for installations where fire and emissions of smoke and toxic fumes create a potential threat. Not suitable for use in water. |
| **ARMOURED HALOGEN-FREE LOW SMOKE POWER CABLES** | | | | | | |
|  | | BS 6724 | 600/1000 | 1 | 50÷500 | XLPE insulated, LSOH bedded, steel round wires armoured and LSOH sheathed power and auxiliary control cables for the supply of electrical energy. Special for installation where fire and the emission of smoke and toxic fumes create a serious potential threat |
| | **Cu/XLPE/LSOH/ SWA/LSOH** | BS 6724 | 600/1000 | 2÷4<br>5<br>3 + 1<br>7÷48<br>7÷19 | 1.5÷240<br>1.5÷70<br>25/16<br>÷240/120<br>1.5÷2,5<br>4 | |
| **HALOGEN-FREE LOW SMOKE FIRE RESISTANT POWER CABLES** | | | | | | |
|  | **FLAME-X 950 NKGs** | ZN-FKZ-0333:1997 IEC 60331 | 600/1000 | 1<br>2<br>3÷4<br>5<br>6÷19<br>24÷61 | 1.5÷500<br>1.5÷50<br>1.5÷240<br>1.5÷95<br>1.5÷4<br>1.5÷2.4 | FLAME-X 950 helps to protect human life in the event of fire in public buildings or industrial installations, e.g. in industrials complexes, power stations, public buildings, hotels, underground railway systems, hospitals, airports, data processing centrex, emergency power supply and alarm system etc. Suitable for fixed installation in dry and moist rooms as well as for outdoor application, not however direct installation in the earth or in water.<br>Performance under fire conditions:<br>Insulation integrity for 180 minutes - IEC 60331-21<br>Flame propagation:<br>EN 50266-2-2, IEC 60332-3-22 - Cat. A |
|  | **1-CHKE-V** | Refer to individual products description | 600/1000 | 1<br>2<br>3<br>4÷5<br>7,12<br>19÷18 | 25÷300<br>1÷6<br>1÷50<br>1÷150<br>1÷4<br>1÷2.5 | Halogen-free low smoke fire resistant power cables are designed for fixed installation both in ordinary and damp environments. They can also be used on an inflammable surface and in environment with fire hazards where maintenance of circuit integrity during and after a fire is required.<br>Performance under fire condition:<br>Insulation integrity for 180 minutes - IEC 60331-21<br>Flame propagation:<br>En 50266-2-2, IEC 60332-3-22 - Cat. A |
|  | **FLAME (N)HXH FE180/E 30** | DIN VDE 0266 DIN 4102 - 12 | 600/1000 | 1<br>2<br>3÷4<br>5<br>7÷30 | 1.5÷300<br>1.5÷25<br>1.5÷240<br>1.5÷50<br>1.5÷2.5 | Fire resistant security cables for installation everywhere where high safety requirements have a special significance e.g., in industrials complexes, power station, public buildings, hotels, underground railway systems, hospitals, airport etc. Suitable for fixed installation in dry and moist rooms as well as for outdoor application, not however direct installation in the earth or in water.<br>FE180: Installation integrity for 180 minutes - DIN VDE 0472/814 (IEC 60331-21).<br>E30 and E90: Functionality for electrical cable system for minimum 30 minutes (E30) and 90 minutes (E90) - DIN 4102-12.<br>Flame propagation: DIN VDE 0472-804 C (IEC 60332-3) |
|  | **FLAME (N)HXCH FE180/E 90** | DIN VDE 0266 DIN 4102 - 12 | 600/1000 | 2<br>3<br>4<br>7÷30 | 1.5÷16<br>1.5÷185<br>1.5÷150<br>1.5÷2.5 | |
|  | **FLAME (N)HXCH FE180/E 90** | DIN VDE 0266 DIN 4102 - 12 | 600/1000 | 3<br>4<br>5<br>7÷12 | 1.5÷185<br>1.5÷185<br>1.5÷50<br>1.5÷2.5 | |
|  | **FLAME (N)HXCH FE180/E 90** | DIN VDE 0266 DIN 4102 - 12 | 600/1000 | 2<br>3<br>4<br>7÷24 | 1.5÷16+<br>1.5÷150<br>1.5÷120<br>1.5÷2.5 | |

## Color Identification

*2 Core + Earth*
Red / Black

*3 Core + Earth*
Red / Black / Green

*4 Core + Earth*
Red / Yellow / Blue / Black

*Sheath*
Black / White / Red / Orange

| Nr. of conductor X sect. (sqmm) | Diameter of conductor (mm) | Insulation thicknss (mm) | Diameter earth wire (mm) | Final diameter (mm) |
|---|---|---|---|---|
| 2 X 1 | 1.5 | 0.6 | 1.15 | 8.0 |
| 3 X 1 | 1.15 | 0.6 | 1.15 | 8.3 |
| 4 X 1 | 1.15 | 0.6 | 1.15 | 8.9 |
| 2 X 1.5 | 1.40 | 0.6 | 1.15 | 8.4 |
| 3 X 1.5 | 1.40 | 0.6 | 1.15 | 8.9 |
| 4 X 1.5 | 1.40 | 0.6 | 1.15 | 9.5 |
| 2 X 2.5 | 1.80 | 0.6 | 1.40 | 9.2 |
| 3 X 2.5 | 1.80 | 0.6 | 1.40 | 9.7 |
| 4 X 2.5 | 1.80 | 0.6 | 1.40 | 10.5 |

