noise >

wavebar® - acoustic noise barrier

Pyrotek noise control

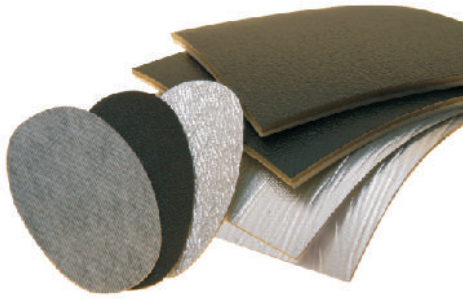
wavebar®

www.pyroteknc.com

> noise barrier material > easily installed > high performance
> quality assured & tested > highly flexible > cost effective

wavebar®

> introduction



Wavebar Original enjoys an unparalleled 40+ year reputation in effective, proven noise control. It is the most well known flexible acoustic barrier and is specified by acoustic engineers and architects throughout the world.
Wavebar 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.
Available in four formats, Original (plain product), Quadzero (foil faced), dBX (non pvc) and Outdoor (weather faced).

> product introduction

Wavebar is an economical, easy to install sound barrier that greatly reduces noise transmission between walls, partitions, floors and ceilings in buildings, vehicles and marine applications. Wavebar provides high transmission loss with high tensile strength and uses the latest manufacturing technology. It is a specially engineered material consisting of a mineral loaded polymer, and can be supported by a reinforcing fabric to ensure it will never crack and will remain flexible during a lifetime.

> product applications

Wavebar Original & dBX
- Reduction of traffic and aircraft noises in homes, apartments and offices
- Partition wall interlining
- Floor and ceiling interlining
- Acoustic doors
- Soft enclosures for factory fans and machinery housings and enclosures
- Strip curtains/drapes
- Vehicles and marine vessels as flooring mats and engine curtains

Wavebar Quadzero
- Can be used in all in-situ building applications
- Marine and automotive applications
- Where improved fire performance is required

Wavebar Outdoor
- Portable noise barrier screens
- Mining barrier curtains
- Noise curtains for jack-hammers, drilling rigs, blasting and pile drivers on building sites

Architects have specified Wavebar in many of Australia's most iconic buildings, from the Sydney Opera House to the Sydney Olympic Skate Park and St Vincent's Hospital. Wavebar Quadzero has reduced unwanted noise in over 80% of roofs under the Government's Sydney Airport Noise Insulation Project – SANIP.

