GYPROCK®

Everything else is just plasterboard

Gyprock Perforated Plasterboard

Acoustic performance with design freedom

CSR

Make an impression

Excellence in design is achieved with a balance of aesthetics and functional performance. The Gyprock range of perforated plasterboard allows architects and designers to create beautiful ceilings and walls that achieve 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.

Gyprock seeks to develop exclusive relationships with leading manufacturers throughout the world to deliver the best technologies and products to the Australian construction industry.

INTERNATIONAL ALLIANCE

As part of the International Alliance program, the perforated range includes three Gyptone plasterboard options with unique, seamless access panels, developed by worldwide plasterboard specialist, Saint-Gobain. These products feature innovative VOC reducing Activ'Air technology to help improve indoor air quality.

Gyprock perforated plasterboard is available in a range of contemporary patterns and provides a unique design element for acoustic ceiling and wall projects.


YAMAHA

Acoustic control

Good acoustic design includes control of both sound transmission and sound absorption. Sound transmission is controlled by using solid or cavity elements sealed to prevent sound leakage. To combat sound transmission, Gyprock provides a range of systems which achieve high transmission reduction targets.

Sound absorption is the control of sound within a room where absorbing surfaces reduce the amount of sound bouncing back into the room of origin. 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.

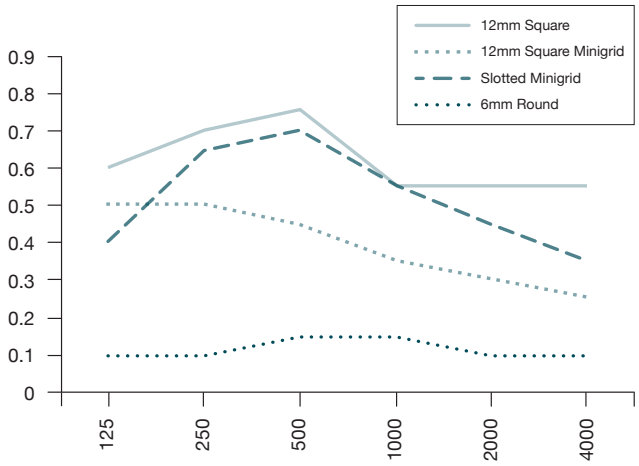
Gyprock's range of perforated plasterboard provides high levels of reverberation control with much greater freedom for designers:

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

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, the type of acoustic fabric, the use of additional insulation material and the depth of the air cavity (plenum) behind the lining. Boards in the Gyptone range were tested for sound absorption in the Auckland University acoustic laboratory. Testing was performed with air cavities of 200mm and 600mm, with and without insulation (50mm CSR Bradford glasswool batts at 14kg/m^3). PKA Acoustic Consulting provided complete acoustic predictions based on this data for the Gyptone range and previous testing data for the Standard 6mm Round board, along with perforated and slotted resonance formula calculations, as well as their database of sound absorption coefficient and acoustic laboratory tests. The acoustic absorption results graph shows the absorption coefficients for all boards in the perforated plasterboard range, with an uninsulated 200mm cavity installation. The table below provides a quick comparision of the range's NRC values. Copies of the test reports are available by contacting DesignLINK Technical Support on 1800 621 117.

Acoustic absorption performance summary:
200mm plenum (air cavity), uninsulated
(Full details on following pages)

