



PERFORATED PLASTERBOARD
ACOUSTIC PERFORMANCE WITH DESIGN FREEDOM

CSR





MAKE AN IMPRESSION



Excellence in design is achieved with a balance of aesthetics and functionality.

The Potter Interior Systems range of perforated plasterboard allows architects and designers to create beautiful ceilings and walls with high levels of acoustic performance.

The panel perforations together with acoustic fabric lining and insulation, where used, reduce echo and noise reverberation to create more comfortable environments for work and leisure.

Developed by worldwide plasterboard specialist, Saint-Gobain. These products also feature innovative Activ'Air technology to help improve indoor air quality.

Potter Interior Systems has developed exclusive relationships with leading manufacturers to offer the widest selection of high quality plasterboards to meet a range of performance requirements.

The versatile range features:

- Five Rigitone options with edge to edge pattern layouts for a monolithic, seamless design
- Three Protone contemporary grid-style patterns for exceptional acoustic performance
- Gyprock Standard 6mm Round has a traditional pattern layout with economical sound attenuation

ACOUSTIC CONTROL

Good acoustic design includes control of both sound transmission and absorption. The aim is to control the sound within a room with absorbing surfaces reducing the amount of sound bouncing back.

The total amount of sound absorption in a room and hence the reverberation time, is critically important for speech intelligibility, privacy and general noise levels.

Our range of perforated plasterboard provides high levels of reverberation control with greater design freedom.

- Suitable for both ceilings and walls
- Plasterboard provides ease of installation and versatility
- The surface is more durable than mineral fibre or similar acoustic materials

Acoustic Assessment

A material's sound absorbing properties are expressed by the noise reduction coefficient (NRC), a simple measure that averages the absorption values over just a few frequencies.

NRC typically ranges from 0 (total reflection) to 1.00 (total absorption).

For perforated products, the NRC is dependent on

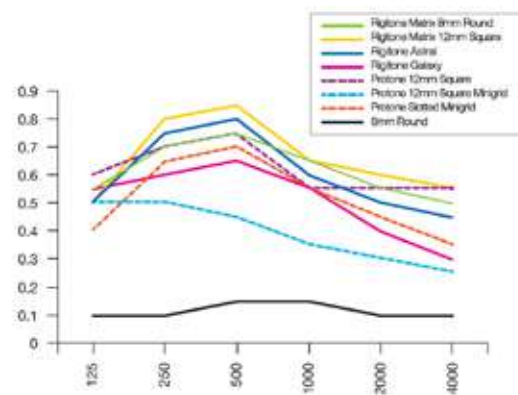
- The amount of open surface area
- Type of acoustic backing fabric
- Use of additional insulation material
- Depth of the air cavity (plenum) behind the lining

Boards in the Rigitone and Protone ranges were tested for sound absorption in CSIRO Melbourne and Auckland University laboratories. Testing was performed with air cavities of 200mm and in some cases 600mm.

It has also been tested with and without insulation. (50mm CSR Bradford glasswool batts at 14kg/m³).

PKA Acoustic Consulting provided complete acoustic predictions based on this data for the Rigitone and Protone ranges.

The acoustic absorption graph below shows the absorption coefficients for all boards in the perforated plasterboard range, with an uninsulated 200mm cavity installation.



NRC Value Summary

Perforated Pattern	Sheet Size (mm)	Sheet Thickness (mm)	Open Area %	Acoustic Fabric	Plenum (Air Cavity)					
					65mm		200mm		600mm	
					Empty	Batts*	Empty	Batts*	Empty	Batts*
Rigitone										
Matrix 8mm Round	1188 x 1998	12.5	15.5%	Yes	N/A	N/A	0.65	0.75	0.65	0.75
Matrix 12mm Square	1200 x 2000	12.5	23.0%	Yes	N/A	N/A	0.70	0.90	0.70	0.85
Matrix 15mm Round	1200 x 1980	12.5	19.6%	Yes	N/A	N/A	0.65	0.85	0.65	0.80
Astral	1188 x 1980	12.5	19.6%	Yes	N/A	N/A	0.65	0.85	0.65	0.80
Galaxy	1200 x 1960	12.5	10.0%	Yes	N/A	N/A	0.55	0.60	0.60	0.65
Protone										
12mm Square	1200 x 2400	12.5	16.0%	Yes	0.55	0.70	0.65	0.70	0.65	0.70
12mm Square Minigrid	1200 x 2400	12.5	6.0%	Yes	0.35	0.40	0.40	0.40	0.40	0.45
Slotted Minigrid	1200 x 2400	12.5	13.0%	Yes	0.45	0.60	0.60	0.60	0.55	0.60
Gyprock Standard										
6mm Round	1200 x 3600	13.0	8.3%	No	0.10	0.35	0.15	0.40	0.15	0.45

Bold values in all tables are test report data. Non-bold values are PKA's acoustic predictions.
 *Batts denotes that 50mm Bradford glasswool batts (14kg/m³) were included in the cavity.
 Copies of the test reports are available by contacting specsupport@potters.co.nz.



PROTONE 12MM SQUARE

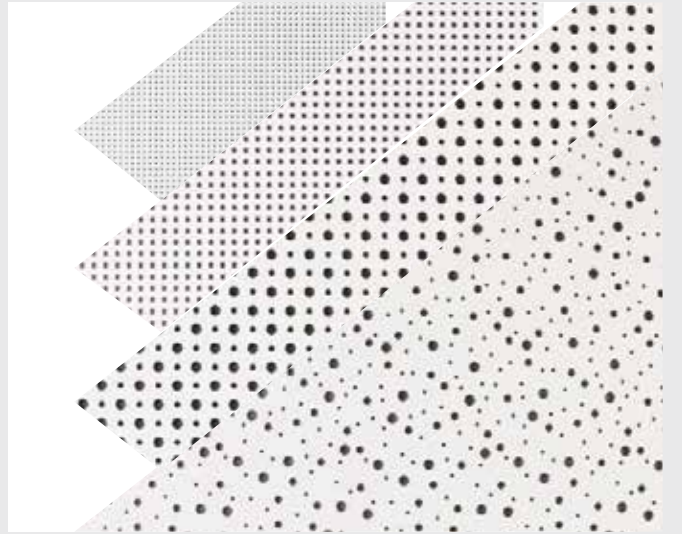
THREE CORE RANGES

Rigitone™ Perforated Range

Manufactured by worldwide plasterboard specialist, Saint-Gobain, Rigitone is purpose built to provide exceptional acoustic control with ultimate design freedom.