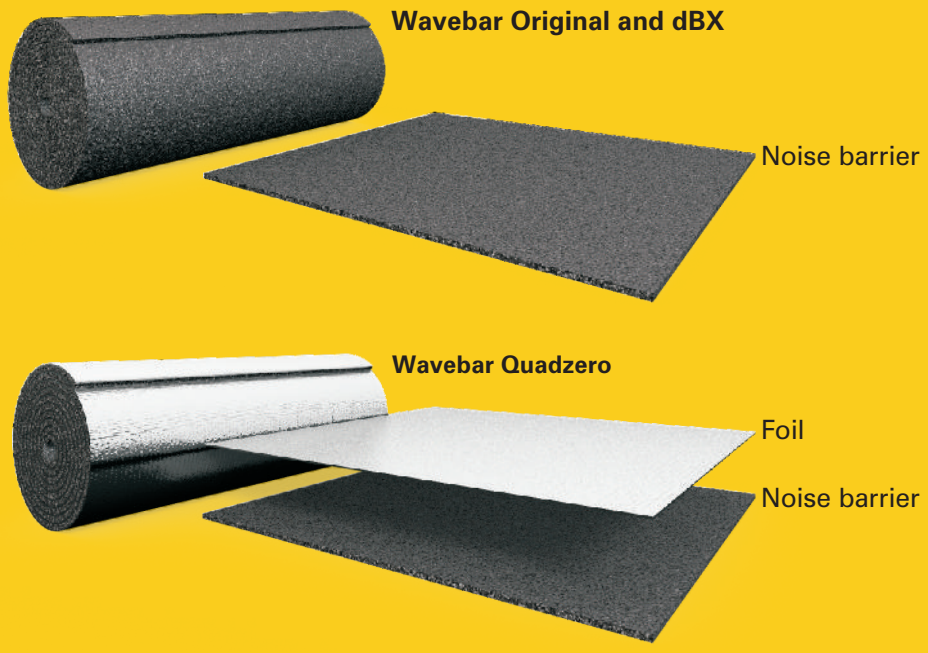
> product solution

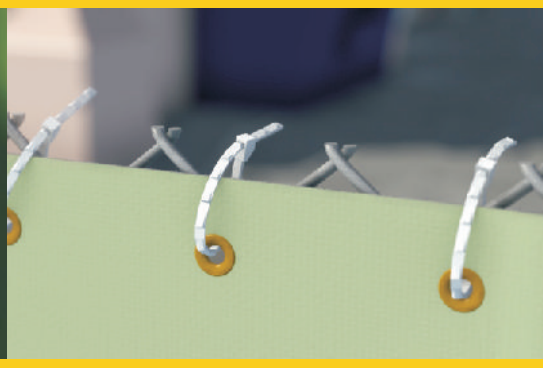
The Wavebar series of products represent the latest in noise control product technology.
Wavebar can be used to improve transmission loss in walls and ceilings, to control the level of cross-talk between acoustically sensitive rooms.
Wavebar reduces inter-office noise transmission providing comfort, privacy and confidentiality.
It controls external noise problems from aircraft, traffic and rain noise.
Wavebar increases performance of existing structures in retro-fit, by fitting over existing walls and covering with plasterboard.
Wavebar gives transmission loss across a wide range of frequencies.
Uniquely flexible, Wavebar allows for easy installation in tight corners and complex fit-outs.
Moisture proof, dust proof and chemical resistant, Wavebar's easy sealing of joins and edges prevents deterioration.
No specialist tools or equipment are required for installation.

Original
Quadzero
dBX
Outdoor

> product construction

Wavebars limp nature combines with it's high mass providing a resonance free barrier. The internal damping characteristics means it is especially well suited in stiff structures where coincidence and resonance are a concern.
Wavebar is very flexible and easy to install even in awkward spaces. It can be draped or joined into curtains to form enclosures to greatly reduce noise transmission from one area to another.





> Wavebar Quadzero

Wavebar Quadzero is a foil faced flexible noise barrier material.
Wavebar Quadzero exhibits zero ignitability, zero spread of flame, zero smoke developed and heat evolved (refer to table over).
The reflective foil facing provides fire resistance and additional thermal performance.
Wavebar Quadzero remains the easiest and most effective means to reduce noise through walls, floors and ceilings in boats, ships, buildings, automobiles and trucks.
It is easily taped at joins using Soundtape a foil faced pressure sensitive reinforced tape.

Quadzero is:

- easily taped
- fire resistant faced
- light reflective
- four zero performance
- highly flexible
- tested to marine standards
- tested to building standards

Refer Information Page 312IP - Wavebar Quadzero and 311IP - Wavebar Original for more details.

> Wavebar dBX

With the same performance characteristics as pvc based Wavebar, Wavebar dBX offers a series of environmental benefits across it's life in manufacture, in use and in disposal.
Wavebar dBX and product variants are re-engineered for equal or enhanced performance with reduced environmental impact.
Wavebar dBX is also available with a foil facing to provide higher thermal reflective proprieties and additional fire resistance.

dBX is:

- Non PVC
- easily installed
- flexible
- tested to marine standards
- tested to building standards

Refer Information Page 313IP for more details.

> Wavebar Outdoor

Wavebar Outdoor is a specially engineered material consisting of a mineral loaded polymer, supported by a reinforced tarpaulin material, manufactured from a UV resistant formulation. Available in various colours, Wavebar Outdoor boasts an extremely high tear and tensile strength in all directions and can be hung in 10m drops.
Wavebar Outdoor can be used anywhere that noise needs to be controlled from travelling from one location to another. It can be hung from a temporary frame around noisy equipment or permanently fixed within a structure.

Outdoor is:

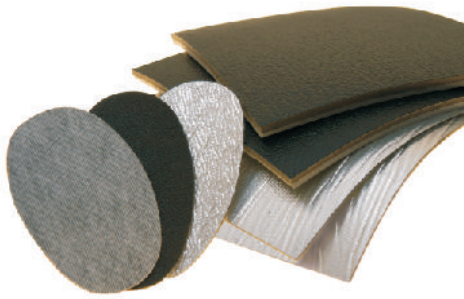
- coloured
- weather resistant
- able to be hung freely
- known for high tear and tensile strength in all directions

Refer Information Page 314IP for more details.

Pyrotek noise control

> product specifications

Barrier Weight kg/m²	Thickness mm	Roll Width mm	Roll Length lineal mtrs	Weight kg	R_w	Ceiling Attenuation Class (CAC)
2	1.6	1380	10	28	23	44
4	2	1380	5 or 10	28-56	26	-
6	2.5	1380	5	42	29	48
8	3.5	1380	5	56	30	50

