

STONESHIELD Cavity Barriers for Timber Frame Applications

Technical Data Sheet

Issue Number: 3



Designed to provide fire compartmentation within concealed voids within the external fabric of a timber frame building.

PRODUCT

STONESHIELD Cavity Barriers for Timber Frame Applications are polythene enclosed stone mineral wool cavity barriers manufactured in sizes to suit customer specified cavity widths.

STONESHIELD Timber Frame Cavity Barriers assist in satisfying requirements of guidance documents such as Approved Document B for England and Wales, Irish Approved Document B Fire Safety Volume 2 Technical Documents and The Scottish Technical Handbooks. The data shown below is from tests made to BS EN 1366-4:2021.

Note: Both BS EN 1366-4 and BS476: Parts 20/ 22 coexist in Approved Document B until 1st September 2029.

STONESHIELD Timber Frame Cavity Barriers have been tested with Timber Frame Cassettes, vertically and horizontally, both mid cavity to the edge of cavities around openings, and also at compartment lines sub-dividing cavities. They are also suitable for masonry to masonry applications.

STONESHIELD Timber Frame Party Wall Barrier is suitable for use at party wall lines.

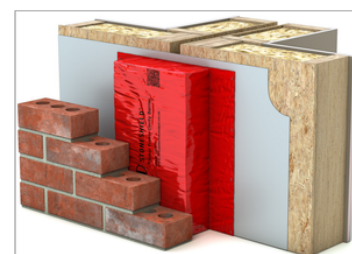
STONESHIELD Timber Frame Cavity Barriers are stapled at 150mm centres to the inner OSB substrate at designated positions prior to brickwork being erected which then compresses the barrier within the cavity creating a seal against smoke and heat transmission.



STONESHIELD Timber Frame Cavity Barrier - installed by a window (construction by others)



STONESHIELD Timber Frame Cavity Barrier - mid-cavity (construction by others)



STONESHIELD Timber Frame Party Wall Barrier - installed vertically (construction by others)

FEATURE	BENEFIT
Can be used for cavities from 35 - 130mm	Wide range of cavities gives design scope
Tested to BS EN1366-4:2021 for up to 60 minutes fire integrity (E) on Timber Frame Cassettes	Achieves the desired fire performance for compartmentation, tested as built on site
Tested at both mid-cavity and flush to apertures, as per the requirement of BS EN1366-4:2021	Suitable for vertical and horizontal applications for mid-cavity and around apertures such as doors and windows
Suitable for all party wall cavities (typically 50-100mm)	STONESHIELD Timber Frame Party Wall Barrier sizes permit flexibility in design
Closed state barrier	Assists in reducing flanking sound transmission between properties
Barrier lengths from 300 to 1200mm are available	Reduces waste and cutting on site

STONESHIELD TIMBER FRAME CAVITY BARRIER

Fixings	Staples at minimum 150mm centres. See separate install guide.
DPC	When installing it may be necessary to consider additional use of DPC's and/or cavity trays in line with relevant Building Control guidance.
Width of cavity	35 to 130mm cavities
Compression	15mm Minimum. NOTE: Greater compression has no impact upon stated fire resistance.
Thermal Conductivity (W/mK)	0.037
Fire Resistance Integrity (E) Insulation (I)	STONESHIELD Timber Frame Cavity Barrier has been independently tested on timber frame cassettes in accordance with BS EN 1366-4: 2021 and subsequently assessed as a Field of Application. All solutions tested achieve the minimum requirement of E30 I15 for all orientations and locations both at apertures (windows/doors) and mid cavity locations.
Field of application report number	WF561275 (Draft)

