ADVANCE CABLE TECHNOLOGIES (P) LTD

EMPOWERING CONNECTIVITY

FIRE SURVIVAL CABLE

RELIABLE CONNECTIONS WHEN IT MATTERS MOST

www.advancecable.in

Powering Safety with Confidence

In modern construction and infrastructure, electrical cables and wires are far more than functional components—they are vital to fire safety. Standard insulation and sheathing materials can ignite easily, turning wiring into a hidden hazard. Only fire-retardant and fire-resistant cables can truly safeguard lives and property, helping to prevent overheating, arcing, short circuits, and other electrical faults from escalating into disasters.

Advance Cable Fire Survival Cables (Low Smoke Zero Halogen - LSZH) are engineered to perform when it matters most. Designed for critical indoor and outdoor applications, these cables ensure power continuity even in the event of a fire. From high-rise buildings and hospitals to schools, malls, hotels, and public transport systems, they offer superior protection by minimizing toxic smoke and corrosive gas emissions—keeping people safe and equipment operational.

Tested and approved by leading public sector organizations across India, our cables meet stringent IEC and BIS standards—delivering peace of mind where it counts.

What makes Advance Cable Fire Survival Cables stand out?

They are the result of years of innovation and research at our advanced R&D center, where we work tirelessly to create cables that not only meet but exceed fire safety standards. With a strong commitment to the environment, we've crafted these cables to :-

- Promote a green, healthy environment
- Be halogen-free, reducing the release of corrosive gases that could harm both people and equipment
- Eliminate toxic gas emissions, allowing firefighters to work safely and enabling swift evacuations
- Minimize smoke production, ensuring clear exit routes for a smooth rescue operation
- Take significantly longer to ignite compared to traditional cables, offering more time for safe evacuation
- Demonstrate superior flame-retardant properties that stop fires from spreading
- Ensure the continuity of vital systems that support rescue operations, firefighting, and evacuation efforts

These cables keep critical systems running during emergencies, such as :-

- Booster pump systems
- Water sprinkling systems
- Rescue elevators
- Alarm hooters
- Emergency lighting
- Ventilation systems
- Fire & smoke detection systems

With Advance Cable Fire Survival Cables, you're not just investing in a product—you're investing in safety, security, and peace of mind.

APPLICATIONS

- Fire alarm armoured/unarmoured un-shielded multicore cables are used in various buildings and institutions.
- Common applications include high-rise buildings, commercial complexes, schools, educational institutions, and hospitals.
- These cables connect security systems like smoke detectors, emergency lighting, exit signboards, and fire command centers.
- They are essential in locations where fire safety is a top priority.

Performance of cables in the event of Fire In the event of fire

- The cable develops hazards in respect of flame propagation, evaluation of smoke, heat development and toxic gasses etc. To evaluate the potential performance of the cable, many tests have been developed over the years.
- **The performance of the cable under fire condition is specified in several international standard as follows**
  - Flame Propagation Test : IEC 60332-1
  - Flame spread test : IEC 60332-3
  - Fire Resistance test : IEC 60331, BS 6387 CWZ
  - Resistant to Fire with water : BS 6387 CWZ
  - Acid Gas emission test : IEC 60754
  - Determination of Acidity : IEC 60754
  - Smoke emission test : IEC 61034
  - Limiting Oxygen Index (LOI) : ASTM D 2863

Circuit Integrity in the following category

- Category A 650 ±40°C for 3 hours
- Category B 750 ±40°C for 3 hours
- Category C 950 ±40°C for 3 hours