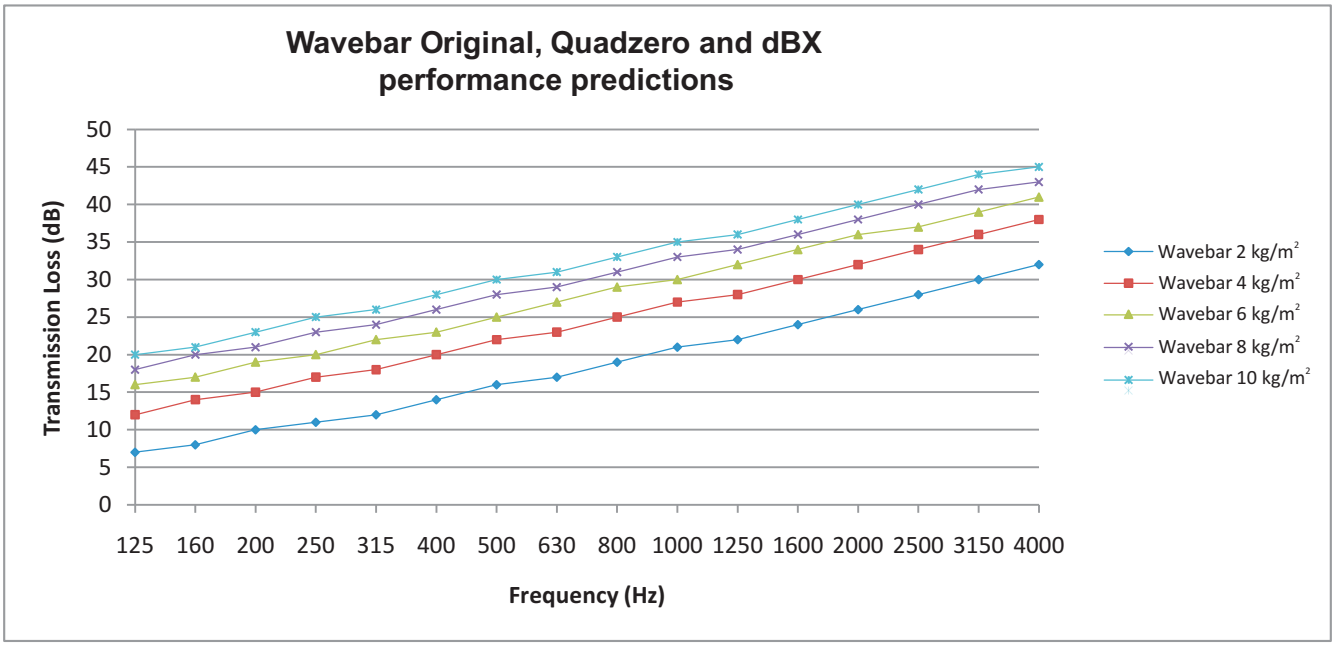


Dimensional tolerance +/- 5%
Other weights available on request
The addition of foil or reinforced tarpaulin will increase weight and performance for Quadzero or outdoor

> properties

	Wavebar Original	Wavebar Quadzero	Wavebar Outdoor	Wavebar dBX	Wavebar dBX (foil face)
Operating temperature range	-20 to 100°C	-20 to 100°C	-20 to 100°C	-20 to 70°C	-20 to 70°C
FMVSS-302	SE	SE	SE	SE	SE
AS 1530.3 1999: Ignitability	-	0	-	-	0
Spread of flame	-	0	-	-	0
Heat evolved	-	0	-	-	0
Smoke Developed	-	0 -1 *	-	-	0 -1 *
BS 476.7	-	Class 1	-	-	-
BS 6853 D8.6	-	Cat 1b	-	-	-
EC Type Certificate of Examination 96/98/EC MED B (Floor Coverings)	-	Complies	-	Complies	-

SE - Self Extinguishing
*SDI is reported as 0-1 due to the inability of the smoke measurement equipment to resolve an index of zero



Results shown have been calculated using transmission loss software. Base data was compiled from several years of independent acoustic testing (tests available on request). The software uses well known acoustic formula. Values given are within 1-2 dB of actual test data. Variations will always occur in test data and predictions, due to variations in material properties, different methods and standards.

