

SIDERISE RH and RV cavity barriers for use in the external envelope or fabric of buildings

The SIDERISE RH 'Open State' horizontal and RV vertical cavity barrier range represents the default choice for market leading, high performance Rainscreen Cavity Barrier applications.

Application

SIDERISE RH 'Open State' horizontal cavity barriers have been specifically developed to meet the requirements for cavity barriers used in drained and ventilated facades. Their use ensures that the system will drain any moisture within the façade construction, whilst maintaining airflow and, in the event of fire, provide an effective hot smoke and fire seal.

SIDERISE has developed two 'Open State' (open void) horizontal solutions: RH25(G/S) for air gaps up to 25mm and RH50(G/S) for air gaps up to 50mm.

The product range is fully compliant to current market requirements and additionally has been tested to recent ASFP Guidance: 'Open State' Cavity Barrier used in External Envelope or Fabric of Buildings, utilising principles of EN 1363-1.

SIDERISE RV vertical cavity barriers for rainscreen cladding are used to full fill the void between the external envelope and internal structure.

By fully sealing the void, they assist ventilated facades to function by maintaining air-pressurisation compartmentation.

Importantly, their unique stonewool lamella core construction enables the vertical barriers to accommodate the serviceability movement normally associated with rainscreen facades.

Intersections between horizontal and vertical cavity barriers are simply abutted.



Benefits

- Allows continuous ventilation and drainage behind external envelope
- Market leading fire resistance
- Rapid seal closure times
- Fully compliant and meets ASFP and CWCT guidelines
- Horizontal barriers can incorporate up to 50mm continuous ventilated air space
- Vertical barriers accommodate cladding movement

Acoustic, fire and thermal insulation specialists



SIDERISE RH 'Open State' horizontal cavity barriers

PRODUCT DESCRIPTION

SIDERISE RH 'Open State' horizontal cavity barriers consist of a non-combustible stonewool lamella core, with reinforced aluminium foil faces, giving an overall reaction to fire performance to Class A1. The exposed leading edge is also sealed with aluminium foil. Whilst the base material is water repellent and non-hydroscopic, this predominantly enclosed arrangement affords an added degree of weather protection to the core material.

SIDERISE RH 'Open State' horizontal cavity barriers incorporate a continuous high performance intumescent strip which is bonded to the leading edge. In the event of exposure to fire, the intumescent rapidly expands and fully seals the purposely designed ventilation gap, formed at the time of installation, between barrier and the rear of the cladding. This unique construction offers an excellent resistance to the passage of both smoke and fire.

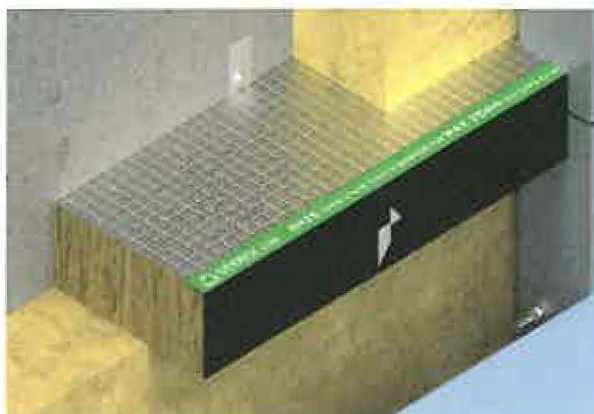
As standard, the range includes a choice of products to suit either 25mm air gaps - referred to as RH25 - or 50mm air gaps - referred to as RH50.

Both options are available with either galvanised mild steel or stainless steel fixing brackets as part of the system.

The specific horizontal cavity barrier system is then referred to as either RH25G, RH25S, RH50G or RH50S accordingly. The choice of bracket is usually determined by the rainscreen system designer according to project exposure and/or location.

The leading edge of the horizontal cavity barriers is encapsulated in a weather resistant polymer film. As standard, the film is black so as to register as a 'shadow-line' behind open joints in the cladding.

For product identification purposes, the top edges of the film used on the RH25 and RH50 systems are colour-coded green and red respectively.