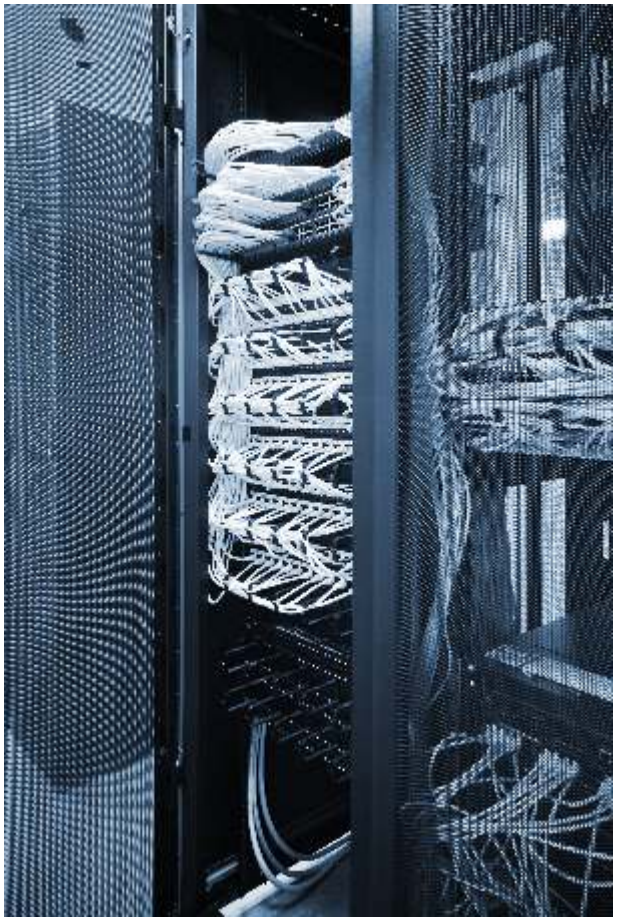
BS 6387-2013 describes following Circuit Integrity tests under CWZ conditions, as below

- Protocol C subjects the cable under test to a flame via direct impingement corresponding to a temperature attack of 950˚C ±40˚C.
- Protocol W subjects the cable under test to a flame via direct impingement corresponding to a temperature attack of 650˚C ±40˚C with direct application of water simulating a sprinkler system.
- Protocol Z subjects the cable under test to a flame via direct impingement corresponding to a temperature attack of 950˚C ±40˚C with indirect application of mechanical shock.

Also, BS 6387 CWZ specifies that

Cables shall be designated by category according to their fire resistance characteristics as follows:

- Category F2. Resistance to fire, resistance to fire with water, resistance to fire with mechanical shock, assessed separately, when tested in accordance with 17.6.2 of BS 7846
- Category F30. Resistance to fire with direct mechanical impact and water jet assessed in combination, when tested in accordance with BS 8491 for 30min
- Category F60. Resistance to fire with direct mechanical impact and water jet assessed in combination, when tested in accordance with BS 8491 for 60min
- Category F120. Resistance to fire with direct mechanical impact and water jet assessed in combination, when tested in accordance with BS 8491 for 120min.



CONSTRUCTION DETAILS :

Extruded XLPE Insulation & Extruded FRLS PVC Sheath

CONDUCTOR -

Tinned/Bare Copper as per IEC-60228, IS:8130

HEAT BARRIER/FIRE PROOF LAYER -

Glass Mica Tape Wrapped Over Conductor

VOLTAGE RATING -

Upto 1100V

TEMPERATURE RATING -

Operating Temperature : -40˚C to +90˚C

Short Circuit Temperature : Up to +250˚C

INSULATION -

Extruded XLPE

CORE IDENTIFICATION

As per standard or as required

SCREENING (IF REQUIRED) -

- Aluminium Mylar Tape Screening
- Copper Tape/Wire Screening
- Tinned Copper Braiding

INNER SHEATH

Extruded FRLS PVC

ARMOUR

- Galvanised Steel Wire/Flat Strip Armour
- Galvanised Steel Wire Braiding
- Tape Armour (Galvanised Steel/Copper/ Aluminium)

OUTER SHEATH

Extruded FRLS PVC

Colour: Black. (other colour as per request).

BENDING RADIUS

Min - 12 x Overall Diameter

TEST VOLTAGE

3500V AC at (20 ± 5)˚C

COMPLIANCE

- Fire Resistant : BS 7846-F2 / BS 6387 CWZ/ BS EN 50200 (PH 60) / BS 8434 / BS 8491 / IEC 60331
- Flame Propagation : IEC 60332-1
- Fire Retardant : IEC 60332-3
- Halogen free material : IEC 60754
- Smoke Density : IEC 61034
- Toxicity : NES 02-713

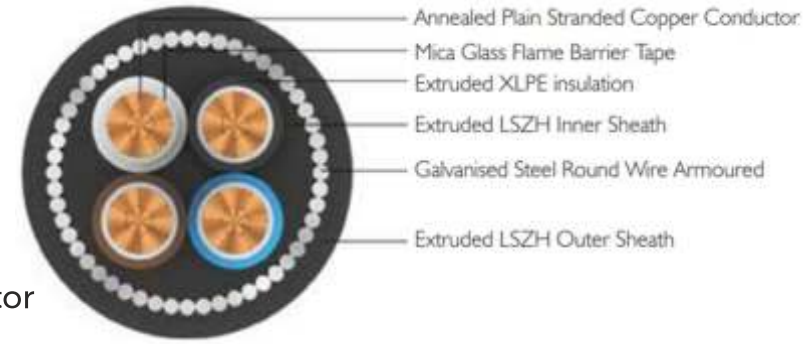
Custom cable designs can be crafted to meet specific requirements.

