Woodland Acoustics

Acoustic Systems

We are Woodland Acoustics

Acoustic design is an often unsung hero in curating how we experience a space. Let's design better spaces for people to live and work.

TRANSFORMING SPACES

At Woodland Acoustics, we believe that every space deserves the best acoustic treatment. By effectively controlling sound, we help create environments that promote well-being, productivity, and enjoyment.

We only source products that meet our high standards in style and functionality, creating an extensive range of carefully curated options.

Talk to our team for expert advice and guidance to make your acoustic decisions easy.

Sustainability

We're committed to reducing our environmental footprint through strategic choices that promote sustainability at every level of our business from our partnerships, our packaging and our product range.

Sourcing

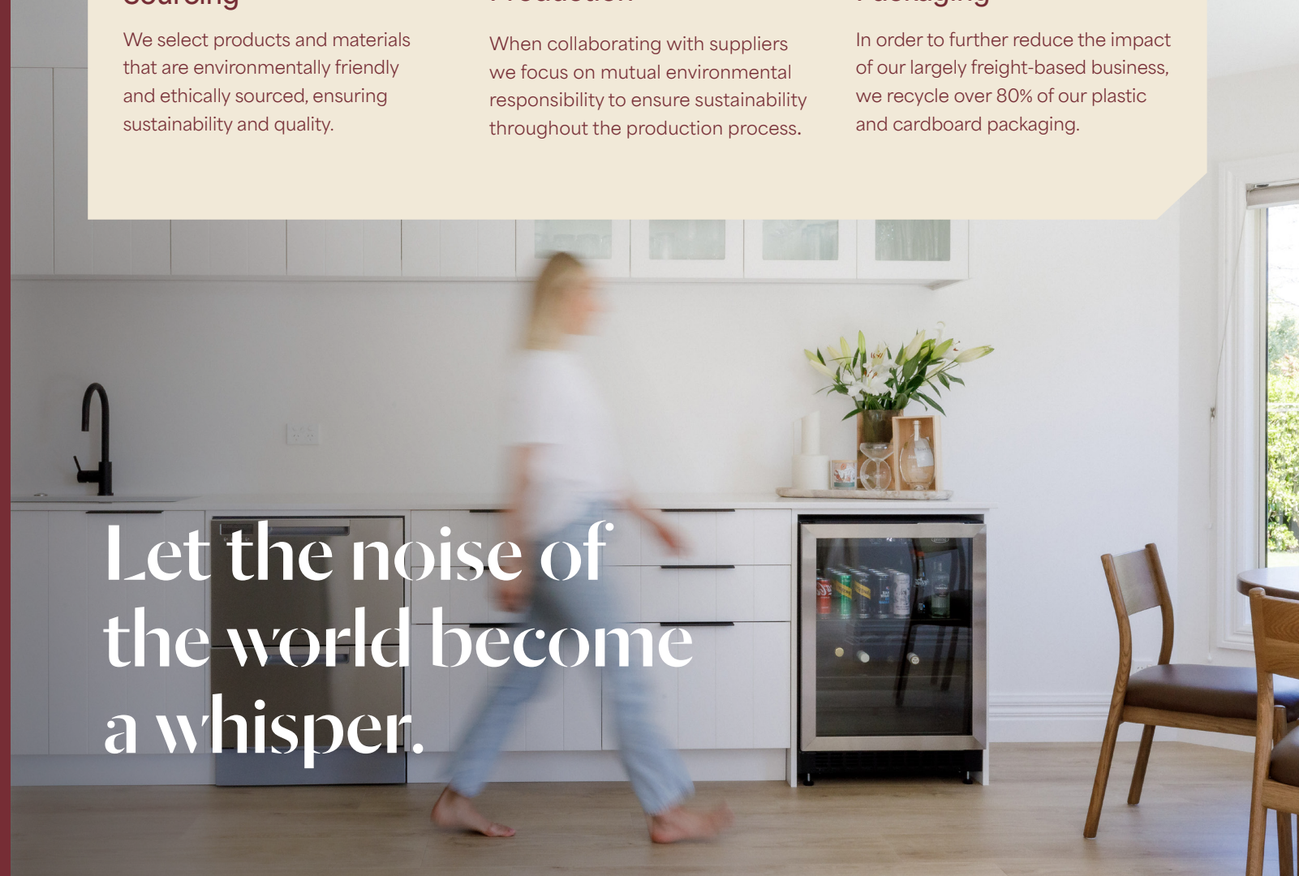
We select products and materials that are environmentally friendly and ethically sourced, ensuring sustainability and quality.