SIDERISE RH 'Open State' horizontal cavity barrier for air gaps up to 25mm: RH25(G/S)



SIDERISE RH 'Open State' horizontal cavity barrier for air gaps up to 50mm: RH50(G/S)

SIDERISE RH 'Open State' horizontal cavity barriers

STANDARDS AND APPROVALS

SIDERISE 'Open State' horizontal cavity barriers satisfy the requirements of:

- England and Wales - the Building Regulations 2000, Approved Document B (2006 edition), Appendix A, Table A1, item 10 (Volume 1) & item 15 (Volume 2) and diagram 33
- Scotland - Technical Handbook 2
- Northern Ireland - Technical Document E
- Ireland - Technical Guidance Document B

They also meet the higher minimum fire resistance standard (30/30) for cavity barriers outlined in the LPC Design Guide for the Fire Protection of Buildings.

FIRE PERFORMANCE

SIDERISE 'Open State' horizontal cavity barriers have been successfully tested up to 120 minutes (E) Integrity and 60 minutes (I) Insulation, when tested to the temperature and pressure conditions of BS EN 1363 Part 1: 2012. . Test conducted in accordance with the test standard: ASFP 'Open State' Cavity Barrier used in External Envelope or Fabric of Buildings.

SIDERISE RH25(G/S) 'Open State' horizontal cavity barrier for maximum 25mm air gaps

SIDERISE have tested a range of horizontal cavity barriers with 25mm air gap to the above mentioned standards with seal reaction times of <1 minute which resulted in effective seal closure <1 minute.

Seal temperatures remained below 180°C during this activation period, and maintained the EI requirements as detailed in Tables 1 and 2 for up to E 120 and I 60. Test report WF 328279/A shows evidence of this.

SIDERISE RH50(G/S) 'Open State' horizontal cavity barrier for maximum 50mm air gaps

SIDERISE have tested a range of horizontal cavity barriers with 50mm air gap to the above mentioned standards with seal reaction times of <1 minute and full closure at 2 minutes 22 seconds and they maintained the EI requirements as detailed in Tables 1 and 2 for EI 30. Test report BMT/FEI/F114007 shows evidence of this.

Small voids <50mm

For small voids <50mm please refer to Table 3 for up to E 120 and I 90. Test report WF 328279/A shows evidence of this.

SIDERISE RH ‘Open State’ horizontal cavity barriers

Table 1

Fire performance for SIDERISE RH25G ‘Open State’ horizontal cavity barriers with galvanised brackets for voids between 50 - 300mm

Product Type	Fire Rating		Dimensions (mm)	Void Range (mm)	Air Gap (mm)
	Integrity (E)	Insulation (I)			
RH25G-90/30	90	30	75 x void -25	49 - 300	25±3.0
RH25G-90/60	90	60	90 x void -25	49 - 300	25±3.0
RH25G-120/60	120	60	120 x void -25	49 - 300	25±3.0
RH50G-30/30	30	30	75 x void -50	60 - 300	50±5.0

Table 2

Fire performance for SIDERISE RH25S ‘Open State’ horizontal cavity barriers with stainless steel brackets for voids between 50 - 300mm

Product Type	Fire Rating		Dimensions (mm)	Void Range (mm)	Air Gap (mm)
	Integrity (E)	Insulation (I)			
RH25S-90/30	90	30	75 x void -25	49 - 300	25±3.0
RH25S-90/60	90	60	90 x void -25	49 - 300	25±3.0
RH25S-120/60	120	60	120 x void -25	49 - 300	25±3.0
RH50S-30/30	30	30	75 x void -50	60 - 300	50±5.0

SIDERISE RH 'Open State' horizontal cavity barriers

Table 3

Fire performance for SIDERISE 'Open State' horizontal cavity barriers for voids up to 50mm

Product Type	Fire Rating		Dimensions (mm)	Void Range (mm)	Air Gap (mm)
	Integrity (E)	Insulation (I)			
RH25-120/90	120	90	15 x 75	0 - 26	25±3.0
			20 x 75	42 - 48	25±3.0
RH25-90/30	90	30	15 x 75	37 - 41	25±3.0
			15 x 75	32 - 36	20±3.0
			15 x 75	27 - 31	15±3.0
			20 x 90	42 - 48	25±3.0
RH25-90/60	90	60	15 x 90	37 - 41	25±3.0
			15 x 90	32 - 36	20±3.0
			15 x 90	27 - 31	15±3.0
			20 x 120	42 - 48	25±3.0
RH25-120/60	120	60	15 x 120	37 - 41	25±3.0
			15 x 120	32 - 36	20±3.0
			15 x 120	27 - 31	15±3.0

NOTE: For voids greater than 300mm please contact the Facades team.

