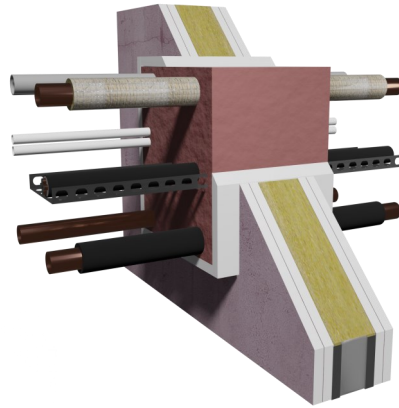


# PyroSeal 2K

## Expanding Sealant System



### General description

PyroSeal2K Expanding Sealer is a 2-component polyurethane sealant system, manufactured with halogen-free intumescent fire retardants. On application the two components are mixed through a screw nozzle resulting in a reaction which causes the product to expand and swell around penetrating services.

### Packaging

- 380ml Cartridge

### Application and use

- To reinstate fire resistance through walls and floors
- Prevention of air leakage
- Maintains Acoustic performance
- Assumed working life 10 years

### Product Details

Product Details	
Material	2-component polyurethane sealant system
Weight	-1.61g/cm <sup>3</sup>
Finish / Colour	Red/Brown
Chemical properties/ COSHH statment	See SDS latest version is available at <a href="http://www.fsiltd.com">www.fsiltd.com</a> or available on request from <a href="mailto:technical.fsi.uk@etexgroup.com">technical.fsi.uk@etexgroup.com</a>
Size/dimensions (product & installation spacial requirement)	Please Contact the technical department for further product application queries from <a href="mailto:technical.fsi.uk@etexgroup.com">technical.fsi.uk@etexgroup.com</a>
Shelf life	12 Months
Foaming Factor	1.6-4.5x
Foam Yield	Up to 2.1 Litres
Foaming Set Time	After approx. 50 seconds (at 22 °C material temperature and ambient temperature)
Foaming Set Time For Cutting	After approx. 90 seconds (at 22 °C material temperature and ambient temperature)
Classification of the fire protection behaviour in accordance with DIN EN 13501-1:	Class E