High levels of acoustic absorption are achieved through a combination of perforation patterns and a highly effective acoustic fabric backing which also prevents dust from the ceiling entering the room and masks the ceiling framework.

The edges of Rigitone boards are square cut and pre-primed for a unique installation method using ready-mixed Rigitone Filler, creating a continuous, seamless finish.



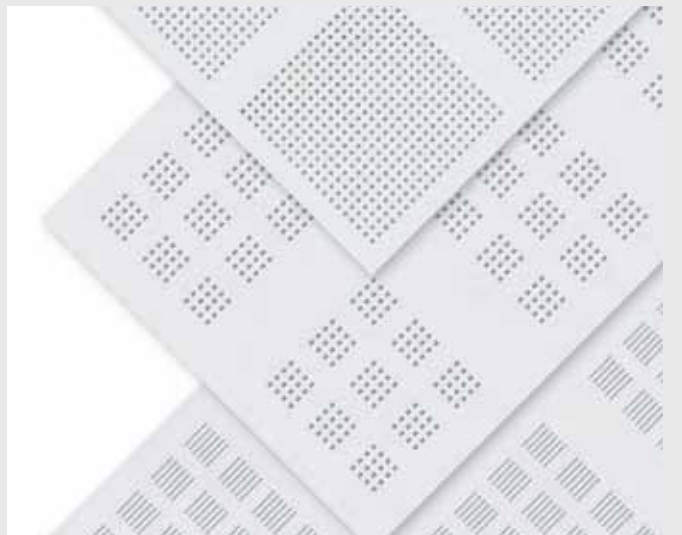
Protone™ Perforated Range

Contemporary grid-style perforated patterns for exceptional acoustic performance. Flexible and standard board options with built-in Activ'Air technology.

The range features three contemporary perforation patterns, each with different percentages of open area to meet most acoustic application requirements.

All four edges of Protone perforated plasterboards are recessed to make flush jointing quicker and easier without the need for butt joints between full panels.

The availability of seamless access panels, ensures easy access to the ceiling cavity while maintaining pattern continuity.

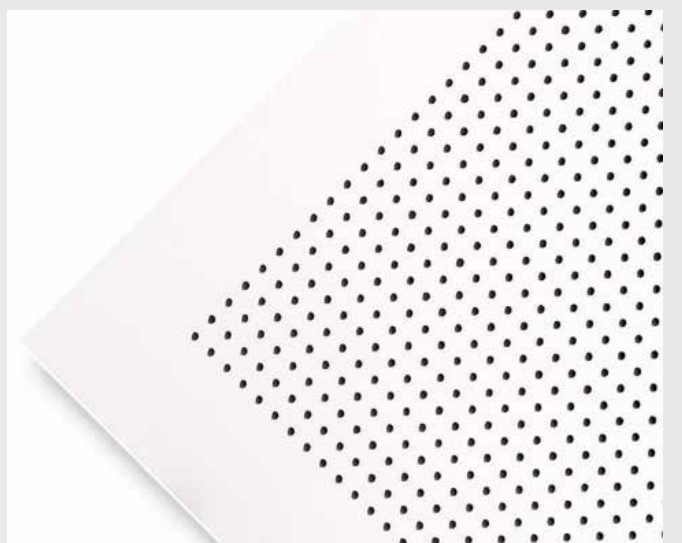


Gyprock Standard 6mm Round

The traditional Gyprock perforated board product that has been extensively used throughout New Zealand for many years. It provides an economical aesthetic solution for ceilings or walls.

The design features six large rectangular groupings per sheet, each with 2,100 x 6mm diameter perforations at 15mm centres to provide an open area of 8.3%.

Standard 6mm Round perforated plasterboard is jointed with a three coat system and sanded smooth prior to decoration.





RIGITONE MATRIX 8MM ROUND

ACTIV AIR

For Cleaner Indoor Environments

Many materials, such as particleboard, furniture, carpets and paint emit formaldehyde, one of the most prevalent VOCs.

This means that high concentrations of formaldehyde, which has been classified as a known carcinogen by The World Health Organisation can frequently be found in the air we breathe in many indoor spaces.

Activ'Air is a patented technology that converts formaldehyde into non-harmful inert compounds that are permanently locked in the board and cannot be released back into the air.

Controlled testing has shown that Activ'Air can reduce the concentration of formaldehyde within an environment by up to 60% when installed in ceilings, even when there is continuous airflow containing formaldehyde.

Installing ceiling and wall linings containing Activ'Air technology will have an enduring impact on air quality and will improve the environment for people working and living in the space.

Acoustic Fabric

Rigitone and Protone perforated plasterboard is supplied with a highly effective acoustic fabric that dramatically improves the acoustic performance of the board. This unique fabric is exclusive to Potter Interior Systems and apart from improved acoustic performance, it provides other benefits:

