



USE THE BEST

PASSIVE FIRE PROTECTION

"THERE IS NO SECOND CHANCE WITH FIRE - DO IT RIGHT THE FIRST TIME"



TIE UP'S WITH OVER 28 GLOBAL LEADERS



Introduction

STANVAC CHEMICALS INDIA LTD. was established in the year 1994.

Operation's began with the import & distribution of the worlds finest "Crown Aervoe" brand of Industrial aerosols and today the range encompasses over 1000 diverse products, sourced from over 28 Global Technology Leaders in the US, Europe, Australia... in the following areas:

1. Industrial Aerosols
2. Environments Friendly Bulk Cleaners
3. Electrical Insulation Coatings & Tapes
4. Fire Suppression Coatings
5. Single & Two Component Anti-Corrosion Coatings
6. Speciality Greases & Lubricants
7. Rust Preventatives
8. Repair & Reclamation technologies
9. Industrial Safety - PPE
10. Adhesives & Sealants...



STANVAC NATIONAL CENTRE – MANESAR, GURGAON

India's finest & most diverse range of "World Class" technologies, provides customers with unique "Single window" purchasing convenience, with fully warranted supplies.

An Extensive sales & service team of sales engineers, service technicians & area distributors ensures a full national service back-up & prompt availability anywhere in India.

ISO 9001-2008 certified quality systems further ensure truly world class performance features & quality, in line with our motto – "USE THE BEST".

AIK Flammadur Brandschutz GmbH, Germany

Estd 1890



Leaders in the development & manufacturing of fire preventative components & systems for over a century.

★ Most exhaustive range of specialised fire protection systems in the world.

★ Structural Engineering

- Flammadur A77 fire suppression cable coating.
- Flammadur MW mineral wool based firestop barrier & Flammadur E473 mortar based firestop barrier for bulkheading electrical & mechanical penetrations.
- Flammadur A107, S90 fire - protection of expansion joints in walls & ceilings...



★ Railway, Subway & Vehicles

- Flammadur A153G & A128, surface fire protection.
- Flammadur A702 fire protection foam for cable & pipe penetrations....

★ Ship Building

- Geaquello sealing system for cable & fire penetrations.

★ Aircraft Construction, Military, Nuclear, Specialities....

- Flammadur A316, 2C fibre composite protection
- Flammadur A391, 2C sealing compound for clean room & laboratory.
- Flammadur F200, intumescent elastic putty with pressure withstanding capacity.
- Flammadur F400 /500 /600 fire protection foam materials.
- Flammadur E473 bulkheads with radiation resistance, earthquake safe.
- Flammadur E983 nuclear radiation sealing mortar.
- Flammadur E988, 2C expansion joints...

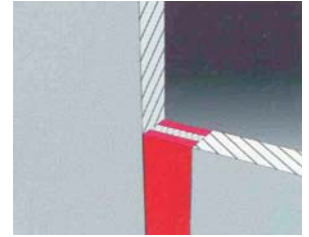
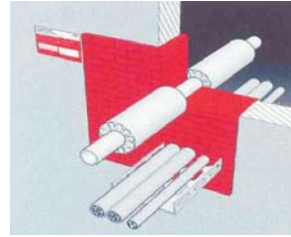
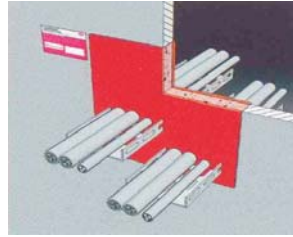
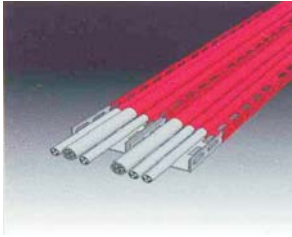


Our systems and products are tested, controlled and certified through following societies:

- ★ Quality Management System according to ISO 9001:2008
- ★ Germanischer Lloyd, Germanischer Lloyd Luxembourg, American Bureau of Shipping, Det Norske Veritas, Bureau Veritas, Lloyd's Register, Rina, Russian Register, Transport Canada, US Coast Guard, Nippon Kaiji Kyokai, Korean Register etc.
- ★ Exova Brandhaus, TÜV Nord Brandversuchshaus, MPA Braunschweig, MPA Dresden, MPA NRW, KFA Jülich GmbH, EDAG polymer service, ISSeP, etc
- ★ Underwriters Laboratories, Factory Mutual, DIBT Brandschutz, etc.



PASSIVE FIRE SUPPRESSION & FIRESTOP SYSTEMS



- ★ **Passive fire suppression cable coatings** - preventing fire propagation & smoke generation.
- ★ **Passive firestop barriers (mortar & mineral wool based)** - compartmentisation against the spread of fire & smoke.
- ★ **Passive fire protection coatings for structural steel** - preventing weakening & collapse.