STONESHIELD Timber Frame Cavity Barrier installed around a window



VERTICAL ORIENTATION TABLE

Max Cavity Width (up to)	Product Orientation	Fire Resistance mid cavity (mins)		Fire Resistance apertures (mins)		Product Dimensions (mm)
		Integrity (E)*	Insulation (I)	Integrity (E)	Insulation (I)	
35mm	Vertical	45	30	45	30	50x65x1200
40mm	Vertical	45	30	45	30	55x65x1200
45mm	Vertical	45	30	45	30	60x65x1200
50mm	Vertical	45	30	45	30	65x65x1200
55mm	Vertical	45	45	45	45	70x90x1200
60mm	Vertical	45	45	45	45	75x90x1200
65mm	Vertical	45	45	45	45	80x90x1200
70mm	Vertical	45	45	45	45	85x90x1200
75mm	Vertical	45	45	45	45	90x90x1200
80mm	Vertical	45	30	45	30	95x120x1200
85mm	Vertical	45	30	45	30	100x120x1200
90mm	Vertical	45	30	45	30	105x120x1200
95mm	Vertical	45	30	45	30	110x120x1200
100mm	Vertical	45	30	45	30	115x120x1200
105mm	Vertical	45	30	45	30	120x120x1200
110mm	Vertical	45	30	45	30	125x120x1200
115mm	Vertical	45	30	45	30	130x120x1200
120mm	Vertical	45	30	45	30	135x120x1200
125mm	Vertical	45	30	45	30	140x120x1200
130mm	Vertical	45	30	45	30	145x120x1200
*For E60 I45 solutions, up to 100mm cavity in vertical applications, use a 150mm deep barrier						
up to 100mm cavities	Vertical	60	45	60	45	up to 115x150x1200

STONESHIELD TIMBER FRAME CAVITY BARRIER

All solutions tested achieve the minimum requirement of E30 I15 for all orientations and locations both at apertures (windows / doors) and mid cavity locations.

Please note these are the minimum depths of barrier to achieve the performance stated.

For specific fire performance or higher performance requirements please contact us.

STONESHIELD Timber Frame Cavity Barrier - mid-cavity (construction by others)



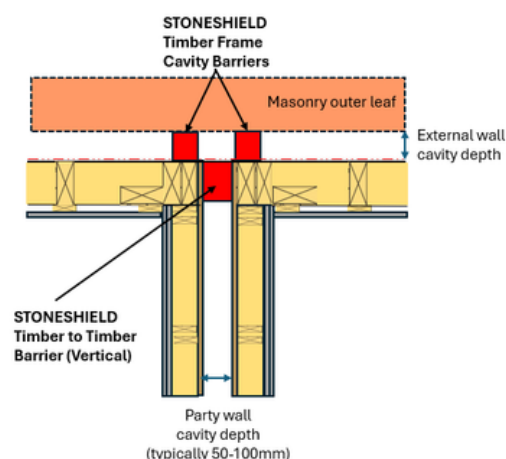
HORIZONTAL ORIENTATION TABLE

Max Cavity Width (up to)	Product Orientation	Fire Resistance mid cavity (mins)		Fire Resistance apertures (mins)		Product Dimensions (mm)
		Integrity (E)**	Insulation (I)	Integrity (E)	Insulation (I)	
35mm	Horizontal	90	45	30	20	50x65x1200
40mm	Horizontal	90	45	30	20	55x65x1200
45mm	Horizontal	90	45	30	20	60x65x1200
50mm	Horizontal	90	45	30	20	65x65x1200
55mm	Horizontal	60	30	30	30	70x90x1200
60mm	Horizontal	60	30	30	30	75x90x1200
65mm	Horizontal	60	30	30	30	80x90x1200
70mm	Horizontal	60	30	30	30	85x90x1200
75mm	Horizontal	60	30	30	30	90x90x1200
80mm	Horizontal	60	30	30	20	95x120x1200
85mm	Horizontal	60	30	30	20	100x120x1200
90mm	Horizontal	60	30	30	20	105x120x1200
95mm	Horizontal	60	30	30	20	110x120x1200
100mm	Horizontal	60	30	30	20	115x120x1200
105mm	Horizontal	60	30	30	20	120x120x1200
110mm	Horizontal	60	30	30	20	125x120x1200
115mm	Horizontal	60	30	30	20	130x120x1200
120mm	Horizontal	60	30	30	20	135x120x1200
125mm	Horizontal	60	30	30	20	140x120x1200
130mm	Horizontal	60	30	30	20	145x120x1200
**For E60 I60 solutions, up to 100mm cavity in horizontal applications, use a 150mm deep barrier						
up to 100mm cavities	Horizontal	60	60	45	45	up to 115x150x1200

