

VENTILATED FIRE BARRIERS

FOR EXTERNAL WALL SYSTEMS



INNOVATION

SAFETY

TENMAT is a leading manufacturer of unique, high performance intumescent materials and solutions with over 30 years of passive fire protection experience.

SERVICE

TENMAT manufacture innovative life safety products and we are committed to meeting our customers' needs and exceeding the latest quality standards worldwide.

QUALITY



TENMAT are proud to be members of the Association for Specialist Fire Protection.

A Leading Manufacturer for the Construction Industry

TENMAT's advanced passive fire protection materials are widely recognised as the industry standard for demanding applications within the construction industry.

Commitment to Quality

TENMAT operates an ISO 9001:2008 Quality Management System for the design, development and manufacture of specialised high performance engineering materials and components.

VENTILATED FIRE BARRIERS

TENMAT's range of Ventilated Fire Barriers maintain a ventilated cavity in external wall systems. In the event of fire, the intumescent Ventilated Fire Barriers quickly expand to seal off the cavity to prevent hidden fire spread, both vertically and horizontally behind the external facade.



VFB Plus

Bespoke Ventilated Fire Barrier for 50-500mm cavities
Up to 120 minutes fire rating

More Information on Page 3-4



NVFB Non-Ventilated Fire Barrier

Full fill vertical fire barrier for use in addition to VFB Plus
Up to 120 minutes fire rating

More Information on Page 5-6



FF102/50

Fully Intumescent Ventilated Fire Barrier for up to 50mm cavities
Up to 120 minutes fire rating

More Information on Page 7-8



Cavity Fire Barrier on a Roll

Ventilated Fire Barrier for up to 50mm cavities with timber frame or blockwork inner substrates
Up to 30 minutes fire rating

More Information on Page 9-10



Other Products

FF102/25—Ventilated Fire Barrier for up to 25mm cavities
FF109/125—Ventilated Fire Barrier for up to 125mm cavities

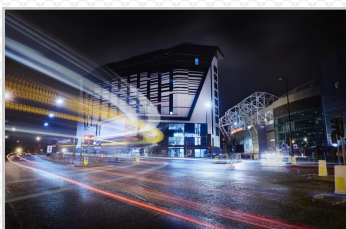
More Information on Page 11



Linear Gap Seals

Fully intumescent linear firestop seals
Up to 240 minutes fire rating

More Information on Page 12



Examples of Projects & Test Data

All of our VFBs are third party fire tested
Widely accepted by Building Control and NHBC

More Information on Page 13-14

Image courtesy of Hotel Football

VFB Plus

Key Features:

- Up to 120 minutes Fire Rated
- Maintains 44mm* air gap
- Up to 450mm cavities
- Weather Proof/Age Tested
- Simple to install



TENMAT's VFB Plus Ventilated Fire Barrier is an 'Open State' cavity fire barrier system for ventilated cavities of up to 450mm which employs a high expansion intumescent seal fixed to **TENMAT** High Density Mineral Wool. The product has undergone extensive fire testing to BS 476: Parts 20 and 22: 1987, EN1363-1: 1999, and ASFP TGD19 (Fire Resistance Test for 'Open-State' Cavity Barriers). It is suitable for use within the majority of construction types, enabling the versatile system to be specified with confidence and provide the installer with a simple, time saving and site friendly solution.

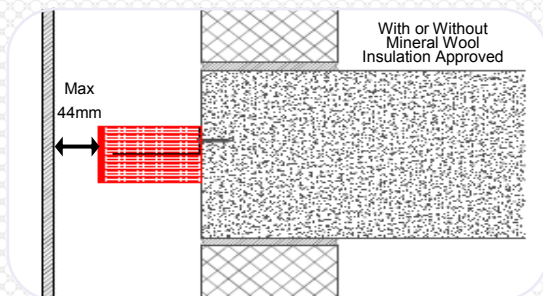
The VFB Plus can be mechanically fixed both horizontally and vertically within ventilated cavities behind external wall systems to act as a cavity fire barrier.