National Building Code of India 2005

(Revised Building Codes of India Firestop Guidelines (Excerpts from part 4 : Fire and Life Safety))



the passage of all building services like cables, electrical wiring and telephone cables etc., shall be protected by enclosures in the form of Duct / Shafts with a fire resistance of not less than 2 hours.

Clause 3.4.8.4 Fire Stopping - Vertical Openings

Every vertical opening between the floors of a building shall be suitably enclosed or protected as necessary to provide reasonable safety to the occupants while using means of egress by preventing spread of fire, smoke or fumes through vertical openings from floor to floor, thus allowing occupants to complete their safe use of the means of egress.

Clause C-9 Compartmentation

The building shall be suitably compartmentalized so that the fire and smoke remain confined to the area where the fire incident has occurred and does not spread to the other part of the building.

Annex Clause C1.9 Fire Stopping Service Ducts & Shafts

Service ducts and shafts shall be enclosed by walls of 2 hours and doors of 1 hour rating. All such ducts / shafts shall be properly sealed and fire stopped at all floors .

Annex Clause C1.12 Fire Stopping Cables Ducts Penetrations

The electric distribution cables / wiring shall be laid in a separate duct. The duct shall be sealed at every floor with non-combustible materials having the same fire resistance as the fire rating of the cable duct.

Annex Clause C1.12a Cable Ducts

The electric distribution cables / wiring shall be laid in a separate duct. The duct shall be sealed at every floor with non-combustible materials having the same fire resistance as the fire rating of the duct.

Annex Clause C1.16a Transformer Substation

The outside walls, ceiling, floor, opening including door and windows to the transformer substation area shall be provided with fire resistance of 2 hours rating.

Annex Clause C1.16C Transformer Room

When housed inside the building the transformer shall be of dry type and shall be compartmentised from the other portion of the premises by walls / doors / cut-outs having fire a minimum fire resistance of 4 hours.

Annex Clause C1.17 Fire Rated Ducts

Where the duct passes through fire walls, the opening around the duct shall be sealed with fire resistant materials having the fire resistant rating of the compartment. Where the duct crosses the compartment which is fire rated, the duct shall be fire rated for same fire rating. Further, depending on the services passing around ductwork, which may be affected in case of fire temperature rising, the ducts shall be insulated.

Clause F.3.4.15.4 Class 4 Materials

Materials of class 4 flame spread are the worst ones for use in building & hence their use is to be strictly prohibited unless they are given proper fire retardant treatment.

Clause 3.3.3 Structural Steel

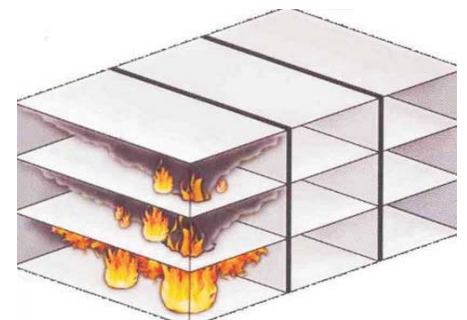
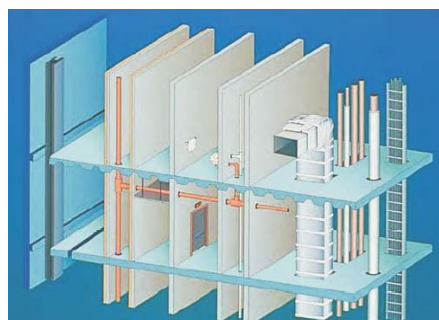
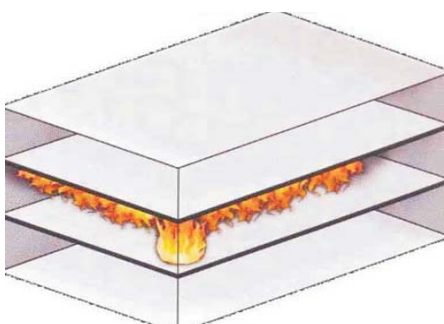
Load bearing steel beams & columns of buildings having total covered area of 500m² and above shall be protected against failure /collapse of structure in case of fire.

Clause 3.4.8.2 Wall & Floor Openings

Openings in the separating walls or floors shall be fitted with 2hr fire resistance assemblies .

Clause 3.4.8.3 Fire Stopping Wall & Floor Openings

Openings in walls or floors which are provided for



A. FLAMMADUR A77, HIGH SOLIDS THIN FILM INTUMESCENT FIRESTOP CABLE COATING

#Z415 Flammadur A77 is a Fire Suppression Coating especially designed for protecting electric power cables, communication cables, junction boxes - against ignition, propagation of fire, smoke emission...

