Sonawood™

Perforated Wood Panels for Ceilings and Walls

Technical Data Sheet—BPIR Class 1

Tiger enclosure—Auckland Zoo

Description.

Sonawood™ is a made in NZ perforated wood panel with acoustic tissue backing designed to control unwanted noise in interior spaces. Panels may be customised according to substrate, decorative finish, acoustic perforations and sized to meet individual project requirements.

Application.

Sonawood™ is ideal for corporate offices, hotels, retail, schools and sports centres.

Composition.

Substrates are from FR MDF, MDF, Plywood, or FR Plywood, with natural wood veneer, low pressure laminates, paint, stain or clear coat finishes, and acoustic backing. Framing is from galvanised steel or timber.

Features & Benefits.

- An attractive high performance acoustic ceiling or wall panel that can be customised to size and perforation.
- Available in a range of standard hole and slot perforation patterns to meet acoustic performance criteria.
- Range of substrates—FR MDF, FR Plywood, or standard MDF or Plywood, all acoustic tissue backed as standard.
- Veneer finish and plywood options provide the warmth of natural wood and are typically clear coated or stained.
- Pre-finished low pressure laminate finishes provide excellent colour and pattern consistency at lower cost.
- Panels available raw for on site coating or factory finished with UV, powder coat or premium 2 pack coatings.
- Fire Group 3, 2-S, 1-S performance subject to substrate and perforated open area selected.
- Tuneable acoustic performance, NRC 0.1 up to 0.80.
- Also available as a lay-in ceiling tile to fit Rondo DX grid.
- Range of fixing options, face fix, concealed fix, split rail.
- Asona in-house design service for shop drawings prior to manufacture. Ideal to integrate M/E services, penetrations (eg power outlets), borders etc.

Hobsonville Point secondary school

Orangutang enclosure—Auckland Zoo

Sonawood Panel Selection Options

Early Fire Reaction Group	1-S / 2-S / 3
Substrate Type	MDF / Black FR MDF / FR MDF / Plywood / FR Plywood
Finish Type	Natural wood veneer / Low pressure laminate / Paint / Stain / Clear coat
Wood Veneer Cut *	Crown / Quarter / Rotary / Recut
Wood Veneer Layup *	Book / Slip / Planked / Planked Rustic
Panel Size (nominal)	1200 x 2400mm / _____ x _____ mm
Perforation Code #	
Installation Method	

* Contact Asona for detailed information on Natural Wood Veneer cut and layup options)

NZBC C/AS2 Risk Groups and EFR Group Requirements

Table 4.3	Internal surface finishes Paragraph 4.17				
Fire protection	Maximum permitted Group Number				
	Exitways and Importance Level 4 buildings: walls and ceilings	Sleeping spaces where care or detention is provided: walls and ceilings	Other sleeping spaces (excluding within household units) and crowd spaces: ceiling surfaces	Other sleeping spaces (excluding within household units) and crowd spaces: wall surfaces	All other occupied spaces: walls and ceilings
Unsprinklered	1-S	1-S	2-S	2-S	3
Sprinklered	2	2	2	3	3
Risk Group	SM SI CA WB	SI	SM CA	CA	WB

Amend 2 Nov 2020

Clause
4.17 Interior surface finishes, floor coverings and suspended flexible fabrics

Surface finish requirements for walls and ceilings

4.17.1 *Surface finish* requirements shall be as specified in Table 4.3 for walls and ceilings

Exceptions to surface finish requirements

4.17.6 *Surface finish* requirements do not apply to:

a) Small areas of non-conforming product within a *firecell* with a total aggregate surface not more than 5.0 m².

Educational buildings

4.17.7 Unsprinklered *firecells* containing classrooms, passageways and corridors of educational *buildings* need not comply with Table 4.3 provided all the following conditions are satisfied:

a) The *occupant* load is less than 250, and

b) The *firecells* are at ground level and are served by at least two *exitways* or *final exits*, and

c) The material *Group Number* is no more than 2-S for surfaces 1.2m or more above floor level, and

d) The material *Group Number* is no more than 3 for surfaces less than 1.2 m above floor level.

Sonawood finishes Group Number

Substrate	Finish	Perforated	Non-perforated
MDF	Laminate (LPL)	3	3
	Natural veneer	3	3
	Paint[1]	3	3
FR MDF Black	Laminate (LPL)	2-S	1-S
	Natural veneer	TBC	1-S
	Paint[1]	2-S	1-S
FR MDF	Laminate (LPL)	2-S	1-S
	Natural veneer	TBC	1-S
	Paint[1]	2-S	1-S
Plywood	Natural	3	3
	Coatings[2]	3	3
	Stain	3	3
FR Plywood	Poplar	1-S	1-S

[1] Paint option includes powder coated or wet
[2] Coatings include clear, UV
Intumescent also available which will provide a 1-S

Finish Options

Substrate Type

MDF

Black FR MDF

FR MDF MR

Plywood &
FR Plywood

Finish Type
Low Pressure Laminates—wood look or solid colours available* (refer to Asona for full range)

Nordic Pine

Premium Oak

Tawa

French Oak

Sovereign Oak

Rimu

Tahoe Walnut

Black Forest Oak

* Colour representations are as close as printing permits. Clear coat and intumescent coating may affect final colour. Always make your colour selections from an actual sample, not from a digital screen.