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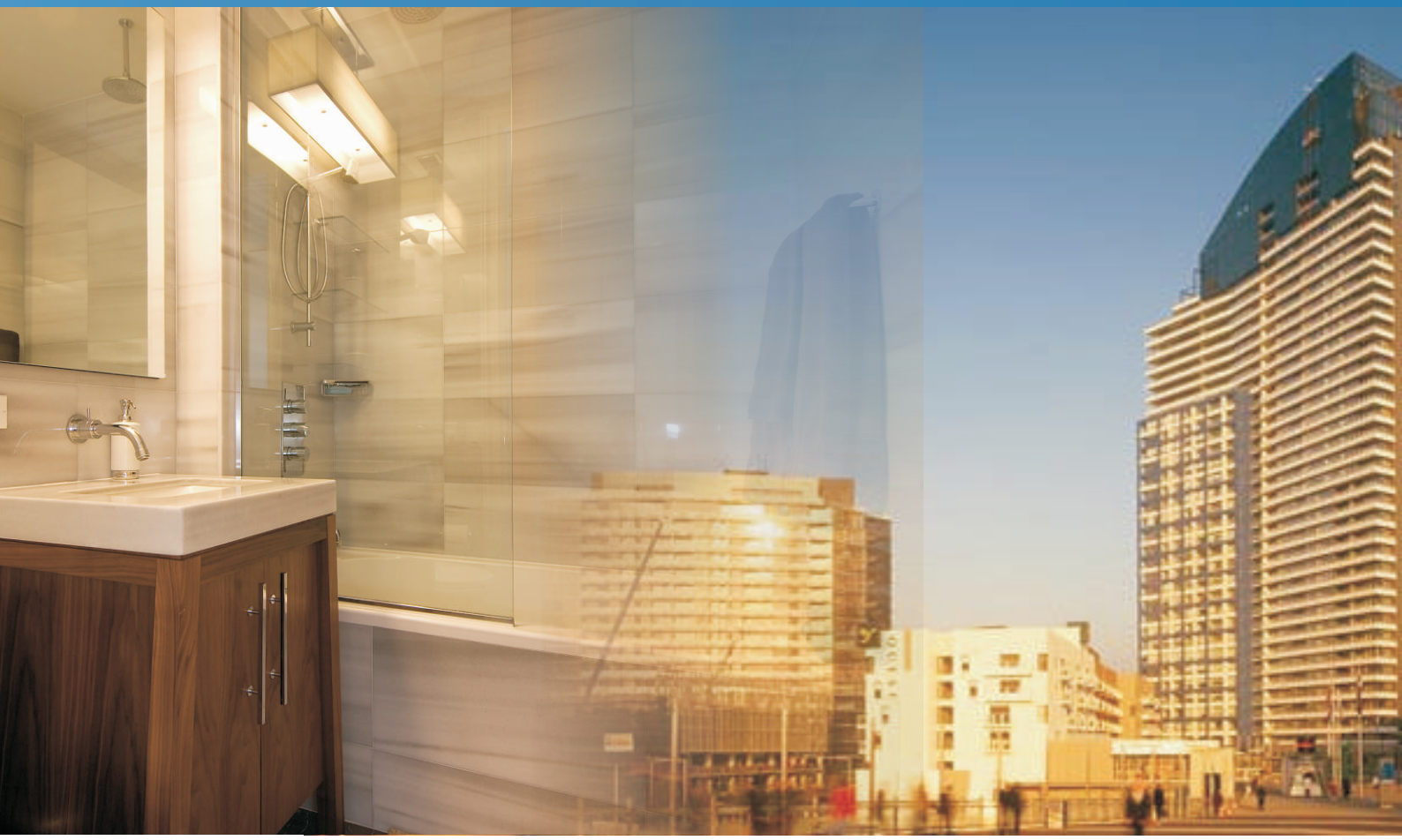
Pyrotek noise control

noise >

soundlag® - acoustic pipe lagging



Pyrotek noise control

soundlag® 4525C

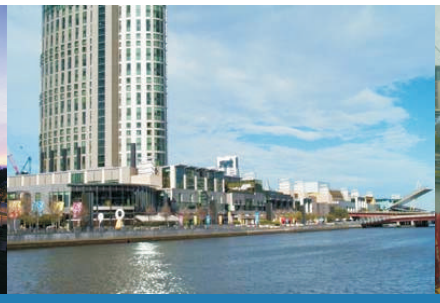
www.pyroteknc.com

> reduces pipe noise > easily installed > high performance
> quality assured & tested > highly flexible > cost effective

soundlag® 4525C

> introduction

The trend towards high-density living environments and lightweight building construction over the last decade has required an improvement in the control of noise from waste pipes and general plumbing. Soundlag 4525C, carrying a ten year warranty, is the choice for many leading acoustic consultants, architects and consulting engineers as its quality assured consistent performance guarantees quieter pipes.


> product introduction

Soundlag 4525C is a pipe wrap comprising of 5.0 kg/m² flexible loaded vinyl bonded to 25mm thick flexible convoluted foam. The function of the foam is to provide acoustic decoupling between the pipe's noise energy and the 5kg flexible loaded vinyl external wrap, resulting in superior performance. The external face of the vinyl is bonded to an aluminum foil providing a fire resistant covering.

> why use soundlag 4525C?

- Easiest pipelag product on the market to cut, wrap & install
- Most widely specified by leading acoustic & EMP (electrical, mechanical & plumbing) consultants
- Highly flexible, allowing it to conform to the smallest dia. Pipes & bends (has no memory)
- No odour & non irritant
- No solvents or adhesives used during manufacture
- Complies to building standard regulations for low VOC ommission
- Ten year warranty
- Available world wide

> fixing and cutting

Soundlag 4525C is easily cut with a knife or scissors to size, minimising wastage. Wrap soundlag 4525C around the pipe and then use high quality aluminium tape to join the product together. Pyrotek recommends an overlap at all joins to eliminate potential flanking noise.