STONESHIELD TIMBER TO TIMBER SOLUTION

Fixings	Staples at minimum 150mm centres.
Width of cavity	35 to 100mm cavities
Compression	15mm Minimum. NOTE: Greater compression has no impact upon stated fire resistance.
Thermal Conductivity (W/mK)	0.037
Fire Resistance Integrity (E) Insulation (I)	STONESHIELD Timber Frame Cavity Barrier has been independently tested with timber frame cassettes in accordance with BS EN 1366-4: 2021 and subsequently assessed as a Field of Application. The barriers were tested both on the fire side as well as mid cavity.
Field of application report number	WF561275 (Draft)

Timber to Timber Vertical Solution used as part of a 3 way barrier solution (illustration only)

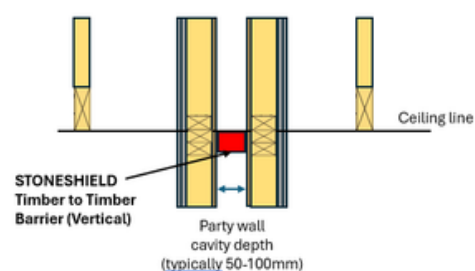


VERTICAL ORIENTATION TABLE

Max Cavity Width (up to)	Product Orientation	Fire Resistance Mid Cavity (mins)		Fire Resistance Apertures (mins)		Product Dimensions (mm)
		Integrity (E)	Insulation (I)	Integrity (E)	Insulation (I)	
35mm	Vertical	45	30	45	30	50x90x1200
40mm	Vertical	45	30	45	30	55x90x1200
45mm	Vertical	45	30	45	30	60x90x1200
50mm	Vertical	45	30	45	30	65x90x1200
55mm	Vertical	45	30	45	30	70x90x1200
60mm	Vertical	45	30	45	30	75x90x1200
65mm	Vertical	45	30	45	30	80x90x1200
70mm	Vertical	45	30	45	30	85x90x1200
75mm	Vertical	45	30	45	30	90x90x1200
80mm	Vertical	60	45	60	45	95x150x1200
85mm	Vertical	60	45	60	45	100x150x1200
90mm	Vertical	60	45	60	45	105x150x1200
95mm	Vertical	60	45	60	45	110x150x1200
100mm	Vertical	60	45	60	45	115x150x1200
*For E60 I45 solutions, up to 100mm cavity in vertical applications, use a 150mm deep barrier						
up to 100mm cavities	Vertical	60	45	60	45	up to 115x150x1200

STONESHIELD TIMBER TO TIMBER SOLUTION

Timber to Timber Horizontal Solution for a ceiling zone compartment wall (illustration only)

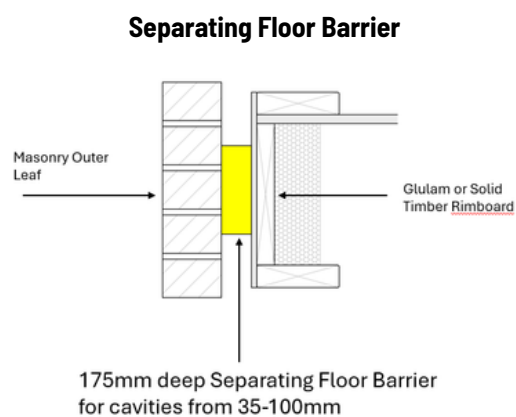


HORIZONTAL ORIENTATION TABLE

Max Cavity Width (up to)	Product Orientation	Fire Resistance Mid Cavity (mins)		Fire Resistance Apertures (mins)		Product Dimensions (mm)
		Integrity (E)	Insulation (I)	Integrity (E)	Insulation (I)	
35mm	Horizontal	30	30	30	30	50x90x1200
40mm	Horizontal	30	30	30	30	55x90x1200
45mm	Horizontal	30	30	30	30	60x90x1200
50mm	Horizontal	30	30	30	30	65x90x1200
55mm	Horizontal	30	30	30	30	70x90x1200
60mm	Horizontal	30	30	30	30	75x90x1200
65mm	Horizontal	30	30	30	30	80x90x1200
70mm	Horizontal	30	30	30	30	85x90x1200
75mm	Horizontal	30	30	30	30	90x90x1200
80mm	Horizontal	45	45	45	45	95x150x1200
85mm	Horizontal	45	45	45	45	100x150x1200
90mm	Horizontal	45	45	45	45	105x150x1200
95mm	Horizontal	45	45	45	45	110x150x1200
100mm	Horizontal	45	45	45	45	115x150x1200
**For E60 I60 solutions, up to 100mm cavity in horizontal applications, use a 150mm deep barrier						
up to 100mm cavities	Horizontal	60	60	60	60	up to 115x150x1200

