**Applications**

These cables are designed for use in fire situations where the spread of flames along a cable route need to be retarded. Fireguard cables are designed to reduce the spread of fire along a cable duct or tray. The outer sheath of the cables is flame retardant PVC. These cables are slightly more expensive than normal PVC cables and are widely used without extra costing.

**Construction**

Conductors: Stranded compacted annealed copper to IEC 60228 or BS 6360
Insulation: PVC/XLPE
Filler (where applicable): Polypropylene yarn
Binder Tape (where applicable): Polyester mylar tape
Bedding (armoured cable): Flame retardant PVC
Armour (armoured cable): Galvanised steel wire armoured (multicore) or Aluminium wire armoured (single core)
Oversheath: Flame retardant PVC
Rated Voltage: 300/500V, 450/750V, 600/1000V
Range of Sizes: 1.5mm² to 1000mm²
Number of Cores: 1, 2, 3, 4, 7, 12, 19, 27, 37
Core Identification: Single Core; Natural (Orange for nonsheathed)
  - Two Core: Red & Black
  - Three Core: Red, Yellow & Blue
  - Four Core: Red, Yellow, Blue & Black
Reference Standards: BS 6004 (single core unsheathed cable)
  - BS 6346 (PVC insulated and PVC sheathed cable)
  - BS 5467 (XLPE insulated and PVC sheathed armoured cable)

**Fire Performance**

Flame Retardancy: Pass IEC 60332 Part 1 or BS 4066 Part 1
Flame Propagation: Pass IEC 60332 Part 3 or BS 4066 Part 3

**Highlights of Fireguard**

- Fully complying with BS 5467 or BS 6346
- Reduced flame propagation to IEC 60332 Part 3C (BS 4066 Part 3C) or IEC 60332 Part 3A (BS 4066 Part 3A)
  (with special sheath material)
- Fireguard cables will retard the flame propagation.
- Fireguard cables are not designed for maintaining circuit integrity, and will give off large quantities of toxic gas and smoke.
Fire Performance Cables

FIREGUARD  Flame Retardant Cables
FIREFUME  Flame Retardant Low Smoke Cables
FIRETOX  Flame Retardant Low Smoke Halogen Free Cables
FIREFLIX  Fire Resistant Low Smoke Halogen Free Cables

FIREFUME

Applications

These cables are designed for use in surface mounted or embedded conduits, or closed systems, for areas in which low emission of smoke and acid gas have to be guaranteed in case of fire. FIREFUME cables are designed to reduce the spread of fire along a cable conduit. The outer sheath of the cables is flame retardant low halogen PVC. These cables are slightly more expensive than flame retardant PVC cables and cheaper than LSHF cables.

Construction

Conductors: Stranded compacted annealed copper to IEC 60228 or BS 6360
Insulation: XLPE (single core unsheathed conduit wires.)
    PVC/XLPE (single core & multicore sheathed cables.)
Filler (where applicable): Polypropylene yarn
Binder Tape (where applicable): Polyester mylar tape
Bedding (armoured cable): Flame retardant low halogen PVC
Armour (armoured cable): Galvanised steel wire armoured (multicore) or Aluminium wire armoured (single core)
Oversheath: Flame retardant low halogen PVC
Rated Voltage: 300/500V, 450/750V, 600/1000V
Range of Sizes: 1.5mm² to 1000mm²
Number of Cores: 1, 2, 3, 4, 7, 12, 19, 27, 37
Core Identification: Single Core: Natural (Orange for nonsheathed)
    Two Core: Red & Black
    Three Core: Red, Yellow & Blue
    Four Core: Red, Yellow, Blue & Black
Reference Standards: BS 7211 (single core unsheathed cable)
    BS 6346 (PVC insulated and PVC sheathed cable)
    BS 5467 (XLPE insulated and PVC sheathed armoured cable)
    BS 6724 (XLPE insulated and LSHF sheathed armoured cable)

Fire Performance

Flame Retardancy: Pass IEC 60332 Part 1 or BS 4066 Part 1
Flame Propagation: Pass IEC 60332 Part 3 or BS 4066 Part 3
Corrosive Acid Gas Emission: 5% - 15% to BS 6425 or IEC 60754-1

Highlights of FIREFUME
- Fully complying with BS 7211, BS 5467 or BS 6346 or BS 6724
- Reduced flame propagation to IEC 60332 Part 3C (BS 4066 Part 3C) or IEC 60332 Part 3A (BS 4066 Part 3A)
  (with special sheath material)
- Low emissions of smoke when tested according to BS 7622 Part 2 or IEC 61034.
- Low emissions of acid gas when tested according to BS 6425 Part 2 or IEC 60754-2;
- Low halogen content (15%) when tested according to IEC 60754-1
Applications

These cables are designed for fixed installation in dry premises for situations in which low emission of smoke and acid gases have to be guaranteed in the case of fire. FIRETOX cables are designed to reduce flame propagation and smoke in those instances where a fire may develop. FIRETOX are highly recommended in the following areas:

1) Where large numbers of people may be present (eg. Cinemas, shopping centres, theatres)
2) Where people are confined due to limited access and escape may be difficult during fire. (eg. Underground railways, high rise buildings, hospitals, tunnels etc.)
3) Where expensive equipment has been installed (eg. Computer rooms, data centres, power stations, switching centre etc)