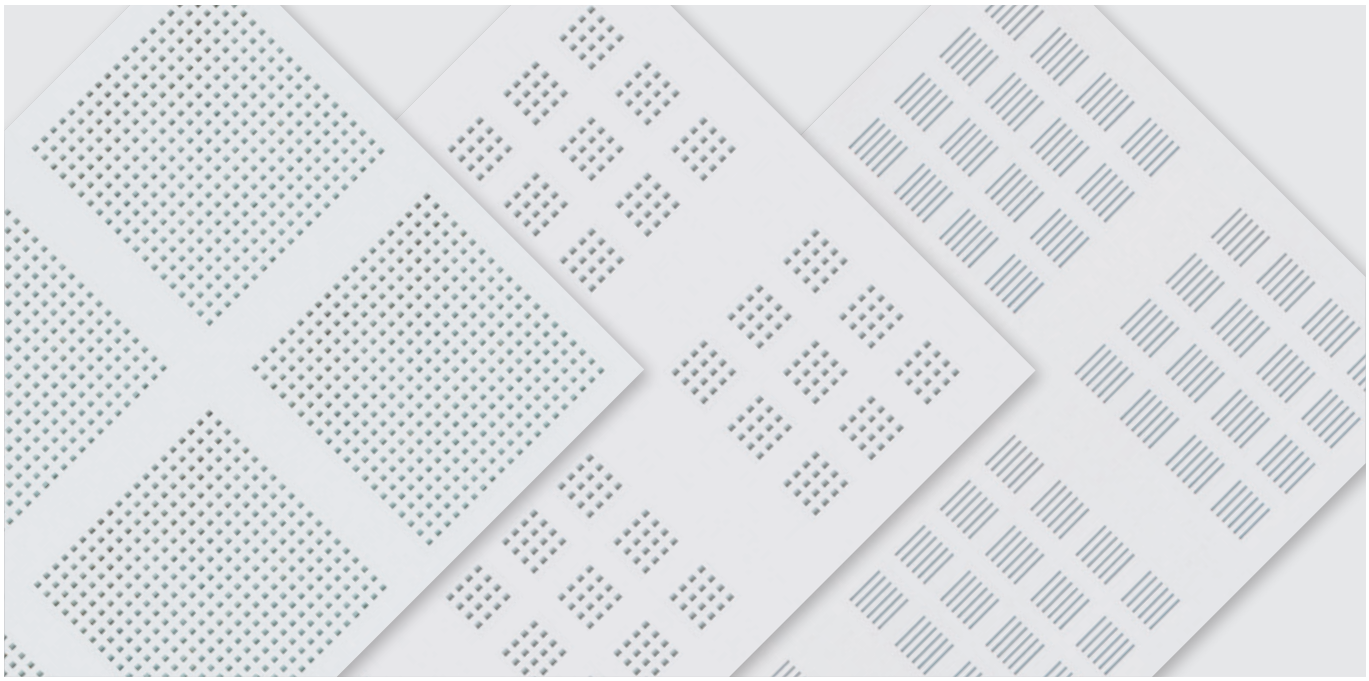


The three boards in the Gyptone range are supplied with acoustic fabric backing as standard and were tested as supplied, resulting in far better acoustic performance results than Standard 6mm Round, which was tested as supplied without acoustic fabric. Standard 6mm Round is an entry level perforated product, often specified for aesthetics over performance. However, installers may use a a third party acoustic fabric to provide far higher levels of acoustic performance if required.

NRC value summary:
(Full details on following pages)

Perforated Pattern	Open Area %	Acoustic Fabric	Plenum (Air Cavity)					
			65mm		200mm		600mm	
			Empty	Batts*	Empty	Batts*	Empty	Batts*
Gyptone								
12mm Square	16.0%	Yes	0.55	0.70	**0.65**	**0.70**	0.65	0.70
12mm Square Minigrid	6.0%	Yes	0.35	0.40	**0.40**	**0.40**	0.40	0.45
Slotted Minigrid	13.0%	Yes	0.45	0.60	0.60	0.60	**0.55**	**0.60**
Standard								
6mm Round	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/m^3) were included in the cavity.



Two core ranges

The Gyptone range

Gyptone perforated plasterboard contributes to aesthetics, excellent acoustics and improved indoor air quality. The range features three contemporary perforation patterns, each with different percentages of open area to meet most acoustic application requirements. Each board in the range is supplied at a size of 2400mm x 1200mm x 12.5mm. The Gyptone boards can also be used for curved installations down to a radius of 6000mm (dry bending), allowing architects and designers to create stunning architectural features.

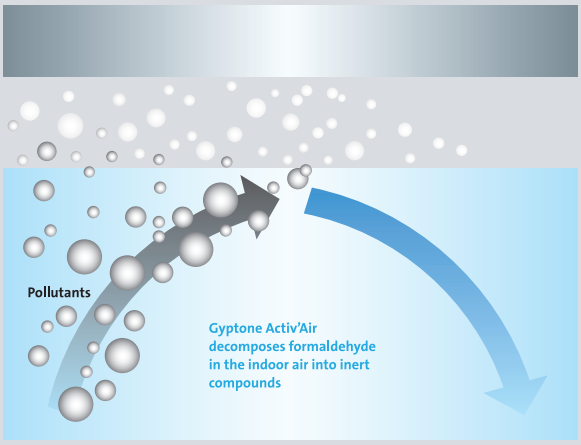
Unique edge design

Unlike standard plasterboard, all four edges of Gyptone perforated plasterboards are recessed to make flush jointing quicker and easier with the normal tape and three coat jointing system. This negates the need for butt joints which can be more difficult to finish to a smooth, even surface.