Natural wood veneers—wide range available, contact Asona.
(Supplied precoated clear. May be supplied "raw" for site intumescent coating.)

Painted and stained finishes—wide range available, contact Asona.
(Paint finish suitable for MDF only; Stain finish suitable for Veneer and Plywood only)

NOTE: Material type and wood species selection may affect surface finish and surface chipping on plywood. FR Plywood available in Poplar wood species only. Consult Asona prior to specification.

Standard Substrate Size
Panels are machined from substrates sized to allow for side trimming and for expansion and contraction on site. For example 2440 x 1220mm substrates are machined to 2397 x 1197mm for a nominal 2400 x 1200mm panel with allowance for 3mm gap between panels.

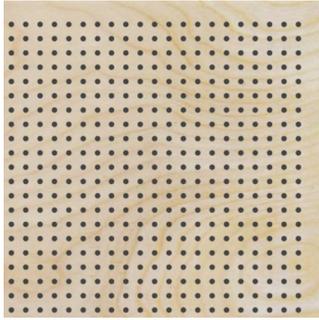Nominal sizes:
2400 x 1200mm, 2700 x 1200mm, others to order

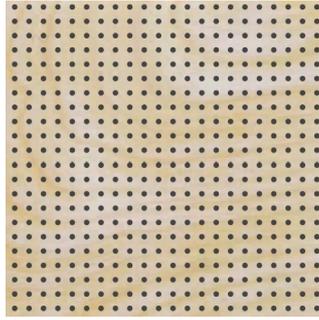Thickness:
12mm*, others to order, consult Asona

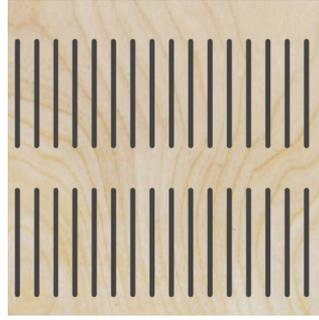(*13mm for natural wood veneers)

Perforation Patterns

Hole-Square
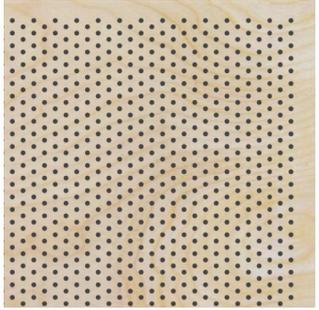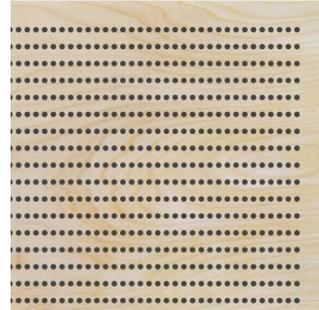16 or 32mm centres

NB—No Border option for W1L1

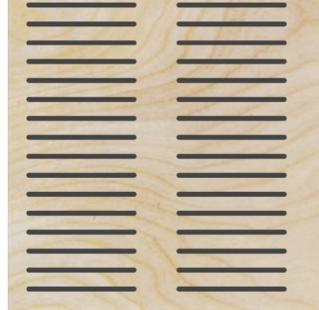**Slot-Width**

Slot-Staggered

Hole-Diagonal
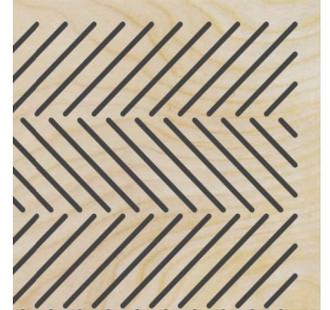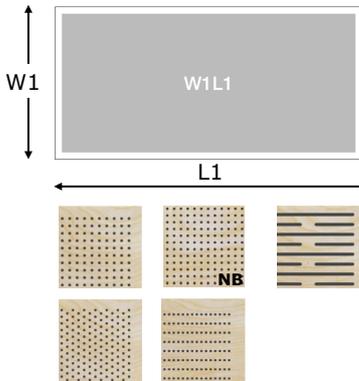16 or 32mm centres

Hole-Linear
16x32mm centres

Slot-Length

Slot-Herringbone

Perforation Clusters (Square pattern holes, Diagonal pattern holes, Linear pattern holes or Slot perforations)

Refer to https://asona.co.nz/technical-library for technical drawings.

Open area % is measured over a full panel size including borders and non-perforated areas.