STONESHIELD SEPARATING FLOOR SOLUTION

Fixings	Staples at minimum 150mm centres.
Width of cavity	35 to 100mm cavities
Compression	15mm Minimum. NOTE: Greater compression has no impact upon stated fire resistance.
Thermal Conductivity (W/mK)	0.037
Fire Resistance Integrity (E) Insulation (I)	STONESHIELD Timber Frame Cavity Barrier has been independently tested with a glulam rim board design in accordance with BS EN 1366-4: 2021 and subsequently assessed as a Field of Application.
Field of application report number	WF561275 (Draft)



HORIZONTAL ORIENTATION TABLE

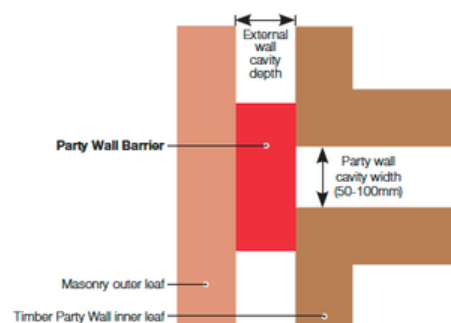
Max Cavity Width (up to)	Product Orientation	Fire Resistance (mins)		Product Dimensions (mm)	Colour
		Integrity (E)	Insulation (I)		
35mm	Horizontal	90	90	50x175x1200	Yellow
40mm	Horizontal	90	90	55x175x1200	Yellow
45mm	Horizontal	90	90	60x175x1200	Yellow
50mm	Horizontal	90	90	65x175x1200	Yellow
55mm	Horizontal	90	90	70x175x1200	Yellow
60mm	Horizontal	90	90	75x175x1200	Yellow
65mm	Horizontal	90	90	80x175x1200	Yellow
70mm	Horizontal	90	90	85x175x1200	Yellow
75mm	Horizontal	90	90	90x175x1200	Yellow
80mm	Horizontal	90	90	95x175x1200	Yellow
85mm	Horizontal	90	90	100x175x1200	Yellow
90mm	Horizontal	90	90	105x175x1200	Yellow
95mm	Horizontal	90	90	110x175x1200	Yellow
100mm	Horizontal	90	90	115x175x1200	Yellow

Note: The horizontal and vertical solutions were tested both mid cavity and at the aperture.

STONESHIELD TIMBER FRAME PARTY WALL CAVITY BARRIER

Fixings	Staples at minimum 150mm centres
DPC	When installing STONESHIELD Timber Frame Cavity Barrier it may be necessary to consider additional use of DPC's and/or cavity trays in line with relevant Building Control guidance.
Width of cavity	35 to 130mm cavities
Compression	15mm Minimum. NOTE: Greater compression has no impact upon stated fire resistance.
Thermal Conductivity (W/mK)	0.037
Fire Resistance Integrity (E) Insulation (I)	STONESHIELD Timber Frame Party Wall Barrier has been independently tested on timber frame cassettes in accordance with BS EN1366-4: 2021 and subsequently assessed as a Field of Application.
Field of application report number	WF561275 (Draft)

STONESHIELD Timber Frame Party Wall Barrier at the party wall junction (plan view)



