Fire Door Foam™

Installation Guide

Fire & Acoustic Seals

Contents

Introduction

Buildings are compartmentalised to delay the spread of fire from one area to another. These compartments are usually linked by fire doors and fire-rated screens to allow access to protected escape routes such as corridors, lobbies, stairways, and shafts.

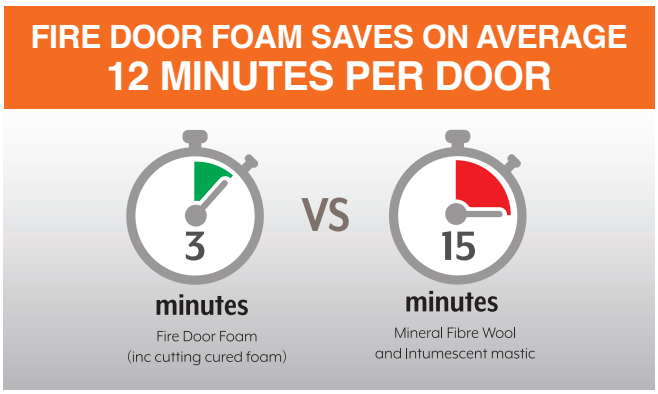
Fire doors have two essential functions in a fire; when closed they form a barrier to stop the spread of fire, and when opened they provide a means of escape.

Unprotected cavities between the door frame and the supporting construction can be easily exploited by fire and if not adequately sealed or protected, can undermine the fire performance of the fire door assembly.

Fire & Acoustic Seals (FAS) Fire Door Foam™ is a proprietary fire sealing product specifically formulated to reinstate the fire resistance of cavities and gaps between pedestrian fire door assemblies and supporting constructions, for use in flexible partitions and masonry walls.

The product has been extensively tested for 30 to 120 minutes fire resistance in accordance with BS 476:Part 20&22:1987 and BS EN 1634-1. It is also Certifire approved - CF5839.

This document has been created to provide guidance on how to use FAS Fire Door Foam™ correctly to achieve the required fire and acoustic performance when installing fire-rated doorsets and screens.



Product Application

- Fire-stopping seal providing up to 60 minutes fire resistance. This increases to up to 120 minutes when used with a mastic capping.
- Cavity gap filling and perimeter pointing between walls and timber frames of fire-rated doors and screens.
- Gap must be 30mm wide or less depending on performance criteria.
- The maximum height of the construction must be no greater than 2800mm from the finished floor level.

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

FD30 & FD60

Fire Rating	Door Frame Substrate	Wall / Partition Substrate	Minimum Frame Depth	Max. Width	Mastic Capping Required (Y/N)
FD30	Softwood	Masonry/Concrete	78mm	30mm	N
		Timber stud	78mm	30mm	N
		Steel stud	78mm	30mm	N
	MDF	Masonry/Concrete	78mm	30mm	N
		Timber stud	78mm	30mm	N
		Steel stud	78mm	30mm	N
	Hardwood	Masonry/Concrete	78mm	30mm	N
		Timber stud	78mm	30mm	N
		Steel stud	78mm	30mm	N
FD60	MDF	Masonry/Concrete	90mm	25mm	N
		Timber stud	90mm	25mm	N
		Steel stud	90mm	25mm	N
	Hardwood (not Beech – Fagus sylvatica)	Masonry/Concrete	90mm	25mm	N
		Timber stud	90mm	25mm	N
		Steel stud	90mm	25mm	N

FD90 & FD120

To be installed with Fire & Acoustics Seals Fire Door Foam™ & Fire Door Intumescent Acrylic Sealant Sealant

Fire Rating	Door Frame Substrate	Wall / Partition Substrate	Minimum Frame Depth	Max. Width	Mastic Capping Required (Y/N)
FD90	Hardwood (not Beech – Fagus sylvatica)	Masonry/Concrete	112mm	25mm	10mm
		Timber stud	112mm	25mm	10mm
		Steel stud	112mm	25mm	10mm
FD120	Hardwood (not Beech – Fagus sylvatica)	Masonry/Concrete	112mm	25mm	10mm
		Timber stud	112mm	25mm	10mm
		Steel stud	112mm	25mm	10mm
	Mineral Core	Masonry/Concrete	132mm	25mm	10mm
		Timber stud	132mm	25mm	10mm
		Steel stud	132mm	25mm	10mm

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 load bearing 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-load bearing 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 aapplicable.