SIDERISE RH 'Open State' horizontal cavity barriers

INSTALLATION RECOMMENDATIONS

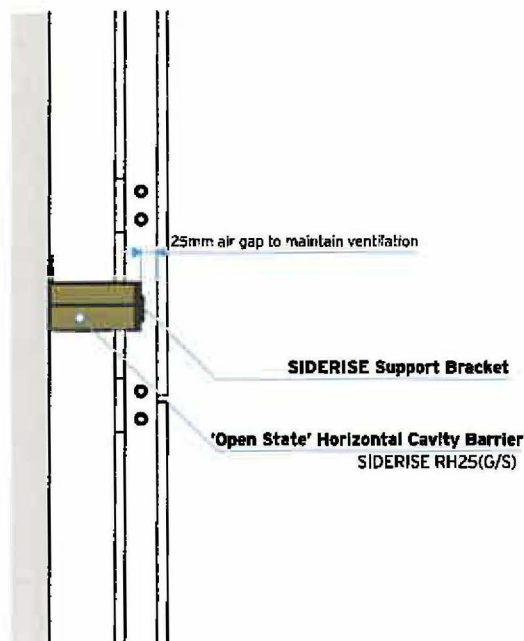
SIDERISE RH25(G/S) 'Open State' horizontal cavity barrier for maximum 25mm air gaps

These cavity barriers are installed in the void formed between the rainscreen facade and the inner structural wall, using the appropriate **SIDERISE support brackets** (see Tables 4-6).

To prevent fire flanking to the rear of the fire stop, any thermal insulation fitted to the outer face of the structural wall must be completely cut away to accommodate the thickness of this product.

The RH25(G/S) horizontal cavity barrier is fitted with the plain mineral fibre edge against the structural wall. A 25mm ± 3 mm (dimension may alter with specific design criteria) clear air gap should be left between the front edge of the cavity barrier and the rear surface of the rainscreen facade.

Adjacent lengths of the horizontal cavity barrier should be tightly abutted to prevent gaps. The top surface of the joint should be sealed with **SIDERISE foil tape** RFT 120/45.

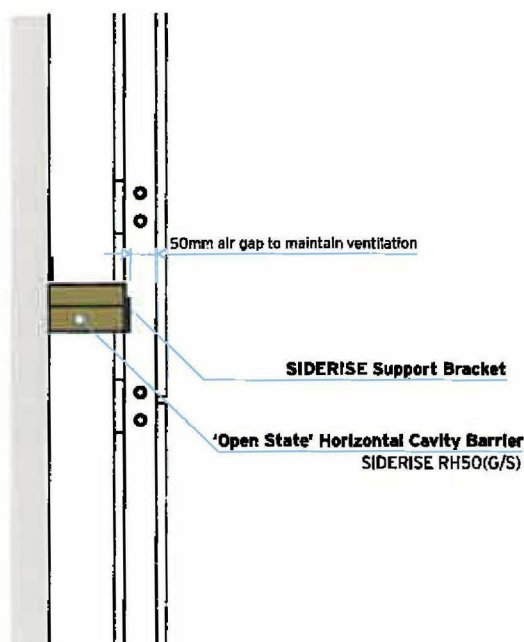


SIDERISE RH50(G/S) 'Open State' horizontal cavity barrier for maximum 50mm air gaps

These are installed in the void formed between the rainscreen facade and the inner structural wall using the appropriate **SIDERISE support brackets** (see Tables 5 & 6). To prevent fire flanking to the rear of the fire stop, any thermal insulation fitted to the outer face of the structural wall must be completely cut away to accommodate the thickness of this product.

The RH50(G/S) horizontal cavity barrier is fitted with the plain mineral fibre edge against the structural wall. A 50mm ± 5 mm (dimension may alter with specific design criteria) clear air gap should be left between the front edge of the cavity barrier and the rear surface of the rainscreen facade.

Adjacent lengths of the horizontal cavity barrier should be tightly abutted to prevent gaps. The top surface of the joint should be sealed with **SIDERISE foil tape** RFT 120/45.



SIDERISE RH 'Open State' horizontal cavity barriers

SUPPORT BRACKETS

A range of **SIDERISE support brackets** for horizontal cavity barriers are available for void widths of up to 300mm (see Tables 4-6). Lengths of the barrier are secured with these dedicated 'split' fixing brackets, which are impaled through the product at mid thickness.

