Pyrotek noise control

Wavebar dBX noise barrier product guide

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This brochure describes the control of airborne noise using Wavebar dBX noise insulation from Pyrotek. It covers the principles, design considerations and installation methods for controlling airborne noise within buildings.

Noise Problem Defined

Noise energy transmission from one area to another is controlled by providing a barrier to the noise path. Wavebar dBX gains maximum noise reduction from its limp and heavy nature, giving maximum noise reduction on a weight-to-thickness ratio.

When shielding an enclosed area from an external noise source, the product used must contain a heavy mass-loaded barrier. This will deflect the noise back towards the source.

Wavebar dBX removes the resonant performance dip in plasterboard walls

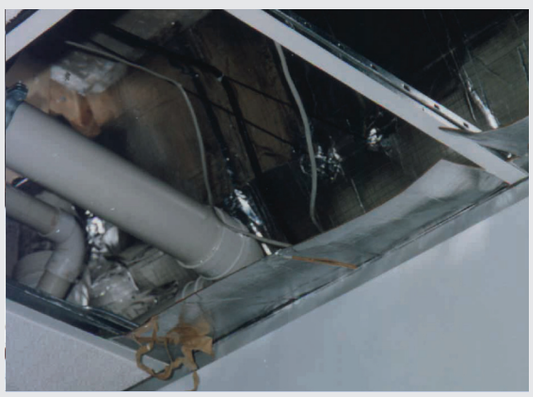
Note: Information contained in this brochure may be subject to change. When specifying Wavebar dBX it is important to follow the most recent advice and recommendations.

Product Solution

Wavebar dBX represents the latest in polymer technology. It is used to improve transmission loss in walls and ceilings, reduce the level of cross-talk between acoustically sensitive rooms and reduce noise intrusion from external noise sources such as traffic and aircraft.

- Reduces inter-office noise transmission providing comfort, privacy and confidentiality
- Controls external noise problems from aircraft, traffic and rain noise
- Increases performance of existing structures in retro-fit, by fitting over existing walls and covering with plasterboard
- No added phthalate plasticisers
- Transmission loss across a wide range of frequencies
- Unique flexibility allows for easy installation in tight corners and complex fit-outs
- Low maintenance Reinforced Foil facing providing a robust surface finish, ensuring protection from damage
- Moisture proof, dust proof and chemical resistant
- Easy sealing of joins and edges prevents deterioration
- No specialist tools or equipment required for installation

Wavebar dBX used to control cross talk, promoting inter-office privacy



Being a non PVC product, Wavebar dBX is easily joined, taping and sealing penetrations is easy.

Solution Research

Initially Wavebar dBX was developed and extensively researched for the premium European automotive industry, expanding into other markets as it's unique benefits were realised. Continuing research sees it now applied over a wide range of acoustic applications outside the automotive industry.

Product Introduction

Wavebar dBX is used to increase transmission loss, reducing noise moving from one area to another and is suitable for a wide range of applications due to its flexibility and low thickness to weight ratio. Wavebar dBX is an elastomeric polymer mass loaded barrier used to add extra mass, or hung as a barrier curtain for increased transmission loss and noise reduction.

Wavebar dBX is used in roof applications for the control of internal and external environmental problems

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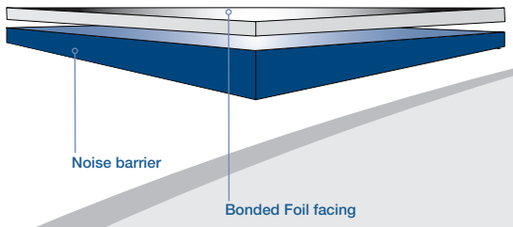
Product Construction

NOISE BARRIER • 3, 5 & 8 kg/m²

Wavebar dBX reduces noise through its elastomeric polymer barrier, loaded with inert high-density fillers. This combination creates a heavy mass barrier, maximising noise reduction. The product utilises a high quality polymer base material and is available in 3kg/m² 5kg/m² and 8kg/m² standard barrier weights and from 2kg/m² to 12kg/m² on indent.



FACING • NON WOVEN SCRIM OR BONDED FOIL

Wavebar dBX is supplied as standard with a Bonded Foil facing.

- Bonded Foil (BF) is a strong reinforced foil facing, giving improved fire test results to AS1530 Part 3, Early Fire Hazard properties. The foil's robustness adds to the overall product strength, allowing it to be hung, self supporting. Matching tape is supplied to enable easy installation and sealing. When used in conjunction with an air gap, the foil facing offers improved thermal conductivity, in a manner similar to building foil.

