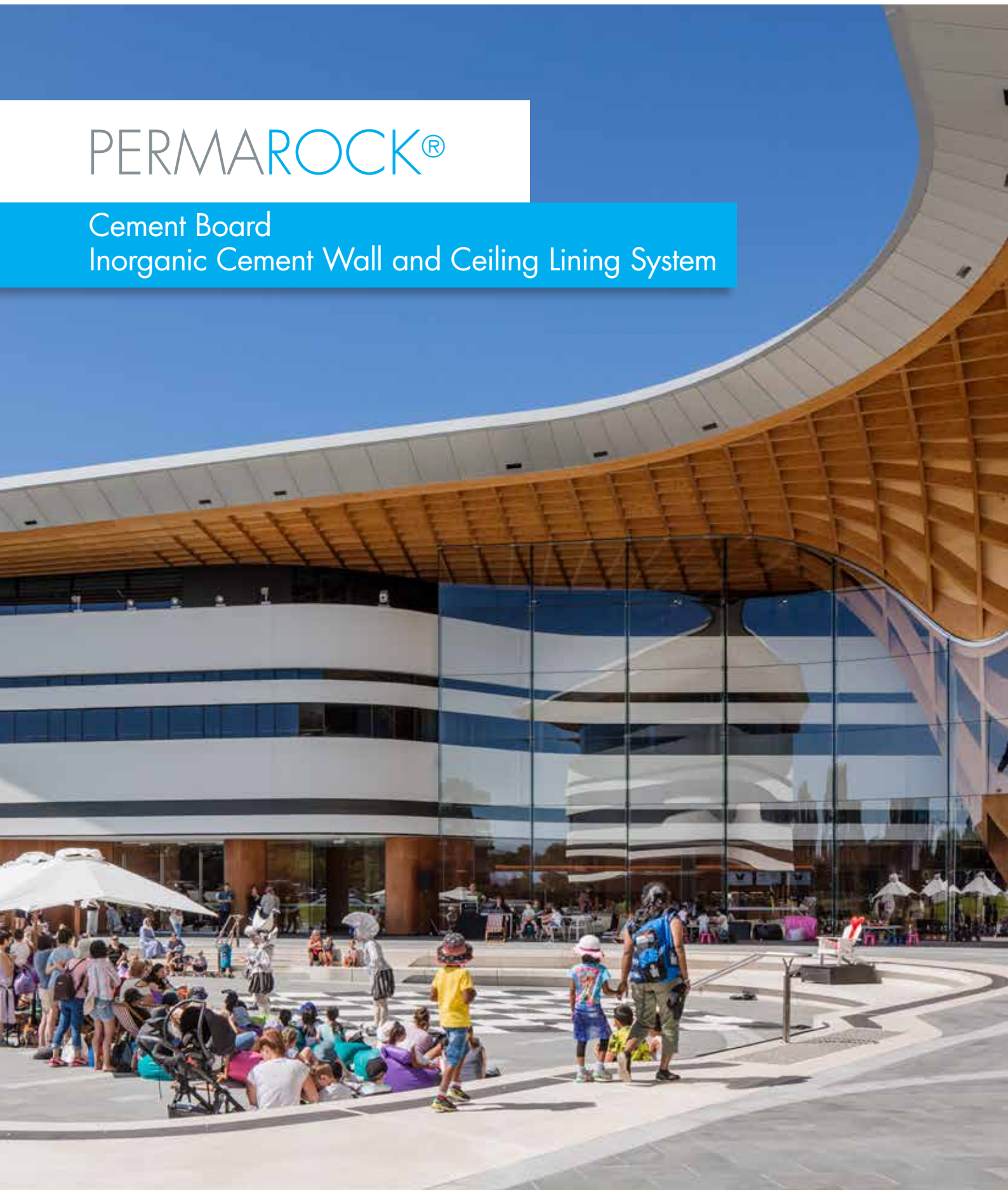


The PERMAROCK logo is located in the upper left quadrant of the image. It features the word "PERMAROCK" in a blue, sans-serif font, with a registered trademark symbol (®) to its upper right. The logo is set against a white rectangular background.A blue horizontal bar contains the text "Cement Board" and "Inorganic Cement Wall and Ceiling Lining System" in white, sans-serif font. The bar is positioned below the PERMAROCK logo and above the main image of the building.