CONSTRUCTION DETAILS :

Extruded XLPE Insulation & Extruded FRLS / LSZH Sheath

CONDUCTOR -

Tinned/Bare Copper as per IEC-60228, IS:8130



HEAT BARRIER/FIRE PROOF LAYER -

Glass Mica Tape Wrapped Over Conductor

VOLTAGE RATING -

Upto 1100V

TEMPERATURE RATING -

Operating Temperature :

-40˚C to +105˚C / -40˚C to +125˚C

(b) Short Circuit Temperature :

Up to +250˚C

INSULATION -

Extruded XLPE

CORE IDENTIFICATION

As per standard or as required

SCREENING (IF REQUIRED) -

- Aluminium Mylar Tape Screening
- Copper Tape/Wire Screening
- Tinned Copper Braiding

INNER SHEATH

Extruded LSZH/FRLS

ARMOUR

- Galvanised Steel Wire/Flat Strip Armour
- Galvanised Steel Wire Braiding
- Tape Armour (Galvanised Steel/Copper/ Aluminium)

OUTER SHEATH

Extruded LSZH/FRLS

Colour: Black. (other colour as per request).

BENDING RADIUS

Min - 12 x Overall Diameter

TEST VOLTAGE

3500V AC at (20 ± 5)˚C

COMPLIANCE

- Fire Resistant : BS 6387 CWZ
- Flame Propagation : EN 60332-1
- Fire Retardant : EN 60332-3
- Halogen free material : EN 60754
- Smoke Density : EN 61034

Custom cable designs can be crafted to meet specific requirements.

CONSTRUCTION DETAILS:
Extruded EBXL Insulation & Extruded LSZH Sheath

CONDUCTOR -
Tinned/Bare Copper as per IEC-60228, IS:8130

HEAT BARRIER/FIRE PROOF LAYER -
Glass Mica Tape Wrapped Over Conductor

VOLTAGE RATING - Upto 1100V

TEMPERATURE RATING -

- Operating Temperature : -40˚C to +105˚C
- Short Circuit Temperature : Up to +280˚C

INSULATION - Extruded EBXL

CORE IDENTIFICATION
As per standard or as required

SCREENING (IF REQUIRED)

- Aluminium Mylar Tape Screening
- Copper Tape/Wire Screening
- Tinned Copper Braiding

INNER SHEATH
Extruded LSZH

ARMOUR

- Galvanised Steel Wire/Flat Strip Armour
- Galvanised Steel Wire Braiding
- Tape Armour (Galvanised Steel/Copper/ Aluminium)

OUTER SHEATH
Extruded LSZH,
Colour: Black. (other colour as per request).

BENDING RADIUS
Min - 12 x Overall Diameter

TEST VOLTAGE
3500V AC at (20 ± 5)˚C

COMPLIANCE

- Fire Resistant : BS 7846-F2 / BS 6387 CWZ/ BS EN 50200 (PH 60) / BS 8434 / BS 8491 / IEC 60331
- Flame Propagation : IEC 60332-1
- Fire Retardant : IEC 60332-3
- Halogen free material : IEC 60754
- Smoke Density : IEC 61034
- Toxicity : NES 02-713

Custom cable designs can be crafted to meet specific requirements.

CONSTRUCTION DETAILS :

Extruded Silicon Rubber Insulation & Extruded LSZH Sheath

CONDUCTOR -

Tinned/Bare Copper as per IEC-60228, IS:8130

HEAT BARRIER/FIRE PROOF LAYER -

Glass Mica Tape Wrapped Over Conductor

VOLTAGE RATING -

Upto 1100V

TEMPERATURE RATING -

(a) Operating Temperature :

-40˚C to +150˚C

(b) Short Circuit Temperature :

Up to +350˚C

INSULATION -

Extruded Silicon Rubber

CORE IDENTIFICATION

As per standard or as required

SCREENING (IF REQUIRED) -

- Aluminium Mylar Tape Screening
- Copper Tape/Wire Screening
- Tinned Copper Braiding

INNER SHEATH : Extruded LSZH

ARMOUR

- Galvanised Steel Wire/Flat Strip Armour
- Galvanised Steel Wire Braiding
- Tape Armour (Galvanised Steel/Copper/ Aluminium)

OUTER SHEATH

Extruded LSZH

Colour: Black. (other colour as per request).