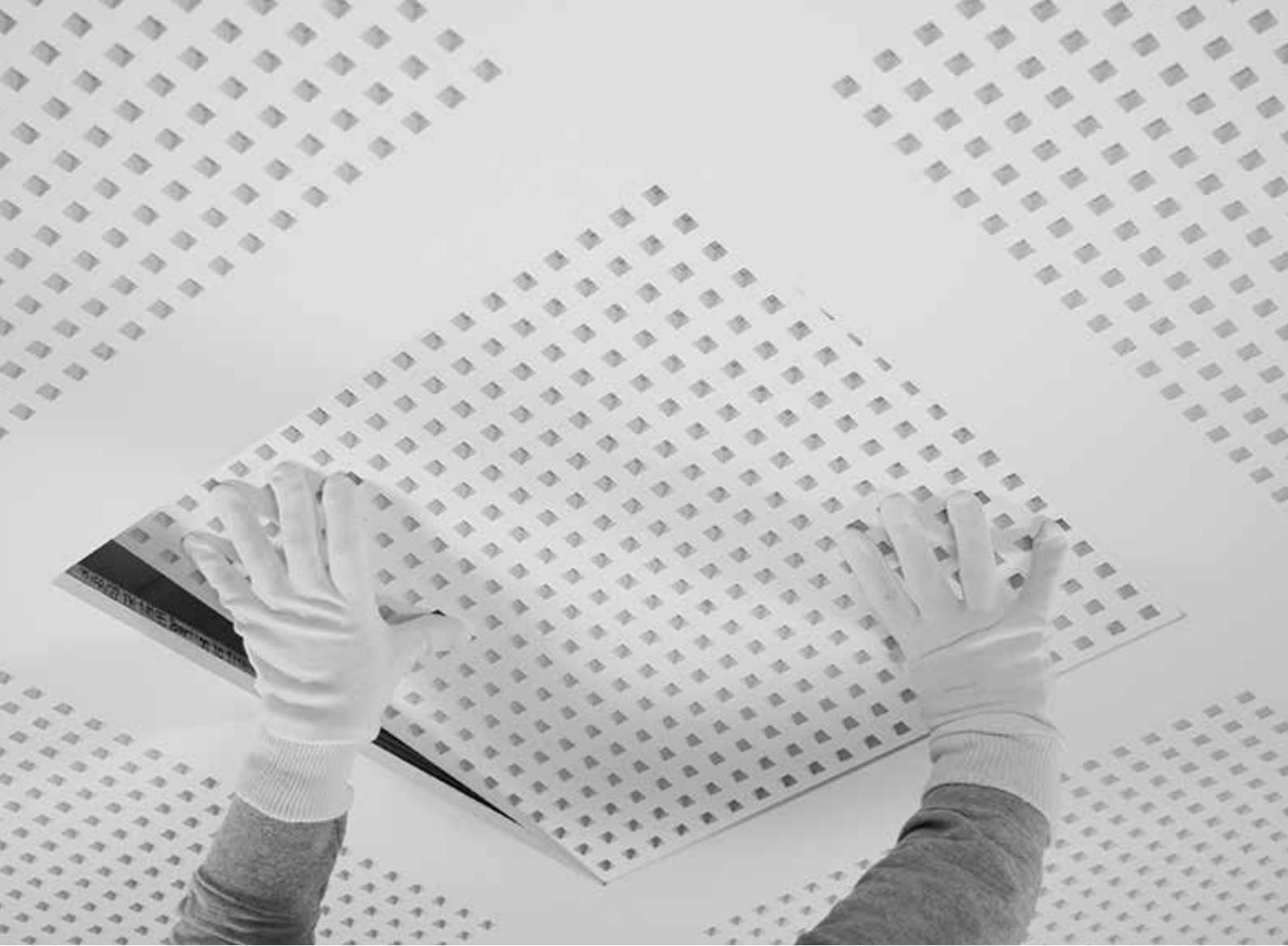
- Eliminates dust from ceiling cavities falling into the room
- Masks the ceiling framework so it can't be seen from below through the perforations
- Contributes to increased fire protection

Applications

Perforated plasterboard is not recommended for installation in areas subject to greater than 70% relative humidity including indoor swimming pools and bathrooms.

Protone boards support point loads up to 3kg. Adequate independent or additional support must be provided for services and lighting systems that exceed this limit.





RIGITONE + PROTONE ACCESS PANELS

Access panels are designed to allow easy access for inspection and maintenance of services located above perforated plasterboard ceilings.

Access panels are available in each of the Rigitone and Protone board patterns.

These consist of a plasterboard frame that is easily set into the ceiling and a 510mm x 510mm hatch piece with a matching perforation pattern that fits neatly into the frame for a seamless look.







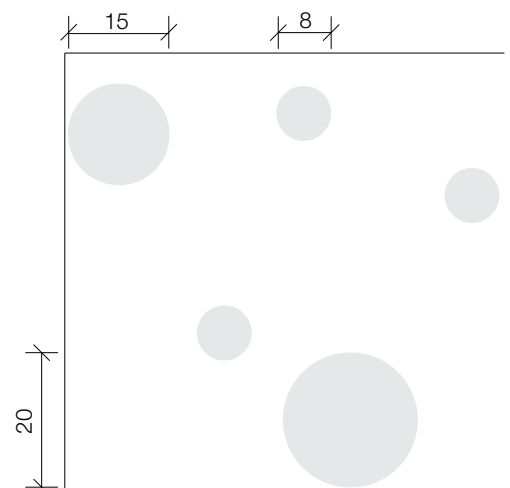
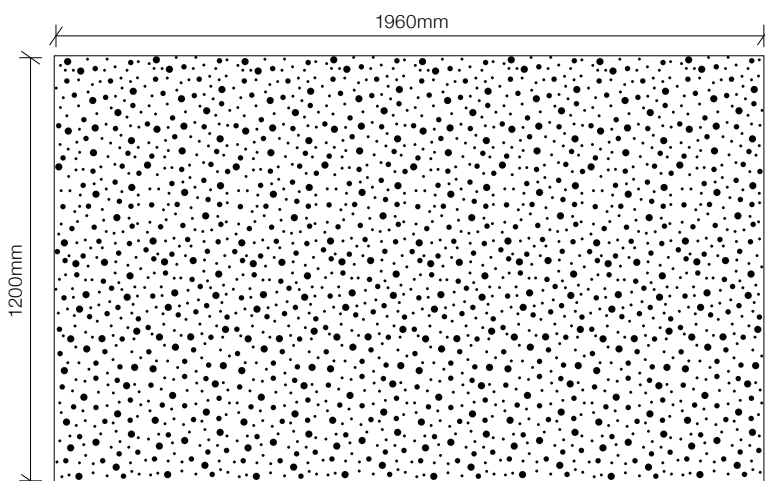
RIGITONE GALAXY

(8-15-20 SUPER)

An irregular scattered pattern consisting of 8mm, 15mm and 20mm round perforations, providing a 10% open area. Supplied with a white acoustic fabric backing.

Galaxy 10% open area				Sound Absorption Coefficient a_p					
Plenum (Air Cavity)	Plenum Insulation	a_w	NRC	Octave Band Centre Frequency (Hz)					
				125	250	500	1000	2000	4000
200mm	Empty	0.45 (L)	0.55	0.55	0.60	0.65	0.55	0.40	0.30
	50mm glasswool (14kg/m ³)	0.55 (L)	0.60	0.60	0.65	0.60	0.60	0.45	0.45
600mm	Empty	0.60	0.60	0.60	0.60	0.60	0.60	0.50	0.50
	50mm glasswool (14kg/m ³)	0.65	0.65	0.60	0.60	0.65	0.70	0.55	0.55

