

# Perforated

Timber Acoustic Panels

STIL  
ACOUSTICS





**Acoustic control  
and the warmth of  
real wood.**

## Perforated timber acoustic panels

### Perforated panels

Perforated acoustic panels enable a wide range of options to control reverberation on ceilings and walls. There are many perforation patterns to choose from, or bespoke designs can be produced.

Different edge details and panel sizes provide installation options for wall and ceiling. Finishes include wood veneers, lacquers, plywood and laminates.

Acoustic cupboard doors and ancillaries further enhance the integration possibilities.

As with all our timber products, we can supply FSC® - C163652 certified.

### Design assistance

Samples are available on request. We also provide a comprehensive design service to help you integrate our solutions in your project. We can supply matching joinery items such as doors and detail trims to ensure a seamless end result.

### Acoustic advice

When contacting Stil Acoustics, you can expect to be assisted by a member of the Institute of Acoustics, with extensive real-world experience.

### How the panels absorb sound

The perforations, combined with a cavity behind the panel create resonance, due to the air in the cavity which acts like a spring. In combination with damping, typically provided by a layer of mineral fibre in the cavity, to reduce sound energy. This is known as a Helmholtz absorber.





Contact us for  
detailed support.

## Perforated quick reference

### All models:

Fire performance	B-s1-d0 components on request
Environmental factors	FSC certified upon request. Low emissions (E1 class)



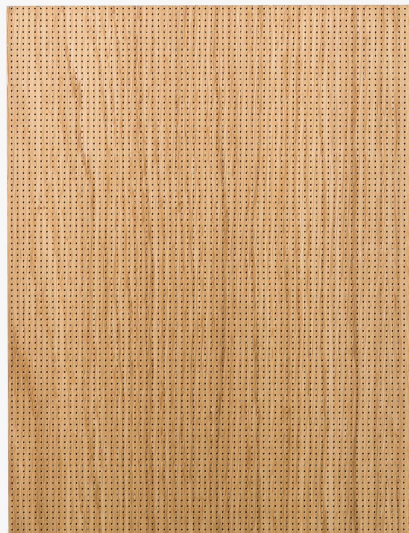
**Nanoperforated NP-2**  
0.5mm holes at 1.97mm

**Acoustic performance**  
Absorption - Class C

**Extra options**  
Acoustic Cupboard doors,  
Internal door covers,  
Semi-concealed T-grid

**Finish option**  
- Veneer with tinted oil  
- Veneer with lacquer

**Sizes**  
- Sheets veneer - 3000 x 1200 mm  
- Sheets CPL - 3000 x 1200 mm  
- T&G planks - 3030 x 192 mm  
- Ceiling T-grid - 1200 x 600 mm  
- Ceiling T-grid - 600 x 600 mm  
- Made to measure - on request



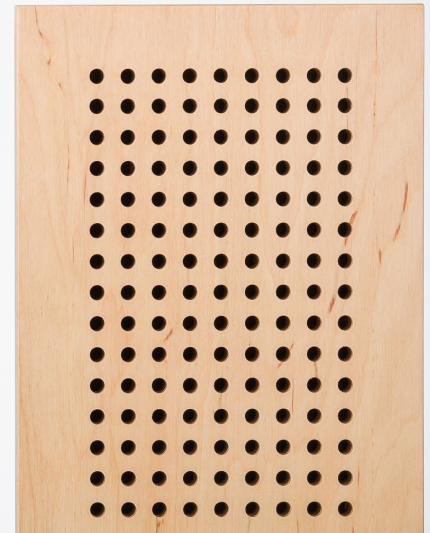
**Microperforated MP-3**  
1.1mm holes at 3mm

**Acoustic performance**  
Absorption - Class B

**Extra options**  
Acoustic Cupboard doors,  
Internal door covers,  
Semi-concealed T-grid

**Finish option**  
- Veneer with tinted oil  
- Veneer with lacquer  
- HPL

**Sizes**  
- Sheets veneer - 3000 x 1200 mm  
- Sheets HPL - 3000 x 1200 mm  
- T&G planks - 3030 x 192 mm  
- Ceiling T-grid - 1200 x 600 mm  
- Ceiling T-grid - 600 x 600 mm



**Perforated P16-C**  
8mm holes at 16mm

**Acoustic performance**  
Absorption - Class C

**Extra options**  
Internal door covers

**Finish option**  
- Veneer with tinted oil  
- Veneer with lacquer  
- Plywood  
- HPL

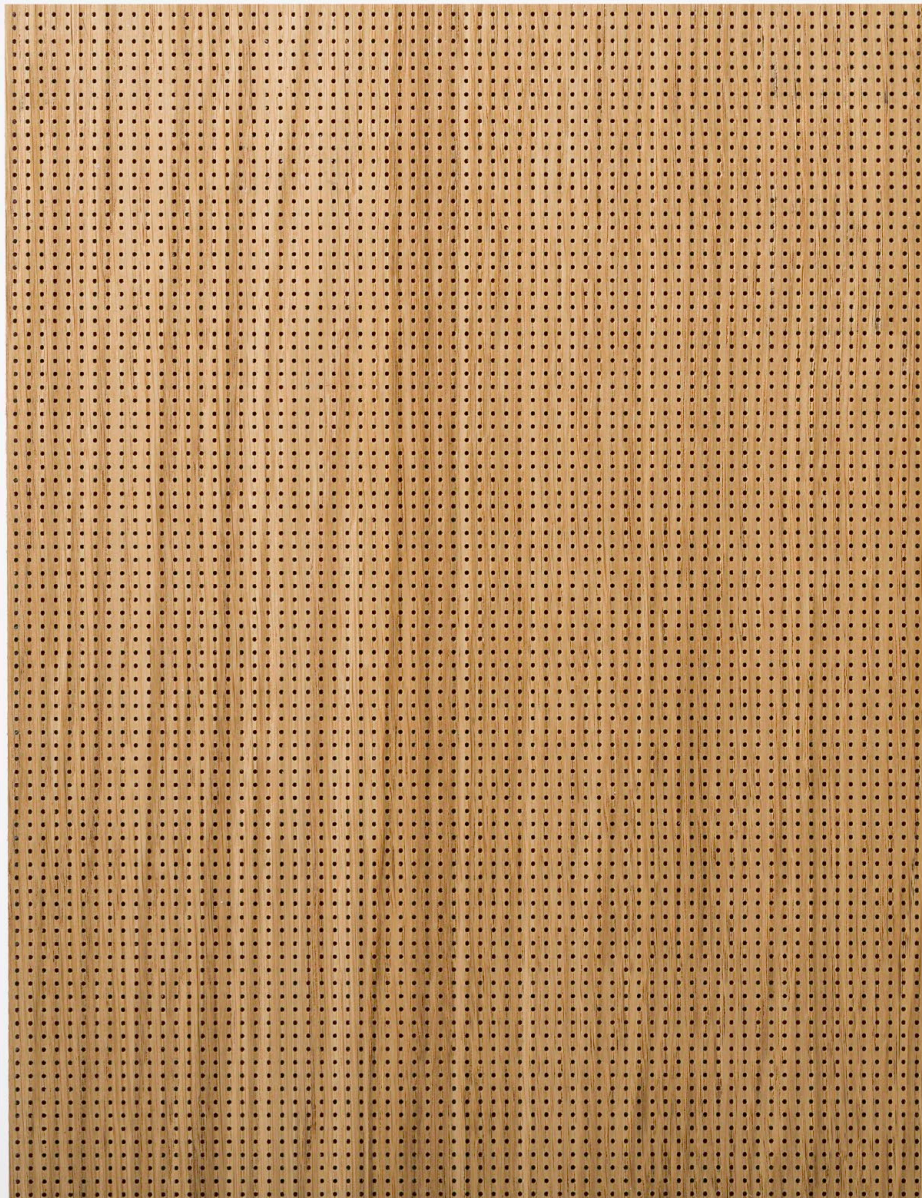
**Sizes**  
- Sheets veneer - 3030 x 120 mm  
- Sheets HPL - 3030 x 1280 mm  
- Sheets Plywood - 3030 x 1280 mm  
- Sheets FR Plywood - 2400 x 1200 mm  
- Made to measure - on request

