



SIDERISE SC cavity barriers & fire stops for suspended ceilings

Semi-rigid composite sheets designed for free standing in ceiling voids that improve room-to-room sound reduction and prevent the spread of fire and smoke.

Application

SIDERISE SC cavity barriers and fire stops for suspended ceilings have been designed to provide a simple and easy to install method of sealing the void formed above suspended ceilings.

These SIDERISE systems provide a resilient seal between the top of a partition, or fire resistant suspended ceiling, and the structural soffit.

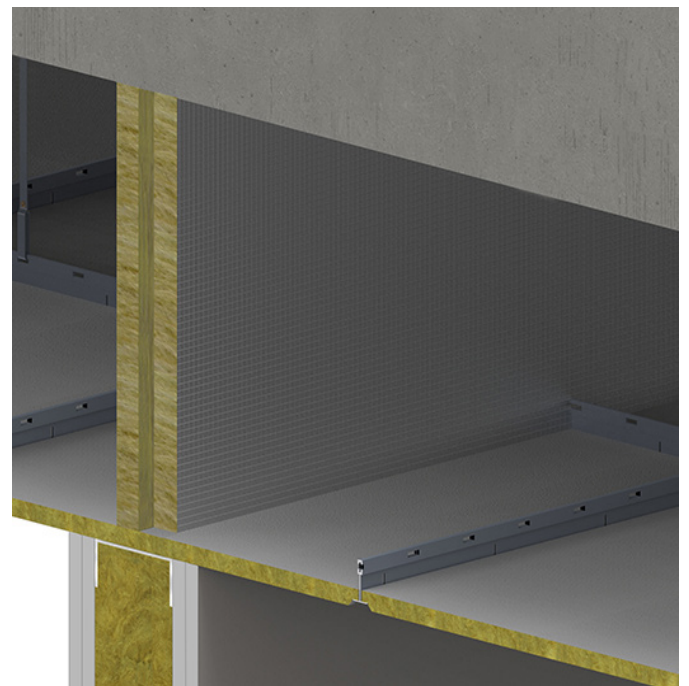
Typical applications include:

- Voids above suspended ceilings
- Acoustic barriers
- Areas of difficult access

Products from the SIDERISE SC range comprise a one piece, close dimensioned product with a pre-compressed internal mineral fibre core. The products have integral aluminium foil facings to provide a Class A1 rating and excellent resistance to smoke.

The standard range has been optimized to incorporate options of materials that are cost effectively matched to suit the specific performance criteria for all suspended ceiling void requirements. The choice of material is simply determined by the performance requirement in terms of fire resistance.

Being specifically designed for this application, this range represents a combination of fully qualified performance, practical installation and service benefits.



Benefits

- Acoustic performance (Rw): 23 - 25dB
- D_{nCw} up to 45dB
- Fire performance: 30 - 120 minutes
- Fire and smoke seal
- Suitable for use in voids up to 1175mm high
- No requirement for additional sealants or adhesives
- No requirement for fixing sub-frame

Product description

SIDERISE SC cavity barriers & fire stops for suspended ceilings are produced using a unique method of manufacture that provides a resilient lateral compression property facilitating installation, ensures the requisite tight fit and thereby enhances fire integrity.

As standard, the materials are supplied with an interlocking overlap joint to further enhance the integrity of the installation.

The materials are either supplied as pre-cut units to suit a quoted void size or in 1200mm x 1200mm sheet form for cutting on site and are installed with no fixing sub-frame required.

The installed cover length is 1175mm due to a 25mm rebate which provides a lap joint. (The only exception to this is SC-FS300 which has a 1125mm cover length due to a 75mm rebate).

The materials used in the range comprise a one-piece product having a pre-compressed non-combustible rockfibre core. The products also have integral aluminium foil facings to provide a Class A1 rating and excellent resistance to smoke.

SIDERISE SC-CB cavity barrier systems are used to subdivide uninterrupted voids in accordance with Building Regulations.

SIDERISE SC-FS fire stop systems maintain continuity of fire resistance for installations aligned with fire rated partitions and thereby maintain compartmentation.

The systems can offer tested fire rating options ranging from 15 minutes to 5 hours and can accommodate cavity depths up to 1175mm.