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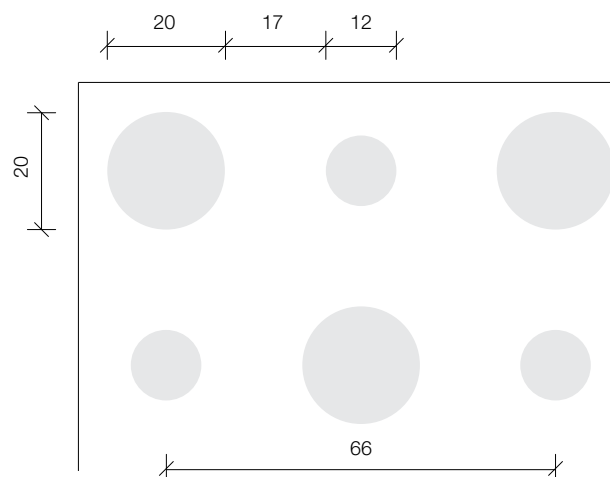
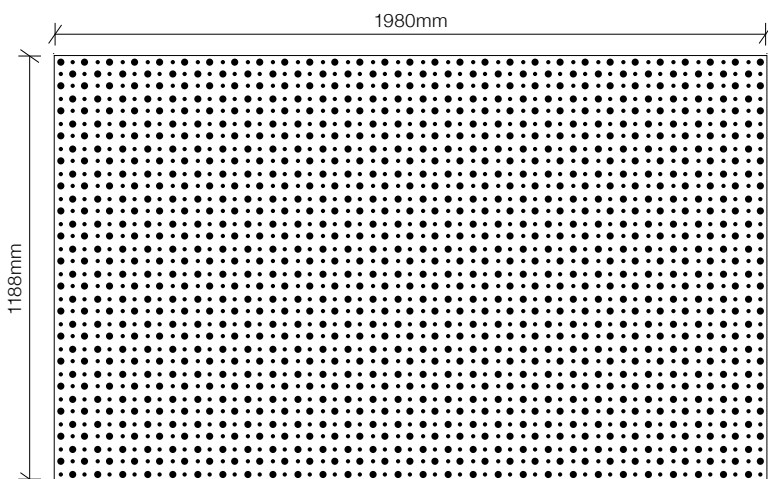
RIGITONE ASTRAL

(12-20/66)

A regularly staggered pattern consisting of 12mm and 20mm round perforations spaced at 33mm centres, providing a 19.6% open area. Supplied with a white acoustic fabric backing.

Astral 19.6% open area				Sound Absorption Coefficient a_p					
Plenum (Air Cavity)	Plenum Insulation	a_w	NRC	Octave Band Centre Frequency (Hz)					
				125	250	500	1000	2000	4000
200mm	Empty	0.55 (LM)	0.65	0.50	0.75	0.80	0.60	0.50	0.45
	50mm glasswool (14kg/m ³)	0.80 (L)	0.85	0.70	0.85	0.85	0.85	0.70	0.70
600mm	Empty	0.65	0.65	0.60	0.65	0.65	0.65	0.60	0.50
	50mm glasswool (14kg/m ³)	0.80	0.80	0.70	0.70	0.80	0.85	0.75	0.75

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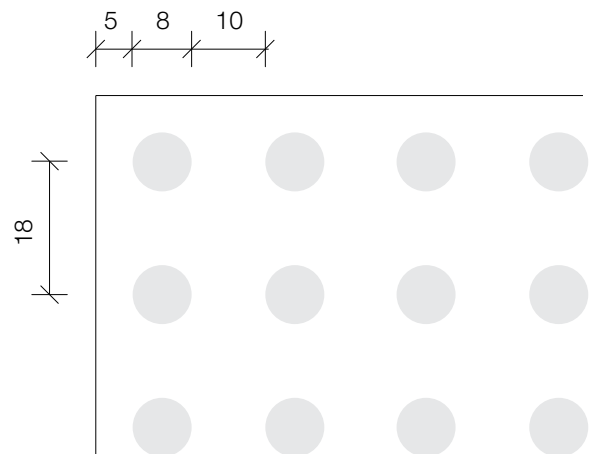
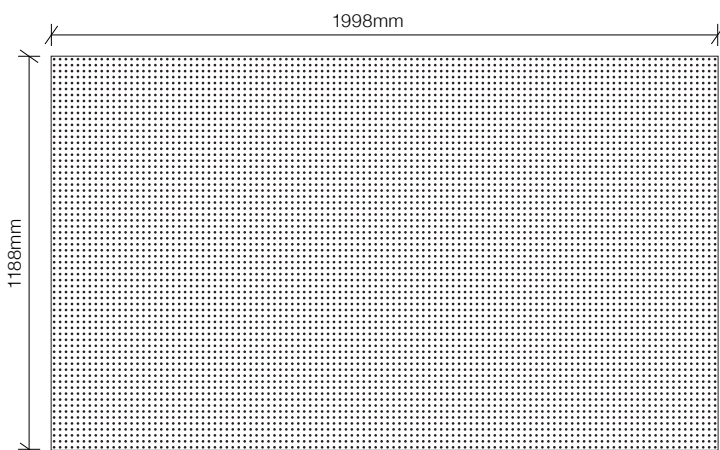
RIGITONE MATRIX

8MM ROUND (8/18)

A pattern of 8mm round perforations spaced at 18mm centres, providing a 15.5% open area. Supplied with a white acoustic fabric backing.

Matrix 8mm Round 15.5% open area				Sound Absorption Coefficient a_p					
Plenum (Air Cavity)	Plenum Insulation	a_w	NRC	Octave Band Centre Frequency (Hz)					
				125	250	500	1000	2000	4000
200mm	Empty	0.60(L)	0.65	0.55	0.70	0.75	0.65	0.55	0.50
	50mm glasswool (14kg/m ³)	0.75(L)	0.75	0.70	0.80	0.75	0.75	0.70	0.70
600mm	Empty	0.65(L)	0.65	0.60	0.70	0.65	0.60	0.60	0.55
	50mm glasswool (14kg/m ³)	0.75	0.75	0.70	0.75	0.70	0.70	0.75	0.75

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RIGITONE MATRIX

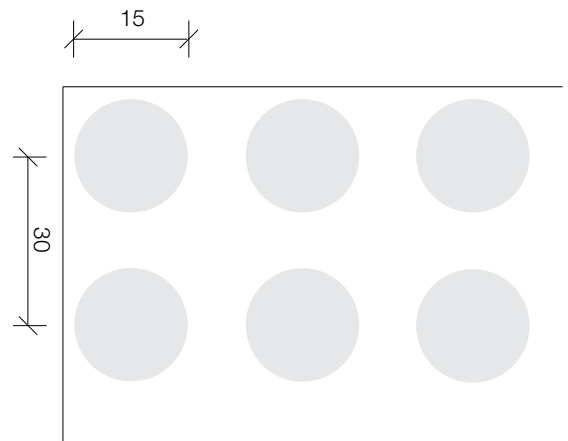
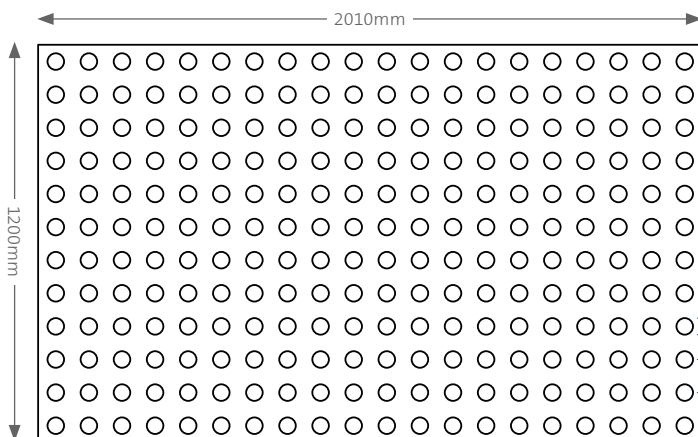
15MM ROUND (15/30)

A regular pattern of 15mm round perforations at 30mm centres combine to give Class C sound absorption and 19.6% perforated area. Supplied with white acoustic fabric backing.

