

Open State Cavity Barrier

An open state cavity barrier for ventilated façade systems and timber frame construction.



Technical Guide

Issue 3 - 07 2024

PRODUCT

AIM Open State Cavity Barriers (OSCB's) are manufactured from high density Rockwool stone wool and faced with an intumescent strip and colour coded for ease of identification.

Open state cavity barriers allow the ventilation necessary within the wall construction. In the event of a fire, heat activates the intumescent strip which expands quickly to fully close the cavity.

AIM OSCB's have been designed and tested for use within ventilated rainscreen façades and timber frame construction, allowing free airflow and drainage.

Open State Cavity Barriers offer an effective fire barrier for ventilated voids up to 425mm in width. Having been tested to TGD 19 & the general principles of BS EN 1363-1, they offer a superior fire rating of up to 120 minutes insulation & integrity with ventilated air spaces within the cavity.

The AIM OSCB range is available to provide either a 25 or 44mm air gap. For simplicity the range also offers either a 60, 90 and 120 minute rating for both Integrity and Insulation.



Example product installation schematic using materials by others



Certificate number: IFCC 1901 (60/25, 60/44, 120/25, 120/44)

FEATURES

- Provides a 25mm or 44mm airspace
- Fire rated solutions for cavity voids up to 425*mm.
- Heat activates the intumescent strip which expands quickly to fully close the cavity
- Tested in accordance with AAFP Technical Guidance Document 19 (TGD 19) & to the general principles of BS EN 1363-1
- IFC Third Party Certified
- Provides up to 120 minutes integrity and insulation performance
- Galvanised steel fixing bracket supplied as standard
- Stainless steel metal brackets available as a tested option
- Quick and cost effective installation.
- Colour coded for ease of identification

BENEFITS

- In the event of a fire, provides an effective barrier to the passage of hot smoke and fire behind the cladding system.
- Designed to enable a continuous airflow behind a rainscreen and timber frame cladding system thus helping to prevent problems of condensation.
- Flexible specification: Choice of six OSCBs deliver insulation and integrity performance up to 120 minutes.
- Easy to install: Simple fixing procedure; OSCB25 range incorporates spring steel screws and steel hanging brackets. No specialist tools required.

* The OSCB 25 range can be used in cavities up to 600mm where the barrier is supported by Rockwool Duoslab insulation or equivalent but is outside of the scope of IFC Certificate IFCC 1901.

COMPONENTS available from AIM



OSCB Fixing Brackets



AIM Intumescent Mastic



Coarse wound (Pigtail) Screws



OSCB Rainscreen

Galvanised steel fixing brackets are supplied at a rate of two per metre length. Brackets are packaged in a separate cardboard box located at the bottom of a pallet - the location will be marked with a label.

Fixing Brackets are designed to be easily re-profiled by hand on site, and should be cut as necessary to ensure they penetrate the barrier by at least 50% of its width.

Stainless steel brackets are available as an option.

Coarse wound (Pigtail) Screws are required for AIM OSCB 60/25, OSCB 90/25 and OSCB 120/25, and are used to secure the front-facing intumescent strip. They are supplied at a rate of 3 per metre length and will be packaged with the fixing brackets.

Care should be taken to ensure that the Coarse Wound Screws protrude from the front face of the firestop by a maximum of 25mm.

PHYSICAL INFORMATION

- Thickness - 90mm
- Width - Total cavity size (up to 425*mm) less 25 or 44mm according to the barrier required.
- Length - 1000mm
- Max Air Gap – 25 or 44mm

* The OSCB 25 range can be used in cavities up to 600mm where the barrier is supported by Rockwool Duoslab insulation or equivalent but is outside of the scope of IFC Certificate IFCC 1901.

PACKAGING

AIM OSCB's are generally packed into cartons and stretch wrapped onto wooden pallets with a showerproof polythene pallet cover and high quality edge protectors.

AS STANDARD

AIM OSCB's are supplied pre-cut in 1000mm lengths, 90mm thick with widths varying according to the void size.

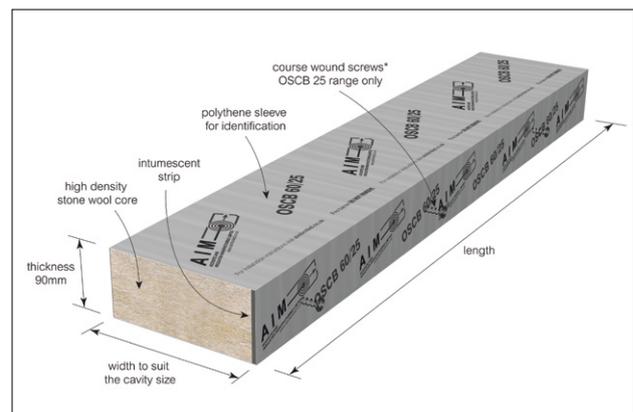
The product is supplied pre-cut product complete with the required fixing clips.