Approximate pipe coverage per 5m roll

Nominal Inside Dia.	Outside Dia.	Actual Cut Length	Coverage/ 5m Roll
32	36	260	25.5
40	43	280	23
50	56	320	20
65	69	360	17.5
80	83	405	16
100	110	490	13.5
150	160	650	9.5
225	250	930	7
300	316	1135	5
375	401	1400	4

This is an indicative calculation based on a minimal overlap

> product solution

Soundlag 4525C has been developed as an easy to use acoustic treatment which reduces noise breakout from pipes.

The unique flexibility of the polymer-based noise barrier provides superior performance and allows even the smallest pipes to be lagged effectively.

It's independently tested in laboratory conditions and in situ to give proven consistent performance. Leading consultants specify Soundlag 4525C with confidence.

Low maintenance with a long service life, the aluminium foil facing provides a robust lifetime surface finish, ensuring protection from damage, and improves fire resistance.

Burj Khalifa Tower used lagging technology acquire by Pyrotek that is used in Soundlag 4525C

> system design considerations

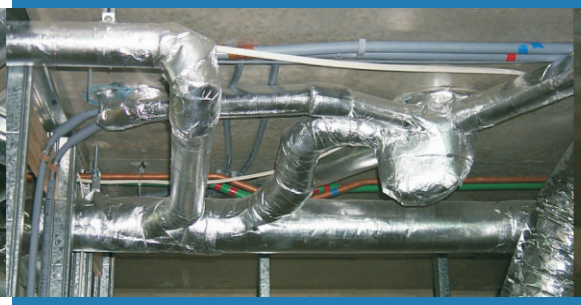
When designing a system using Soundlag 4525C, penetrations through ceilings must be taken into account to ensure effective sound reduction especially from down lights, air conditioning ducting, access hatches and where light-weight ceilings such as mineral fibre tiles are used.

> product construction

Foil facing
Soundlag 4525C uses a strong aluminium foil facing, giving improved fire resistance and increased mechanical strength.

Noise barrier (5 kg/m²)
The Soundlag noise barrier reduces noise through it's unique construction. The specialist fillers create a heavy flexible mass barrier, maximising noise reduction. Soundlag's uniquely flexible and naturally inert nature allows effective, easy installation, essential in achieving a noise-tight seal.

Convoluted foam
The foam provides a decoupling layer which breaks the vibration path allowing the noise barrier to continue to perform in a limp non-constrained manner. Soundlag has enough inherent flexibility to allow convoluted foam to be used, improving fit-out quality on traps and joins.
The polyether foam used in the manufacture of Soundlag products is non-fibrous, will withstand the effects of moisture (hydrolysis resistant), displays excellent acoustic characteristics and has a long serviceable life.



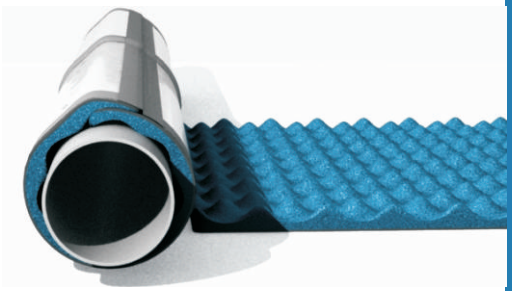
> did you know?

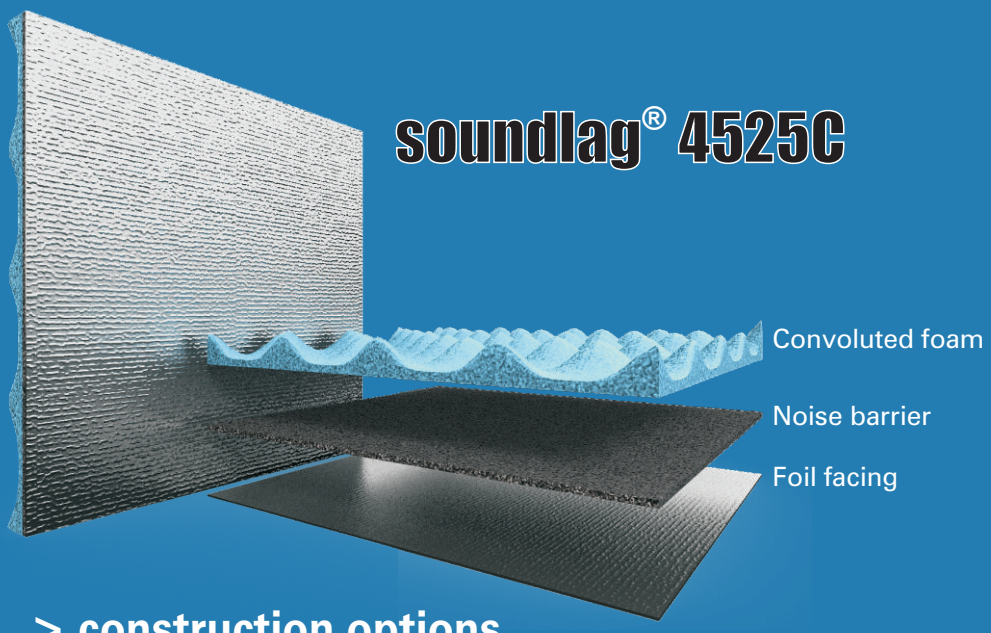
Manufacturers of HDPE and HDPP heavy density acoustic pipes also recommend acoustically lagging pipes with products such as 4525C to comply with building codes.