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## Microperforated - MP-3

### Key features:

Acoustic performance	Up to Class B
Environmental factors	FSC certified upon request. Low emissions (E1 class)
Finishes	Veneer, HPL
Formats	Sheets, cupboard doors, planks, made to measure, T-grid ceilings
Perforation front	1.1mm holes at 3mm centres Up to the edge of the panel. The perforations can differ slightly near the edge



















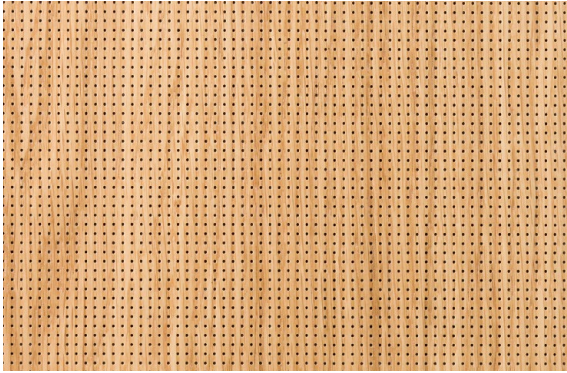




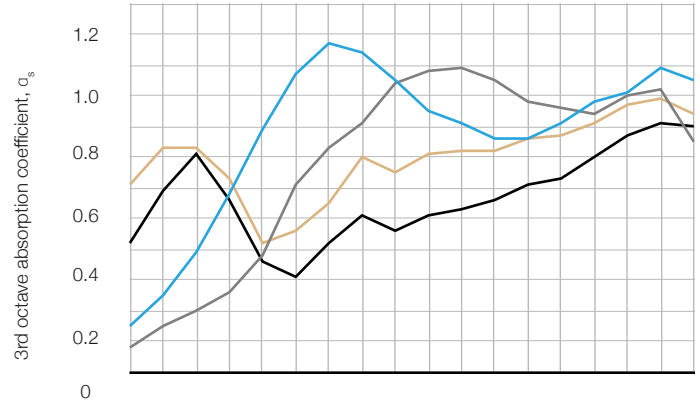


# Microperforated - MP-3 datasheet

1.1mm holes at 3mm centres



Absorption data for Microperf (EN 354: 2003)



Microperf acoustic performance	$\alpha_w$	Class	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz
70mm void with 50mm 40kg/m <sup>3</sup> mineral fibre	0,85	B	0,25	0,80	1,00	0,80	0,85	0,95
20mm void with 20mm 22.5/m <sup>3</sup> Polyester wool	0,70 (MH)	C	0,15	0,40	0,85	1,00	0,85	0,85
Cupboard door with 500mm cavity (empty)	0,55 (H)	D	0,55	0,40	0,45	0,55	0,65	0,80
As above with 20mm Polyester wool (filled)	0,70 (H)	C	0,70	0,50	0,65	0,70	0,80	0,85

## Specification checklist

Fire performance	B-s1-d0 components on request
Standard sheet	3000 x 1200 mm (veneer)
Standard sheet	3000 x 1270 mm (HPL)
Standard T&G planks	3000 x 192 mm
Made to measure	On request
Ceiling tiles	1200 x 600 and 600 x 600 mm (with semi-concealed edge detail)
Acoustic cupboard doors	Made to measure (max 3000x600mm)
Thickness	17-19mm depending on specification
Weight	11kg/m <sup>2</sup>
Core	Black moisture resistant MDF/Black fire retardant MDF
Finishes	HPL - 0.9mm timber effect or solid colour / Veneer finishes with lacquer or oil
Clear lacquer sheen levels (veneer)	10% for fire retardant lacquer. Oil very matt
Wall mouting	Softwood battens at 600mm centres. Split batten system
Ceiling mounting	Semi-concealed T-Grid or planks mounted on MF grid.
Panel backing	Black fleece tissue inside the panel, Veneer panel backing.
Edging options	No edging (black core exposed) / Veneer / ABS / T&G / Loose tongue
Sustainability / Environment	FSC accredited on request, E1 Formaldehyde emissions
Trims, doors and finishing details available	Matching internal door covers, acoustic doors, edgings, skirting and returns on request



# Nanoperforated - NP-2

Key features:

Acoustic performance	Class C
Environmental factors	FSC certified upon request. Low emissions (E1 class)
Finishes	Veneer
Formats	Sheets, cupboard doors, planks, made to measure, , T-grid ceilings
Perforation front	0.5mm holes at 1.97mm diagonal centres Up to the edge of the panel. The perforations can differ slightly near the edge















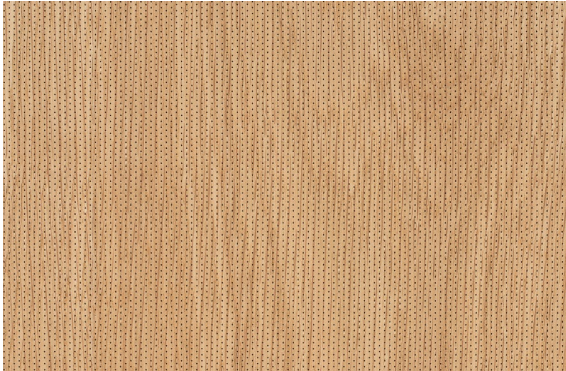




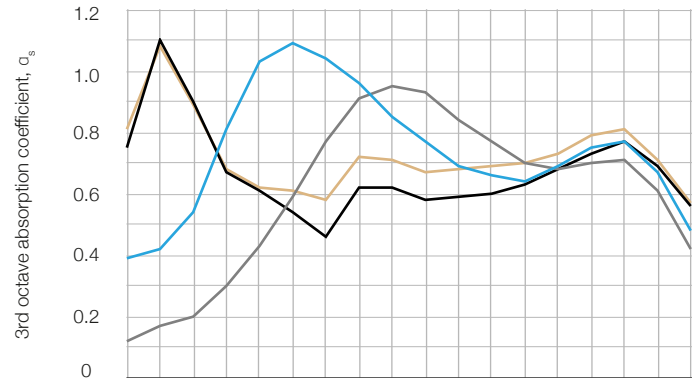


# Nanoperforated - NP-2 datasheet

0.5mm holes at 1.97mm diagonal centres



Absorption data for Nanoperf (EN 354: 2003)



