

## TECHNICAL DATA SHEET

# PENOSIL FireStop Intumescent Acrylic 681

Intumescent acrylic sealant for fireproofing.

### Main benefits

- Can be painted
- Low odour
- Withstands fire up to 4 hours
- Prevents the passage of fire and hot gases
- Helps reduce smoke produced during combustion
- Halogen, solvent and asbestos free
- Bright white
- Movement capability  $\pm 12,5\%$
- Starts expanding from 200 to 220 °C

### Fields of application

- Interior joint seals where it is required to have passive fire protection.
- Joints in slabs, walls, fire walls, partition walls, door and window frames.
- Sealing gaps around pipes (e.g. PVC, metal, composite), cables, ducts and small openings which penetrate firewalls and floors.
- Filling gaps in concrete and plaster to protect from fire and smoke.

### Adhering

- Concrete
- Brick
- Tile
- Ceramics
- Different metals
- Wood
- Glass
- PVC

### Application instructions

#### Application conditions

Application temperature between +5 °C and +40 °C.

#### Surface preparation

Substrates (joint flanks) must be clean, dry, and free of dust, grease and other contaminant which may affect the adhesion. Non-porous surfaces (such as aluminium, glass, etc.) should be cleaned with a suitable solvent and thoroughly dried with a clean cloth. Porous substrates (such as concrete, brickwork, etc.) must be mechanically cleaned from loose particles. Mask off the joint edges.

#### Application method

Cartridge: cut off the threaded end of the cartridge and screw on the application nozzle for directing sealant. Cut the threaded end of the nozzle to create a suitable opening for application. Place the cartridge together with the applicator in the gun and fill the installation nozzle with sealant by repeatedly pressing the gun trigger.

Apply sealant in the joint by repeatedly and evenly pressing on gun trigger and smoothly dragging the nozzle along the joint.

After application, smooth the surface with a suitable tool (e.g., spatula) and remove excess material. The joint should be tooled and smoothed before skin formation, ensuring good contact with the surface to seal. Remove masking tape.

Paintable after the final curing. Early painting can cause cracking of the paint.

### Cleaning

Uncured acrylic can be removed with water or with special cleaning wipes.

Cured acrylic should be first removed mechanically and then with a moist cloth.

### Technical data

Properties	Value	Unit
Basis	Acrylic	
Consistency	Paste	
Density (DIN 53 479-B)	1,54	g/ml
Tack free time	3...5	min
Application temperature	+5...+40	°C
Shelf life	12	months
Shore A hardness (ISO 868)	15...20	
<b>Properties of cured sealant</b>		
Loss of volume (ISO 10563)	≤25	%
Resistance to flow (ISO 7390)	0	mm
Movement capability (ISO 11600)	±12,5	%

The values specified were obtained at +23 °C and 50% relative humidity, unless otherwise specified. These values may vary depending on environmental factors such as temperature, moisture and type of substrates.

### Fire rating

Fire resistance according to EN 1366-4 Linear joints

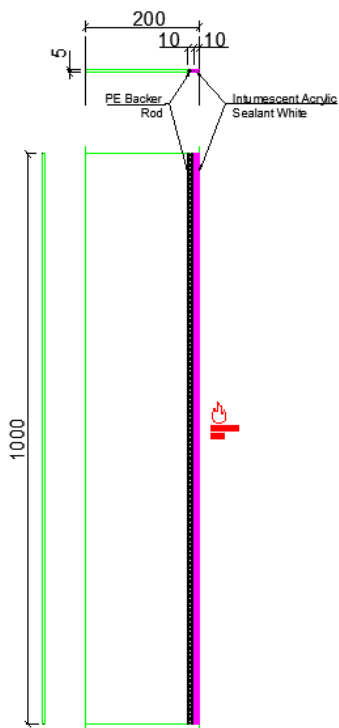
Sealant dimensions		Backing material	Orientation	Rating acc. EN 1366-4		Classification according EN 13501-2	N° report
Width (mm)	Depth (mm)			Integrity (E) (min)	Insulation (I) (min)		
5 <sup>(1)</sup>	10	PE	Vertical	240	15	EI 15-V-X-W5; E 240-V-X-W5	23/32302408
10 <sup>(2)</sup>	10	PE	Vertical	240	25	EI 20-V-X-W10; E 240-V-X-W10	23/32302408
10 <sup>(3)</sup>	15	FR-PU	Vertical	240	240	EI 240-V-X-W10	23/32302411
20 <sup>(4)</sup>	30	FR-PU	Vertical	240	240	EI 240-V-X-W20	23/32302411
15 <sup>(5)</sup>	30	FR-PU	Horizontal	240	240	EI 240-T-X-W15	23/32305388