In addition to providing an effective seal against the passage of fire and smoke the products will also function as effective acoustic barriers and plenum linings.

The SIDERISE SC suspended ceiling fire stops and cavity barriers are single components which are simply engaged end-to-end within the void to form a continuous fire, smoke and acoustic barrier. The correct sized units are placed in position ensuring that the interlocking joints are pushed tightly together.

Acoustic performance

The SIDERISE SC range provides an effective sound barrier as the material construction and inherent properties of the mineral fibre core afford the products exceptional acoustic performance which improves the room-to-room sound reduction of suspended ceilings.

Their acoustic performance is attributable to the mass of the mineral fibre core coupled to the unique resilient lamella board internal construction. Also, the rebated joints, foil facings and the additional sealing of joints with foil tape all serve to provide improved air tightness.

Based on laboratory tests to determine airborne sound transmission in accordance with BS EN ISO 140-3: 1995 on a variety of lamella board constructions, the Weighted Sound Reduction Index SRI (R_w) values in Table 1 can be used.

The installation of the SIDERISE SC system above a partition will significantly increase the room-to-room attenuation. The precise value will depend upon the specifics of the ceiling construction. Please contact our Interiors technical team for advice on a project basis.

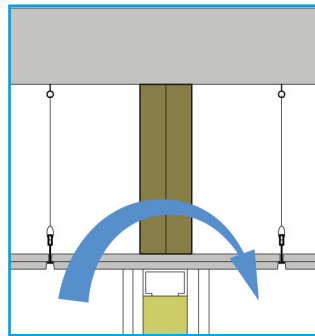


Fig 1. Sound Transmission Path

Table 1 - Weighted SRI

System	Thickness (mm)	R_w (dB)
SC-CB15	50	17*
SC-CB30	75	21
SC-FS90	90	23
SC-FS180	120	25
SC-FS300	175	27*

NOTE: * R_w value interpolated from test results - Sound Research Laboratories Ltd. Test Report No. C/99/5L/7743/1

Fire performance

The design and manufacture of the range of SIDERISE SC systems is based on proven fire performance to BS 476 : Part 20 : 1987.

See Table 2 below.

SIDERISE SC-CB CAVITY BARRIERS

Approved Document B to the current Building Regulations requires that cavity barriers must have a minimum standard of fire resistance of 30 minutes with regard to integrity and 15 minutes with regard to insulation. (When a more stringent specification is required SIDERISE SC-FS fire stops can be used for 30 minute cavity barriers.)

CB15 cavity barriers meet all relevant current provisions for cavity barriers. These include:

- In England and Wales, Approved Document B3 to the Building Regulations Vol 1 & 2 2010.
- In Scotland, Domestic and Non-Domestic – Fire 2011.
- In Northern Ireland, Technical Booklet E, The Building Regulations (Northern Ireland) 2005.
- In Eire, Technical Guidance Document B, The Building Regulations 2006.
- Schools BB100.
- Hospitals HTM 05.

SIDERISE SC-FS FIRE STOPS

FS60 is suitable for installation above a 60 minute fire rated partition to provide continuity of fire resistance. For more stringent requirements SIDERISE SC-FS fire stops can provide a fire rating of up to 300 minutes for both insulation and integrity.

Table 2 - Fire performance

Void size >	50 - 600 (mm)		601 - 1175 (mm)
Up to 30mins	SC-CB15	SC-CB30	SC-CB30HV
	50mm	60mm	75mm
	30/15mins	30/30mins	30/30mins
Up to 60mins		SC-FS60	SC-FS60HV
	-	90mm	120mm
	-	60/60mins	60/60mins
Void size >	50 - 400 (mm)		
Up to 180mins	SC-FS90	SC-FS180	
	90mm	120mm	-
	90/90mins	300/180mins	-
300mins*	SC-FS300		
	175mm	-	-
	300/300mins	-	-

NOTE: *SC-FS 60 will achieve a fire performance of 90 minutes in tests when used in voids between 200 and 400mm

Installation

STANDARD SYSTEMS

SIDERISE SC Sheets:

Sheet products are supplied 1200 x 1200mm for cutting on site, which may prove beneficial when the actual void size is unknown or where it varies significantly.

The installed cover length is reduced to 1175mm due to the 25mm product rebate which provides a lap joint.