Nanoperf acoustic performance	$\alpha_w$	Class	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz
70mm void with 50mm 40kg/m <sup>3</sup> mineral fibre	0,75 (L)	C	0,45	1,00	0.95	0,70	0,70	0,65
20mm void with 20mm 22.5/m <sup>3</sup> Polyester wool	0,70	C	0,15	0,45	0,90	0,85	0,70	0,60
Cupboard door with 500mm cavity (empty)	0,60	C	0,90	0,60	0,55	0,60	0,70	0,65
As above with 20mm Polyester wool (filled)	0,70	C	0,90	0,65	0,65	0,70	0,75	0,70

## Specification checklist

Fire performance	B-s1-d0 components on request
Standard sheet	3000 x 1200 mm (veneer)
Standard sheet	3000 x 1200 mm (HPL)
Standard T&G planks	3000 x 192 mm
Made to measure	On request
Ceiling tiles	1200 x 600 and 600 x 600 mm
Acoustic cupboard doors	Made to measure (max 600mm width)
Thickness	17-19mm depending on specification
Weight	11kg/m <sup>2</sup>
Core	Black moisture resistant MDF/Black fire retardant MDF (normal MDF on request)
Finishes	Veneer finishes with lacquer or oil
Clear lacquer sheen levels (veneer)	10% for fire retardant lacquer. Oil very matt
Wall mouting	Softwood battens at 600mm centres. Split batten system
Ceiling mounting	Semi-concealed T-Grid or planks mounted on MF grid.
Panel backing	Black fleece tissue inside the panel, Veneer panel backing.
Edging options	No edging (black core exposed) / Veneer / ABS / T&G / Loose tongue
Sustainability / Environment	FSC accredited on request, E1 Formaldehyde emissions
Trims, doors and finishing details available	Matching internal door covers, acoustic doors, edgings, skirting and returns on request



## Composition - Micro MP-3 / Nano NP-2

### Composition wall and ceiling panels

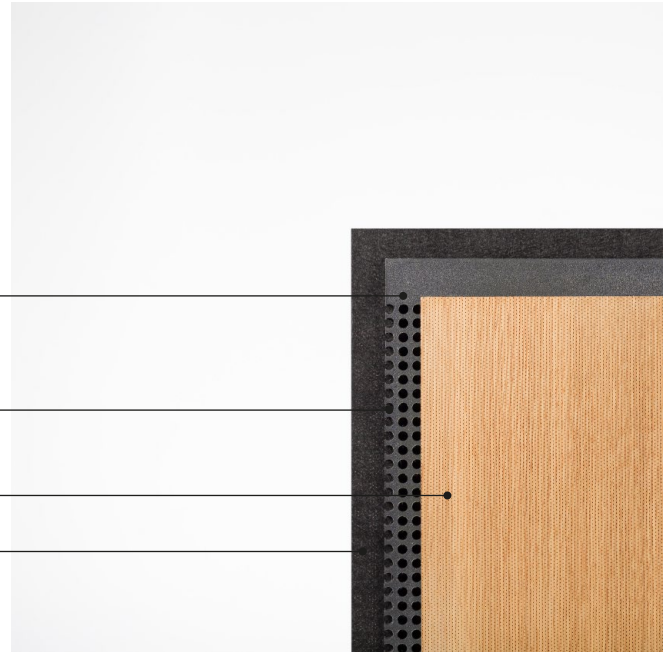
Perforations to the face of the panel go from edge to edge. It's in the black core board where size is considered as the perimeter is unperforated to allow for fixings from behind and profiled or matching edges.

Solid perimeter of the core board allows fixings from the back and profiled or veneered edges

16mm core board with 6mm holes at 8mm centres

Perforated front face

Balance and fleece at rear



### Composition acoustic cupboard doors

Perforations to the faces of the panel go from edge to edge. It's in the black core board where size is considered as the perimeter is unperforated to allow for hinge and profiled or matching edges. We can pre-route the holes for hinges when clear instructions are available.

Solid perimeter of the core board allows fixings for hinges and profiled or veneered edges

2 x 9mm core boards allow matching face to each side

Perforated front face

Black fleece in the middle

Perforated matching rear face



### Made to measure ordering

The solid border means made-to-measure panels are typically ordered to allow for hidden fixings.

Optimisation software ensures maximal yield, but consideration of sheet sizes should still be considered to minimise waste, and the number of unique panel sizes kept to a minimum; as each incurs a surcharge.

Where exact wall dimensions aren't known, end panels are oversized to cut on site, and our project engineers are on hand to assist in the final stages of ordering.



# Perforated - P16-C

**Key features:**

Acoustic performance	Class C
Environmental factors	FSC certified upon request. Low emissions (E1 class)
Finishes	Veneer, HPL
Formats	Sheets, made to measure
Perforation	8mm holes at 16mm centres (standard) Either to the edge of the panel or with a solid border







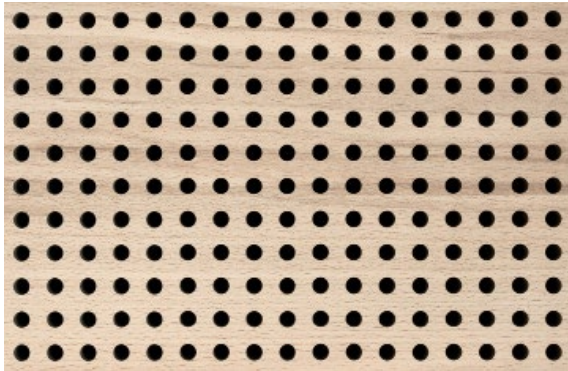




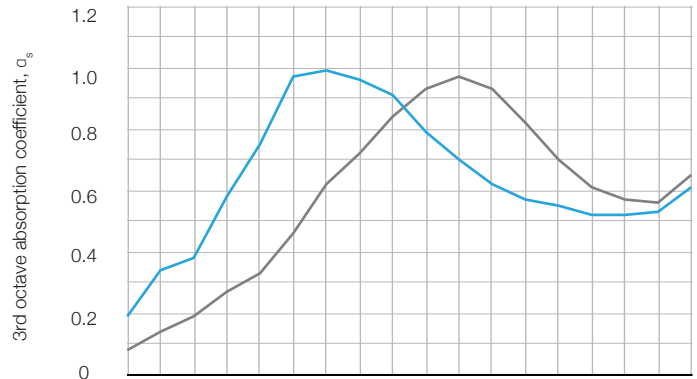


# Perforated P16-C datasheet

8mm holes at 16mm centres



Absorption data for Perforated 16/16/8mm (EN 354: 2003)



Perforated 16C (8mm holes) absorption	$\alpha_w$	Class	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz
70mm void with 50mm 40kg/m <sup>3</sup> mineral fibre	0,65 (LM)	C	0,30	0,75	0,95	0,70	0,55	0,55
20mm void with 20mm 22.5/m <sup>3</sup> Polyester wool	0,65 (M)	C	0,15	0,35	0,75	0,95	0,70	0,60