**Legend:** FR-PU: Fire Rated PU foam / PE: Polyethylene Backer Rod

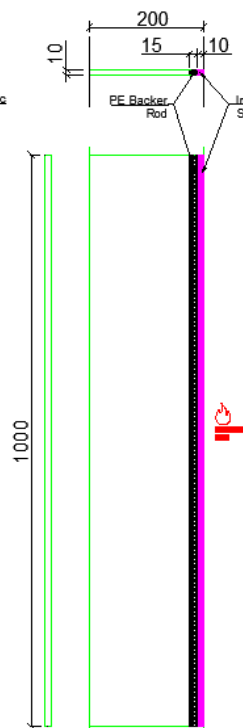
V: Vertical supporting construction – vertical joint; T: Horizontal supporting construction – horizontal joint; X: No movement; W: joint width

Remark: Fire Rated Foam: PENOSIL Premium FireRated Gunfoam

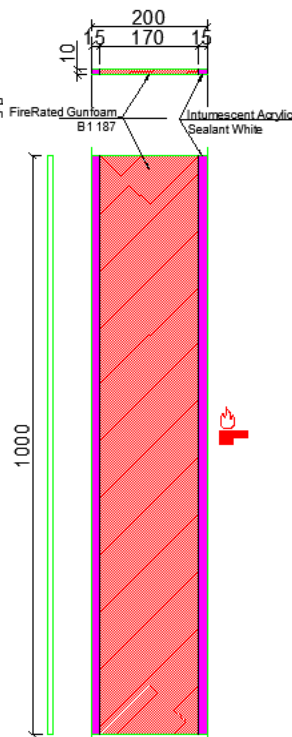
Test sample 1



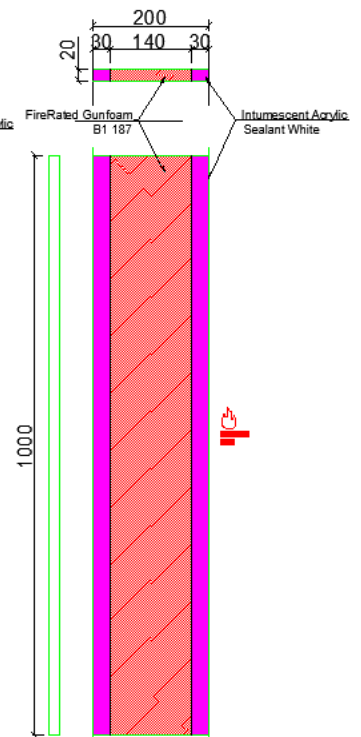
Test sample 2



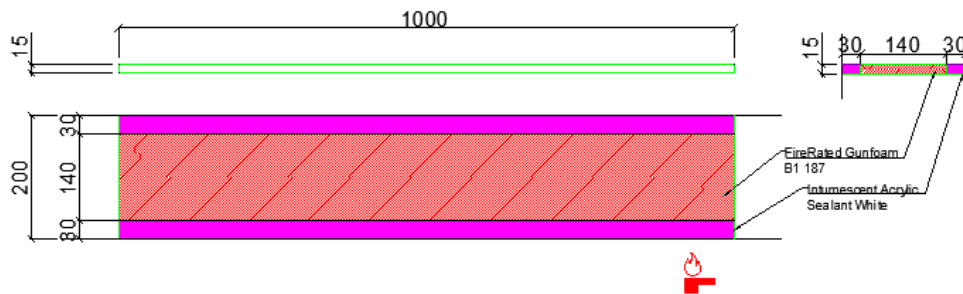
Test sample 3



Test sample 4



Test sample 5



Fire resistance according to EN 1366-3 Penetration sealing system  
Type of sealing system "sealant+foam+sealant" or "sealant+mineral wool+sealant"