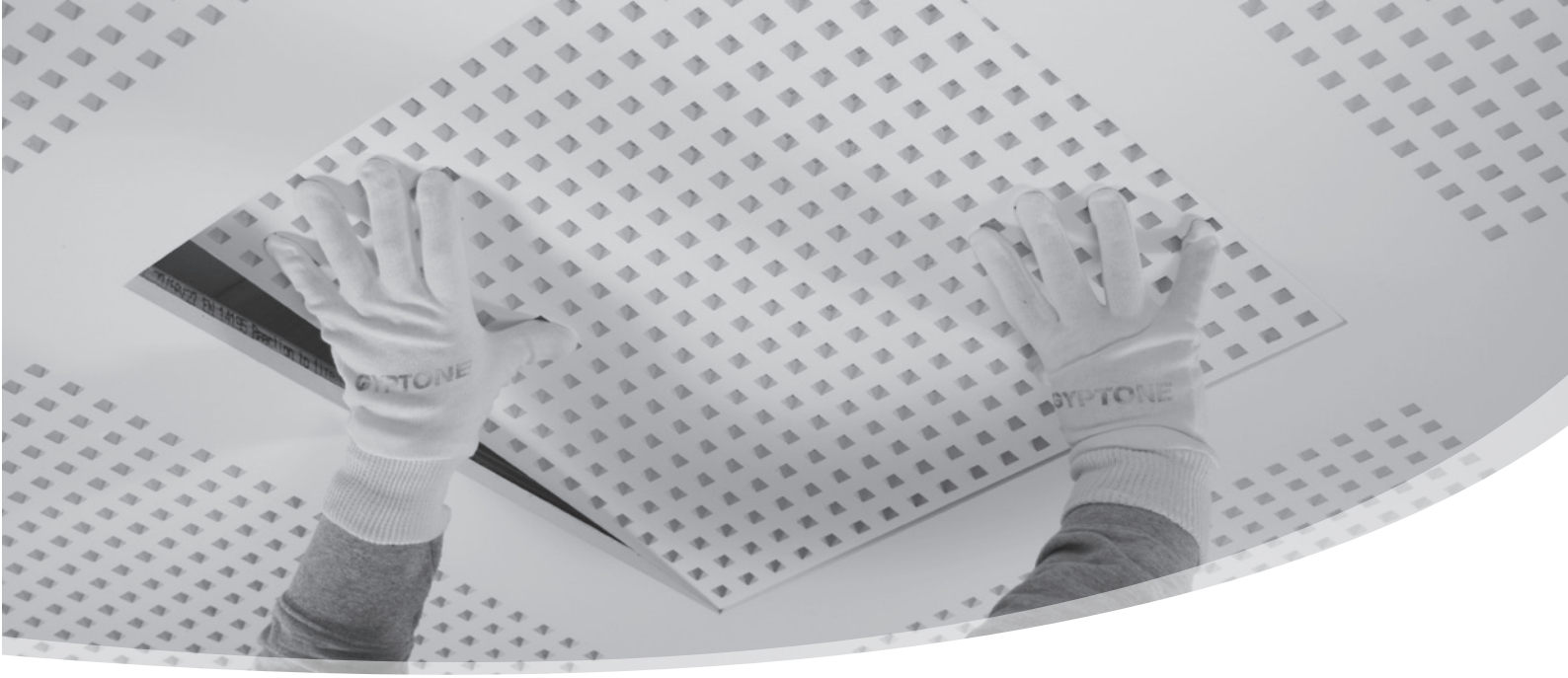
ACTIV air

Many materials, such as particle board, 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 and the US Department of Heath, 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

Gyptone 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 Gyptone and apart from improved acoustic performance, it provides other benefits:

- Eliminates dust from ceiling cavities coming down into the room
- Effectively masks the ceiling framework so that it is not seen from below through the perforations
- Contributes to better fire protection compared to a board without fabric backing

Initial imports of Gyptone boards will be supplied with a black fabric as standard, although batches may be produced with white fabric from time to time. The fabric colour can be stipulated for special orders. Minimum order quantities may apply.

