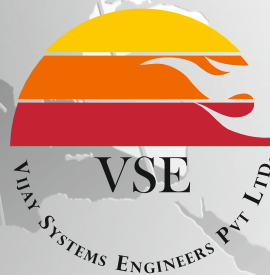




WHEN FIRE STRIKES, GET TIME ON YOUR SIDE



WITH VSE PASSIVE FIRE PROTECTION SYSTEMS





Who we are :

Vijay Systems Engineers (VSE) Pvt. Ltd. is a leading manufacturer, supplier and exporter of a wide range of Passive Fire Protection Products & Systems. We, at VSE, are endowed with a wealth of experience in the Fire Industry and have established ourselves as an organization to trust and reckon with in the field of Passive Fire Protection. Our products are manufactured to global standards and approved by International & National certifying bodies, such as:

- Factory Mutual (FM) USA
- CBRI (Central Building Research Institute)
- Government Quality Marking Center

Our Mission :

We are committed to spreading awareness on the benefits of Passive Fire Safety Measures in safeguarding lives and protecting property across the globe.

Our Legacy :

VSE is backed by more than 55 years of experience from the Vijay Group of Companies that is a leading conglomerate of business ventures - a powerhouse of reliable and globally accepted products and systems in the Fire Industry. Vijay Group has executed over 3500 turnkey projects in Fire, Safety and Security throughout India, Asia & the Middle East in a span of 55 years. The range of products and services offered by the group companies include but are not limited to:

- Fire Engine Vehicles & Speciality Vehicles
- Nitrogen Quads
- Safety Equipment
- Security Systems
- Turnkey Industrial & Commercial Fire Protection Projects
- Building Management Systems
- Waste Collection & Sweeper Vehicles
- Medical Equipment and Latex Gloves

Our Range of Products:

The aim of passive fire products is to compartmentalize a fire within a structure and stop the spread of fire across compartments in order to mitigate damage to property and save lives.

We offer a wide range of Passive Fire Protection Systems which include:

Fire Penetration Sealing Systems

- Ace Mortar Seal
- Ace Panel Seal
- VS Plastic Pipe Collars
- VS Plastic Pipe Wraps
- VS Panel Seal for Glass Facade
- VS Fire Rated Partitions/Walls

Fire Sealants

- Ace Mastik Sealant - A
- VS Mastik Sealant - I
- VS Expansion Joint Sealant

Fire Retardant Coating Compounds

- Ace Mastik Coating
- VS Steel Coating VM
- VS FR Fabric Coating
- VS FR Wood Coating (White)

Satisfied Clients-Our Real Reward:

Our true reward comes from knowing that our clients are extremely satisfied. We pride ourselves in providing passive fire solutions to a host of clients in various industries. Our clients are some of the leading manufacturers or processors in their respective industries.

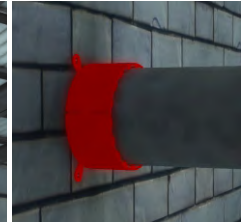
FIRE PENETRATION SEALING SYSTEMS



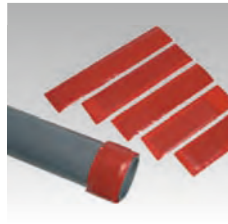
Ace Mortar Seal



Ace Panel Seal



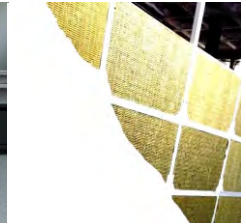
VS Plastic Pipe Collars



VS Plastic Pipe Wraps



VS Panel Seal for Glass Facade

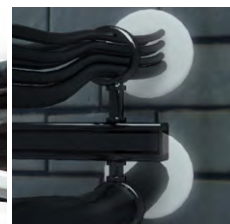


VS Fire Rated Partitions/Walls

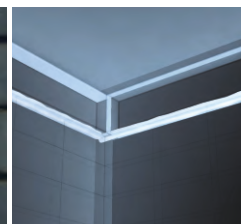
FIRE SEALANTS



Ace Mastik Sealant - A



VS Mastik Sealant - I



VS Expansion Joint Sealant

FIRE RETARDANT COATING COMPOUNDS



Ace Mastik Coating



VS Steel Coating VM



VS FR Fabric Coating



VS FR Wood Coating (White)

Ace Mortar Seal

(VSPS240MS)

Fire Barrier



Product Description

Ace Mortar Seal is a mixture of cement and other fire-retardant chemicals capable of controlled swelling. Ace Mortar Seal is a light-weight, low-density product which expands, ensuring a tight seal against the passage of fire, toxic gases and smoke. This type of fire stop can be adopted for openings in walls as well as cut-outs in floors, providing a fire rating of up to 4 hours.