Product Dimensions

Thickness (Total Cavity less 44mm Air Gap) x 75mm x 1000mm

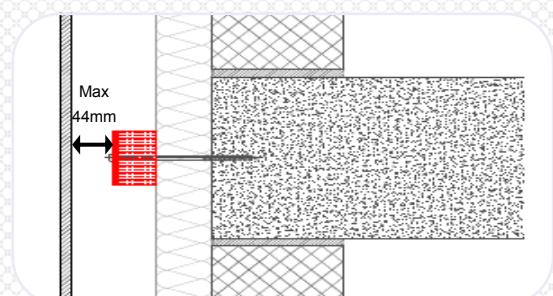
Examples of Approved Applications

VFB Plus Fixed to Non-Combustible Constructions



VFB Ref.	Assessed Construction Type	Fire Rating Horizontal	Fire Rating Vertical
VFB Plus	Brick, Block, Masonry	30, 60, 90	30, 60, 90
VFB Plus	Aerated Concrete Block	30, 60, 90	30, 60, 90

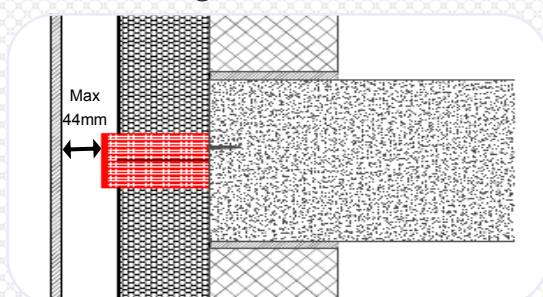
VFB Plus Fixed onto Mineral Fibre Insulation



VFB Ref.	Assessed Construction Type	Fire Rating Horizontal	Fire Rating Vertical
VFB Plus	Min. Fibre on Concrete	90	90
VFB Plus	Min. Fibre on Timber Frame	30	60

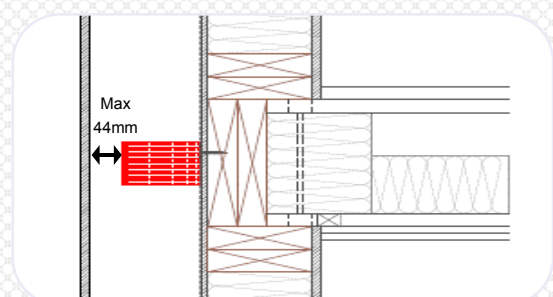
Cavity size restrictions apply. Check with **TENMAT** prior to specifying.

VFB Plus Fixed between Kingspan K15 Rigid Insulation



VFB Ref.	Assessed Construction Type	Fire Rating Horizontal	Fire Rating Vertical
VFB Plus	Fitted within Kingspan K15	30, 60, 90, 120	30, 60, 90, 120

VFB Plus Fixed to Combustible Timber Constructions



VFB Ref.	Assessed Construction Type	Fire Rating Horizontal	Fire Rating Vertical
VFB Plus	Timber Frame	30	60

General Fitting Instructions

For detailed fitting instructions for various applications please contact **TENMAT**.

TENMAT's VFB Plus is a particularly versatile and extensively fire tested Ventilated Fire Barrier which can be installed in a wide range of construction types. The product is simply mechanically fixed in position to leave up to a maximum 44mm* air gap.

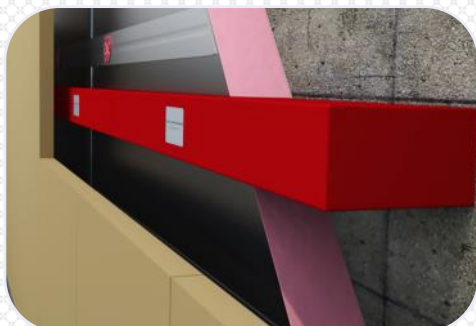
Total Cavity Size	Brackets Supplied (per metre length)
Up to 120mm	None (screw fixed)
120-259mm	2No. Multipurpose Brackets
260-300mm	3No. Multipurpose Brackets
300-450mm	2No. HP Brackets



- In cavities <120mm, directly screw fix VFB Plus. **
- In cavities >120mm, fix VFB Plus with steel fixing brackets using suitable non-combustible fixings.
- Product must be fixed at max. 500mm centres.
- The brackets should impale the VFB Plus at mid barrier depth.
- Cut the bracket down to size if required.



- Cut the barrier down to length if required.
- Each section of VFB Plus greater than 250mm, must be mechanically fixed with 2no. Brackets; if VFB Plus section is 250mm or less than, only 1no. Bracket is required.
- The bracket should not protrude through the rigid intumescent element, but should penetrate the barrier to approx. three quarters of the width of the product.



