



SIGNUM



Fire Retardant Cable Coating



Why use Signum FR Coating?

Electrical faults are reported to be a major cause of fire throughout the world, especially in recent years. This increase in frequency of electrical fires can be attributed to a surge in use of electrical components, equipment, appliances and systems in today's day to day life.

Fires resulting from such electrical faults tend to spread rapidly through the length of the cables, and even more so where cables are bundled together or where there is a heavy concentration of power cables such as in cable galleries, cable tunnels, cable shafts etc.

While burning, most cable insulations release toxic and extremely corrosive gases, which are not only harmful to human life but when combined with moisture in the atmosphere, initiate extensive corrosion in steel, thereby affecting structural integrity of buildings as well.

Signum Fire Retardant (FR) Cable Coating is a specially formulated water-based coating, designed primarily for use on electrical, communication and data cables, whether individual or grouped and their supporting horizontal or vertical trays.

How it works

Fire retardant cable coatings are specially formulated protective layers applied over electrical cables to prevent the spread of fire along cable routes.

When exposed to high temperatures or direct flame, the coating undergoes a thermo-chemical reaction that forms an insulating layer on the cable surface thereby protecting the cable from heat, reducing temperature rise, along with suppression of flame and limiting smoke and toxic gas generation, improving safety in critical installations.

By protecting cable insulation and delaying ignition, the coating helps maintain circuit integrity for a longer duration during a fire, allowing essential systems such as emergency lighting, alarms, and control systems to continue operating.

Signum Fire Retardant Cable Coating enhances fire resistance to maintain circuit integrity under emergency conditions thereby ensuring cable functionality in areas where it is imperative to have connectivity.

Features

- *Water-based coating*
- *Asbestos-free, toxic-free*
- *Eco-Friendly certified by the Indian Green Building Council (IGBC)*
- *Anti-rodent, anti-termite and vermin proof*
- *No cable derating, does not reduce current carrying capacity of cables*
- *Excellent flexibility after drying*
- *Moisture and humidity resistant*
- *Can be used outdoors/ in varying environmental conditions with no loss on effectiveness*
- *Easily applicable by brush or sprayed-on*
- *No loss in properties after prolonged exposure to nuclear radiation*
- *Mechanically tough, can withstand walking on coated cable trays without damage to coating*
- *Permanent in nature, lasts for the lifetime of cables*
- *Maintenance free*



Signum Coatings are available in 1 Kg, 5 Kg and 20 Kg Pails

Performance Specifications

Signum Fire Retardant Cable Coating has been tested for compliance with many national and internationally approved standards

IEEE 383: Standard for Type Test of Class 1E Electric Cables, Field Splices, and Connections for Nuclear Power Generating Stations

IEC 60331: Tests for electric cables under Fire conditions

IEC 60332: Test on electric and optical fibre cables under fire conditions

IEC 60754: Tests on gases evolved during combustion of materials from cables - halogen acid gas content

IS 10810 (Part 53): Methods of Test for Cables - Flammability Test

IS 10810 (Part 50): Methods of Test for Cables - Bending Test

ASTM D 2863: Standard Test Method for Measuring The Minimum Oxygen Concentration to Support Combustion (Oxygen Index)

Certifications & Approvals

Signum Fire Retardant Cable Coating has been tested and certified by several internationally accredited third-party organizations approved to conduct such tests under Government of India authority in India

CBRI: Central Building Research Institute, Rourkee

CPRI: Central Power Research Institute - Thermal Research Center, Koradi

NABL: National Accreditation Board for Testing & Calibration Laboratories

GREENPRO: Indian Green Building Council (IGBC) Certified

Approved Type Test Certificates for all performance standards are provided with all projects executed.

Quality Assurance

Signum is certified for its quality systems according to **ISO 9001:2015** standards by TUV India Pvt. Ltd., a member of internationally known TUV NORD GROUP.

Quality Assurance Plan (QAP) and Manufacturer's Certificate of Conformity/ Test Certificate (MTC) for Signum Fire Retardant Cable Coatings is available upon request.

Technical Characteristics

Trade Name	RS90DF
Colour	Grey
Visual Characteristics	
Wet form	Thick paste like form
Dry form	Light textured surface finish
Viscosity	Highly viscous
pH Value	>7
Specific Gravity	1.25 to 1.45
Thermal conductivity	Poor
Flash point	Not Applicable
Solid Content	High, ≥60 % by weight
Resistance to Fungus	Excellent
Toxicity	Non-toxic
Limiting Oxygen Index	> 50% as per ASTM D 2863
Oil Resistance	Excellent
Effect on Ampacity	< 2%
Resistance to water	Excellent
Resistance to weak acids and mild alkalis	Excellent
Resistance to ageing	Excellent
Resistance to Rodent Gnawing	Non palatable by microtine rodents (rats, mice etc.) as per lab tests conducted
Flexibility	No cracking/ peeling at bending radius of 12 x OD for armored cables as per IS 10810 Part 50, IS 1255-83
Impact resistance	Mechanically tough, can withstand nominal impact of drop loads without impairing performance of coating
Recommended thickness	1.5 mm average dry film thickness or as per requirement
Coverage	~3.2 to 3.5 kg/m ² (at recommended thickness)
Drying time	To touch 2-3 hours, hard dry 24-72 hours
Packaging	1 5 20 kg Pails (buckets)
Shelf life	12 months in original unopened containers
Storage Temperature	4 °C to 45 °C
Surface preparation	Thick layers of dirt, oil, grease and other foreign matter should be removed from the surface to be coated prior to application
Application to cables	By brush or by spray equipment

Application

Surface Preparation: Signum Fire Retardant Coating has excellent adhesion to all types of cable jackets without any special surface preparation. However, thick layers of dirt, dust, oil, grease and any other foreign matter must be removed prior to coating application. Special cleaning agents or solvents are not recommended.

Application to Cables: A thin fog coat can be applied to all exposed surfaces of cable(s) at the location under consideration. It is recommended to allow the coat to hard dry and then apply subsequent coats to ensure proper adhesion to cable surface. Next, two or more coats can be applied to achieve the necessary thickness, each coat being allowed time to hard dry.

For addition or deletion of cables from coated bunch, pull out/add-in the cables first and then coat the bare surface as per procedure described above.

It is recommended to apply several thin coats for better results.

Once cured, Signum Fire Retardant Cable Coating forms a tough film which is resistant to deterioration from flaking, impact, vibration and temperature changes.

Recommended Application Areas

Residences, Commercial Spaces, IT Parks
Hospitals, Hotels
Multiplexes, Banks, Department Stores
Airports, Metro Railway Stations
Thermal, Nuclear, Hydro Power Projects
Govt. buildings - Embassies, Administrative offices
Military Installations - Hangars, Shipyards, Administrative offices
Industries - Cement factories, Godowns, other factories
Steel Plants, Coal Mines, Paper & Saw Mills, Petrochemical Plants, Explosive Manufacturing units

Other Products by Signum

Steel & Timber Flush Doors
Timber Carved Designer Series Doors
Steel & Timber Fire Doors
Steel & Timber Acoustic Doors - General and Fire Rated
Metal Sliding Doors - General and Fire Rated
Rolling Metal Shutters - General and Fire Rated
Architectural Partitions
Fire Stop Mortar Barrier



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TURNKEY PASSIVE FIRE PROTECTION SYSTEMS

Manufactured by: -

Signum Fire Protection India Pvt. Ltd.

TURNKEY PASSIVE FIRE PROTECTION SOLUTIONS

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An ISO 9001: 2015 Company



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