

Lamaphon Cinema Lining System

Lamaphon Cinema Lining Systems are acoustic lining systems for Cinemas and Auditoria, they comprise of a range of products specifically developed to provide cost effective and practical sound absorbing treatments for most commonly encountered conditions within these acoustically demanding applications.

In addition to acoustic performance, product development has centred on providing a complete system package including all requisite fixings and ancillaries. This provides for a simplified and rapid installation procedure together with a uniform

and pleasing final appearance.

The range comprises of 4 standard systems, Systems 1 and 2 are based on a resin bonded rockfibre sound absorbing base material. The product is faced on the exposed surface with a black non-woven glass fabric. The facing is applied by a special open structured bonding technique to ensure optimum and consistent sound absorbing properties. The final composite material provides a Class 'O' fire performance to Building Regulations.

Systems 3 and 4 are based on flexible open cell acoustic foams offering a

Class 'O' fire performance to Building Regulations.

Both systems 3 and 4 are particularly suited for application to non-planar surfaces of for treatments incorporating thinner absorbent layers.

All systems exhibit excellent sound absorption properties. The figures quoted below are random incidence sound absorption coefficients for Octave Band Centres (1/1 Octave approximately) for common thicknesses. Test method BS EN 20354, please contact our Technical Department for full details or information on other thicknesses.

Description

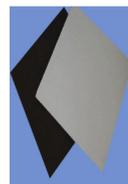
System 1 (the original Lamaphon Cinema Lining Slab) comprises a black faced resin bonded rockfibre slab. The facing is applied to leave overlaps on two adjacent edges to obscure butt joints following installation.



System 2 is as System 1 except the product is supplied without overlaps (the product is post trimmed following lamination to ensure that the facing and base slab are perfectly aligned) Joint obscuration can be effected by application of our matching self adhesive jointing tape (see installation).



System 3 comprises a flexible melamine foam, which has a natural light grey colour. System 3 is also available faced with a black non-woven polymer fabric (System 3BPF). This applied facing additionally enhances the sound absorption characteristics of the system.



System 4 is a flexible open cell impregnated PU foam having a natural matt black colour. Unlike the other systems, the material is black throughout its structure. When cut to size or shaped, all edges exhibit a matching matt black colour.



Application

Application	System used
Rear of screen areas in Cinemas (Wall / Ceiling surfaces) No further covering normally employed. Lamaphon system provides the final installed finish.	1 & 2
Wall panels or in-situ linings, post covered with stretched fabric or loose fabric (e.g. pleated or hanging drapes)	All
Wall panels or in-situ linings, post covered with spaced slats, slotted or perforated timber or perforated metal sheet	1,2,3BPF or 4
Soffit linings with a stretched fabric ceiling below	All

Acoustic Absorption

Product	Thick	OBC Absorption Coefficients						
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	NRC *
System 1	50mm	0.20	0.60	1.04	1.09	1.05	1.02	0.95
System 1	100mm	0.62	1.13	1.19	1.10	1.07	1.02	1.12
System 2	50mm	0.20	0.60	1.04	1.09	1.05	1.02	0.95
System 2	100mm	0.62	1.13	1.19	1.10	1.07	1.02	1.12
System 3	25mm	0.11	0.21	0.51	0.80	0.87	0.93	0.60
Sys 3BPF	25mm	0.07	0.30	0.65	0.87	0.97	0.94	0.70
System 3	50mm	0.15	0.52	0.90	1.05	1.08	1.05	0.89
Sys 3BPF	50mm	0.21	0.57	0.97	1.10	1.10	1.07	0.94
System 4	25mm	0.11	0.21	0.46	0.61	0.67	0.75	0.50
System 4	50mm	0.23	0.44	0.70	0.83	0.84	0.98	0.70

* Noise Reduction

Installation

In general all lining systems should be attached to the background surface using through mechanical fasteners. The recommended types are PP1, IH3 and DP2. The latter is a hammer fix fastener requiring drilling into the background substrate. The two former fasteners are spot adhered to the background surface only. Detailed descriptions of each are outlined below.