- Ensure label side is facing out so that the intumescent element faces into cavity in case of fire.
- Adjacent lengths must be tightly butted together.
- Ensure the product is pushed back to be fully in contact with supporting wall.



- Maximum remaining air gap to the back of the external face is 44mm*.
- Ensure Fire Barrier is free to expand in a fire situation.

*Max 44mm air gap (54mm air gap possible in limited applications only, please check with **TENMAT**).

**Fix with non-combustible stainless steel screws. Maximum screw head diameter is 11.5mm (trumpet/ countersunk type head only). Product must be fixed at maximum 250mm centres.

NVFB Non-Ventilated Fire Barrier

Key Features:

- Simple installation
- Up to 120 minutes fire rating
- Maintenance free
- Unaffected by humidity and moisture
- Good acoustic insulation
- Cold smoke seal
- Thermal Performance



Tested in accordance with BS 476:Part 20, **TENMAT** NVFB Non-Ventilated Fire Barriers provide up to 2 hours fire protection for vertical rainscreen/cladding cavities. The NVFB Non-Ventilated Fire Barrier is used for preventing fire penetration to adjoining compartments within external cavities in a vertical situation for specified periods of up to 2 hours. They are manufactured to suit cavity widths and are held in place by a combination of compression and multi purpose brackets.

Availability

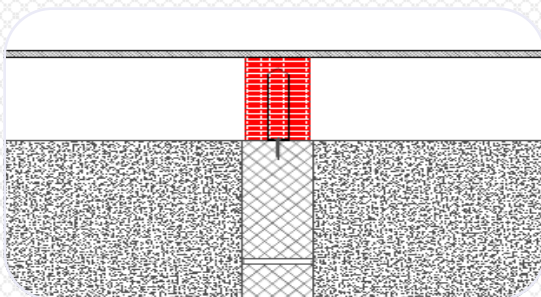
Thickness (Total Cavity plus 10mm for Compression Fit) x 100mm x 1000mm. (80mm deep in cavities ≤ 100 mm)

Can be supplied as Plain Fibre or Shrink-wrapped.

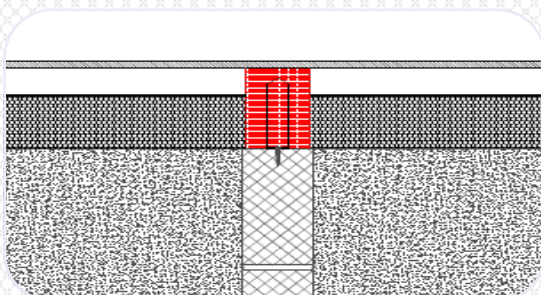
2No. Multipurpose Brackets are supplied per metre. The Barriers must be fitted using these brackets as per installation instruction (For cavities ≤ 100 mm , NVFB is friction fit into position and is not supplied with brackets).

Examples of Approved Applications

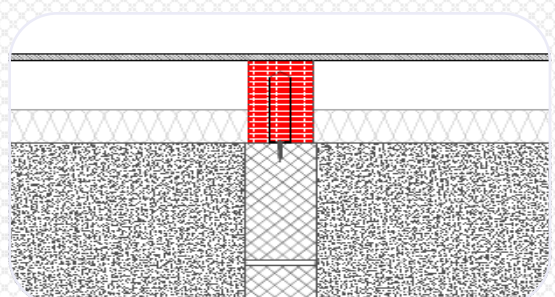
NVFB Fixed to Non-Combustible Constructions



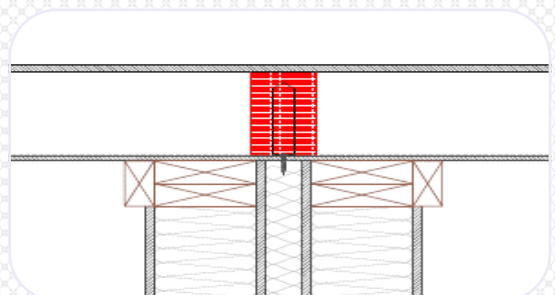
NVFB Fixed between Kingspan K15 Rigid Insulation



NVFB Fixed between Mineral Fibre Insulation



NVFB Fixed to Combustible Timber Constructions



Please contact **TENMAT** for timber constructions before specifying the product

Fire Rating

CAVITY SIZE	INTEGRITY	INSULATION	DEPTH
10-100 mm	120 mins	120 mins	80 mm
101-450 mm	120 mins	120 mins	100 mm
451-600mm	120 mins	30 mins	100 mm

Fibre Migration

Fibre migration will be prevented by the use of shrink-wrapping, or foil encapsulation.