## Specification checklist

Fire performance	B-s1-d0 components on request
Standard Measurements	3030 x 1200 mm (veneer)
Standard Measurements	3030 x 1280 mm (HPL)
Made to measure	On request
Perforation patterns	16mm x 16mm x 6mm 16mm x 16mm x 8mm 16mm x 16mm x 10mm
Thickness	18mm
Weight	12kg/m <sup>2</sup>
Core	Black moisture resistant MDF/Black fire retardant MDF (normal MDF on request)/ Plywood
Can be applied to curved surfaces	Yes, T&G or curving panels available
Finishes	HPL - 0.9mm with Over 500 options available. Veneer finishes - lacquered/oiled
Clear lacquer sheen levels (veneer)	10% for fire retardant lacquer
Wall mouting	Softwood battens at 600mm centres. Split batten system
Ceiling mounting	Concealed T-Grid. Enquire for bespoke options
Panel backing	Black fleece tissue inside the panel, HPL panel backing.
Typical absorption used	50mm mineral fibre
Sustainability / Environment	FSC accredited on request, E1 Formaldehyde emissions

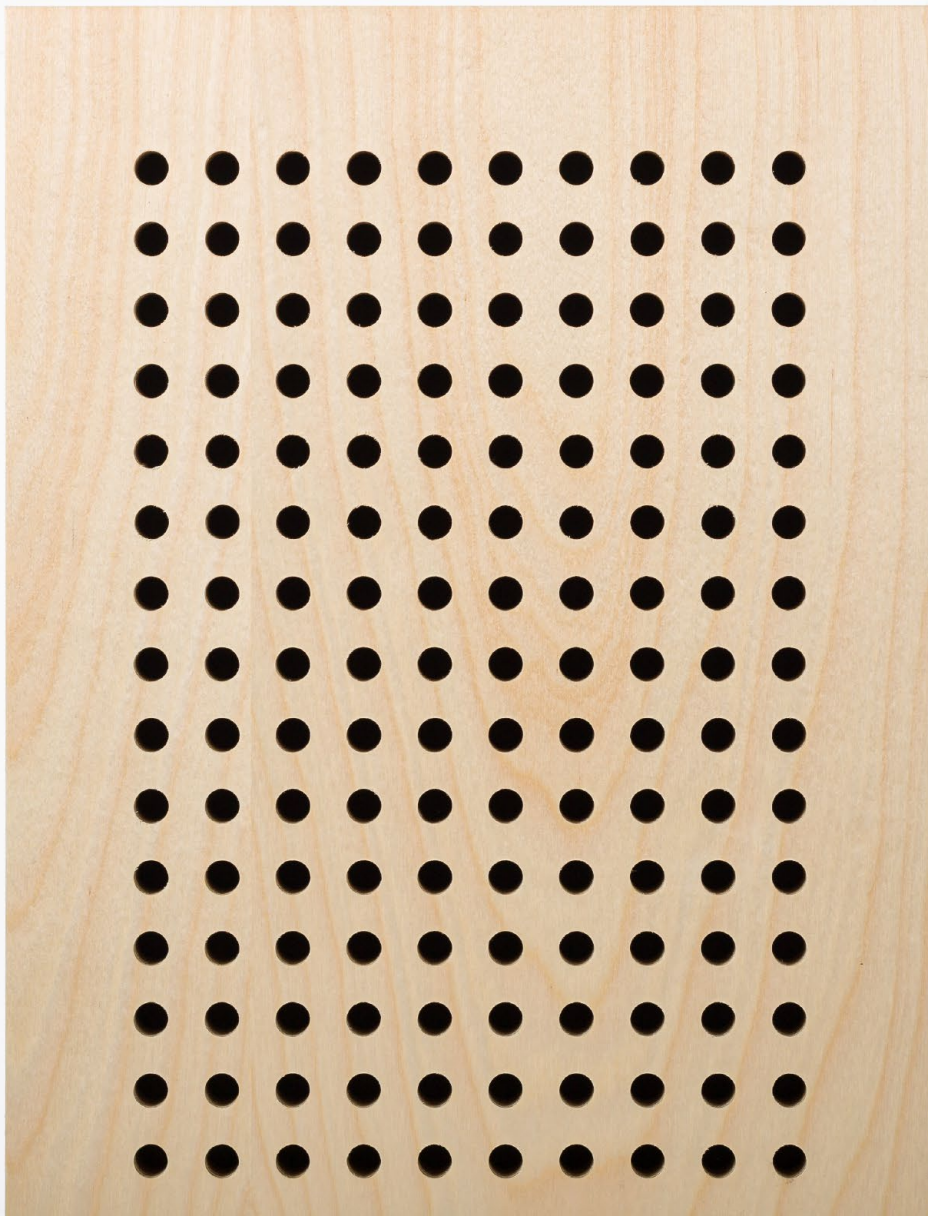


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## Perforated Plywood - P16-C

**Key features:**

Acoustic performance	Class C
Environmental factors	FSC certified upon request. Low emissions (E1 class)
Finishes	Birch Plywood
Formats	Sheets, made to measure
Perforation	8mm holes at 16mm centres (standard) Either to the edge of the panel or with a solid border



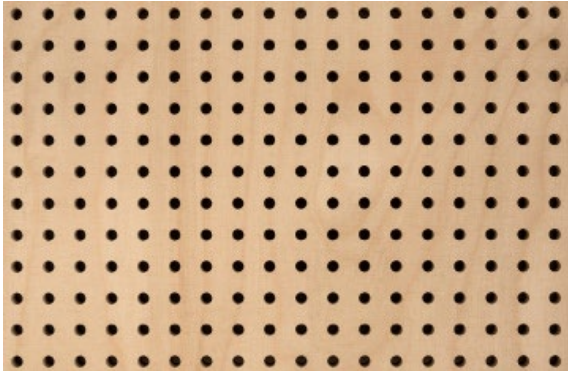




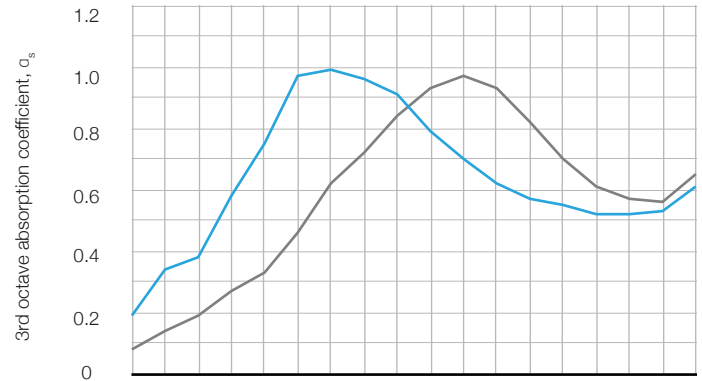


# Perforated Plywood P16-C datasheet

8mm holes at 16mm centres



Absorption data for Perforated 16/16/8mm (EN 354: 2003)



Perforated 16C (8mm holes) absorption	$\alpha_w$	Class	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz
70mm void with 50mm 40kg/m <sup>3</sup> mineral fibre	0,65 (LM)	C	0,30	0,75	0,95	0,70	0,55	0,55
20mm void with 20mm 22.5/m <sup>3</sup> Polyester wool	0,65 (M)	C	0,15	0,35	0,75	0,95	0,70	0,60

## Specification checklist

Fire performance	B-s1-d0 components on request
Standard Measurements	3030 x 1280 mm
Standard Measurements	2400 x 1200 mm (fire impregnated)
Made to measure	On request
Perforation patterns	16mm x 16mm x 6mm 16mm x 16mm x 8mm 32mm x 32mm x 6mm 32mm x 32mm x 8mm
Thickness	18mm
Weight	12kg/m <sup>2</sup>
Board	Class B Birch face Plywood/Fire impregnation treated Birch face Plywood
Can be applied to curved surfaces	Yes, curving panels available
Clear lacquer sheen levels	10% for fire retardant lacquer
Wall mouting	Softwood battens at 600mm centres. Split batten system
Ceiling mounting	Concealed T-Grid. Enquire for bespoke options
Panel backing	Black fleece tissue inside the panel
Typical absorption used	50mm mineral fibre
Trims , doors and finishing details available	Yes



Only for Microperf  
and Nanoperf.