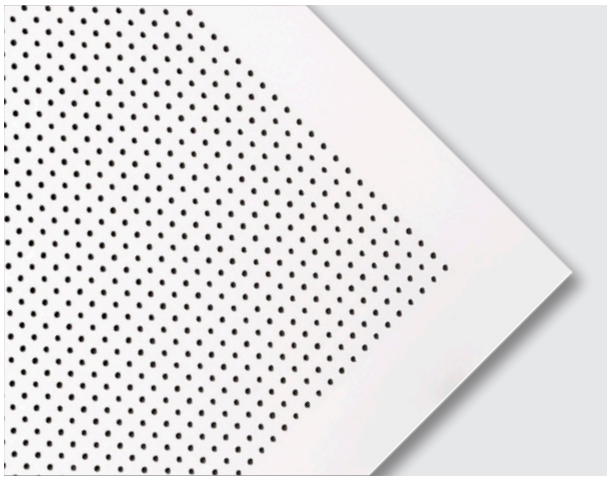
Gyptone is not recommended for installation in areas subject to greater than 70% relative humidity including indoor swimming pools and bathrooms. Gyptone perforated plasterboards support point loads up to 3kg. Adequate independent or additional support must be provided for services and lighting systems that exceed this limit.

Access panels

Access panels are available in each of the three Gyptone 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. These panels provide access to the ceiling cavity while ensuring a seamless look across the surface.

Standard 6mm Round

6mm Round is the traditional Gyprock perforated board product that has been extensively used throughout Australia for many years. It provides an economical aesthetic solution for ceilings or walls. This 3600mm x 1200mm x 13mm board features recesses on the two long edges with square cuts at each short edge. 6mm Round is supplied without an acoustic fabric backing and acoustic performance is adequate for most situations where moderate levels of attenuation are required.



Gyptone 12mm Square (41)

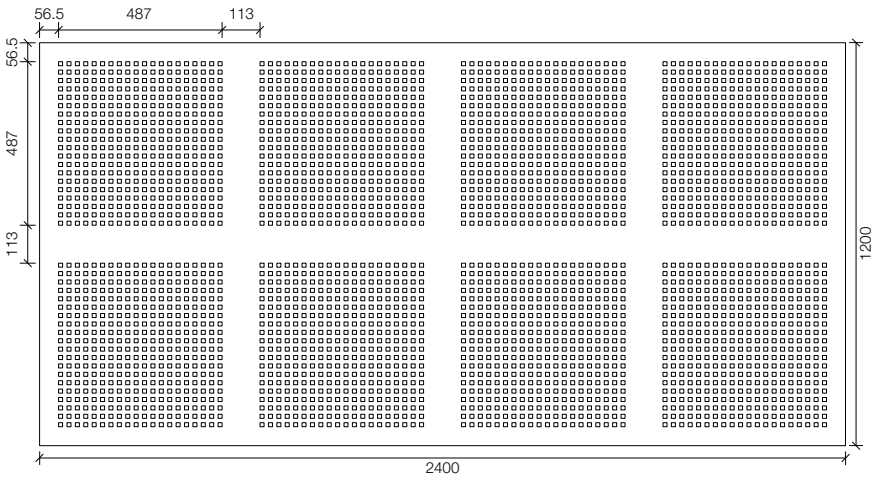
ACTIV air

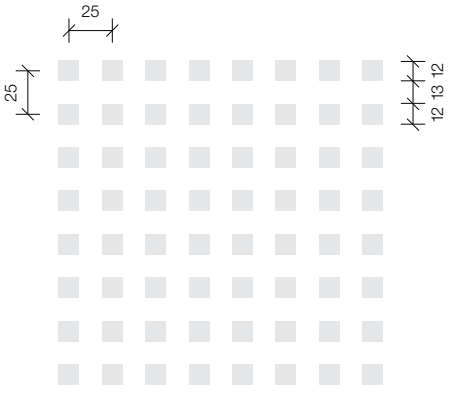
Eight large square groupings per sheet, each with 400 x 12mm square perforations at 25mm centres, providing a 16% open area. Supplied with either black or white acoustic fabric backing.

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

12mm Square 16% open area				Sound Absorption Coefficient α_p					
Plenum (Air Cavity)	Plenum Insulation	α_w	NRC	Octave Band Centre Frequencies (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/m³)	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/m³)	**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/m³)	0.70	0.70	0.70	0.65	0.70	0.70	0.70	0.70

Bold values are test report data conducted at the Auckland University acoustic laboratory. Non-bold values are acoustic predictions by PKA Acoustic Consulting. (L) denotes excess performance at 250Hz (M) denotes excess performance at 500Hz, 1000Hz (H) denotes excess performance at 2000Hz, 4000Hz





Gyptone 12mm Square Minigrid (47)