Smoke Seal

TENMAT NVFB Non-Ventilated Fire Barriers will inhibit smoke spread within the cavity.

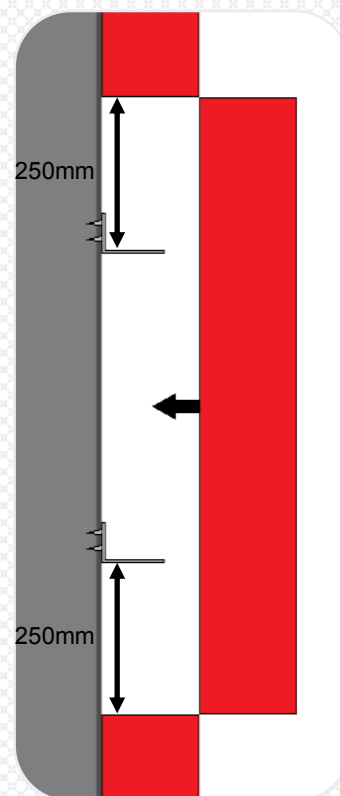
Thermal Performance

The mineral wool from which **TENMAT** NVFB Non-Ventilated Fire Barrier is made has a thermal conductivity of 0.035 W/Mk.

General Fitting Instructions

1. Bend the multi-purpose brackets into an 'L' shape and fix min. 2 per length of NVFB to the inner substrate using self tapping non-corrosive steel masonry anchors (minimum 55mm long) embedding a minimum of 50mm into the substrate.
2. Brackets to be fitted 250mm in from ends of the barrier. For sections of NVFB over 300mm in length, 2 brackets are still required.
3. Push the NVFB onto the leg of the bracket so it is spiked into the centre of each length, and compress into the cavity, ensuring that the seal is fitted under a minimum of 5mm/10mm* compression.
4. Where the gap deviates significantly from the product supplied, trim the thickness of the NVFB with a knife or fine tooth saw to allow a minimum of 5mm/10mm* compression.
5. Ensure that adjacent pieces of NVFB have all of their joints tightly abutted together, and are aligned flush with each other.
6. Point in any small gaps (up to 5mm) with Intumescent Sealant if required.

* *Brickwork/blockwork: Min. 5mm compression.*
Cladding/curtain walling: Min. 10mm compression.



FF102/50

Key Features:

- For use in up to 50mm cavities
- Weather Proof
- Age Tested
- Up to 120 minutes Fire Rated
- Simple to install



TENMAT's FF102/50 Ventilated Fire Barrier is a high expansion intumescent seal offering industry leading performance as a ventilated cavity fire barrier. The product has undergone extensive fire testing and is suitable for use within the majority of construction types, enabling the versatile system to be specified with confidence and provide the installer with a simple, time saving and site friendly solution.

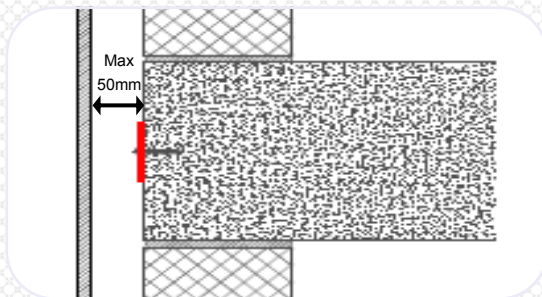
The FF102/50 Ventilated Fire Barrier is a rigid, high expansion intumescent strip encased in aluminium foil. The FF102/50 can be mechanically fixed both horizontally and vertically within ventilated cavities behind rainscreen or cladding systems to act as a cavity fire barrier.

