

Design & Installation Guide

MASS TIMBER SYSTEMS

New Zealand | v3.1 | January 2024

 **SoundDown**™

To be used in conjunction with SoundDown™ &
Affiliate Product & Safety Data Sheets

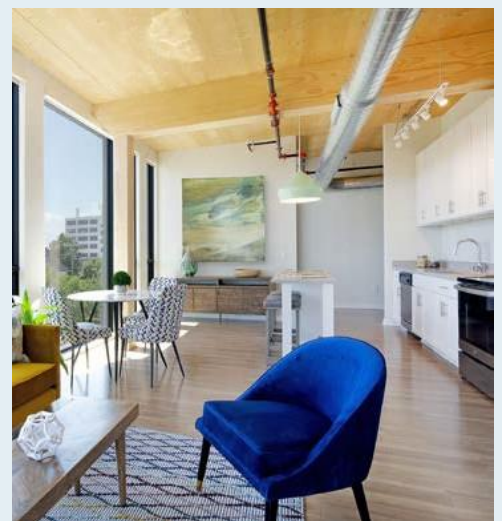
www.sounddown.co.nz

SoundDown™ Acoustic Floor & Wet Area Systems

Sustainable, engineered solutions solving mass timber acoustics



High acoustic energy rooms



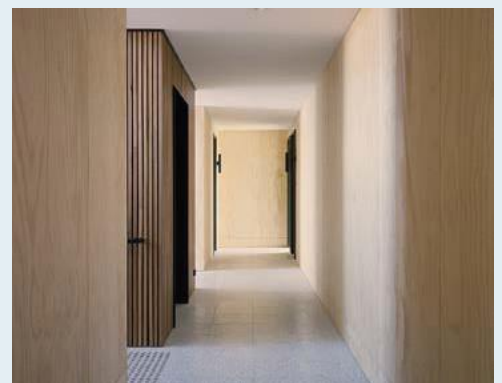
Living Spaces



Large open spaces



Modern workspaces



High traffic areas

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This Design and Installation Guide has been prepared as a source of information to provide general guidance to consultants – and in no way replaces the services of the professional consultant and relevant engineers designing the project.

It is the responsibility of the architectural designer and engineering parties to ensure that the details in this Design and Installation Guide are appropriate for the intended application.

The recommendations of this guide are of good building practice, but are not intended to be an exhaustive statement of all relevant data and your project may require alternate solutions.

SECTION 01 | INTRODUCTION

SoundDown™ are leaders in high performance acoustic intertenancy floor and ceiling systems suitable for high density residential, commercial, educational and healthcare applications. SoundDown™ Floor Systems are engineered to solve complex acoustic problems associated with CLT structural floors while maintaining the ethos and values of Mass Timber construction.

SoundDown™ PAB and SDP systems are sustainable, lightweight solutions designed to reduce noise and vibration for CLT structural floors that the market is accustomed to with the likes of reinforced concrete. The benefits of SoundDown™ Acoustic Floor Systems include reducing on-site labour and removing messy wet trades; leading to a faster and efficient installation allowing your project to realise construction programme and cost benefits.

The systems are comprised of proprietary SoundDown™ products and industry-leading building materials to create a practical, resilient, dry subfloor as an alternative to wet screeds and concrete toppings which diminish the value of Cross-Laminated Timber (CLT). SoundDown™ Acoustic Floor Systems were developed to offer a variety of airborne and impact sound options, services integration and project-unique floor depth requirements to meet the vast range of project, customer and performance needs.

In addition to Acoustic Floor Systems, SoundDown™ offer a preassembled Shower Tray Module to compliment SoundDown™ PAB system; allowing for a prefabricated option to enable seamless floor transition to the shower and removing mortar beds entirely. The benefits include unlocking certainty in quality, consistent construction and compliance of falls and speed of installation.

As the construction field evolves, the market, industry and governing bodies are continually calling for better quality and safer systems constructed of moisture resistant, non-combustible and non-hazardous materials to drive positive change in the built environment. SoundDown™ acknowledges the changing landscape and brings progressive solutions to the market guaranteeing compliance and best in class practices.

The Benefits of SoundDown™

- Highly durable topping
- Available in easy to carry unit sizes
- Designed to be installed by one person
- Simple design and construction detailing
- Lightweight solution through resiliency over mass
- Suitable for wet areas
- Use of recycled and sustainable materials

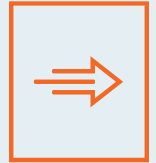
For further information or project support:

web: www.sounddown.co.nz
email: warren@buildanatomy.co.nz
phone: (+64) 022 377 2162

 SoundDown™



Acoustic Rated



Fast & Efficient



Non-Combustible
Topping Option



Moisture Resistant



Non-Hazardous



Simple Design



High Value



Squeak Free

SECTION 02 | USE OF THIS GUIDE

Industry Professionals

This Design & Installation guide has been prepared for use by qualified construction professionals to provide the necessary technical information on SoundDown™ PAB and SDP Floor Systems for CLT structural floors in Mass Timber buildings for New Zealand.

Products referred to in this document other than SoundDown™ products are required to be used to meet the specified performance values. New Zealand standards and other manufacturer literature are required to be consulted by all stakeholders to ensure safe and compliant design and construction.

This guide does not provide exhaustive information and as such, projects may require professional advice from qualified subject matter experts to assess the suitability of SoundDown™ Acoustic Floor Systems and detailing for your project. This can include acoustics, structural, waterproofing and fire engineering.

This guide is for designers and installers; professional judgement must be used when referencing this document. Full responsibility for the design and compliance with the New Zealand Building Code (NZBC) and New Zealand Standards, rests with the design professional specifying the product.

SoundDown™ will not accept any liability for the failure of any other elements of the building which cause a subsequent failure of a SoundDown™ system.

While all reasonable efforts have been made to ensure the accuracy of information provided, this guide is a guide only. It may be subject to change.

Technical assistance is available at www.sounddown.co.nz.

Designers & Specifiers

As per Clause G6 'Airborne and Impact sound' to the New Zealand Building Code (NZBC), the Sound Transmission Class (STC) and the Impact Insulation Class (IIC) for intertenancy floors shall be no less than 55. SoundDown™ systems have been tested and verified to achieve STC & IIC values above the minimum requirements of Clause-G6 of the NZBC.

Ensure the information in this design and installation guide is appropriate for the application you are planning and that you undertake specific design and detailing for areas which fall outside the scope of the following contents.

Installers

Ensure that you follow the design detailing and associated product literature provided to you.

High risk areas such as wet areas, penetrations and wall to floor junctions require you to practice care and caution. Waterproofing systems must be installed by an accredited installer.

Please contact SoundDown™ if you seek further support.

Version Control

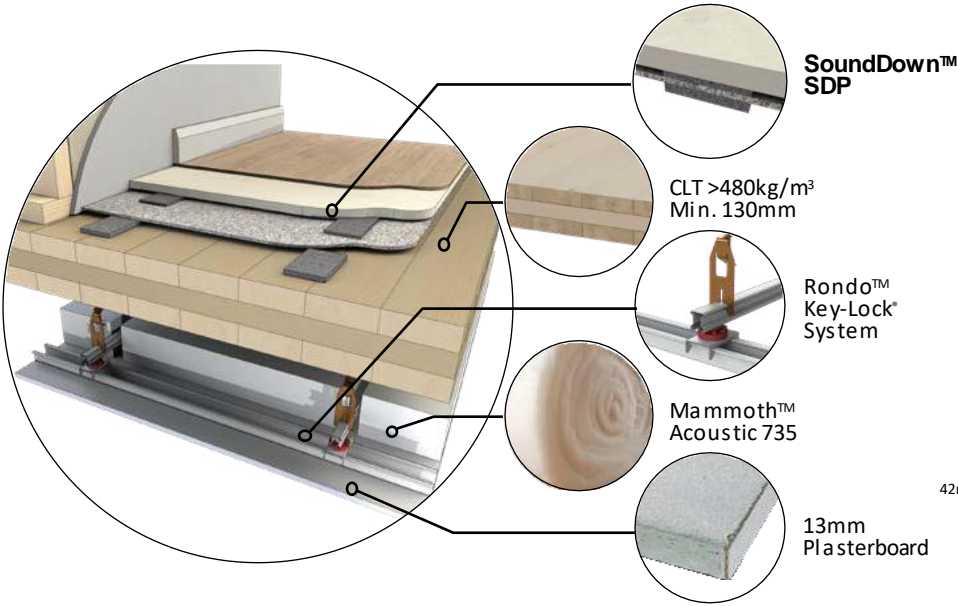
This design and installation guide receives updates and version control is used. The latest issue is always available on the SoundDown™ website. It is the user's responsibility to ensure that the latest version is in use at all times.

SECTION 03 | INTRODUCING SOUNDDOWN™ ACOUSTIC FLOOR SYSTEMS FOR MASS TIMBER

SoundDown™ acoustically-engineered floor systems for buildings utilising Cross-Laminated Timber structural floors.

SoundDown™ SDP

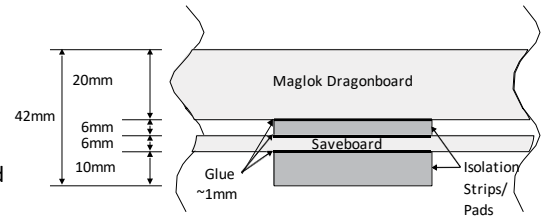
A pre-assembled acoustic sandwich panel comprised of Maglok Dragonboard 20mm, Saveboard 6mm and recycled rubber isolation strips and pads enabling lower floor-to-floor heights and increased speed of installation.



System Information

Min. System Depth:	422mm
SoundDown™ Build Up:	42mm
Services Routing:	✗
Topping Durability:	Maglok ✓
Installation Time:	>5m ² /Hour
Weight:	27kg
Coverage Per Panel:	1.08sq/m
IIC:	62
STC:	64

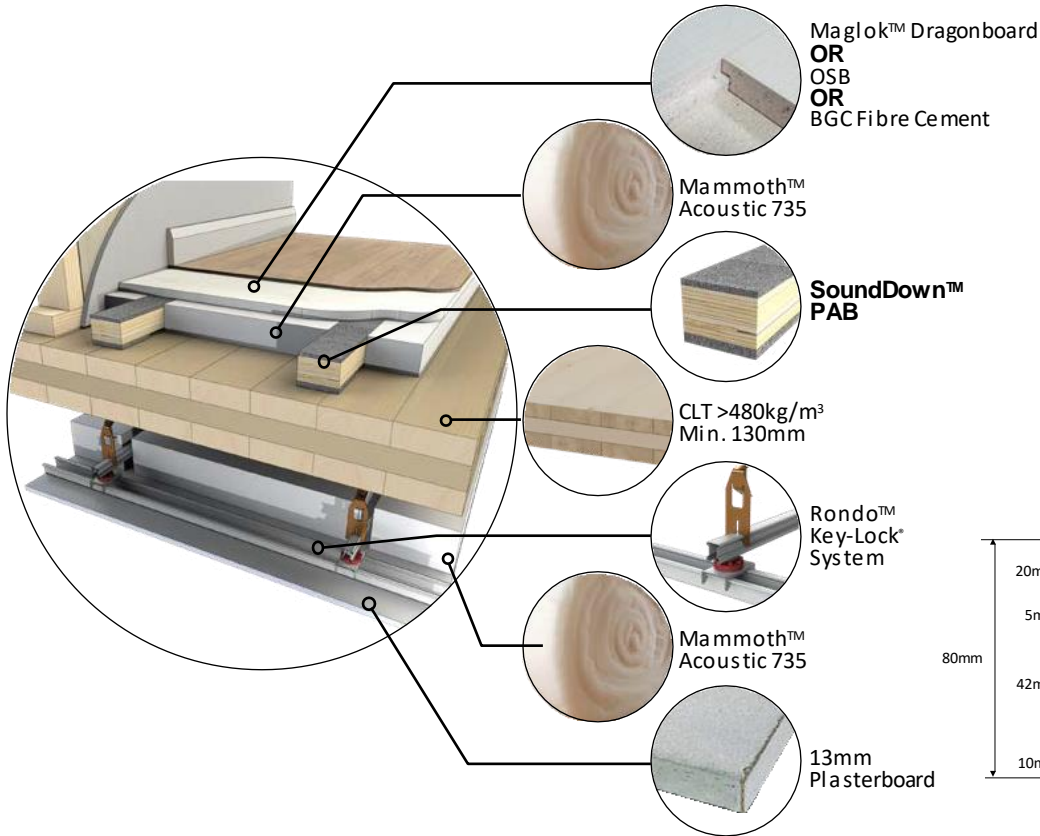
*Weight is SDP panel only, shown below.



SECTION 03 | INTRODUCING SOUNDDOWN™ ACOUSTIC FLOOR SYSTEMS FOR MASS TIMBER

SoundDown™ PAB

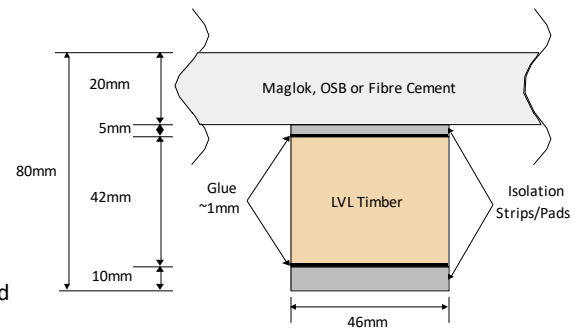
A pre-assembled acoustic batten comprised of LVL & recycled rubber isolation strips, enabling superior acoustics, services integration and flexibility of topping layer.



System Information

Total System Depth:	460mm
SoundDown™ Build Up:	77mm
Services Routing:	✓
Topping Durability:	Maglok ✓
Installation Time:	>3m ² /Hour
Weight OSB	18.4kg/m ²
Weight Maglok	26.2kg/m ²
IIC (OSB):	57
IIC (Maglok):	60
STC:	66

*Weights displayed are PAB with topping panel only, shown below.