## Acoustic cupboard doors and furniture panels



### Cupboard doors

Class c absorption is typical.  
Considerations for design:

- Max height 3000mm
- Max width 600mm
- Distance between hinges max 350mm
- Top and bottom hinges 125mm from edge
- Double hing at the top
- Magnets - 3 across the height
- For high cupboards- one shelf must be permanent at half way, with the edge on plane with the body

### Cupboard sliding doors

Easily installed with a top-running rail fixed directly under the door lintel with a guide at the bottom.

### Acoustic sliding doors

Made to measure and double sided with a layer of polyester wool in the core. Typically 60mm thickness.

### Faux acoustic doors

We provide thin sheets for matching materials for use as normal door covers. Typically 11mm.







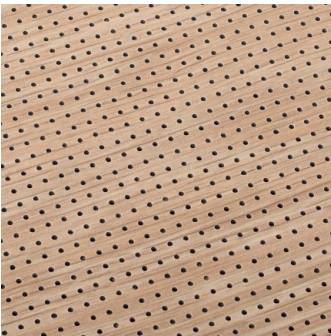


Images for  
guidance only as  
variations occur  
in natural timber.

## Finishes

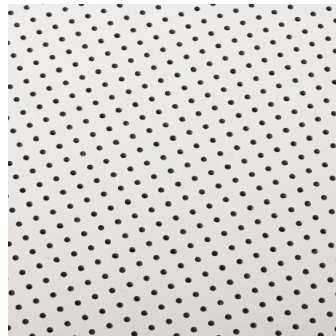
### HPL Wood effect

- Hundreds of finishes
- Scratch resistant
- UV resistant
- FSC available
- Fire performance



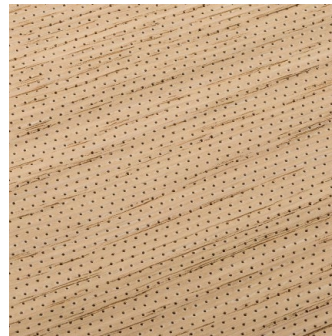
### HPL Colours

- Many colours & textures
- Scratch resistant
- UV resistant
- FSC available
- Fire performance



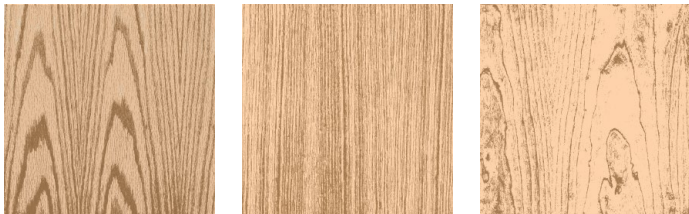
### Real wood veneer

- Oil or lacquer finishing
- Match other joinery
- Stain options
- FSC available
- Fire performance



### Birch Plywood

- Lacquer finishing
- Match other joinery
- Stain options
- FSC available
- Fire performance



### Veneer cuts explained

The type of veneer cut changed the pattern of the grain. Look out for this in the veneer finish pages.



*Crown Cut*

*Quarter Cut*

*Rotary Cut*

### Finish matching and non-standard options

As pictured right, finish matching with reference flooring samples. Minimum orders may apply for custom options.





Greater consistency across the project for Microperforated and Nanoperforated.

# Mixmatch veneers for perforated sheets - the new standard

**Benefits**

- Greater consistency and quality across the project due to advanced industrial sorting
- Figuring (interesting patten in the grain) is maintained
- Shorter lead times for Microperforated and Nanoperforated panels
- FSC certified
- Matching edging available
- Full finishing range still available with lacquer or tinted oils

**An advanced mix matching technique**

A challenge with real wood veneers can be achieving consistency across the project, from sheet to sheet. Crown cut veneer provides vibrant patterns in the grain but at the expense of consistency between different sheets. Quarter cut veneer provides a characteristic straight-grain pattern with increased consistency yet can look flat and less vibrant by comparison. We address this by using a veneer with mainly crown cut with some quarter cut which is sorted using advanced industrial processing to mix match in a randomised fashion. The result delivers the both of both worlds.

**Our new standard for Microperforated and Nanoperforated**

This veneer most benefits our perforated ranges with large areas of visible grain. Therefore a stock is now maintained for Microperforated and Nanoperforated panels in our most popular finishes - Oak and Walnut. Our Rotary Cut Birch naturally provides high consistency already.

Oak Mixmatch full sheet example 1



Oak Mixmatch full sheet example 2



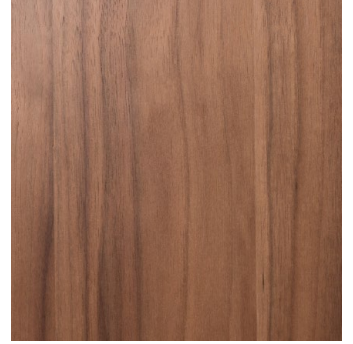
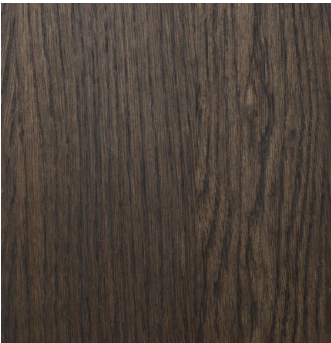
Walnut Mixmatch full sheet example 1



Walnut Mixmatch full sheet example 2





**Veneer with clear lacquer***Ash**Oak**Rotary Cut Birch**Walnut***Veneer with tinted oil***Pure Oak**Fair Oak**Fair White Oak**Oak Gris**Black Mist Oak**Oak Kakoa**Pure Ash**Fair Ash**Fair White Ash**Ash Gris**Black Mist Ash**Ash Kakoa*