Product Dimensions

6 mm x 75 mm x 1000 mm

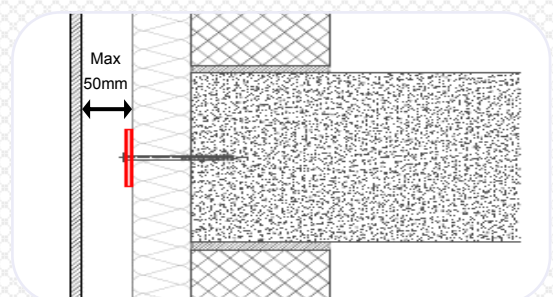
Approved Applications

FF102/50 Fixed to Non-Combustible Constructions



VFB Ref.	Assessed Construction Type	Fire Rating Horizontal	Fire Rating Vertical
FF102/50	Brick, Block, Masonry	120	120
FF102/50	Aerated Concrete Block	120	120

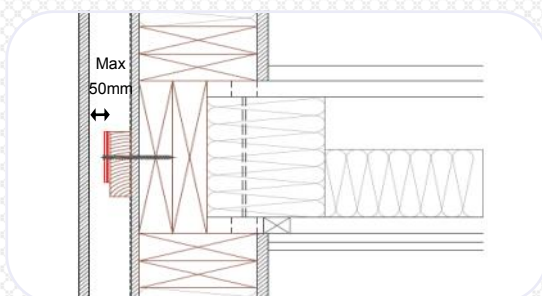
FF102/50 Fixed onto Existing Cavity Insulation



VFB Ref.	Assessed Construction Type	Fire Rating Horizontal	Fire Rating Vertical
FF102/50	Min. Fibre on Concrete	90	90
FF102/50	Min. Fibre on Timber Frame	30	60

For details on approved Mineral Fibre Insulation types, please consult **TENMAT**.
Cavity size restrictions apply. Check with **TENMAT** prior to specifying.

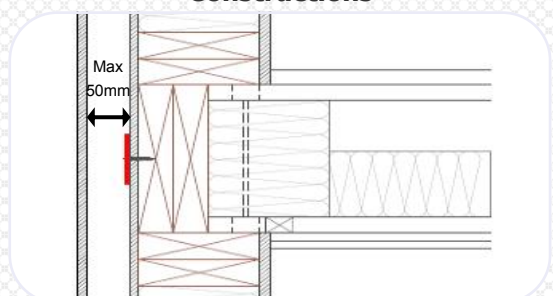
FF102/50 Fixed to Timber Batten



VFB Ref.	Assessed Construction Type	Fire Rating Horizontal	Fire Rating Vertical
FF102/50	Timber Batten on T. Frame	30	30

Cavities greater than 50mm can be reduced to 50mm by the installation of a suitable OSB, Timber or Non-Combustible packer (consult **TENMAT** for details).

FF102/50 Fixed to Combustible Timber Constructions



VFB Ref.	Assessed Construction Type	Fire Rating Horizontal	Fire Rating Vertical
FF102/50	Timber Frame	EI90	60

Fitting Instructions

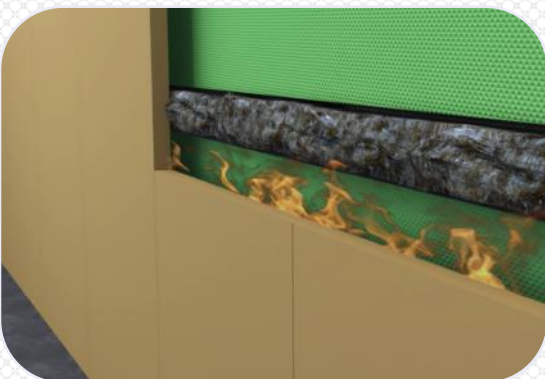
TENMAT's FF102/50 Ventilated Fire Barrier is a particularly versatile and extensively fire tested Ventilated Fire Barrier which can be installed in a wide range of construction types. The product is simply mechanically fixed in position to leave up to a maximum 44mm air gap. Check with **TENMAT** if a greater air gap is required.



- Fix FF102/50 with non-combustible stainless steel nails or screws.
- Maximum screw head diameter is 11.5mm (trumpet/countersunk type head only).
- FF102/50 can be cut to length if required.



- Product must be fixed at maximum 250mm centres.
- Fixings must be along centre line of the Fire Barrier.
- Ensure label side is facing out into cavity.
- Adjacent lengths must be tightly butted.