Production

When collaborating with suppliers we focus on mutual environmental responsibility to ensure sustainability throughout the production process.

Packaging

In order to further reduce the impact of our largely freight-based business, we recycle over 80% of our plastic and cardboard packaging.



Welcome to a new era of soundproofing:

Introducing PhoneStar

PhoneStar is a revolutionary soundproofing board that redefines acoustic control. Engineered with precision in Germany, PhoneStar is designed to significantly reduce sound transfer in both residential and commercial spaces.

PhoneStar is not just another soundproofing product; it's a marvel of modern engineering.

Utilising an innovative combination of sand and cardboard layers, PhoneStar excels in reducing sound transfer, especially low-frequency noises that are notoriously hard to manage.

Imagine a solution that is only 15mm thick yet delivers remarkable acoustic performance - equivalent to adding 60mm of concrete. That's the power of PhoneStar.

A quiet revolution in sound reduction

Unmatched sound reduction

Say goodbye to disruptive noise. PhoneStar significantly diminishes both airborne and impact sound, creating peaceful environments.

Sustainable

Made from sustainable materials like sand and cardboard, PhoneStar is a natural choice for environmentally conscious projects.

Minimal thickness, maximum impact

At just 15mm, PhoneStar adds minimal build-up while delivering extraordinary results. Perfect for projects where space is a premium.

Easy installation

Designed for quick and straightforward installation, PhoneStar is easy to use, no specialised skills or trades people are required.

APPLICATIONS

Residential

Perfect for reducing noise from neighbouring apartments, traffic and urban environments.

Industrial

Effective at mitigating noise from machinery, making it suitable for factories, workshops, and other industrial settings requiring robust sound control.

Commercial

Ideal for soundproofing offices, boardrooms and conference areas to maintain privacy and professionalism.

Specialised Spaces

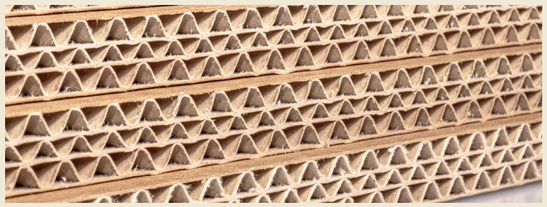
Excellent for recording studios, home theaters, and spaces requiring high acoustic performance.

Footfall noise

Efficiently reduces impact noise from footsteps, making it suitable for high density living environments and multi-level apartments.

How does PhoneStar work?

PhoneStar combines loose sand and the versatility of cardboard in carefully structured layers. This unique configuration effectively disrupts sound waves, particularly those at low frequencies, providing superior noise reduction.



Engineered cell structure

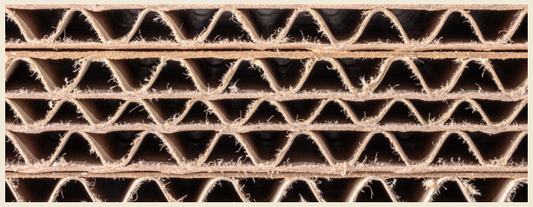
The technical cell structure is designed to disrupt and dissipate sound waves, enhancing acoustic performance.

Quartz sand filling

The loose filling of quartz sand, with molecules that are not bonded together, creates air pockets that allows vibration. This is particularly effective in absorbing sound.

Layered composition

The board consists of alternating hard and soft layers, working together according to acoustic principles to minimise sound transmission.



Heavyweight design

The substantial mass of PhoneStar prevents sound transfer, offering superior soundproofing and exceptional acoustic insulation.

How sound is perceived

Studies have shown that, in general a sound is perceived as twice as loud when the sound level is increased by 10dB. Similarly, a 20 dB increase in sound pressure level is perceived as four times louder by the average listener. For this reason, careful consideration of acoustic performance is essential in every build to ensure comfort and well-being.

Sound Awareness	Change in sound (dB)
Insignificant	1
Just perceptible	3
Clearly noticeable	5
Twice or half as loud	10
Significant	15
Four times as loud	20

Understanding acoustic measurements

The measurements used to evaluate sound transmission between floors in New Zealand are STC and IIC. These address both airborne sounds (STC), like talking, and impact sounds (IIC), like footsteps.