Note: When ordered in sheet form the requisite quantity of SIDERISE fixing brackets needs to be purchased separately.

SIDERISE SC Strips:

Pre-cut strip products are available in 1mm increments of the width so as to provide a tight compressive fit within the void. Each pre-cut SIDERISE SC unit is supplied with fixing brackets. The standard fixing brackets are supplied in galvanised steel in flat form that is pre-notched for folding on site (see Fig 2).

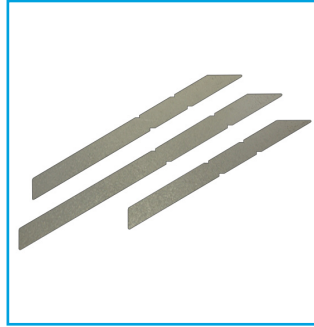


Fig 2. SIDERISE brackets

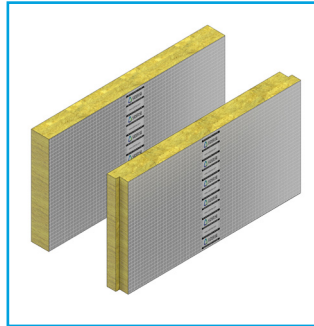


Fig 3. For all voids over 200mm the SC system is supplied with a 25mm rebated joint, providing 1175mm cover length. For voids under 200mm the SC is supplied with a butt joint, providing 1200mm cover length.

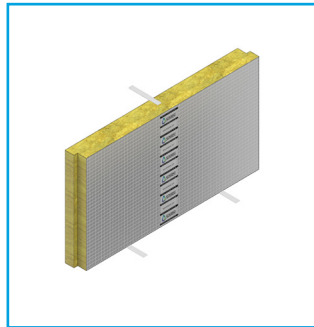


Fig 4. Fixing brackets are impaled into the SC-FS fire stop material, 2 in the base, 1 in the top at nominal 400mm fixing centres. Joints may be sealed with foil tape to maintain continuity of smoke barrier foil facing.

INSTALLATION PRINCIPLES

For all installations the product is fitted to the full depth of the ceiling void with a compression allowance:

For voids up to 200mm high the minimum product height is void height +5%.

For voids 201 - 1000mm the minimum product height is void +10mm.

The vertical standing boards may be finished with SIDERISE foil tape to maintain continuity of the smoke barriers' foil facings and to enhance the fire and acoustic integrity of the assembly. Further application of tape to the top and along the base of the unit presents an effectively sealed construction which is suitable for plenum lining applications.

The height of the SIDERISE SC is sized to suit the measured void height plus a compression allowance. If necessary the height of the material can be trimmed on site using a sharp serrated knife providing the compression allowance is maintained.

INSTALLATION OF SIDERISE SC-CB

SIDERISE SC-CB cavity barriers have been specifically developed to meet the provisions for cavity barriers as required by current legislation.

They are used to laterally subdivide large uninterrupted voids above suspended ceilings of up to 1 metre or less.

The vertical standing seals used to subdivide the ceiling voids should, wherever possible, be placed so as to coincide with the fire-resisting partitions in the compartment below the ceiling. This may require location of barriers at less than the maximum 20 metre spacing.

Where a compartment has many fire-resisting partitions, it should not be necessary to locate a cavity barrier above every one (so long as the maximum limit on void dimension is not exceeded). For a fire rating above 30 minutes, however, every compartment wall must have a barrier.

In practice, consideration should be given to the requirement for the installation of SC as an acoustic barrier to limit cross-talk.

FIXING BRACKETS

Fixing brackets are incorporated into the assembly to maintain the integrity of the construction. They are simply impaled alternately into the top and base of the barrier prior to installing, using 3 No. per unit which are positioned at nom. 400mm centres. The fixing brackets are mechanically fixed to the surrounding structure with steel fixings.

The standard SIDERISE fixing brackets are available in a flat pre-notched form for folding on site to the requisite "L" or "Z" shape (see Fig 2). They are pre-cut to a spike so that the long leg can penetrate into the barrier.

For voids up to 1175mm high, B355 brackets are required which are 355mm x 150mm x 25mm long x 1mm thick and are used with the long leg penetrating into the barrier.