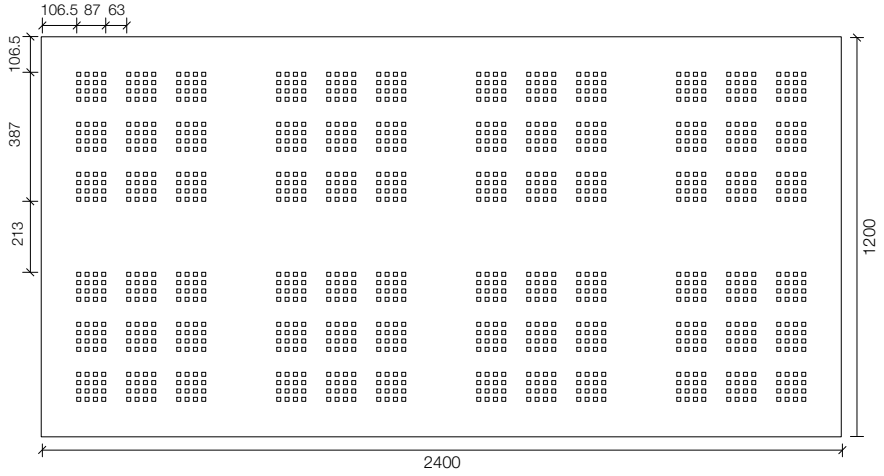
ACTIV air

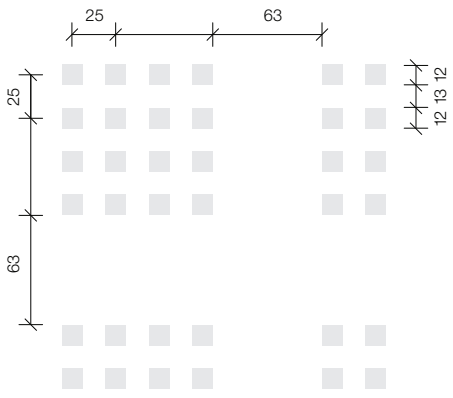
Eight large square groupings per sheet, each with nine mini grids of 16 x 12mm square perforations at 25mm centres. This subtle pattern provides an open area of 6% and features a black acoustic fabric backing.

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

12mm Square Minigrid 6% open area				Sound Absorption Coefficient α_p					
Plenum (Air Cavity)	Plenum Insulation	α_w	NRC	Octave Band Centre Frequencies (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/m³)	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/m³)	**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/m³)	0.45	0.45	0.60	0.45	0.45	0.45	0.35	0.40

Bold values are test report data conducted at the Auckland University acoustic laboratory. Non-bold values are acoustic predictions by PKA Acoustic Consulting. (L) denotes excess performance at 250Hz (M) denotes excess performance at 500Hz, 1000Hz (H) denotes excess performance at 2000Hz, 4000Hz





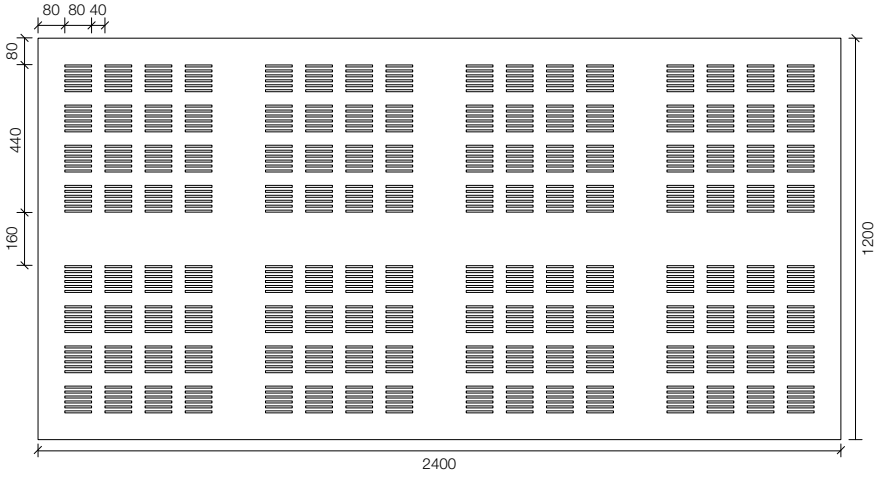
Gyptone Slotted Minigrid (6)

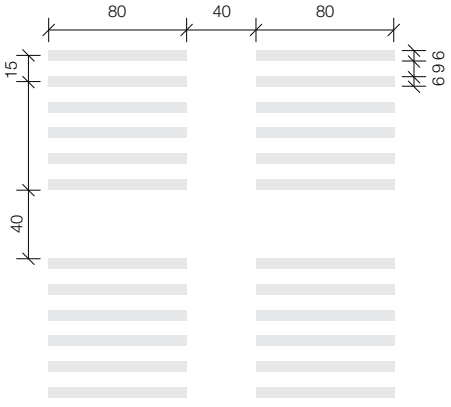
Eight large square groupings per sheet, each with 16 mini grids of six 6mm x 80mm slot perforations. This contemporary design provides 13% open area and is supplied with a black acoustic fabric backing.