Sage Headquarters, Newcastle, England



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# PERMAROCK® Cement Board

PERMAROCK® Cement Board is an advanced drylining solution that offers the ultimate design solution for exterior walls, facades and other water intensive areas.

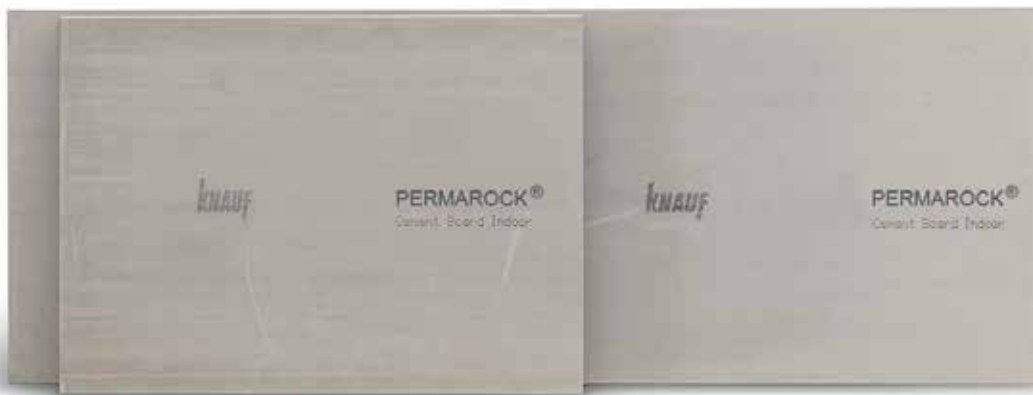
Using advanced cement board technology, PERMAROCK® Cement Board is made from aggregated Portland cement with glass fibre mesh embedded into the front and back surfaces. PERMAROCK® Cement Board is resistant to water and due to the high dimensional stability when exposed to moisture, temperature and humidity variations, will retain its strength without degrading when immersed in water. With limited expansion or contraction when exposed to moisture and the capability of supporting surface finishes of up to 50 kg/m<sup>2</sup>, PERMAROCK® Cement Board is the ideal substrate for tiles.

In addition, PERMAROCK® Cement Board has the superior impact resistance required in high traffic areas and being inorganic, it is resistant to mould growth. Coupled with excellent sound insulation and being non-combustible, PERMAROCK® Cement Board provides a versatile substrate solution and lightweight alternative to brick and block for any construction project.



## PERMAROCK® CEMENT BOARD

PERMAROCK® Cement Board is made of Portland cement and aggregate core, with coated glass fibre mesh embedded in back and front surfaces. Ends are square cut and both edges are reinforced and finished smoothly. It is 100% water resistant and offers a solid and durable substrate for tiles or render style finishing systems in exterior and interior water intensive areas.



	Thickness (mm)	Width (mm)	Length (mm)	Weight* (kg/m <sup>2</sup> )
Outdoor	13	1200	3000	16
Indoor	13	1200	3000	11

\*Weights indicated are nominal



## PERMAROCK®

### CEMENT BOARD INDOOR

PERMAROCK® is a solid, engineered wall and ceiling lining made from inorganic aggregated cement embedded with coated glass fibre mesh that is 100% water resistant making it an ideal tile substrate.