An access panel consisting of a frame and matching 510mm x 510mm hatch is available.

Matrix 19.6% open area				Sound Absorption Coefficient a_s					
Plenum (Air Cavity)	Plenum Insulation	a_w	NRC	Octave Band Centre Frequency (Hz)					
				125	250	500	1000	2000	4000
200mm	Empty	0.55(LM)	0.65	0.50	0.75	0.80	0.60	0.50	0.45
	50mm glasswool (14kg/m ³)	0.80(L)	0.85	0.70	0.85	0.85	0.85	0.70	0.70
600mm	Empty	0.65	0.65	0.60	0.65	0.65	0.65	0.60	0.50
	50mm glasswool (14kg/m ³)	0.80	0.80	0.70	0.70	0.80	0.85	0.75	0.75

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PROTONE 12MM SQUARE



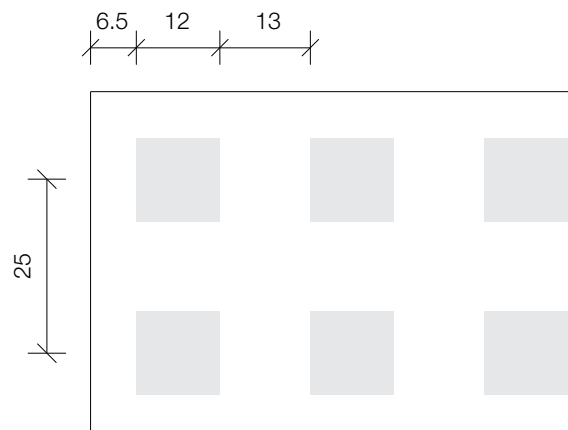
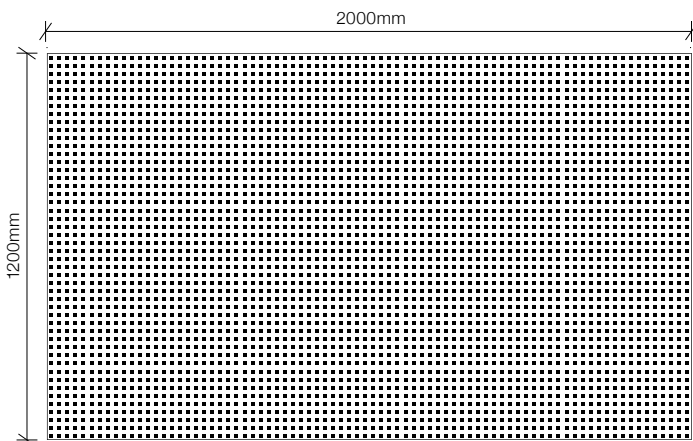
RIGITONE MATRIX

12MM SQUARE (12/25Q)

A pattern of 12mm square perforations spaced at 25mm centres, providing a 23% open area. Supplied with a white acoustic fabric backing.

Matrix 12mm Square 23% open area				Sound Absorption Coefficient a_p					
Plenum (Air Cavity)	Plenum Insulation	a_w	NRC	Octave Band Centre Frequency (Hz)					
				125	250	500	1000	2000	4000
200mm	Empty	0.65(L)	0.70	0.50	0.80	0.85	0.65	0.60	0.55
	50mm glasswool (14kg/m ³)	0.85(L)	0.90	0.70	0.90	0.90	0.90	0.80	0.75
600mm	Empty	0.65(L)	0.70	0.65	0.70	0.65	0.70	0.65	0.55
	50mm glasswool (14kg/m ³)	0.90	0.85	0.70	0.70	0.85	0.95	0.90	0.95

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PROTONE

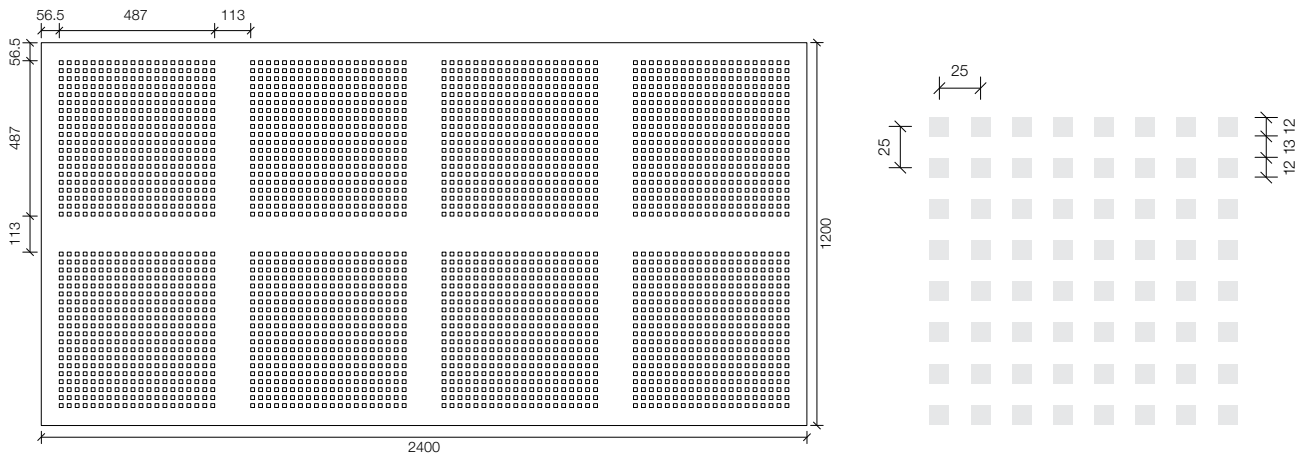
12MM SQUARE (41)

Eight large square groupings per sheet, each with 400 x 12mm square perforations at 25mm centres, providing a 16% open area. Supplied with white acoustic fabric backing.