The Sound Transmission Class (STC) measures the sound insulation of a floor/ceiling assembly using an airborne sound source, this is represented in decibels (dB).

The Impact Insulation Class (IIC) measures the sound insulation of a floor/ceiling assembly using a direct impact source. This is done with a calibrated tapping machine and generates impact sounds a different frequencies. IIC is also measured in decibels, the higher the IIC and STC results, the better the performance of the assembly.

Delta IIC (△IIC) values reflect the improvement in impact sound isolation that a product brings to a construction. It is measured by taking the difference between the overall IIC value and the initial IIC value before the product was added. △IIC values are usually measured using ASTM E2179. This standard requires the measurement to be taken using a concrete floor. This means the △IIC values presented alongside acoustic and flooring products are only useful when considering them for buildups that include a concrete floor.

It is important for specifiers to look for fully tested assemblies rather than △IIC values when designing timber buildings

Product Specifications

	Description	Dimensions	Thickness	△IIC	△Lw
PhoneStar Tri	Acoustic insulation board.	1200 x 800mm	15mm		22
PhoneStar 25	Acoustic insulation board.	800 x 600mm	25mm		
Decoupling Fleece	Polyester fleece used as a base layer under acoustic floor build-ups.	1m x 50m	1.4mm		
Decoupling Plate	Polyester underlay used in acoustic floor build-ups to adhere floor coverings. Suitable for timber, ceramics and vinyl.	1000 x 600mm	4mm		
MiWo	High density rock wool insulation used as part of acoustic floor build-ups.	1200 x 625mm	12mm or 20mm		
GenieMat RST02	High performance acoustic rubber underlay	1220mm x 22.86m	2mm		
GenieMat RST05	High performance acoustic rubber underlay	1220mm x 9.14m	5mm		
GenieMat RST10	High performance acoustic rubber underlay	1.22m x 4.57m	10mm		
GenieMat FIT08	All-in-one acoustic floating floor	1220 x 7620mm	8mm		
GenieMat FIT30	All-in-one acoustic floating floor	607 x 607mm	30mm		
GenieMat FIT70	All-in-one acoustic floating floor	607 x 607mm	70mm		
GenieMat FF06	A continuous underlay system	1.2m x 7.6m	6mm		
GenieMatFF17	A continuous underlay system	1.22 x 4.57m	17mm		
GenieMat FF25	A continuous underlay system	1.2 x 4.6m	25mm		
FloorMuffler US	An underlay made from XLPP foam with industry-leading acoustic ratings.	10m x 0.997mm or 32.8m x 1.83m	2mm	25	
FloorMuffler LVT	Flooring underlay suitable for Hybrid and Vinyl Plank floors. Made from XLPP foam with industry leading acoustic performance.	11.24m x 0.889mm	1mm	22	
Native Vinyl Plank	High performance, commercial, acoustic vinyl plank with colours inspired by New Zealand timber.	1524 x 228.6 mm (plank size)	5mm	16	
Strata Premium Hush	Hybrid overlay flooring with ISOCORE technology and industry leading acoustic performance.	1510 x 220mm (plank size)	8mm	24	

Concrete mid-floors

Acoustic test reports for all referenced results are available on request.

Concrete floors generally provide excellent acoustic performance due to their inherent mass. However, it's crucial to incorporate softer, resilient materials to address high frequencies, such as the sound of high-heeled shoes on tiles. Selecting an acoustic system compatible with waterproofing and adhesives is essential to effectively manage these sounds.

Key considerations:

- **Is there a ceiling below?** The presence of a ceiling can significantly improve acoustic performance.
- **Slab thickness:** The thickness of the concrete slab plays a crucial role in acoustic performance.
- **Concrete type**: Different types of concrete floors (solid, hollow core, composite deck) have varying acoustic properties.
- **Build-up height**: Acoustic systems often require additional build-up height, which must be factored into the design.

