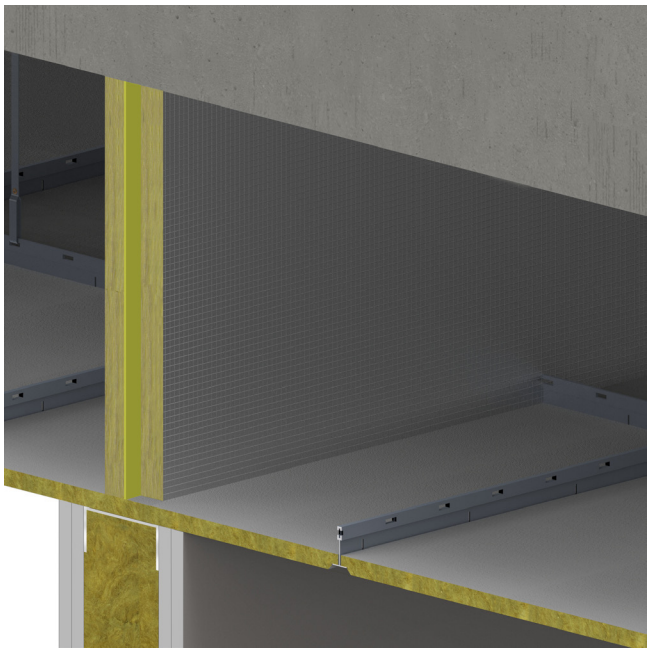
Siderise CVB acoustic void barriers for suspended ceilings & raised access floors



A semi-rigid composite sheet that reduces sound transmission between rooms, designed for free-standing in both ceiling and raised access floor voids.

Siderise CVB

Siderise CVB acoustic void barriers are primarily intended to reduce sound transmission via hidden voids offering potential 'cross-talk' paths to adjoining areas. For suspended ceiling or raised access floors, typical voids include those formed at partition lines and the cavity formed at floor slab abutments to curtain walls.

The product comprises a high-density resin bonded rockfibre insulation core with exposed faces finished in a reinforced aluminium foil.

As standard for the SFO grades it incorporates opposing interlocking rebate joints in one direction. This feature helps maintain acoustic integrity at joints within the installed barrier.

Application

Siderise CVB is available in a number of grades and thicknesses that offer a wide range of sound reduction values. The product is also available with a choice of optional high mass central membranes to achieve substantially higher Sound Reduction Index (SRI) values. (Contact our SSPL Technical Team for advice.)

Some Siderise CVB barriers have certified fire resistance permitting their dual use as ceiling or floor void fire barriers The product is extremely simple to fix and can be easily cut to accommodate service penetrations.

Product description

The rockfibre insulation core of Siderise CVB acoustic void barriers for suspended ceilings is available in a range of densities and in two different structural forms:

SFO
the conventional construction (i.e. the direction of the internal fibres predominantly aligns with that of the barrier itself).

HSL
the special 'lamella' construction (i.e. the internal fibres have a perpendicular orientation and additionally are held in a pre-compressed state).

The advantage of the HSL construction is that it offers improved acoustic performance at lower surface weights. Additionally, the HSL version is more compressible in the plane of the barrier, assisting friction fitting and aiding deformation around service penetrations.

The SFO form is also optionally available with the inclusion of a central limp heavy membrane. The surface weight of the polymeric membrane (P10) is 10kg/m^2.

Siderise CVB is faced as standard on the exposed surfaces with a reinforced aluminium foil.

Benefits

CVB/LAM

- Acoustic performance (Rw): 23 - 25dB.
- $D_{nC,w}$ up to 45dB.
- Fire Resistance: 30 - 60 minutes.
- Reaction to Fire classification – A1.

CVB/P

- Acoustic performance (Rw): 28 - 31dB.
- $D_{nC,w}$ up to 55dB.
- Reaction to Fire classification - B-s1, d0.

Table 1 – Barrier Grades

Product Code	Type	Thickness (mm)	Weight (Kg/m^2)	R_w (dB)
CVB/75LAM/90 **	HSL	90	7.1	23dB (R_w)
CVB/75LAM/120 **	HSL	120	9.4	25dB (R_w)
CVB/100/100R (Subject to MOQ) ***	SFO	100	10	19dB (R_w)
CVB/140/100R (Discontinued) ****	SFO	100	14	21dB (R_w)
CVB/80/P10/100R	SFO + P10	105	18	31dB (R_w)*
CVB/80/P10/100R + CB10P	Twin Barrier arrangement	250 o/a	29	49dB (R_w)

Note * Assessed value ** Now supplied with Non-Rebated edges as standard *** Subject to Minimum Order Quantity **** No longer available

Acoustic performance

Frequently the sound separation achieved between adjoining rooms or offices is severely limited by 'cross-talk' via a common void. This occurs when the transmission loss associated with this sound path is less than that provided by the primary separating element (e.g. partition or floor).