An access panel consisting of a frame and matching. 510mm x 510mm hatch is available.

Protone 12mm Square 16% open area				Sound Absorption Coefficient a_p					
Plenum (Air Cavity)	Plenum Insulation	a_w	NRC	Octave Band Centre Frequency (Hz)					
				125	250	500	1000	2000	4000
65mm	Empty	0.55	0.55	0.20	0.35	0.55	0.75	0.60	0.40
	50mm glasswool (14kg/m ³)	0.70	0.70	0.40	0.65	0.80	0.70	0.65	0.55
200mm	Empty	0.60(L)	0.65	0.60	0.70	0.75	0.55	0.55	0.55
	50mm glasswool (14kg/m ³)	0.70	0.70	0.65	0.70	0.70	0.65	0.65	0.60
600mm	Empty	0.65(L)	0.65	0.65	0.70	0.65	0.60	0.60	0.65
	50mm glasswool (14kg/m ³)	0.70	0.70	0.70	0.65	0.70	0.70	0.70	0.70

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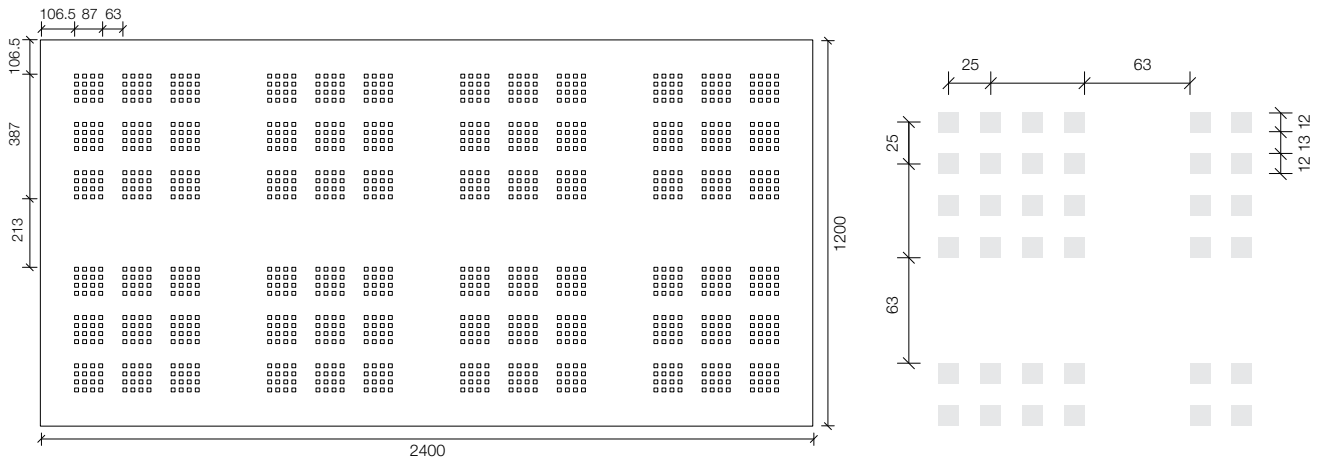
PROTONE 12MM SQUARE MINIGRID (47)

Eight large square groupings per sheet, each with nine mini grids of 16 x 12mm square perforations at 25mm centres. This subtle pattern provides an open area of 6%. Supplied with white acoustic fabric backing.

An access panel consisting of a frame and matching 510mm x 510mm hatch is available.

Protone 12mm Square Mini Grid 6% open area				Sound Absorption Coefficient a_p					
Plenum (Air Cavity)	Plenum Insulation	a_w	NRC	Octave Band Centre Frequency (Hz)					
				125	250	500	1000	2000	4000
65mm	Empty	0.35	0.35	0.20	0.25	0.35	0.45	0.35	0.20
	50mm glasswool (14kg/m ³)	0.35(L)	0.40	0.35	0.45	0.50	0.40	0.30	0.25
200mm	Empty	0.35(L)	0.40	0.50	0.50	0.45	0.35	0.30	0.25
	50mm glasswool (14kg/m ³)	0.40(L)	0.40	0.55	0.50	0.45	0.40	0.30	0.30
600mm	Empty	0.40(L)	0.40	0.55	0.50	0.35	0.40	0.35	0.35
	50mm glasswool (14kg/m ³)	0.45	0.45	0.60	0.45	0.45	0.45	0.35	0.40

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PROTONE

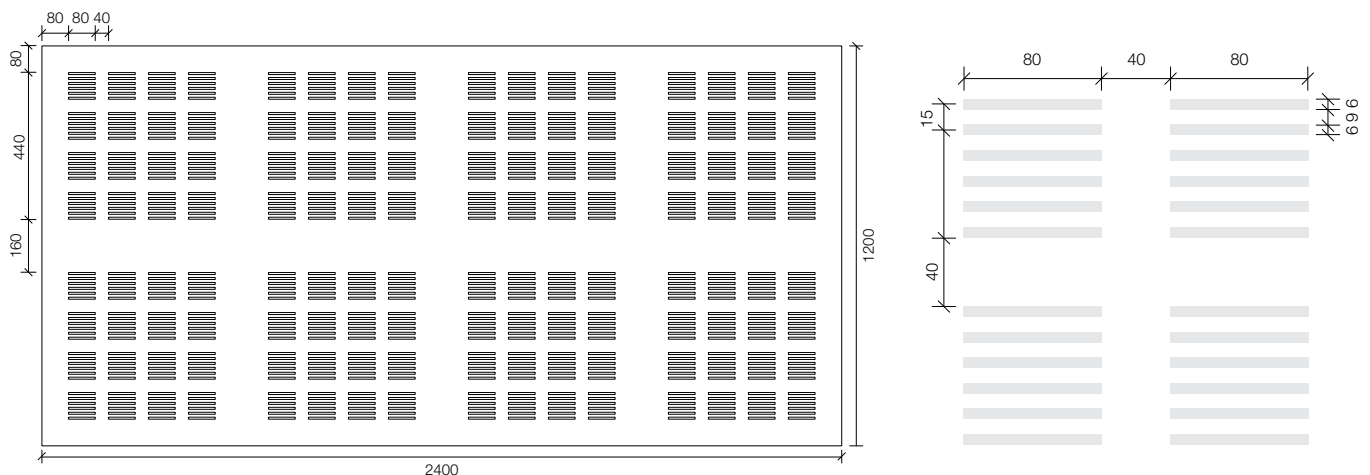
SLOTTED MINIGRID (6)

Eight large square groupings per sheet, each with 16 mini grids of six 6mm x 80mm slot perforations. This contemporary design provides 13% open area. Supplied with white acoustic fabric backing.

