



## Flam-Guard 300 Range

### Enhanced Fire Resistant Multi Core Cable

(Complies with BS 7629-1:2015)

Class 1 Solid Copper Conductor or Class 2 Stranded Copper Conductor/  
Silicone Rubber Insulation / MICA Fire Barrier Tape / Aluminum  
Electrostatic Screen/ Tinned Copper Circuit Protective Conductor/  
Low Smoke Zero Halogen Sheath

#### Application

Enhanced fire-resistant cables are designed for safety systems which need to operate during multi-phase evacuations such as tower blocks, multi-story buildings or dense public buildings such as hospitals. Suitable for fire detection and fire alarm systems with 'enhanced' performance conforming to BS 5839-1 Code of Practice. Suitable for emergency lighting systems with 'enhanced' performance conforming to BS 5266-1 Code of Practice.

Manufactured with Low Smoke Zero Halogen (LSZH) insulation, making it suitable for installations in public buildings where, in the event of fire, smoke and acid gas evolution would pose a hazard to public life and equipment.

#### Cable Description

Class 1 Solid Copper Conductor to BS EN 60228 for 1.5mm<sup>2</sup>  
Class 2 Stranded Copper Conductor to BS EN 60228 for 2.5mm<sup>2</sup> - 4.0mm<sup>2</sup>  
Silicone Rubber Insulation Type EI2 to BS EN 50363  
MICA (Fire Barrier) Overall Tape  
Aluminum Electrostatic Screen  
Tinned Copper circuit protective conductor  
Low Smoke Zero Halogen Sheath



**N.B.** In the event of fire, the gases evolved from this cable are free from Halogen and the design is optimised to limit the quantity and cleanliness of the smoke evolved during this period. Although the acronym HFFR is applied to the sheath material, the terms LSOH, HFFR and HFFR are also applicable.

#### Insulation Colours

2 Core - Blue, Brown,

3 Core - Brown, Black, Grey

4 Core - Blue, Brown, Black, Grey

#### Sheath Colours

White / Red (Other Colours Available on Request)

#### Third party Accreditation



Cables are tested and approved by BASEC (British Approvals Service for Cables)



Cables are tested and approved by LPCB (Loss Prevention Certification Board)

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## Physical Characteristics

| No of Conductors | Nominal Cross-Sectional Area (mm <sup>2</sup> ) | Nominal Radial Thickness Insulation (mm) | Nominal Radial Thickness Sheath (mm) | Approximate Overall Diameter (mm) | Maximum Conductor Resistance at 20°C (ohms/km) | Nominal Weight (kg/km) |
|------------------|-------------------------------------------------|------------------------------------------|--------------------------------------|-----------------------------------|------------------------------------------------|------------------------|
| 2                | 1.5                                             | 0.70                                     | 0.90                                 | 8.50                              | 12.10                                          | 93.00                  |
| 2                | 2.5                                             | 0.80                                     | 1.00                                 | 10.50                             | 7.41                                           | 135.00                 |
| 2                | 4.0                                             | 0.80                                     | 1.10                                 | 12.50                             | 4.61                                           | 190.00                 |
| 3                | 1.5                                             | 0.70                                     | 0.90                                 | 9.50                              | 12.10                                          | 130.00                 |
| 3                | 2.5                                             | 0.80                                     | 1.00                                 | 11.50                             | 7.41                                           | 180.00                 |
| 3                | 4.0                                             | 0.80                                     | 1.10                                 | 13.50                             | 4.61                                           | 250.00                 |
| 4                | 1.5                                             | 0.70                                     | 1.00                                 | 10.50                             | 12.10                                          | 150.00                 |
| 4                | 2.5                                             | 0.80                                     | 1.10                                 | 12.00                             | 7.41                                           | 210.00                 |
| 4                | 4.0                                             | 0.80                                     | 1.20                                 | 15.00                             | 4.61                                           | 330.00                 |

## Mechanical Characteristics

| Characteristics              | Unit     | Value    |
|------------------------------|----------|----------|
| Max Conductor Temperature    | °C       | 70 (*90) |
| Min Operating Temperature    | °C       | -40      |
| Min Installation Temperature | °C       | 0        |
| Max Installation Temperature | °C       | 70       |
| Minimum Bend Radius          | Diameter | 6D       |

\* Cable installed in an enclosure, subject to the sheath being terminated upon entry and the combination of ambient temperature and temperature rise due to load resulting in a conductor temperature not exceeding 70 °C outside the enclosure, the conductor temperature in the enclosure can be increased to a temperature not exceeding 90 °C.

