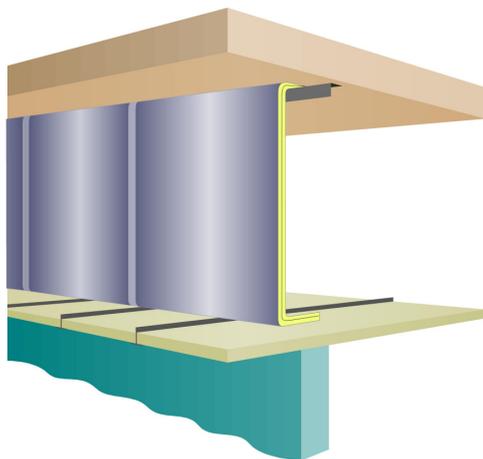


Introduction



CBX Series Barriers

Lamaphon CBX Series Acoustic Barriers are flexible composite quilts designed for free-hanging in ceiling voids above partition lines. They have been specifically developed to provide a simple solution to the common problem of improving 'room to room' sound separation via a common ceiling void.

All grades offer exceptional sound reduction properties in comparison to common ad-hoc solutions using standard flexible / resilient materials.

The product is extremely quick & easy to install and is suitable for both new build and refurbishment projects.

Being flexible and thin they are ideal for remedial treatment requiring only limited disruption to an existing suspended ceiling during installation.

Unlike partitions or structures formed from rigid boards, CBX barriers accommodate service penetrations simply. Being inherently flexible it is not necessary to apply resilient packing around the penetration and caulk - a normal requirement with rigid structures to isolate any mechanical services vibration from the partition.

The barrier's flexibility allows it to be easily deformed around localised obstructions within the ceiling void.

Description

Lamaphon CBX Acoustic Ceiling Void Barriers are multi-layered composite materials.

The central layer is a thin flexible heavy septum membrane. Two types of membrane are available. Lead foil or a polymeric heavy salt loaded barrier. Both types incorporate to one side a laminated glass fabric 'anti-creep' layer. This is designed to prevent possible long-term elongation of the product in its normal free hanging condition. Additionally, this layer provides additional reinforcement to through penetrations at fixing points.

Both types of central membranes provide matching acoustic performance for each of the two standard surface weight options. The primary difference between the types is their mechanical characteristics when bent or deformed. The lead foil membrane has a tendency to memorise deformation. In consequence the final selection is normally at the contractor's preference.

To each side of the membrane is a soft high-tensile glass fibre insulation layer. This is faced as standard on the exposed surface with a reinforced aluminium foil.

Alternative facings for special conditions are available e.g. with open-cell ceilings a matt black finish is commonly required.

Grades

Product Code	Description
CB5	5 kg/m ² - lead foil central membrane
CB10	10 kg/m ² - lead foil central membrane
CB5P	5 kg/m ² - polymeric barrier central membrane
CB10P	10 kg/m ² - polymeric barrier central membrane

Specification

Product	Lamaphon 'CBX' Series Barrier
Sheet size	1800 x 1200mm (CB5 & CB10) 2000 x 1200mm (CB5P & CB10P) (Special lengths are available for CB5 & CB10)
Thickness	Nominal 40mm (CBX barrier can be readily compressed)
Surface weight	Nominal 6kg/m ² (CB5 & CB5P) Nominal 11kg/m ² (CB10 & CB10P)
Central mass membrane	Lead foil (CB5 & CB10) Polymeric barrier (CB5P & CB10P)
Standard finish	Bright reinforced aluminium foil to both surfaces
Fire Performance (Standard finish)	BS 476, Part 7: Class 1 BS 476, Part 6: I<12, I ₍₁₎ <6 (Class 'O' to Building Regulations)
Thermal conductivity	0.035 W/mK

Acoustic Performance

Frequently the sound separation achieved between adjoining rooms or offices is severely limited by 'cross talk' via a common ceiling void. This occurs when the transmission loss associated with this sound path is less than that provided by the partition.

This situation can be remedied by either the installation of vertical barriers above the partition lines or by upgrading the existing suspended ceiling by the application of overlay materials. The former option is generally preferable as a greater and more reliable improvement in sound separation is achievable. Also the application of continuous overlays to the suspended ceiling may not be possible due to the presence of light units or diffusers requiring venting to the void.

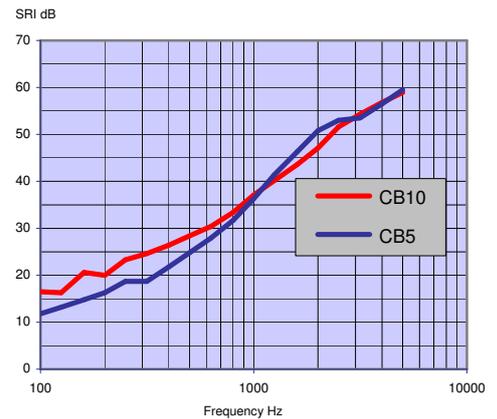
The Sound Reduction Index (SRI) of the new ceiling barrier is not normally required to match that of the partition below. The individual performance of the barrier need only be sufficient to correct the shortfall between the partition value and that of the existing cross talk path.