They must also have relevant fire-resistant test evidence covering their installation within the supporting constructions and door frame material. FAS Fire Door Foam™ and Intumescent Acrylic Sealant have been extensively tested and certified to meet these standards when installed correctly. See the installation section for more details.

Note to Building Control - Fire & Acoustic Seals Fire Door Foam™ has been fire and smoke tested in a 'cut back' state (please refer to the installation video) and has test evidence with packers cut flush to the face of the frame.

Test Data Information

Product Type	Fire Rating	Test Standard	Report Reference	Certification Body
Fire-rated Timber Doorset	FD30	BS 476: Part 20/22: 1987	WF413375	WarringtonFire
		BS EN 1634-1 & BS EN 1363-1	WF414882	WarringtonFire
		BS 476: Part 20/22: 1987	CFR1803081	Cambridge Fire Research
		BS 476: Part 20/22: 1987	WF386228	Exova
	FD60	BS 476: Part 20/22: 1987	CFR1803081	Cambridge Fire Research
		BS 476: Part 22: 1987	CFR2209012	Cambridge Fire Research
		BS 476: Part 22: 1987	CFR2204071	Cambridge Fire Research
		BS EN 1634-1 & BS EN 1363-1	WF389582	Exova
		BS EN 1634-1 & BS EN 1363-1	WF384623	Exova
		BS EN 1634-1 & BS EN 1363-1	20210419-003210	UK Testing & Certification
	FD120	BS EN 1634-1: 2014 + A1: 2018	CFR1911291	Cambridge Fire Research
Fire-rated Timber Glazed screen inc. Timber Doorsets	FD30	BS 476: part 20/22: 1987	WF411193	WarringtonFire
	FD60	BS 476: Part 22: 1987	CFR1908301	Cambridge Fire Research
	N/A	Certifire Certificate	CF 5839	WarringtonFire
GRP – Composite Doorset	FD30	BS 476: Part 20/22: 1987	CFR1803082	Cambridge Fire Research
	Air/Smoke Leakage			
Fire-rated Timber Doorset	Y	BS EN1634-3: 2004	WYC 501934-04	WarringtonFire
		BS EN1634-3: 2004	WYC 501934-05	WarringtonFire
		BS EN1634-3: 2004	WF18414-1	Build Check Ltd

For more product application details see tables on page 3.

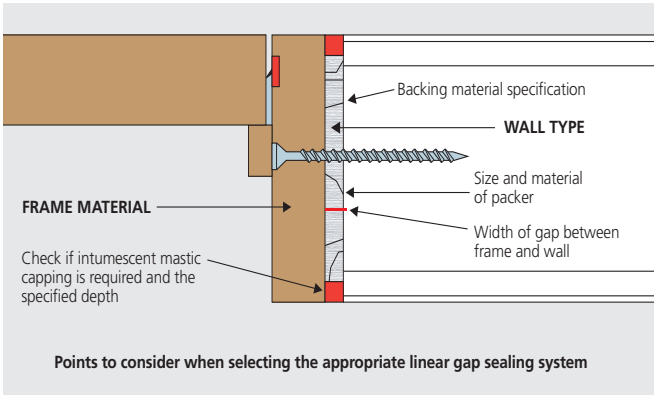
Installation

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. Fire door foam is compatible with plastic packers.
- 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.



Points to consider when selecting the appropriate linear gap sealing system

Linear Gap Seal

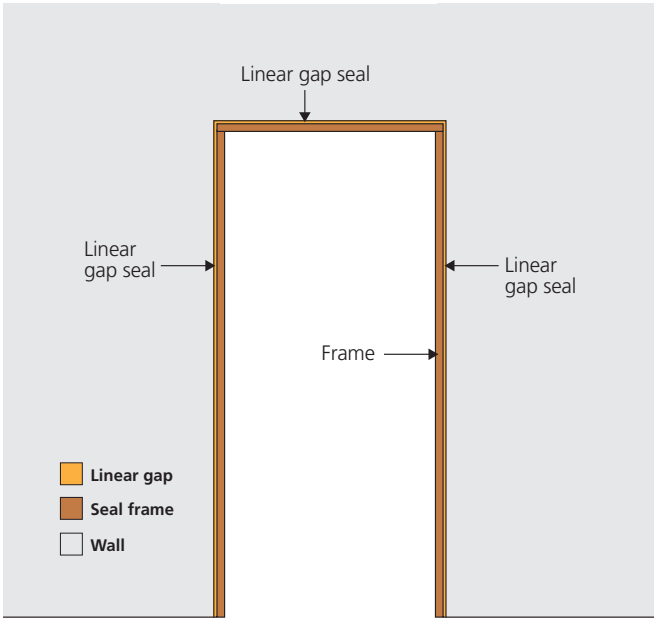
The linear gap seal refers to the method and materials used to fill any gap between the back face of the frame and the wall. This can be one of the weakest points for fire performance if not filled correctly. Fire & Acoustic Seals Fire Door Foam™ and Fire Door Intumescent Acrylic Sealant are approved 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.