SoundDown™ PAB FIREBLOCK

A pre-assembled, fire-stopping acoustic batten comprised of LVL & recycled rubber isolation strips encapsulated in 16mm FR plasterboard to prevent to spread of fire within the sub-floor; specifically designed for floor fire compartmentalisation.

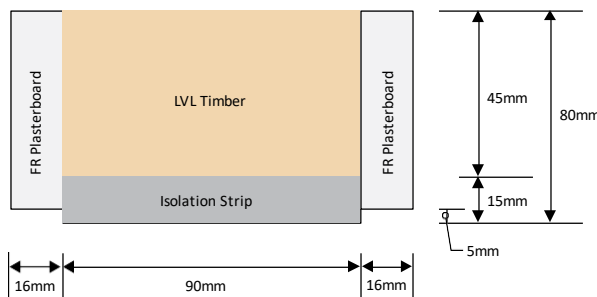
Option 1 | 122 x 60mm



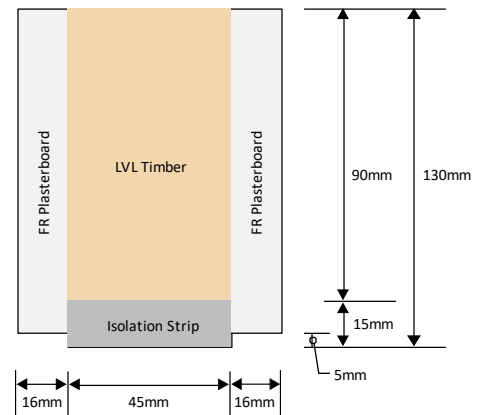
Option 2 | 77 x 115mm



Option 1 | 122 x 60mm



Option 2 | 77 x 115mm

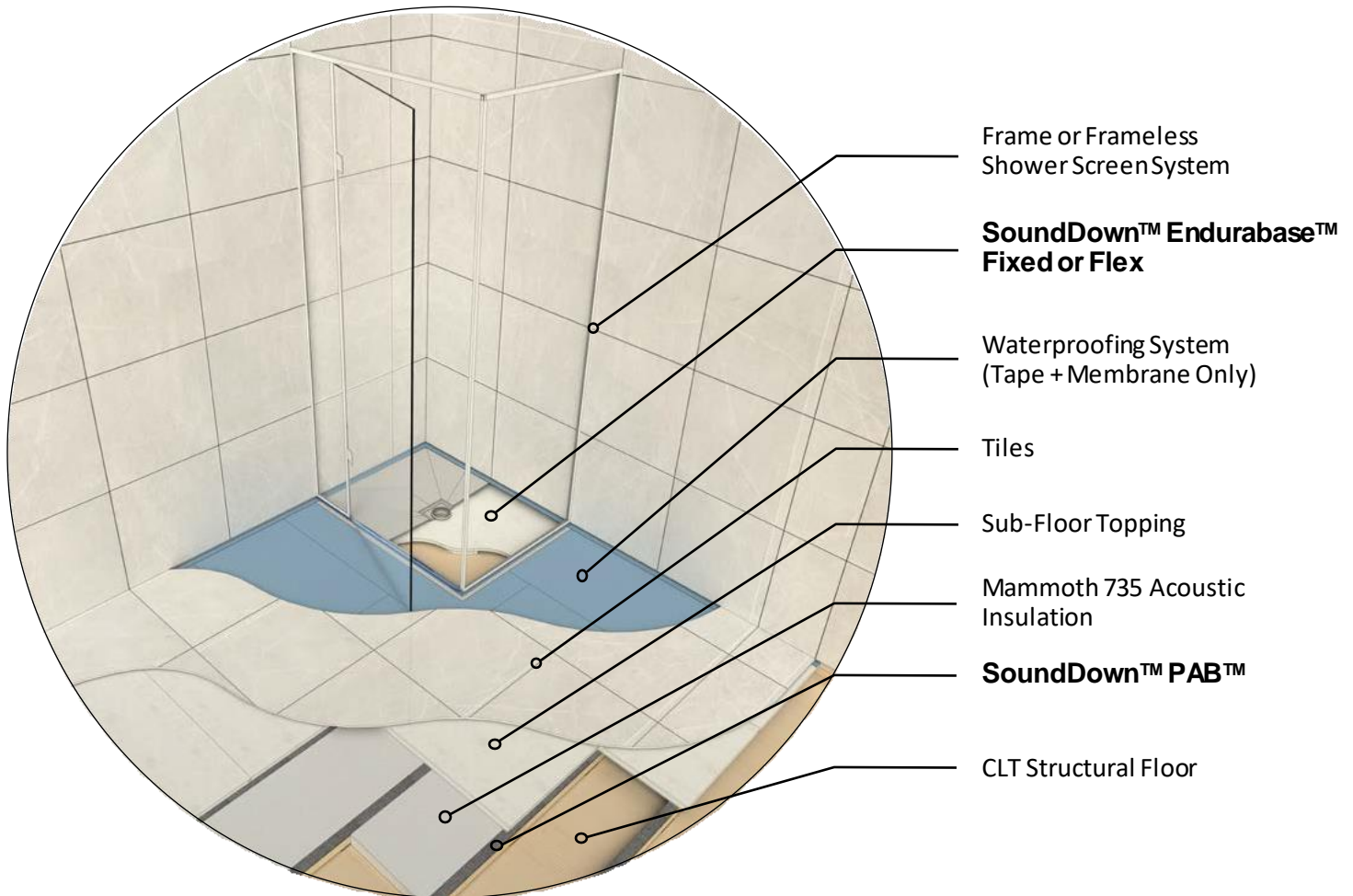


SECTION 04 | INTRODUCING SOUNDDOWN™ ENDURABASE™

SoundDown™ offer pre-assembled, acoustically isolated shower modules to compliment SoundDown™ PAB acoustic floor systems. A two part system consisting of a customisable Sub-Base and either a fixed or flex preformed tileable tray. The following systems remove the need to build up the shower floor with wet screeds that reduces on-site labour and enables a seamless, flush shower entry whilst guaranteeing code compliant floor falls.

SoundDown™ Endurabase™ Fixed and Flex | A seamless pre-fabricated solution for showers

A complimentary system to SoundDown™ PAB™ Acoustic Floor System



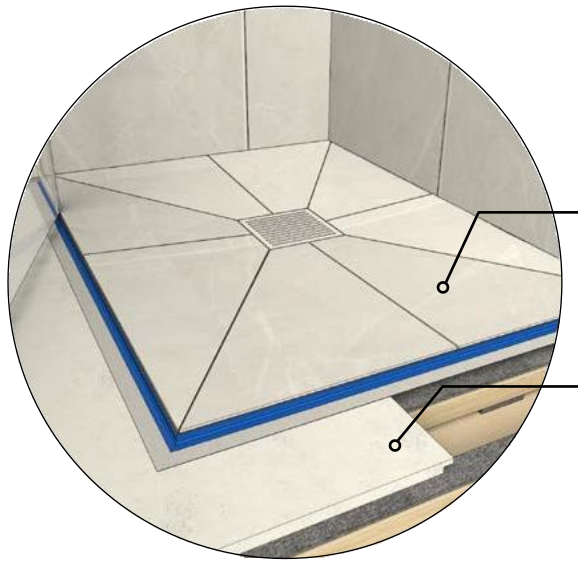
SoundDown™ Endurabase™ Fixed and Flex

- Designed for premium architectural bathrooms with walk-in, corner, alcove and truncated layouts
- 100% waterproof shower base systems
- Hobless design; flush, level entry
- Standard and custom sizes, made to order
- High precision manufacture, guarantee perfect fit
- Channel drain and centre drain options
- Pre-formed code compliant fall guarantees drainage
- Easy and fast to waterproof and tile
- Removal of wetscreeds and mortar bases
- Peace of mind, backed by SoundDown™ Warranty



SECTION 04 | INTRODUCING SOUNDDOWN™ ENDURABASE™

SoundDown™ Seamless Shower and Acoustic Floor Systems



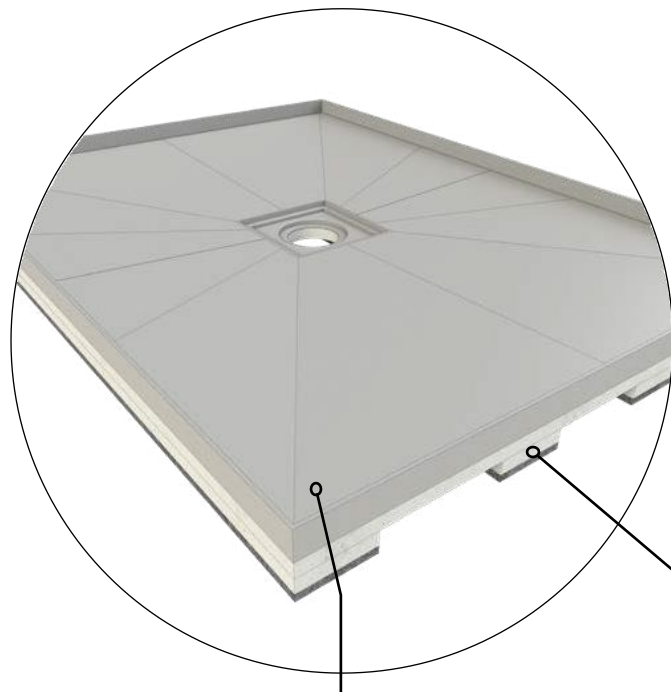
SoundDown™ Endurabase™ Fixed or Flex
Pre-fabricated shower solution

SoundDown™ PAB or SDP
Acoustic Floor System

System Information

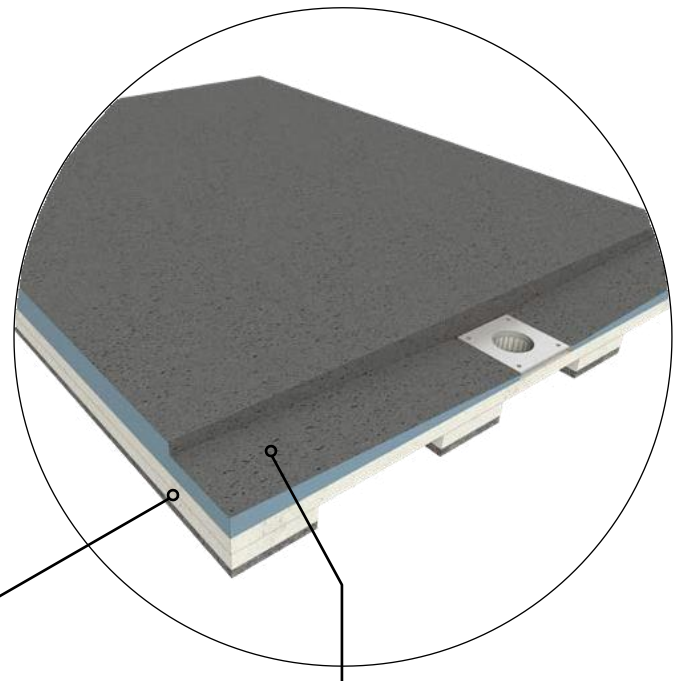
Height Range:	42 to 350mm
In-Built Floor Waste:	✓
Top Durability: Maglok or FC	✓
No Wet Screed:	✓
Seamless Floor Transition:	✓
In-Built Code Compliant Fall:	✓
Versatile, Custom Sizes:	✓
Suits All Layout Shapes:	✓
Fast & Easy Installation:	✓
Impact Sound Absorbing: Flex	✓
Dimensionally Stable:	✓

1 | SoundDown™ Endurabase™ Fixed Fibreglass Tray



SoundDown™ Fixed
Pre-Formed Fibreglass Shower Tray

2 | SoundDown™ Endurabase™ Flex Cement coated, XPS-Core Base



SoundDown™ Flex
Pre-Formed cement coated XPS-core Shower Base

SoundDown™ Endurabase™ Sub-Base
Pre-fabricated acoustically-isolated, moisture-resistant base

Available Sizes

1000 x 1000mm
1200 x 900mm
1400 x 900mm
1600 x 900mm
1800 x 900mm

Product Information

Standard Shower Size Options
Centre Drain Configuration
Easyclean Drain Waste
Rated for up to 300kg
Square Corner & Alcove Shapes

Product Information

Custom designed to suit your shower shape and size
Can be cut on-site to allow for as built tolerances
Maximum 2400mm length available
Minimum height at lowest point; 18mm
Convenient & simple pre-formed shower niches available

Contact your SoundDown™ representative for project specific design and installation support.