- ★ **HIGHEST % SOLIDS (>67%) : BEST IN CLASS INTUMESCENCE**
Expands over 65 times by volume for the best in class heat insulation, best in class prevention of coated area ignition, best seal against fire ingress, as well as best in class flame resistance & flame propagation retardance.



Before

After



- ★ **UNIQUE THIN FILM PROTECTION**
Flexible. Will not reduce heat dissipation or cable ampacity unlike older "CEMENTATIOUS" type technologies. Protects Cables sheaths against heat ageing with larger area coverage.
- ★ **UNIQUELY TESTED & APPROVED BY LEADING GLOBAL INSTITUTIONS FOR TOTAL RELIABILITY OF PROTECTION**
- ★ **VERSATILE**
Performs on Rubber, PVC, FRP, Paper, Wood... Easy to install "In-Situ" on cables of varying sizes.
- ★ **DURABLE**
Non ageing performance. Documented Lifespan > 20 Years. Ageing has no influence on the intumescence /protection effect.

Product Features:

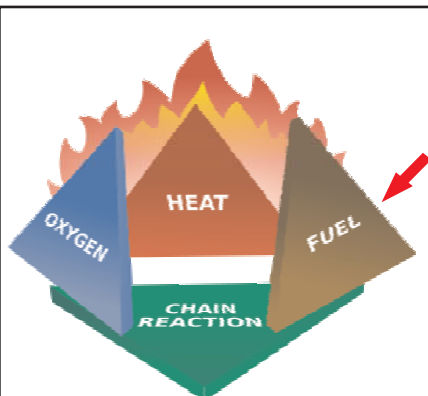
In the event of fire FLAMMADUR A77 expands as a result of heat exposure and cures to an insulating char.

- ★ Flame spread on cables and insulation damage are delayed in the case of prolonged exposure to fire or heat.
- ★ Current rating of the coated electrical cables is not reduced.
- ★ Escape routes and power supply can be used for a longer time.
- ★ Significant extension of operative condition of cables.
- ★ Smoke generated from the protected materials is < 400% minimised.
- ★ Dripping or dropping of burning cable fragments is limited in amount and time depending on kind and intensity of the fire.
- ★ Free of asbestos, halogens...

Before



After



The Physics of Fire

Cables are a rich source of FUEL!
One FOOT of Loaded Tray = 150,000 BTUs*



Equivalent to 4.2 liters of Petrol!

*Fully Loaded 33 cm x 10 cm Tray

LIST OF KEY TESTS AND APPROVALS

INSTITUTE	TEST	DFT.
Factory mutual, Norwood, USA	FM 3971 Fire Retardant Cable Coating for Grouped Electrical Cables Project Data Record (JI) 3001128 & reflected as an approved product on the FM website. Significance:- Grouped electrical cable test. Product should clear test with DFT≤1.6mm Includes vertical fire tests, scorch tests, leakage current /high potential test post 200% of rated voltage both pre & post fire tests, fire tests on cables electrically heated with 150% of rated current, saltwater test, accelerated ageing test, ampacity test & field weather exposure tests.	1.59 mm
ISSeP Institut Scientifique de Service Public, Liege, Belgium	IEC 332-3, several cable sizes Test reports No. 820/93 & No. 160/99 Significance:- Flame propagation test. Product should clear with DFT ≤0.5mm	0.5 mm
ISSeP Institut Scientifique de Service Public, Liege, Belgium	Report No. 358/1998 - IEEE Std. 383 - Part 25 flame test Significance:- Fire self - extinguishing Nuclear Power Plant test. Flame should not propagate & fire travel should be within test limits. Product should clear test with DFT ≤0.5mm.	0.5 mm
Central Building Research Institute, Roorkee, India	IEC331 Should pass minimum 20 minutes, fire survival test. Significance:- Fire survival test. Product should clear fire test without any damage to cable core /current carrying capacity post 20 minutes fire exposure.	3.5 mm
IBMB Institut for Baustoffe, Mssivbau und brandschutz, TU Brunswick, Germany	Test Report U 99 070 Qualifying of reducing of fire-risk for PVC Cables Significance:- Reducing risk of fire initiation & growth on PVC cables in both vertical as well as horizontal configurations. Product Should clear test with DFT≤1.00mm	1.0 mm
Deutsches Institute for Bautechnik, Berlin, Germany	General Approval in Terms of the Building Laws and Regulations. Significance:- Ignition of building material DIN 4102 - 1(DIN 4102 - B2) test	0.8 mm
EPM Elektisches Profamt Munich, Germany	Test report No. 99522 Surface resistance by DIN VDE 0472/05.85 Significance:- Surface resistance test. Product should clear test with DFT ≤0.50mm.	0.5 mm
Aventis Research & Technologies GmbH & Co. KG Frankfurt, Germany	Bestimmung der sauerstoffzahl nach ASTM D 2863 test report no 99-1207 Significance:- Product should have a limiting oxygen index >50%. Flammadur A77 has 59%.	0.5 mm
Germanicher Lloyd ,Germany	Shipping Approvals - Germanicher Lloyd SOLAS & IEC 60332-3-2 Significance:- Confirms performance & reliability.	0.5 mm
Technical University of Brunswick, Germany	Ageing Resistance Significance:- Flammadur A77 has an audited effective lifespan in excess of 20 years.	-