BENDING RADIUS

Min - 12 x Overall Diameter

TEST VOLTAGE

3500V AC at (20 ± 5)˚C

COMPLIANCE

- Fire Resistant : BS 7846-F2 / BS 6387 CWZ/ BS EN 50200 (PH 60) / BS 8434 / BS 8491
- Flame Propagation : IEC 60332-1
- Fire Retardant : IEC 60332-3
- Halogen free material : IEC 60754
- Smoke Density : IEC 61034
- Toxicity : NES 02-713

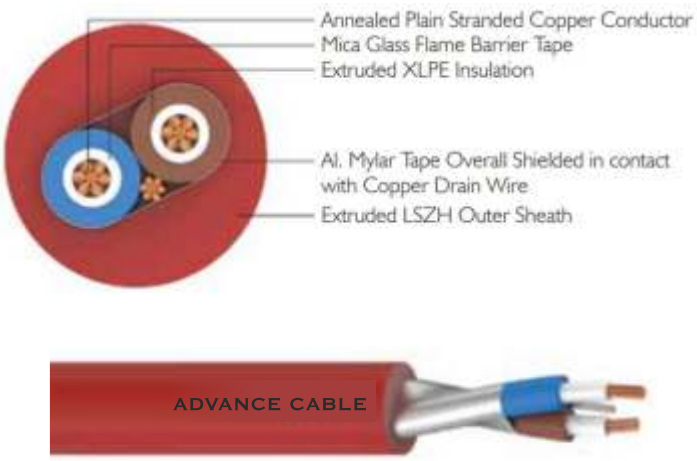
Custom cable designs can be crafted to meet specific requirements.

CONSTRUCTION DETAILS :

Extruded XLPE Insulation, Al Mylar Tape OS with Copper Drain Wire & Extruded LSZH Sheath

CONDUCTOR -

Tinned/Bare Copper as per IEC-60228, IS:8130



HEAT BARRIER/FIRE PROOF LAYER -

Glass Mica Tape Wrapped Over Conductor

VOLTAGE RATING -

300V/500V AC

TEMPERATURE RATING -

(a) Operating Temperature : -40˚C to +90˚C

(b) Short Circuit Temperature :

Up to +250˚C

INSULATION - Extruded XLPE

CORE IDENTIFICATION

As per standard or as required

SCREENING -

- Aluminium Mylar Tape Screening
- Copper Tape/Wire Screening

OUTER SHEATH

Extruded LSZH, Colour : Red or White

(Other colour as per request).

BENDING RADIUS

Min - 6 x Overall Diameter

TEST VOLTAGE

2000V AC at (20±5)˚C

COMPLIANCE

- Fire Resistant : BS 7629-1 / BS 6387 CWZ/ BS EN 50200 (PH 120) / BS 8434 / IEC 60331
- Flame Propagation : IEC 60332-1
- Fire Retardant : IEC 60332-3
- Halogen free material : IEC 60754
- Smoke Density : IEC 61034
- Toxicity : NES 02-713

Custom cable designs can be crafted to meet specific requirements.

CONSTRUCTION DETAILS :

Extruded XLPE Insulation, Al Mylar Tape OS with Copper Drain Wire & Extruded LSZH Sheath

CONDUCTOR -

Tinned/Bare Copper as per IEC-60228, IS:8130

HEAT BARRIER/FIRE PROOF LAYER -

Glass Mica Tape Wrapped Over Conductor

VOLTAGE RATING - 300V/500V AC

TEMPERATURE RATING

Operating Temperature : -40˚C to +90˚C

INSULATION - Extruded XLPE

CORE IDENTIFICATION

Colour Coding or Number Printing

SCREENING

- Aluminium Mylar Tape Screening
- Copper Tape/Wire Screening

OUTER SHEATH

Extruded LSZH, Colour : Red or White (Other colour as per request).

BENDING RADIUS

Min - 12 x Overall Diameter

TEST VOLTAGE

2000V AC at (20±5)˚C

COMPLIANCE

- Fire Resistant : BS 7629-1 / BS 6387 CWZ/ BS EN 50200 (PH 120) / BS 8434 / IEC 60331
- Flame Propagation : IEC 60332-1
- Fire Retardant : IEC 60332-3
- Halogen free material : IEC 60754
- Smoke Density : IEC 61034
- Toxicity : NES 02-713

Custom cable designs can be crafted to meet specific requirements.