An access panel consisting of a frame and matching 510mm x 510mm hatch is available.

Slotted Minigrid 13% open area		Sound Absorption Coefficient a_p							
Plenum (Air Cavity)	Plenum Insulation	a_w	NRC	Octave Band Centre Frequency (Hz)					
				125	250	500	1000	2000	4000
65mm	Empty	0.45	0.45	0.15	0.25	0.45	0.55	0.45	0.30
	50mm glasswool (14kg/m ³)	0.55(L)	0.60	0.45	0.60	0.70	0.60	0.50	0.40
200mm	Empty	0.50(L)	0.60	0.40	0.65	0.70	0.55	0.45	0.35
	50mm glasswool (14kg/m ³)	0.55(L)	0.60	0.60	0.65	0.60	0.55	0.50	0.40
600mm	Empty	0.50(L)	0.55	0.65	0.60	0.55	0.50	0.45	0.40
	50mm glasswool (14kg/m ³)	0.60	0.60	0.65	0.55	0.60	0.60	0.55	0.45

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PROTONE PLAIN PLASTERBOARD

Plain plasterboard to create consistency with Protone perforated plasterboard.

To use in spaces around or between perforated plasterboard to ensure same texture, tone, joins and size throughout. Ideal for light and fixture areas. Four recessed edge.





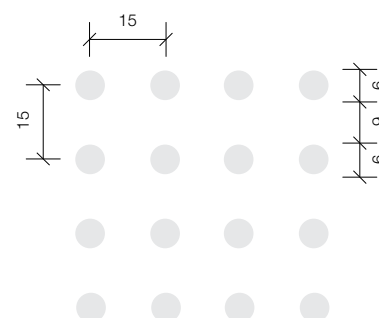
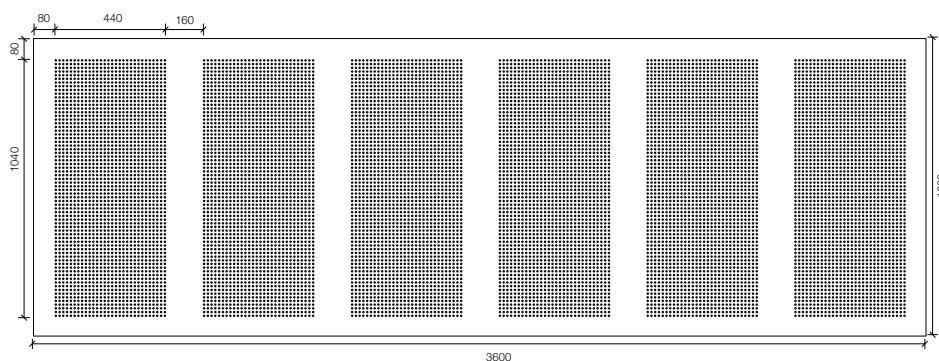
GYPROCK STANDARD 6MM ROUND

Six large rectangular groupings per sheet, each with 2,100 x 6mm diameter perforations at 15mm centres to provide an open area of 8.3%. This board is supplied with no acoustic fabric backing.

6mm Round is suitable for any room where moderate acoustic control and a simple design is required.

Gyprock Standard 6mm Round 8.3% open area				Sound Absorption Coefficient a_p					
Plenum (Air Cavity)	Plenum Insulation	a_w	NRC	Octave Band Centre Frequency (Hz)					
				125	250	500	1000	2000	4000
65mm	Empty	0.15	0.10	0.05	0.10	0.10	0.15	0.10	0.10
	50mm glasswool (14kg/m ³)	0.30	0.35	0.15	0.25	0.40	0.50	0.30	0.15
200mm	Empty	0.15	0.15	0.10	0.10	0.15	0.15	0.10	0.10
	50mm glasswool (14kg/m ³)	0.25(LM)	0.40	0.40	0.45	0.60	0.40	0.20	0.15
600mm	Empty	0.15	0.15	0.20	0.15	0.15	0.10	0.10	0.10
	50mm glasswool (14kg/m ³)	0.30(LM)	0.45	0.50	0.50	0.60	0.40	0.25	0.15

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INSTALLATION

RIGITONE ACCESSORIES

The unique, seamless finish of Rigitone is made possible by the use of a specialised primer, filler and installation tools.

While all four edges of the boards are pre-primed, Rigitone Primer is used to prepare cut edges for jointing.

Patten Spacers are available to ensure boards are fixed with the exact gap required for jointing.

Rigitone joints are achieved using the Rigitone Filler sausage, dispensed with the Accessory Kit.

The Rigitone Accessory Kit includes the tools required to achieve the Rigitone system joint. From the barrel gun with proprietary nozzles that dispenses the filler accurately, to the screw head filler template and cleaning brush, this kit is an all-in-one installation solution.



Rigitone Primer



Rigitone Barrel Gun



Two Rigitone nozzle connectors



Two Rigitone nozzles



Rigitone notched joint knife



Rigitone Filler – 600ml Sausage



Rigitone cleaning brush



Rigitone screw head template

INSTALLATION

Rigitone Installation

Rigitone is specially designed to be screw fixed to suspended ceilings. Its unique installation method allows the product's perforated pattern to continue undisrupted where sheets meet.

Unlike the traditional three coat plasterboard jointing systems, Rigitone boards are jointed by directing a specialised compound into a gap between the sheets. The filling method is made possible by the unique Rigitone Filler Accessory Kit, combined with the Rigitone Filler compound.

While all four edges of Rigitone sheets are pre-primed, cut edges must be sealed with Rigitone Primer prior to installation, readying the surface for the filler compound.

Protone and Standard installation

Protone and Standard 6mm Round perforated plasterboard products are screw fixed to suspended concealed grid, or direct fixed to framing and finished with a three coat jointing system. The sheets are installed with the long edges at right angles to the direction of the framing with maximum 600mm centres.

Insulation is limited to 50mm thick and 14kg/m³ density. Joints should be sanded smooth prior to decoration.

Painting

After the joints are completed, the surface of the plasterboard is painted in accordance with the paint manufacturer's specifications using a paint roller, taking care to paint the surface only, and not the voids.

Long nap and heavily loaded paint rollers should be avoided for this reason. Water-based paints are required for boards that contain Activ'Air technology. Repainting will not impact the performance of Activ'Air.