Fire exposure test - practical comparison

(Salt water dipping of coated sample for 24 hours & 2 minutes blue flame exposure - carried out by a major steel mill customer in india)

BRAND A



Filler & core damage

BRAND B



Filler damage, core intact

BRAND C



Filler damage, core intact

FLAMMADUR A77



Neither filler nor core damage

Summary : Flammadur A77 exhibits the best fire protection abilities.

Technical Data

Color:	White /Grey
Solids:	>67%
Density:	1.37 (Dry)
temperature resistance:	>1315°C
Min. Thickness, wet film:	2.5 mm
Min. Thickness, dry coat:	1/16 inch (1.59 mm) (FMApproval)
Amount of wet coat, approx:	3 kg/m ² =10 oz/ 1ft ²
Cure Time, at 68°F(20°C)	
Coating dries:	4-8 hours
Cures:	24-48 hours
Cleaning Solvent:	Water
Flexibility:	Flexible, when dry
Method of Application:	Brush, roller or airless sprayer.
Applications:	Surfaces are to be free from oil, grease and dirt.

Applications

For the fire proofing of combustible cables at fire stops in walls, floors, below floor mounted panels, switchgears, junctions /crossings of cable routes...

Typically applied as a continuous coating on power & communication cables but can also be applied intermittently to serve as a "Fire Break" within a cable run - both interior & exterior applications (either top coat or use weather resistant - "A77 GREY" grade), for both vertical & horizontal cable runs, on both single & grouped electrical & communication cabling, within cables trays as well as outside of cable trays.

B. FIRE STOP BARRIERS – MORTAR BASED SYSTEM

Two Component System

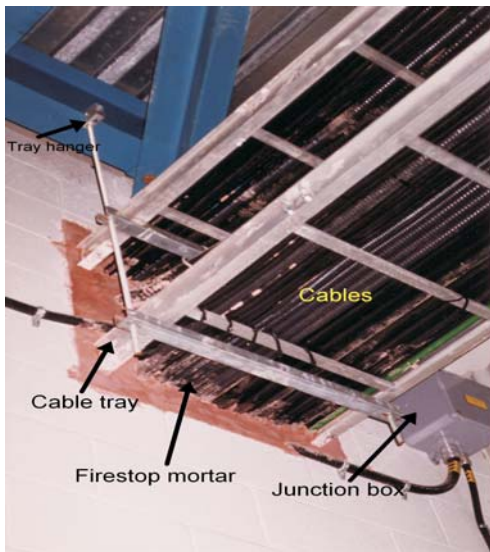
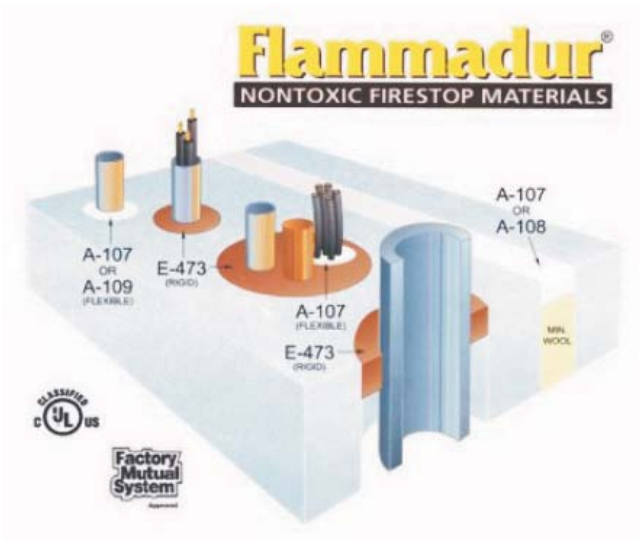
- (A) **Flammadur E473** Water Based Inorganic, Expanding type, Heat Absorbing Fire Stop Mortar designed to seal cable & pipe penetrations through walls & ceilings.
- (B) **Flammadur A77** High Solids Thin Film Intumescent Firestop Coating for application on cable/ trays passing through the firestop mortar based barrier on either side.