## Fireflex Cables

Voltage rating (V): 300, 450 / 750 and 600 / 1000

Stranded conductors to BS 6360 class 1,2 and 5

FIRE FLEX Cables to BS 5839-1:2002 par 26.2d

| | |
|---|---|
| **BS 6387 C** | Resistance to fire alone at 3 hours at 950°C. |
| **BS 6387 W** | Resistance to fire & water at 650°C for 15 min. With fire & water. |
| **BS 6387 Z** | Resistance to fire with mechanical shock 950°C for 15 min, with 30 sec, hammers blows. |
| **BS 6425; Part 1** | Acid Gas emission |
| **BS 4066; Part 1** | Flame Propogation |
| **BS 4066; Part 3** | Flame Propogation |
| **IEC 60331** | Resistance to fire 3 hours at 750°C. |
| **BS 7622 / EN 50621-1** | Smoke Emission |
| **IEC 7622** | Smoke Emission |
| **IEC 60754; Part 1** | Acid Gas Emission |
| **IEC 60332-3** | Flame Propogation |
| **BS 6360** | High conductivity annealed Copper conductor |
| **BS 7629** | Cable Construction |
| **EN 50200 PH 30** | Functionality to fire - 30 min |

## Standard

| | |
|---|---|
| **IEC 331** | Fire-resistance characteristics of electric cables |
| **IEC 332-1** | Flame-retardant characteristics of electric cables |
| **IEC 332-3** | Tests on electric cables under fire conditions |
| **IEC 754-1** | Test on gases evolved during combustion of electric cables |
| **IEEE 383** | IEEE std for type test of class 1E Electric Cables, fieldsplices, and connections for Nuclear Power Generation Station. VerticalTray Flame Test |
| **DEF STD 61-12 (Part 18)** | Wires, cords and cable, eletricmetricunits. Part 18:Equipment wires limited fire hazard. |
| **BS 6387** | Performance requirements for cable required to maintain circuit integrity under fire conditions. |
| **BS 8434 - 1 2003** | Functionality to fire 30 min fire, mechanical shock and later test described in clause 26.2d of BS 5839 - 1 :2002 |

## APPROVAL AND SPECIFICATIONS:

**BS6387 - FIREFLEX achieves the highest categories C, W and Z for cables required to maintain circuit integrity under fire conditions.**

**Category C:**

Resistance to fire alone (950 C for 3 hours).

**Category W:**

Resistance to fire with water spray (650 C for 15 minutes with fore alone followed by fire and water spray for 15 minutes).

**Category Z:**

Resistance to fire with mechanical shock (950°C with applied mechanical shock for 15 minutes).

FIREFLEX is suitable for use on fire alarms and emergency lighting circuit and satisfies the requirements of the code of practice in each case.

## FIREFLEX SIZE RANGE

| CABLE REFERENCE | CONDUCTOR | | WEIGHT kg/100m |
|---|---|---|---|
| | NUMBER | CROSS SECTION AREA mm² | |
| CCFLX 2/1E | 2 | 1m² | 80 |
| CCFLX 2/1.5E | 2 | 1.5m² | 95 |
| CCFLX 2/2.5E | 2 | 2.5m² | 130 |
| CCFLX 2/4E | 2 | 4m² | 200 |
| CCFLX 3/1.5E | 3 | 1.5m² | 125 |
| CCFLX 4/1.5E | 4 | 1.5m² | 150 |
| CCFLX 7/1.5E | 7 | 1.5m² | 240 |

| CABLE REFERENCE | | NOMINAL INSULATION THICKNESS | APPROXIMATE OVERALL DIAMETER | | | | NOMINAL CAPACITANCE | |
|---|---|---|---|---|---|---|---|---|
| NOMINAL CROSS SECTION AREA | STRANDS AND DIAMETER | | 2 Core | 3 Core | 4 Core | 7 Core | Core to Core | Core to Core/ Screen |
| mm | Strand/mm | mm | mm | mm | mm | mm | pF/m | pF/m |
| 1.0 | 1/1.13 | 0.6 | 7.60 | 8.10 | 8.60 | 11.75 | 120 | 210 |
| 1.5 | 1/1.38 | 0.6 | 8.60 | 9.60 | 10.50 | 14.30 | 125 | 220 |
| 2.5 | 7/0.67 | 0.6 | 9.60 | 10.30 | 11.10 | 15.20 | 130 | 230 |
| 4.0 | 7/0.85 | 0.6 | 11.20 | 12.20 | 13.20 | 18.00 | 135 | 235 |

1 Zero halogen low smoke jacket available in red or white.

- No fire propogation. Low smoke and low toxicity of combustion gases.
- Absence of corrosive gases.
- Cable is fully screened.

2 Earth Conductor.

3 Aluminium / Polyester tape screen.

4 1st Polyester Tape

5 Special compound silicon rubber mix.

6 Plain annealed solid copper.

**Current Installation:**

Hotels
Hospitals
Railway Station
Libraries
School
Theaters
Factories
Restaurants
Computer Center
Control Rooms
Airport Terminal
Underground Stations
Smoke Detection System