W1 — W1L1 — L1

Hole Ø /spacing ctrs	6 @ 16mm	8 @ 16mm	8 @ 32mm	10 @ 16mm	12 @ 32mm	16 @ 32mm	50 @ 100mm
Open Area SQ %	9.8%	17.4%	4.4%	27.2%	9.9%	17.7%	17.3%
Perforation Code #	H6.16.S.50 W1L1	H8.16.S.50 W1L1	H8.32.S.50 W1L1	H10.16.S.50 W1L1	H12.32.S.50 W1L1	H16.32.S.50 W1L1	H50.100.S.75 W1L1
Open Area SQ % **NB**	11.0%	19.6%	4.9%		11.0%	19.6%	
Perforation Code # **NB**	H6.16.S.8 W1L1	H8.16.S.8 W1L1	H8.32.S.16 W1L1		H12.32.S.16 W1L1	H16.32.S.16 W1L1	
Open Area DIA %	9.8%	17.4%	4.4%	27.2%	9.9%	17.7%	19.4%
Perforation Code #	H6.16.D.50 W1L1	H8.16.D.50 W1L1	H8.32.D.50 W1L1	H10.16.D.50 W1L1	H12.32.D.50 W1L1	H16.32.D.50 W1L1	H50.100.D.75 W1L1
Open Area LINEAR %	5%	8.8%		13.8%	19.7%		
Perforation Code #	H6.16/32.S.50 W1L1	H8.16/32.S.50 W1L1		H10.16/32.S.50 W1L1	H12.16/32.S.50 W1L1		
Slot Width		**8mm**		**10mm**	**12mm**		
Open Area %		20.7%		25.9%	31.0%		
Perforation Code #		SS8.300.25 W1L1		SS10.300.25 W1L1	SS12.300.25 W1L1		

W1 — W1L2 W1L2 — L2
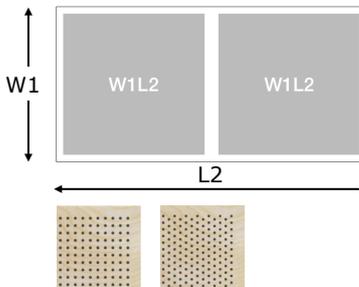
| Hole Ø /spacing ctrs	6 @ 16mm	8 @ 16mm	8 @ 32mm	10 @ 16mm	12 @ 32mm	16 @ 32mm	50 @ 100mm
Open Area SQ %	9.4%	16.7%	4.3%	26.1%	9.7%	17.2%	16.6%
Perforation Code #	H6.16.S.50 W1L2	H8.16.S.50 W1L2	H8.32.S.50 W1L2	H10.16.S.50 W1L2	H12.32.S.50 W1L2	H16.32.S.50 W1L2	H50.100.S.75 W1L2
Open Area DIA %	9.5%	16.8%	4.2%	26.3%	9.5%	16.9%	18.8%
Perforation Code #	H6.16.D.50 W1L2	H8.16.D.50 W1L2	H8.32.D.50 W1L2	H10.16.D.50 W1L2	H12.32.D.50 W1L2	H16.32.D.50 W1L2	H50.100.D.75 W1L2

W2 — W2L1 / W2L1 — L1
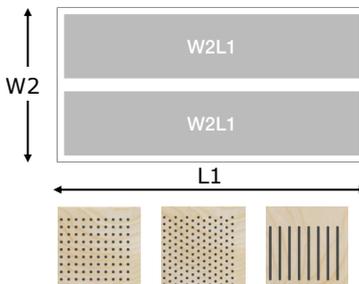
Hole Ø /spacing ctrs	6 @ 16mm	8 @ 16mm	8 @ 32mm	10 @ 16mm	12 @ 32mm	16 @ 32mm	50 @ 100mm
Open Area SQ %	9.1%	16.2%	4.0%	25.2%	9.1%	16.2%	15.7%
Perforation Code #	H6.16.S.50 W2L1	H8.16.S.50 W2L1	H8.32.S.50 W2L1	H10.16.S.50 W2L1	H12.32.S.50 W2L1	H16.32.S.50 W2L1	H50.100.S.75 W2L1
Open Area DIA %	8.9%	15.8%	4.0%	24.6%	8.9%	15.9%	16.7%
Perforation Code #	H6.16.D.50 W2L1	H8.16.D.50 W2L1	H8.32.D.50 W2L1	H10.16.D.50 W2L1	H12.32.D.50 W2L1	H16.32.D.50 W2L1	H50.100.D.75 W2L1
Slot Width		**8mm**		**10mm**	**12mm**		
Open Area %		17.3%		21.7%	26.0%		
Perforation Code #		SW8.520.40 W2L1		SW10.520.40 W2L1	SW12.520.40 W2L1		