VERTICAL ORIENTATION TABLE

Max Cavity Width (up to)	Product Orientation	Fire Resistance (mins) - Results TBC		Product Dimensions (mm)		
		Integrity (E)	Insulation (I)	For 50mm PW Cavities	For 75mm PW Cavities	For 100mm PW Cavities
35mm	Vertical	60	60	50x300x1200	50x300x1200	50x300x1200
40mm	Vertical	60	60	55x300x1200	55x300x1200	55x300x1200
45mm	Vertical	60	60	60x300x1200	60x300x1200	60x300x1200
50mm	Vertical	60	60	65x300x1200	65x300x1200	65x300x1200
55mm	Vertical	60	60	70x300x1200	70x300x1200	70x300x1200
60mm	Vertical	60	60	75x300x1200	75x300x1200	75x300x1200
65mm	Vertical	60	60	80x300x1200	80x300x1200	80x300x1200
70mm	Vertical	60	60	85x300x1200	85x300x1200	85x300x1200
75mm	Vertical	60	60	90x300x1200	90x300x1200	90x300x1200
80mm	Vertical	60	60	95x300x1200	95x300x1200	95x300x1200
85mm	Vertical	60	60	100x300x1200	100x300x1200	100x300x1200
90mm	Vertical	60	60	105x300x1200	105x300x1200	105x300x1200
95mm	Vertical	60	60	110x300x1200	110x300x1200	110x300x1200
100mm	Vertical	60	60	115x300x1200	115x300x1200	115x300x1200
105mm	Vertical	60	60	120x300x1200	120x300x1200	120x300x1200
110mm	Vertical	60	60	125x300x1200	125x300x1200	125x300x1200
115mm	Vertical	60	60	130x300x1200	130x300x1200	130x300x1200
120mm	Vertical	60	60	135x300x1200	135x300x1200	135x300x1200
125mm	Vertical	60	60	140x300x1200	140x300x1200	140x300x1200
130mm	Vertical	60	60	145x300x1200	145x300x1200	145x300x1200

Party Wall Junctions. The party wall barrier has been designed to have a minimum overlap of 100mm either side of the party wall cavity. The 300mm wide option will suit a 100mm party wall cavity.

Additional Party Wall Solutions are available. The typical Party Wall Cavities are shown for illustration purposes only. Please contact us for further information.

STONESHIELD TIMBER FRAME 3 CAVITY BARRIER SOLUTION AT THE PARTY WALL JUNCTION

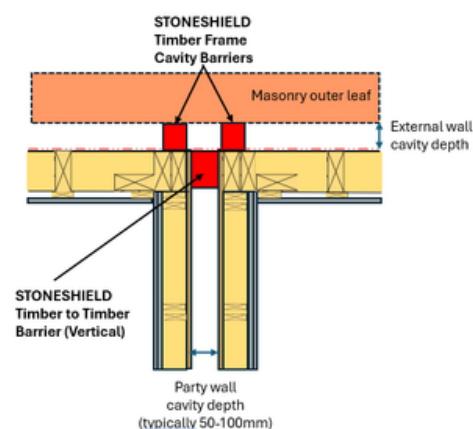
Alternative to the single STONESHIELD Timber Frame Cavity Barrier.

It is essential to consider the respective datasheet tables for the correct solution.

The direction of fire attack should be considered.

Please refer to the test information available within the Field of Application.

3 Way Barrier to External Walls



STONESHIELD SOLUTION FOR PENETRATIONS

STONESHIELD solution to penetration is to utilise 4 pieces of STONESHIELD Timber Frame Cavity Barrier around penetrations through the external wall of low rise houses. They are designed to perform the function of a cavity barrier around openings in the wall.

The penetrations may be circular or rectangular. The representation shows rectangular.

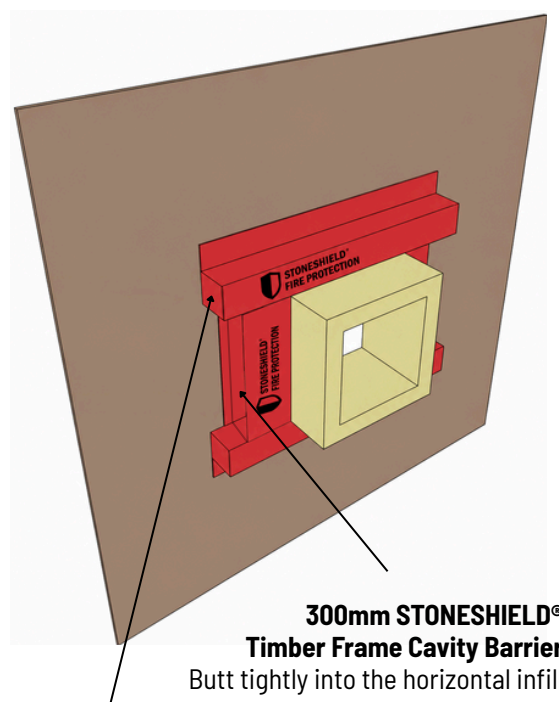
300MM STONESHIELD® TIMBER FRAME CAVITY BARRIER

To reduce cutting on site, 300mm sealed Timber Frame Cavity Barriers are sold and fitted as per the diagram. The slight oversailing of the horizontal barriers prevents water ingress during installation.