> installation

Soundlag 4525C is easily installed using Soundtape, a high quality, self adhesive, reinforced foil tape.

To ensure a high quality fit-out, place 3 circumferencial wraps of Soundtape every 300 - 400mm, ie 3 wraps per 1m of pipe.





> construction options

Extensive research has enabled Soundlag 4525C to maximise results while remaining cost effective. However, if extra barrier weights or a variation in foam thickness is required, consult your local Pyrotek representative for special orders. Pre cut pieces for bends, junctions and floor waste gullies can be produced from templates available on request.

Pyrotek noise control

> acoustic performance

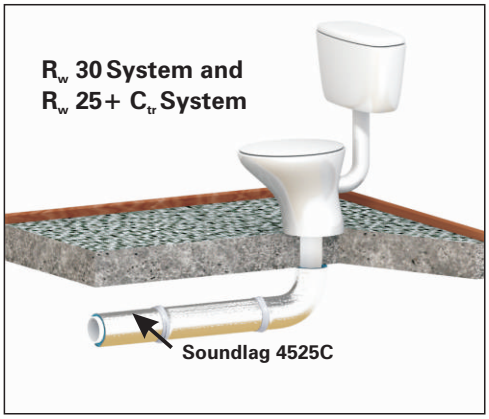
Working with acoustic consultants and test facilities, Pyrotek has designed and tested systems that achieve a high level of noise reduction for all plumbing and hydraulic situations.
Soundlag 4525C is tested in field and independent laboratories to international standards.
Refer Information Page 411IP for more details

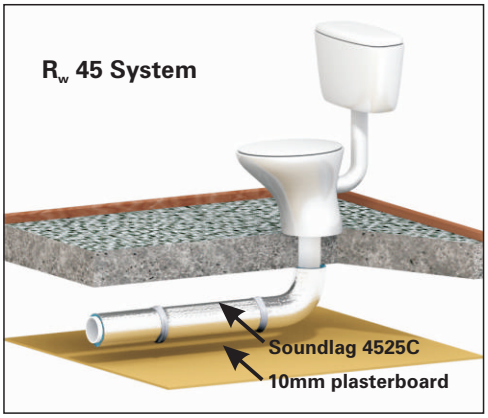
> properties

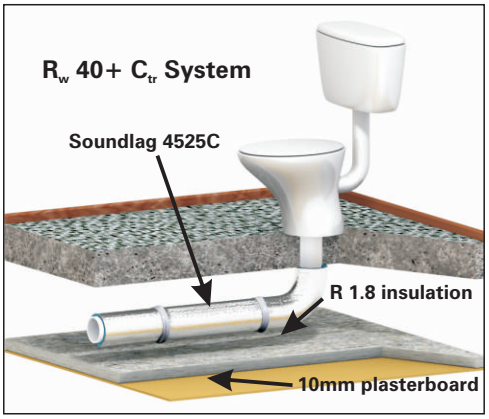
Standard roll size	1350 x 5000mm or 675 x 5000mm (nominal ± 5%)
Roll weight	34kg – 36kg (nominal ± 5%)
Thickness	25mm (nominal ± 5%)
Operating temperature (maximum continuous)	80^{0} C
Operating temperature (maximum intermittent)	100^{0} C
Flammability - AS 1530 Part.3, 1999	Ignitability 0, Spread of Flame 0, Heat Evolved 0, Smoke Developed 0-1
Flammability UL94	HBF

> acoustic testing

Insertion loss: (NAL ATF 750B Report)	25 dB (A) (1/3 octave band 100Hz to10kHz)
Insertion loss (system): (TA 129-D7F03 Report)	Greater than R_w45
Free hanging (ASTM E-90-90)	R_w28
Transmission loss (As1276)	R_w27







As shown above, Soundlag 4525C meets the requirement of Section F5.6 of the current Australian Building Code (2005)

AUSTRALIAN BUILDING CODE REQUIREMENTS
For the states and territories of Australian Capital Territory, New South Wales, South Australia, Tasmania, Victoria and Western Australia. Section F5.6 of the current Australian Building Code (2005) requires that:
"If a duct, soil, waste or water supply pipe, including a duct or pipe that is located in a wall or floor cavity, serves or passes through more than one sole-occupancy unit, the duct or pipe must be separated from the rooms of any sole-occupancy unit by construction with an Rw + Ctr (airborne) not less than—
(i) 40 if the adjacent room is a habitable room (other than a kitchen); or (ii) 25 if the adjacent room is a kitchen or non-habitable room."
For the states and territories of Queensland and the Northern Territory.
Specifically F5.6 Soil and waste pipes to be separated states the following:
If a soil or waste pipe, including a pipe that is embedded in or passes through a floor, serves or passes through more than one sole-occupancy unit –
(a) the pipe must be separated from the rooms of any sole-occupancy unit by construction with an Rw not less than –
(I) 45 if the adjacent room is a habitable room (other than a kitchen); or (ii) 30 if the adjacent room is a kitchen or any other room.