### Veneer with tinted oil (continued)



*Fair Birch*



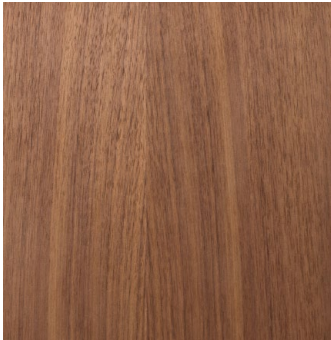
*Fair White Birch*



*Birch Gris*



*Black Mist Birch*



*Pure Walnut*



*Stone Walnut*



*Black Mist Walnut*



*Intense Black Walnut*

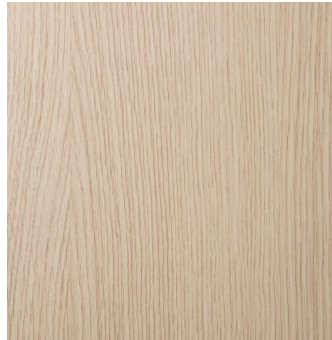
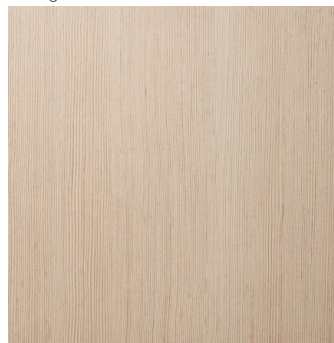
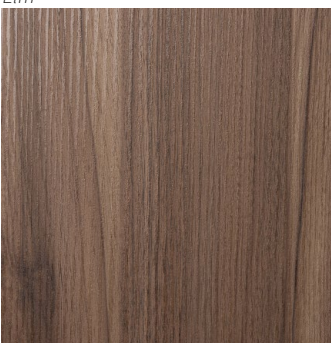
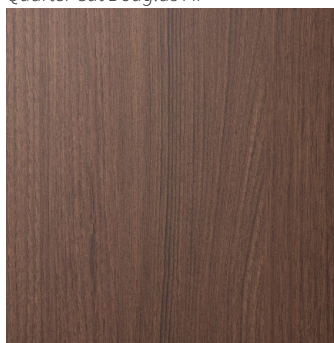
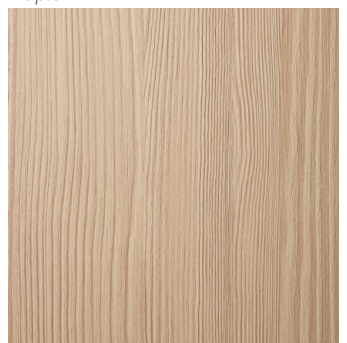
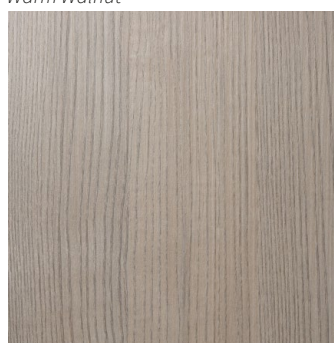
### Veneer with pre-colour plus tinted oil (additional cost)

For further colour modification, we can include a pre-colour before applying tinted oil.

The project below at Berkeley Square, London, received a pale stain then dark oil on Oak veneer, to achieve a grey/brown colour.



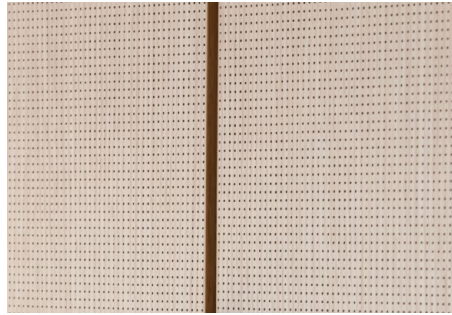
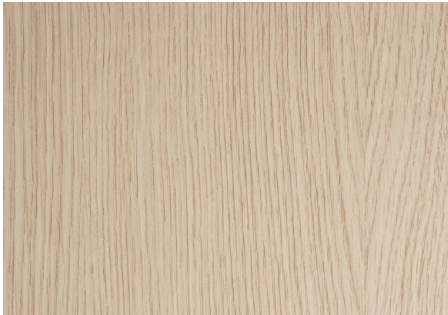


**HPL Wood effect***Natural Oak**Rustic Oak**Light Oak**White Washed White Oak**Nobel Oak**Vintage Fumed Oak**Black Stained Oak**Manzano**Elm**Quarter Cut Douglas Fir**Birch**Maple**Natural Walnut**Warm Walnut**Olmo**Ash**White Washed Ash**Grey Ash**Grey Mocha**Grey Wash*



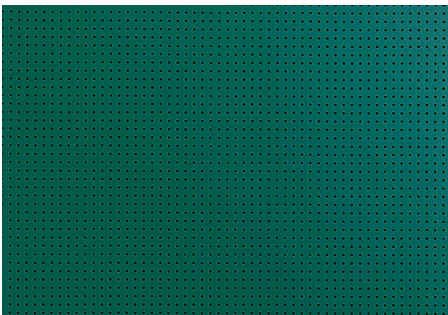
Scratch, UV and  
impact-resistant.  
Timber effect or  
solid colours.  
>600,000m<sup>2</sup> in  
stock.

## High Pressure Laminates overview



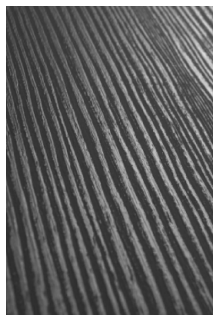
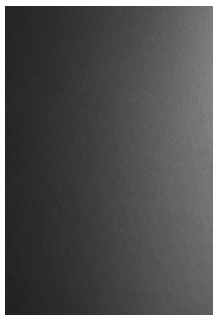
### Timber effect

As well as the standard finishes overleaf, many more options are available. These are high quality finishes with complimentary texture.



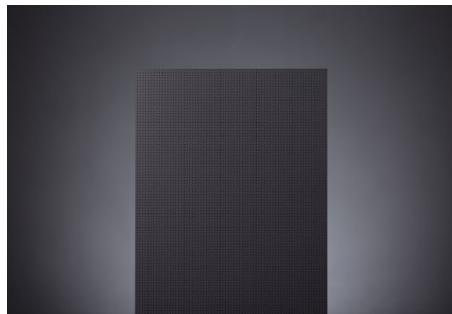
### Colours

A wide range of colours are available. Talk to us if you have specific NCS, RAL or Pantone requirements.



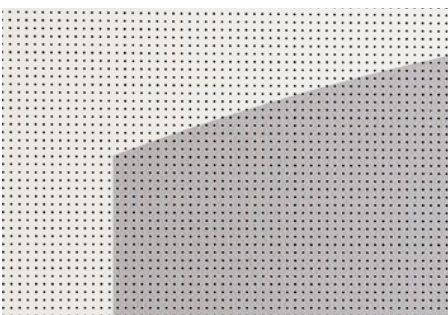
### Textures

Each of the timber effect finishes has a pre-selected texture to best suit the character of the species it represents. Solid colours are usually a satin finish and on special request, Ultra Matt finishes are available as mentioned below.



### New: Ultra Matt, anti-fingerprint HPL

A dramatic and contemporary look. Highly resistant to scratches and fingerprints, unlike other matt surfaces.