Construction

Conductors: Stranded compacted annealed copper to IEC 60228 or BS 6360
Insulation: XLPE complying to BS 7211 (single core unsheathed conduit wires) and BS 6724 ( multicore armoured cables).
Filler (where applicable): Polypropylene yarn
Binder Tape (where applicable): Polyester mylar tape
Bedding (armoured cable): Low smoke halogen free (LSHF) compound
Armour (armoured cable): Galvanised steel wire armoured (multicore) or Aluminium wire armoured (single core)
Oversheath: Low smoke halogen free (LSHF) compound
Rated Voltage: 300/500V, 450/750V, 600/1000V
Range of Sizes: 1.5mm² to 1000mm²
Number of Cores: 1, 2, 3, 4, 7, 12, 19, 27, 37
Core Identification: Single Core: Natural (Orange for nonsheathed)
Two Core: Red & Black
Three Core: Red, Yellow & Blue
Four Core: Red, Yellow, Blue & Black
Reference Standards: BS 7211 (single core unsheathed cable)
BS 6724 (multicore armoured cable)

Fire Performance

Flame Retardancy: Pass IEC 60332 Part 1 or BS 4066 Part 1
Flame Propagation: Pass IEC 60332 Part 3 or BS 4066 Part 3
Corrosive Acid Gas Emission: < 0.5% to BS 6425 or IEC 60754-1
Toxicity: NES 713
Smoke Emissions: Pass IEC 61034

Highlights of FIRETOX
-Fully complying with BS 7211 or BS 6724
-Reduced flame propagation to IEC 60332 Part 3C (BS 4066 Part 3C) or IEC 60332 Part 3A (BS 4066 Part 3A)
(with special sheath material)
-Low emissions of smoke when tested according to BS 7622 Part 2 or IEC 61034
-Low emissions of acid gas when tested according to BS 6425 Part 2 or IEC 60754-2;
-Very low halogen content (0.5%) when tested according to IEC 60754-1
Applications

These cables are designed for emergency lighting, fire alarms and essential equipment in fire situations where an uninterrupted power supply has to be guaranteed.

During fire, electric circuits may be damaged and the associated lighting, power and data communications may be suspended. Human safety may depend on continued operation of lighting, elevators and escalators, fire fighting water pumps, fire alarm and ventilation fans. FIREFLIX cables are designed to maintain circuit integrity of these vital emergency services during the fire situation. The individual conductors are wrapped with a layer of fire resisting mica/glass tape which prevents phase to phase and phase to earth contact even after the insulation has been burnt away.

Construction

Conductors: Plain annealed stranded copper to IEC 60228 or BS 6360
Fire Barrier: Mica/glass tape
Insulation: XLPE
Filler (where applicable): Polypropylene yarn
Binder Tape (where applicable): Polyester mylar tape
Bedding (armoured cable): Low smoke halogen free (LSHF) compound
Armour (armoured cable): Galvanised steel wire armoured (multicore) or Aluminium wire armoured (single core)
Oversheath: Low smoke halogen free (LSHF) compound
Rated Voltage: 300/500V, 450/750V, 600/1000V
Range of Sizes: 1.5mm² to 1000mm²
Number of Cores: 1, 2, 3, 4, 7, 12, 19, 27, 37
Core Identification:
   Single Core: Natural (Orange for nonsheathed)
   Two Core: Red & Black
   Three Core: Red, Yellow & Blue
   Four Core: Red, Yellow Blue & Black
Reference Standards: BS 7211 (single core unsheathed)
   BS 6724 (multicore armoured cables)

Fire Performance

Flame Retardancy: Pass IEC 60332 Part 1 or BS 4066 Part 1
Flame Propagation: Pass IEC 60332 Part 3 or BS 4066 Part 3
Corrosive Acid Gas Emission: < 0.5% to BS 6425 or IEC 60754-1
Toxicity: NES 713
Smoke Emissions: Pass IEC 61034

Circuit Integrity Performance:

Resistance to Fire Alone: IEC 60331-3 hours at 750 ºC
   BS 6387 Cat C-3 hours at 950 ºC
Resistance to Fire with Water Spray:
   BS 6387 Cat W-15 mins at 650ºC
   Plus 15 mins with water spray
Resistance to Fire with mechanical shock:
   BS 6387 Cat Z-15 mins at 950ºC
   Plus 15 mins with water spray & mechanical shock

Highlights of FIREFLIX

-Surpasses the requirements of BS 6387 CWZ or IEC 60331
-Reduced flame propagation to IEC 60332 Part 3C (BS 4066 Part 3C) or IEC 60332 Part 3A (BS 4066 Part 3A) (with special sheath material)
-Low emissions of smoke when tested according to BS 7622 Part 2 or IEC 61034.
-Low emissions of acid gas when tested according to BS 6425 Part 2 or IEC 60754-2;
-Very low halogen content (0.5%) when tested according to IEC 60754-1
FIRE PERFORMANCE CABLES

ORDERING CODE
CCA – BCDE-FG-HI

A - Cable Series
FGD = FIREGUARD; FFE = FIREFUME;
FTX = FIRETOX; FFX = FIREFLIX

B - Insulation
XP = XLPE; Y = PVC; 2Y = PE; H = LSHF

C - Voltage Rating
300 = 300/500V; 450 = 450/750V; 600 = 600/1000V; 1900 = 1900/3300V

D - Core Construction
S = Single Core with Sheathing; SU = Single Core Unsheathed; M = Multicore

E - Armouring
U = No Armouring; A = Armouring

F - Number of Cores
2C = 2 Cores; 3C = 3 Cores; 4C = 4 Cores etc.

G - Cross Section Area
1.5 = 1.5mm²; 2.5 = 2.5mm² etc.

H - Fire Propagation Level (Option)
1 = IEC 60332-1; 3C = IEC 60332-3C; 3A = IEC 60332-3A

I - Fire Resistant Level (Option)
331 = IEC 60331; 6387CWZ = BS 6387 CWZ

For Example
CCFGD-XP300SA-4C25-3C
Fireguard Series, XLPE Insulated, 300/500V, Single Core Armoured, 4 Cores,
25 mm², fire propagation to IEC 60332-3C.