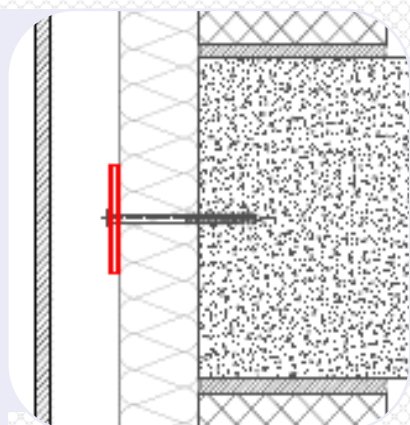
- Maximum remaining air gap to the back of the cladding panel is 44mm.
- Ensure Fire Barrier is free to expand in a fire situation.

When fixing FF102/50 through existing cavity insulation, ensure fixing embeds into solid substrate.

Recommended Fixing Type:

- EJOT FPS-E 8.0 for aerated block
- EJOT FBS-E 6.3 for concrete

Other fixing types can be used. Contact your fixings supplier or alternatively contact **TENMAT**.



Cavity Fire Barrier on a Roll

Key Features:

- No unsightly weep holes needed
- Improves aesthetics of building
- 30 minutes fire rating
- For cavities up to 50mm
- Compact 6.3lm roll
- Simply stapled into position



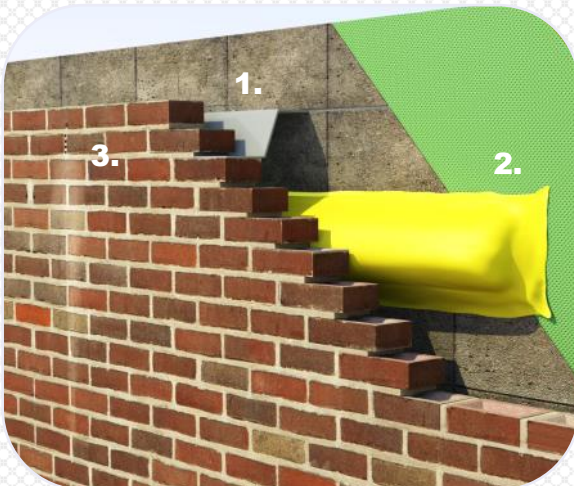
TENMAT's Cavity Fire Barrier on a Roll is a low profile intumescent which provides material and labour cost savings compared to the traditional method of using Cavity Trays, Cavity Socks & Weep Holes.

TENMAT's Cavity Fire Barrier on a Roll is designed for Timber and Masonry cavities. The product maintains the ventilated cavity to prevent thermal and moisture bridging and resultant damp problems, but in the event of a fire it expands to fill the cavity and prevent the spread of fire and smoke.

Product Dimensions

4 mm x 75 mm x 6.3 m roll

Traditional Method



1. Cavity Trays

- Cavity is bridged = thermal & moisture bridging
- Can cause damp problems

2. Cavity Socks

- Creates unwanted sealed compartments
- Can often push brickwork away
- Susceptible to misalignment

3. Weep Holes

- Unsightly
- Discolouration of wall below
- Only allows limited air movement
- Risk of blockage
- Wind driven water issues

TENMAT Method

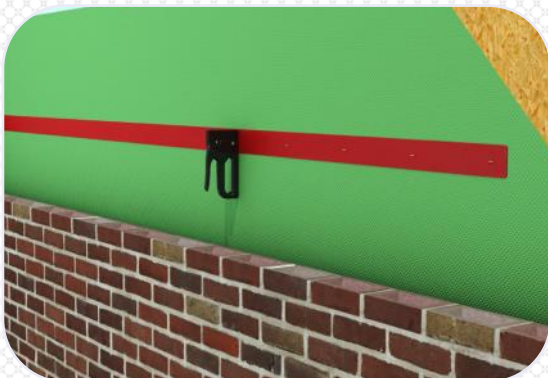


1. **TENMAT** Cavity Barrier on a Roll

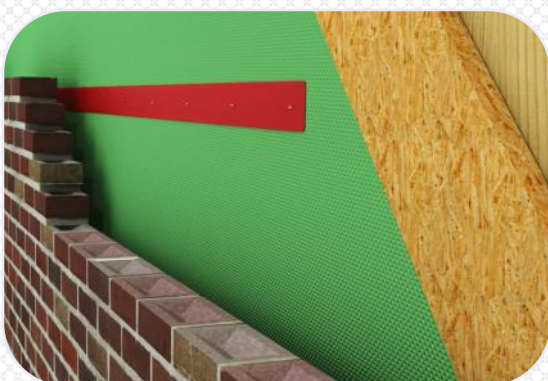
- No Weep Holes needed = clean wall finish & no wind driven water issues
- No Cavity Trays needed
- Material & labour cost savings
- Product is 4mm thick and therefore maintains air gap
- Expands to fill cavity in event of fire
- Takes up imperfections and misalignments
- Restricts fire & smoke spread