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

Slotted Minigrid 13% open area				Sound Absorption Coefficient α_p					
Plenum (Air Cavity)	Plenum Insulation	α_w	NRC	Octave Band Centre Frequencies (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/m³)	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/m³)	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/m³)	**0.60(L)**	**0.60**	**0.65**	**0.55**	**0.60**	**0.60**	**0.55**	**0.45**

Bold values are test report data conducted at the Auckland University acoustic laboratory. Non-bold values are acoustic predictions by PKA Acoustic Consulting. (L) denotes excess performance at 250Hz (M) denotes excess performance at 500Hz, 1000Hz (H) denotes excess performance at 2000Hz, 4000Hz





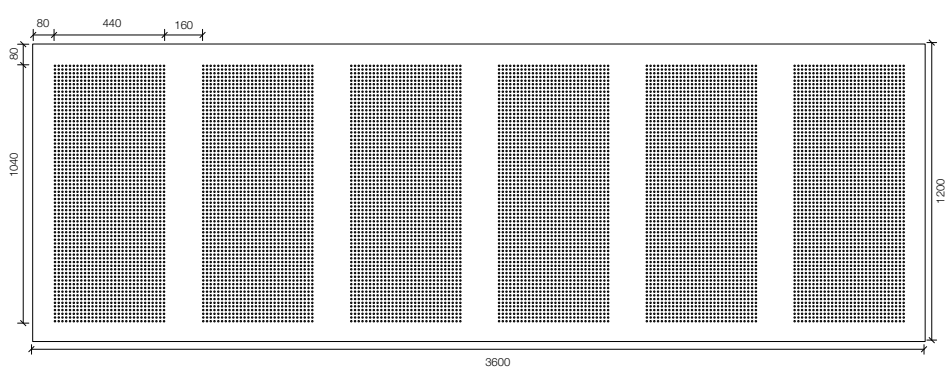
Standard 6mm Round

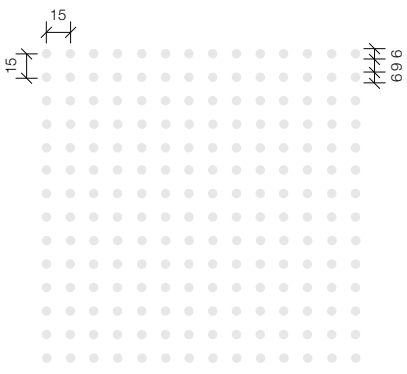
Six large rectangular groupings per sheet, each with 2,100 x 6mm diameter perforations at 15mm centres to provide an open area of 8.3%. This board is supplied with no acoustic fabric backing.

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

Standard 6mm Round 8.3% open area				Absorption Coefficient α_p					
Plenum (Air Cavity)	Plenum Insulation	α_w	NRC	Octave Band Centre Frequencies (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

These acoustic predictions are for standard 6mm Round perforated plasterboard without acoustic fabric. Installers may use a third party acoustic fabric to provide far higher levels of acoustic performance if required. (L) denotes excess performance at 250Hz (M) denotes excess performance at 500Hz, 1000Hz (H) denotes excess performance at 2000Hz, 4000Hz





Installation

Gyptone and standard 6mm Round perforated plasterboard products are installed using standard direct-fix methods, 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/m^3 density.

Full installation details can be found in the Gyprock Commercial Installation Guide Addendum, available for download from gyprock.com.au under the Resources tab.

Finishing

After the set joints are sanded smooth, 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.