## Product Details

Air permeability:	<p><math>Q_{600} \leq 0.08 \text{ m}^3/(\text{h}\cdot\text{m}^2)</math>(no air permeability was measurable at a differential pressure of 600 Pa and a measurement accuracy of <math>0.01 \text{ m}^3/\text{h}</math>) Test standard: EN 1026(test specimen dimensions 350 x 350 x 200 [mm], tested without penetrating elements)</p> <p><math>Q_{50} = 0.39 \text{ m}^3/(\text{h}\cdot\text{m}^2) / Q_{600} = 4.09 \text{ m}^3/(\text{h}\cdot\text{m}^2)</math> Test standard: EN 1026(test specimen dimensions 360 x 360 x 144 [mm], tested without penetrating elements)</p>
Resistance to static differential pressure:	<p><math>P_{\text{max}} = 10000 \text{ Pa}</math> Test standard: In accordance with EN 12211 (test specimen dimensions 350 x 350 x 200 [mm], tested without penetrating elements)</p> <p><math>P_{\text{max}} = 8800 \text{ Pa}</math> Test standard: In accordance with EN 12211 (test specimen dimensions 360 x 360 x 144 [mm], tested without penetrating elements)</p>
Thermal Conductivity	Thermal conductivity: $\lambda = 0.088 \text{ W}/(\text{m}\cdot\text{K})$ $R = 0.279 \text{ m}^2\cdot\text{K}/\text{W}$ Test standard: DIN EN 12667
Airborne sound insulation:	<p><math>D_{n,e,w}(C;Ctr) = 62 (-1; -5) \text{ dB}</math> <math>R_w(C;Ctr) = 43 (-1; -5) \text{ dB}</math> Test standard: EN ISO 717-1 (test specimen dimensions 350 x 350 x 144 [mm], tested without penetrating elements)</p> <p><math>D_{n,e,w}(C;Ctr) = 66 (-1; -6) \text{ dB}</math> <math>R_w(C;Ctr) = 47 (-1; -6) \text{ dB}</math> Test standard: EN ISO 717-1 (test specimen dimensions 360 x 360 x 200 [mm], tested without penetrating elements)</p>
Surface resistance:	<p><math>R_0 = 1.25 \times 10^9</math></p> <p>Test standards: DIN EN 60079-0 (VDE 0170-1):2013-04 Section 7.4 including application of note 2 of Section 7.4.2, IEC 60079-0:2011 and modified + Cor.:2012, EN 60079-0:2012, EN 80079-36 and TRGS 727:2016-07-29</p>
VOC emission class:	A+ in accordance with French decree no. 2011-321 Test standards: ISO 16000-3, ISO 16000-6, ISO 16000-9, ISO 16000-11, ISO 16017-1
Permissible ambient conditions	Use category Z1 Fire-retardant sealing products for use in indoor areas with all moisture levels at temperatures $\geq 0 \text{ }^\circ\text{C}$ . Occasional, brief spray water stress does not pose a problem. Overall, continuous wet conditions as well as standing water and pressing water must be avoided
Influence of coating materials and chemicals:	The following paints and occasional, brief influence of chemicals do not cause any change in the technical fire protection properties: Coating materials: Dispersion paint, alkyd resin paint, polyurethane acrylic lacquer, epoxy resin lacquer Solvent/oil: Trichloroethylene, xylene, acetone, white spirit, butyl acetate, butanol, domestic fuel oil Gaseous chemicals: Brief storage over concentrated ammonia solution Comment: Environmental conditions with high humidity levels and/or some coating materials and chemicals can cause minor lightening of the colour
Contact with metals and plastics:	The surface consistency of aluminium, stainless steel, galvanised steel and plastics made of polyethylene and polyvinyl chloride is not affected in a negative way upon contact with Fire Protection Foam PyroSeal2k.

## Product Certification / Approvals

Approval	Reference number
CE Mark	ETA-18-0897
ISO 9001	11378

## Memberships

ASFP
BASA
BCF
FIS

## Testing / Classification

Standard	Description	Result
BS EN 1366-3:2009	Fire resistance tests for service installations. Penetration seals	Contact technical.fsi.uk@etexgroup.com
BS 476 : Parts 20 and 22	Fire tests on building materials and structures. Method for determination of the fire resistance of non-loadbearing elements of construction	Contact technical.fsi.uk@etexgroup.com
BS EN 1026:2000	Windows and doors. Air permeability. Test method	Contact technical.fsi.uk@etexgroup.com
ASTM E84	Standard Test Method for Surface Burning Characteristics of Building Materials	Contact technical.fsi.uk@etexgroup.com
ASTM E2923:14	Longevity of Fire Stop Materials	10 years
BS EN 13501-2:2016	Fire classification of construction products and building elements	Contact technical.fsi.uk@etexgroup.com
LEED 4.1	NC-2009 IEQc4.1 Low-Emitting Materials—Adhesives and Sealants	Contact technical.fsi.uk@etexgroup.com
BS EN ISO 10140-2:2020	Laboratory measurement of sound insulation of building elements. Measurement of airborne sound insulation	Contact technical.fsi.uk@etexgroup.com
AS1530.4:2014	Methods for fire tests on building materials, components and structures Fire-resistance tests for elements of construction	Contact technical.fsi.uk@etexgroup.com
BS EN 13501-1	Fire classification of construction products and building elements. Classification using data from reaction to fire tests	Contact technical.fsi.uk@etexgroup.com

## Installation & Operation

FSi Ltd. recommend installation of FSi Ltd. products is carried out by 3rd party certified installers.

Adequate space and accessibility should be provided for cutting and shaping the batts, applying and tooling the sealant.