Perforation Clusters (Square pattern holes, Diagonal pattern holes or Slot perforations)
Open areas exclude borders and non-perforated areas.
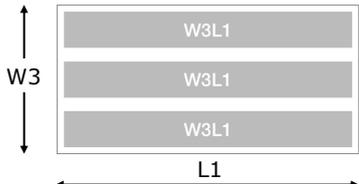
Hole Ø /spacing ctrs	6 @ 16mm	8 @ 16mm	8 @ 32mm	10 @ 16mm	12 @ 32mm	16 @ 32mm	50 @ 100mm
Open Area SQ %	8.1%	14.4%	3.8%	22.5%	8.5%	15.1%	14.2%
Perforation Code #	H6.16.S.50 W3L1	H8.16.S.50 W3L1	H8.32.S.50 W3L1	H10.16.S.50 W3L1	H12.32.S.50 W3L1	H16.32.S.50 W3L1	H50.100.S.75 W3L1
Open Area DIAG%	7.9%	14.1%	3.7%	22.0%	8.2%	14.6%	14.0%
Perforation Code #	H6.16.D.50 W3L1	H8.16.D.50 W3L1	H8.32.D.50 W3L1	H10.16.D.50 W3L1	H12.32.D.50 W3L1	H16.32.D.50 W3L1	H50.100.D.75 W3L1
Slot Width		8mm		10mm	12mm		
Open Area %		16.0%		19.9%	23.9%		
Perforation Code #		SW8.320.40 W3L1		SW10.320.40 W3L1	SW12.320.40 W3L1		

W3 / L1
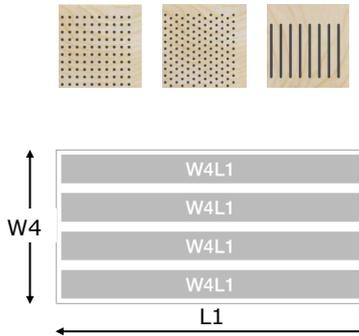
Slot width	8mm	10mm	12mm
Open Area %	14.6%	18.2%	21.8%
Perforation Code #	SW8.220.40 W4L1	SW10.220.40 W4L1	SW12.220.40 W4L1

W4 / L1
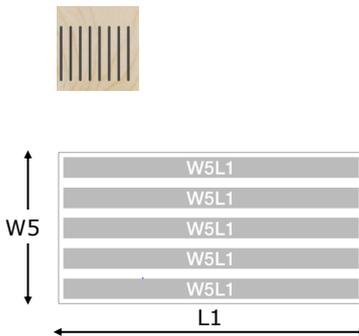
Slot width	8mm	10mm	12mm
Open Area %	13.2%	16.5%	19.8%
Perforation Code #	SW8.160.40 W5L1	SW10.160.40 W5L1	SW12.160.40 W5L1

W5 / L1
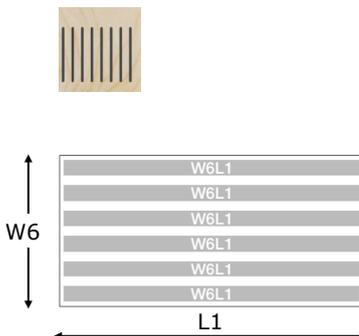
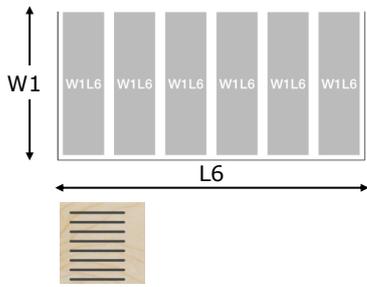| Slot width	8mm	10mm	12mm
Open Area % Vertical	11.9%	14.8%	17.7%
Perforation Code #	SW8.120.40 W6L1	SW10.120.40 W6L1	SW12.120.40 W6L1
Open Area % Herring	16.7%	21.0%	25.4%
Perforation Code #	SA8.180.50 W6L1	SA10.182.48 W6L1	SA12.184.46 W6L1

W6 / L1
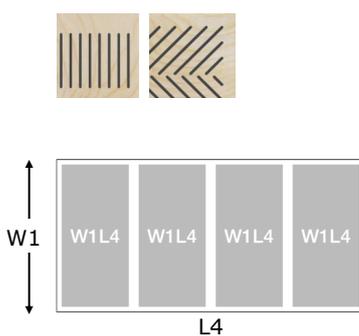
Slot width	8mm	10mm	12mm
Open Area %	17.3%	21.7%	32.0%
Perforation Code #	SL8.520.40 W1L4	SL10.520.40 W1L4	SL12.520.40 W1L4

W1 / L4
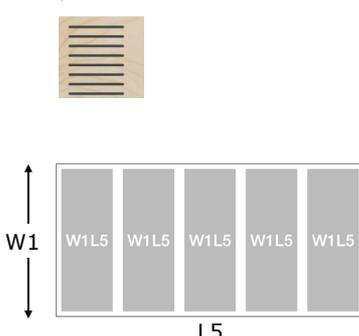
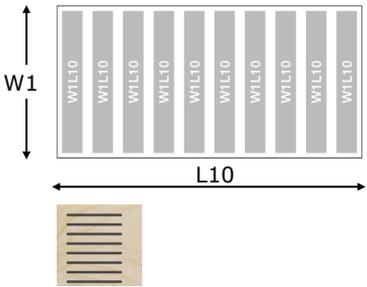| Slot width	8mm	10mm	12mm
Open Area %	16.7%	20.8%	24.9%
Perforation Code #	SL8.400.40 W1L5	SL10.400.40 W1L5	SL12.400.40 W1L5

W1 / L5

Perforation Clusters (Square pattern holes, Diagonal pattern holes or Slot perforations)
Open areas exclude borders and non-perforated areas.