Final 'room to room' sound transmission performance is specific to the type of suspended ceiling employed. The performance offered by the ceiling itself (normally stated as a Dncw Value) can vary substantially. Typical values are in the range 15 – 40dB.

With knowledge of the suspended ceiling employed, its installation arrangement and potential sound degrading penetrations, an acoustic engineer can make an assessment for the target SRI value for the vertical barriers. Alternatively, our own technical department would be pleased to assist in this process.

Where the ceiling void is also a return air plenum, cross talk attenuators should be installed in the void across partition lines. For less onerous conditions we would be pleased to advise on aperture layouts with sound attenuation characteristics.

The following performance values are solely for the CBX product tested individually (using the recommended jointing and fixing methods).



Sound Reduction Index:

CB5 & CB5P: 29dB (Rw) [30.1dB]
 CB10 & CB10P: 33dB (Rw) [32.1dB]

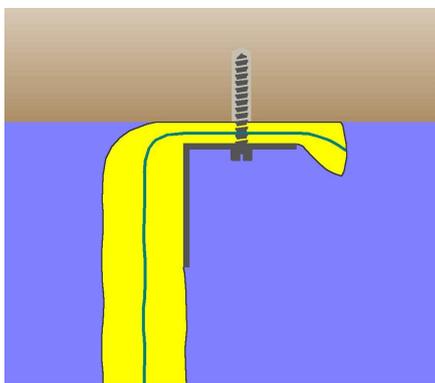
[Mean Sound Reduction Index, 100-3150Hz]
 To BS EN ISO 140-3:1995, BS 2750: Part 3; 1995

Twin barrier arrangements can achieve exceptionally high sound transmission losses. We can offer configurations providing tested SRI's of up to 49dB (Rw) for the vertical barriers alone.

Installation

Lamaphon CBX Quilts are fitted in a manner broadly similar to that used for mineral fibre fire barrier quilts. The product is normally attached to the soffit and allowed to hang as a curtain. Surplus material at the base is returned along the rear of the suspended ceiling.

Head Fixing: The quilt is continuously secured and supported by clamping the product between the soffit and a mild steel angle section. Mechanical fixings should be selected with reference to the background material. See figure below.



Fixing at Side Walls: Normally as for the head fixing described above. A flat metal strap may be used in preference to an angle section.

Base Fixing: Preferably the product should be fixed by continuous clamping as previously described to ensure optimum acoustic performance. If this is not possible we recommend that the quilt is returned a minimum 150mm along the rear of the ceiling. The return should always be carefully deformed around any raised elements of the ceiling suspension grid.

With some ceiling systems it is easier to create a near flat region above the partition line. This can often be achieved by overlaying the tiles or formed trays with cut strips of board (such as plasterboard or MDF). Multiple layers of board may be employed, which should be built up until level with the top of the ceiling grid. Any minor gaps should be caulked with an acoustic flexible sealant. This technique can often create a fixing background for clamping without the need to penetrate the tiles or partition head.

Vertical Joints: Should be overlap joints with a minimum 75mm lap. The product should not be butt jointed. The overlap should be mechanically fixed at 150 - 200mm centres using a plain insulation pin and non-return washer. The lap should be substantially compressed at the point of these fixings to ensure an effective seal. The overlap joints are then normally dressed on both sides with a minimum 75mm wide self-adhesive aluminium foil tape.

Service Penetrations: Star or 'X' cuts should be made in the product and the resulting flaps returned along the service. A strip of the quilt typically 150 - 300mm wide is then wrapped around the service duct or pipe, covering the returns. All exposed edges should then be dressed with self-adhesive aluminium foil tape.

For some types of service penetrations (such as wide profile ventilation ducts), shallow gaps above or below the service may be present. Such small apertures may prove difficult to close. The use of our CVB barrier in these local conditions will normally alleviate this problem.

Ceiling Void Air Plenums: As Lamaphon CBX Quilts are faced on both sides and the joints are normally taped, the installed product is effectively dust free. However, for critical applications the product can be made fully enclosed by pre-wrapping all edges with a self-adhesive foil tape before final installation.

Special Conditions: Our technical department will be pleased to advise on recommended detailing for the following conditions: coffered soffits, hollow rib or profiled decking, services parallel to the partition line, off-set barriers, high density service penetrations, large void heights, continuous lighting trays or diffusers, open-cell ceilings and twin barrier constructions.