The substrate must be clean, dry, sound and homogeneous, free from oils, grease, dust and loose particles. The product does not require a primer on most common surfaces.

Simple tools and equipment are required:

Tape measure

Cartridge gun - 380ml

Marker or pencil

Straight edge

Masking tape

Pallet knife or pointing trowel

## Installation & Operation

If the mixing nozzle is clogged, never use force to press out the material, force can destroy the cartridge or the dispensing gun. Wear suitable protective gloves, safety glasses and protective clothing for the work.

1. Clean the aperture or opening. Cardboard, plastic sheet or duct tape can be used as form work, and it can remain on the surface.
2. Hold the cartridge vertically with the cap pointing upward, unscrew the cap and firmly screw on the provided mixing nozzle.
3. Insert the cartridge into the intended dispensing gun.
4. Start pressing out and discard non-mixed initial material.
5. Fill the opening from back to front. In this process build up the foam from bottom to top, always guide the tip of the mixing nozzle

above the foam so that the material does not stick or clog. After a work interruption longer than approximately 50 seconds the foam hardens in the mixing nozzle, which then must be replaced. Prior to changing the mixing nozzle, offload the dispensing gun, and carefully replace the mixing nozzle.

6. After approx. 2 minutes projecting foam residues can be cut off with a suitable knife in compliance with the necessary protective measures and safety regulations.

7. Cables or pipes that will be installed retroactively can be routed through the existing foam. Refill gaps due to removed cables or pipes with PyroSeal 2k.

8. Large free areas can be filled with PyroSeal Bricks.

## Processing of PyroSeal Brick

1. Areas that are not penetrated by cables, cable support systems, conduits or pipes can be sealed with PyroSeal Brick.

2. The PyroSeal Brick must be installed in such a manner that the minimum seal thickness is maintained.

3. Remove the protective foil of the PyroSeal Brick and install them in layers (like in a brick wall, i.e., layer-by-layer offset of the vertical butt joints) so that they fit tightly in the opening.

Clean all tools and application equipment with water immediately after use.

Competence records should be kept for all individuals installing this product (s). Installations should be suitably recorded and logged.

## Maintenance

Recorded inspection should be conducted in line with the maintenance and inspection schedule defined for the building/project. These inspections should be completed and recorded by suitably competent individuals at intervals outlined in the operation and maintenance manual relevant to the building.

Ensure Safe Access and Egress when carrying out maintenance or inspection

Where product (s) is damaged or tampered, new product should be installed in line with installation guidance.

## Handling & Storage

For unopened material, store in a well-ventilated, dry, cool environment. Recommended temp ranges +5°C - +30°C. Protect against exposure to direct sunlight. Always ensure that safe manual handling procedures are followed at all times.

## Disposal

Removal and disposal must be done in a way that limits, as much as possible, the formation of dust. Adequate PPE must be worn including suitable respiratory equipment in the case of insufficient ventilation.

Dispose of waste according to applicable legislation. Handle contaminated packages in the same way as the substance itself. Non-contaminated packages may be recycled.

Please see SDS for further information.

## Warranty

FSi Ltd. products are manufactured to rigid standards of quality. Any product which has been applied in accordance with FSi Ltd.'s written instructions and in any application recommended by FSi Ltd., but which is proved to be defective in product quality, will be replaced free of charge. No liability can be accepted for the information provided in this document although it is published in good faith and believed to be correct at time of issue. Any drawings provided are for illustrative purposes only. FSi Ltd. reserves the right to alter product specifications without prior notice, in line with our Company policy of continuous development and improvement. Changes due to new findings are possible, errors and misprints are not excluded. No liability whatsoever will be accepted for any loss, damage or injury arising from the use of the information given. FSi Ltd. have no control over the methods of installation, competence of operatives or suitability of site conditions, no warranties, expressed or implied, are intended to be given as to the actual performance of the product/system mentioned within this document.