Special Features:

- It has a Fire Rating of up to 4 Hours
- Expands while it sets, ensuring a tight crack-free seal
- Can easily retrofit cables through the penetration
- Is easy to mix and apply
- Is splash and ageing resistant
- Sticks well on steel, concrete
- Is water resistant
- Is easy to mix and apply



Specifications

PROPERTY	PRESENT VALUE
Bulk Density	Approx 700 gm/Litre (+/- 50)
Compressive Strength	Approx 1.2 to 1.9 N/mm ²
Storage Temperature	5°C to 50°C in dry condition
Ph Value	Approx. 9 to 12.5
Toxicity	Non-toxic
Mix Ratio	1 : 0.64 (Mortar : Water)
Application Temperature	Room Temperature
Color	Grey
Shelf Life	18 months, in original packed condition
Packaging	20Kg & 30 Kg

TESTED IN ACCORDANCE WITH
ASTM-E-814, UL-1479 UP TO
4 HOURS RATING



"Subject to the conditions of Approval as a Wall Penetration Fire Stop when installed as described in the Approvals Guide, an online resource of FM Approvals"

Ace Panel Seal

(VSPS120PS / VSPS240PS)

Fire Barrier



Product Description

Ace Panel Seal is a fire sealing system which consists of two special types of panel boards, placed parallel to each other, with an air gap maintained and the exposed surface of boards are coated with fire-retardant paint providing a fire rating of 2 to 4 hours. It provides a tight seal against the spread of fire, toxic gases and smoke. The complete system is Factory Mutual, USA approved and tested as per ASTM-E-814 Standards.

Special Features:

- It has a Fire Rating of up to 4 hours
- Is non hygroscopic, it does not retain moisture and is not effected by humidity. It remains effective even after prolonged outdoor use
- The coating does not disintegrate or deteriorate in salt water
- Has no ageing effect. Coating lasts for the lifetime of the penetration seal
- Is anti - rodent
- Is resistant to Mineral Oil
- The coating does not crack or peel
- Not affected by radiation. Suitable in radiation areas, ideal for nuclear power plants and atomic energy establishments



Specifications

PROPERTY	PRESENT VALUE
Density of Ace Mastik	1.25 to 1.40 gms/cc
Bulk Density	550 gms/ltr
Thickness of Coating	1.5 to 2.00 mm
Curing Rate	4 hours
Shelf Life	18 Months, In Original Packed Condition
Application Temperature	Room Temp.

TESTED IN ACCORDANCE WITH
ASTM-E-814, UL-1479 UP TO
4 HOURS RATING

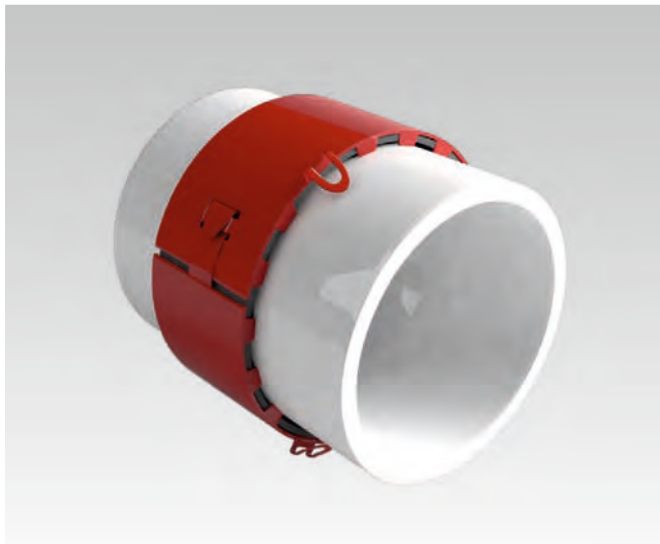


"Subject to the conditions of Approval as a Wall Penetration Fire Stop when installed as described in the Approvals Guide, an online resource of FM Approvals"