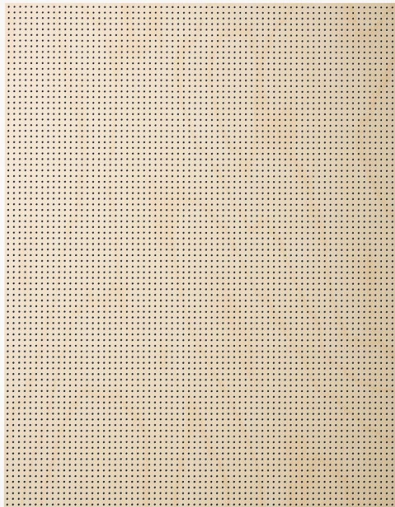


### New: Printed HPL

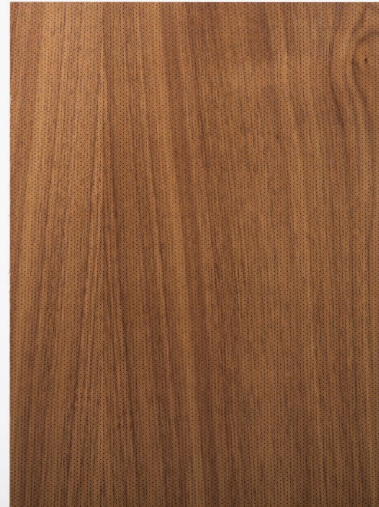
Enables uniquely multifunctional solutions like sound absorbing cupboard doors with imagery, branding or signage; still maintaining the abrasion resistance of normal HPL.



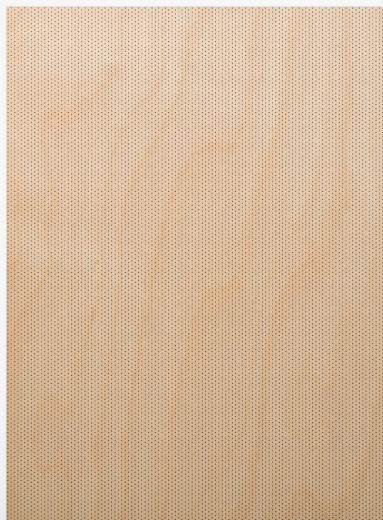
*Microperforated MP-3  
Birch HPL*



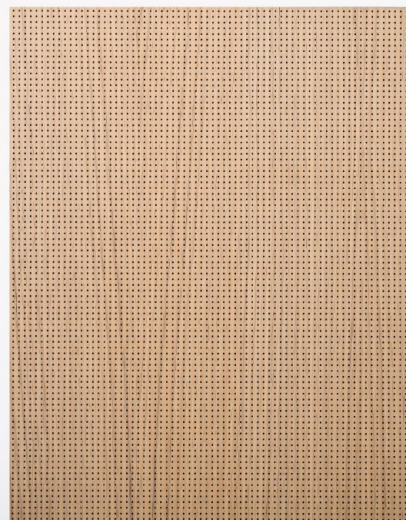
*Nanoperforated NP-2  
Walnut veneer with clear lacquer*



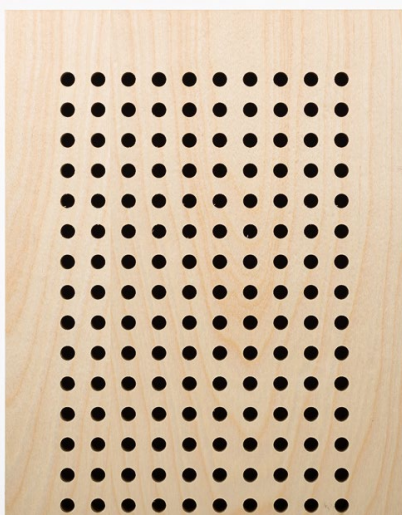
*Nanoperforated NP-2  
Birch veneer with lacquer*



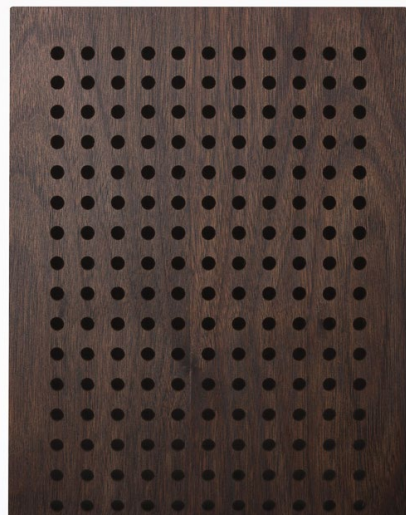
*Microperforated MP-3  
Fair White Oak veneer*



*Perforated P16-C  
Birch Ply*

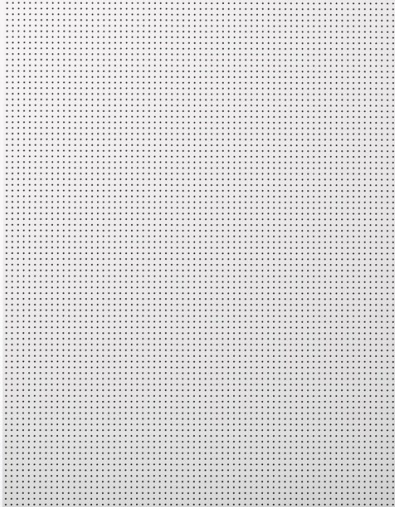


*Perforated P16-C  
Intense Black Walnut veneer*

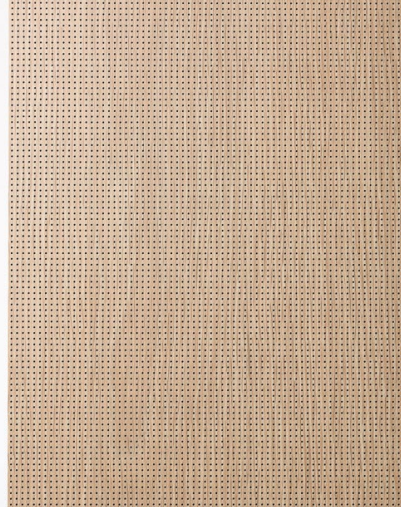




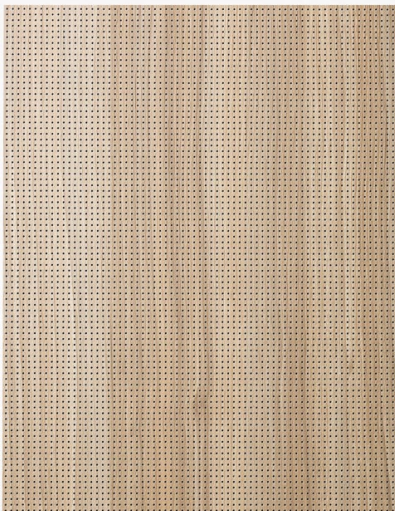
*Microperforated MP-3  
White HPL*



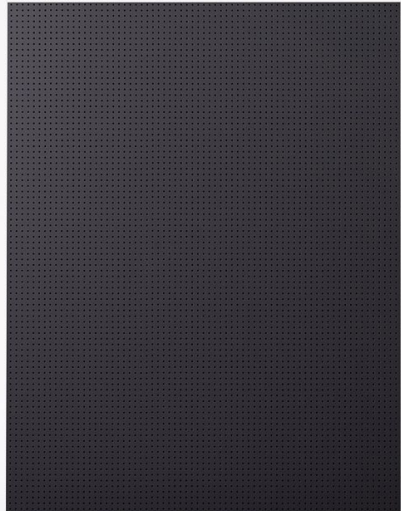
*Microperforated MP-3  
Natural Oak HPL*