The brackets are drilled on site and secured to the inner structural wall using non-combustible steel anchors or screws.

Please note:

For cut lengths a minimum of 2 brackets per length must be used. When using **SIDERISE support brackets**, pre-fitting the brackets to the product is recommended prior to fixing to the wall. For cut lengths <100mm one bracket/length.

'Screws' refers to the fixing and a washer with a 15mm (max.) head diameter. They should be non-combustible and suitable for substrate. The fixing is not supplied by SIDERISE.

SIDERISE RH25(G/S) 'Open State' horizontal cavity barrier for maximum 25mm air gaps (See Tables 4-6)

To facilitate bracket penetration, a small horizontal cut should be made in the face intumescent strip coinciding with the bracket's exit point. The protruding split ends should be trimmed to 10-20mm and counter-folded to retain the product. **SIDERISE galvanised brackets** and **SIDERISE stainless steel brackets** are available for purchase.

SIDERISE RH50(G/S) 'Open State' horizontal cavity barrier for maximum 50mm air gaps (See Tables 5 & 6)

SIDERISE RH50(G/S) - 30/30 must be installed with product logo tape on the top face, this is to ensure that the intumescent is located at the bottom of the barrier, thus closest to fire.

The protruding split ends should be trimmed to 10-20mm and counter-folded to retain the product.

SIDERISE galvanised brackets and **SIDERISE stainless steel brackets** are available for purchase.

Table 4

Fixing requirements for installation of SIDERISE RH 'Open State' horizontal cavity barriers for small voids

Product Type	Voids		
	0 - 50		
	Quantity	Type	Centres (mm)
RH25-120/90	3	Screw	400
RH25-90/30	3	Screw	400
RH25-90/60	3	Screw	400
RH50G-120/60	3	Screw	400

NOTE: Fixing screws are not supplied by SIDERISE.

Table 5

Fixing requirements for installation of SIDERISE RH 'Open State' horizontal cavity barriers with galvanised brackets

Product Type	Voids (mm)									> 300
	51 - 75			76 - 250			251 - 300			
	Quantity	Type	Centres (mm)	Quantity	Type	Centres (mm)	Quantity	Type	Centres (mm)	
RH25G-90/30	3	Screw	400	2	RS 350	600	3	RS 450	400	For Voids in excess of 300mm please contact SIDERISE Technical Department for details, extended range of application up to 450mm, >450mm subject to Engineering Appraisal Based on project detail
RH25G-90/60	3	Screw	400	3	RS 350	400	3	RS 450	400	
RH25G-120/60	3	Screw	400	3	RS 350	400	3	RS 450	400	
	60 - 75			76 - 250			251 - 300			
RH50G-30/30	2	RS 350	600	3	RS 350	400	3	RS 450	400	

NOTE: Fixing screws are not supplied by SIDERISE

Table 6

Fixing requirements for installation of SIDERISE RH 'Open State' horizontal cavity barriers with stainless steel brackets

Product Type	Voids (mm)									> 300
	51 - 75			76 - 250			251 - 300			
	Quantity	Type	Centres (mm)	Quantity	Type	Centres (mm)	Quantity	Type	Centres (mm)	
RH25S-90/30	3	Screw	400	2	RS 350 SS	600	3	RS 450 SS	400	For Voids in excess of 300mm please contact SIDERISE Technical Department for details, extended range of application up to 450mm, >450mm subject to Engineering Appraisal. Based on project detail.
RH25S-90/60	3	Screw	400	3	RS 350 SS	400	3	RS 450 SS	400	
RH25S-120/60	3	Screw	400	3	RS 350 SS	400	3	RS 450 SS	400	
	60 - 75			76 - 250			251 - 300			
RH50S-30/30	2	RS 350 SS	600	3	RS 350 SS	400	3	RS 450 SS	400	

NOTE: Fixing screws are not supplied by SIDERISE

SIDERISE RV vertical cavity barriers

PRODUCT DESCRIPTION

SIDERISE RV vertical cavity barriers for rainscreen cladding applications consist of a non-combustible stonewool lamella core, with reinforced aluminium foil faces, giving an overall reaction to fire performance to Class A1.

They are used to full fill the void between the external envelope and internal structure.

The construction offers an excellent resistance to the passage of both smoke and fire. Additionally, by fully sealing the void, they assist ventilated facades to function by maintaining air-pressurisation compartmentation.