OPTIONS

In some instances it may be necessary to install a cassette insert to provide a flat service for the OSCB to close against, eg where cassette panels are being used. Please contact AIM our experienced sales team on 01293 582 400 or sales@aimlimited.co.uk

Stainless Steel Screws / Coarse Wound Screws as standard. Stainless Steel Clips available.

An option to install an OSCB 25 without coarse wound screws is available; please contact AIM technical for more details.



TECHNICAL INFORMATION



	Vertical use	Horizontal use	Cladding rails	Cavity sizes	Polythene sleeved	Installed with clips
60/25	Yes	Yes	Provide 60+ minutes integrity	50mm to 425mm*	White colour coded	Yes & coarse wound screws
60/44	No	Yes	Provide 60+ minutes integrity	50mm to 425mm*	Blue colour coded	Yes
90/25	Yes	Yes	Provide 60+ minutes integrity	50mm to 425mm*	Clear Plastic colour coded label	Yes & coarse wound screws
90/44	No	Yes	Provide 60+ minutes integrity	50mm to 425mm*	Clear Plastic colour coded label	Yes
120/25	No	Yes	Provide 60+ minutes integrity	50mm to 425mm*	Red colour coded	Yes & coarse wound screws
120/44	No	Yes	Provide 60+ minutes integrity	50mm to 425mm*	Black colour coded	Yes

* The OSCB 25 range can be used in cavities up to 600mm where the barrier is supported by Rockwool Duoslab insulation or equivalent but is outside of the scope of IFCC Certificate IFCC 1901.

FIRE RATING (INTEGRITY / INSULATION (EI - MINUTES))

	60/25	60/44	90/25	90/44	120/25	120/44
Masonry to masonry	60/60	60/60	90/90	90/90	120/120	120/120
Sheeting board to masonry	60/60	60/60	90/90	90/90	120/120	120/120

Tests include combustible and non-combustible sheathing boards. Weather Defence Board SFS Framework, Intersecting aluminium cladding rails.

Test run with combustible PIR, Rockpanel Façade, Extended Airspaces (30mm & 50mm - one hour only).

NOTE: Increased airspace reduces performance to 60 minutes.

Through fixing option available (with tabs) for the OSCB 60/25 and 90/25.

OSCB 60/25 and 90/25 have been tested vertically in a 425mm wide cavity,

Mastic solutions allow for an easy and effective installation against uneven and curved facades.

Direct Fix option available for open state cavity barriers in small cavities.

We hold R&D test data for Cassette Inserts & for FF102/50 to be screwed to vertical rails.

We hold test evidence showing the performance of AIM OSCB's where the exterior cladding is a Rockpanel construction. Please contact our technical department for further details.

Test standards employed: BS EN 1363-1 & TGD19.

The OSCB range has been exposed to BS 8414 Fire performance of external cladding systems fire tests and assessed to BR135 to achieve pass results with a variety of third party cladding systems.

The AIM OSCB Range has been tested with masonry façades to establish the performance of the product itself without being influenced by the supporting structure. It may be used with a variety of façade types however this should involve the consideration and approval of a competent person.

TEST REPORTS

Assessment Report	Basic Details of Test
A variety of test reports are available. The suitability of the OSCB range is encapsulated within these assessments	
PAR 23678/1	ASSESSMENT COVERING OSCB 60/25
PAR 23678/2	ASSESSMENT COVERING OSCB 90/25
PAR 23678/2	ASSESSMENT COVERING OSCB 120/25
PAR 23678/3	ASSESSMENT COVERING OSCB 60/44
PAR 23678/4	ASSESSMENT COVERING OSCB 90/44
PAR 23678/4	ASSESSMENT COVERING OSCB 120/44



IFCC 1901 covering OSCB 60/25, 60/44, 120/25, 120/44



AIM are partners with NBS. Our products can be found on NBS Source and have been authored to NBS specification standards and have both CAWS and Uniclass 2015 classifications.

