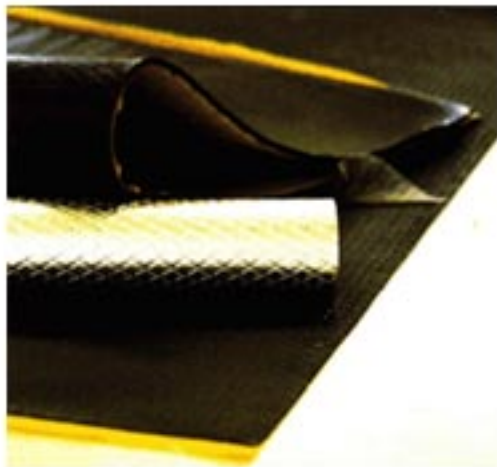


Damping Sheet Bitumen Based



Description

Bitumen Based Damping Sheets are manufactured from bitumen with added mineral fillers and synthetic rubber to form a highly viscoelastic material.

They are designed to minimise acoustic and vibration radiation of sheet metal. They can improve sound insulation performance of the substrate by adding mass.

Bitumen Based Damping Sheets are available in five standard grades, two of which have an aluminium foil facing on one side for improved fire performance: all have a full self-adhesive backing. They are available in sheets or can be die-cut to size and shape.

Colour Base material - Black
Surface finish - Black or Silver

Application

Bitumen Based Damping Sheets are used extensively to reduce vibration in flat, resonant surfaces such as vehicle panels, machine guards, domestic and industrial stainless steel sinks and preparation tables.

Operating and Application Temperature

Bitumen Based Damping Sheets can be used on substrates operating at continuous temperatures between -10°C and 90°C. For ease of application, Bitumen Based Damping Sheets should be applied when the ambient temperature is between 18°C and 25°C. The material becomes brittle and breaks when cold, and should not be handled when the temperature is below 5°C.

Fire Performance

Bitumen Based Damping Sheets meet the requirements of FMVSS 302/ISO3795. DS 3A and DS 5A are supplied with a Class 1 aluminium foil facing on one side to BS476: Part 7: 1987.

Acoustic Performance

material	geiger plate decay rate @20° C dB/sec
DS3	15
DS3A	15
DS5	35
DS5A	35
DS10	98

An Example of Improvement in Decay Rate on 0.8mm Steel

0.8mm steel	Sound Transmission Loss dB					
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
untreated	8	14	20	26	32	39
treated with DS 10	27	32	32	33	41	43

Dimensions and weight

grade	Thickness mm	weight kg/m ²	colour	sheet size mm
DS3	1.5	3	black	1500x1000
DS3A	1.5	3	silver	1500x1000
DS5	2.5	5	black	1500x1000
DS5A	2.5	5	silver	1500x1000
DS10	5	10	black	1500x1000

Bitumen Based Damping Sheets improve the acoustic performance by increasing decay rate. Decay rate is the speed in Db/second at which the vibration reduces after panel excitation has ceased. The higher the decay rate, the better the acoustic performance. An example of this can be seen overleaf.

Note: Other thickness and weight may be available subject to minimum quantities. Further detail available on request.

Storage and Handling

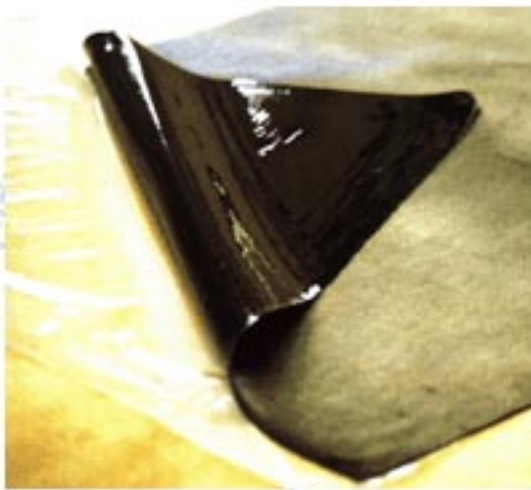
Bitumen Based Damping Sheets should be stored at temperatures between 10°C and 25°C and allowed to stabilise at room temperature prior to use. The material will become brittle and break if handled at temperatures below 5°C. Bitumen Based Damping Sheets should be used within 3 months of purchase.