Importantly, their unique stonewool lamella core construction enables the vertical barriers to accommodate the serviceability movement normally associated with rainscreen facades.

The leading edge compresses directly against the external envelope. No intumescent strip is required.



SIDERISE RV vertical cavity barrier

SIDERISE RV vertical cavity barriers

STANDARDS AND APPROVALS

SIDERISE RV vertical cavity barriers satisfy the requirements of:

- England and Wales - the Building Regulations 2000, Approved Document B (2006 edition), Appendix A, Table A1, item 10 (Volume 1) & item 15 (Volume 2) and diagram 33
- Scotland - Technical Handbook 2
- Northern Ireland - Technical Document E
- Ireland - Technical Guidance Document B

They also meet the higher minimum fire resistance standard (EI 30/30) for cavity barriers outlined in the LPC Design Guide for the Fire Protection of Buildings.

FIRE PERFORMANCE

SIDERISE RV vertical cavity barriers is based on proven fire performance to EN1366-4:2006 based on multiple tests with integrity ratings of 120 minutes and insulation rating of up to 120 minutes, (details on the extended performance are available on request).

SIDERISE RV vertical cavity barriers

Table 7

Fire performance for SIDERISE RV vertical cavity barriers

Product Type	Fire Rating		Thickness (mm)	Void Range (mm)
	Integrity (E)	Insulation (I)		
RV-90/30	90	30	75	26 - 300
RV-90/60	90	60	90	26 - 300
RV-120/120	120	120	120	26 - 300

SIDERISE RV vertical cavity barriers

INSTALLATION RECOMMENDATIONS

SIDERISE RV vertical cavity barriers: are installed within the cavity formed between the rainscreen façade and the inner structural wall, using the appropriate **SIDERISE support brackets** (see Table 8).

The RV cavity barrier is fitted vertically under nominal 10mm compression, completely filling the void. The product is installed with the plain mineral fibre edge positioned against the structural wall.

To prevent fire flanking to the rear of the fire stop, any thermal insulation fitted to the outer face of the structural wall, must be completely cut away to accommodate the thickness of vertical cavity barrier.

Adjoining lengths of this product should be tightly abutted to prevent gaps. Joints should be sealed with **SIDERISE foil tape RFT 120/45**.

Thanks to the unique internal 'lamella' construction, facade deflection can be accommodated, even at the mid-position of the panel system.

SUPPORT BRACKETS

A range of **SIDERISE support brackets** for the vertical cavity barriers are available for cavity widths of up to 300mm (see Table 8). Lengths of the barrier are supported with these dedicated brackets, which impale the product at mid thickness to depth 75% of void.

The brackets are supplied as standard in 1mm galvanised mild steel in a flat form for site folding. They incorporate pre-notched indents to aid this process.

The brackets are drilled on site and secured to the inner structural wall using non-combustible steel anchors or screws.

Brackets are installed at 600mm fixing centres (300mm from each end).

Please note:

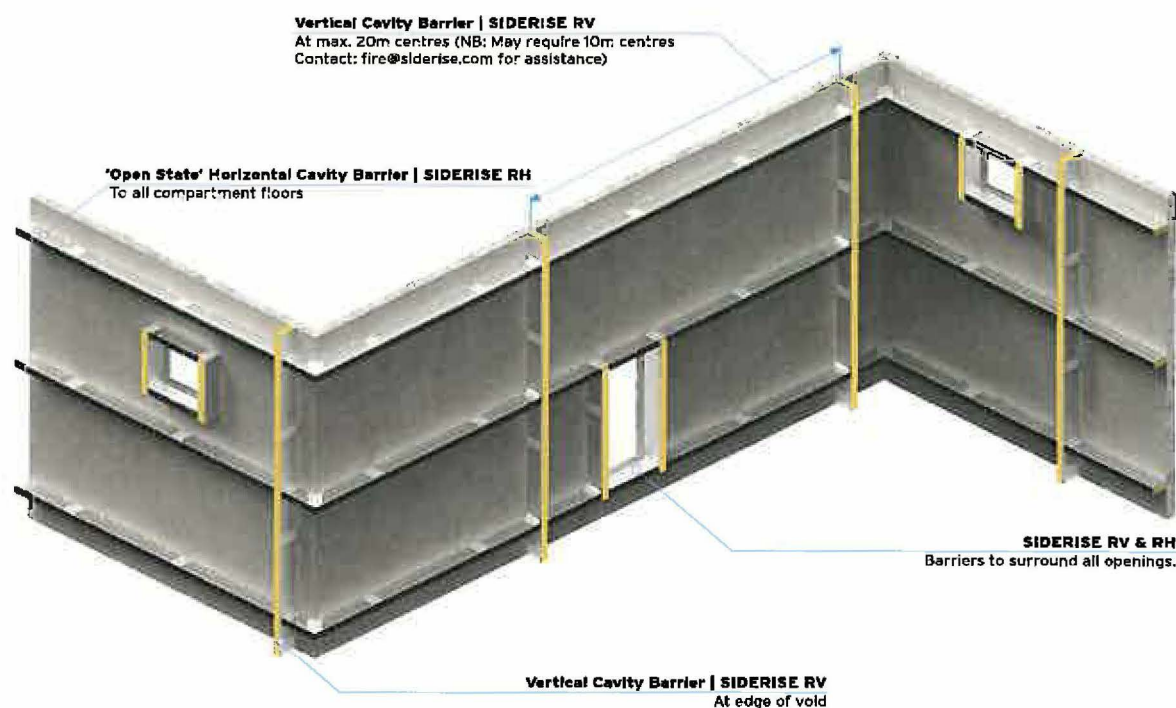
For voids less than 100mm: measured cavity + 5mm compression is required; for voids greater than 100mm: measured cavity +10mm compression is required.