VS Plastic Pipe Collars

(VSPS120PC)

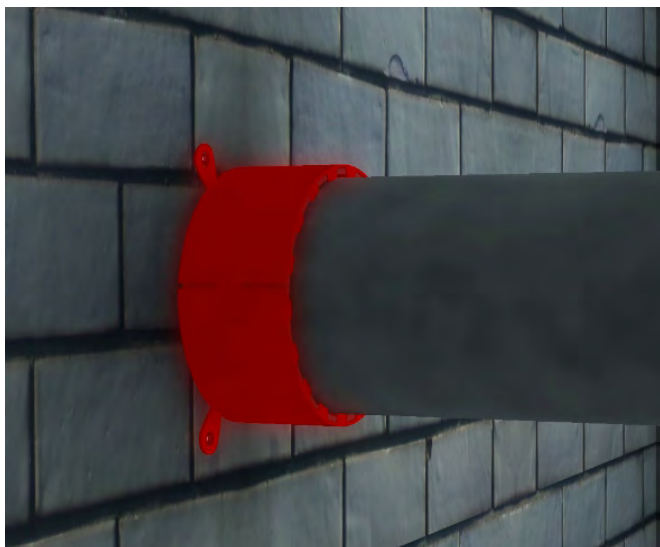
Fire Barrier



Product Description

VS Pipe Collar is a metal casing filled with intumescent wrap that is used to cover plastic pipes where they penetrate through a wall or floor. In the event of a fire or exposure to high heat, plastic pipes can melt quickly and permit fire, smoke and fumes to pass through the pipes and travel beyond the barrier.

VS Collar Seal are a fire penetrant sealant that wraps around the plastic pipes and gets fixed to the barrier surface. In a fire, the intumescent wraps expand multiple times and cause the plastic pipes to collapse internally (inside the collar) and close the through passage in order to create a tight seal and prevent fire, smoke and fumes from travelling. Any gaps between the pipe and the wall/floor opening can be sealed using VS Intumescent Sealant. Ideally, the collars should be used on the plastic pipes penetrating on both sides of the barrier (wall/floor). VS Collar Seals are available for various standard plastic pipe sizes of 2", 3", 4", 6" & 8" (in diameter).



Special Features:

- Easy installation and maintenance
- No separate supporting system, panelling, damning is required. Just install with Anchor Fasteners
- Retrofits possible
- No spares except Anchor Fasteners required for any alterations during retrofitting
- Can seal almost all plastic pipe materials like HDPE, PVC, UPVC, CPVC, PVDF, ABS etc.
- Works on proven technology of intumescent seals
- Has a Fire Rating of 2 hours
- It does not get affected by long exposure to various ambient conditions in commercial and industrial applications like weathering effects, aging, vibrations, ambient temperature variations, exposure to light acids & alkalis and high humidity



Specifications

PROPERTY	PRESENT VALUE
Life Expectancy of Ace Pipe Collar Seals	40 Years
Intumescent Film/Wrap	2 To 6 Mm Thick
Outer Casing	Mild Steel Sheet
Finish Of Casing	Powder Coated (red)
Clamping To Pipe	Clip On Arrangement
Fixing on Wall / Floor	Through Plug Screws / Anchor Fasteners
Sizes	For 2", 3", 4", 6" & 8" Diameter Pipes
Recommended For Penetration Pipe Materials	Rigid HDPE, PVC, UPVC, CPVC, PVDF & ABS
Resistance To Moisture & Humidity	Good
Service Temperature	Up to 50 °C
Flexibility /Movement	Good

VS Plastic Pipe Wraps

(VSPS120PW)

Fire Barrier



Product Description

VS Plastic Pipe Wrap is a dry, flexible intumescent film wrap to be wrapped around plastic service pipes penetrating through openings in a wall / floor in a building structure. In the event of a fire, the wrap expands multiple times to seal the plastic pipe through opening as well as the opening between the pipe and the wall/floor structure. The smallest of the gaps can be filled using VS Mastik Intumescent Sealant around the plastic pipe up to the civil opening. This system which includes the intumescent wrap along with the intumescent sealant can be installed for various standard plastic pipe sizes of nominal diameter like 1", 2", 3", 4", 6" & 8".