Penetration diameter (mm)	Thickness of sealing system (mm)	Sealant thickness (mm)	Type of insulation layer	Rating acc. EN 1366-3		Classification according EN 13501-2	N° report
				Integrity (E) (min)	Insulation (I) (min)		
200 <sup>(6)</sup>	15	15	FR-PU	240	2	E 240 U/U	23/32305388
50 <sup>(7)</sup>	15	35	FR-PU	240	240	EI 240 U/U	23/32305388
50 <sup>(8)</sup>	15	15	MW	240	48	EI 45-U/U; E 240 U/U	23/32305388
32 <sup>(9)</sup>	15	25	FR-PU	240	32	EI 30-U/U; E 240 U/U	23/32305388
32 <sup>(10)</sup>	15	25	FR-PU	240	240	EI 240 U/U	23/32305388
32 <sup>(11)</sup>	15	15	MW	240	240	EI 240 U/U	23/32305388
8 <sup>(12)</sup>	5	15	FR-PU	240	240	EI 240	23/32305388
8 <sup>(13)</sup>	10	25	MW	240	240	EI 240	23/32305388
8 <sup>(14)</sup>	10	15	none	240	240	EI 240	23/32305388

\* Galvanized steel pipe. Outer diameter 200mm. Pipe wall thickness 0.5mm

\*\* Zinc coated carbon steel pipe. Outer diameter 50mm. Pipe wall thickness 3.2mm. Stone wool pipe section with reinforced aluminum foil facing both sides of penetration, section 30mm x 500mm (width x depth).

\*\*\* Aluminum pipe + polyethylene composite. Outer diameter 32mm. Pipe wall thickness 3.0mm.

\*\*\*\* PVC pipe. Outer diameter 32mm. Pipe wall thickness 3.0mm.

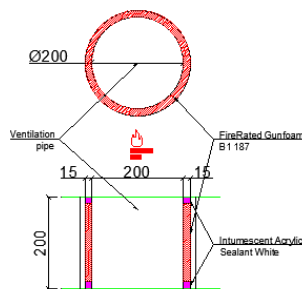
\*\*\*\*\* Round PVC flexible cable. Outer diameter 8mm.

**Legend:** FR-PU: Fire Rated PU foam / MW: Mineral wool

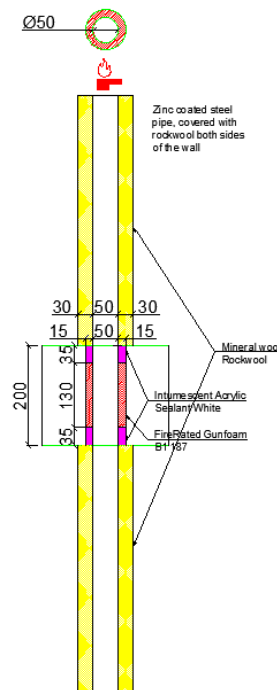
Pipe end configurations: U: Uncapped (both inside and outside the furnace) / Tests applicable to lower diameter.

Remark: Fire Rated Foam: PENOSIL Premium FireRated Gunfoam. Mineral wool: stone wool 30kg/m<sup>3</sup>.