CONSTRUCTION DETAILS :

Extruded XLPE Insulation, Al Mylar Tape OS with Copper Drain Wire & Armoured Extruded LSZH Sheath

CONDUCTOR -

Tinned/Bare Copper as per IEC-60228, IS:8130

HEAT BARRIER/FIRE PROOF LAYER

Glass Mica Tape Wrapped Over Conductor

VOLTAGE RATING

300V/500V AC

TEMPERATURE RATING

Operating Temperature : -40˚C to +90˚C

INSULATION

Extruded XLPE

CORE IDENTIFICATION

Colour Coding or Number Printing

SCREENING

- Aluminium Mylar Tape Screening
- Copper Tape/Wire Screening

INNER SHEATH

Extruded LSZH

ARMOUR

- Galvanised Steel Wire/Flat Strip Armour
- Galvanised Steel Wire Braiding
- Tape Armour (Galvanised Steel/Copper/ Aluminium)

OUTER SHEATH

Extruded LSZH,

Colour : Red or White (Other colour as per request).

BENDING RADIUS

Min - 15 x Overall Diameter

TEST VOLTAGE

2000V AC at (20±5)˚C

COMPLIANCE

- Fire Resistant : BS 7629-1 / BS 6387 CWZ/ BS EN 50200 (PH 120) / BS 8434 / IEC 60331
- Flame Propagation : IEC 60332-1
- Fire Retardant : IEC 60332-3
- Halogen free material : IEC 60754
- Smoke Density : IEC 61034
- Toxicity : NES 02-713

Custom cable designs can be crafted to meet specific requirements.

CONSTRUCTION DETAILS :

Extruded Cross-linked Halogen Free Flame Retardant Insulation

CONDUCTOR -

Tinned/Bare Copper as per IEC-60228, IS:8130

HEAT BARRIER/FIRE PROOF LAYER

Glass Mica Tape Wrapped Over Conductor

VOLTAGE RATING

450V/750V AC

TEMPERATURE RATING

- Operating Temperature : -40˚C to +90˚C
- Short Circuit Temperature 250˚C

INSULATION

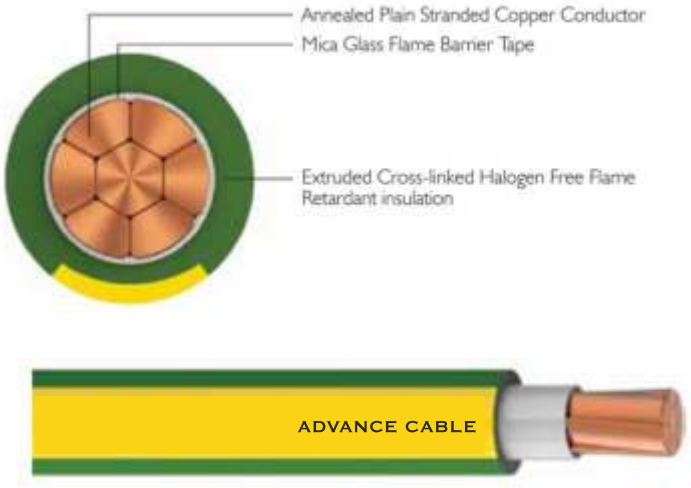
Extruded Cross-linked Halogen Free Flame Retardant Insulation

CORE COLOUR

Green-Yellow or any mono colour

BENDING RADIUS

Min - 8 x Overall Diameter



COMPLIANCE

Fire Resistant : IEC 60331

Flame Propagation : IEC 60332-1

Fire Retardant : IEC 60332-3

Halogen free material : IEC 60754

Smoke Density : IEC 61034

Toxicity : NES 02-713

Custom cable designs can be crafted to meet specific requirements.

TESTS PERFORMED

Flame Ignition

Oxygen Index and Temperature Index as per ASTMD - 2863, IS 10810 Part 58 & Part 64, NES 715 and BICC Electrical Cables Handbook