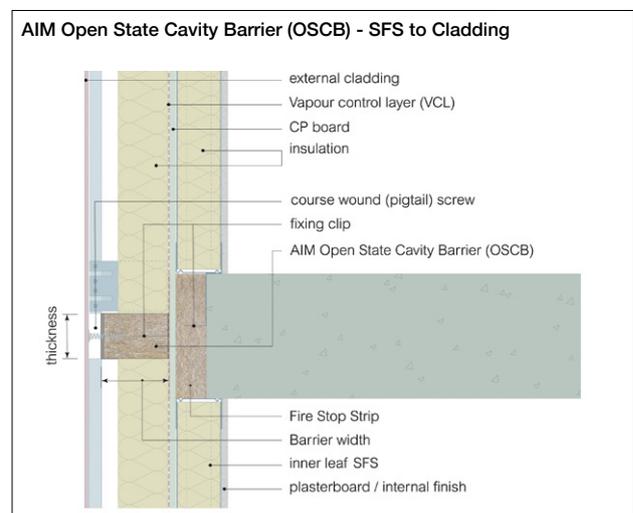
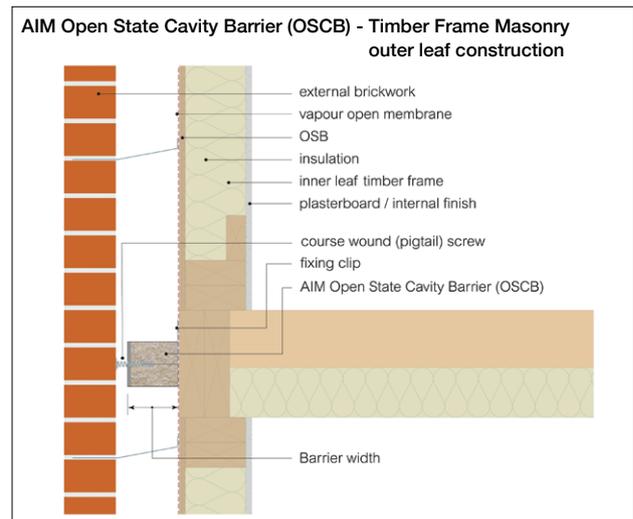
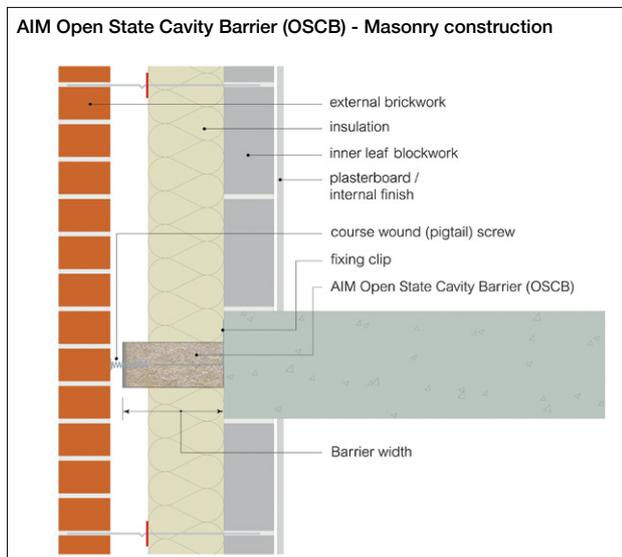
APPLICATIONS

OSCB's are a polythene sleeved ROCKWOOL® stone wool and intumescent material designed for use within open state cavities (e.g. Rainscreen systems), allowing ventilation and drainage of the cavity under normal conditions while providing up to 120 minutes insulation and integrity performance in the event of a fire.

The AIM OSCB range has been successfully tested to TGD 19 & the general principles of BS EN 1363-1 with a variety of substrates so that they can be used in a multitude of cavity wall configurations.

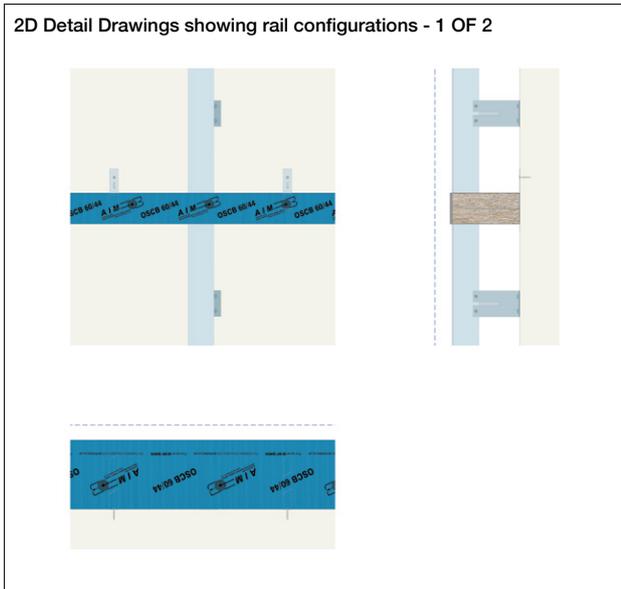
The OSCB 60/25 has also been tested for use vertically in a masonry cavity up to 425mm.

The AIM OSCB range has been tested to provide solutions that accommodate cladding rails interrupting the line of the barrier.

