Fire Door Intumescent Acrylic Sealant

Installation Guide

Fire & Acoustic Seals

Contents

Introduction

Unprotected cavities around fire door frames, partitions, and cladding can be easily exploited by fire, and if not sealed or protected correctly, can undermine their fire performance.

Fire and Acoustic Seals Fire Door Intumescent Acrylic Sealant is a halogen free, polymer emulsion-based sealant that swells to form a fire and smoke seal when exposed to temperatures above 125º.

It has been extensively tested to 30-120 minutes fire resistance depending on application in accordance with BS 476: Pts 20&22:1987 and BS EN 1634-1: 2014. It is also Certifire approved – CF5840.

It will perform without backing below 5mm and up to 25mm with suitable fire-rated backing - see application tables for more details on page 3.

STEP 3	VIEW OUR 60-MINUTE FIRE-RATED INTUMESCENT SEALANT INSTALLATION VIDEO.

APPLY FIRE AND ACOUSTIC SEALS INTUMESCENT ACRYLIC SEALANT

Add a minimum of 10mm sealant to achieve fire-ratings up to 60 minutes

Scan to view

MORE INFORMATION PAGE 6

STEP 3	VIEW OUR INTUMESCENT SEALANT & FIRE DOOR FOAM™ INSTALLATION VIDEO TO INCREASE FIRE RATINGS TO 120 MINUTES.

APPLY FIRE AND ACOUSTIC SEALS INTUMESCENT ACRYLIC SEALANT

For fire-ratings of up to 120 minutes use with Fire & Acoustic Seals Fire Door Foam™

Scan to view

MORE INFORMATION PAGE 6

Product Application

- Cavity gap filling and perimeter pointing between walls and timber frames of fire-rated doors, screens, partitions, and cladding. It will seal joints of up to 35mm without slumping.

- Fire-stopping sealant providing 30-60 minutes fire resistance for 5mm gaps or below without backing, and 30-120 minutes fire resistance for gaps up to 25mm with Fire and Acoustic Seals Fire Door Foam™ or stone mineral fibre wool.

Please follow the detailed guidance to achieve the appropriate fire specification. Architrave is optional.

FD30, FD60, FD90 & FD120

Fire Rating	Wall Depth	Door Frame Substrate	Wall / Partition Substrate	Minimum Seal Depth	Maximum Joint Width	Backing Material	
FD30	Wall installations **minimum 78mm thick with FD30 doorsets** (architraves optional)	Softwood	Masonry	**10mm sealant both faces**	25mm	**Min 78mm** Fire & Acoustic Seals 'Fire Door Foam' or Stone Mineral Wool Insulation	**Joint widths up to 5mm do not require any backing material**
			Timber Stud				
			Steel Stud				
		MDF	Masonry				
			Timber Stud				
			Steel Stud				
		Hardwood (not Beech Fagus sylvatica)	Masonry				
			Timber Stud				
			Steel Stud				
FD60	Wall installations **minimum 119mm thick with FD60 doorsets** (architraves optional)	Hardwood (not Beech – Fagus sylvatica)	Masonry	**10mm sealant both faces**	25mm	**Min 99mm** Fire & Acoustic Seals 'Fire Door Foam' or Stone Mineral Wool Insulation	
			Timber Stud				
			Steel Stud				
FD90	Wall installations **minimum 130mm thick with FD90 doorsets** (architraves optional)	Hardwood (not Beech – Fagus sylvatica)	Masonry	**10mm sealant both faces**	25mm	**Min 110mm** Fire & Acoustic Seals 'Fire Door Foam' or Stone Mineral Wool Insulation	
			Timber Stud				
			Steel Stud				
FD120	Wall installations **minimum 130mm thick with FD120 doorsets** (architraves optional)	Hardwood (not Beech – Fagus sylvatica)	Masonry	**10mm sealant both faces**	25mm	**Min 110mm** Fire & Acoustic Seals 'Fire Door Foam' or Stone Mineral Wool Insulation	
			Timber Stud				
			Steel Stud				

Testing Standards

Building Regulations

There are several regulations that relate to fire doors in England which include:

- **Approved Document B** – Fire Safety Volume 1 and 2
- **Regulation 7** – Materials and workmanship
- **Approved Document E** – Resistance to sound
- **Approved Document M** – Access and use of buildings
- **Regulation 38** – the handover of fire safety information which will assist the responsible person to operate and maintain the building or extension with reasonable safety.

