

General Product Description

Protecta® FR Board is designed to prevent the spread of fire and smoke through openings in fire rated walls and floors where openings are formed to allow the installation of multiple building services. Protecta® FR Board will also maintain the acoustic design performance in fire rated walls and floors.

Protecta® FR Board consists of a high density stone wool core, over-coated with Protecta® FR Coating. The top coating provides additional protection by significantly reducing the permeability of the stone wool core and prevents the passage of hot gases, thus reducing the temperature rise on the unexposed side and reducing heat conduction through the building services.

Protecta® FR Board is available with top coating on one or two sides, selected on the basis of installation considerations and fire resistance. On site, Protecta® FR Board must be used together with Protecta® FR Acrylic for sealing around building services and the surrounding construction.

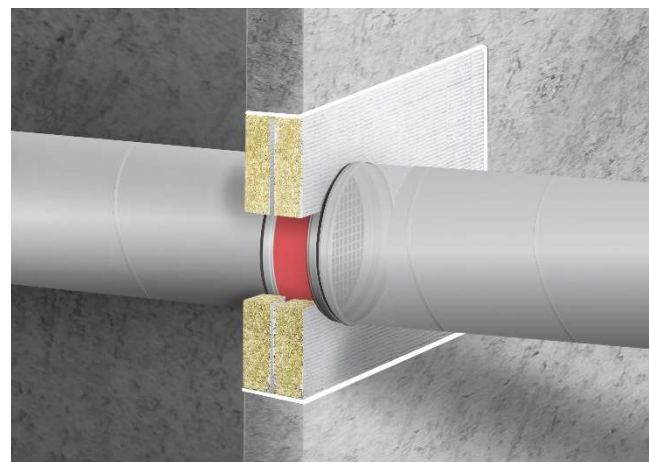
Properties & Precautions

- Classified for all types of constructions with or without building service penetrations
- Simple and very quick to install
- Resists UV, humidity and frost (once cured)
- Easy to retrofit additional building services after installation
- Permanently flexible - will accommodate movements during fire and movements in the construction it has been fitted within
- Suitable for most surfaces, including concrete, bricks, masonry, steel, wood, gypsum, glass, plastic and most non-porous surfaces. Should not be used in direct contact with bituminous materials
- May be used in unlimited lengths in walls with heights up to 1200 mm and in floors with widths up to 800 mm.
- May be installed in drywalls with or without framing around the opening
- Halogen free with added fungicides
- Protecta® FR Board can be supplied with a smooth surface
- Precautions are required to be taken to prevent a person stepping onto a blank horizontal penetration seal

Sound Insulation

| Description | Sound reduction |
|---|-----------------|
| Single 50 or 60mm FR Board 2-S as linear seal ≤ 120mm wide | Rw 55 dB |
| Single 50 or 60mm FR Board 2-S as large seal | Rw 29 dB |
| Double 50 or 60mm FR Board 1-S or 2-S as large seal | Rw 52 dB |
| 50 or 60mm FR Board 1-S or 2-S with 50mm cavity, large seal | Rw 53 dB |

Protecta® FR Board has been tested at Warringtonfire Testing and Certification Ltd (UKAS accredited); according to EN ISO 10140-2:2010.



Emission Data (indoor air quality)

| Compound | Emission rate after 4 weeks |
|-------------------------|-----------------------------|
| TVOC | 0.20 mg/m ² h |
| Formaldehyde | n.d. |
| Ammonia | n.d. |
| Carcinogenic | n.d. |
| n.d. means not detected | |

| Regulation or Protocol | Conclusion |
|--------------------------------------|------------|
| French VOC Regulation | A+ |
| French CMR components | Pass |
| Italian CAM | Pass |
| ABG / AgBB to the guidelines of DIBt | Pass |
| Belgian Regulation | Pass |
| Indoor Air Comfort® | Pass |
| EU Decopaint Directive | Compliant |
| M1 | Pass |
| BREEAM-NOR | Compliant |
| LEED v4 | Compliant |

Protecta® FR Board has been tested by Eurofins Product Testing; reports available upon request.

Air Permeability

| Positive Pressure (Pa) | Leakage (m ³ /h) | Negative Pressure (Pa) | Leakage (m ³ /h) |
|------------------------|-----------------------------|------------------------|-----------------------------|
| 25 | 0.00 | 25 | 0.00 |
| 50 | 0.01 | 50 | 0.01 |
| 100 | 0.03 | 100 | 0.02 |
| 200 | 0.08 | 200 | 0.04 |
| 300 | 0.20 | 300 | 0.11 |
| 450 | 0.63 | 450 | 0.49 |
| 600 | 1.01 | 600 | 0.95 |

Protecta® FR Board has been tested at Warringtonfire Testing and Certification Ltd (UKAS accredited); according to EN 1026: 2016.