The flexible film in the form of a ready wrap around the pipe is wrapped in layers. The film is generally 2.0mm thick with a width of 6".

Special Features:

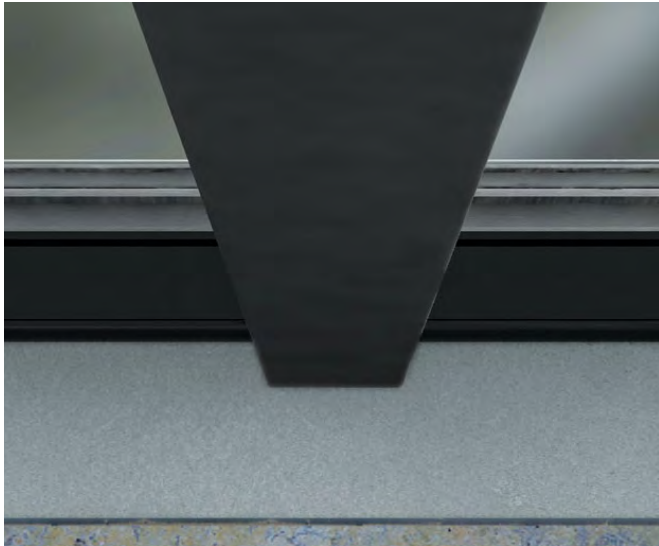
- The small gaps around the wrap can be sealed with intumescent sealants
- Retrofits possible
- Applicable for almost all plastic pipe materials like HDPE, PVC, UPVC, CPVC, PVDF, ABS etc.
- Works on proven technology of intumescent seals
- It is not affected by long exposure to various ambient conditions in commercial and industrial applications such as: weathering effects, aging, vibrations, ambient temperature variations, exposure to light acids and alkalis, high humidity



Specifications

PROPERTY	PRESENT VALUE
Life Expectancy	40 Years
Wrap Thickness	2 To 6 mm Thick
Opening Sizes	For 1", 2", 3", 4", 6" & 8" Nominal Pipe Dia
Recommended For Penetration Pipe Materials	Rigid HDPE, PVC, UPVC, CPVC, PVDF, ABS
Resistance To Moisture & Humidity	Good
Service Temperature	Up to 50 °C
Flexibility /Movement	Good

VS Panel Seal for Glass Facade (VSPS120GF) Prevents the Spread of Fire



Product Description

In recent times glass facades have become most preferred architectural and aesthetically appealing building facelifts. A typical through gap is left between the glass facade and the floor ceilings. Ace Panel Seals can effectively seal these gaps and prevent passage of smoke and fire through these gaps in case of fire. The system consists of mineral wool boards stuffed in the gaps between the façade and the ceiling with the exposed surfaces of the mineral wool boards being coated with Ace Mastik Coating. Any annular gaps between the Panel Seal system & the structure is sealed with Ace Mastik Sealant. Ace Panel Seal is tested as per ASTM E 814 & UL 1479 for up to 4 hours fire rating.

Special Features:

- It is Halogen Free
- Can be re-entered and repaired
- Easy to use and apply
- Non toxic
- Light weight
- Added advantage of good acoustic insulation
- Is not affected by conditions such as: weathering, aging, vibrations, ambient temperature variation
- Is resistant to rodents, vermin & termite



Specifications

PROPERTY ACE MASTIK COATING	PRESENT VALUE
Life Expectancy of Ace Mastik Coating	40 Years
Density	1.25 to 1.40 gms/cm ³
pH	6.5 to 8.5
Appearance	Off White, Thick Liquid
Odor	Odorless
Flash Point	None
Resistance to Moisture & Humidity	Good
Toxicity	Non Toxic
Application Temperature	5 °C to 50 °C
PROPERTY OF MINERAL WOOL	PRESENT VALUE
Density	Nominal 144kg/m ³
Thickness	50 mm