There are other equivalent documents in Wales and Scotland.

British Standards

Timber based fire door assemblies **BS 8214:2016** is the code of practice that is referenced in most fire door certification. This code of practice provides further installation relating to different wall types, linear gap seals, and installation scenarios. This standard is only applicable to door assemblies that are designed to provide fire resistance ratings of up to and including 2 hours when tested in accordance with **BS 476: Pt 20&22:1987** or **BS EN 1634-1**.

BS 476:Part 20:1987 – Fire tests on building materials and structures – Part 20: Method for determination of the fire resistance of loadbearing elements of construction.

BS 476:Part 22:1987 – Fire tests on building materials and structures – Part 22: Method for determination of the fire resistance of non-loadbearing elements of construction.

BS EN 1634-1 – Fire resistance and smoke control tests for door and shutter assemblies, operable windows, and elements of building hardware – Part 3: Smoke control test for door and shutter assemblies.

Door and Glazed Screen Testing

Timber-based fire resisting door assemblies and glazed screens must have suitable fire resistance evidence or have been assessed for fire resistance integrity in accordance with BS 476:Part 22:1987 and BS EN 1634-1:2014 + A1:2018 for 30, 60, 90 or 120 minutes as applicable.

They must also have relevant fire-resistant test evidence covering their installation within the supporting constructions and door frame material under BS 476:Part 20:1987.

The FAS Fire Door Intumescent Acrylic Sealant and Fire Door Foam™ (to achieve 90-120 minutes) have been extensively tested and certified to meet these standards when installed correctly. See the installation section for more details.

Test Data Information

| Fire Rating	Test Standard	Report Reference	Certification Body
4 hours	BS EN 1366-3: 2004 + BS EN 1366-4 2006	WF166576	WarringtonFire
FD30	BS 476: Part 20/22: 1987	WF405307	Exova BM Trada
FD30	BS 476: Part 20/22: 1987	WF413375	WarringtonFire
FD120	BS EN 1634-1 2014 + A1: 2018	CFR1911291	Cambridge Fire Research
FD60	BS EN 1634-1 2014 + A1: 2018	WF429152	WarringtonFire
55Db-Rw	BS EN ISO 10140-2: 2010	2612-76	University of Salford
N/A	Certifire Certificate	CF5840	WarringtonFire

Installation

To maintain the fire resistance of fire-resisting walls or partitions when fitted with a door/screen assembly the junction between them needs to be adequately sealed.

Fitting new fire doors into existing frames could be an issue if the existing frame is not fit for purpose or compatible with the certification of the new fire door. There are various checks you should do in this situation. Refer to the BWF Fire Door Alliance Installation Guide for more information – **www.bwf.org.uk**

Frame Installation

- Set the frame centrally within the opening making sure it's square and level.

- Use packers to keep the frame square.

- Use suitable fixings which should penetrate at least 50mm into the wall from the frame (excluding any fitting gap) in accordance with BS8214:2016.

- Fixings should be located 100mm from the top and bottom of each frame leg with five fixings on each side.