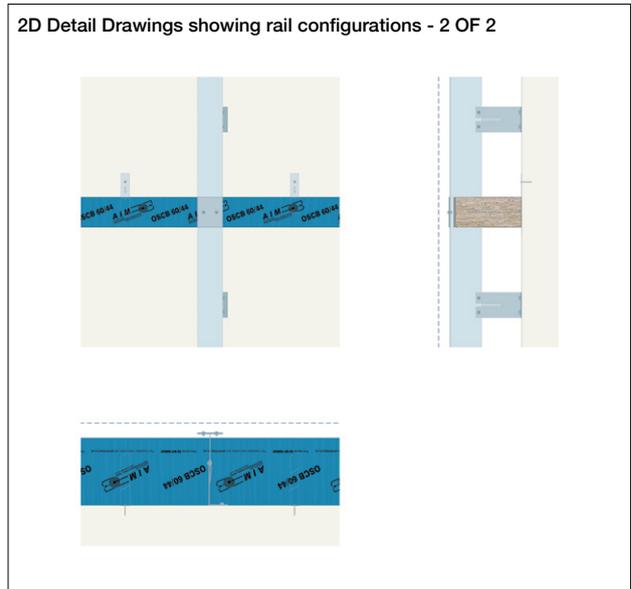


APPLICATIONS

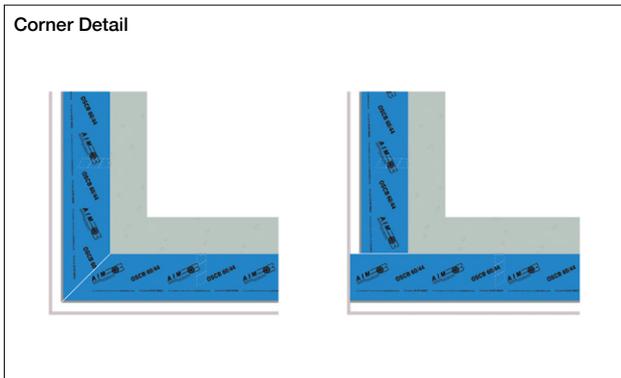
2D Detail Drawings showing rail configurations - 1 OF 2



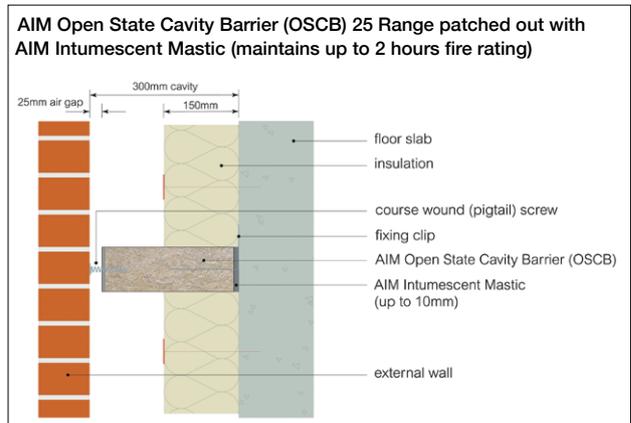
2D Detail Drawings showing rail configurations - 2 OF 2



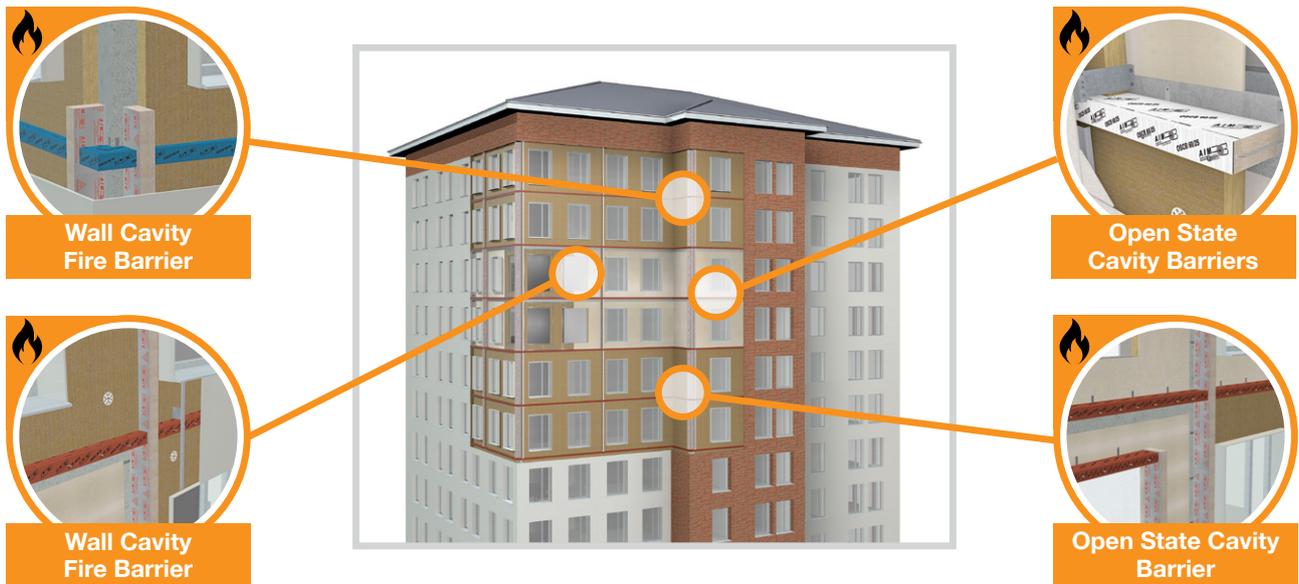
Corner Detail



AIM Open State Cavity Barrier (OSCB) 25 Range patched out with AIM Intumescent Mastic (maintains up to 2 hours fire rating)