SECTION 05 | SYSTEM COMPONENTS

Table 1 | Main Components | Supplied by Build Anatomy








Category	Products	Switch
SoundDown™ Pre-Fabricated Floor Products	<p>SoundDown™ PAB A pre-assembled acoustic batten comprising of LVL & recycled rubber isolation strips, typical size 42x46mm (custom profile sizes available) Available in 1.0m, 1.8m, 2.4m & 3.0m lengths.</p>	
	<p>SoundDown™ PAB Fire Block A pre-assembled, fire-stopping acoustic batten comprised of LVL & recycled rubber isolation strips encapsulated in 16mm FR plasterboard to prevent to spread of fire within the sub-floor; specifically designed for floor fire compartmentalisation. Available in 1.0m lengths.</p>	
	<p>SoundDown™ SDP A pre-assembled acoustic sandwich panel comprising of Maglok Dragonboard 20mm, recycled rubber isolation strips and pads and 6mm SaveBoard Exposed Internal Lining. Available in 1800x600x42mm.</p>	
SoundDown™ Pre-Fabricated Shower Modules	<p>SoundDown™ Endurabase™ Fixed A pre-assembled, acoustically isolated, preformed fibreglass shower tray mounted on a moisture-resistant Maglok Dragonboard 40mm base ready for waterproofing and tiling. A perfect option for a standardised approach to showers. Available in 1000x1000mm, 1200x900mm, 1400x900mm, 1600x900mm & 1800x900mm.</p>	
	<p>SoundDown™ Endurabase™ Flex A pre-assembled, acoustically isolated, preformed polymer cement coated XPS-core shower base mounted on a moisture-resistant Maglok Dragonboard base ready for waterproofing and tiling. Available in custom sizes up to 2400mm long and 1000x1000mm, 1200x900mm, 1400x900mm, 1600x900mm & 1800x900mm.</p>	
Sub-Floor Topping	<p>Maglok™ Dragonboard 20mm A chloride-free, fibre-reinforced MgO board for use as structural sub-floor featuring a shiplap joint on the long edge. Available sizes: - 2000x1200mm and 1800x1200mm. *1800x1200x20mm is preferred for SoundDown™ PAB due to fitting batten spacing efficiency gain.</p>	
	<p>BGC Fibre Cement A cellulose-reinforced cement sheet for use as a structural sub-floor featuring a tongue and groove joint on the long edge. Available products and sizes: - Innova™ Durafloor™ 19mm: 2250x600mm & 2700x600mm. - Innova™ Durafloor™ 22mm: 2400x600mm. - Compressed Flooring 15mm: 2400x1200mm. - Compressed Flooring 18mm: 1800x1200mm & 2400x1200mm. *Compressed Flooring 24mm available by order only. Confirm availability with BGC Fibre Cement.</p>	
	<p>ISB™ EUROfloor or Laminex™ Strandfloor® (OSB) A oriented strand board (OSB) for use as a structural sub-floor featuring a tongue and groove joint on the long edge. Available products and sizes: - Laminex Strandfloor T&G. Available in 2400x1200x20mm & 3600x1200x20mm. - ISB™ EUROfloor 20mm Available in 2400x1200x20mm & 3600x1200x20mm. *Wet areas: a moisture-resistant OSB is required. H3.1 grade or higher with Stainless Steel fasteners (SS304 or SS316).</p>	
Insulation	<p>Mammoth™ Acoustic 735 A 735gsm, 14.7kg/m³, moisture-resistant, non-sag, polyester insulation available in blankets and sections. Available in 405mm or 360mm wide rolls (20m² per pack).</p>	

Table 2 | Accessories | Supplied by Build Anatomy

Category	Products	Switch
Spare Parts	<p>SoundDown™ SDP Acoustic Isolation Kit A kit of additional isolation strips and pads to reinforce SoundDown™ SDP panels where cutting has removed pre-assembled isolation material.</p>	
Screws	<p>Screws 10G x 50mm Countersunk (CSK) Self-Tapping Collated Screws. OSB Topping: Min. Zinc Coated or SS304 where treated to H3 or above. Maglok™ or BGC Fibre Cement: Min. Class 3 Galvanised.</p>	
Construction Adhesive	<p>Construction Adhesive Examples: Sika™ Nail Bond Premium, Holdfast Gorilla™ Grip, Bostik™ Alpha Grip & Selleys™ Liquid Nails *Only required for Maglok Dragon Board lap joints.</p>	
Fire & Acoustic Sealant	<p>Fire & Acoustic Sealant Examples: Selleys Superfire 810 or similar</p>	

 Denotes interchangeability of products permitted when a professional acoustician, fire engineer or manufacturer has provided a technical specification suitable for your project needs.

SECTION 05 | SYSTEM COMPONENTS

Table 3 | Tools | Supplied by Build Anatomy

Category	Products	Switch
Measure	<p>SoundDown™ PAB Setout Tool</p> <p>A prefabricated, custom setout tool specific to your project batten spacing, removing on-site measuring and maintaining alignment during installation of SoundDown™ PAB battens.</p> <p>*Available by order only</p>	

Table 4 | Main Components | Supplied by Others





Category	Products	Switch
Ceiling Lining	<p>Plasterboard (13mm)</p> <p>A 960kg/m³+ 13mm high-performance acoustic and fire plasterboard lining is required.</p> <p>SoundDown™ recommends GIB™ Braceline® Noiseline® 13mm Plasterboard.</p> <p>Available in 1200 x 2400 2700 3000 3600.</p> <p>* SoundDown has been tested and modelled with GIB® Noiseline® 13mm, however alternatives brands with comparable or higher density product may be used.</p> <p>**Additional performance requirements such as fire, moisture or bracing may also require substitutions.</p> <p>***Where a substitute board with a density less than 960kg/m³ is used, it is recommended an acoustic consultant is contracted to ensure acoustic performance is maintained.</p>	
Ceiling System	<p>Rondo KEY-LOCK® Suspended Ceiling System</p> <p>A performance, snap-fit acoustically-rated suspended ceiling system.</p> <p>The following products must be used:</p> <ul style="list-style-type: none"> - Rondo 547 Suspension Bracket - Rondo 2534 Suspension Clip 110mm (To suit TCR 127/128) - Rondo 121 Suspension Rod - Rondo 127 TCR 25mm (*128 TCR 38mm permitted for use) - Rondo STSU Acoustic Isolator - Rondo 129 Furring Channel (28x38mm) - Rondo 272 TCR Joiner <p>*For additional information on ceiling system fire performance. Refer to www.rondo.co.nz for more information.</p> <p>**Seek professional advice before specifying an alternate ceiling system.</p>	
Waterproof System	<p>Ardex Waterproofing System</p> <p>A complete waterproofing product range by Ardex.</p> <p>SoundDown™ recommends the use of:</p> <p>Tray Adhesive: Ardex RA 88 epoxy</p> <p>Substrate Primer: Ardex P9 Primer Waterproofing</p> <p>Tape: Ardex STB Tape (75mm x 15m)</p> <p>Liquid Membrane: Ardex WPM 155 or WPM 02 Tile</p> <p>Adhesive to Shower Tray: Ardex WA 100 Epoxy</p> <p>Tile Grout: Ardex EG 15 epoxy or FG 8 + Grout Booster or FSDD + Grout Booster</p> <p>Waterproof Sealant: Ardex SE Silicone</p> <p>All Ardex wet area materials have a 15 year warranty.</p> <p>See website or contact SoundDown™ directly for the latest waterproofing specifications.</p>	

Table 5 | Accessories | Supplied by Others

Accessories
<p>Backing Rod</p> <p>Closed-cell, 10mm backing rod for control joints</p>
<p>Expansion Joint Foam Tape</p> <p>Self adhesive backed closed-cell foam; 10x50mm</p> <p>Sika Abelflex or similar.</p>
<p>Insulation Ties/Strapping</p> <p>Holding mechanism for ceiling insulation</p>

Table 6 | Tools | Supplied by Others

Power Tools
<p>Simpson Strong-Tie Quik Drive Screw® Driving System or similar An extended, collated, auto-feed screw gun enabling fast fixing of subfloor topping panels.</p> <p>(SoundDown™ PAB Only)</p>
Cordless Impact Driver / Drill
Track Saw with Vacuum Dust Extraction (M Class or Higher)
180mm+ Diamond-Tipped Saw Blade
Hand Tools
Gorilla™ Gripper
Spatula / Joint Knife
Caulking Gun

 Denotes interchangeability of products permitted when a professional acoustician, fire engineer or manufacturer has provided a technical specification suitable for your project needs.

SECTION 06 | SOUNDDOWN™ ACOUSTIC PERFORMANCE

SoundDown™ have undertaken acoustic system testing in accredited laboratories to guarantee compliance and performance of the systems within this guide. Alternative structural and subfloor options are presented below.

Where the option has not been tested; it is advised that the project consult a professional acoustician.

SOUNDDOWN™ PAB ACOUSTIC MATRIX | CLT Specification & Topping

SUBFLOOR TOPPING	MAGLOK™ DRAGONBOARD				OSB			
	STC	IIC	Rw+Ctr	Ln,w	STC	IIC	Rw+Ctr	Ln,w
C3/130mm	66 ¹	60 ¹	64 - 68 ²	48 - 52 ²	66 ¹	57 ¹	64 - 68 ²	51 - 55 ²
C5/140mm	66 ²	61 ²	64 - 68 ²	47 - 51 ²	66 ²	58 ²	64 - 68 ²	50 - 54 ²
C5/170mm	67 ²	63 ²	65 - 69 ²	45 - 49 ²	67 ²	60 ²	65 - 69 ²	48 - 52 ²
C5/200mm	68 ²	65 ²	66 - 70 ²	43 - 47 ²	68 ²	62 ²	66 - 70 ²	46 - 50 ²
C5/220mm	68 ²	66 ²	66 - 70 ²	42 - 46 ²	68 ²	63 ²	66 - 70 ²	45 - 49 ²
C7/240mm	69 ²	67 ²	67 - 71 ²	41 - 45 ²	69 ²	64 ²	67 - 71 ²	44 - 48 ²
C7/260mm	69 ²	67 ²	67 - 71 ²	41 - 45 ²	69 ²	64 ²	67 - 71 ²	44 - 48 ²
C7/310mm	70 ²	68 ²	68 - 72 ²	40 - 44 ²	70 ²	65 ²	68 - 72 ²	43 - 47 ²

¹ Tested by University of Auckland. Reports available from www.sounddown.co.nz

² Estimate by professional; acoustic modelling or advice required for project use.

SOUNDDOWN™ SDP ACOUSTIC MATRIX | CLT Specification

SUBFLOOR TOPPING	MAGLOK™ DRAGONBOARD			
	STC	IIC	Rw+Ctr	Ln,w
C3/130mm	64 ¹	62 ¹	62 - 66 ²	46 - 50 ²
C5/140mm	64 ²	63 ²	62 - 66 ²	45 - 49 ²
C5/170mm	65 ²	66 ²	63 - 67 ²	42 - 46 ²
C5/200mm	66 ²	68 ²	64 - 68 ²	40 - 44 ²
C5/220mm	66 ²	69 ²	64 - 68 ²	39 - 43 ²
C7/240mm	67 ²	70 ²	65 - 69 ²	38 - 42 ²
C7/260mm	67 ²	70 ²	65 - 69 ²	38 - 42 ²
C7/310mm	68 ²	73 ²	66 - 70 ²	35 - 39 ²

¹ Tested by University of Auckland. Reports available from www.sounddown.co.nz

² Estimate by professional; acoustic modelling or advice required for project use.



All System combinations feature the same system depth, insulation and ceiling specification.

This table provides information relating to changing the structural CLT thickness, number of CLT lamellas and the subfloor topping material in the SoundDown™ System.

Acoustic Considerations

The sound insulation of CLT building elements relies on appropriate design and construction detailing. The compliant rating can be effectively achieved by SoundDown™ floor assemblies incorporated in mass timber (CLT) floor structure, resilient layers, air gaps, and absorbent insulation within cavities.

Designers must detail to avoid 'flanking' sound transmission via alternative paths e.g. through air gaps, services ducts or adjoining elements which are common to two tenancies. There are significant interdependencies between acoustic solutions which require them to be considered together at an early stage. SoundDown™ recommend discontinuous floor systems between spaces to ensure impact sound is not transmitted through flanking paths.

SECTION 06

| **SOUNDDOWN™ ACOUSTIC PERFORMANCE**

SoundDown™ have lab tested a range of alternative systems to enable flexibility in your project's acoustic and spatial needs; the table below provides alternate options. **All systems are tested without a suspended ceiling system on a CLT3 5" / 126mm structural floor.** Contact your SoundDown™ representative for a system specification suited to your project.

	NAME	STC	IIC	Rw+Ctr	Ln,w	SYSTEM BUILD UP	INSULATION	RAISED FLOOR HEIGHT	TOTAL FLOOR HEIGHT
1	SDP 25	42 ¹	39 ¹	40 - 44 ²	69 - 73 ²	20mm Maglok (Floating) 5mm Polyester Sheet CLT	N/A	25mm	151mm
2	PAB 80	51 ¹	41 ¹	49 - 53 ²	67 - 71 ²	20mm OSB 5mm Isolation Strip 45mm LVL 10mm Isolation Pads CLT	Mammoth 735 50mm 14.7kg/m3	80mm	206mm
3	PAB 175M	53 ¹	43 ¹	51 - 55 ²	65 - 69 ²	20mm Maglok 140mm LVL 15mm Isolation Pads CLT	Mammoth 1100 90mm 12.22kg/m3	175mm	301mm
4	PAB 195M	56 ¹	47 ¹	54 - 58 ²	61 - 65 ²	2 x 20mm Maglok 140mm LVL 15mm Isolation Pads CLT	Mammoth 1100 90mm 12.22kg/m3	195mm	321mm
5	PAB 200S	N/A	46 ¹	N/A	62 - 66 ²	20mm OSB (Floating) 5mm Polyester Sheet 20mm Maglok 140mm LVL 15mm Isolation Pads CLT	Mammoth 1100 90mm 12.22kg/m3	200mm	326mm
6	PAB 200M	55 ¹	49 ¹	53 - 57 ²	59 - 63 ²	20mm OSB (Floating) 5mm Polyester Sheet 20mm Maglok 140mm LVL 15mm Isolation Pads CLT	Mammoth 1100 90mm 12.22kg/m3	200mm	326mm
7	PAB 130M	55 ¹	45 ¹	53 - 57 ²	63 - 67 ²	20mm Maglok 5mm Isolation Strip 90mm LVL 15mm Isolation Pads CLT	Mammoth 1100 90mm 12.22kg/m3	130mm	256mm
8	SDP PAB 155M	56 ¹	49 ¹	54 - 58 ²	59 - 63 ²	20mm Maglok 5mm Isolation Strip 90mm LVL 15mm Isolation Pads 20mm Maglok (Floating) 5mm Polyester Sheet CLT	Mammoth 1100 90mm 12.22kg/m3	155mm	281mm
9	SDP PAB 155 + FL	56 ¹	49 ¹	54 - 58 ²	59 - 63 ²	20mm Maglok 5mm Isolation Strip 90mm LVL 15mm Isolation Pads 20mm Maglok (Floating) 5mm Polyester Sheet CLT 13mm Fyreline	Mammoth 1100 90mm 12.22kg/m3	155mm + 13mm Ceiling Lining	294mm
10	SDP PAB 160.5M + FL + LVT	56 ¹	51 ¹	54 - 58 ²	57 - 61 ²	Jacobsen Acoustic LVT 20mm Maglok 5mm Isolation Strip 90mm LVL 15mm Isolation Pads 20mm Maglok (Floating) 5mm Polyester Sheet CLT 13mm Fyreline	Mammoth 1100 90mm 12.22kg/m3	160.5mm + 13mm Ceiling Lining	299.5mm
11	Double PAB 210M	57 ¹	51 ¹	55 - 59 ²	57 - 61 ²	20mm Maglok 5mm Isolation Strip 45mm LVL 10mm Isolation Pads 20mm Maglok 5mm Isolation Strip 90mm LVL 15mm Isolation Pads CLT	Mammoth 1100 90mm 12.22kg/m3 + Mammoth 735 50mm 14.7kg/m3	210mm	336mm

