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
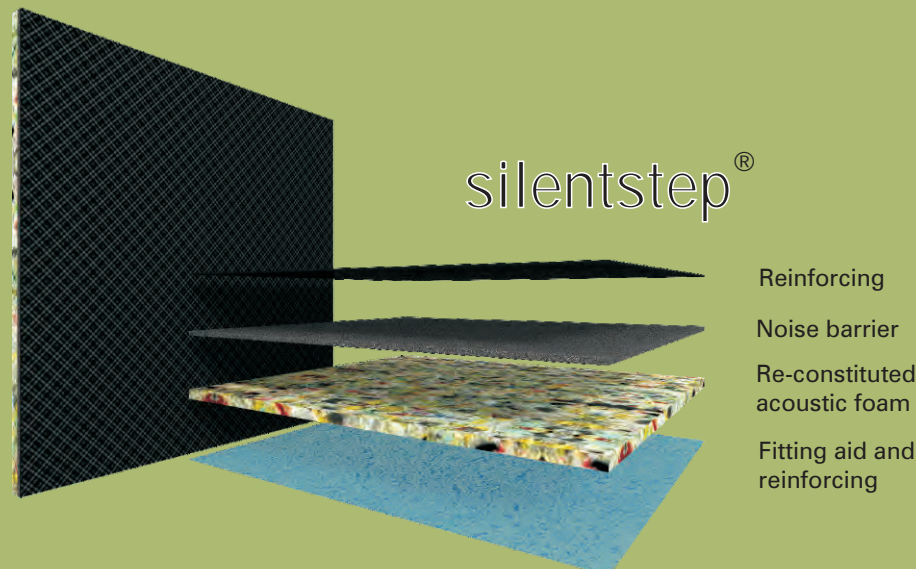
silentstep ®

Reinforcing

Noise barrier

Re-constituted acoustic foam

Fitting aid and reinforcing

> 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.

> 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.

> 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.

**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
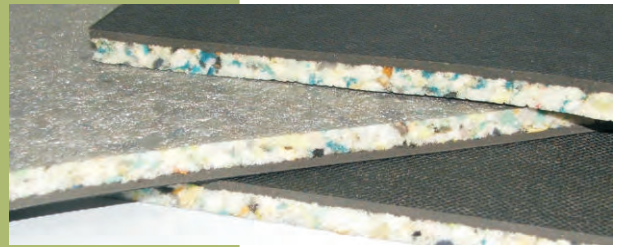

Rating	Result
$L_n, T_w + C$ - Weighted impact sound pressure level + Spectrum adaptation	56
L_{n},w - Weighted impact sound level	56
C - Spectrum adaptation	-0.3
IIC - Impact Insulation Class	54
R_w - Weighted sound reduction index	25-28
AAAC - Association of Australian Acoustic Consultants	4 star rating

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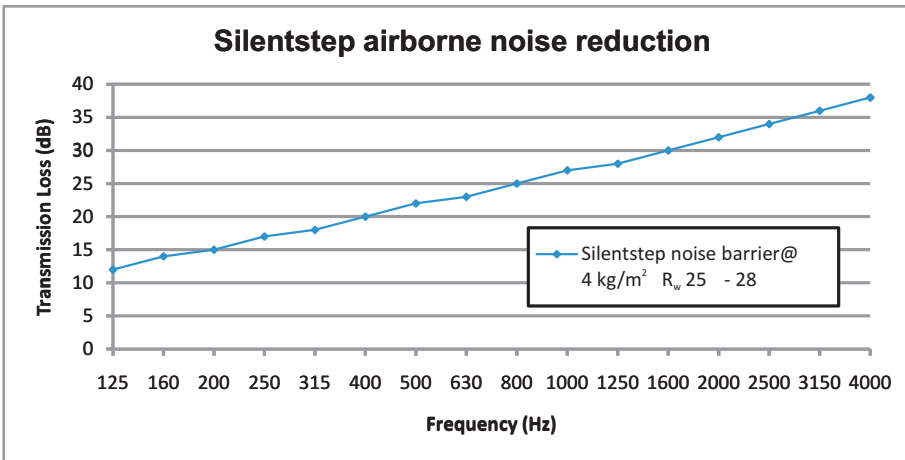
Results shown have been calculated using transmission loss software. Base data was compiled from several years of acoustic testing.(Tests available on request) The software uses well known acoustic formula. Values given are within 1-2 dB of actual test data. Variations will always occur in test data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