(A) Flammadur E473 Expanding Firestop Mortar

Features:

- ★ Expands in curing, making tight fit. Most other mortar firestop do not expand and some shrink in curing.
- ★ Ensuring the fire protection for special conditions like:
 - Humid environment.
 - Resistance to gamma radiation in nuclear power plants.
 - Flood, without losing penetration seal, up to 3 atm = 44 psi.
 - Very hot environment, up to 250°C (482°F) on a continuous basis.
 - Corrosive conditions.

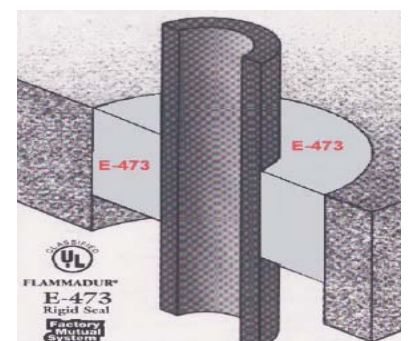


- ★ Shearing strength:
 - To steel up to 650 psi (4,485 kPa).
 - To concrete up to 125 psi (862 kPa).
- ★ Proven performance history, used around the world for over 40 years in Nuclear Power Plants, High Rise Buildings, Factories, High Security Buildings...
- ★ Non-toxic (No asbestos, no halogens, no noxious vapors, no lead).
- ★ Maximum fire safety (high F (fire) and T (temperature) ratings up to 4 hours).
- ★ Applications: Sealing through penetrations for pipes, conduits, cables, cables in cable trays, ducts, with F=3 and 4hrs, and T=0 to 4 hrs.
- ★ High strength, excellent shearing strength to steel and concrete.
- ★ No derating of cables. Excellent thermal conductivity.
- ★ Convenient to use, easy to repair and finish..

Unique Systems:

Flammadur is now the only company with numerous UL classified and FM approved systems with the following:

- ★ F=3 hours and T=3 hours ratings for cables, cables in cable trays, cables in conduit- for power, control and instrumentation cables.
- ★ F=T=4 hours ratings for communication cables.
- ★ High T ratings, permitting time for firemen to combat fire spread on off fire side.
- ★ F=T=3 hours ratings for up to 4 cable trays in an opening with up to 36" wide cable trays.
- ★ F=3 hours rating unique for sealing large opening with rigid E473 and lacing pipes, conduits sealed with elastomeric Flammadur A107.
- ★ F=3 and T=2 and 3 hour rating using a patent pending method for externally fireproofing non-performing old penetration seals, applicable to sealing through penetrations with insufficient annular space.
- ★ F=4 hour system for pipes, conduits and EMT, D < 4.5 inch.



Technical Data

A. General Properties

- Color : Grey or red, can be painted.
- Life Expectancy : Lifetime of a building(50+ years).
- Material needed per unit volume : 740 kg/m³ (47.6 lbs/ft³).
- Water penetration : No. For prolong exposure cover with water-proof layer (e.g., Flammadur E292) Resistant to 45 psi (311 kPa) for 24 hours, and 75 psi (519 kPa) for 5 min after 2 hours in furnace.

B. Physical Properties

- Powder density : 0.74 g/cm³
- Short-term loading capacity : 30 psi (207 kPa)
- Expansion during curing : 0.02% linear, @ 0.1% volume
- Final material density at 68°F (20°C) : 50-53 lbs/ft³ (800-850 kg/m³)
- Solvent : Water
- Pot Life : Approx. 30- 40 minutes at +20°C (68°F)
- Full cure time : Approx. 24 hrs at +20°C (68°F)
- Chemical Hardening : Approx. 25 days at +20°C (68°F)
- Coefficient of thermal conductivity : Approx 0.23 kcal/mhK. Flammadur E473 acts like a heat sink.
- Heat conductivity : Approx 0.26 W /mK
- Ampacity tests conducted by EFI Norway : Revealed a cable derating factor of 1.0 - No significant ampacity losses.
- Shore A hardness : 80 after 48 hrs at 20°C (68°F)
- Processing Mixing ratio : approx 0.6= 0.8 ltrs of water with 1.0kg of powder.
- Gamma ray resistance : Exposed to 200 million rads- no change in physical and chemical properties.

