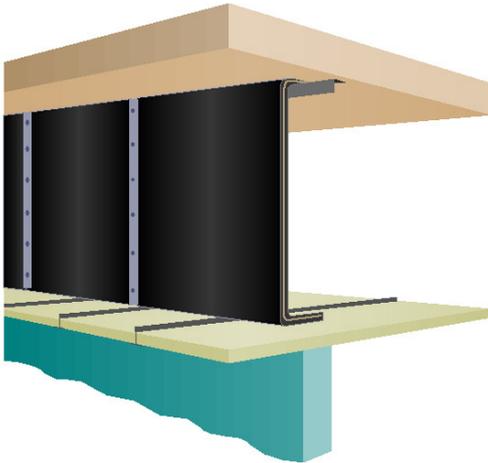


Introduction



FLX Series Barriers

Lamaphon FLX Series Acoustic Barriers are flexible composite sheets designed for free hanging in ceiling voids above partition lines.

They provide a simple solution to the common problem of improving 'room to room' sound separation via a common ceiling void.

All grades offer excellent sound reduction properties in comparison to commonly employed 'ad-hoc' solutions based on standard flexible / resilient materials.

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

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

FLX barriers can be used as an alternative to our CBX ceiling void barriers for conditions where a mineral fibre free product is required.

In general Lamaphon CBX barriers remain our preferred solution for ceiling void barrier applications as they offer a number of technical and practical advantages. However, for some special situations the use of FLX barriers may prove beneficial (e.g. in conditions where the barrier is partially visible, the product's standard matt black finish may be preferred).

Description

Lamaphon FLX 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 heavy salt loaded polymeric barrier. To each side of the membrane is a Class 'O' open cell acoustic foam insulation layer

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.

Lamaphon FLX barriers are available as standard with two optional features:

Reinforced aluminium foil finish to one side. This facing simplifies the sealing of service penetrations as it permits the application of self-adhesive foil tapes. The finish also acts as an integral anti-creep layer.

Internal glass fabric anti-creep layer. This minimises the risk of possible long-term elongation in high void conditions. This option is not required if the aluminium foil finish described above is selected.

Grades

Product Code	Description
FL5	5 kg/m ² - lead foil central membrane
FL10	10 kg/m ² - lead foil central membrane
FL5P	5 kg/m ² - polymeric barrier central membrane
FL10P	10 kg/m ² - polymeric barrier central membrane

Specification

Product	Lamaphon FLX Series Barrier
Sheet size	2000 x 1200mm
Thickness	Nominal 13mm
Surface weight	Nominal 6kg/m ² (FL5 & FL5P) Nominal 11kg/m ² (FL10 & FL10P)
Central mass membrane	Lead foil (FL5 & FL10) Polymeric barrier (FL5P & FL10P)
Finish / Colour	Matt black open cell foam both sides or optional bright reinforced aluminium foil to one side
Fire Performance (Plain or foil finish)	BS 476, Part 7: Class 1 BS 476, Part 6: I<12, I(1) <6 (Class 'O' to Building Regulations)

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.

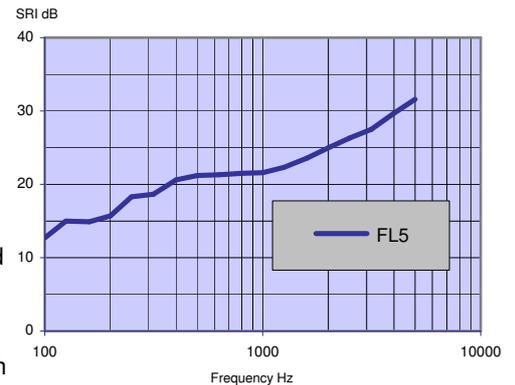
The Sound Reduction Index (SRI) of the new ceiling barrier is not normally required to match that of the partition below. The individual performance of the barrier need only be sufficient to correct the shortfall between the partition value and that of the existing cross talk path.

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 FLX product tested individually (using the recommended jointing and fixing methods).



Sound Reduction Index:

F/L5 & FL5P: 23dB (Rw)
F/L10 & FL10P: 27dB (Rw)*

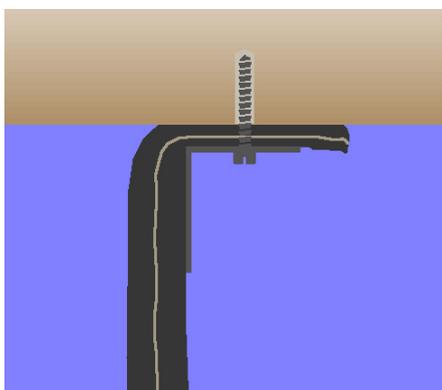
[Mean Sound Reduction Index. 100-3150hz]
 To BS EN ISO 140-3:1995, BS 2750: Part 3; 1995
 * Estimated value

Twin barrier arrangements can achieve exceptionally high sound transmission losses. We can offer configurations providing tested SRI's of up to 44dB (Rw) for the vertical barriers alone.

Installation

Lamaphon FLX sheets 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 sheet 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 sheet 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 using pre-punched metal strap to both sides with suitable through fixings at regular intervals (e.g. threaded bolt with locking nut). The lap should be substantially compressed by the straps to ensure an effective acoustic seal is achieved.

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

Ceiling Void Air Plenums: Lamaphon FLX barriers contain no mineral fibre based components and are effectively dust free even in the plain unfaced form. In consequence the product is suitable for conditions where the ceiling void is used as a return air plenum.

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.

Related Products

Lamaphon CBX Ceiling Void Barrier
 Lamaphon CVB Ceiling Void Barrier
 Lamaphon Acoustic Closures