Mid-Floor Construction	Acoustic Build up	Floor Covering	IIC	STC	Notes
150mm slab with drop ceiling (STM E90 & ASTM E492)	N/A	Native Vinyl	60	61	
		Strata Premium Hush	69	62	
	FloorMuffler Acoustic Underlay	Vinyl Plank (4mm)	71	66	FloorMuffler LVT
		Laminate (10mm)	74	73	FloorMuffler US
150mm slab no ceiling	N/A	Strata Premium Hush	53	51	
	FloorMuffler Acoustic Underlay	Vinyl Plank (4mm)	54	53	FloorMuffler LVT
		Engineered Timber (11mm)	52	52	FloorMuffler US
Rib, infil and ceiling	FloorMuffler PhoneStar Tri Decoupling Plate	Engineered Timber (14mm)	FIIC 66dB	N/A	NZ field testing

See our website for CAD details.

Timber joist mid-floors

Timber joist floors are characterised by their low mass, which results in relatively low acoustic performance. One significant challenge in designing timber floors is that standard acoustic delta ratings, often derived from tests on concrete floors, do not usually apply. Low frequencies, in particular, are difficult to prevent from transferring between spaces.

Key considerations:

- **Ceiling structure:** Has the specific ceiling structure been acoustically tested?
- **Fire rating**: If your ceiling detail changes due to fire rating requirements, this will affect your acoustics. Be sure to revisit your acoustic planning if the ceiling changes.
- **Client expectations:** Higher-end projects typically demand performance beyond code requirements.
- **Adding mass:** While adding mass can improve performance, it may impact the overall structure and build-up height.

Mid-Floor Construction	Acoustic Build up	Floor Covering	IIC	STC	$L_{n,w}$ (C_I)	R_w(C;C_{tr})
Fire rated floor/ceiling (GBDFA-60b)	PhoneStar Tri Decoupling Plate	Sheet Vinyl (2mm)	54	65	50 (3)	64 (-4; -11)
	Decoupling Fleece PhoneStar Tri Decoupling Plate	Sheet Vinyl (2mm)	56	64	49 (2)	63 (-3; -10)
		Engineered Timber (12mm)	57	67	52 (1)	65 (-4;-11)
		Ceramic Tiles (10mm)	60	68	50 (0)	66 (-4;-11)
	Decoupling Fleece PhoneStar Tri	Strata Premium Hush	55	66	49 (3)	64 (-4;-11)
	Decoupling Fleece PhoneStar Tri FloorMuffler US	Laminate (8mm)	56	65	50 (2)	64 (-4;-11)
	Decoupling Fleece PhoneStar Tri PhoneStar Tri Decoupling Plate	Sheet Vinyl (2mm)	61	66	44 (2)	64 (-2;-9)

See our website for CAD details.

Mass timber mid-floors

Mass timber floors tend to have poor acoustic performance, mainly due to the lack of an air cavity. Projects requiring exposed ceilings present significant challenges, as few acoustic systems can effectively mitigate sound in these scenarios. Adding additional mass is crucial for improving acoustic performance.

Key considerations:

- **Occupancy type**: Does the project need to meet G6 building code requirements?
- **Ceiling below:** A high acoustic-rated ceiling can significantly enhance overall IIC and STC ratings.
- **Flanking sound:** Mass timber is highly prone to flanking noise, requiring early design measures to mitigate them.
- **Required acoustic performance**: Aligning client expectations with achievable acoustic ratings is essential.
- **Build-up height:** Acoustic systems often require additional build-up height, which must be taken into account.
- **Low frequencies:** New Zealand testing methodologies don't account for sound under 100Hz. This is often problematic for mass timber.

Mid-Floor Construction	Acoustic Build up	Floor Covering	IIC	STC	$L_{n,w}$	R_w
140mm CLT no ceiling	PhoneStar Tri PhoneStar Tri MiWo	N/A	52	55	56	54
126mm CLT no ceiling	FloorMuffler US PhoneStar Tri 5mm Plywood	N/A	44	40	66 (0)	40 (0;-3)
126mm CLT no ceiling	FloorMuffler US PhoneStar Tri PhoneStar Tri 5mm Plywood	5mm Native Vinyl Plank	48	44	62 (0)	44 (-1;-4)
126mm CLT no ceiling	MiWo PhoneStar Tri 18mm Plywood	N/A	43	48	64 (1)	48 (-2;-8)
126mm CLT no ceiling	MiWo PhoneStar Tr PhoneStar Tri Decoupling PLate	N/A	46	49	61 (2)	49 (-3;-8)

See our website for CAD details.

Woodland Acoustics

09 308 7948
support@woodlandacoustics.co.nz

woodlandacoustics.co.nz