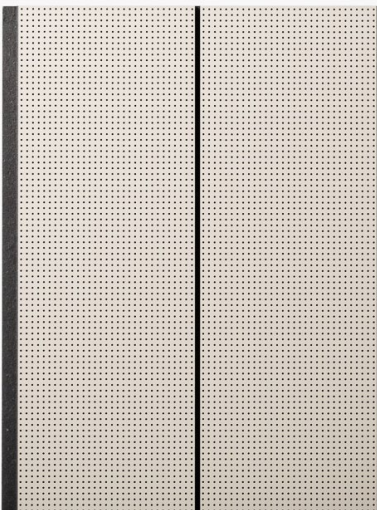
*Microperforated MP-3  
Manzano HPL*



*Microperforated MP-3  
Ultramatt Black HPL*



*Microperforated MP-3 plank  
Off-white HPL*



*Nanoperforated NP-2  
Oak veneer with lacquer*

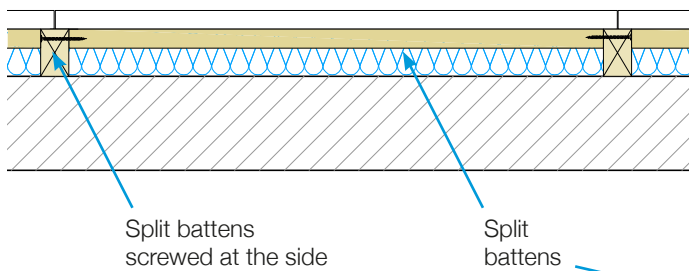




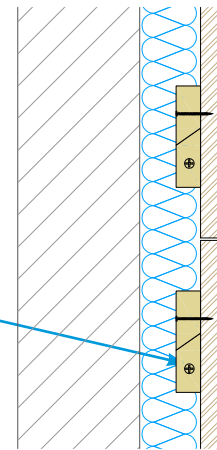
## Installation - walls

To be mounted on a wooden frame with invisible 45° split battens. The wooden frame is filled with sound absorbing mineral wool (e.g. Rockwool at 45kg/m<sup>3</sup>). We advise you to leave a space of 2.5 mm per meter in height and width around the panels to allow expansion. The invisible splice joints are screwed on the back of the panels. The acoustic absorbing panels are mounted on the other half of the splice joint wall side.

**Batten fixing plan detail**

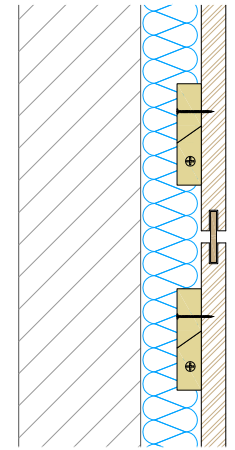


**Typical joint detail**

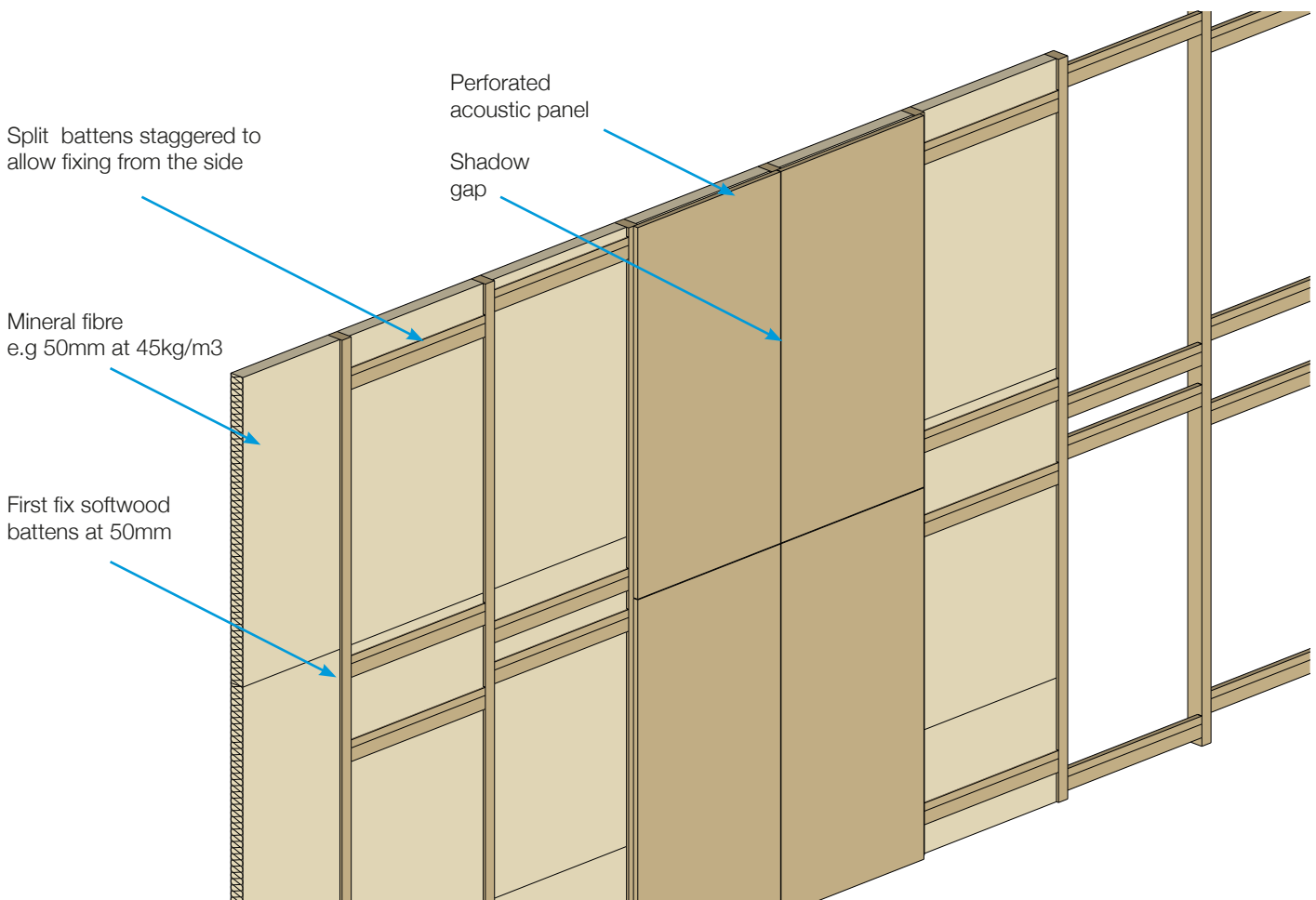


Standard joint

**Typical joint detail**



Loose tongue joint







**STIL ACOUSTICS**

[info@stil-acoustics.co.uk](mailto:info@stil-acoustics.co.uk)  
[www.stil-acoustics.co.uk](http://www.stil-acoustics.co.uk)