1 Tested by University of Auckland. Reports available from www.sounddown.co.nz

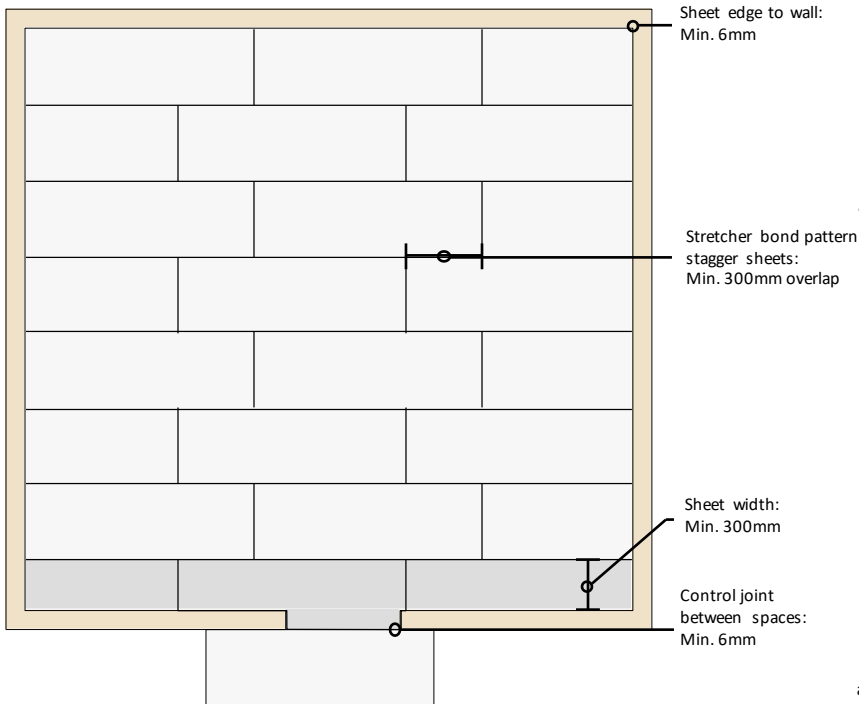
2 Estimate by professional; acoustic modelling or advice required for project use.




This table provides information relating to systems containing various build up options of SoundDown™. CLT thickness and specification remains across all systems stated in the table above.

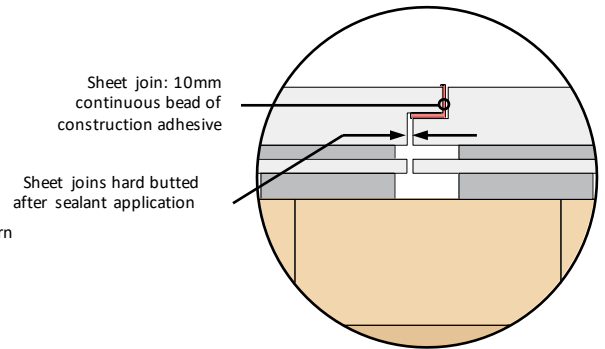
SECTION 07 | SOUNDDOWN™ SDP | DETAILS

ROOM PLAN

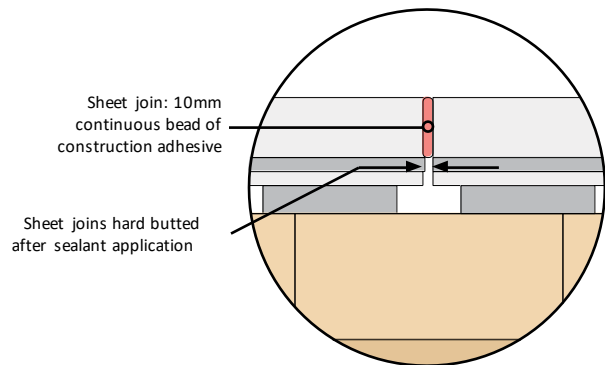


 Panels are **NOT** to come into contact with the wall lining or framing.

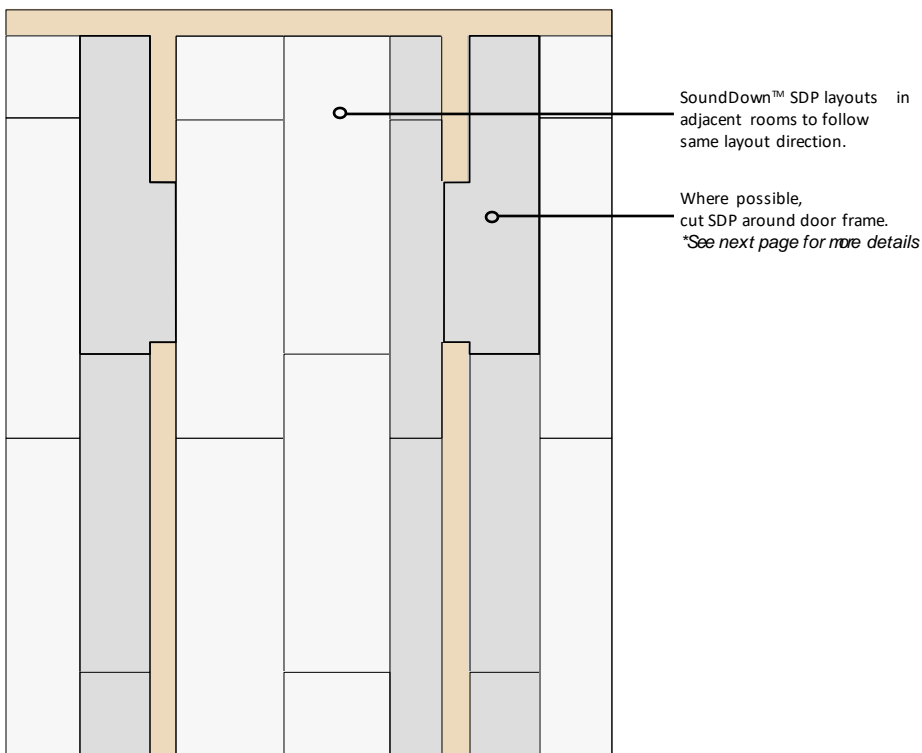
LONG EDGE JOIN - SHIPLAP




SHORT EDGE JOIN - BUTT JOIN



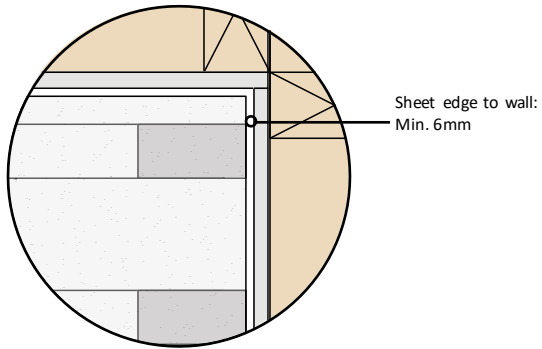
CORRIDOR PLAN



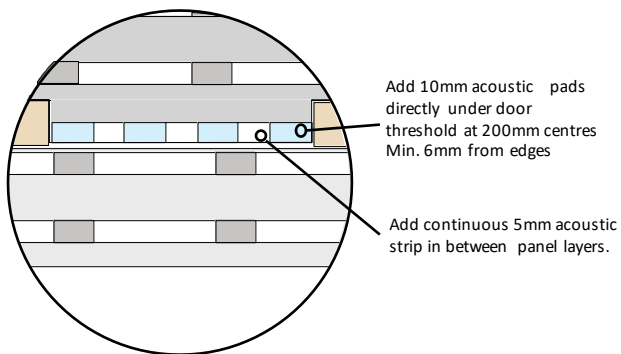
 Corridor panel direction can be alternate to the adjacent room layout. A minimum 6mm control joint must be used and reflected through the floor finish to allow for movement.

SECTION 07 | SOUNDDOWN™ SDP | DETAILS

CORNER

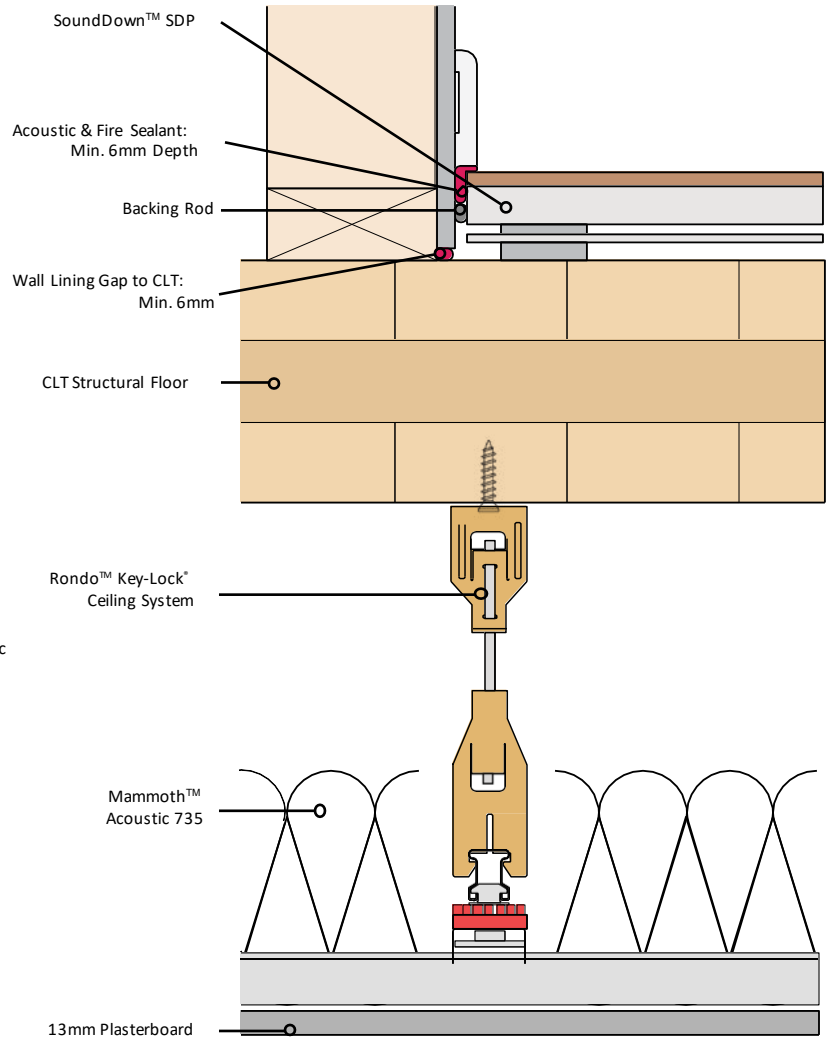


DOORWAY

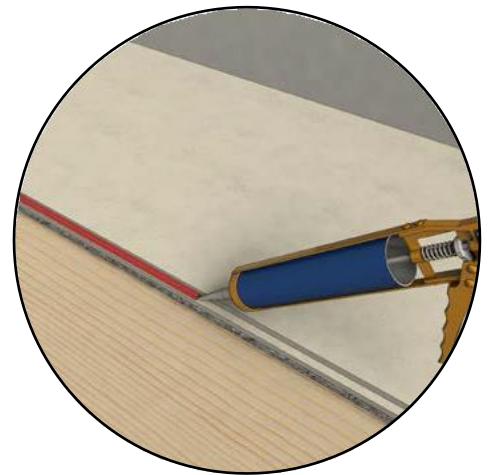
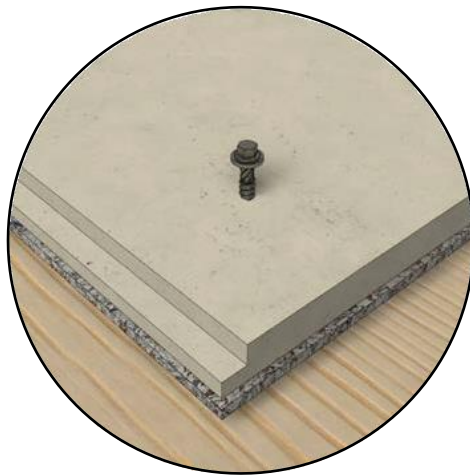
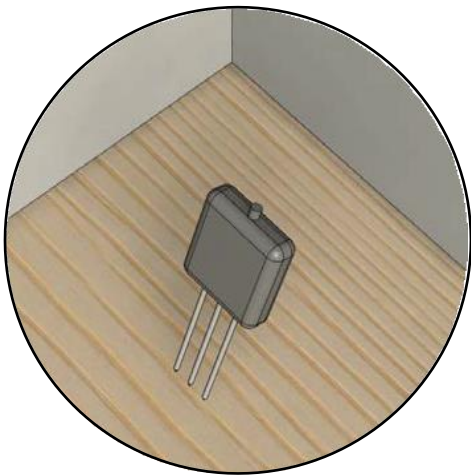


Where the isolation pads and strips are removed due to panel cut, additional material is to be added to support the sheet edge.