> 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

Silentstep impact noise reduction compared to bare floor
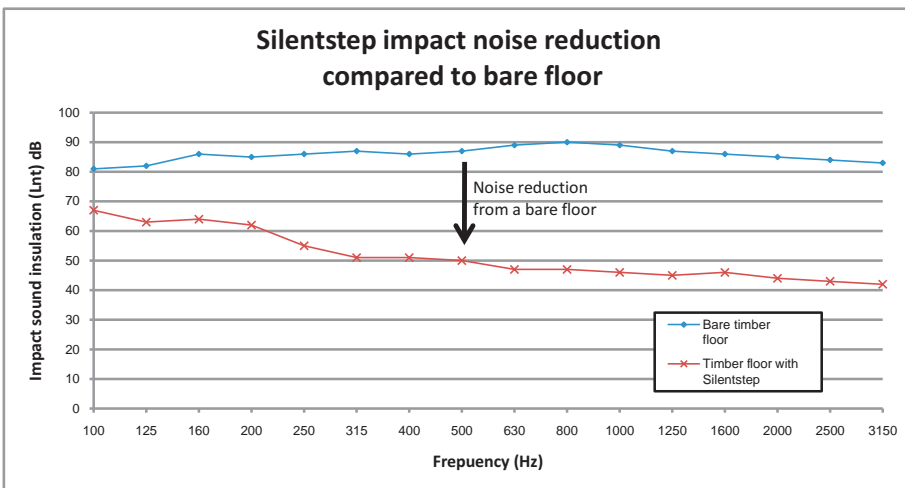
Australia and New Zealand
"The floor covering tested met the requirements of Building Code of Australia (BCA) from impact generated sound. It is predicted that using the floor covering tested in combination with a correctly constructed floor structure in dwellings between habitable rooms would meet at 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

NOTES: Specifications are subject to change without notice. The data listed in this document is typical or average values based on tests conducted by independent laboratories or by the manufacturer. They are indicative only of the results obtained in such tests and should not be considered as guaranteed maximums or minimums. Materials must be tested under actual service to determine their suitability for a particular purpose. The conclusions drawn from acoustic test results are as interpreted in writing by qualified independent testing authorities or suitably qualified engineers where possible. Even so, always seek the opinion of your own engineer as to the meaning of any data presented by the manufacturer as it is applied to any given project or use.
DISCLAIMER: This document is covered by Pyrotek standard Disclaimer, Warranty and © Copyright clauses. See **www.pyroteknc.com/disclaimer**

www.pyroteknc.com

Pyrotek noise control

Silentstep has been designed specifically to reduce speech and audio noise as well as footfall noise generated between floors in buildings.

The unique combination of an acoustic noise barrier and premium bonded foam underlay gives unsurpassed noise reduction.

The noise barrier absorbs and reflects noise, drastically reducing its transfer to adjoining floors.

The bonded foam layer cushions footfall reducing foot impact, while isolating the barrier layer from the floor, increasing the effectiveness of the barrier.

The combination of the two layers enhances the total performance of Silentstep.

SILENTSTEP
SOUNDPROOFING UNDERLAY

what difference will I hear?

The graph shows the performance of standard bonded foam underlay versus Silentstep.

Standard foam underlay stops very little noise due to its very low weight and open structure. You can't see sound, so imagine it is like water. If water can get through, so can sound.
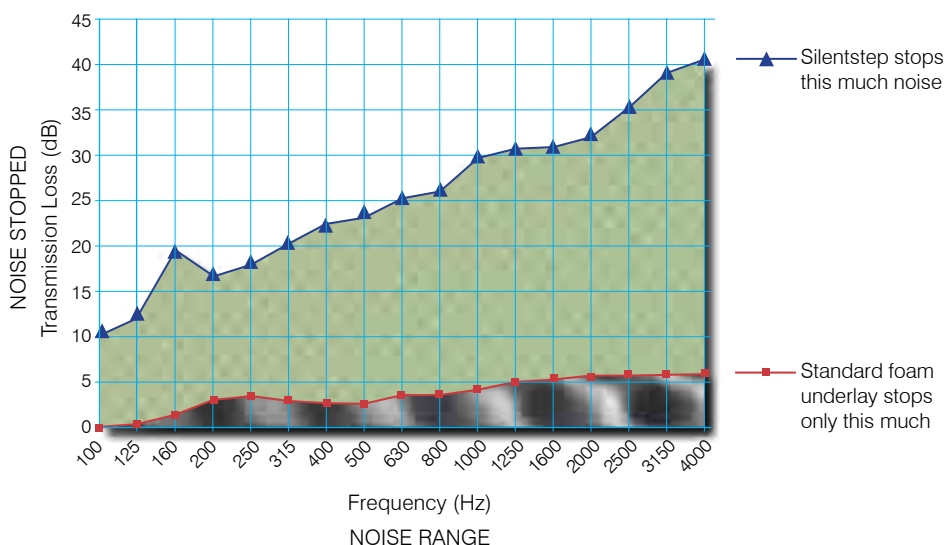
FROM A THUMP TO A TIPTOE

FROM A SHOUT TO A WHISPER

Footfall creates a loud thump as the heel hits the floor (315Hz). Plain underlay has little effect on this impact noise problem.

When tested against a bare floor, Silentstep reduces the impact noise by 36dB so a thump becomes a tiptoe.....

400Hz to 1000Hz is the range critical to control the transfer of noise from speech, music, TV and radio.

At 500Hz standard underlay stops only 2dB whereas Silentstep stops 23dB. **That's 21dB more** - so a shout becomes a whisper.....

NOISE STOPPED
Transmission Loss (dB)

Silentstep stops this much noise

Standard foam underlay stops only this much

Frequency (Hz)
NOISE RANGE

Pyrotek
noise control