- FAS Fire Door Intumescent Acrylic Sealant and Fire Door Foam™ have been specifically tested with plastic packers and standard screw fixings. Timber and MDF packers may also be used where required.
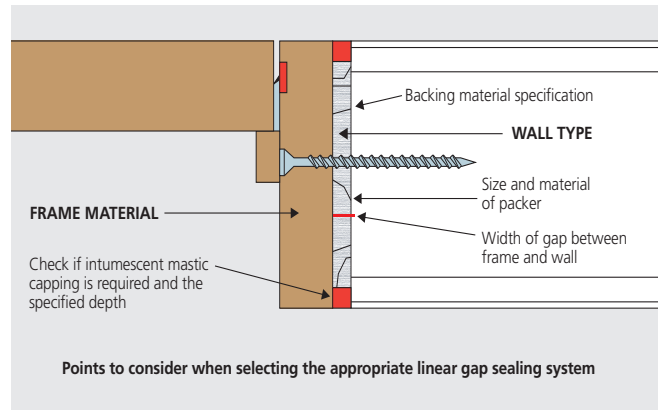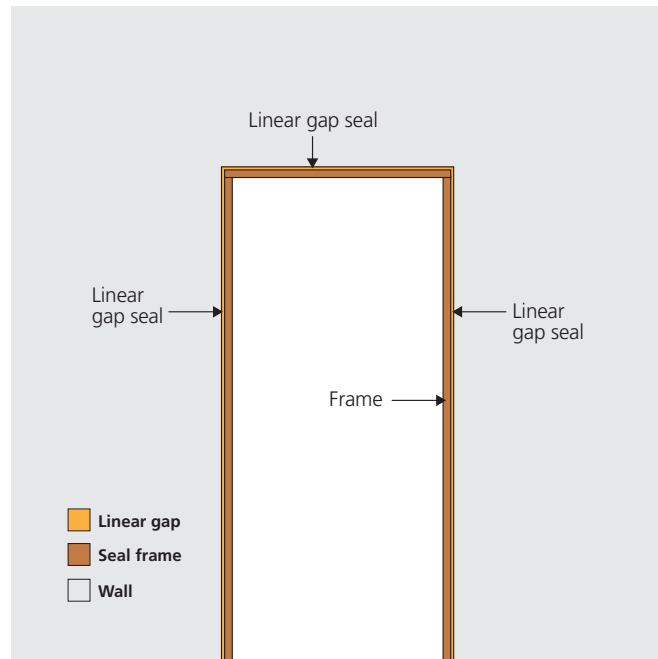
Linear Gap Seal

The linear gap seal refers to the method and materials used to fill any gap between the back face of the frame and the wall. This can be one of the weakest points for fire performance if not filled correctly. FAS Fire Door Intumescent Acrylic Sealant and Fire Door Foam™ are approved sealing products that will protect the frame and surrounding structure when installed correctly.

Checklist

The fire performance varies depending on the following factors:

✔ The fire resistance of the installation – FD30, FD60, FD90 and FD120.

✔ The wall construction material and the frame material.

✔ The gap between the back face of the frame and the wall. If the gap exceeds the recommended width you risk inferior performance and invalidation of certification.

Refer to the detailed guidance in the tables on page 3 to achieve the required fire performance.

Backing material specification
WALL TYPE
Size and material of packer
Width of gap between frame and wall
FRAME MATERIAL
Check if intumescent mastic capping is required and the specified depth

Points to consider when selecting the appropriate linear gap sealing system

Linear gap seal
Linear gap seal
Linear gap seal
Frame

☐ Linear gap
☐ Seal frame
☐ Wall

Installation of Fire Door Intumescent Acrylic Sealant

FD30 – FD120

1. For good adhesion, the surfaces of the building element should be firm, clean, and free from any dust or loose particles. Degrease non-porous surfaces and seal porous surfaces with a suitable primer.

2. Optimum application temperature +10˚C>+30˚C (+20˚C ideal). Do not use in joints where movement exceeds +/- 12.5% of joint width.

3. Ensure the surrounding area is protected, particularly if using the sealant in retrofit applications to protect any damage to decoration or furnishings.

4. Attach the adapter or gun to the cartridge or foil sausage.

5. Joint widths below 5mm don't require any backing material. **Refer to image A.**

   For joint widths up to 25mm add the following Fire & Acoustic Seals Fire Door Foam™ or a stone mineral fibre wool backing **Refer to image B:**

   FD30 - minimum of 78mm

   FD60 - minimum of 99mm

   FD90 - minimum of 110mm

   FD120 - minimum of 130mm

   Please note that FAS Fire Door Intumescent Sealant and Fire Door Foam™ have been rigorously tested together within FD30-FD120 fire doors to ensure optimum compliance and performance.