Environmental Impact

Wavebar dBX utilises an elastomeric polymer base, which maximises product flexibility without the use of phthalate plasticisers. The issue of plasticiser migration has long been a problem for vinyl based noise control products, as the out-gassing of plasticisers causes deterioration in the product. Wavebar dBX is able to provide product flexibility, enabling easier installation, and long-life acoustic performance, without requiring the addition of pthalate plasticisers.

Wavebar dBX is easily installed, fixed and cut without specialist tools or skills

Product Application

Wavebar dBX is designed as a noise barrier for increasing transmission loss of existing walls or partitions. It can be hung as a barrier curtain, used to increase transmission loss of dry wall partitions, ceilings, doors, flexible duct connectors or where a noise barrier only is required. Used as a layover in ceilings or floors in multi-storey buildings.

Wavebar dBX economically and efficiently provides for cross talk reduction promoting office privacy

Product Properties

PHYSICAL CHARACTERISTICS

Wavebar dBX/3kg with foil 1.35 x 3M	3kg/m^2 mass barrier with reiforced foil facing
Wavebar dBX/3kg with foil 1.35 x 5M	3kg/m^2 mass barrier with reiforced foil facing
Wavebar dBX/5kg with foil 1.35 x 10M	5kg/m^2 mass barrier with reiforced foil facing
Wavebar dBX/5kg with foil 1.35 x 5M	5kg/m^2 mass barrier with reiforced foil facing
Wavebar dBX/8kg with foil 1.35 x 5M	8kg/m^2 mass barrier with reiforced foil facing

MECHANICAL PROPERTIES

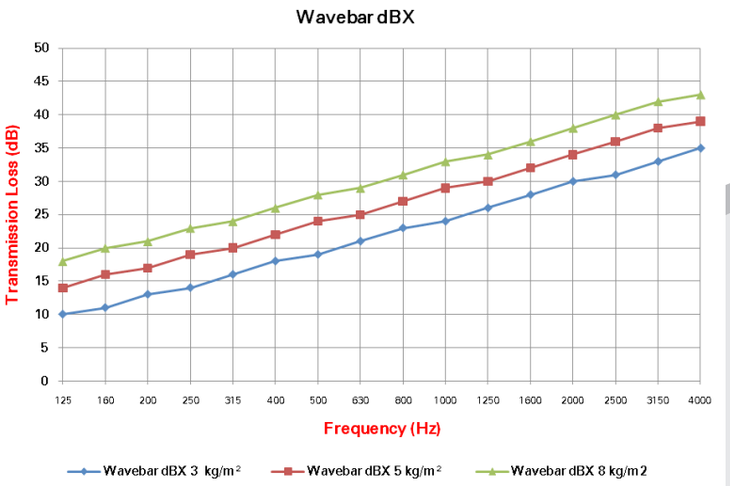
Properties	Wavebar dBX/3BF	Wavebar dBX/5BF	Wavebar dBX/8BF
Specific gravity	1.97g/cm^3	1.97g/cm^3	2.02g/cm^3
Dimensional stability (4 hours at 100^{0}C)	-1.3% - + 1.5%	-1.3% - + 0.8%	-1.3% - + 0.8%
Hardness (Shore A, DIN 53 505)	83 HS (A)	85 HS (A)	85 HS (A)

Acoustic Performance

PERFORMANCE CHARACTERISTICS

Product Code	AS1530 Part 3	Max. operating temp
Wavebar dBX/3BF	0.0.0.0	70^{0}C
Wavebar dBX/5BF	0.0.0.0	70^{0}C
Wavebar dBX/8BF	0.0.0.0	70^{0}C

Product Code	Weighted Sound Reduction Index
Wavebar dBX/3BF	R_w24 @ 3kg/m^2
Wavebar dBX/5BF	R_w27 @ 5kg/m^2
Wavebar dBX/8BF	R_w30 @ 8kg/m^2



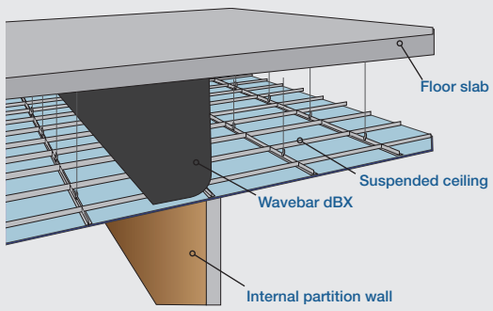
Frequency (Hz)	Wavebar dBX3 kg/m²	Wavebar dBX5 kg/m²	Wavebar dBX8 kg/m²
125	10	14	18
160	11	16	20
200	13	17	21
250	14	19	23
315	16	20	24
400	18	22	26
500	19	24	28
630	21	25	29
800	23	27	31
1000	24	29	33
1250	26	30	34
1600	28	32	36
2000	30	34	38
2500	31	36	40
3150	33	38	42
4000	35	39	43
STC	24	28	32
Rw	24	28	32