Application and Fixing

To obtain optimum bond strength from the self-adhesive backing supplied on Bitumen Based Damping Sheets follow these instructions:

- 1 Allow to stabilise at room temperature prior to use.
- 2 Apply in the horizontal or vertical plane. Where there is a requirement for the damping sheet to be applied to the underside of a substrate, the substrate should be turned upside down if at all possible. The damping sheet can then be applied to the underside from the horizontal or vertical plane and left until the adhesive has fully cured before turning the substrate back to its correct position. If re-orientation of the substrate is not possible, the damping sheet can be applied from the underside providing it is supported against the substrate until the adhesive cures. It is recommended that some form of permanent additional mechanical fixing also be used to retain DS 5, DS 5A and DS 10 to the underside of substrates. This prevents the downwards pressure and weight of the damping sheet weakening the adhesive bond.
- 3 Clean and dry the substrate with an appropriate cleaner i.e. methylated spirit or similar so that it is free from oil, grease, rust, dust or other particles. For applications onto timber substrates, the surfaces should be prepared using a primary coat of A3038 Neoprene Adhesive, available from Hodgson & Hodgson Group Ltd.
- 4 If possible, gently preheat the damping sheet to 30°C and apply when the ambient temperature is between 18°C and 25°C. Do not subject to direct flame.
- 5 Peel off the protective backing, position material onto substrate and apply a constant forward and downward pressure to the surface of the damping sheet to ensure it is securely fixed onto the substrate. A hard timber or steel roller is recommended for this.
- 6 Particular care must be taken to avoid forming air pockets between the substrate and self-adhesive backing, as this will weaken the bond and reduce the vibration damping performance.

Damping Sheet PVA Based



Description

PVA Based Damping Sheet is a light weight, visco-elastic polymer material, manufactured from polyvinylacetate.

It is designed for use in acoustic applications, where a high level of vibration damping is required to reduce noise radiating from lightweight sheet metal. It is suitable for use in clean room environments.

PVA Based Damping Sheet is supplied with a full self-adhesive backing and is available in sheets or can be die-cut to size and shape.

Colour - Grey

Application

PVA Based Damping Sheet is used extensively to reduce vibration in flat resonant surfaces, particularly from vehicle panels, machine guards, industrial plant, stainless steel sinks and preparation tables.

Operating and Application Temperature

PVA Based Damping Sheet can be used on substrates operating at continuous temperatures between -35°C and 100°C . It will withstand intermittent temperatures up to 160°C . For ease of application, PVA Based Damping Sheet should be applied when the ambient temperature is between 18°C and 25°C .

Fire Performance

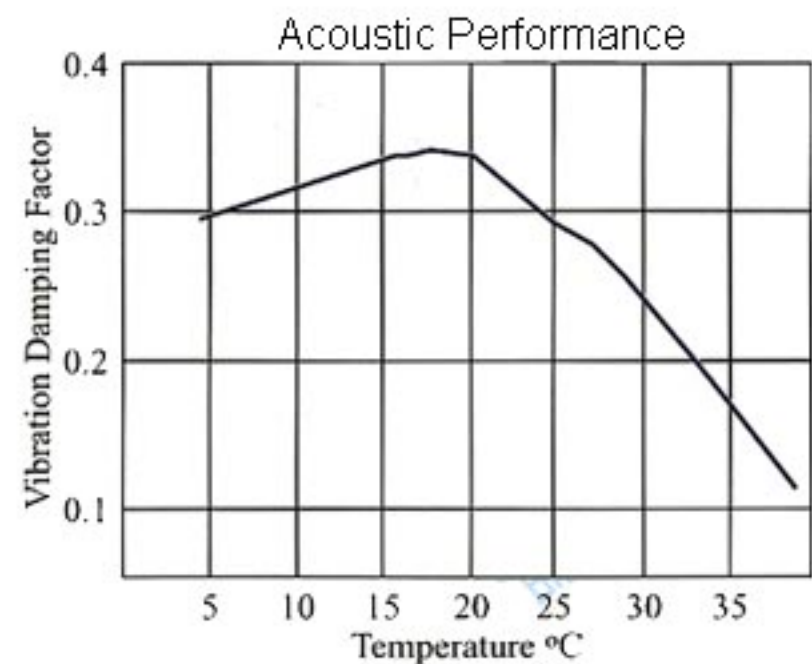
PVA Based Damping Sheet meets the requirements of FMVSS 302/ISO3795.

Storage and Handling

PVA Based Damping Sheet should be stored between 18°C and 25°C and allowed to stabilise at room temperature prior to use. PVA Based Damping Sheet should be kept in a dry environment and used within 6 months of purchase.

Acoustic Performance

Vibration Damping Factor: the vibration damping performance of a material can be defined by its 'damping factor'. This is the ratio of the material's damping to its critical damping. Critical damping is the smallest value for which a sample does not vibrate when deflected and released. It is also a temperature dependent property. For PVA Based Damping Sheet, optimum damping is achieved between 15°C and 20°C .