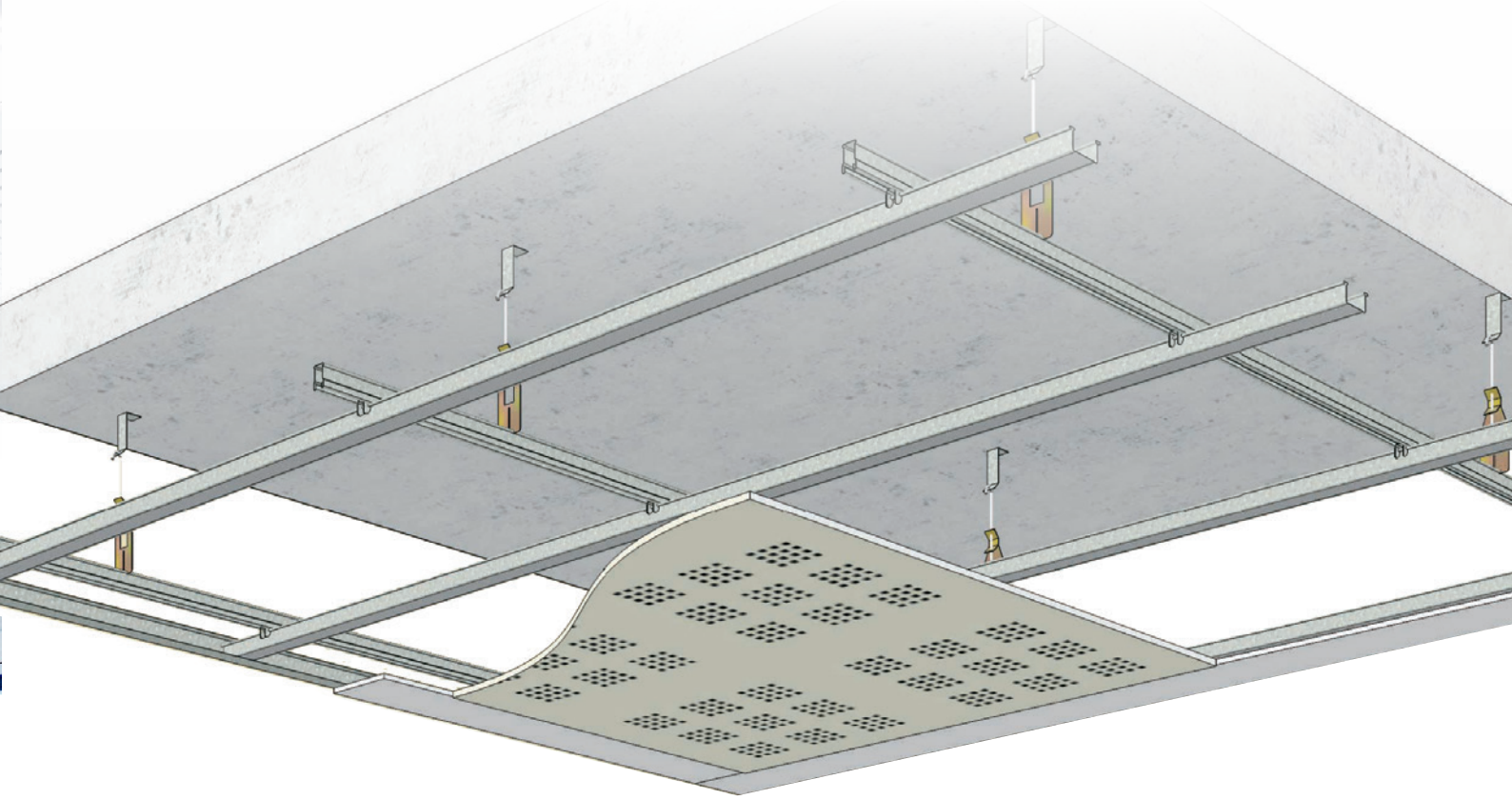
Long nap and heavily loaded paint rollers should be avoided for this reason. Water-based paints are required for boards that contain Activ'Air technology. Repainting will not impact the performance of Activ'Air.