Please refer to the STONESHIELD Timber Frame Cavity Barrier table, specifically the mid-cavity fire resistance columns for fire performances.

All joints must be tightly butt-jointed.

Please refer to STONESHIELD Timber Frame Cavity Barrier Installation Guide for full details on installation.



300mm STONESHIELD® Timber Frame Cavity Barrier
Butt tightly into the vertical infill

STONESHIELD 300mm TIMBER FRAME CAVITY BARRIER (other cavity sizes are available)

Max Cavity Width (up to)	Product Orientation	Fire Resistance Mid Cavity (mins)		Product Dimensions (mm)
		Integrity (E) *	Insulation (I)	
50mm	Vertical or Horizontal	45	30	65x65x300
60mm	Vertical or Horizontal	45	30	70x90x300

Management Systems

Certified as meeting the requirements of ISO 9001

Storage and Handling

- Keep the product dry and undercover
- Suitable handling equipment will be required for bulky products or pallets
- DO NOT stack products or pallets as these will become unstable

Installation

See separate installation guidelines.

Operation

The product is intended to be static post installation. There is no operator involvement in its use.

Maintenance

The product's intended use and design, along with its often-inaccessible location post construction, means there are no maintenance requirements.

Health & Safety

- Dry working by cutting or handling non-encapsulated products may release fibre dust
- Use suitable PPE for site hazards including the wearing of gloves.
- Where possible use on-tool dust extraction with HEPA filter
- "Machine Made Mineral Fibre" the primary material has workplace exposure limits in HSE EH40

Packaging & Product Disposal

- Pallets can be readily re-used
- Pallet wrap / covers should be placed in an appropriate waste stream
- The product remains in the construction until refurbishment or demolition as such, the project lead should apply the contemporary national and local regulations for waste.

UNDERSTANDING CAVITY BARRIER DIMENSIONS

It is critical to install the barriers in the right direction. For e.g. for a 65x90x1200mm barrier:

a. the 1st dimension is the direction in which the fibres will compress easily and is related to the cavity.

ie. a 65mm wide barrier will be compressed into a 50mm cavity. (Known as the compression side.)

b. the 2nd dimension is the side which has no flanges

c. The 3rd dimension is the length of the barrier, see below:

The dimensions are always written as the compression side followed by the barrier depth by barrier length.

For full installation guidelines see our STONESHIELD Timber Frame Installation Guide.

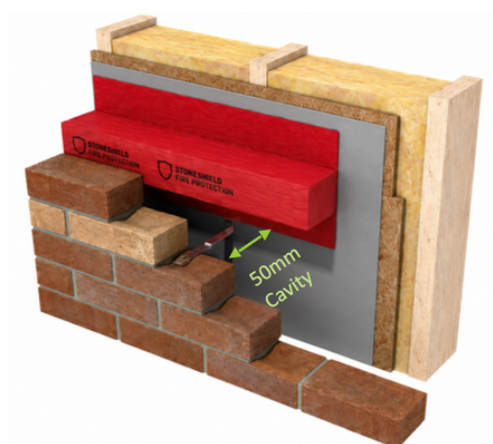
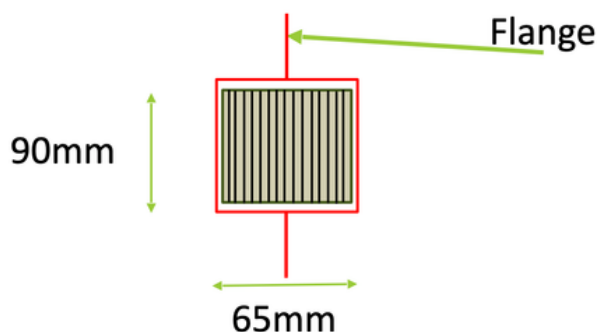


Illustration: 65x90x1200mm barrier fitted into a 50mm cavity