Slot width	8mm	10mm	12mm
Open Area %	16.0%	20.8%	23.9%
Perforation Code #	SL8.320.40 W1L6	SL10.320.40 W1L6	SL12.320.40 W1L6
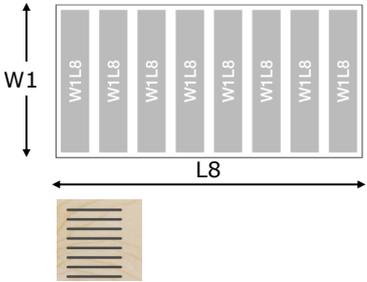
Slot width	8mm	10mm	12mm
Open Area %	14.6%	18.2%	21.8%
Perforation Code #	SL8.220.40 W1L8	SL10.220.40 W1L8	SL12.220.40 W1L8

Slot width	8mm	10mm	12mm
Open Area %	13.2%	16.5%	19.8%
Perforation Code #	SL8.160.40 W1L10	SL10.160.40 W1L10	SL12.160.40 W1L10
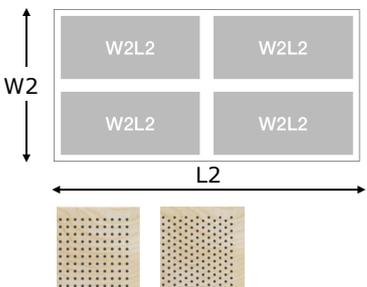
Hole Ø /spacing ctrs	6 @ 16mm	8 @ 16mm	8 @ 32mm	10 @ 16mm	12 @ 32mm	16 @ 32mm	50 @ 100mm
Open Area SQ %	8.7%	15.5%	3.9%	24.2%	8.8%	15.7%	15.1%
Perforation Code #	H6.16.S.50 W2L2	H8.16.S.50 W2L2	H8.32.S.50 W2L2	H10.16.S.50 W2L2	H12.32.S.50 W2L2	H16.32.S.50 W2L1	H50.100.S.75 W2L2
Open Area DIAG %	8.6%	15.2%	3.8%	23.8%	8.6%	15.2%	16.2%
Perforation Code #	H6.16.D.50 W2L2	H8.16.D.50 W2L2	H8.32.D.50 W2L2	H10.16.D.50 W2L2	H12.32.D.50 W2L2	H16.32.D.50 W2L2	H50.100.D.75 W2L2
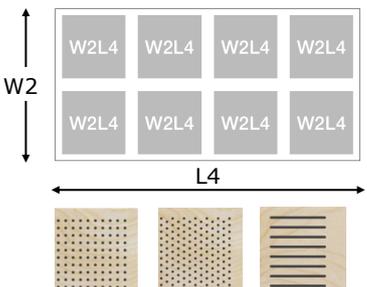
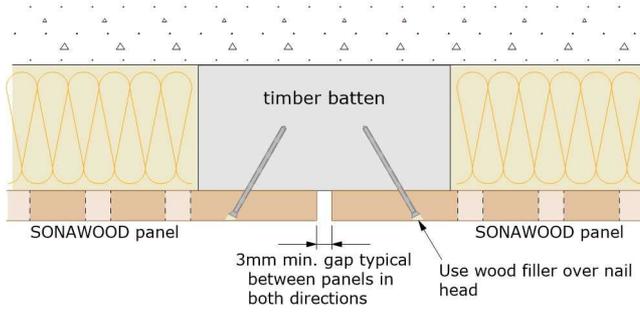| Hole Ø /spacing ctrs	6 @ 16mm	8 @ 16mm	8 @ 32mm	10 @ 16mm	12 @ 32mm	16 @ 32mm	50 @ 100mm
Open Area SQ %	8.1%	14.4%	3.6%	22.4%	8.1%	14.4%	13.7%
Perforation Code #	H6.16.S.50 W2L4	H8.16.S.50 W2L4	H8.32.S.50 W2L4	H10.16.S.50 W2L4	H12.32.S.50 W2L4	H16.32.S.50 W2L4	H50.100.S.75 W2L4
Open Area DIAG %	7.9%	14.1%	3.5%	22.1%	7.8%	13.9%	14.8%
Perforation Code #	H6.16.D.50 W2L4	H8.16.D.50 W2L4	H8.32.D.50 W2L4	H10.16.D.50 W2L4	H12.32.D.50 W2L4	H16.32.D.50 W2L4	H50.100.D.75 W2L4
Slot Width		8mm		10mm	12mm		
Open Area %		15.6%		19.4%	23.3%		
Perforation Code #		SL8.500.50 W2L4		SL10.500.50 W2L4	SL12.500.50 W2L4		