In the case of Systems 3 & 4, as these materials are flexible, depending on the thickness selected and orientation of the background surface, the fastenings may need to be supplemented with direct adhesion techniques (under these conditions it is also acceptable to reduce the frequency of the mechanical fasteners). Alternatively, in marginal conditions it may be acceptable to simply increase the frequency of fastenings from the guide figures indicated in the table below.

In a number of applications for the systems, it is desirable that the exposed component of the fastener is also black in colour. Fasteners PP1 and DP2 are produced as standard in a black polymer material. Fastener IH3 requires that the non-return washer is painted black (normally this is carried out as a post fitting operation).

Fasteners PP1 and DP2 are particularly suitable for low-level treatment (up to 2m) as being produced in a polymer material they are unlikely to inflict any significant injury (e.g. skin puncture) in the event of accidental body impact against the treatment area.

Fixing PP1

Fixing PP1 comprises two black polymer components a perforated base plate with projecting pin and a non-return washer.



Fixing DP2

Fixing DP2 is a hammer fix fastener comprising a central drive pin contained within a long expanding plug. The fastening is used in combination with a special matching large diameter spoked washer. The components are produced in a black polymer material.



Fixing IH3

Fixing IH3 is broadly similar to PP1 excepting that the components are produced from galvanised mild steel. The fixing sequence is as PP1.



Fixing Sequence for PP1 / IH3

Base plate is adhered to the background with our 'High Tack' cartridge adhesive (suitable for use with most common building materials). Following curing of the adhesive the Lamaphon material is impaled onto the projecting pins. The non-return washer is applied to the visible remaining section of the pin and any surplus projecting pin then removed leaving the washer flush to the material face.

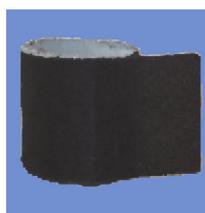
Joint Obscuration

With the exception of System 4, all of the black surfaced materials comprise a black facing on a light coloured sound absorbing base material. This can result in butt joints appearing as clearly visible lines as a result of slight gaps or minor variations in thickness between adjoining sheets. In instances where the product provides the final installed finish or is visible through the final finish (e.g. behind spaced slats, perforated sheets or open structured fabrics) obscuration of the butt joint can be achieved using the following techniques: -

System 1 Integral facing overlaps on two adjacent edges automatically hide the joints between neighbouring slabs. The facing laps are 10-25mm wide and may be adhered to the adjoining face by our GP aerosol adhesive if required.



System 2 & 3 Joints may be covered following installation by the application of our matching self adhesive black fabric tape. This technique offers several benefits over System 1 (if adhered laps are required) including reduced application time, no separate adhesive and reduced potential for adhesive staining of the face.



System 4 Not applicable as all edges are black. Care should be taken to ensure that all joints are close butted.

Sizes & Fixing Requirements

System	1000mm x 600mm	1200mm x 1000mm	1200mm x 900mm	2000mm x 1200mm	2500mm x 1250mm
System 1	4	4	4		
System 2		4			
System 3					4
System 4	Available in Rolls (up to 25mm)			4	

System	Standard Thickness (mm)	Special Thicknesses (mm)
System 1	25, 30, 50, 75, 100 & 150mm	15-150mm
System 2	25, 30, 50, 75, 100 & 150mm	15-150mm
System 3	6, 9, 12, 15, 20, 25, 30, 50, & 75mm	5-250mm
System 4	6, 9, 12, 15, 20, 25, 30, 50, & 75mm	5-100mm *

* May be subject to a minimum quantity

Dependant on the size of Lamaphon Acoustic Lining Systems used, the number of fixings required will alter.

	1000mm x 600mm	1200mm x 1000mm	1200mm x 900mm	2000mm x 1200mm	2500mm x 1250mm
No of Fixing Required	6 No	9 No	9 No	12 No *	15 No *

* For guidance, the number of fixings are based on 50mm thick material fixed to a vertical surface