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Pyrotek noise control

noise >

silentstep® - acoustic carpet underlay

Pyrotek noise control

silentstep®

www.pyroteknc.com

> reduces impact & airborne noise > high performance
> easily installed > quality assured & tested > cost effective

silentstep®

> introduction

The trend towards high-density living and light weight building construction over the last decade has required an improvement in the control of noise in multi storey buildings. Noise issues often relate to impact noise created by foot traffic and airborne noise created by activity travelling through light weight or poorly constructed flooring systems. Silentstep offers a solution to these problems.

> product introduction

Silentstep is a cost effective high performance acoustic underlay that offers excellent support for all types of carpet. Silentstep provides a significant reduction in both airborne and impact noise from the floor above into the room directly below in two storey domestic and commercial applications.
Silentstep works to control footfall noise (impact) in inter-tenant living, reducing airborne noise from radio, TV, home entertainment systems or human voice.

> product construction

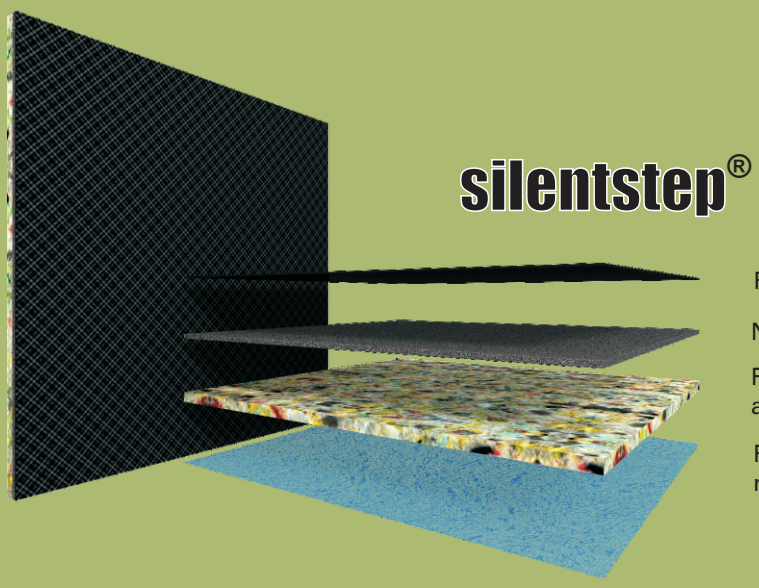
Silentstep is a four part laminate consisting of the following layers:

A reinforcing layer that acts as slip resistance to prevent carpet rucking, and as a strengthening layer for the barrier providing life long stability.

A noise barrier which significantly reduces air borne and impact noise due to the limp heavy nature of the product.

A foam layer which isolates the barrier from the floor structure, allowing the barrier layer to perform independently.

A slip layer to help fitting and also provides reinforcing for the foam layer



> product solution

Silentstep is laid as simply as conventional underlay, replacing existing underlay. Its final manufactured thickness ensures easy laying during installation, as with conventional underlay.

Silentstep maintains a high level resilience in carpet underlay applications.

For improved performance in extreme inter-tenancy noise problems, a floating floor can be created using Silentstep by laying a sub floor on top of the Silentstep then replacing the existing underlay and carpet.

Silentstep underlay creates a decoupled noise barrier with the bottom layer of foam isolating the noise barrier from the floor construction.

Silentstep's flexibility resists compression set, controlling impact noise problems.

It is extremely effective as an underlay over tongue and groove floors. Silentstep underlay also performs as a seal to prevent sound transmission through gaps and cracks in older flooring.

> acoustic

Silentstep's construction has been optimised to control impact and airborne noise through its multi layer construction. Impact noise is created by the impact of foot steps across a floor. The combination of the cushioning effect of the acoustic foam and the damping of the noise barrier effectively controls this noise problem. Airborne noise is created by activity from voice, audio equipment, etc. Silentstep's heavy layer reduces the transfer of airborne noise due to its high mass and limp nature.

> installation

1. Use standard domestic carpet gripper unless otherwise directed.
2. Lay the foam side of the Silentstep onto the floor surface.
3. Butt the edges of the Silentstep together – Join each sheet with good quality underlay tape.
4. Silentstep has sufficient internal weight to remain in position during the fitting of the carpet. Bonding and stapling will reduce the acoustic performance of the material.