Dimensions and weight

material	Thickness mm	weight kg/m ²	sheet size mm	ordering reference
PVA Based Damping Sheet	1.4mm	2.6	1600x1000	DSF2

Application and Fixing

To obtain optimum bond strength from the self-adhesive backing supplied on PVA Based Damping Sheet follow these instructions:

- 1 Allow to stabilise at room temperature prior to use.
- 2 Apply in the horizontal or vertical plane. Where there is a requirement for the damping sheet to be applied to the underside of a substrate, the substrate should be turned upside down if at all possible. The damping sheet can then be applied to the underside from the horizontal or vertical plane and left until the adhesive has fully cured before turning the substrate back to its correct position. If re-orientation of the substrate is not possible, the damping sheet can be applied from the underside providing it is supported against the substrate until the adhesive cures.
- 3 Clean and dry the substrate with an appropriate cleaner i.e. methylated spirit or similar so that it is free from oil, grease, rust, dust or other particles.
For applications onto timber substrates, the surfaces should be prepared using a primary coat of A3038 Neoprene Adhesive, available from Hodgson & Hodgson Group Ltd.
- 4 If possible, gently preheat the damping sheet to 30°C and apply when the ambient temperature is between 18°C and 25°C . Do not subject to direct flame.
- 5 Peel off the protective backing, position material onto substrate and apply a constant forward and downward pressure to the surface of the damping sheet to ensure it is securely fixed onto the substrate. A hard timber or steel roller is recommended for this purpose.
- 6 Particular care must be taken to avoid forming air pockets between the substrate and self-adhesive backing, as this will weaken the bond and reduce the vibration performance.



Vibration Damping Compound

Description

Vibration Damping Compound is a water based co-polymer emulsion, with mineral fillers dispersed in a low permeable, polymeric binder. It is solvent free, easy to apply and can be used in most interior and semi-exposed areas.

It is designed to reduce noise by damping resonant vibration caused by continuous or impulsive excitation of the substrate to which it is applied.

Vibration Damping Compound can be sprayed onto smooth and irregular surfaces. Once applied, it has a monolithic spray texture finish.

Colour Off - White

Applications

Vibration Damping Compound is designed for use in areas where a continuous membrane is required to damp noise and vibration from GRP, steel, aluminium and other non ferrous metals. It is used extensively on large surface areas e.g. floors and bodysides of railway carriages, air conditioning equipment, contoured metal, GRP and other substrate surfaces. Vibration Damping Compound is also ideal as rain screen cladding.

Surface and Air Temperature

Vibration Damping Compound is suitable for used on substrates when the air and surface temperatures is rising between 2°C and 45°C and when the air and surface temperature is at least 2°C above dewpoint.

Fire Performance

Vibration Damping Compound complies with the Class 'O' requirements of the Building Regulations, when tested to BS476: Part 6: 1981 and Part 7: 1987

It has also been tested to BS 6853 UK railway standards and has an M1 Classification in accordance with French regulation Arrete 28.09.1991

Vibration Damping Between 70 and 80 Hz

substrate	Thickness of damping coat	vibration decay rate (dB/Sec)
1mm steel	uncoated steel	3
	1.5mm when dry	115
	3mm when dry	224
3mm aluminium	uncoated aluminium	11
	1.5mm when dry	104
	3mm when dry	555

Dimensions and Density

wet coat Thickness	dry coat Thickness	weight per litre	deum size litres	ordering reference
3mm to 6mm	1.5mm to 3mm	1.5-1.6kg	20	DC-LST

Practical Coverage

Typically, 1 litre of wet compound will cover approximately 0.5m² when applied at 3mm wet finish thickness.

Chemical Resistance

Vibration Damping Compound is mildly alkaline with a pH between 7 and 9.

Storage

Vibration Damping Compound should be kept in its airtight container until ready for use. All containers are marked with a batch number and the lower number should be used first. Protect from frost and excessive heat. Avoid exposure to radiant sunlight. Store at temperature between 4°C and 45°C. Use within six month of purchase.

Method of Application

- Vibration Damping Compound can be applied to primed, galvanized and stainless steel, aluminium and vitreous enamel surfaces. It should not be applied to bare steel as corrosion will occur.
- It can be applied inside buildings and most adequately weather protected exterior areas providing it is protected from rain hail and cold winds during application.
- Inspect substrate prior to application and remove all loose material, flaking paint, rust, oil, grease and any other material likely to impair adhesion.
- Ensure the surfaces to be treated are clean and dry and mask any surrounding areas to protect from overspray.
- Stir Vibration Damping Compound thoroughly before use – do not remove excess liquid floating on top of the drum or thin with additives.
- Apply over large areas using industrial heavy material spray equipment, available from Hodgson & Hodgson Ltd or by trowel over small areas.
- Spray or trowel on the first coat up to 3mm wet thickness and build up further coats until the required finished thickness is achieved.
- Allow each coat to dry completely before applying the next. Repair any damage by spraying or troweling over the affected area.

Safety Precautions

- Ensure the area where Vibration Damping Compound is being applied is well ventilated both during and after the application.
- It is recommended that gloves, goggles, face mask and barrier cream is worn during application. Avoid contact with skin and eyes and the inhalation of spray mist.
- Do not smoke, eat or drink whilst applying the material.
- If it comes into contact with the skin, wash with lukewarm water and soap or a propriety hand cleaner.
- If it comes into contact with the eyes, wash with plenty of clean water and seek medical attention if irritation persists.
- If swallowed, rise mouth and throat with water. Drink plenty of water to dilute stomach contents and seek medical assistance.
- If a spillage occurs, cover with an absorbent material e.g. dry sand, and dispose of it taking care not to contaminate water courses, sewers or soil.