Smoke Generation

Visibility during burning as per ASTM D 2843

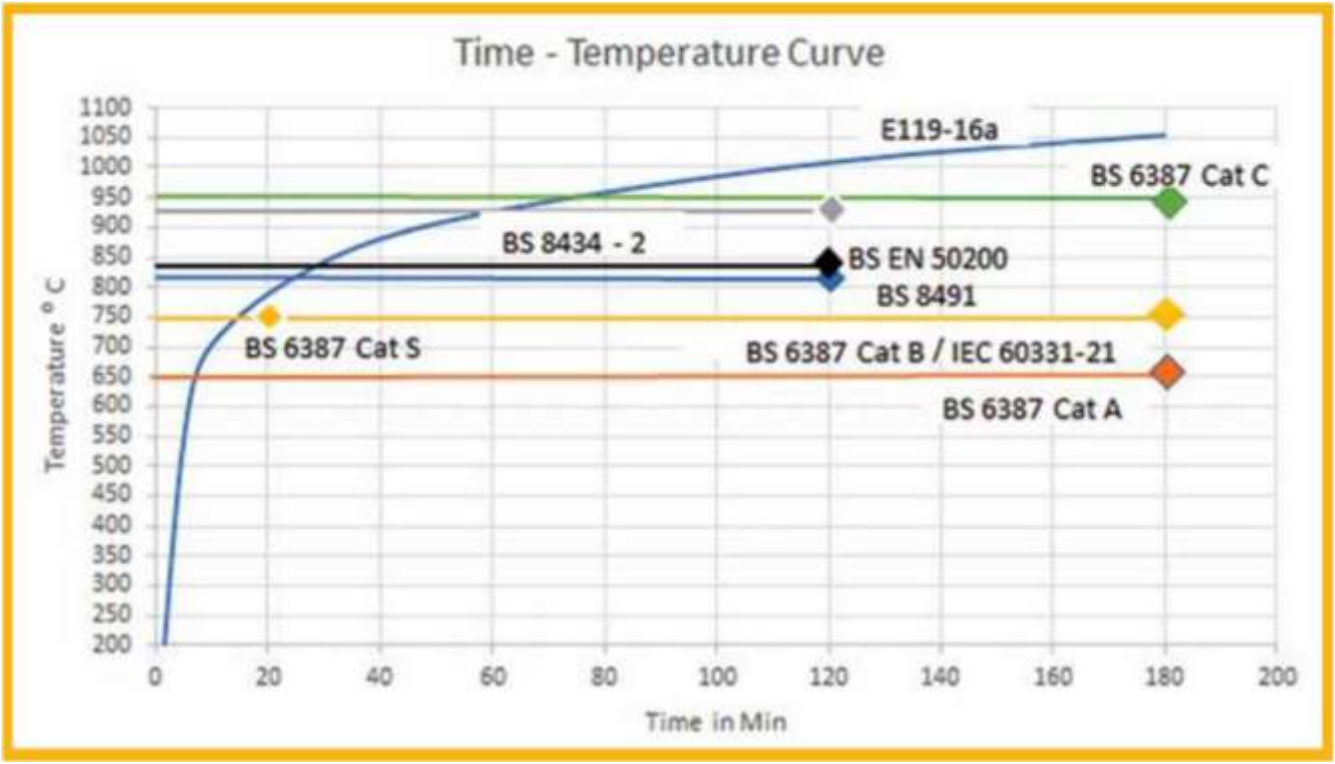
Category C - Exposure to Fire alone at 950°C as per BS 6387

Category W - Exposure to Fire with Water Spray at 650° C as per BS 6387

Category Z - Exposure to Fire with Mechanical Shock at 950° C as per BS 6387

Time -Temperature Curve

The time-temperature curve depicted in the image below represents the standard scale used to measure the severity of fire tests, illustrating the progression of fire spread.



To evaluate the cable's performance under various fire loads, several specifications are provided. The time-temperature curve for the standard fire endurance test, ASTM E 119 [13], reaches 1260˚C, but this requires 8 hours. As a result, cable performance at temperatures below this threshold is outlined in BS 6387CWZ, BS 8434-2, BS EN 50200, BS 8491, and IEC 60331-21.

ADVANTAGES

- High Resistant to Fire.
- Reduced Flame Propagation.
- Circuit Integrity when exposed to Fire.
- Low Toxicity
- Fire Barrier

ADVANCE CABLE TECHNOLOGIES PVT LTD

Corporate Office :

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MANUFACTURING FACILITIES

Unit - 1
Plot No. 10 & 14,
KIADB Industrial Area,
Bashettihalli,
Doddaballapur Industrial Area,
Bangalore - 561203

Unit - 2
Plot No. 20 P2, SY No. 79(P)
Veerapura Village,
Doddaballapur Industrial Area,
Bangalore - 561203

Unit - 3
SW 32 & 33 (P1), A - P II Phase,
Kasaba Hobli
Doddaballapur Industrial Area,
Bangalore - 561203