SECTION VIEW



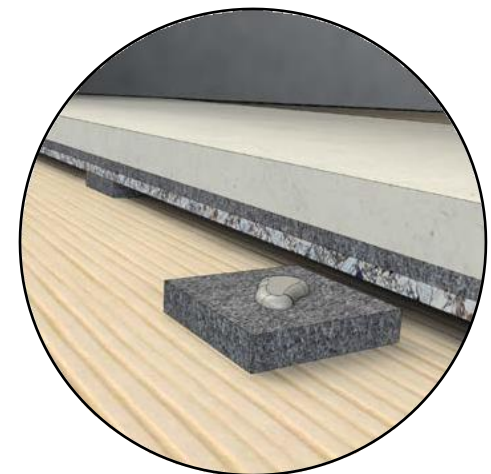
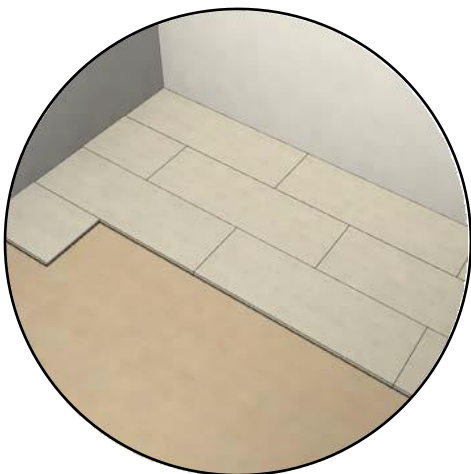
SECTION 07 | SOUNDDOWN™ SDP | INSTALLATION



- Ensure CLT is free of debris, dust, nails and screws.
- Check CLT moisture content, must be under <16% before installation.
- If the CLT has been coated, install after desired curing time has lapsed.
- Wall lining to be installed before installing SoundDown™ SDP Floor System, and not touching the CLT structural floor.

- The first panel may be secured in two locations using 8Gx50mm hex head screws at diagonally opposing sides. This is to ensure the panel does not move while butting up the next panels.
- The screws must be removed after installation and holes filled with fire and acoustic sealant through the entire panel depth.

- Measure room layout, calculate panel sizing (considering minimum cut panel size), ensure panels can be positioned to allow for minimum stretcher-bond overlap. See Construction Details.
- Start installation from the furthest corner from the door opening.
- Apply a continuous bead of the specified Construction Adhesive into the joint and scrape excess.
- Ensure Construction Adhesive is applied at the butt-joint where sheet ends meet.



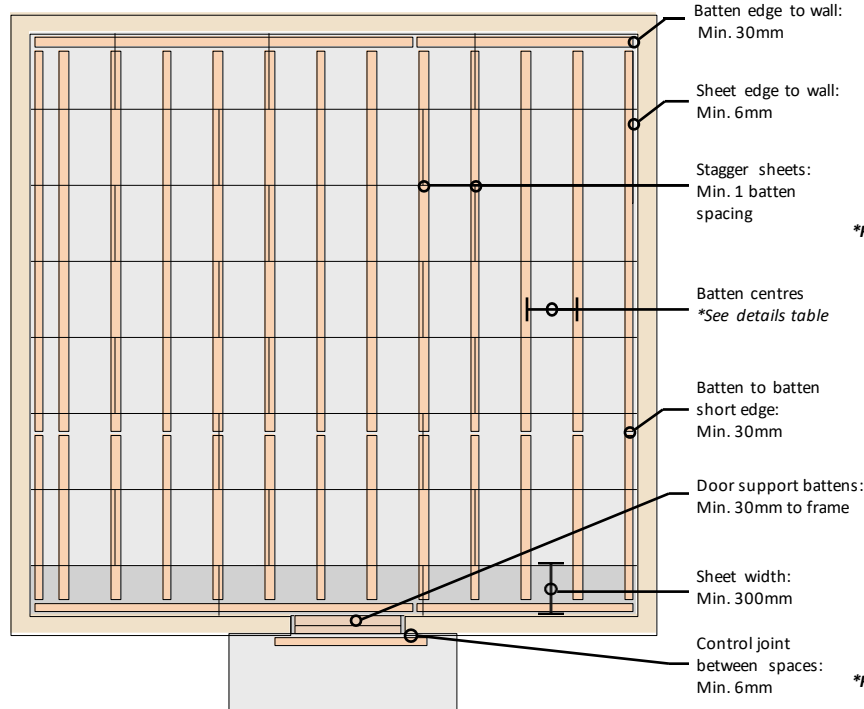
- Follow layout to front of the area. Panel width cuts may be required with additional SoundDown™ 10mm Acoustic Pads to be placed under the SDP board. See Construction Details for further information on cut SDP panel detailing.

- Where cutting of panels leads to removal of inbuilt isolation strip, add a continuous length of 5mm isolation material to the inside edge of panel, using a generous amount of construction adhesive.

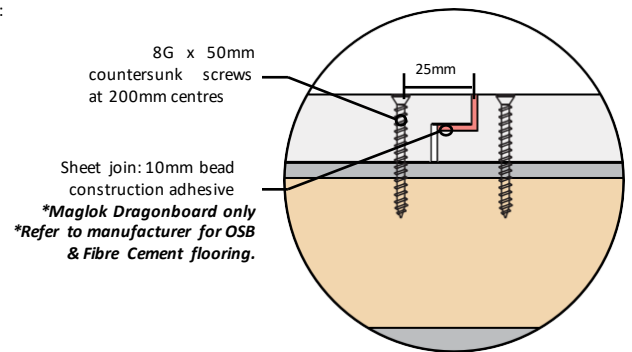
- Add 10mm isolation pads at 250mm centres to the underside of the panel along the cut edge, using a generous amount of construction adhesive.
- Panel edge to be clamped firmly until the isolation strips are securely adhered.

SECTION 08 | SOUNDDOWN™ PAB | DETAILS

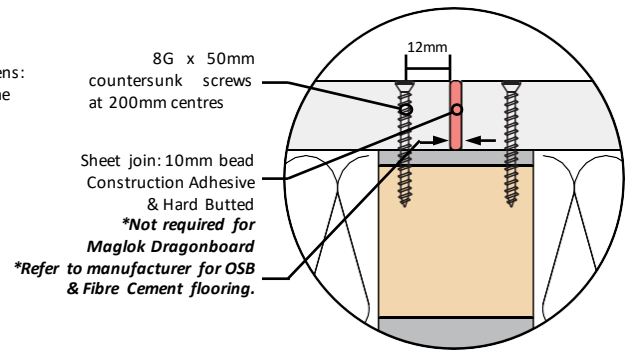
ROOM PLAN



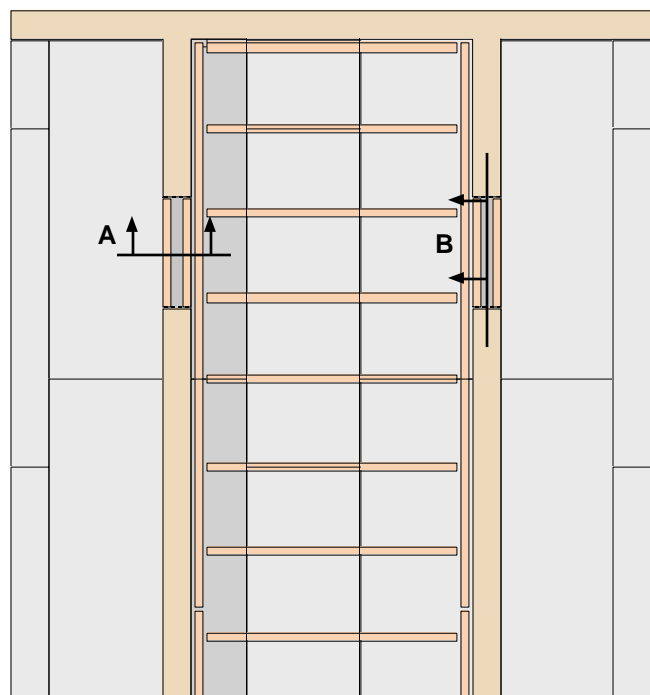
LONG EDGE JOIN - SHIPLAP



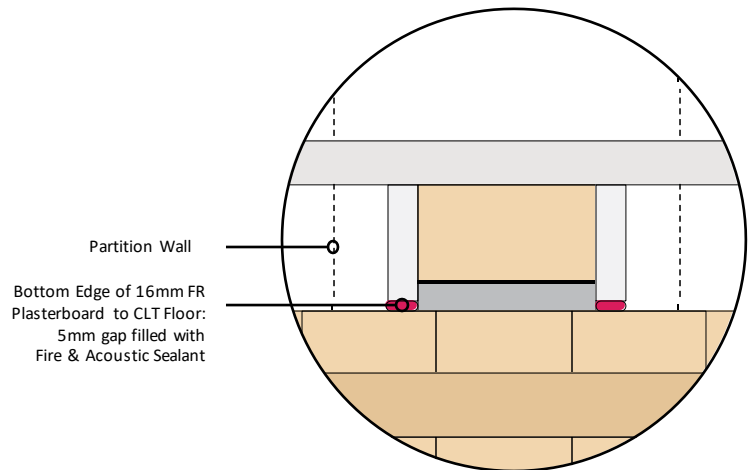
SHORT EDGE JOIN - BUTT JOIN



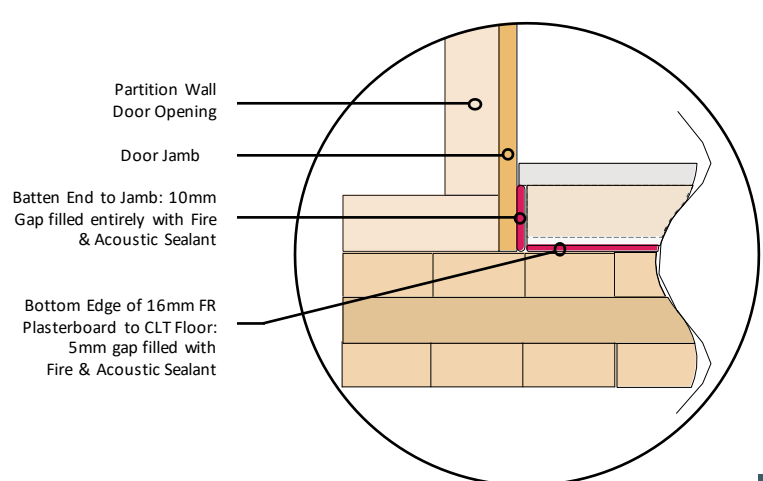
CORRIDOR PLAN



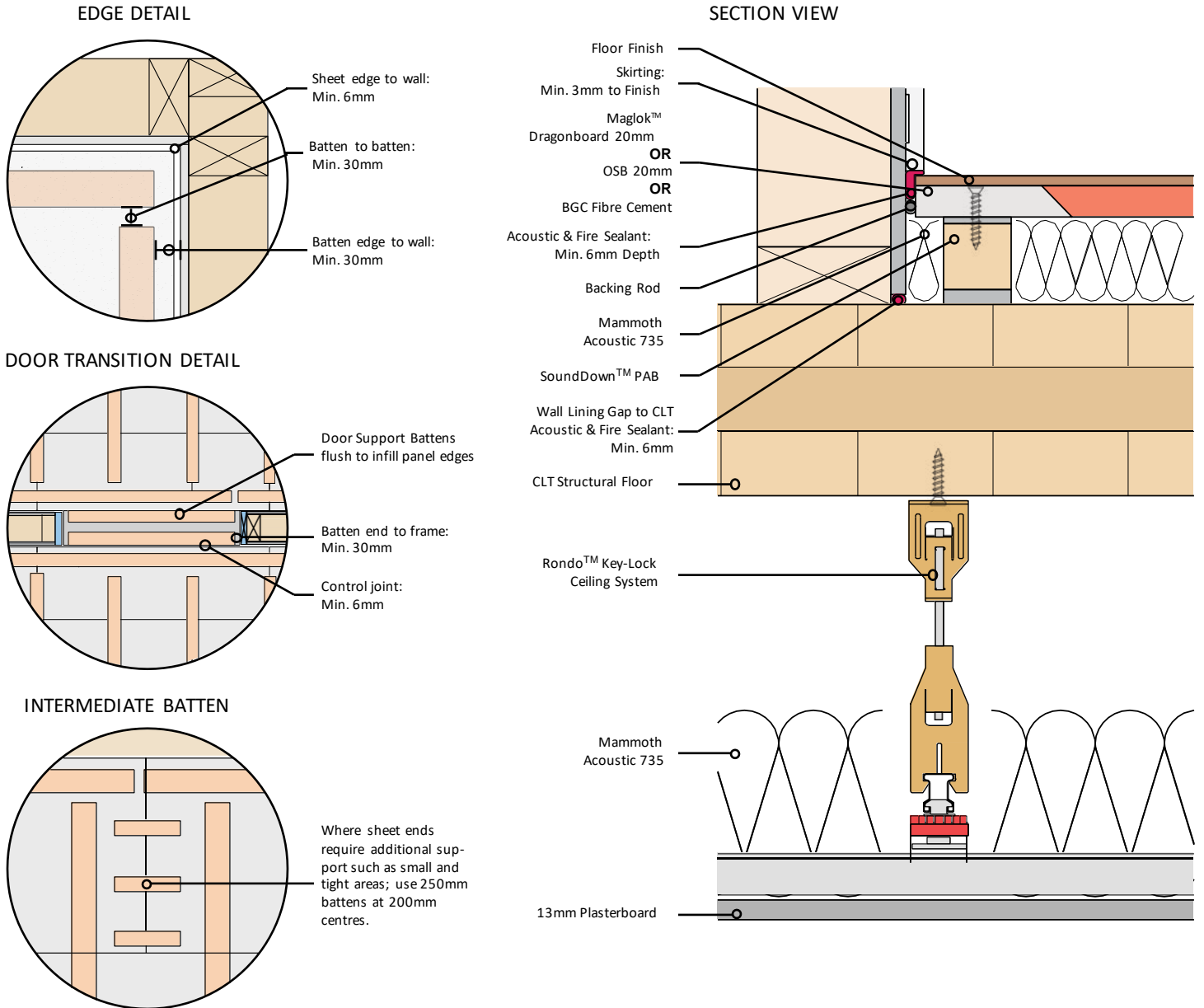
DETAIL A | PAB™ FIRE BLOCK DOOR JAMB SECTION



DETAIL B | PAB™ FIRE BLOCK DOOR OPENING SECTION



SECTION 08 | SOUNDDOWN™ PAB | DETAILS



BATTEN & FASTENER SPACING

SoundDown™ PAB must be installed at the maximum centres listed below.