Custom Perforations
Example: random perforation with 3 hole sizes, or blank areas for services integration.
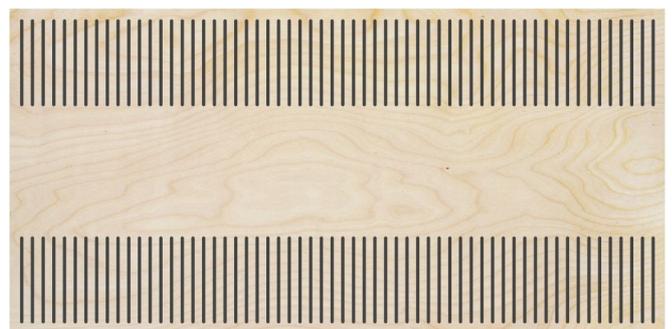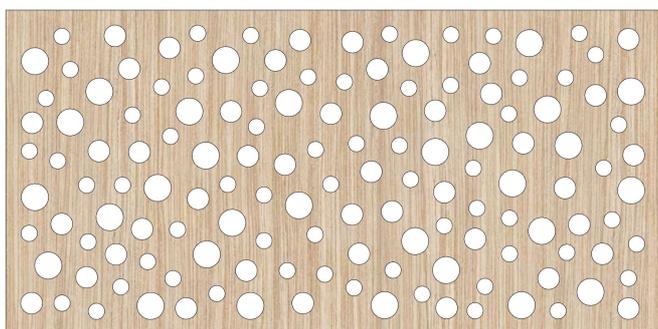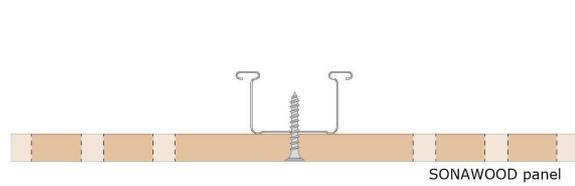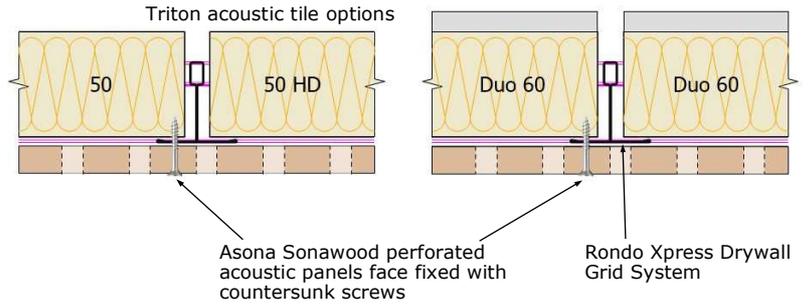
Installation Options
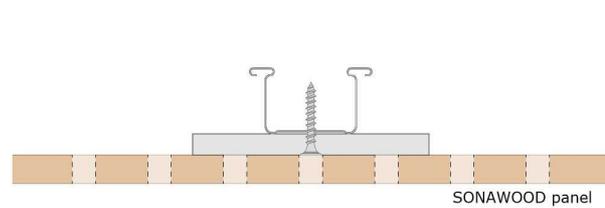
Face fix with 40mm panel pins

timber batten

SONAWOOD panel   SONAWOOD panel

3mm min. gap typical
between panels in
both directions

Use wood filler over nail
head

Face fix with countersunk screws to Rondo KEY-LOCK® furring channel/batten

SONAWOOD panel

Face fix with countersunk screws to Rondo Xpress®

Triton acoustic tile options

50   50 HD   Duo 60   Duo 60

Asona Sonawood perforated
acoustic panels face fixed with
countersunk screws

Rondo Xpress Drywall
Grid System

Secret fix / hidden screw to #FFB mounting strip to Rondo KEY-LOCK® furring channel/batten

SONAWOOD panel

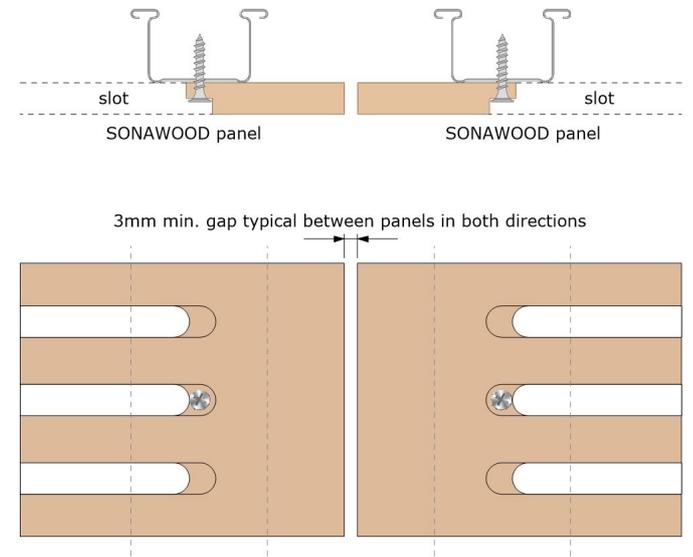## Secret fix / hidden screw to #FFB mounting strip to Rondo Xpress®