6. Add a minimum of 10mm sealant to both faces.

7. Fill the gap slowly building up layers to completely fill the void.

8. Smooth off with a wet spatula and remove any masking tape within 10 minutes of application.

9. Allow the sealant to dry which will take 15 minutes to 1 hour depending on the room temperature.

10. Add paint or architrave to achieve the fire-performance and to complete the look once the installation has been signed off on site.

Image A – FAS Fire Door Intumescent sealant for joint widths up to 5mm require no backing.

Image B – FAS Fire Door Intumescent Acrylic Sealant with Fire Door Foam™ for joint widths up to 25mm to achieve ratings of up to 120 minutes when applied correctly.

Pre-Installation Checklist

✔ Assess the fire rating performance required.

✔ Ensure the wall and frame are suitable materials and sizes to meet the fire rating.

✔ Check the frame depth and maximum gap width to achieve the fire rating.

✔ Ensure the frame is centrally fitted in the wall opening to ensure the equal gap is maintained on both sides of the frame and the wall.

✔ Make the same checks on the gaps between the head of the frame and the wall construction above.

✔ Place packers to brace the fixing.

Post Installation Checklist

✔ There are no gaps in the linear seal once filled and there is full sealing around the entire perimeter.

✔ The cavity has been capped by the minimum amount of FAS Fire Door Intumescent Acrylic Sealant as shown on page 3 and smoothed off with a wet spatula.

✔ Take photos of the firestopping installation before adding the architrave.

✔ The job has been signed off by the contractor.

Storage & Disposal

✔ Cartridges or foil sausages should not be left in an over-heated environment, in temperatures above +50˚C or exposed to direct sunlight.

✔ Empty cartridges or foils should be disposed of appropriately in line with local regulations.

Frequently Asked Questions

Q: What fire rating does Fire Door Intumescent Acrylic Sealant offer?
A: Intumescent sealant has been fire tested from 30 to up to 120 minutes (BS476 Pt 20&22: 1987 & BS EN1634-1) in timber and timber glazed screens.

Q: What is the minimum and maximum gaps Fire Door Intumescent Acrylic Sealant can be used in?
A: This can be used to fill widths up to 5mm without backing and a maximum tested gap to 25mm if used with Fire and Acoustic Seals Fire Door Foam™ or a stone mineral fibre wool.

Q: Do you have to install Fire Door Intumescent Acrylic Sealant with specialist packers or fixings?
A: No, Fire Door Intumescent Acrylic Sealant and Fire Door Foam™ have been specifically tested with plastic packers and standard screw fixings. Timber and MDF packers may also be used where required.

Q: Can I add architraves over Fire Door Intumescent Acrylic Sealant?
A: Architraves are optional, Fire Door Intumescent Acrylic Sealant has been tested with and without.

Q: Does Fire Door Intumescent Acrylic Sealant have a shelf life?
A: Fire Door Intumescent Acrylic Sealant has an 18-month shelf life whilst stored unopened in temperate conditions (5°C > 30°C).

Q: Where can I find technical and health & safety information?
A: All relevant information can be downloaded on our website: **www.fireandacousticseals.co.uk**

Q: How much will a 310ml cartridge or 600ml foil sausage seal?
A: 310ml cartridge will produce approximately 1m using a 20mm x 15mm bead.
600ml foil sausage will produce approximately 1.8m using a 20mm x 15mm bead.

Q: Does Fire Door Intumescent Acrylic Sealant have an acoustic rating?
A: Yes, Fire Door Intumescent Acrylic Sealant has sound reduction capabilities of up to 55dB Rw.

Q: Can I use Fire Door Intumescent Acrylic Sealant when doorsets are required to have smoke control.
A: Yes, Fire Door Intumescent Acrylic Sealant has smoke leakage evidence to BS EN 1634-3: 2004.

Q: Why use Fire Door Foam™ instead of stone mineral fibre wool as backing for Fire Door Intumescent Acrylic Sealant?
A: Fire Door Foam™ installation saves time and money against traditional mineral fibre wool methods.

References & Support

FAS Fire Door Intumescent Acrylic Sealant and Fire Door Foam™ are independently tested, and third party certified to meet BS 476:Part 20&22:1987 and BS EN 1634-1.

Certification Schemes

Testing Bodies

Tested to Certifire standards

Industry Partners

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