OPEN STATE CAVITY BARRIER IN HIGH RISE CONSTRUCTION

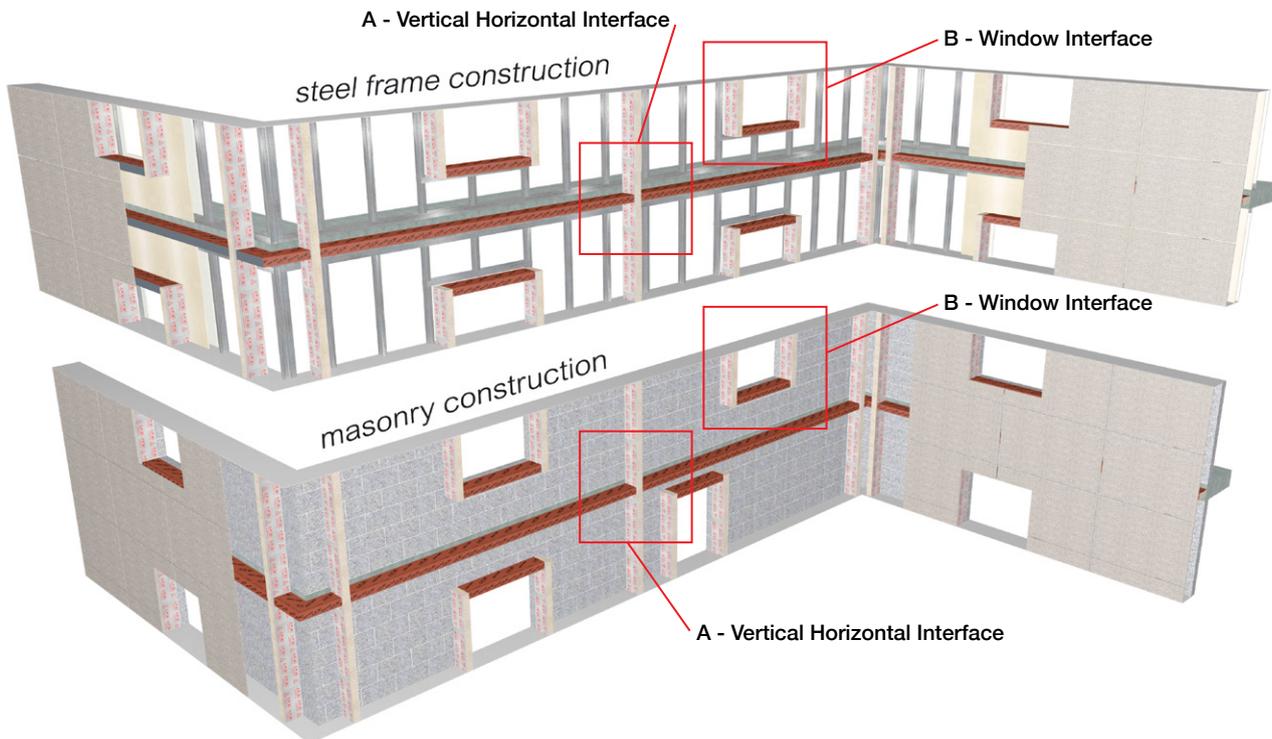


COMPARTMENTATION AND RAINSCREEN CLADDING SOLUTIONS

In general, AIM OSCB's are used in conjunction with AIM's Wall Cavity Fire Barriers. The AIM OSCB's tend to be used for horizontal fire stopping and permitting free flowing ventilation through the cavity in a vertical plane. AIM Wall Cavity Fire Barriers provide a fully filled cavity solution and are generally used vertically to prevent the spread of fire across the face of a building.

The drawings below provide guidance as to how the two products are used to created a cavity barrier solution.

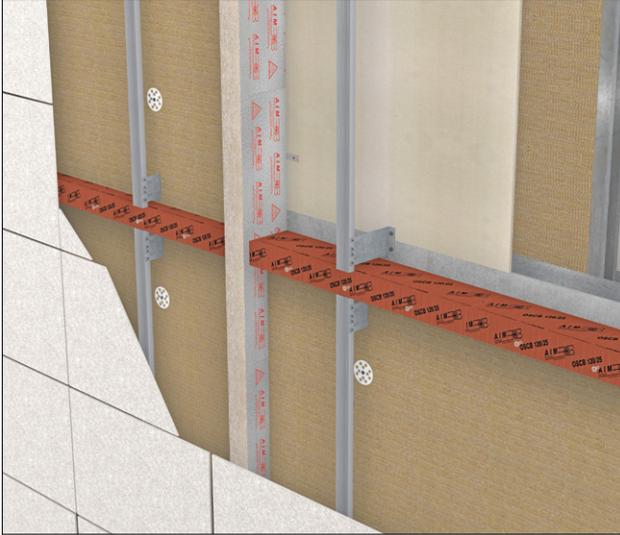
Please note: the drawings below reflects typical cavity barrier locations and is presented for guidance purposes only. The specifier and user must seek formal approval regarding cavity barrier location requirements on a project basis.