Triton acoustic tile options

50   50 HD   9mm #FFB   Duo 60   Duo 60   9mm #FFB

Screws through #FFB
into Sonawood

Asona Sonawood perforated
acoustic panels secret fixed/
hidden screws

Rondo Xpress Drywall
Grid System
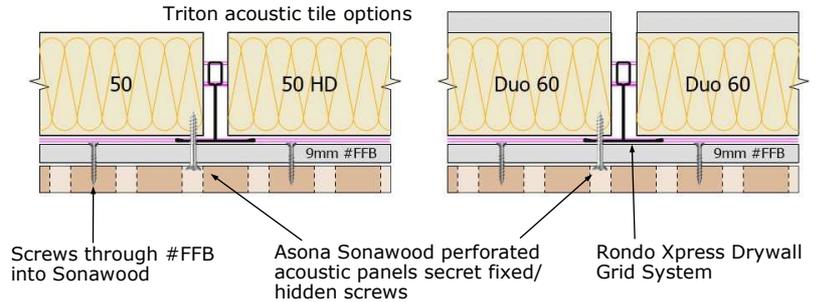
Demountable Mounting (Walls Only)

Secret fix with Z bar split rail and clip—wall mounting only

15mm
minimum
gap at top
to allow for
lift-on
installation

Clips to
back of
panel

Z bar to
timber
packer

SONAWOOD panel   Triton 25mm   SONAWOOD panel   Triton 25mm
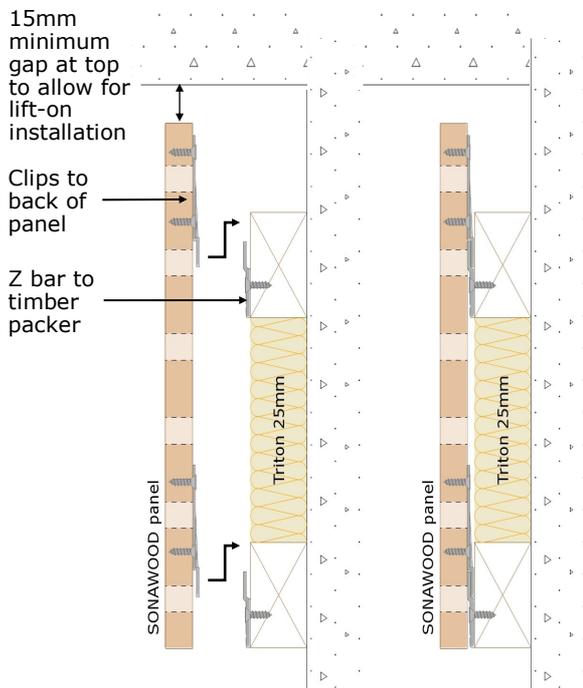
Secret fix / hidden screw to step slot end

slot   slot

SONAWOOD panel   SONAWOOD panel

3mm min. gap typical between panels in both directions

Contact Asona for full Installation Manuals
for the above mounting systems

Sonawood Composition Examples

Laminate

- Laminate finish
- Substrate - 12mm black FR MDF
- Back laminate
- Acoustic tissue

Natural Wood Veneer

- Clear coat
- Natural wood veneer
- Substrate - 12mm MDF
- Back veneer
- Sealer coat
- Acoustic tissue