- Limited expansion or contraction when exposed to moisture
- High dimensional stability when exposed to temperature and humidity variations
- 100% water resistant, no swelling, disintegration or damage

Thickness (mm)	Width (mm)	Length (mm)	Weight* kg/m <sup>2</sup>
13	1200	3000	11.0

\*Weights indicated are nominal



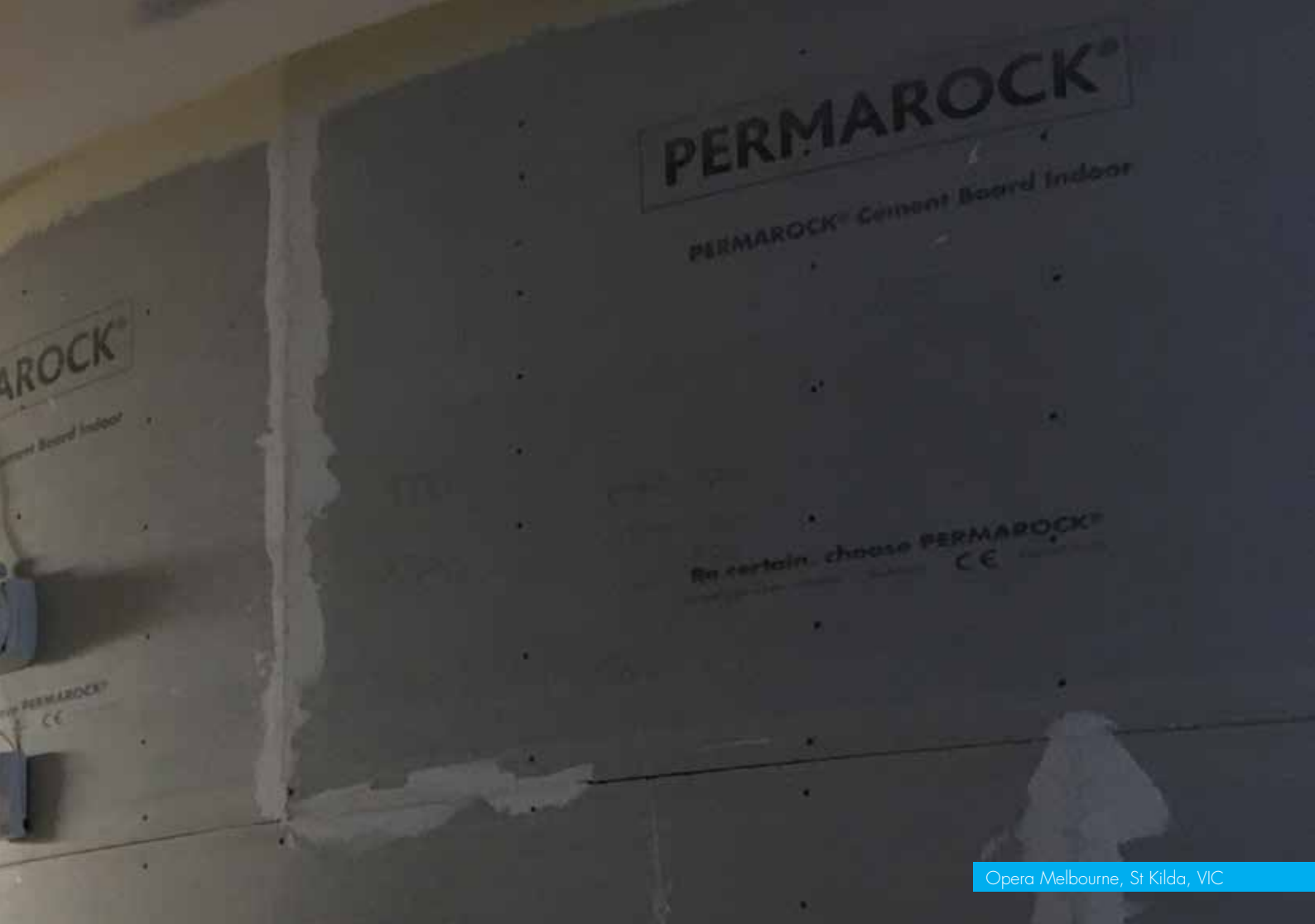
## PERMAROCK®

### CEMENT BOARD OUTDOOR

PERMAROCK® Cement Board Outdoor is made of Portland cement and aggregated core, with coated glass fibre mesh embedded in back and front surfaces. Ends are square cut and both edges are reinforced and finished smoothly.