Installation of Fire Door Foam

FD30 & FD60

1. For good adhesion, the surfaces of the building element should be firm, clean, and free from any dust or loose particles.
2. The cavity area must be well moistened with water sprayed to aid installation to the substrate. It may be necessary to use a primer prior to foam installation especially on highly porous surfaces.
3. Optimum application temperature +10ºC>+30ºC (+20ºC ideal).
4. Ensure the surrounding area is protected, particularly if using the foam in retrofit applications to protect any damage to decoration or furnishings.
5. Shake the can for two minutes until the foam inside becomes liquid.
6. Attach the adapter or gun to the canister.
7. Fill the gap from the base slowly building up layers of foam to completely fill the void. It can be used to fill the gap up to 30mm in width (see the table on page 3 for reference) without using wadding or mastics. Larger apertures should be reduced with a solid infill. **Refer to image A.**
8. Take care not to over fill the cavity.
9. Allow the foam to cure and after one hour cut any excess foam away surrounding the frame using a sharp bladed instrument.

Image A – FD30 & FD60 foam only.

FD90 & FD120

To achieve these higher fire-ratings you must complete the installation with with FAS Fire Door Intumescent Acrylic Sealant.

Follow instructions 1-9 above.

10. Cap both sides of the cavity with a minimum of 10mm depth. **Refer to image B.**
11. Smooth off with a wet spatula and remove any masking tape within 10 minutes of application.
12. Architrave to be installed if required once the installation has been signed off on site.

Image B – FD90 & FD120 foam with intumescent acrylic sealant cap of 10mm minimum.

Post Installation Checklist

- ✔ Assess the fire rating performance required for the fire door and/or screen.
- ✔ Ensure the wall and frame are suitable materials 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.
- ✔ Ensure there are no gaps in the linear seal once filled and there is full sealing around the entire perimeter.
- ✔ Excess foam has been cut away.
- ✔ The cavity has been capped by 10mm for 90 & 120-minute fire doors with FAS Fire Door Intumescent Acrylic Sealant.
- ✔ Take photos of the fire-stopping installation before adding the architrave.
- ✔ The job has been signed off by the contractor.

Storage & Disposal

- ✔ Cans should not be left in an over-heated environment, in temperatures above +50ºC or exposed to direct sunlight.
- ✔ Empty cans should be disposed of appropriately in line with local regulations.

Frequently Asked Questions

Q: What fire rating does Fire Door Foam™ offer?
A: Fire Door Foam has been fire tested to 60 minutes (BS476 Pt20/22: 1987 & BS EN1634-1) in timber and composite doorsets and timber glazed screens.

Q: What is the minimum and maximum gaps Fire Door Foam™ can be used?
A: The minimum practical width is 5mm and maximum tested gap is 30mm.

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

Q: Do I need to cap off Fire Door Foam™ with intumescent mastic?
A: No, there is no need to cap with mastic for fire ratings of up to 60 minutes.

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

Q: Does Fire Door Foam™ have a shelf life?
A: Fire Door Foam has a 12-month shelf life whilst stored 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 many doors can I seal per can?
A: A 750ml can will seal 3-4 single doors within a standard structural opening (10mm x 70mm void).

Q: Does Fire Door Foam™ have an acoustic rating?
A: Yes, Fire Door Foam has sound reduction capabilities of up to 60 dB Rw.

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

Q: Why use Fire Door Foam™? What are the alternatives?
A: It saves time and money against traditional methods like mineral wool & mastic.

References & Support

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

Certification Schemes

bwf FIRE DOOR ALLIANCE MEMBER

warringtonfire certifire CERTIFICATION

IFC Certification

Testing Bodies

CAMBRIDGE FIRERESEARCH

Tested to Certifire standards

Industry Partners

NBS Source PARTNER

ASDMA MEMBER

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