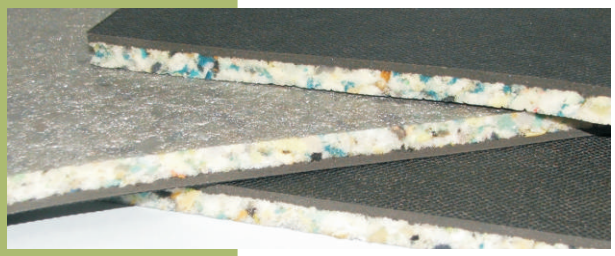
5. Cut the Silentstep in as per normal underlay installation.
6. Make certain the carpet is firmly attached to the leading gripper pins.
7. Bolster the carpet between the far side gripper edge and skirting board.

Pyrotek noise control

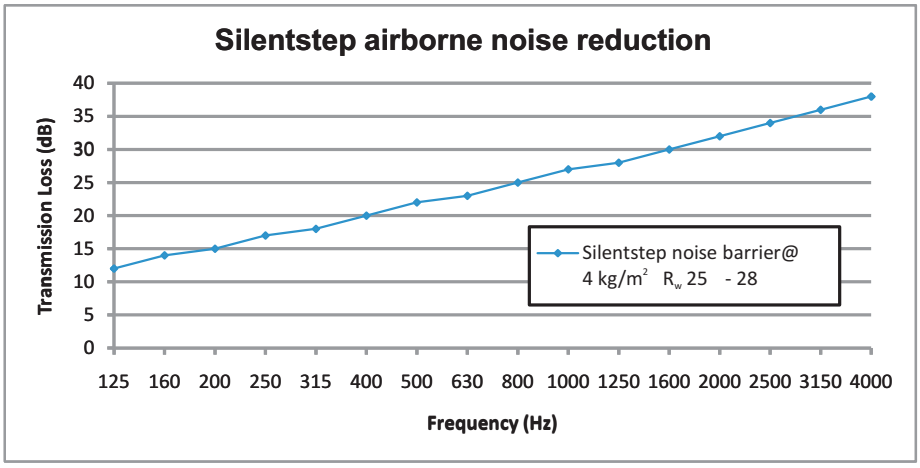
> tested

Silentstep has been tested to:
- ISO 140-7:1998 (E) (Impact)
- AS 1191-1985 (Airborne)

Full report available on request. Refer Information Page 412IP for more details



Rating	Result
L_n, T_w + C - Weighted impact sound pressure level + Spectrum adaptation	56
$L_{n,w}$ - Weighted impact sound level	56
C - Spectrum adaptation	-0.3
IIC - Impact Insulation Class	54
R_w - Weighted sound reduction index	25-28
AAAC - Association of Australian Acoustic Consultants	4 star rating



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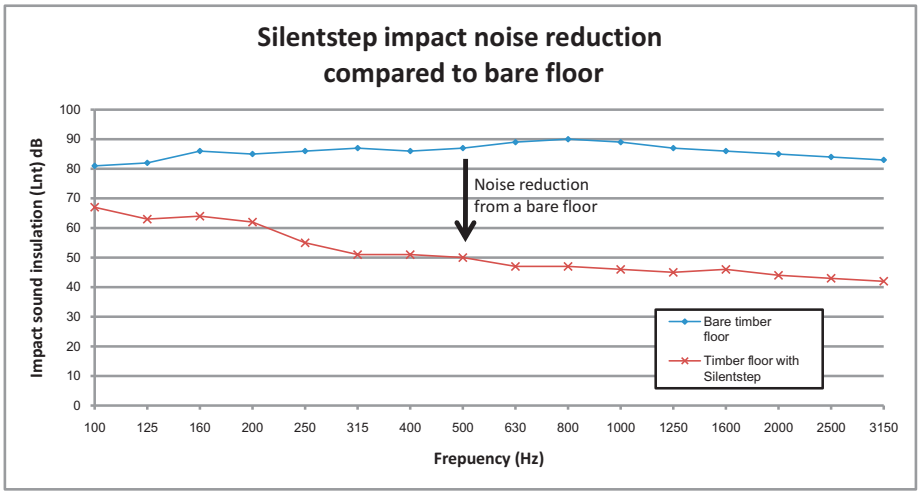
> properties

Thickness (mm nominal)	10
Roll length (metres)	5.0
Roll width (metres)	1.35
Roll weight (kg nominal)	33
Colour	Black facing
Recommended temp range	-20°C to +100°C
Foam treatment	Anti bacterial



Australia and New Zealand
"The floor covering tested met the requirements of Building Code of Australia (BCA) from impact generated sound. It is predicted that using the floor covering tested in combination with a correctly constructed floor structure in dwellings between habitable rooms would meet at least AAAC 4 star rating. The improvement in the floor covering tested, over the bare timber floor, was at least 36 dB for frequencies centred on 315 Hz." (When compared to a bare timber floor as per test report)
Comments from Report nss21031. Conducted and compiled by Ken Scannell MSc MAAS MIOA - Noise and Sound Services

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