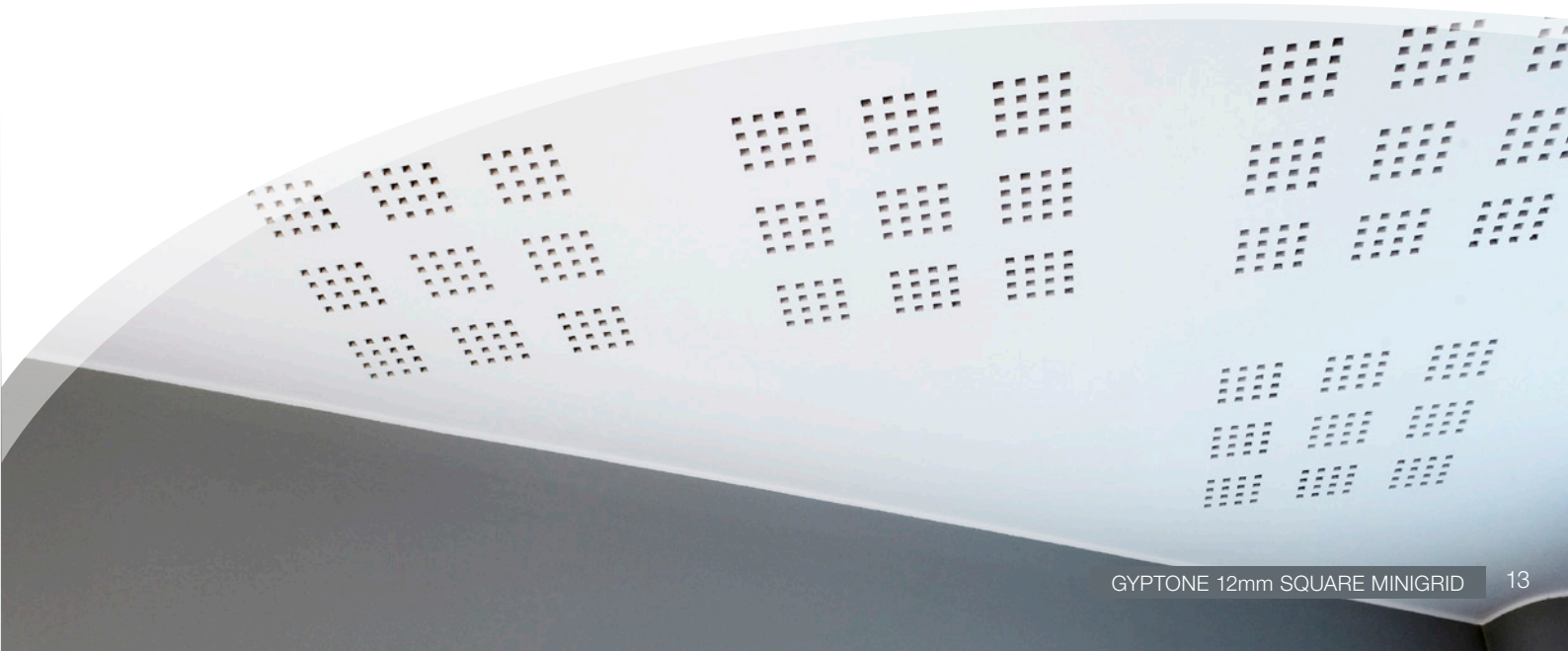
Warranties

Gyprock 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 Gyprock Gyptone products to remain free of defects in material and manufacture for a minimum of 7 years.





DesignLINK Support

DesignLINK is a team of engineers, building design professionals and architects, working to support Gyprock and Cemintel product and system specification in projects across Australia. With impressive knowledge of the building industry, DesignLINK partners with clients to value-engineer, simplify system specifications and workshop complex design issues, delivering building performance while easing the way for builder and contractor.

Based at Gyprock's Research and Development Centre in Wetherill Park, New South Wales, the DesignLINK team is a driving force in Gyprock's innovation agenda, representing customer experience and bringing problem solving skills to the table. The Wetherill Park site houses Gyprock's NATA accredited laboratory and several test rigs, as well as being a manufacturing site for Gyprock and Cemintel products.

What does DesignLINK offer?
The DesignLINK service, offered to architects, engineers and other design professionals, includes phone support for enquiries, assistance with planning major projects, provision of complex testing data and supply of CAD files for increased productivity.

Phone and email support
All enquiries are handled with care. Where possible, we'll provide you with an answer on the spot, otherwise we'll escalate your enquiry to the most qualified team member.

Assistance with major projects
DesignLINK is available to support major projects, delivering performance and simplification. This service is offered in conjunction with your local Account Manager to ensure you receive the very best local knowledge, combined with DesignLINK's technical expertise.

System performance data
Fire and acoustic reports are available for a wide variety of Red Book systems. Whether you're looking to prove performance or better understand the options available and what differentiates them, the team's thorough understanding of performance requirements and results will have your query solved in no time. Looking for a bespoke solution? Our Acoustic Predictor provides opinions based on hundreds of data points, saving time and money, and delivering a fast solution.

How do I contact the DesignLINK team?
Call 1800 621 117 or email DesignLINK@csr.com.au