VS Fire Rated Partition/Wall

(VSFP120PW)

Prevents the Spread of Fire

Product Description

VS Fire Rated Partition Wall is a system using Panel Seals with pressed steel channel encasing, reinforced by suitable structural steel support sections. The support sections can be standard steel angles, channels or beams depending upon the span of unsupported width and height of the fire rated partition wall required to be installed at a project site. Ace Panel Seals are Mineral Wool Boards of nominal density 150 kg/m³ coated on both the faces with Ace Mastik Coating to a nominal thickness of 1.60 mm. The support sections and steel encasing channels are also coated with Ace Mastik Coating. VS Fire Rated Partitions prevent the spread of fire, smoke and noxious gases across the partition in the event of fire, when installed in accordance with the installation guidelines. The product is tested as per BS 476 Part 22 and IS 3614 Part 2.

Special Features:

- Halogen Free
- Standard fire rating of the system in up to 2 hours. Special arrangement and system designs can be offered for systems upto 4 hours fire rating
- Can be repaired and altered in future to accommodate changes
- Halogen Free
- Added advantage of good acoustic insulation/ sound attenuation
- Flexible to moderate shocks, temperature variations and weather conditions
- Not affected by aging
- Resistant to rodents, vermin & termite



Specifications

PROPERTY OF ACE MASTIK COATING	PRESENT VALUE
Life Expectancy of Ace Mastik Coating	40 Years
Density	1.25 to 1.40 gms/cm ³
pH	6.5 to 8.5
Appearance	Off White, Thick Liquid
Odor	Odorless
Resistance to Moisture & Humidity	Good
Toxicity	Non Toxic
Application Temperature	5 °C to 50 °C
PROPERTY OF MINERAL WOOL	PRESENT VALUE
Density	Nominal 144 kg/m ³
Thickness	50 mm

Ace Mastik Sealant - A

(VSPS240AS)

Prevents the Spread of Fire



Product Description

Ace Mastik Sealant is a joint filler and sealant for penetration seals and fire separating walls such as curtain wall, top of wall joints, high movement expansion joint and joints in either walls or floors, sealing up to 50 mm around pipes, etc.

Special Features:

- It has a fire rating of up to 4 hours
- It is water - based, halogen and solvent free
- Easy to apply

Consumption Guide

Consumption guide values are given as joint length in metres per 420 gm Cartridge.

Joint Depth (mm)	Joint Width (mm)			
	6	12	20	30
6	9	4.50		
10			1.60	
15				0.70



Specifications

PROPERTY	PRESENT VALUE
Density	1.31 to 1.41 gms/cc
Cartridge Content	310 ml/420 gms
Storage Temperature	5°C to 30°C
Application Temperature	5°C to 50°C
Curing Time	Indoor Application: 3-4 hours Outdoor Application: 2-3 hours (At 28°C)
Ph Value	6.5 to 8.5
Color	Off-White
Odor	Odorless
Shelf Life	18 Months, In Original Packed Condition

VS Mastik Sealant - I

(VSPS240IS)

Prevents the Spread of Fire



Product Description

VS Mastik Intumescent Sealant is a fire-rated sealant used to seal joints and through-penetrations. It cures to an elastomeric seal to enable dynamic movement (where required). This sealant expands multiple times and chars without letting the fire penetrate to the material where the sealant is applied.

Special Features:

- Water-based
- Water-resistant
- Low shrinkage
- No solvents & non-halogenated
- Color - Grey