Typical situations include:

- Suspended ceiling voids above partitions.
- Access floor voids below partitions.
- Cavities at floor slab edges to façades.

The inclusion of Siderise CVB can normally remedy this problem for all of these conditions. For common voids above orbelow partitions it is usual to install the CVB barrier directly in line with the partition (see Fig 1).

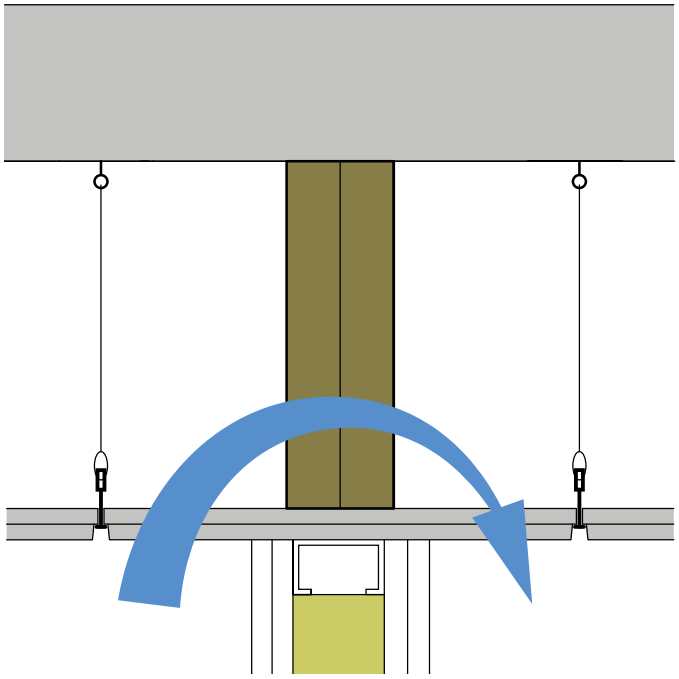


Fig 1. Sound Transmission Path

The Sound Reduction Index (SRI) of Siderise CVB is not normally required to equal that of the partition itself. This is due to the presence of other obstructions in the room-to-room sound path (e.g. the raised access floor or suspended ceiling).

The individual performance of the barrier need only be sufficient to correct the shortfall between the partition and the untreated cross-talk path.

The actual value of these paths can vary substantially. For suspended ceiling voids 15-40dB ($D_{nC,w}$) would be usual, whereas values of 38-42dB ($D_{nf,w}$) would be associated with most raised access floor systems.

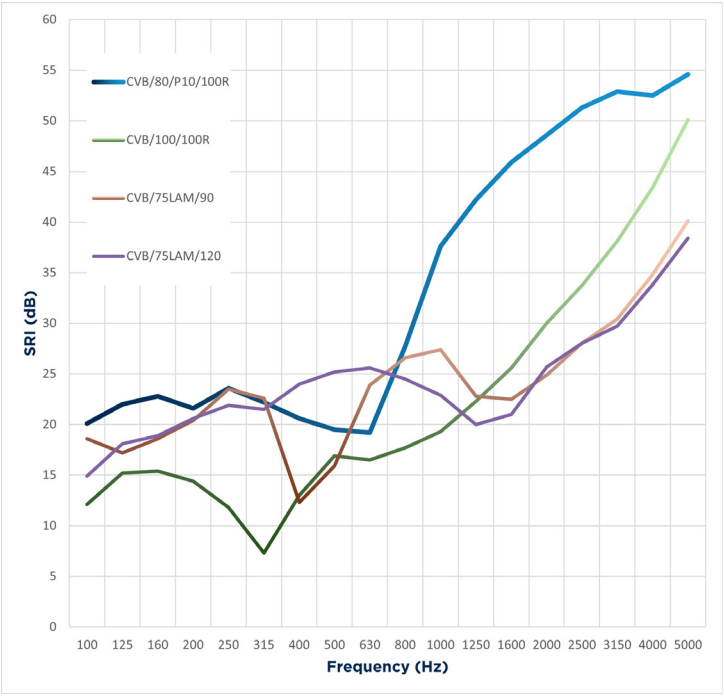
With knowledge of either the existing overall path value or details of the individual path obstructing elements, an acoustic engineer can assess a minimum SRI value for the CVB acoustic barrier.