Plywood

- Clear coat
- Plywood substrate
- Sealer coat
- Acoustic tissue
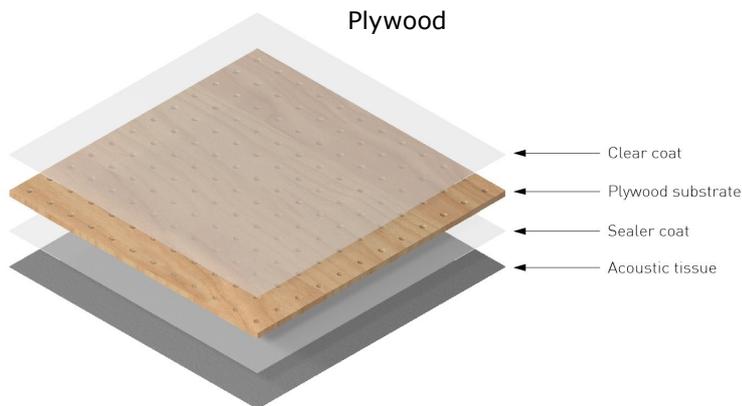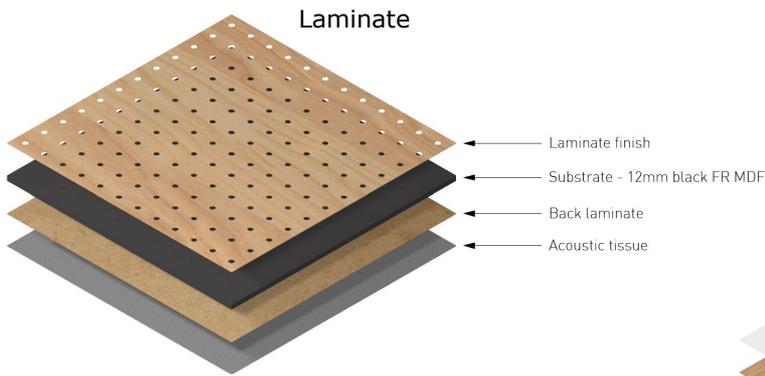
Technical Specifications

Finishes: All panel types
Pre-finished in a range of decorative surface finishes from paint, clear coat lacquer, stain, or prefinished laminates. FR Plywood available in Poplar wood species only.

Limitations:
- For interior use only, and not in direct contact with moisture or in extreme humidity conditions.
- Not for use with negative air return plenums.
- Maximum humidity/temperature 90% R/H at 30°C.
- Maximum weight that can be directly integrated into the ceiling eg: lighting, A/C grill, speakers etc, shall not exceed 1.5kg. Greater weights shall be independently supported.
- Plywood types may be limited by the ply lamination process and acceptable machinability quality. Do not butt panels edge to edge. Lead times apply, contact Asona.

Maintenance:
Clean with vacuum, soft brush. May be cleaned with a damp soapy cloth, clean away residual soap and dry after cleaning.

NZ Building Act
This product is not subject to a warning or ban under Section 26.

NZ Building Code Compliance:

• B2 Durability – Clause B2.3.1 (b) (i): Asona Sonawood with only normal maintenance will have a minimum durability of at least 15 years when installed in accordance with; manufacturer's installation requirements and AS/NZS 2785:2020.

• C3 Fire – Clause C/AS2 3.4(a): Asona Sonawood has a Fire Material Group Number :
3—perforated plywood, MDF with LPL or natural wood veneer
2-S—perforated FR MDF with laminates
1-S—non perforated solid FR MDF with natural wood veneer, LPL or paint, FR Plywood perforated or non-perforated.
NZBC verification method C/VM2 Appendix A, tested in accordance with ISO 5660 or ISO 9705.

Warranty:
15 year limited warranty against manufacturing defects.

Weight: (subject to board type density and perforation open area)
4.2—10 kg/m² Contact Asona.

ITEM	Open Area	NRC	125 Hz	250 Hz	500 Hz	1K Hz	2K Hz	4K Hz
H8.16 NB	19.6	0.70	0.50	0.70	0.80	0.70	0.65	0.70
H8.16 NB*	19.6	0.75	0.60	0.75	0.75	0.80	0.80	0.80
SW10.520	21.7	0.65	0.55	0.70	0.80	0.60	0.60	0.55
SW10.520*	21.7	0.70	0.65	0.70	0.75	0.70	0.65	0.65
SW12.520	26.0	0.70	0.45	0.70	0.80	0.65	0.60	0.55
SW12.520*	26.0	0.80	0.70	0.80	0.80	0.80	0.70	0.70

Practical Sound Absorption Coefficients:
ISO 354 E-200, Test reports T2312-3 to 8
* with Triton 50 acoustic tile backer

Installation:
Shall not commence until the building is water tight and dry. Sonawood wall panels shall be installed with a full perimeter support and plywood ceiling panels must have the face grain running at right angles to framing members. If panels are to be face fixed, timber framing members are recommended to enable more discrete fixings to be used. To minimise the risk of buckling, it is recommended that the panels be allowed to acclimatise in the area in which they are being installed no less than 2 days. Allowance of 3mm minimum shall be made between panels to accommodate swelling and building movement.
Refer full Installation Manual.

Specification:
Acoustical treatment shall be Sonawood perforated wood acoustical panel manufactured by Asona Limited. Tel: 09 525 6575, info@asona.co.nz. Substrates: (Black FR MDF) (FR MDF) (standard MDF) (Plywood) (FR Plywood); Fire Group (_);
Finish Type: Natural Wood Veneer (_), LPL (_) (Natural)
Finish: paint (_), stain (_), clear (_)
Panel Size: (_) x (_)mm x (_)mm thick,
Perforation: Type (_), Perforation Cluster: (_), Code#: (_)
Installation method: (_)
Contractor shall register the ceiling with Asona on practical completion.
(Asona Masterspec 5172AA specification available).

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