Fitting Instructions

Particularly suited for Timber Frame Construction, **TENMAT**'s Cavity Fire Barrier on a Roll is supplied in 6.3 metre lengths improving installation time and reducing storage requirements over traditional cavity socks.



- Staple Cavity Fire Barrier on a Roll along centre line using 14mm long corrosion resistant staples at 250mm centres
- All joints should be tightly butted together so that the intumescent material is continuous throughout the cavity



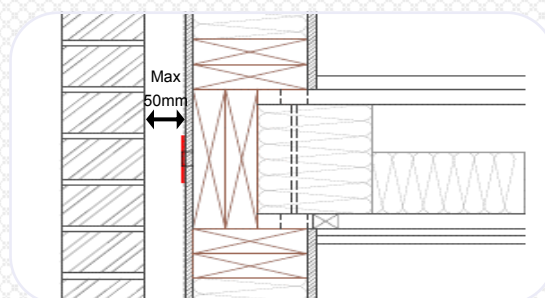
- The **TENMAT** Cavity Fire Barrier should be installed in such a way to ensure the cavity is left open to allow it to expand freely in a fire situation



- In a fire situation, the Cavity Fire Barrier on a Roll will expand across the cavity to restrict the spread of fire & smoke in the cavity

If the **TENMAT** Cavity Fire Barrier on a Roll is cut, then the polythene sleeve should be folded around the exposed end to maintain weather protection. This should then be stapled to the sheathing board.

Cavity Fire Barrier on a Roll fixed to Timber Construction with Brickwork



FF102/25



Key Features:

- For use in up to 25mm cavities
- Weather Proof/Age Tested
- 120 min Fire Rated in non-combustible constructions
- 30 min Fire Rated in Timber Frame

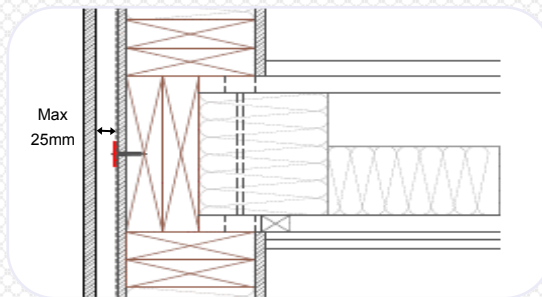
Product Dimensions

4 mm x 35 mm x 1000 mm

TENMAT's FF102/25 Ventilated Fire Barrier is a high expansion intumescent seal offering the same industry leading performance as a ventilated cavity fire barrier as FF102/50 (see pages 7-8) but for up to 25mm cavities.

Example of Approved Application

FF102/25 Fixed to Combustible Timber Construction



FF109/125



Key Features:

- For use in up to 125mm cavities
- Weather Proof
- Age Tested
- Up to 30 minutes Fire Rated
- Simple to install

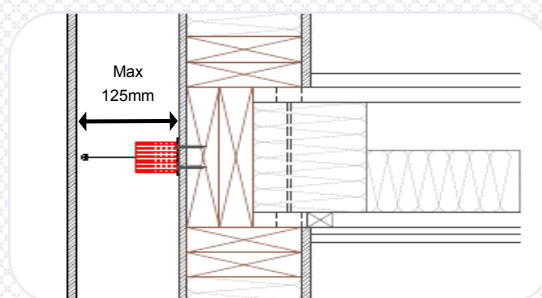
Product Dimensions

50 mm x 50 mm x 1000 mm

TENMAT's FF109/125 Ventilated Fire Barrier is a cavity fire barrier system for ventilated cavities of up to 125mm which is a fully intumescent component. The product is fire rated for up to 30 minutes and is suitable for use within timber and masonry construction types, enabling the versatile system to be specified with confidence.