- Extreme weather resistance
- Board can be curved and non-combustible
- Safe and hygienic material

Thickness (mm)	Width (mm)	Length (mm)	Weight* kg/m <sup>2</sup>
13	1200	3000	16.0



Opera Melbourne, St Kilda, VIC

## PERMAROCK®

### JOINT ADHESIVE (PU)

PERMAROCK® Joint Adhesive (PU) is used to glue PERMAROCK® sheet edges together on internal walls. The adhesive is applied to the sheet edges prior to fixing adjoining sheets. PERMAROCK® Joint Adhesive (PU) is for internal walls and tile finish only.

- Easy application
- Strong bond
- Durable

**310 ml cartridge**



Knauf have partnered with Sto to provide the perfect reinforcing render to ensure maximum longevity for Knauf PERMAROCK® wall and ceiling systems.

Sto is a world leader in the manufacture of high-quality renders and coating systems - built on German quality and now available in over 50 countries across the globe for complete facade protection.

StoArmat render systems are organic, cement-free, breathable, impact-resistant, highly flexible, and available in a wide variety of different coloured finishing renders; delivering a complete weather/water-tight and sustainable solution.

Stoanz Australia Ltd is the authorised partner of Sto in Australia - find out more at:

[www.stoau.com.au](http://www.stoau.com.au)





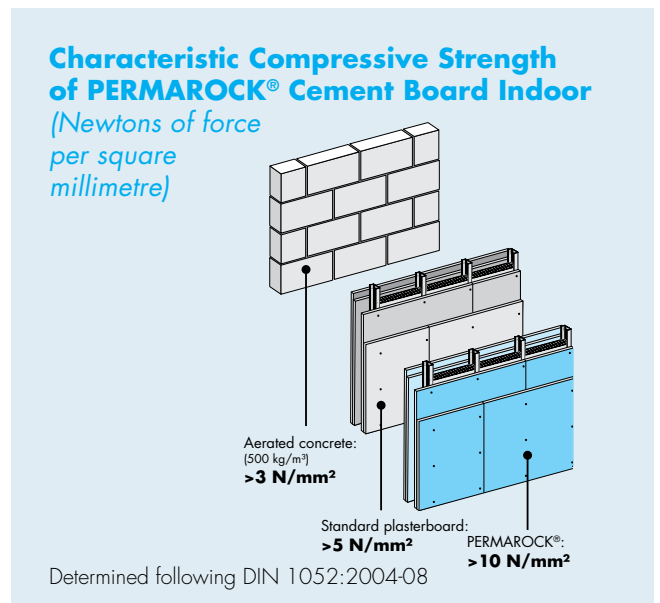


# As tough as a rock

Engineered to be tough, strong and impact resistant.

PERMAROCK® Cement Board aggregated Portland cement body and embedded coated glass fibre mesh in the front and back surface means it is capable of resisting impact without deformation or damage. The diagram highlights PERMAROCK® Cement Board's superior performance.

The EasyEdge technology contained in PERMAROCK® Cement Board, where the straight edge is wrapped with a mesh embedded into the lining, combined with PERMAROCK® Joint Adhesive (PU) results in better adhesion between boards creating a stronger structure. In high humidity and water intensive areas the dimensional stability, with extremely low rates of expansion and contraction, is paramount in reducing the likelihood of tile peaking or popping and cracks to the joints in walls and ceilings.







Bunjil Place, Narre Warren, VIC

# Ideal outdoor solution

PERMAROCK® Cement Board Outdoor delivers peace of mind for external facade applications.

Knauf PERMAROCK® Cement Board Outdoor is an advanced drylining panel with a unique combination of **economic**, **sustainability** and **performance advantages** that are quite simply beyond the reach of conventional construction.