C. Chemical Properties

- Bonding to: : Concrete, masonry, itself
- Does not Contain: : Asbestos, halogens, lead
- Resistant to: : Weak acids, alkalis, solvents, oils, etc.
- PH value in curing : 12
- Corrosive to steel : No
- Combustible : No
- Gases released in fire : None, except water vapor



Approvals

★ Flammadur E473 Water Based Inorganic, Expanding type, Heat Absorbing Fire Stop Mortar:

- FM 4990 approved & reflected as an approved product on FM website.
- UL classified & reflected as an approved product on UL website.
- BS 476 part 20 with both fire integrity (F) & insulation (T) of >240 minutes.

★ Flammdur A77 High Solids Thin Film Intumescent Fire Stop Coating:

- FM 3971 approved & reflected on FM website, Passes FM test with DFT < 1.6mm.
- IEC 332 – 3. Passes with DFT ≤ 0.5mm.
- IEEE 383. Passes with DFT ≤ 0.5mm
- IEC 331 Passes minimum 20 minutes with DFT 3.5mm.
- U990 70 PVC Cables. Passes with DFT ≤ 1.0mm.
- DIN 4102 – 1 (DIN 4102 – B2). Passes with DFT ≤ 0.8mm.
- DIN VDE 0472 /05.85 Surface resistance. Passes with DFT ≤ 0.5mm.
- Limiting oxygen index as per ASTM D2863 >59%.
- Shipping approvals such as Germanischer Lloyd according to SOLAS & IEC 60332 - 3-22 (2007).
- Ageing Resistance - Flammadur A77 has an audited effective lifespan in excess of 20 years.

C. FIRE STOP BARRIERS - MINERAL WOOL BASED SYSTEM

Three Components System:

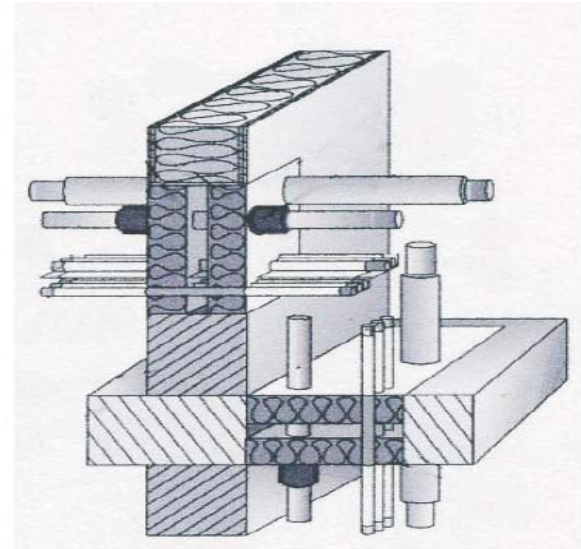
- (A) **Flammadur A150** Mineral Wool Boards Pre - coated with Flammadur A77 Fire Stop Coating - Minimum 120mm Thickness (2 x 60mm), Density > 170 Kgs /m³.
- (B) **Flammadur A77** High Solids Thin Film Intumescent FireStop Coating - Minimum 300mm on either side of barrier.
- (C) **Flammadur A107** Inorganic Elastomeric Intumescent Flexible FireStop Sealant for application on joints, penetrations...



(A) Flammadur A150 Mineral Wool Board

FLAMMADUR® A 150 is a mineral wool based board covered with FLAMMADUR A 77 which foams up in case of fire. By the impact of heat the coating builds up a carbon foam which isolates materials additionally against the impact of heat.

FLAMMADUR® A 150 is used as building material for approved cable penetrations (DIBT Appr.-No.: Z-19.15-436 and Z-19.15-351).



Technical Data

• Minimum density	:	>170 kg/m ³
• Length	:	1200 mm
• Width	:	600 mm
• Thickness	:	60 mm
• Coating thickness	:	1.0 mm

(B) Flammadur A107

Flammadur® A107 is a single component, non-toxic, inorganic, water-based, elastomeric, intumescent flexible firestop sealant used for penetrations through ceilings and floors - UL Classified systems.

Features:

- For through penetrations, with up to F=3 hours.
- For construction joints, with up to F=3 hours, 2" gap.
- For use in large openings with rigid E473 seal for downsizing.
- For unique system with moving slab in a curtain wall, 3hr fire rating, 2" gap.
- Smoke, fume resistant & silicone-free.
- Weather resistant. Excellent ageing & UV resistance.

Uses:

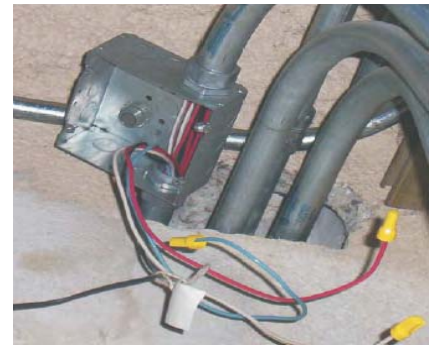
It has been tested for mechanical pipes (metal or composites) electrical penetrations, cables, cable trays and metal conduits in conjunction with mineral wool, and it can be used to seal construction gaps, expansion joints, control joints, and movable curtain wall gaps.