Durability

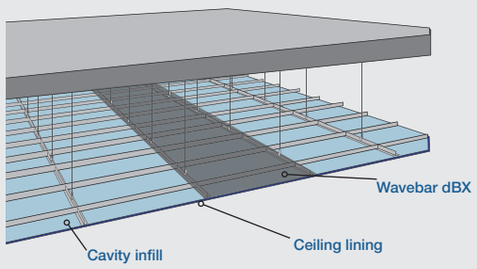
Wavebar dBX has excellent durability and there are no known limitations on the serviceable life of the products, provided the material is used for its designed purpose, and installed and maintained according to the specification provided by the manufacturer.

Specification Guide

The noise insulation shall be “dBX”, made from a polyolefin with Bonded Foil facing and with a barrier weight of 3kg/m² at R_w 24, 5kg/m² at R_w 28 or 8kg/m² with a minimum R_w of 30.



The self-supporting nature of Wavebar dBX allows it to be hung as a plenum barrier, reducing cross-talk or noise being transmitted between adjoining rooms



Use as a ceiling overlay to reduce noise transmitting between adjoining rooms, or to assist in reducing aircraft or traffic noise intrusion

Product Installation

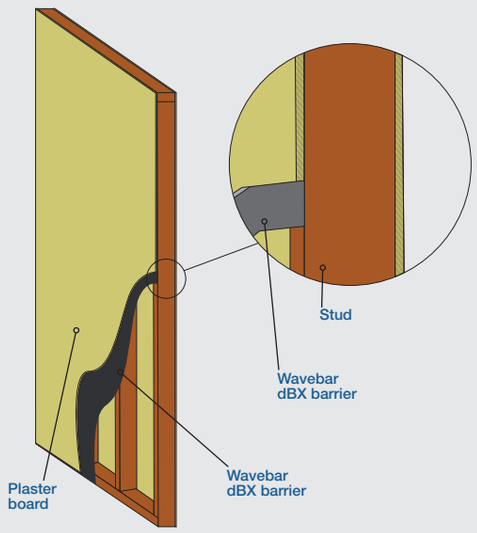
Wavebar dBX requires only a few basic tools to install. To cut Wavebar dBX, a craft knife with disposable blades is recommended. Due to the self-supporting nature of Wavebar dBX, it can be hung or suspended using a timber batten system. Wavebar dBX can be mechanically fixed or bonded using contact adhesive. A small trial should be undertaken to ascertain the compatibility of the adhesive before final use.

Site Handling

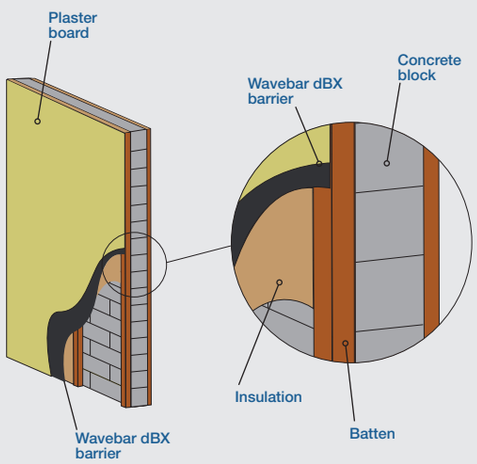
As Wavebar dBX noise barrier products use mass weight in their noise control system, care should be taken when lifting material as rolls of material can weigh from 56kg - 70kg. Normal lifting safety procedures should be employed for roll lifting. When using the material in ceiling or plenum cavities the material should be pre-cut before lifting in situ.

Storage

Wavebar dBX noise barriers should be stored in a clean and dry area protected from possible damage from impacts or abrasions. The material should be stored on a flat level floor with a protective layer between the material and the floor. When supplied in rolls, the product should not be stacked more than 3 rolls high to avoid crushing of the bottom rolls. During storage or transport, excess heat should be avoided to prevent damage to the product as it can take a thermal set.



Wavebar dBX can be used underneath wall or ceiling linings to increase transmission loss



Wavebar dBX can be used for uprating any type of wall system

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