



# FIRESURE® FR BOARD SLAB/BATT TECHNICAL DATA SHEET

## GENERAL PRODUCT DESCRIPTION

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

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

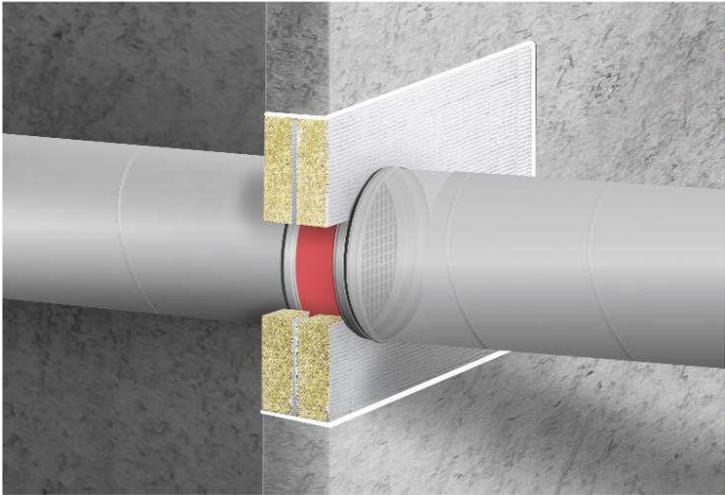
Firesure® FR Board is available coated on one or two sides, selection based on installation considerations and fire resistance. On site Firesure® FR Board must be used with together with Firesure® FR Acrylic for sealing around building services and the surrounding construction.

## PROPERTIES & PRECAUTIONS

- Classified for all types of constructions with or without building service penetrations
- Simple and very quick to install
- Resist 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 1200mm and in floors with widths up to 800mm.
- Halogen free with added fungicides
- Firesure® 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 ≥ 1200mm 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 as large seal	Rw 52 dB
50 or 60mm FR Board 1-S with 50mm cavity, large seal	Rw 53 dB



## EMISSION DATA (indoor air quality)

Compound	Emission rate after 4 weeks
TVOC	< 20 mg/m <sup>3</sup> 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
Belgium Regulation	Pass
Indoor Air Comfort®	Pass
EU Decopaint Directive	Compliant
M1	Pass
BREEAM-NOR	Pass
LEED v4.1	Compliant

Firesure® FR Board has been tested by Eurofins Product Testing;

## AIR PERMEABILITY

Positive Pressure (Pa)	Leakage (m <sup>3</sup> /h)	Negative Pressure (Pa)	Leakage (m <sup>3</sup> /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

Firesure® 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 Firesure® 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 Firesure® FR Board 1-S as pattress	EI 120 (E 120)
Rigid walls comprise 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 Firesure® FR Board 2-S	EI 90 (E 240)
	Unlimited width by 1200mm high seal with double 60mm Firesure® FR Board 2-S	EI 180 (E 240)
	Up to 1200 by 1200mm seal with double 60mm Firesure® 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 Firesure® FR Board 2-S	EI 120 (E 240)
	Up to 2400 by 1200mm seal with single 60mm Firesure® FR Board 2-S	EI 90 (E 120)
	Up to 1200 by 600mm seal with double 60mm Firesure® FR Board 2-S	EI 180 (E 240)
	Up to 2400 by 1200mm seal with double 60mm Firesure® 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 Firesure® FR Board 1-S	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 ration is not smaller than that of the test specimen.

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

Maximum Apertures Sizes Within Floors Or Between Floors And Walls
1200mm width x 2400mm length (tested)
1100mm width x 2900mm Length
1000mm width x 4000 mm length
900mm width x 7000mm length
≥ 800mm 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
600mm width x 1200mm length (tested)
500mm width x 2000mm length
≥ 400mm 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 classification. For instance EI 60 C/U which the pipe was capped inside the furnace, and uncapped outside the furnace. The test configuration defines the approvals possible. Our engineering judgement based on EN 1366-3:2009 are:

Intended Use of pipe	Pipe end condition 4)	
Rainwater pipe plastic	At drainage	U/U <sup>1)</sup>
	Not at drainage	C/C <sup>2)</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>
Pipe in closed circuit (water, gas, air, electricity etc.)	C/C <sup>2)</sup> <sup>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>Suggested in EN 1366-3:2009. <sup>2)</sup>Firesure's judgement 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 seals cover U/C and C/C. U/C classified fire seals cover C/C.

## Analysis of cPVC Pipes e.g. BlazeMaster

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.

Firesure® FR Acrylic as part of the Firesure® 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.

## Technical Details

Density	Board: 160 kg/m <sup>3</sup> (150-170kg/m <sup>3</sup> ) Coating: 1.3-1.4 kg/ltr
Durability	Y <sub>1</sub> – Intended for use at temperatures below 0°C with exposure to UV and humidity but no exposure to rain. Includes lower classes Y <sub>2</sub> , Z <sub>1</sub> and Z <sub>2</sub> .
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 Firesure® 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 50x600x1200mm: 80 per pallet FR Board 60x600x1200mm: 72 per pallet

As part of our policy of on-going product development and testing, we reserve the right to modify, alter or change product specifications without giving notice. All information contained in this document is given in good faith and for guidance only. All drawings are for illustrative purposes only.