Table 8

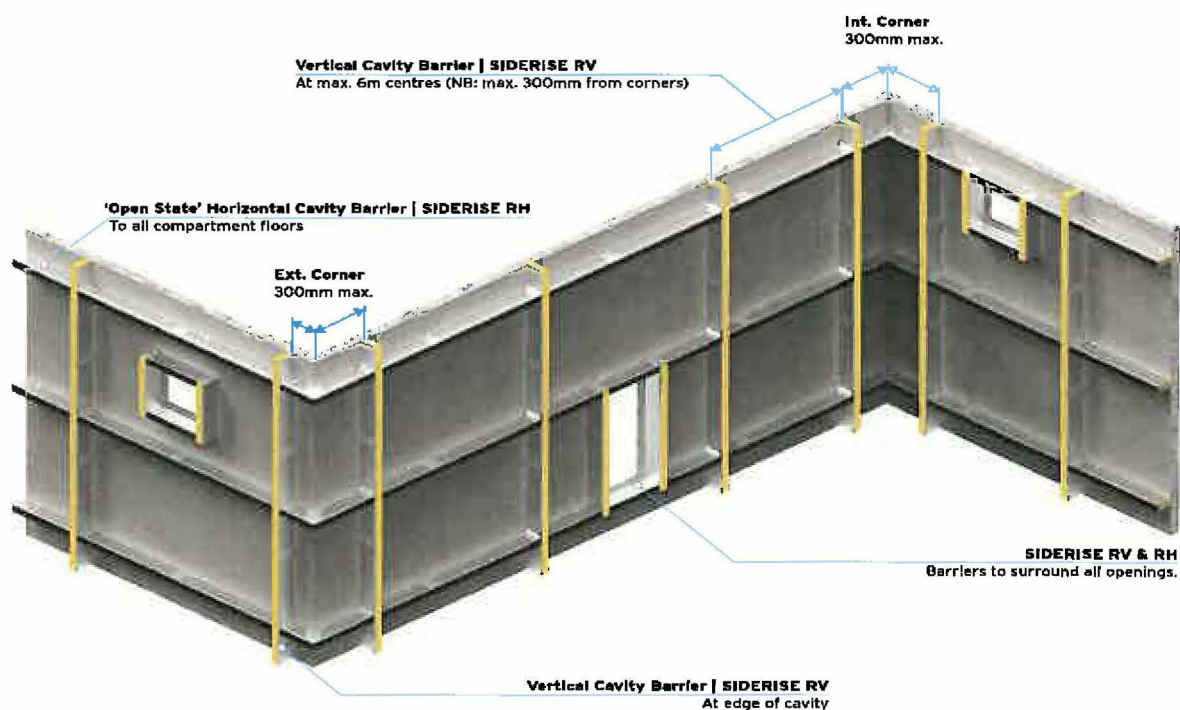
Brackets and centres for installation of SIDERISE vertical cavity barriers