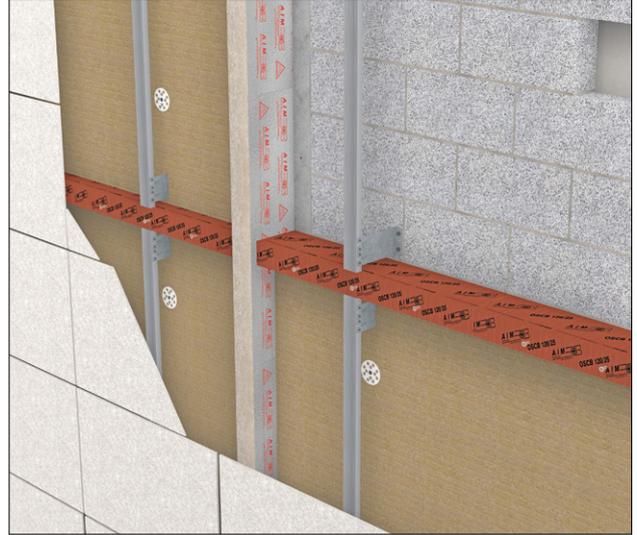
A - VERTICAL HORIZONTAL INTERFACE

Typically, and in line with the recommendations of the Association of Specialist Fire Protection (The ASFP), the vertical cavity barrier takes precedence over the horizontal cavity barrier although this is not a regulatory requirement and may be amended to suit site requirements. To be effective, the cavity

barriers must be fitted tightly back to a fire resisting substrate with fixing clips and non-combustible screws. The interface between the vertical and horizontal cavity barriers must be tight and secure without gaps or voids.



OSCB in Steel Frame / SFS construction substrate



OSCB in Masonry construction substrate

B - WINDOW INTERFACE

Typically when installing cavity barriers around openings in the wall such as doors, windows and non-fire rated vents the cavity barriers fitted at the reveals are full fill with open state cavity barriers fitted at the head and the sill. The cavity barrier must form a complete seal around the opening to provide

protection to all four edges. To be effective, the cavity barriers must be fitted tightly back to a fire resisting substrate with fixing clips and non-combustible screws. The interface between the vertical and horizontal cavity barriers must be tight and secure without gaps or voids.



OSCB in Steel Frame / SFS construction substrate



OSCB in Masonry construction substrate

INSTALLATION GUIDELINES

Intumescent mastic is generally not required however it may be used to seal imperfections in the substrate.

Please contact AIM Technical for guidance on how to reduce the width of the OSCB barriers, if required.

AIM OSCB's are suitable for cavities from 75mm to 425mm* width. For cavities of less than 50mm, Tenmat Intumescent strips, available from AIM, should be used (FF102/25 for cavities up to 25mm and FF102/50 for voids up to 50mm)

Items required for installation



PPE abrasion resistant gloves



PPE impact resistant goggles



RPE dust mask



Sharp knife



Tape measure

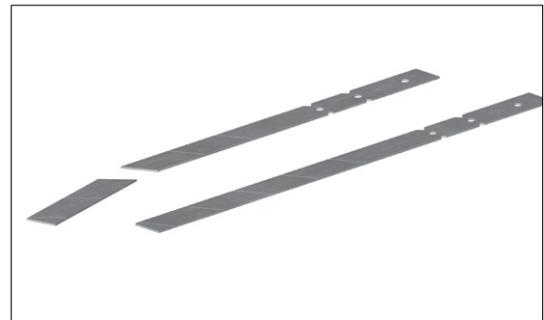


Insulation saw



Acrylic fire rated intumescent mastic (optional extra)

- 1 Form the clips to an L shape and snap the clip to length. It must penetrate at least 50% of the barriers width but should not pass through the intumescent layer.

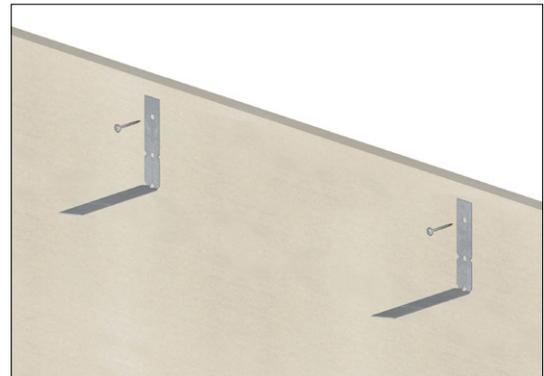
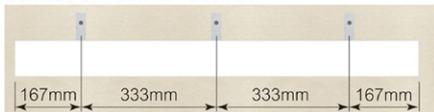


- 2 Fit the clips to the substrate at 500mm centres ensuring that non-combustible and corrosion resistant fixings are used. One screw is required per clip.