PERMAROCK® Cement Board gives architects and contractors a proven alternative to brick and block construction for exterior applications such as high quality exterior walls, facade renovation, tunnels, and all types of exterior projects - with less installation costs.

PERMAROCK® Cement Board is an extremely durable building material, providing a solid and dry foundation that can withstand harsh climates including high winds, rain and snow. It can be used as a substrate for ventilated

exterior walls and also for directly applied systems using 'water-managed' design principles. A range of exterior coatings can be applied.

## Key Benefits



**Fast** PERMAROCK® is simple and easy to install



**Sound** PERMAROCK® systems can achieve very high levels of sound insulating performance



**Wet Area** PERMAROCK® is 100% water resistant, no swelling, disintegration or damage



**Mould** PERMAROCK® is resistant to mould growth



**Impact** PERMAROCK® Great all-round impact resistance reducing the effects of wear and tear



# True peace of mind for wet areas

PERMAROCK® Cement Board Indoor, due to its unique material properties, avoids the common risks associated with wet areas.

Wet area defects such as leakages in pipes, damage to waterproofing membranes or unsealed penetrations are among the most common building defects in Australia. These defects compromise the substrate and in turn cause visible damage to the finished surface. The cost of wet area failure, considering both the cost of actual building works and the closure of facilities while rectification occurs, is often extremely high.

In many construction areas, the ability to withstand damp and water is critical for the quality and durability of a building unit. PERMAROCK® Cement Board Indoor is the ideal lining for such areas, with exceptional resistance to water, humidity and temperature variations maintaining strength even with high moisture exposure.

When subjected to water, PERMAROCK® Cement Board Indoor displays extremely slight and system-safe changes in form reducing the likelihood of cracking or debonding of the finished surface material. Furthermore, where defects occur traditional substrate materials would need to be replaced but with PERMAROCK® Cement Board Indoor this is not normally necessary and only requires a localised repair to the surface material as water will not harm the PERMAROCK® lining.

Being made of inorganic material, PERMAROCK® Cement Board Indoor is resistant to mould growth making it suitable for use in areas where there is a high level of damp.<sup>[1]</sup> In addition, it has a pH of 12 which acts as a natural bactericidal and fungicidal barrier preventing





Nautimo Wellness Centre, Germany

mould growth as virtually no fungi can survive on surfaces with a pH over 10.<sup>[2]</sup>

PERMAROCK® Cement Board Indoor also displays very good vapour-diffusion behaviour, with a diffusion resistance of  $\mu = 50$ .<sup>[3]</sup> This means that the lining shows no vapour blocking behaviour, allowing excess moisture to pass through reducing build-up of excess water in the system.

Source: 1 Institute of Building Biology in Rosenheim, Germany, Report 3004-119-56A. 2 'Indoor Air Quality, Healthy Buildings, and Breathing Walls', JF Straube, University of Waterloo, Canada and V Acharya, Durisol Building Systems. 3 According to EN ISO 12572.

## DESIGNED FOR SOUND



PERMAROCK® Cement Board Indoor has excellent acoustic performance due to its high density core. This enhances sound insulation to reduce transfer of sound between rooms improving the quality of the indoor environment. Systems with PERMAROCK® Cement Board Indoor can achieve high levels of sound insulation performance.





## Sustainability

- Better energy performance due to slimmer wall construction: on average 25% more space than with brick and block (based on the same U-Value) which allows for better thermal insulation
- Better environmental performance through reduced use of natural resources

## Reduced use of natural resources with less pollution

- The reduced building mass of the Knauf PERMAROCK® Exterior Wall saves on natural resources during the manufacturing process and contributes significantly to sustainable construction
- Lower transport and energy costs due to lighter weight, water savings due to drywall construction
- Dismantling/recycling is easier at the end of the life cycle: waste can be separated by type of material so the volume of waste is reduced and the degree of recycling is higher
- PERMAROCK® Cement Board Outdoor and PERMAROCK® Cement Board Indoor are 100% waterproof and completely inorganic, minimising the risk of mould or mildew. They meet the highest requirements for a safe and hygienic environment inside the building – as certified by the German Building Biological Institute Rosenheim (IBR) in report number 3006-214.