Our SSPL Technical Team can also offer assistance in this area. Occasionally conditions arise that demand substantially higher SRI values of the CVB acoustic barrier. Examples include: ceiling voids formed by open-cell or substantially perforated suspended ceilings; supply air floor plenums or voids at floor abutments to curtain walls. Twin barrier or multiple element arrangements can then be employed to accommodate almost all possible sound performance criteria.

Table 1 - Barrier grades indicate weighted sound reduction index values (R_w) for a range of Siderise CVB acoustic void barriers.

Twin barrier constructions have been tested to provide up to 49dB(R_w). Also double arrangements combined with a Siderise fire stop have achieved 51dB(R_w).

All values are for the barrier arrangement alone. Room-to-room performance would therefore normally be significantly higher.



[Mean Sound Reduction Index. 100-3150Hz] To BS EN ISO 140-3:1995, BS 2750: Part 3;1995

Ceiling Voids

In this application Siderise CVB is normally installed by means of a compression fit between the structural soffit and the lower suspended ceiling (or partition head where this projects into the void). The product is cut oversize then friction fitted into its final position (see Fig 2).

In addition to simple friction fitting, Siderise CVB may also be mechanically retained. This would normally apply for larger void heights or for any other condition where it is considered prudent, e.g. when significant ceiling/floor deflections are possible. In these circumstances barrier retention can be achieved using Siderise support brackets.

Alternatively, the head of the product may be securely retained by the installation of metal angle sections to each side (see Fig 3).

Where the barrier abuts a suspended ceiling with projecting grid elements, improved sealing can be affected by cutting corresponding slits into the lower edge of the product. These cuts assist in allowing the barrier to deform snugly around the grid component whilst still maintaining a tight compression fit to the rear of the ceiling tile

Service penetrations are generally best accommodated by cutting the barrier horizontally on the service's centre line or at a perimeter edge. The product is then hand profiled to create a corresponding cut out to the service cross-section. It is essential that both the cut out and cut line are then tightly abutted. Cut joints and the vertical joints should be sealed on both sides with 120mm wide Siderise foil tape.

Siderise CVB is generally limited to a maximum void height of 1200mm. Siderise offers other products suitable for larger void heights (e.g. CBX Barrier).

Generally a single Siderise CVB acoustic void barrier, in combination with the room-to- room sound transmission loss offered by the suspended ceiling, is adequate. However, a twin barrier arrangement can be employed for conditions where a low performance contribution can be expected from the suspended ceiling, e.g. an open cell construction or the presence of significant light or diffuser penetrations (see Fig 4).

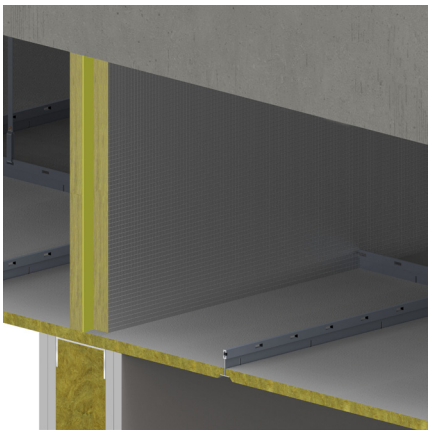


Fig 2. Friction fit in a low height void

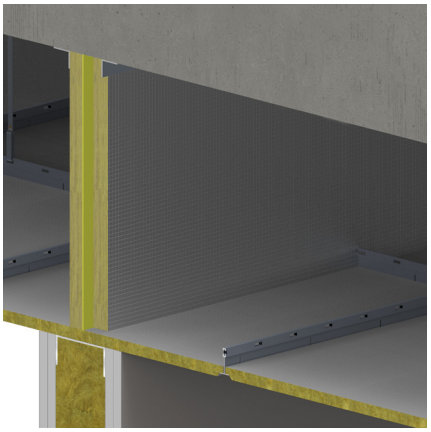


Fig 3. Head fixing with twin angles

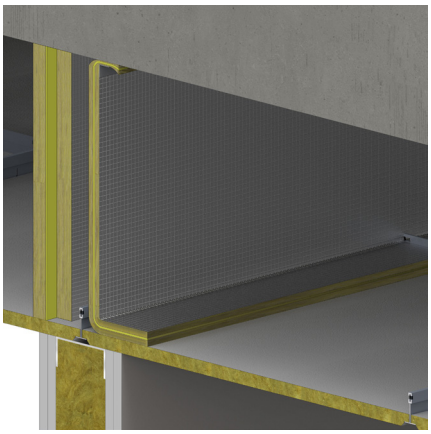


Fig 4. Twin barrier using CVB & CBX

Raised access floor Voids

As with suspended ceiling voids, raised access floor voids also offer a potential cross-talk sound path between adjoining rooms (see Fig 5).