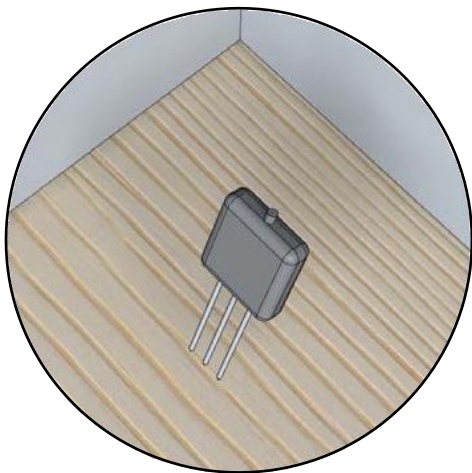
10G x 50mm Countersunk (CSK) Self-Tapping Collated Screws. OSB Topping: Min. Zinc Coated or SS304 (where treated to H3 or above.) Maglok™ Dragonboard or BGC Fibre Cement: Min. Class 3 Galvanised.

Brand	MAGLOK™		All OSB		BGC Fibre Cement		
	Dragonboard 20mm	20mm	Durafloor™ 19mm	Durafloor™ 22mm	Compressed 15mm	Compressed 18mm	Compressed 24mm
SoundDown™ PAB 42x46mm Spacing	450mm Centres	400mm Centres	450mm Centres	600mm Centres	450mm Centres	600mm Centres	
Fastener Edge Distance	Shiplap Edge: 25mm Butt Edge: 15mm	T&G Edge: 25mm Butt Edge: 15mm	T&G Edge: 50mm Butt Edge: 18mm	Long Edge: 50mm Short Edge: 15mm			
Fastener Spacing	Sheet Edge: 150mm Sheet Centre: 300mm	Sheet Edge: 100mm Sheet Centre: 200mm	Sheet Edge & Centre: 200mm	Sheet Edge & Centre: 200mm	Sheet Edge & Centre: 300mm		

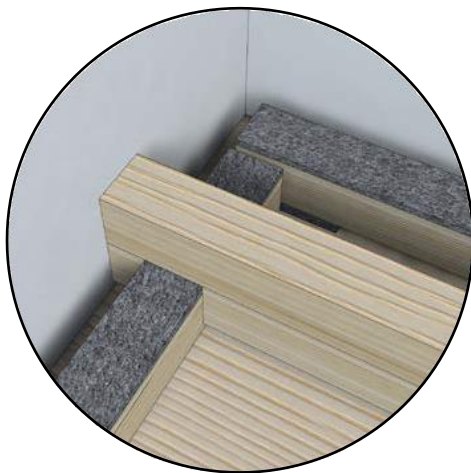
SoundDown™ recommends the use of Simpson Strong-Tie Quik Drive® Screw Driving System or similar collated screw gun system

Panels & Battens are NOT to come into contact with the wall lining or framing.

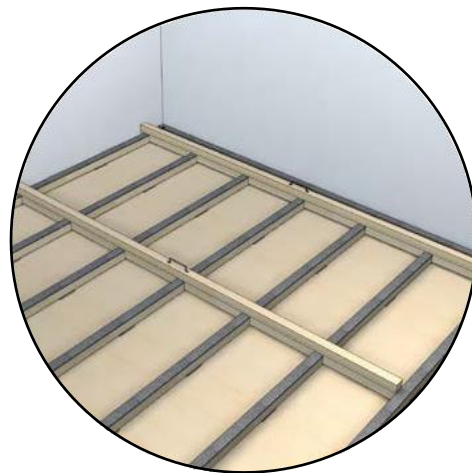
SECTION 08 | SOUNDDOWN™ PAB | INSTALLATION



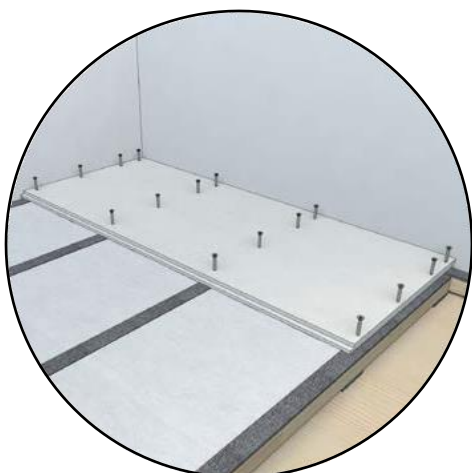
- Ensure CLT is free of debris, dust, nails and screws.
- Check CLT moisture content, must be under <16% before installation.
- If the CLT has been coated, install after desired curing time has lapsed.
- Wall lining to be installed before installing SoundDown™ Acoustic Batten Floor System, and not touching the CLT structural floor.



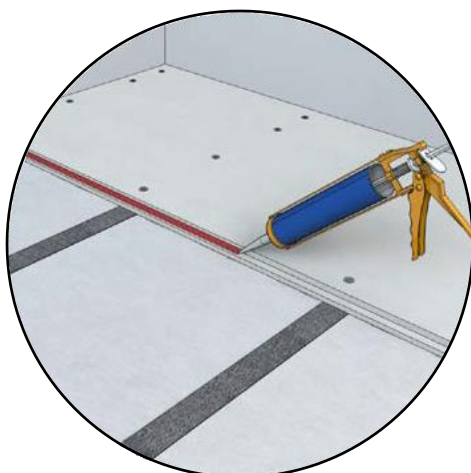
- Measure room layout, refer to project's maximum batten spacing centres and calculate panel sizing (considering minimum cut panel size & ensure battens can support sheet edges adequately.)
- Use PAB Setout Tool to set wall distance (30mm).
- Start installing the SoundDown™ Acoustic Battens around the perimeter, completing the doorway detail, followed by the room centre.
- See Construction Details for batten edge distances



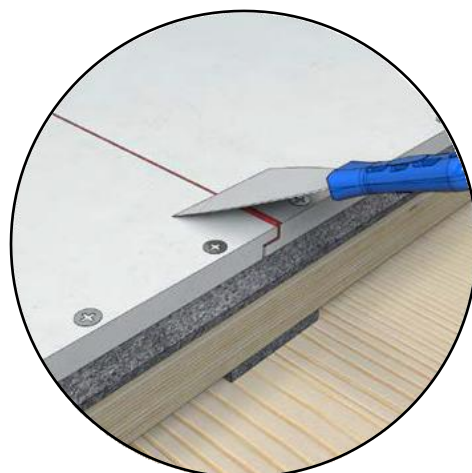
- Use SoundDown™ Setout Tool to align and hold battens at 400mm or 450mm centres for panel installat; consider panel size, floor panel manufacturer max. batten/ joist spacing and/or project floor loading specification.
- Where a PAB batten is cut and isolation pads are removed, 10mm pads must be glued to the batten to support the batten ends.
- Do NOT mechanically fix the battens to the CLT structural floor. The Acoustic Battens are designed to 'float' over the floor. Spot adhesive may be used if required.



- Install the specified the Structural Topping sub-floor panel at the furthest corner from the doorway or exit path; checking the correct fasteners and fastener spacing is used the for specified substrate. See Construction Details for more information.
- Use chalkline to mark batten centres on topping panel before progressing.



- Apply a continuous bead of the specified Construction Adhesive into the joint.
*Maglok Dragonboard only
- Ensure Construction Adhesive is applied at the butt-joint where sheet ends meet.



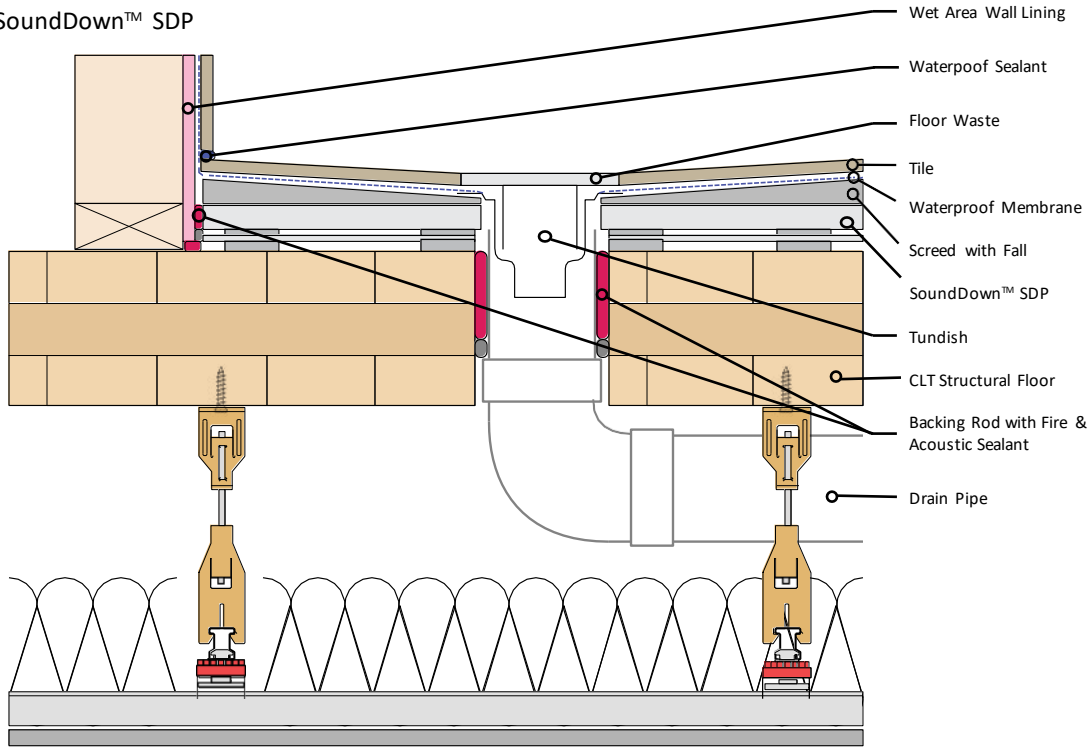
- Using a joint knife, scrape excess adhesive.
- In wet areas, cover fastener heads with a waterproof acrylic sealant after room has been completed. Refer to Wet Area section for further information.

SECTION 09 | WET AREAS & PENETRATIONS

SoundDown™ Floor Systems utilise a common wet area and penetration detail for insitu bathrooms.

If your project features the use of bathroom pods or other pre-fabricated elements, it is the designers responsibility to coordinate design and detailing with all parties to ensure a compliant and secure waterproof details.

SoundDown™ SDP



SoundDown™ Systems

- Penetrations must be only 10mm larger than required pipe/ducting and filled with fire & acoustic sealant.
- PAB and SDP require additional min. 250mm supports at either side of the penetrations.

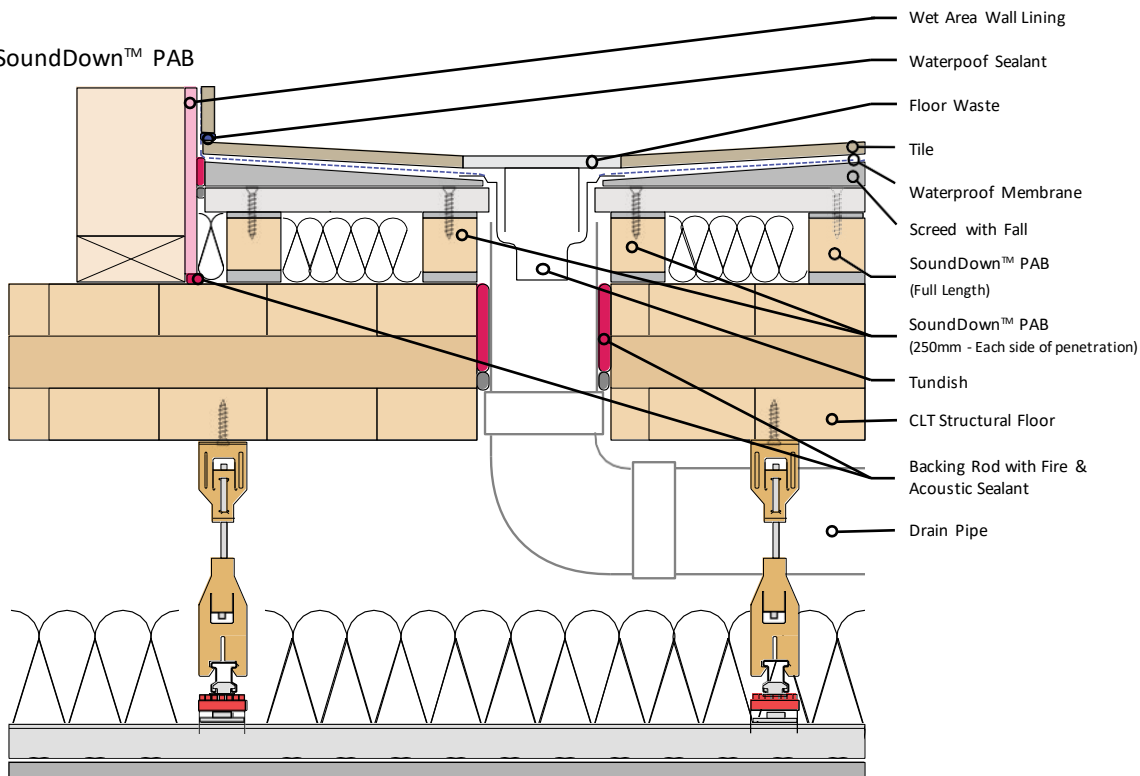
SoundDown™ PAB System

- Do not use OSB in wet areas.
- Stainless steel screws must be used in wet areas.
- Fastener heads to be covered in waterproof sealant, scrape flush to floor.