Table 3 - Brackets and fixing centres

Bracket Ref.	Void Size (mm)		Quantity	Centres (mm)
	Min.	Max.		
B355	200	1175	3	400

Service penetrations

Fire spread and limitation of damage is principally achieved by compartmentation. These compartments are bounded by fire resistant elements including SIDERISE SC-FS fire stops.

However, in practice, the many services required for buildings use and operation mean that these elements are breached to permit access for services. The gaps around the penetrations must be sealed so that the fire integrity of the element is retained.

We have tested compatibility of the SIDERISE SC range of fire stopping systems to which ad-hoc test FC 149 refers. Standard SIDERISE SC systems can be readily treated to accommodate small to large obstructions such as PVC pipes, cable trays and ductwork.

PENETRATION BY CABLE TRAYS

SIDERISE FB-FS60 coated batt fire stops will maintain integrity of installed SIDERISE SC systems. Carefully cut in SC aperture to suit. Cut batt to suit. Perimeter of batt/ interface with SC plus perimeter of service penetrations all additionally sealed with: SIDERISE fire & acoustic gap sealant.

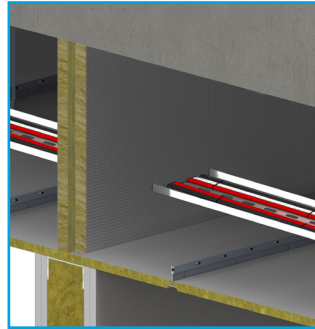
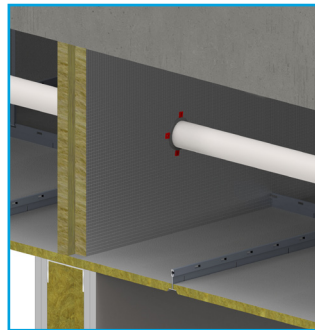


Fig 5. Penetration by cable trays



PENETRATION BY METAL PIPES

For metal pipes up to 25mm diameter no separate pipe closure system is necessary as the SIDERISE SC has sufficient material thickness to maintain the seal. If combustible lagging is present, this must be stripped local to the SC. 'V' notch the SC so as to tightly receive the pipe diameter. There must be no remaining gaps through the barrier. To ensure the Integrity of the construction, all joints pipe must be sealed with SIDERISE fire & acoustic gap sealant for metal pipes. For metal pipes between 60 - 100mm diameter proprietary sealing system must be used. Contact our Interiors technical team for advice.

PENETRATION BY PLASTIC PIPES

SIDERISE PC-FS120 intumescent collars. Cut SC - oversize diameter by 10mm max. Position and secure collar with tab fastening. Fix through SC with metal pin and non-return washer fixings. Seal with SIDERISE fire & acoustic gap sealant.

PENETRATION BY FIRE RATED DUCTS

Please refer to ASFP 'Grey Book' for dampers. (www.asfp.co.uk)

Technical specification

SIDERISE SC cavity barriers & fire stops for suspended ceilings

Form supplied (mm)	Sheet form: 1200 x 1200mm. Pre-cut: Strip products are available in 1mm increments of width.
Colour	Silver
Finish	Aluminium foil facing
Thickness (mm)	50 - 175
Surface weight (kg/m ²)	4 - 14
Fire performance	See Table 2, page 3
Reaction to fire	A1 to EN 13501-1



Further information

PRODUCTS AVAILABLE

The following SIDERISE products for use in suspended ceiling voids are available and can also be specified using NBSPlus:

- SIDERISE SC cavity barriers and fire stops
- SIDERISE FLX flexible acoustic barriers
- SIDERISE CBX flexible acoustic barriers
- SIDERISE CVB (CVB/LAM, CVB/P) acoustic void barriers
- SIDERISE AVC acoustic void closures for tops of walls
- SIDERISE TW fire stops for profiled decks
- SIDERISE foil tape: FT 120/45
- SIDERISE fire & acoustic gap sealant

Contact us for a copy of our SIDERISE ceiling void barrier range brochure.

AVAILABLE CPDS

Contact SIDERISE for further information on our CPDs:

- SIDERISE CVB range: Use and Specification for the Suspended Ceilings Industry
- SIDERISE Acoustic Products & Performance - Information for Noise Consultants

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