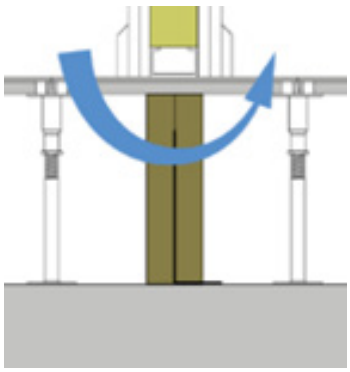


Fig 5 Access floor void cross-talk path

However, as a result of their higher surface mass and normal lack of open penetrations, they inherently provide for a higher starting room-to-room sound transmission loss. Typically an installed access floor will offer a room-to-room value of circa 38-42dB ($D_{nf,w}$). This level of performance is achieved without the presence of any vertical barrier within the floor void.

The installation of Siderise CVB acoustic void barriers will significantly further improve the room-to-room sound transmission loss. The upper achievable value will in all probability become limited by structure borne flanking transmission.

Given the higher starting values, the need to incorporate higher performance Siderise CVB acoustic barrier arrangements is relatively unusual. This requirement is typically limited to conditions where penetrations to the floor are present, e.g. perimeter heating troughs etc.

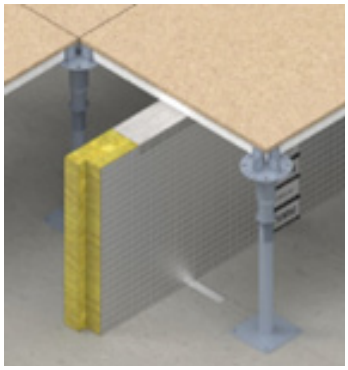


Fig 6. CVB with optional rebates and added stabilising brackets

As for ceiling voids, Siderise CVB is also usually retained by means of a vertical compression fit. This is normally achieved by free-standing an oversized Siderise CVB barrier on the structural floor. The access floor tiles are then fixed down to create the necessary vertical compression. For larger voids the stability of the barrier can be enhanced by the use of Siderise support brackets (see Fig 6). The brackets are reversed alternately and are usually used at a rate of 3 per 1200mm length.

Service penetrations are dealt with in the same manner as described in ceiling void applications. All vertical joints and any cut joints should be sealed on both sides with 120mm wide Siderise foil tape.

Certain grades of Siderise CVB have been tested for suitability in air plenum conditions. Measured air leakage was found to be within known guidelines for pressures up to 250Pa.

For further details including Siderise foil tape specifications please contact our SSPL Technical Team.

Technical specification

Form Supplied	Sheets 1200mm x 1200mm: 1200mm x 1000mm or 1200mm x 900mm (according to grade)
Colour / Finish	Silver / Aluminium Foil
Thickness	Normally 50-150mm (according to grade)
Surface weight	Nominal 7-14Kg/m2 (HSL or SFO) and 18-27Kg/m2 (grades with Central Mass Membrane)
Cover size	As above sheet sizes less 25mm for selected Grades / Dimension with rebates
Fire resistance (BS EN 1366-4:2006+A1:2010)	CVB/LAM – 30-60 minutes depending on void height to a maximum 600mm void CVB SFO or SFO+P Barrier – None, Acoustic only barrier
Reaction to Fire (EN13501-1:2018)	CVB/LAM – A1 CVB SFO+P Barrier – B-s1, d0

Handling

Siderise CVB are fairly heavy barriers, care should be taken when handling to protect the product from damage and the handler from personal injury.

The sheets are packed directly onto pallets.

Products available

The following Siderise products for use the Interiors Sector are available and can also be specified using NBS Plus:

- Siderise MC mullion overclad system.
- Siderise FIP façade interface panel.
- Siderise CBX flexible acoustic barriers.
- Siderise FLX foam based flexible acoustic barriers.
- Siderise AVC acoustic void closures for tops of walls.
- Siderise TW fire stops for profiled decks.
- Siderise foil tape: FT 120/45.

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

Further information

Technical support

For further information please contact our technical team at the address below.

Available CPD's

Contact Siderise for further information on our CPDs:

- Siderise Acoustic Products for Commercial Interiors - Architect Edition
- Siderise Acoustic Products and Performance with 1/3rd Octave Data – Acoustic Consultants Edition

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