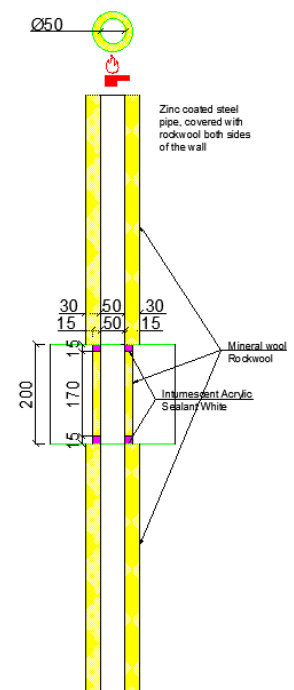
Test sample 6

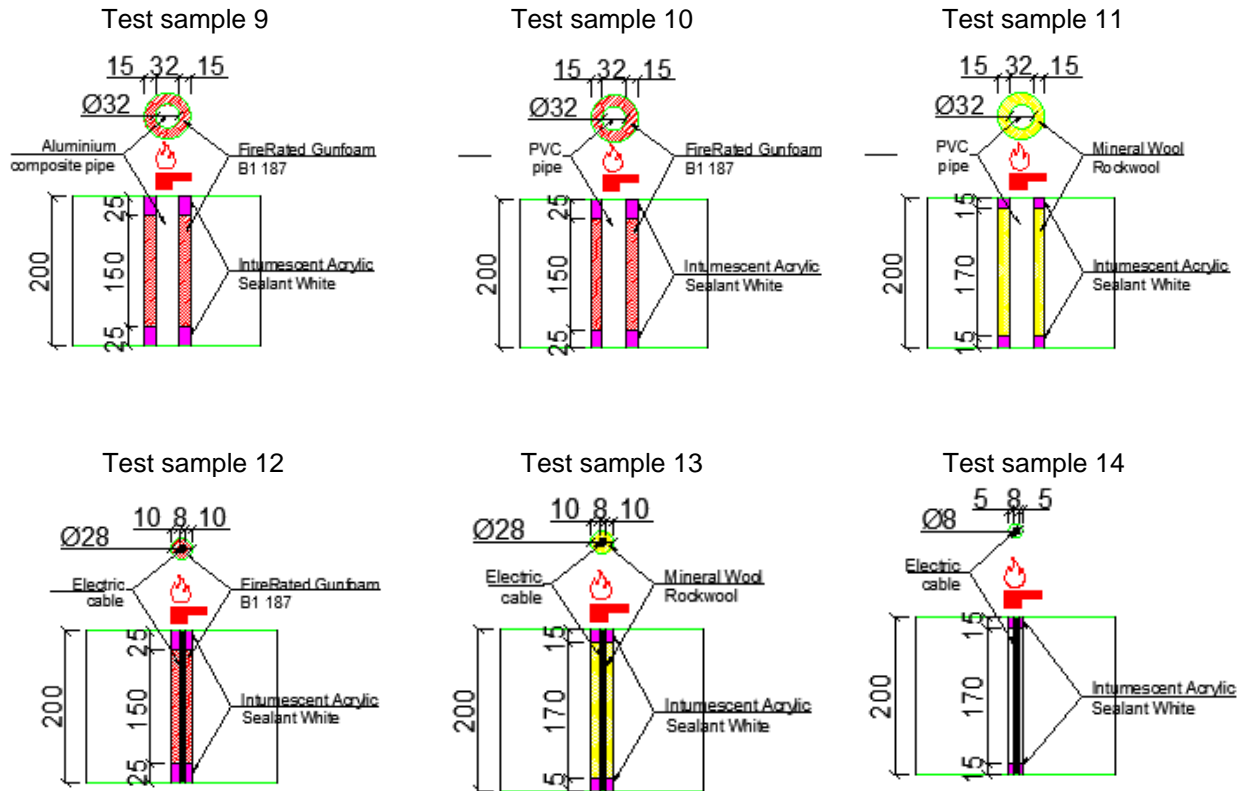


Test sample 7



Test sample 8





## Technical classification and certificates

- Sealant for façade for interior application  
EN 15651-1:2012: Type F-INT
- Fire resistance up to 240 minutes (4 hours) according to EN 13501-2. Tested according to EN 1366-3 Fire resistance tests for service installations - Part 3: Penetration seals and EN 1366-4 Fire resistance tests for service installations - Part 4: Linear joint seals
- Reaction to fire C-s1, d0 according to EN 13501-1. Tested according to EN ISO 11925-2 Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test and EN 13823 Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item
- EMICODE® EC 1 Plus - very low emission
- M1 - low emission & odour

## Colour

White.

## Package

300 ml cartridge, 12 pcs in a box.

## Storage conditions and shelf life

Guaranteed storage time 12 months starting from the date of manufacture if stored in a closed original package in a dry place between +5 °C and +25 °C.

## Limitations

- It should not be applied on bituminous or tar containing substrates, and to materials that bleed oils or plasticizers. Do not use in damp or wet conditions.
- Not recommended for applications in constant contact with water.
- Early painting may cause cracking of the paint.
- Not suitable for joints with movement more than  $\pm 12,5\%$  of the joint width.
- Due to the wide variety of possible substrates, we recommend a preliminary compatibility and adherence test. If necessary, prime surfaces to improve adhesion.
- Due to the wide variety of influences during and after application, the customer must always test the product first!
- Please observe the expiration date!

## Safety regulations

Ensure sufficient ventilation during application and wear necessary personal protective equipment. More specific safety information is available on the safety data sheet (SDS).

Note: The instructions in the present documentation are based on tests carried out by the manufacturer and are presented in good faith. Due to variations in materials and substrates as well as the various application possibilities that are beyond our control, the manufacturer is not liable for the results achieved. In any case, it is recommended to test the product suitability at the place of application. Manufacturer reserves the right to modify products without prior notice. This TDS replaces and supersedes all previous data sheets on the same product.