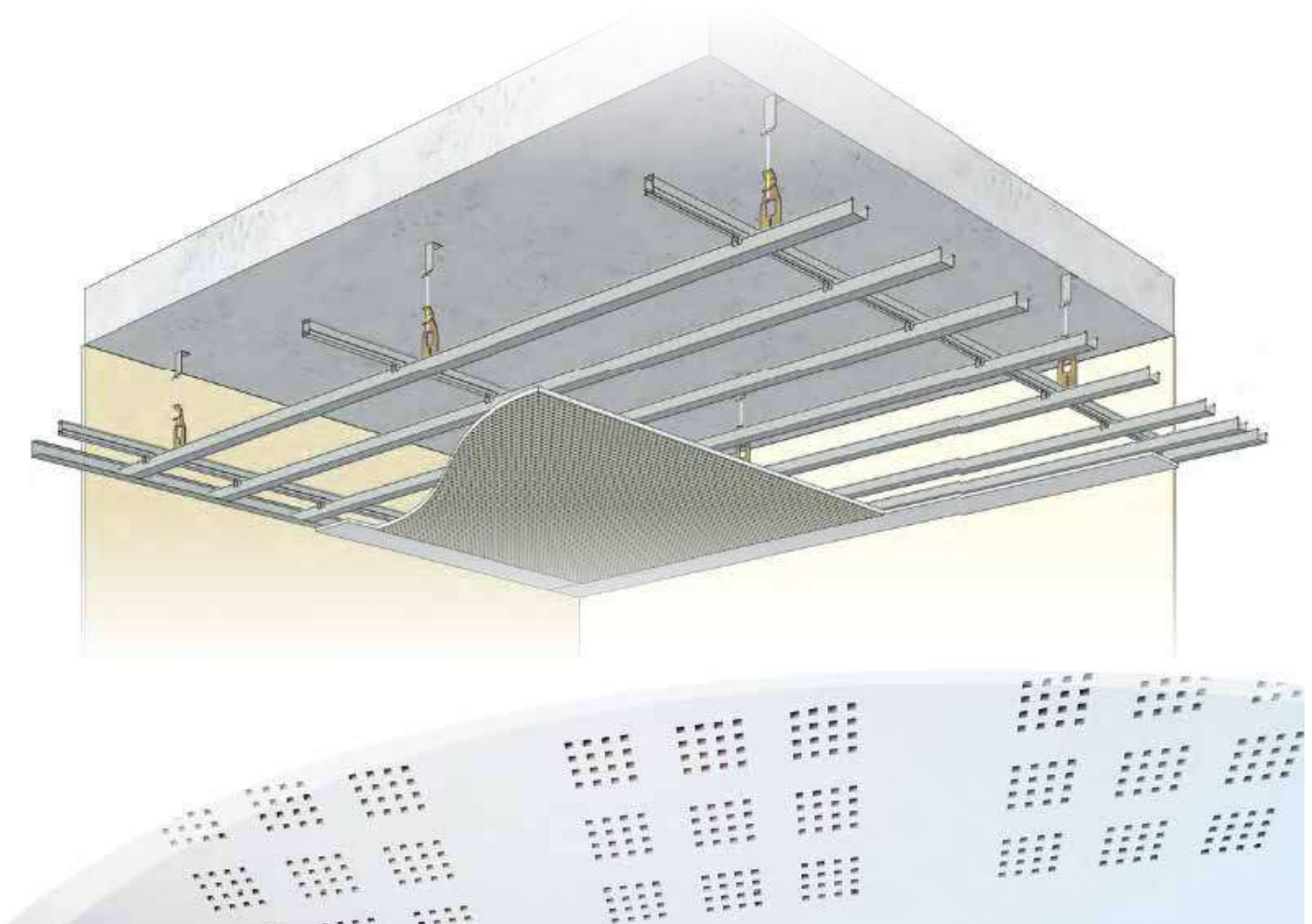
Warranties

Potter Interior Systems products are designed to achieve optimal performance when part of a CSR integrated system.

Gyprock Standard 6mm Round perforated plasterboard is Manufactured For Life in Australia and is warranted by CSR for the usual lifetime of the product.

CSR warrants its International Alliance Rigitone and Protone products to remain free of defects in material and manufacture for a minimum of 7 years.

Full installation methods can be found in our dedicated installation manual at potters.co.nz.





PROTONE 12MM SQUARE

MAINTENANCE

It is important that Potter Interior Systems plasterboard products be kept dry throughout their service lifetime, and must be protected from internal and external moisture. Regular inspections of the lining system (at least annually), for signs of exposure to impact damage, cracks, moisture or mould as well as regular cleaning and re-painting to manufacturer's recommendations, will ensure the product continues to perform the function for which it was originally intended.

Cleaning

Light marks can generally be removed with a damp cloth and should be dried thoroughly. Stubborn marks can be removed with specialty cleaners such as sugar soap, but care should be taken not to scrub, press or heavily wet the plasterboard surface.

Mould and Mildew

Perforated plasterboard is not recommended for installation in areas subject to greater than 70% relative humidity. Mould and mildew can grow on walls and ceilings in areas where there is insufficient ventilation. An improvement to the ventilation method will dramatically reduce the likelihood of these issues.

Once ventilation has been improved it is important to remove the mould from existing surfaces and also to ensure spores are not allowed to circulate through the air.

Fire and Smoke Damage

Potter Interior Systems plasterboard affected by smoke or fire damage is recommended to be replaced, as the heat associated with fire often impacts the performance of the lining material.

Moisture Damage

In general, it is recommended that plasterboard be replaced after being substantially wet, such as due to burst water services or flooding. If the paper becomes wet, or is subject to any deterioration, board strength and the holding capacity of fixings may be reduced.

When subjected to minor water exposure, the plasterboard must be allowed to dry and be inspected for signs of deterioration or warping. If unaffected the plasterboard can be retained, and redecorated as desired.

In tiled areas, any cracks or damage which could allow water ingress into the wall cavity must be repaired immediately by re-stopping and repainting, or by replacing tiles, pointing or sealants.

Moisture damage also occurs from exposure to condensation and humidity, often the result of poor ventilation in areas like bathrooms, laundries and kitchens, commonly resulting in mould and mildew growth.

Impact Damage

Minor Damage: Where only the paper surface has been scratched or dented, and the plasterboard core remains intact, the area should be lightly sanded and patched with a Gyprock topping compound. Paint as per paint manufacturer's recommendations.

Major Damage: Where there is a hole, the plasterboard core is weakened (movement at the site of damage when pressed), or the paper is damaged to the extent that the core is exposed, the damaged section of plasterboard must be replaced.



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