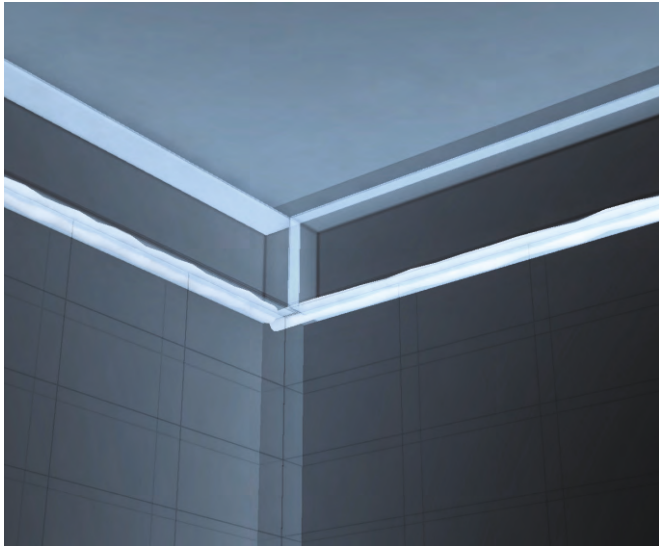
Specifications

PROPERTY	PRESENT VALUE
Standard	ASTM-E-814
Fire Rating	2 Hours
Curing Time	3-4 Hours (Touch Dry)
Shelf Life	18 months
Fire Sealant Properties Guaranteed For	40 years
Density	1.31 to 1.41 g/cm ³
pH	6.5 to 8.5
Application Temperature	5°C to 50°C
Odor	Odorless
Flash Point	None
Humidity & Moisture Resistance	Yes
Toxicity	Non Toxic

VS Expansion Joint Sealant

(VSPS120PC)

Prevents the Spread of Fire



Product Description

VS Fire Rated Expansion Joint Seal is a system that uses Ace Panel Seals to seal various joint openings in a building structure as a firestop measure. There are various types of joints in a building structure, namely 'Wall to Wall', 'Floor to Floor' or 'Wall to Floor'. Ace Panel Seal is a firestop system consisting of mineral wool and backfill material with Ace Mastik Coating. Ace Panel Seals are fixed at the site in the joint gaps of a building structure. Ace Panel Seals are cut to size and fixed in gaps to required minimum thickness. Ace Mastik Coating is applied at the exposed surface of the mineral wool board, in the gaps between the Ace Panel edges, and the edges of the walls / floors. VS Expansion Joint Seal System prevents the spread of fire, smoke and noxious gasses through gaps of building joints, during a fire when installed in accordance with the installation procedure.

Special Features:

- Is not effected by exposure to various conditions like weathering effects, aging, vibrations & ambient temperature variations
- Easy to apply
- Non-toxic
- Light weight
- Halogen free



Specifications

PROPERTY	PRESENT VALUE
Life Expectancy of Ace Mastik Coating	40 Years
Density of Ace Mastik	1.25 to 1.40 gms/cm ³
pH of Ace Mastik	6.0 to 8.0
Appearance	Grey /off White Thick Liquid
Odor	Odorless
Flash Point	None
Resistance to Moisture & Humidity	Good
Toxicity	Non Toxic
Application Temperature	5 °C to 50 °C
Back Filling Material Details	Mineral Wool Density Nominal 144 Kg/m ³ Thickness 50mm Or More For 2 Hours Fire Rating

Ace Mastik Coating

(VSCC000AB)

Prevents the Spread of Fire



Product Description

Ace Mastik is a water-based and solvent-free coating comprising of thermoplastic resins, flame-retardant chemicals, inorganic incombustible fibres, fillers and pigments.

Ace Mastik is an ablative product which, in case of fire, undergoes an endothermic reaction which reduces the burning rate and spread of fire. In addition to its other properties, Ace Mastik is also free of asbestos and halogen.

Special Features:

- FM approved with a Fire Rating of up to 4 hours. Tested as per FM 3971 Standards
- Non hygroscopic, it does not retain moisture and is not effected by humidity. It remains effective even after prolonged outdoor use
- No disintegration or deterioration of coating when subjected to 1% salt water test for a 30 day period with water temp. at 66°
- No ageing effect. Coating lasts for the lifetime of cables
- Provides anti-rodent protection
- Resistant to mineral oil. It can retain its physical & chemical composition if exposed to or immersed in mineral oil for up to 48 hours
- Highly flexible. It can bend 10 times the diameter of cable and not crack or peel
- No top coat required for outdoor application
- Ampacity - no de-rating of cable due to coating
- Not effected by radiation. Suitable in radiation areas, ideal for nuclear power plants and atomic energy plants