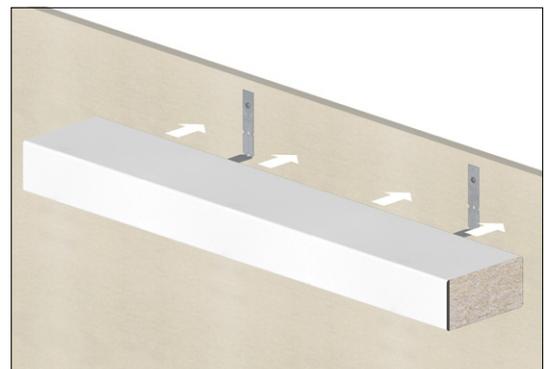
Cavities up to 300mm



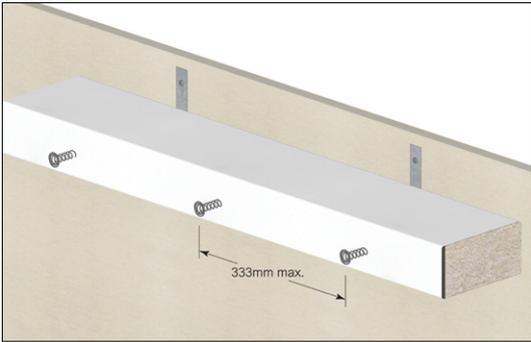
Cavities of 301mm - 600mm



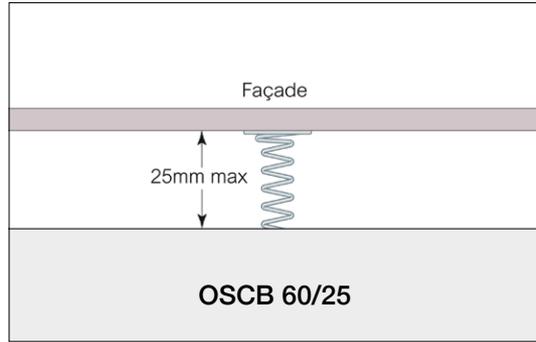
- 3 Impale the barrier onto the fixing clips, mid depth, ensuring the intumescent faces the open airspace. Ensure a tight butt joint between sections of barrier. Where the cavity exceeds 300mm, three clips per barrier spaced at 333mm centers are required.



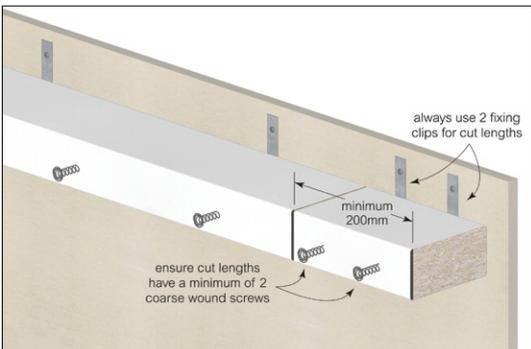
ADDITIONAL INSTALLATION DETAILS SPECIFIC TO OSCB 25



25a Insert three coarse wound screws through the intumescent and into the barrier. Once the façade is installed these should be wound out to touch the inside of the façade panel.

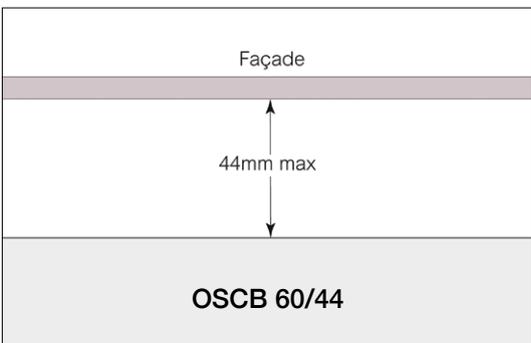


25b Make sure the airspace doesn't exceed 25mm and that all of the coarse wound screws are in contact with the inside of the façade panel

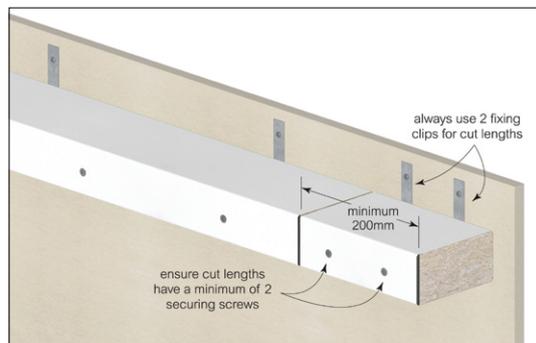


25c Cut lengths must not be less than 200mm in length. Always use at least 2 fixing clips for cut lengths and a minimum of two coarse wound screws.

ADDITIONAL INSTALLATION DETAILS SPECIFIC TO OSCB 44



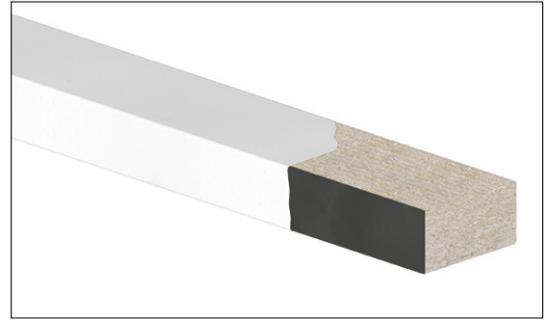
44a Make sure the airspace doesn't exceed 44mm



44b Cut lengths must not be less than 200mm in length. Always use at least 2 fixing clips for cut lengths and a minimum of two securing screws.