Important Information

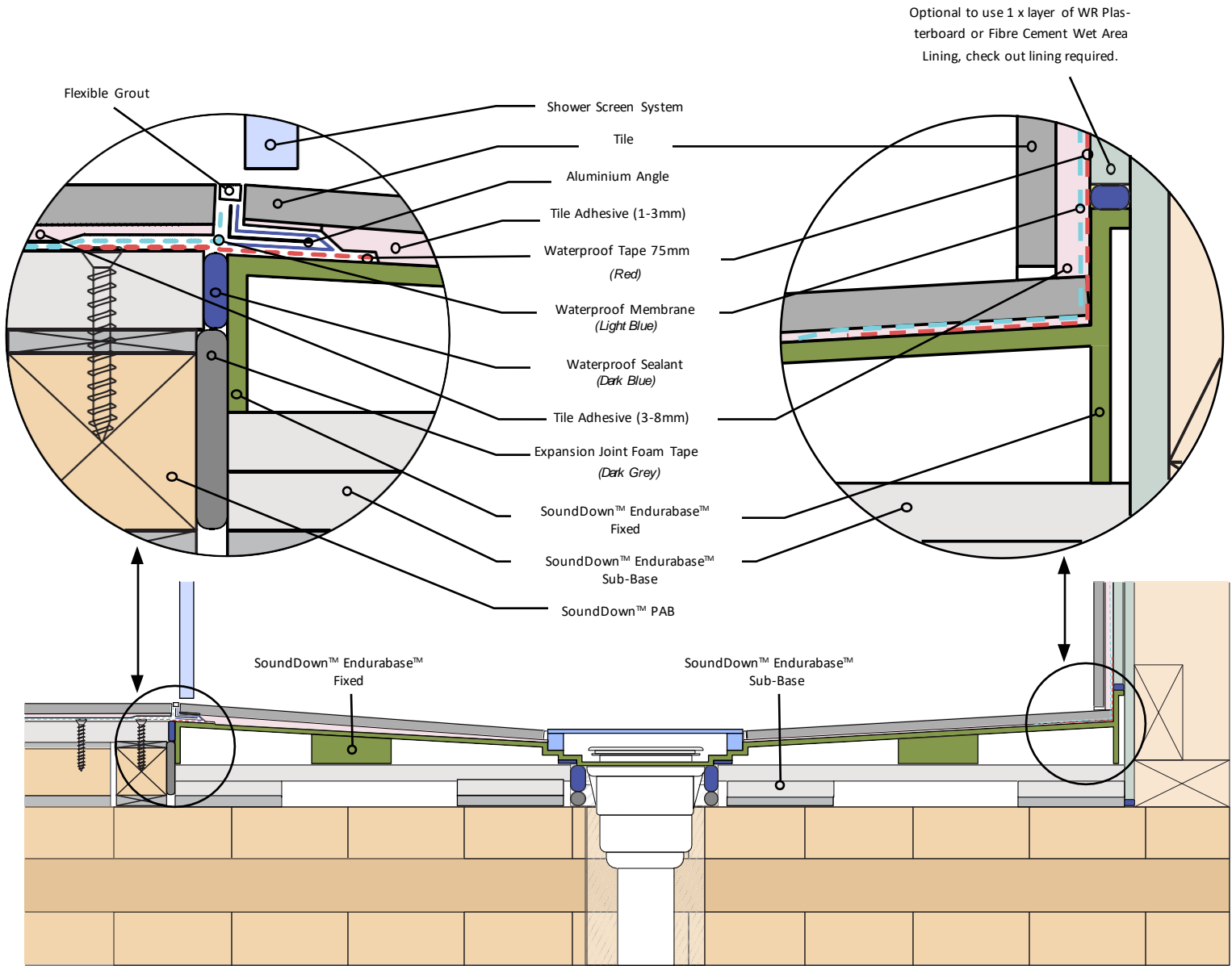
- Fire & Acoustic performance can be adversely affected by penetrations; it is the responsibility of the designer to coordinate with 3rd parties to ensure penetrations and products used are compliant and meet your requirements.

SoundDown™ PAB



SECTION 10 | SOUNDDOWN™ ENDURABASE™ FIXED DETAILS

SoundDown™ Endurabase™ is designed to achieve a flush shower entry when used with SoundDown™ PAB Acoustic Floor System. SoundDown™ recommend design coordination with the builder, architect, specifier, 3rd party manufacturers and SoundDown™ to ensure a robust, code compliance solution.



 SoundDown™ recommends the use of Ardex Waterproofing Product. See Page 8 for more information.

SoundDown™ PAB System

- Penetrations in the CLT must be a maximum of 10mm larger than required pipe/ducting and filled with backing rod & waterproof sealant.
- Check components table for fastener specification.
- Fastener heads to be covered in waterproof sealant, scrape flush to floor.

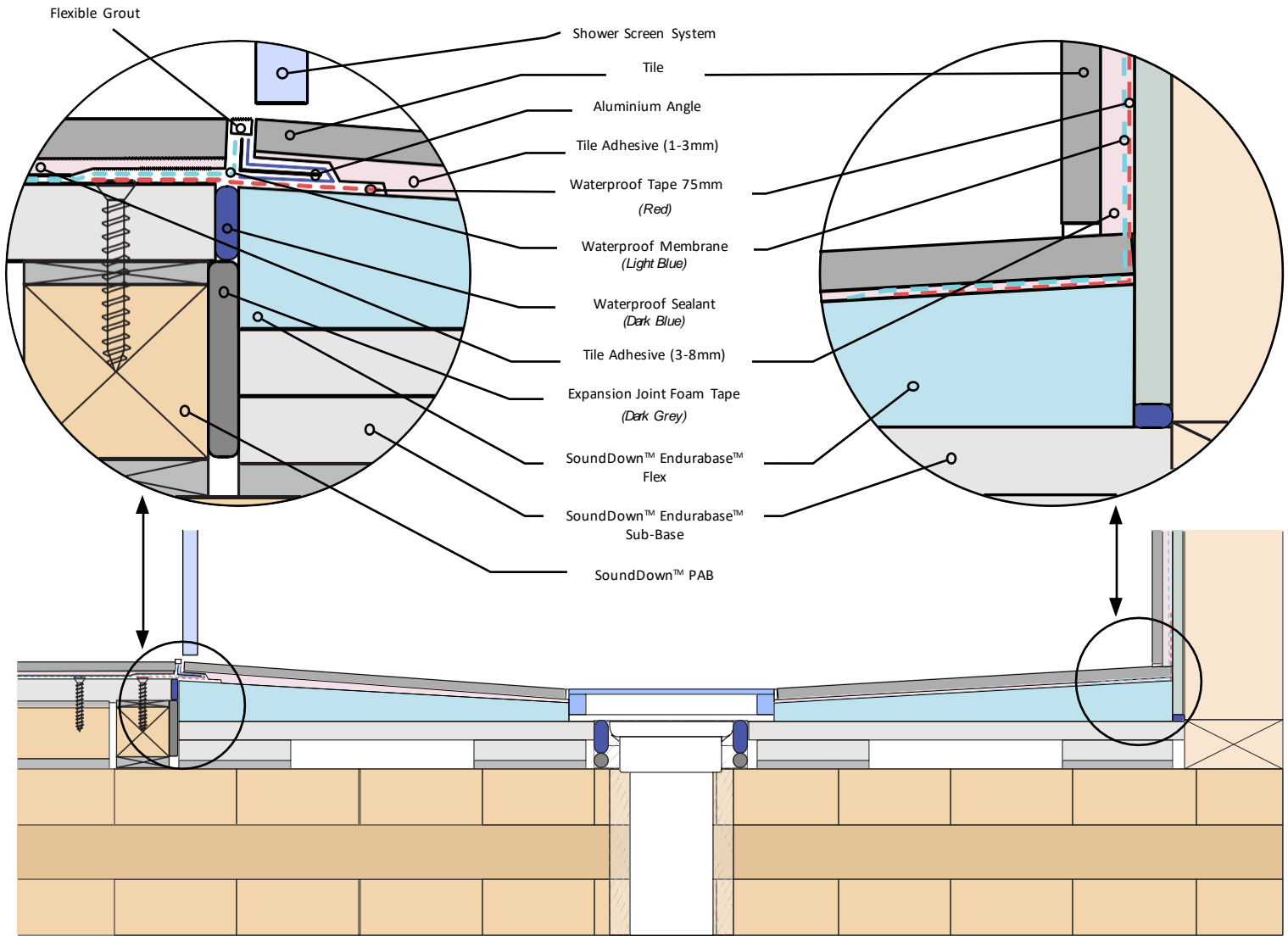
Important Information


- Where a CLT wall is specified, above details apply.
- By partnering with Ardex, SoundDown™ offer a warranted solution for wet areas. Where an alternate waterproofing system is specified; consult the manufacturer to confirm suitability of products and warranty terms and conditions.
- Fire & Acoustic performance can be adversely affected by penetrations; it is the responsibility of the designer to coordinate with 3rd parties to ensure penetrations and products used are compliant and meet project requirements.

**SoundDown™ Endurabase™
Sub-Base**
Pre-fabricated
acoustically-isolated,

SECTION 10 | SOUNDDOWN™ ENDURABASE™ FLEX DETAILS

SoundDown™ Endurabase™ is designed to achieve a flush shower entry when used with SoundDown™ PAB Acoustic Floor System. Endurabase™ FLEX is customisable and trimmable on-site. SoundDown™ recommend design coordination with the builder, architect, specifier, 3rd party manufacturers and SoundDown™ to ensure a robust, code compliance solution.



 SoundDown™ recommends the use of Ardex Waterproofing Product. See Page 8 for more information.

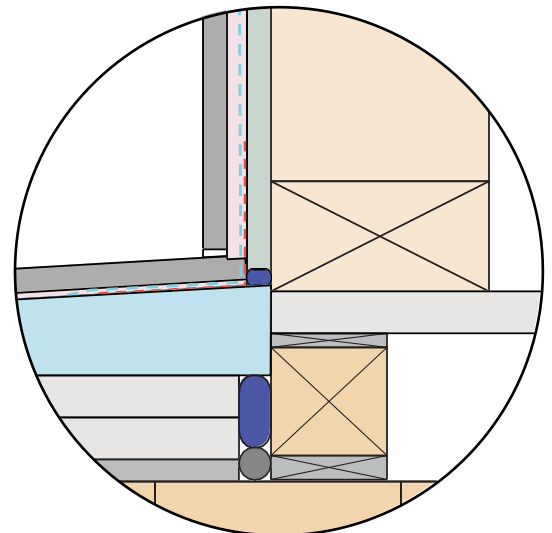
SoundDown™ PAB System

- Penetrations in the CLT must be a maximum of 10mm larger than required pipe/ducting and filled with backing rod & waterproof sealant.
- Check components table for fastener specification.
- Fastener heads to be covered in waterproof sealant, scrape flush to floor.

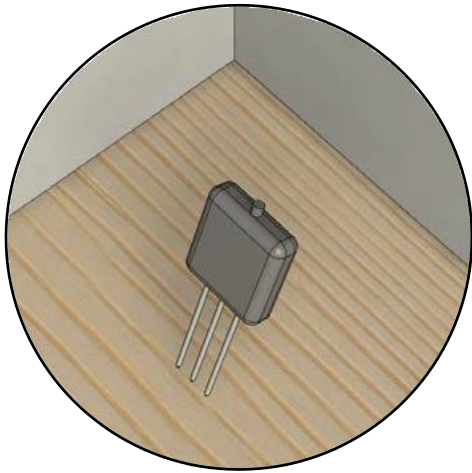
Important Information

- Where a CLT wall is specified, above details apply.
- By partnering with Ardex, SoundDown™ offer a warranted solution for wet areas. Where an alternate waterproofing system is specified; consult the manufacturer to confirm suitability of products and warranty terms and conditions.
- Fire & Acoustic performance can be adversely affected by penetrations; it is the responsibility of the designer to coordinate with 3rd parties to ensure penetrations and products used are compliant and meet project requirements.

ALTERNATE PARTITION WALL DETAIL



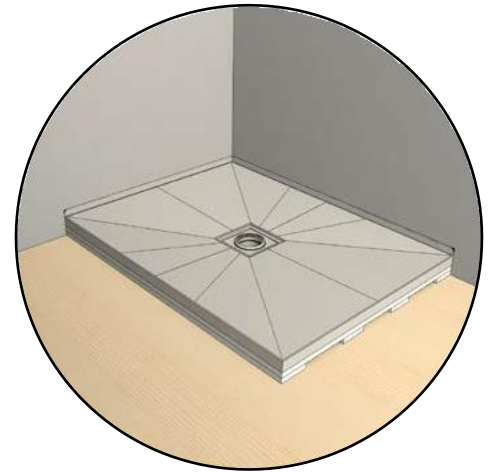
SECTION 10 | SOUNDDOWN™ ENDURABASE™ INSTALLATION



- Ensure CLT is free of debris, dust, nails and screws.
- Check CLT moisture content, must be under <16% before installation.
- If the CLT has been coated, install after desired curing time has lapsed.
- Wall lining to be installed before installing SoundDown™ Shower Tray Module.



- If adjoining wall is stud frame, additional studs and turned noggins on base plate are required to support shower tray module width and length.
- If adjoining wall is CLT, additional furring channels are required.
- Measure shower tray and cut out notches in wet area lining to allow for shower tray module upstands, allow for a tight fit between shower tray module and wet area lining.



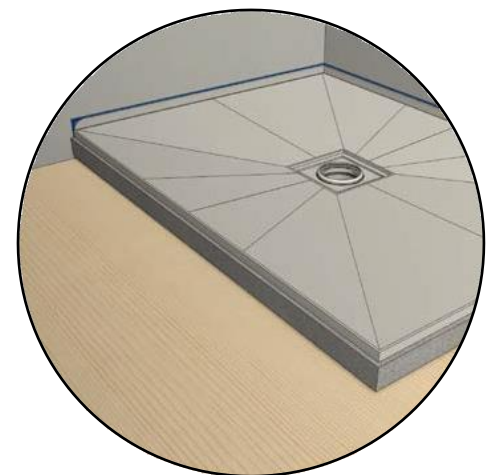
- Position Endurabase™ Sub-Base first, followed by Endurabase™ Fixed or Flex, ensuring penetration is aligned to the drain waste of the Shower Tray Module.
- Check penetrations in the CLT floor are no bigger than 10mm than the Easy Clean Waste Drain outlet.
- Use an epoxy adhesive to glue back of Shower Tray Module to wall base.
- Do NOT mechanically fix Shower Tray Module to the CLT structural floor. The Shower Tray Module is designed to 'float' over the floor.