Flammadur A107 maintains the fire rating of walls and ceilings so that flames and smoke cannot pass through. A107 does not release any flammable, noxious or toxic fumes during installation and curing.

Technical Data

- Density : > 1.3 g/cm³
- Solid by weight : > 79%
- Withstands vapour pressure : >20 mbar
- Withstands water immersion : upto 48 hours without any effect on Fire Stop Seal
- Incombustible
- Elastomeric
- Seals against water penetration.
- Bonds to cables, concrete, brick, metals...
- Resistant to weak acids, alkalis, solvents, oils.

Before



After



Applications

In concrete walls and floors and in drywall and masonry walls with the following penetrants:

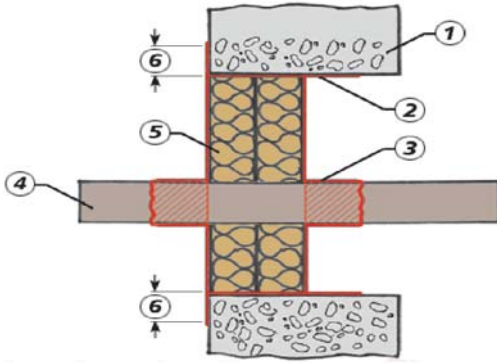
- ★ Cables (individual or grouped) power, control, data, communication, fiber optic
- ★ Cable trays, or racks (aluminum, steel, plastic)
- ★ Pipes
- ★ Ducts

Advantages

- ★ Fire and smoke resistant
- ★ Water based materials
- ★ Easy to install, remove and to re-install
- ★ Fair acoustical properties
- ★ No ampacity derating in cables



Mixed Penetration Seal



1. Wall (100mm) or floor (150mm)
2. Coating with Flamadur A77
3. Coating of installation
4. Installation (cable or pipe)
5. Fire Stop Board 2x60mm, density 170kg/m³
6. Coating all around 50mm

Installation of a "Mixed Penetration Seal"



1.) Cleaning of opening, put adhesive tape around it to obtain an even rim (50mm), apply "A77" on inner side of opening ...



2.) ...and on cables (for a length of 300mm within the opening and 300mm outside it).



3.) Pre-coated firestop board A150 is cut to required size ...



4.) ... and put into the opening (coated side = outer side).



5.) Larger gaps and holes to be filled with mineral wool and covered with "A107".



6.) Complete the installation coating with "A107" (depth of layer approx. 1-2mm) and also cover the joints and gaps.

Approvals

★ Flammadur A77 High Solids Thin Film Intumescent Fire Stop Coating:

- (i) FM 3971 approved & reflected on FM website, Passes FM test with DFT < 1.6mm.
- (ii) IEC 332 – 3. Passes with DFT ≤ 0.5mm.
- (iii) IEEE 383. Passes with DFT ≤ 0.5mm
- (iv) IEC 331 Passes minimum 20 minutes with DFT 3.5mm.
- (v) U990 70 PVC Cables. Passes with DFT ≤ 1.0mm.
- (vi) DIN 4102 – 1 (DIN 4102 – B2). Passes with DFT ≤ 0.8mm.
- (vii) DIN VDE 0472 /05.85 Surface resistance. Passes with DFT ≤ 0.5mm.
- (viii) Limiting oxygen index as per ASTM D2863 >59%.
- (ix) Shipping approvals such as Germanischer Lloyd according to SOLAS & IEC 60332 - 3-22 (2007).
- (x) Ageing Resistant - Flammadur A77 has an audited effective lifespan in excess of 20 years.

★ Flammadur A107 Fire Stop Sealant

- (i) FM 4990 approved & reflected on FM website as an approved product.
- (ii) UL classified & reflected as an approved product on UL website with F rating = 3 hours for through penetrations.