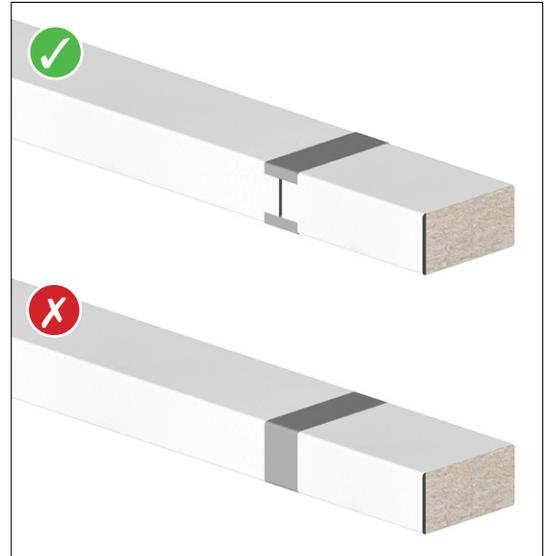
ATTENTION

X Do not remove the weatherproofing polythene layer.

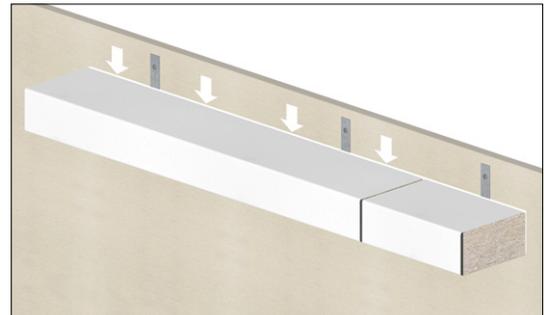


X Ensure that the product is installed with the intumescent material facing towards the cladding panel.

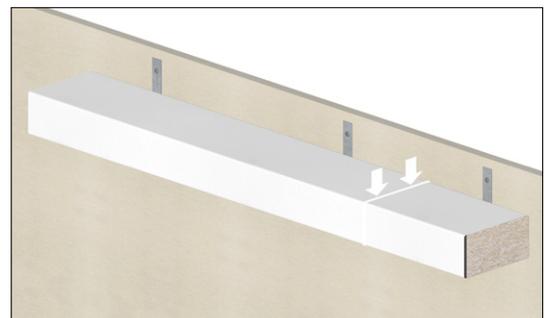
Do not apply tape over the face of the barrier. (The top and bottom surface may be taped if necessary – as shown.)



X Make sure that the barrier is sitting flush back to the substrate and no gaps are present. Seal any gaps or voids with AIM Intumescent Mastic.



X Make sure there are no gaps between adjoining sections of barrier. Any minor voids should be addressed with AIM Intumescent Mastic.



X Make sure that the intumescent strip is clear to expand freely to the rear of the façade without obstruction. i.e. Vertical Cladding Rails or the returns of cassette panels, preventing free expansion.



STORAGE

Products are typically supplied in cartons on wooden pallets with edge protection and a shower proof hood. Products should be stored away from the elements until ready for installation.

MAINTENANCE

This product does not contain moving parts and, if undisturbed in the cavity, requires no routine inspections or maintenance.

It is recommended that the integrity of the barrier is rechecked if further works are carried out, which may involve disturbing the product.

DURABILITY

AIM fire barriers are chemically inert, will not sustain vermin and do not encourage the growth of rot, fungi, moulds or bacteria. They are compatible with all normal building materials. They do not degrade under the usual conditions found in buildings and will perform effectively for the life of the building.

HEALTH & SAFETY

Insulation products supplied by AIM are considered to be inert articles and as such are exempt from requirements to provide a Safety Data Sheet.

A Product Safety and Handling Information Sheet is available upon request.

ENVIRONMENT

Global warming potential = zero

The stonewool element of the products originate from Rockwool UK. It may be possible to recycle clean and uncontaminated material under Rockwool UK's Rockcycle® service. Please contact Rockwool on 01656 868400 for further details.

ORDERING

To order this product the following information will be required:

- Cavity depth in mm
- Fire Performance required
- Approximate quantity
- Delivery location

All AIM fire barriers are made to order. Products are typically supplied in seven to ten working days but lead times may vary depending on existing factory commitments.

There is no minimum order quantity or value although small orders may attract transport surcharges.

TECHNICAL SUPPORT

Technical Support is available from our experienced sales team on 01293 582 400 or sales@aimlimited.co.uk

ABOUT AIM

AIM are a quality insulation convertor with over 30 years experience in the design, testing & manufacturing of high quality fire barriers for customers worldwide.

VERSION CONTROL

Issue 3 - 07 2024

This document replaces and supersedes all previous versions.

The current version number can be verified at <https://www.aimlimited.co.uk/downloads/> or call AIM on 01293 582400

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