- Install the Easy Clean Waste with extended drain pipe into the penetration, seal the penetration with 10mm backing rod and filling penetration gap with waterproof sealant.
- The project may require an alternate detail such as use of waterproof elastic collars or other; follow the 3rd party manufacturer's recommendations.

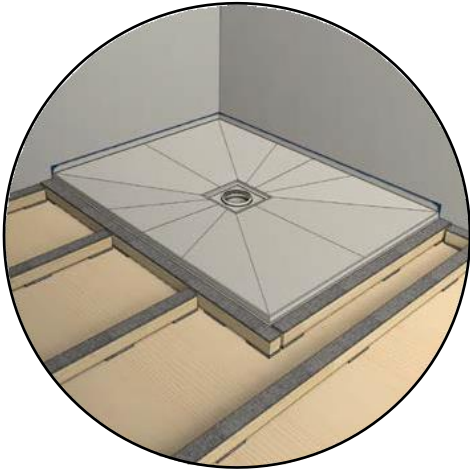


- Apply a continuous 6-8mm bead of the waterproof sealant at the joint between Shower Tray Module and Wet Area Lining.

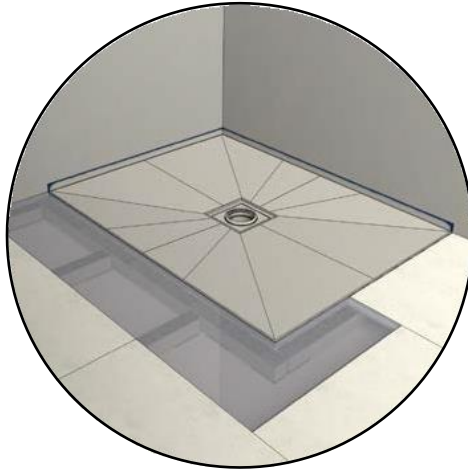


- Fix a 10x50mm Expansion Joint Foam Tape to the Shower Tray Module, ensure there is a 20mm distance from top of the foam to the top of the shower tray.

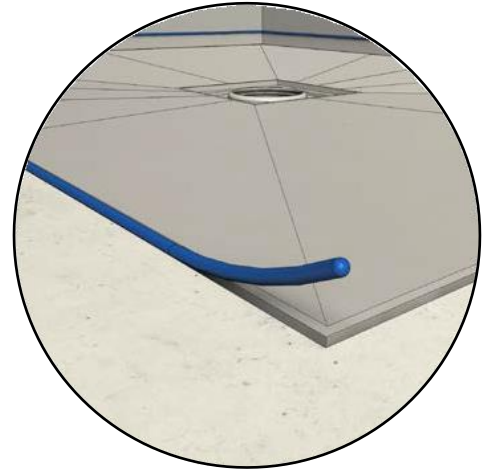
SECTION 10 | SOUNDDOWN™ ENDURABASE™ INSTALLATION



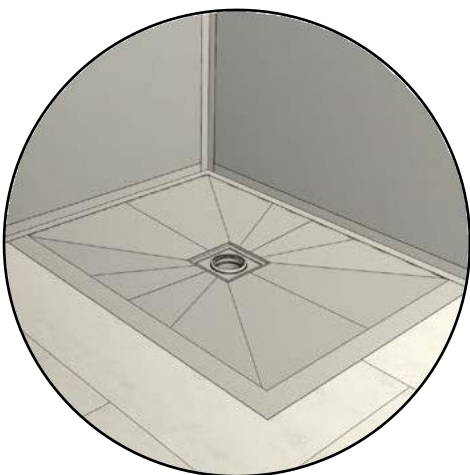
- Prepare PAB battens to suit length and width of Shower Tray Module; see construction details for dimensions.
- Install PAB battens hard up against Expansion Joint Foam Tape.



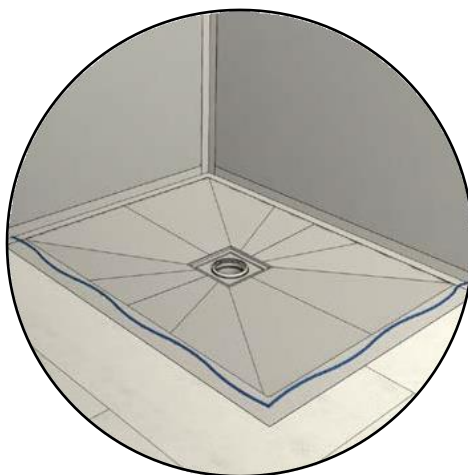
- Install Maglok Dragonboard 20mm; see pages 13 to 15 for construction details and installation procedure.
- Allow for 6mm gap between Maglok Dragonboard panels and Shower Tray Module.



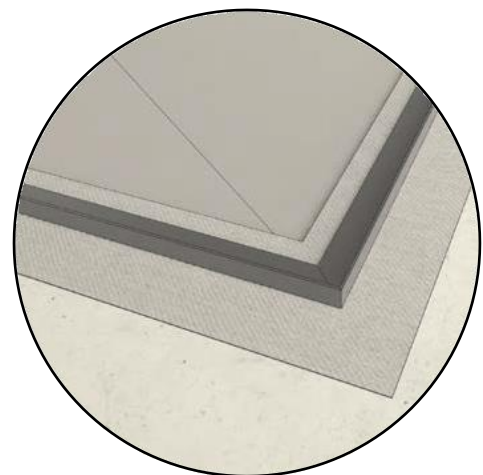
- Seal the gap between the Shower Tray Module and Maglok Dragonboard entirely with Flexible Joint Sealant until it reaches the Expansion Joint Foam Tape.



- Start waterproofing on the floor by applying a 75mm waterproofing tape along the Shower Tray Module and Maglok Dragonboard junction, ensuring equally distant on both sides of the joint.
- After the floor is taped, Tape the floor-to-wall junctions followed by internal wall corners.

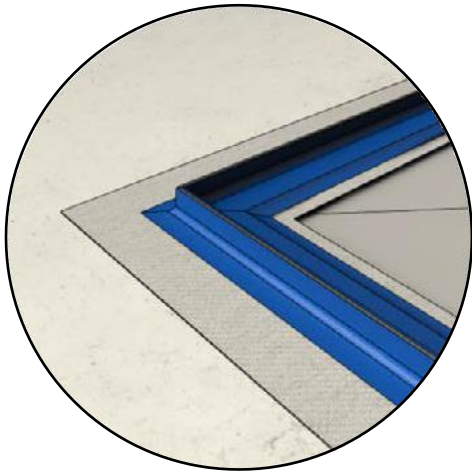


- Measure and mark location for aluminium angle.
- Apply a continuous 6-8mm bead of the waterproof sealant.

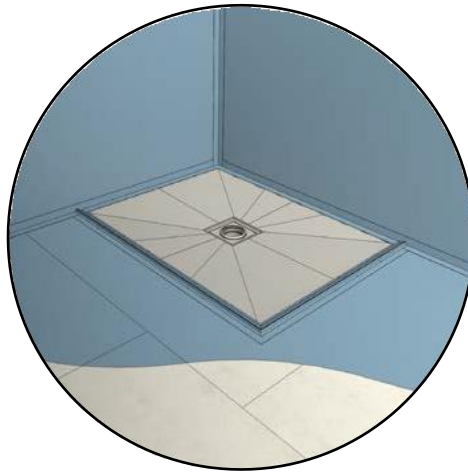


- Place aluminium angles where upstand is flush with the Shower Tray Module edge.
- Seal aluminium angle join at the corner.

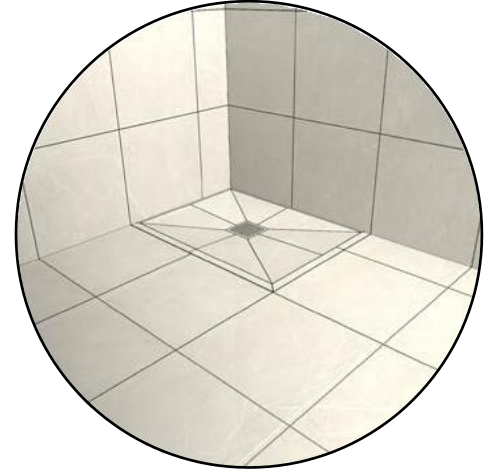
SECTION 10 | SOUNDDOWN™ ENDURABASE™ INSTALLATION



- Apply Waterproof Sealant generously to create a bond breaker on both sides of the aluminium angle, tool the sealant to create a min. 3-5mm radius.



- Prepare and prime all floors and walls as directed by waterproofing specification.
- Apply liquid waterproof membrane to walls and floors, overlapping the waterproofing tape and aluminium angle by 50mm toward the drain waste.
- Further waterproofing of Shower Tray module is not required.



- Use waterproof sealant instead of grout between the main floor and the Shower Tray Module tile joint.
- Use an epoxy-based tile adhesive for tiling to the Shower Tray Module
- Continue standard tile installation practice.

SECTION 11 | FURTHER INFORMATION

Ceiling Specification & Installation

The acoustic performance of SoundDown™ systems are dependant on specifying the correct ceiling system from Rondo. For further information on ceiling specification and installation, visit www.rondo.co.nz.

Handling & Storage

To avoid damage, all SoundDown™ building products should be stored with edges and corners of the product protected from chipping. SoundDown™ building products must be installed in a dry state and protected from weather during transport and storage.

The product must be laid flat under cover on a smooth level surface clear of the ground to avoid exposure to water, moisture, etc.

Tolerances

SoundDown™ PAB has a tolerance of +/- 3mm.

Prohibited Uses

SoundDown™ Floor Systems are not to be used in external applications.

Safe Working Practices

Before starting work, read the relevant Product Safety Data Sheets (SDS).

Take all necessary steps to ensure your safety and the safety of others:

- Ensure adequate ventilation or mechanical dust extraction when cutting or drilling
- Ensure the boards are well supported when cutting and nailing
- Wear appropriate safety equipment, clothing and footwear
- Use all tools in accordance with relevant instruction manuals
- Plan and monitor a safe approach for working at height; select and use the right equipment
- Clear the work area of any obstruction before work starts.

These documents are available at www.worksafe.govt.nz.

Limitations

SoundDown™ only warrants the products that are manufactured by SoundDown™ exclusively. All other 3rd party products cited in this manual carrying their own conditions of use and warranties.

SoundDown™ may supply literature that is **correct** at the time but may change without notice. It is advised to seek warranty documentation from the manufacturer before specifying and designing your floor system.

System Variations

SoundDown™ recommends the use of the products listed on page 7. The solutions presented in this guide have been acoustically tested in accredited laboratories. If your project requires the use of an alternate product, SoundDown™ cannot guarantee claimed performance.

In all cases where a variation is required, professional advice must be obtained.

Branding, Trademarks & Registrations

The brands, trademarks and registrations of 3rd party manufacturers and suppliers cited in this manual are correct at the time of publication.

SECTION 12 | WARRANTY

Warranty

This warranty applies to the SoundDown™ pre-assembled batten (PAB) supplied by Build Anatomy, (Build Anatomy Ltd) and when used in accordance with all the requirements as described in the applicable SoundDown™ technical documentation.

This warranty is to be read in conjunction with all relevant and applicable technical documentation supplied or referenced by Build Anatomy.

Date Warranty Valid: 15 years from proven date of purchase or dispatch from Build Anatomy whichever is the earlier.

All enquiries relating to this warranty must (in the first instance) be directed to the installer.

The SoundDown™ pre-assembled batten (PAB) is comprised of a 5 x 46mm SoundDown™ Acoustic Silencer strip adhered to a 27mm x 46mm LVL timber batten mounted on a SoundDown™ 10mm Acoustic foot.

Build Anatomy warrants that:

At the time of delivery to site the PAB products will:

- be free from freight-related defects, and
- be free from defects that may have arisen through defective factory workmanship or materials.

Collectively this is referred to as the 'warranted condition'.

In the event a breach of the warranty is proven, the following applies:

- Build Anatomy will, at its discretion, supply the replacement PAB product without charge or refund the value of the product.
- Other losses or damage caused by a breach of the warranty or a failure of the product for any other reason are not covered.
- Build Anatomy obligations under this warranty are limited to the replacement of the defective product or its value. The value of the materials will be reduced pro-rata, based on the remaining life of the product (as set by the relevant durability requirements of the NZ Building Code).
- Build Anatomy reserves the right to supply other comparable materials should the warranted materials no longer be supplied by Build Anatomy.

This warranty is subject to the following:

- SoundDown Installer check-sheet must be completed and submitted prior to making a warranty claim.
- Receipt of date of purchase of the products.
- A record of installation completed up to the point at which the defect has become apparent.
- Evidence of failure.
- Receipt of a written claim from the claimant either within 30 days of when the defect would have become reasonably apparent or, if the defect was reasonably apparent prior to installation, then the claim must be made prior to installation.
- The claim must include full details of the alleged defect.
- Evidence satisfactory to Build Anatomy that all handling and storage, installation and maintenance requirements have been carried out.
- The warranty does not cover failure or problems caused by defective use; failure relating to improper design of the project's structure; structural failure; settlement; movement of materials to which the product is attached or dependent on; acts of God including but not limited to earthquakes, cyclones, floods or other severe weather conditions; inadequate maintenance; growth of mould, mildew, fungi, bacteria or any organism on any product; or acts or omissions of a third party over whom Build Anatomy has no control.
- The warranty does not cover failure arising from the failure to follow all applicable advice.
- Normal wear and tear are excluded from this warranty.

All relevant information is available from Build Anatomy (refer to www.sounddown.co.nz).

Note: all documentation related to the use of the PAB is uncontrolled in printed format, so in all instances refer only to the documentation on the website.



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