Specifications

PROPERTY	PRESENT VALUE
Density	1.25 to 1.40 gms./cc
Application Temperature	10°C to 50°C
Packaging	In Plastic Drums/Buckets of 20, 25 & 60 Kgs
Storage Temperature	Max 50°C, must be protected from freezing
Ph Value	6 to 8
Recommended Thickness	1.5 to 2.0 mm
Solid Contents	70% to 75% by weight
Thinning	By water
Specific Gravity	1.26 to 1.40
L.O.I.	>80%
Life Expectancy Toxicity	30 years
Toxicity	Non-Toxic
Touch Dry	4-6 hours



VS Steel Coating VM

(VSSC120VM)

Prevents the Spread of Fire



Product Description

VS Steel Master VM provides fire protection to structural steel. It imparts fire resistance and heat insulation to prevent collapse of the steel structure due to fire.

The phenomenon of possible collapse of steel structures in fire conditions is based on the fact that steel loses nearly 50% of its mechanical strength at a temperature of 550 °C. For a normal fire, it takes 5 to 6 minutes to reach this level of temperature that can result in the sudden collapse of the steel structure. When all the exposed surface of structural steel is coated using VS Steel Master VM, a fire rating of up to two hours is possible.

Special Features:

- It has excellent adhesion to most structural steel surfaces and the conventional primer and paint systems in commercial and industrial units
- Is paintable with primer
- Is easy to apply either during prefabrication or after completion of structure
- Modifications to the structure are feasible with little maintenance efforts
- It can withstand conditions like: weathering effects, aging, vibrations, temperature variations & water logging
- Is non toxic
- Does not evolve halogen when exposed to fire
- Ecologically harmless
- The system is not prone to attacks by vermin, termite or rodents



Specifications

PROPERTY	PRESENT VALUE
Colour & Appearance	Grey, Granular Powder Mix Plaster Compound
Dry Bulk Density	600 +/- 50 kg/m ³
Flammability / Combustibility	Non Flammable / Non Combustible
Compressive Strength	1.2 to 1.9n/mm ²
pH	9.5 to 12
Surface Preparation	Sa 2 ½ (bright, White/grey Base Metal)
Adhesion Base	Two Component Zinc Rich Epoxy Primer 50 Microns DFT Minimum
System Reinforcement	Corrosion Resistant Coated Weld Mesh 16 G X ¾" Pitch

VS FR Fabric Coating

(VSFC00000)

Prevents the Spread of Fire



Product Description

VS FR Fabric Coating is a water based clear solution to dip and dry the fabric to make it fire retardant. The necessary original properties of the fabric like its 'looks', 'colours' and 'touch_feel' are not sacrificed at the cost of fire retardancy. The product can be used for other cellulosic absorbent fibres like jute fabric, coir fabric or other similar woven cellulosic water absorbent textile materials. It suits all types of cotton fibre textiles and weaving patterns.

The coating converts the fabric into black char, but does not allow it to catch flames. The coating is washable to assist cleaning of the fabric whenever required and can be recoated to make the fabric fire retardant again by dipping in solution and drying.

Special Features:

- Is halogen free
- Easy to use and apply
- Light weight
- Flexible to moderate shocks, temperature variations and weather conditions

VS FR Wood Coating (White)

(VSWC000WT)

Prevents the Spread of Fire



Product Description

VS FR Wood Coating is a water based, single component surface coating for wood and Commercial Plywood. The coating cures at general ambient conditions to form a thin coating film on the wood surface which protects the surface against fire. The product is available for brush as well as spray application on exposed wooden surface.

Special Features:

- The product can be applied in finished stage of the product as well as after installation and commissioning at site. The material is compatible with wood and plywood surfaces having less than 20% moisture contents and no leach outs. Approximately, 1-2 coats of 100 to 150 microns of FR Wood Coating can provide fire resistance of upto 30 minutes to the Plywood or wooden surface.
- It is meant for internal use and should be protected with top coat if expected to be exposed to harsh external conditions like water logging, direct sunlight, etc.
- The coating performs to protect the Wood/ Plywood surface against fire as per IS 5509 and Flame penetration (12 mm thick ply) and for 20 minutes for Rate of Burning (30% to 70%).

Agents

Saudi Arabia. :



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