

## FernoStop<sup>®</sup>

### Graphite based, high expansion intumescent sealant

TDS FernoStop 2305EN

Bloem FernoStop is a graphite based high expansion intumescent sealant designed to prevent the spread of fire, smoke and gases through openings in fire rated walls and floors. When exposed to fire the graphite components provide a high volume expansion, closing off and insulating the void left by combustible materials.



#### Properties

- Gives up to 240EI min resistance against smoke and fire
- Quick and easy application
- Remains flexible during movement up to 12.5%
- Swells up at 150°C. when exposed to fire
- Tested in linear joints up to 20mm wide
- Suitable for large service openings up to 300 x 100mm
- Halogen and solvent free
- Long life span

#### Applications

- Flexible walls
- Rigid walls and floors
- Timber walls and floors
- For fire resistance by sealing penetrations with plastic pipes made of PVC, UPVC, ABS, PE, and PP up to Ø160mm
- For penetrations with electric cables, cable bundles, and wiring with and without tray, Alupex, metal pipes with and without insulation

#### Testing / Certification

- Tested according to NEN 6069 and EU standard EN 1366-3, ETA 22/0709
- CE Certificate No. 2531-CPR-CXO10393
- Certification according to EAD 350454-00-1104
- Tested for air permeability according to EN1026 up to 600Pa
- Emicode EC1-Plus, VOC A+ Regulation, BREEAM, BlueAngel, LEED v4

#### Technical data

Description:	Graphite acrylic paste
Classification:	Up to E240, EI240*
Application temperature:	+5°C to +30°C
Service temperature:	-15°C to +70°C
Skimming time:	60 minutes
Hardening time:	Full cure in 4 to 5 days depending on depth, humidity and temperature
Movement capability:	12.5%
pH:	8.00 - 9,5
Density (gr/ltr.):	1.55
Reaction to fire:	B-s1, d0
Thermal conduction:	0.82/0.88 W/mK @ 20mm. depth
Expansion rate:	up to 25 times
Sound isolation ≥25mm. depth:	Seal single sided: Rw 53dB Seal double sided: Rw > 53dB
Service life:	30 years

\*For achieved fire resistance per application, see test report (ETA 22/0709)

#### Handling

Extrude with a standard caulking gun. The sealant can be tooled and smoothed with a pallet knife using water. Tools and stains can be cleaned with water. Cured sealant can only be removed mechanically. Hands and tools can also be cleaned with Bloem PowerScrub wipes.

#### Packaging

Cartridges à 310 ml, 25 cartridges per box.

#### Colour

Dark grey after curing

#### Storage and shelf life

Store in a cool and dry place between +5°C and +25°C. Shelf life is of at least 12 months in original unopened packaging.

#### Safety measures

Keep product out of reach of children. In general, long-term skin contact should be avoided. Prevent contact with food and other consumption products until sealant has vulcanised. After contact with eyes, flush with plenty of water and consult a doctor if necessary. When used according to its intended purpose, the vulcanised product does not pose any risk. See MSDS (safety data sheet) for additional information.

#### Transportation classification

Not applicable; no special measures are required.



### Installation

- Substrates should be clean, free from dust, oil and grease. Loose particles should be removed beforehand.
- Penetration seals should have a minimum of 30mm in between.
- Gaps to be sealed should be at least 10mm wide.
- Mineral wool (min 80kg/m<sup>3</sup>) can be used as a backer.
- In order to accommodate backing material as required the widths around pipes should be 25% of the pipe diameter. If they are too narrow please adjust.
- The required minimum depth according the above table should be filled up completely to the surface.
- As FernoStop is water based some metals may require a barrier between the sealant and the metal surface, in order to prevent corrosion.
- Apply FernoStop sealant generously to prevent any air inclusions. Finish the surface within five minutes with a moist spatula, pallet knife or brush.

### supporting constructions

- Flexible walls** must have a minimum thickness of 100 mm and comprise steel or timber studs\* lined on both faces with minimum 2 layers of 12.5 mm thick boards.
- Rigid walls** must have a minimum thickness of 100 mm and comprise concrete, aerated concrete or masonry, with a minimum density of 650 kg/m<sup>3</sup>.
- Rigid floors** must have a minimum thickness of 150 mm and comprise aerated concrete or concrete with a minimum density of 650 kg/m<sup>3</sup>.
- Timber walls** must have a minimum thickness of 100 mm and comprise solid wood or cross-laminated timber
- Timber floors** must have a minimum thickness of 150 mm and comprise solid wood or cross-laminated timber.
- The supporting construction must be classified in accordance with EN 13501-2 for the required fire resistance period.

\*no part of the penetration seal may be closer than 100 mm to a stud, the cavity must be closed between the penetration seal and the stud, and minimum 100 mm of insulation of class A1 or A2 according to EN 13501-1 must be provided within the cavity between the penetration seal and the stud.

### Limitations

FernoStop should not be used in constantly wet and/or damp areas and/or joints in floors and below the ground. The product is also not to be used for joints with excessive movement and those in direct contact with bituminous substances.

### Pipe end configuration

Different intended uses of pipes can lead to the need for different requirements for the pipe end configuration within a test. During a fire the conditions of the pipe and sealing system which are exposed, depend on whether both or either ends of the pipe are sealed in practice. Within the EN 1366-3 Test standard can be chosen not to cover (or close) the pipe, or to cover the pipe in the furnace, or outside the furnace, or on one or both sides.

For instance EI 60 U/C means the pipe was uncapped inside the furnace, and capped outside the furnace. The pipe end configuration / pipe system relations listed below may be used as a rule of thumb.

Intended use of pipe		Test Condition <sup>4)</sup>
Drainage or sewage pipe, plastic	ventilated drain	U/U <sup>1)</sup>
	Unventilated drain	U/C <sup>1)</sup>
	Drain w/water trap	U/C <sup>1)</sup>
	Not at drainage	C/C <sup>2)</sup>
Rainwater Pipe, Plastic	At drainage	U/U <sup>1)</sup>
	Not at Drainage	C/C <sup>2)</sup>
Pipe in closed circuit (water, gas, air, electricity etc.)		C/C <sup>2) 3)</sup>
Flue gas recovery system pipe, plastic		U/C <sup>1)</sup>
Pipe with open ends and ≥ 50cm length on both sides, plastic		U/U <sup>2)</sup>
Pipe supported by suspension system, metal	Fire rated support	C/U <sup>1)</sup>
	Non-fire rated	U/C <sup>1)</sup>
Waste disposal shaft pipe, metal		U/C <sup>1)</sup>

<sup>1)</sup> Stated in NEN EN 1366-3.

<sup>2)</sup> Bloem Sealants's judgment based on tests.

<sup>3)</sup> Metal pipes should have fire rated support.

<sup>4)</sup> U/U classified fire seals cover C/U, U/C and C/C. C/U classified fire seals cover U/C and C/C. U/C classified fire seals cover C/C.