Product Type	Voids (mm)							
	0 - 50		51 - 150		151 - 240		241 - 300	
RV-90/30	N/A	N/A	B65/110	600 Ctrs	B195	600 Ctrs	B355	600 Ctrs
RV-90/60	N/A	N/A	B65/110	600 Ctrs	B195	600 Ctrs	B355	600 Ctrs
RV-120/120	N/A	N/A	B65/110	600 Ctrs	B195	600 Ctrs	B355	600 Ctrs

Compartmentation: Approved Document B, 2006 edition, Volume 2. England and Wales



Compartmentation: NHBC guidelines



Extract from Approved Document B Table 13

Maximum dimensions of cavities in non-domestic buildings (Purpose Groups 2-7)

Location of cavity	Class of surface/product exposed in cavity (excluding the surface of any pipe, cable or conduit, or any insulation to any pipe)		Maximum dimensions in any direction (m)
	National class	European class	
Between roof and a ceiling	Any	Any	20
Any other cavity	Class 0 or Class 1	Class A1 or Class A2-s3, d2 or Class B-s3, d2 or Class C-s3, d2	20
	Not Class 0 or Class 1	Not any of the above classes	10

NB: The facade designer needs to satisfy themselves that the insulation being used complys with the correct European class, i.e. the four listed above.

Details of the European class can be obtained from the insulation manufacturer from their Declaration of Performance (DoP), following Construction Products Directives (CPD) and Product Standard EN 13162.

Technical specification

SIDERISE RH 'Open State' horizontal cavity barriers

Form supplied	1200mm long. Supplied pre-cut in width to suit advised void size
Colour	Horizontal - RH50(G/S) black/red tape, RH25(G/S) black/green tape
Finish	Aluminium foil
Density	Nominal 75Kg/m ³
Thermal conductivity	$\lambda_{20} = 0.039\text{w/mK}$
Void sizes	0-300 mm. For > 300mm option contact SIDERISE facades technical team
Fire resistance	See Tables 1, 2 and 3
Reaction to fire	Euro Class 'A1'

SIDERISE RV vertical cavity barriers

Form supplied	1200mm long. Supplied pre-cut in width to suit advised void size
Colour	No colour. Stonewool exposed to leading edge
Finish	Aluminium foil
Density	Nominal 75Kg/m ³
Thermal conductivity	$\lambda_{20} = 0.039\text{w/mK}$
Void sizes	0-300 mm. For > 300mm option contact SIDERISE facades technical team
Fire resistance	See Tables 7
Reaction to fire	Euro Class 'A1'



Further information

PRODUCTS AVAILABLE

The following SIDERISE products are available.

- **SIDERISE RH 'Open State' horizontal cavity barriers** - RH50(G/S) and RH25(G/S)
- **SIDERISE RV vertical cavity barriers**
- **SIDERISE foil tape:** Type RFT 120/45
- **SIDERISE support brackets** - galvanised or stainless steel options

DOCUMENTS AVAILABLE

The following information is available upon request or via download from the website:

- NBS Specification Clause
- Safety Data Sheet
- Cutting and Installation instructions
- White paper

ENVIRONMENTAL

SIDERISE RH 'Open State' horizontal cavity barriers and SIDERISE RV vertical cavity barriers are environmentally friendly.

- They contain no Volatile Organic Compounds (VOCs) and no very Volatile Organic Compounds (vVOCs).
- Zero Ozone Depleting Potential
- Zero Global Warming Potential
- Recyclable

SPECIFICATION

SIDERISE offer specifiers support from initial enquiry and technical consultation to project realisation. NBS draft specifications are provided for standard products and applications and can be tailored to suit specific project performance requirements.

TECHNICAL SUPPORT

SIDERISE provides a comprehensive range of technical support services including:

- Project specific or application specific technical support at initial tender or full detailed design stage.
- Training and formal accreditation your staff or sub-contractors as competent installers.
- Introduction of formally accredited, third party approved fire protection installers.
- Attendance at site meetings in a consultative capacity for either firestopping or acoustic design support.
- Consultation with Building Control Officers, Architects, Main Contractors or Noise Consultants to provide support at any stage of the project.
- Co-ordination of site visits with BCO or other stakeholders to inspect and sign off installations, putting the Client or Main Contractor at ease.
- Production of formal letters, confirming the details of site inspections and findings.



SIDERISE GROUP

Forge Industrial Estate,
Maesteg, UK, CF34 0AY
T: +44 (0)1656 730833
F: +44 (0)1656 812509
E: facades@siderise.com
W: www.siderise.com