## Electrical Characteristics - General

| Characteristics      | Unit | Value   |
|----------------------|------|---------|
| Voltage Rating       | V    | 300/500 |
| Current Rating Table | -    | 4D2     |

## Electrical Characteristics – Current Carrying Capacity

| CONDUCTOR CROSS - SECTIONAL AREA | REFERENCE METHOD A (ENCLOSED IN CONDUIT THERMALLY INSULATING WALL ETC) |                                                          | REFERENCE METHOD B (ENCLOSED IN CONDUIT ON A WALL OR IN TRUNKING ETC) |                                                          | REFERENCE METHOD C (CLIPPED DIRECT)      |                                                          | REFERENCE METHOD E (IN FREE AIR OR ON A PERFORATED CABLE TRAY ETC, HORIZONTAL OR VERTICAL) |                                                          |
|----------------------------------|------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------|
|                                  | 1 TWO CORE CABLE*, SINGLE PHASE AC OR DC                               | 1 THREE CORE CABLE* OR 1 FOUR CORE CABLE, THREE-PHASE AC | 1 TWO CORE CABLE*, SINGLE PHASE AC OR DC                              | 1 THREE CORE CABLE* OR 1 FOUR CORE CABLE, THREE-PHASE AC | 1 TWO CORE CABLE*, SINGLE PHASE AC OR DC | 1 THREE CORE CABLE* OR 1 FOUR CORE CABLE, THREE-PHASE AC | 1 TWO CORE CABLE*, SINGLE PHASE AC OR DC                                                   | 1 THREE CORE CABLE* OR 1 FOUR CORE CABLE, THREE-PHASE AC |
| 1                                | 2                                                                      | 3                                                        | 4                                                                     | 5                                                        | 6                                        | 7                                                        | 8                                                                                          | 9                                                        |
| (mm <sup>2</sup> )               | (A)                                                                    | (A)                                                      | (A)                                                                   | (A)                                                      | (A)                                      | (A)                                                      | (A)                                                                                        | (A)                                                      |
| 1.5                              | 14                                                                     | 13                                                       | 16.50                                                                 | 15                                                       | 19.50                                    | 17.50                                                    | 22                                                                                         | 18.50                                                    |
| 2.5                              | 18.50                                                                  | 17.50                                                    | 23                                                                    | 20                                                       | 27                                       | 24                                                       | 30                                                                                         | 25                                                       |
| 4                                | 25                                                                     | 23                                                       | 30                                                                    | 27                                                       | 36                                       | 32                                                       | 40                                                                                         | 34                                                       |

The above is in accordance with 18<sup>th</sup> edition of the IET wiring regulations.

## Fire Performance

| Test                                               | Test Method          | Comment   |
|----------------------------------------------------|----------------------|-----------|
| Construction Standard                              | BS 7629-1            | Compliant |
| Circuit Integrity (PH120) – Flame & Shock 120 mins | BS EN 50200:2015     | Compliant |
| Circuit Integrity– Flame, Shock & Water 120 mins   | BS 8434-2            | Compliant |
| Circuit Integrity– Category 3 Rating               | BS 8519:2020 Annex D | Compliant |
| Circuit Integrity Test                             | BS 6387 C,W,Z        | Compliant |
| Single Cable Vertical Burn Test                    | BS EN 60332-1: 2004  | Compliant |
| Acid Gas Emission                                  | BS EN 60754-1:2014   | Compliant |
| Smoke Emission                                     | BS EN 61034-2: 2005  | Compliant |

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