Resistance to Fire

| Construction | Description | Classification |
|---|---|----------------|
| Flexible walls comprise gypsum, masonry, aerated concrete or concrete | Unlimited width by 1200mm high seal with double 50mm Protecta FR Board 1-S | EI 120 (E 120) |
| Timber walls comprise solid wood or cross-laminated timber | Up to 1200mm wide by 600mm high aperture with double 50mm Protecta FR Board 1-S as pattress | EI 120 (E 120) |
| Rigid walls comprise masonry, aerated concrete or concrete, within walls or between the head of walls and the soffit of floor slabs | Unlimited width by 1200mm high seal with single 60mm Protecta FR Board 2-S | EI 90 (E 240) |
| | Unlimited width by 1200mm high seal with double 60mm Protecta FR Board 2-S | EI 180 (E 240) |
| | Up to 1200 by 1200mm seal with double 60mm Protecta FR Board 2-S | EI 240 (E 240) |
| Rigid floors comprise aerated concrete or concrete within floors or between floors and walls | Up to 1200 by 600mm seal with single 60mm Protecta FR Board 2-S | EI 120 (E 240) |
| | Up to 2400 by 1200mm seal with single 60mm Protecta FR Board 2-S | EI 90 (E 120) |
| | Up to 1200 by 600mm seal with double 60mm Protecta FR Board 2-S | EI 180 (E 240) |
| | Up to 2400 by 1200mm seal with double 60mm Protecta FR Board 2-S | EI 120 (E 180) |
| Timber floors comprise solid wood or cross-laminated timber | Up to 1200 by 600mm aperture with double 50mm Protecta FR Board 1-S as pattress | EI 90 (E 90) |

NB. The classifications are limited to the service penetrations. Please read the Installation Instructions before usage.

Additional Aperture Sizes in Floors

Under EN 1366-3 rules, results from tests in floors with a penetration seal length of minimum 1m apply to any length as long as perimeter length to seal area ratio is not smaller than that of the test specimen.

The following aperture sizes are therefore allowed where 2400 x 1200 mm is described in this data sheet and in the installation instructions:

| Maximum Aperture Sizes within Floors or between Floors and Walls |
|--|
| 1200 mm width x 2400 mm length (tested) |
| 1100 mm width x 2900 mm length |
| 1000 mm width x 4000 mm length |
| 900 mm width x 7000 mm length |
| ≤ 800 mm width x ∞ (infinite) length |

The following aperture sizes are also allowed where 1200 x 600 mm is described in this data sheet and in the installation instructions:

| Maximum Aperture Sizes within Floors or between Floors and Walls |
|--|
| 600 mm width x 1200 mm length (tested) |
| 500 mm width x 2000 mm length |
| ≤ 400 mm width x ∞ (infinite) length |

Pipe end configurations

When testing pipes, one can choose not to cap (or close) the pipe, or cap the pipe inside the furnace, or outside the furnace, or on both sides. The configuration chosen depends on the intended application of the pipe and/or the installation environment.

The code defining if a pipe is capped is stated after the fire classification. For instance EI 60 C/U which means the pipe was capped inside the furnace, and uncapped outside the furnace. The test configuration defines the approvals possible. Our engineering judgment based on EN 1366-3:2009 are:

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

¹⁾ Suggested in EN 1366-3:2009. ²⁾ Polyseam's judgment based on tests.

³⁾ Metal pipes should have fire rated support. ⁴⁾ 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.

Analysis of cPVC Pipes e.g. BlazeMaster

Protecta® FR Acrylic, as part of the FR Board system, has been tested for chemical resistance of a sealant when applied to a cPVC pipe. The sealant does not affect cPVC pipes; the tests showed no difference between the control and exposed results at Yield. Analysed using Fourier Transform Infrared (FTIR) Spectroscopy; examination of the sealant contact regions of the cPVC pipe after removal of the sealant showed no evidence of visible discolouration or changes at the pipe surface.

Technical Data

| | |
|--------------------|---|
| Density | Board: 160 kg/m ³ (150 – 170 kg/m ³) Coating: 1.3 – 1.4 kg/ltr |
| Durability | Y ₁ - Intended for use at temperatures below 0°C with exposure to UV and humidity but no exposure to rain. Includes lower classes Y ₂ , Z ₁ and Z ₂ . |
| Non-sticky | Max. 75 minutes (sealant) |
| Film forming | Max. 25 minutes (sealant) |
| Totally hardened | 3 to 5 days depending on thickness and temperature |
| Reaction to fire | Class D-s1, d0 |
| Flexibility | Medium, 12.5% |
| Thermal conduct. | 0.038 W/mK |
| Storage | May be stored for a long period of time. To be stored in temperatures between 5°C and 30°C |
| Limitations | If the boards are to be used in permanently humid areas Protecta® FR Coating should be applied over the sealant |
| Temperature range | -30°C to +80°C (when hardened) |
| Installation temp. | +5°C to +50°C |
| Working life | Minimum 25 years if conditions are met |
| Colour | White surface, green core FR Acrylic: NCS 1202 – Y26R, RAL 9002 |
| Packaging | FR Board 50x600x1200 mm: 80 pcs per pallet FR Board 60x600x1200mm: 72 pcs per pallet |