★ Flammadur Mineral Wool Complete System

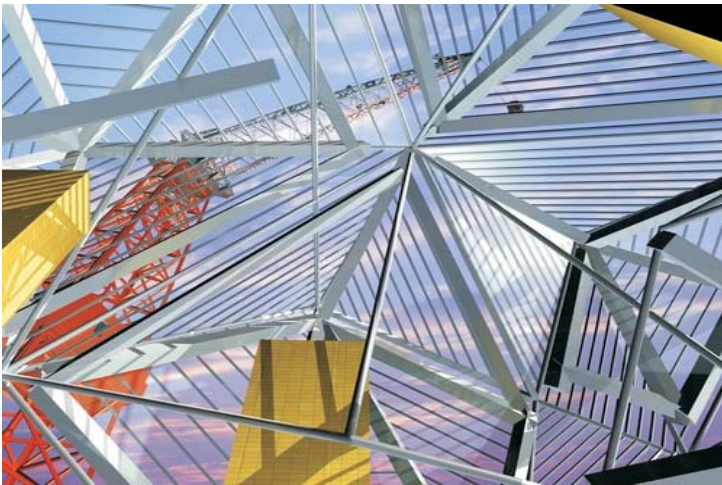
- (i) DIN 4102 – 9 S90 Class /BS 476 part 20 120 minutes.

D. STRUCTURAL STEEL INTUMESCENT PASSIVE FIRE PROTECTION COATINGS

Thin Film High Solids Intumescent Coating provide maximum protection & enables a high quality finish to be obtained similar to conventional decorative paints, preventing steel structures from crossing the critical temperature of 550°C, thus delaying the collapse of loaded steel structures for upto 2 hours and providing time for evacuation & fire fighting.

Certified to BS 476 Part 20-21 : 1987 for F30, F60, F90, & F120 minutes protection.

- ★ Smooth fibre free robust decorative surface allows the architect to use the structural steel work as an integral part of the building design.
- ★ Easy cleaning & maintenance.
- ★ Rapid installation with typically DFT's below 2mm, Appearance of the structure is preserved without affecting the load bearing calculations.



(B) Basecoat HENSOTHERM 3KS Outdoor: Solvent based fire protection coating for interior /exterior use - in accordance with national regulations for I-sections and hollow sections.

HENSOTHERM 3KS Outdoor is a solvent based intumescent coating which reacts under the influence of heat by swelling to many times of its original thickness and producing a layer of carbonaceous foam that acts as an insulating layer to delay the steel from reaching its critical temperature.

Applied to a measured thickness to provide the specified level of protection. Fire resistance class F30-120. BS 476 certifiere CF 700 authorisation. To be applied on I - sections & hollow sections.

HENSOTHERM 3KS Outdoor is a designed for use over suitable prepared and primed substrate.

For already primed surfaces please ensure compatibility of existing primer with HENSOTHERM 3 KS Outdoor. Any damage (corrosion, impact etc.) Must be repaired carefully e.g. with HENSOGRUND 1966 E or other compatible primers.

For base profiles sandblasting SA 2,5 according to EN ISO 12944-4 or manual cleaning St 3 is recommended.

During application and total drying of the **HENSOTHERM 3KS Outdoor** coating system as well as transportation special protection measurements against weathering must be taken.

Coverage:

F30 - 925 g/m² (DFT 500 microns).
F60 - 1850 g/m² (DFT 1000 microns).
F90 - 2400 g/m² (DFT 1300 microns).
F120 - 3330 g/m² (DFT 1800 microns).

Note: Coverage data is for brush application. Typically add 30% for airless application.



3- LAYER SOLVENT BASED SYSTEM

(A) Primer HENSOGRUND 1966E : Solvent - based primer for fire protection coating for structural steel. To protect steel against corrosion & prepare the surface. Self extinguishing. Fast drying. Based on synthetic resins.

Surface preparation should be carried out according to good painting practises. Remove all loose or powdery paint from the surface. The best results are reached by using sand blasting SA 2½ to DIN 55928 resp. EN ISO 12944.

HENSOGRUND 1966 E can be applied by brush, roller or spray tip size : airless: 0,013" air: 1.2mm

The drying time depends on temperature and humidity. At a tempe-rature of appr. 20°C and a humidity of appr. 65% the drying time is as follows:

- Dust dry after appr. 1 hour.
- Ready for over coating after appr. 24 hours

Coverage:190 g/m² (DFT 50 - 60 microns).



(C) Top Coat HENSOTOP 84 : Single component solvent based top coat for HENSOTHERM intumescent coatings. Coating on top for optical reasons and for moisture protection. A hard decorative self extinguishing, fast drying finish to seal the basecoat & provide an attractive, high quality finish. Available in various RAL Shades.

Before topcoating make sure that the fire retardant coating is dried through (test by finger nail !)

HENSOTOP 84 can be applied by brush, roller or spray

Coverage:180 g/m² (DFT 60 microns)

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STANVAC CHEMICALS INDIA LTD

Admn. Office : 15-16, Old Sewa Nagar Market, P. O. Lodhi Road, New Delhi-110003, India

Tel. : +91-11-24647199 / 24647252, Fax : +91-11-24633847 / 24623826,

Web Site: www.stanvac.com, E-mail : sales@stanvac.com