Example of Approved Application

FF109/125 Fixed to Combustible Timber Construction



Linear Gap Seals



Key Features:

- Up to EI240 Fire Rating
- Compressible up to 50%
- Available to suit all common gap sizes
- Accepts joint movement
- No additional sealants required

TENMAT's FF108 Linear Gap Seals are fully intumescent linear firestop seals tested to the latest EN Standards. The durable seals are installed under compression and can accept up to 50% movement. They are equally suited to both vertical and horizontal joints. The seals offer up to 4 hour (EI240) fire rating for joints in fire rated walls and floors.

Availability and Fire Rating

1 Seal Required

Seal Size	Min. Gap	Max. Gap	Fire Rating: Floors	Fire Rating: Walls
15x15mm	7.5	13	EI240	EI240
25x20mm	13	22	E240/EI30	E240/EI30
40x20mm	22	35	E240/EI30	E240/EI30
60x45mm	35	50	E240/EI45	E240/EI45
85x45mm	50	70	E240/EI45	E240/EI45
120x60mm	70	100	E240/EI45	E240/EI45

2 Seals Required

Seal Size	Min. Gap	Max. Gap	Fire Rating: Floors	Fire Rating: Walls
30x15mm	15	25	E240/EI180	E240/EI180
25x20mm	13	22	E240/EI180	E240/EI120
40x20mm	22	35	E240/EI180	E240/EI120
60x40mm	35	50	E240/EI180	E240/EI120
85x40mm	50	70	E240/EI180	E240/EI120
120x50mm	70	100	E240/EI180	E240/EI180

Where 2no. Seals are required, they should be spaced 50mm apart.

Examples of Projects

Student Accommodation

- Student Castle, Manchester
- Downing Plaza, Newcastle
- Holyrood, Edinburgh
- Eastern Boulevard, Leicester
- College Lane, Hatfield
- Wallscourt Park, UWE

Hotels/Commercial

- Hotel Football, Old Trafford
- BBC Media City, Salford
- Premier Inn, Multiple Locations

Residential

- Berkshire House, Maidenhead
- Commonwealth Games, Glasgow
- One Tower Bridge, London
- Anglican Retirement Village, Castle Hill, Sydney



Student Castle, Manchester

Medical and Healthcare

- RLUH — Royal Liverpool University Hospital
- Oncology Hospital, Palermo, Italy



Image courtesy of Hotel Football

Hotel Football, Old Trafford

Test Data

TENMAT's range of Ventilated Fire Barriers are all independently fire tested to the relevant British/European standards, on a comprehensive range of construction types, fitted both horizontally and vertically. The products are up to 2 hour fire tested to standards including: BS476: Parts 20 and 22, EN1363-1: 1999, EOTA TR31 and assessed to TGD19 'open state cavity barriers' to ASFP standards for ventilated facades.

Fire Test Lab	Report Number	Construction	Fire Rating
BRE	243-505	Timber Frame	30
Exova Warringtonfire	A06037	Timber Frame	30-60
Exova Warringtonfire	A10030	Various	30-120
Exova Warringtonfire	A12315	Various	30-60
Exova Warringtonfire	IF06005	Timber Frame	30
Exova Warringtonfire	IF06013	Timber Frame	30-60
Exova Warringtonfire	IF06040	Concrete/Blockwork	120
Exova Warringtonfire	IF07077	Timber Frame	30
Exova Warringtonfire	IF08038	Block	90-120
Exova Warringtonfire	IF08052	Mineral Fibre/Timber Frame	30
Exova Warringtonfire	IF09011	Cement Board/Concrete	90
Exova Warringtonfire	IF09032	Concrete/Blockwork	30-90
Exova Warringtonfire	IF09093	Concrete/Blockwork	30-60
Exova Warringtonfire	IF10048	Concrete/Blockwork	120
Exova Warringtonfire	IF10060	Rigid Insulation & Blockwork	120
Exova Warringtonfire	IF11012	Concrete/Blockwork	120
Exova Warringtonfire	IF12016	Block	30-60





FEROFORM **RAILKO** ***FEROGLIDE*** ***FEROBIDE***

REFRAVER **REFEL** **ARCLEX**

FIREFLY **NITRASIL** **SINDANYO**

TENMAT is committed to the highest standards in customer service and our international staff is looking forward to assist you.

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