## Product and safety data sheets

PERMAROCK® Cement Board Product and Safety Data Sheets are available at:  
[knaufplasterboard.com.au](http://knaufplasterboard.com.au) or by calling 1300 724 505.



National Museum, Canberra, ACT

# **KNAUF**knowhow

Knowhow to help bring your project to life.

Challenges are a natural part of every project and we believe they drive innovation.

The Knauf Knowhow Suite is developed through dialogue and an understanding of your challenges - Delivering unrivalled value and expertise to your project management and specification process.

Discover the suite of Knauf's architectural tools and technical support services.



BIM Wall Creator



System Selector



K Spec Proposal



CPD and Product Presentations



Online Calculators



Technical Support





# CASE STUDY - Bunjil Place

Every community needs a meeting place. A hub where people can meet enjoy music, theatre or art. For Victoria's largest municipality, the City of Casey with nearly 300,000 residents, it was the opportunity to create an inviting centre for the community that also celebrates the traditional owners of the land.

Bunjil Place opened its doors in October 2017, inspired by Bunjil the Eagle, and the meeting of paths – time-honoured stories from the traditional owners, the Wurundjeri, Bunurong and Boon Wurrung people.

Construction Builder Multiplex and architects Francis-Jones Morehen Thorp (FJMT) created the landmark building for the City of Casey. The interconnecting purposes of the building unify the complex, under the protective and sheltering wings of an iconic soaring roof.

*"Bunjil Place is the first facility of its kind in Australia, bringing together creativity, entertainment and community. It was an opportunity to create a place for community participation, a sense of belonging and*

*immense civic pride," says Nazli Almasirad, National Architectural Manager at Knauf.*

The significant sized building covers 24,500m<sup>2</sup> and is connected by two roof 'eagle' wings that give identity and unity to the diverse cultural and civic purposes of Bunjil Place. The architecture of the dynamic roof and interlocking timber grid-shell structure embraces new technology and innovation with timeless themes true to the unique nature of Bunjil Place.

With a stunning and sweeping exterior, FJMT specified a Knauf PERMAROCK® Cement Board Outdoor system that produces beautiful smooth facades and clean lines as well as being manufactured to the highest standards under strict quality control.

*"Knauf PERMAROCK® Cement Board is a high performance exterior drylining system with a unique combination of economic, sustainability and performance advantages. Knauf PERMAROCK® Cement Board offered Bunjil Place a durable building material that provides a solid and dry foundation that*





Bunjil Place, Narre Warren, VIC

is weatherproofed with a Sto Render System and can withstand Victoria’s contrasting climates,” says Nazli.

PERMAROCK® Cement Board was complemented by Sto, an approved render used on the PERMAROCK® substrate. Sto, a world leader in the manufacturing of high quality exterior renders and coating systems, partnered with Knauf to ensure the perfect reinforcing render for Knauf PERMAROCK® construction that delivers a complete bespoke rendered facade solution.

“Built on German quality, a StoMiral Render System was specified for Bunjil Place, offering greater durability and flexibility over conventional cementitious plaster systems and is complimented by a diverse range of Stolit coloured finishing renders; providing Bunjil Place with a fibre reinforced, weather-tight, sustainable rendered PERMAROCK® facade” adds Brent Pointon, Victoria Sales Manager at Sto.

Bunjil Place was finished in Stolit Milano, a durable, impact-resistant synthetic finishing render that creates a smooth fine finish, such as the sanded Stolit Milano finish on Bunjil Place, or alternatively floated for a natural look to mirror concrete panel.

“PERMAROCK® Cement Board is non-combustible to meet strict Australian fire regulations and because it

can be curved in as little as one metre bending radius, and expansion joints only required every 15 metres, it was a deciding requirement by FJMT in creating the seamless monolithic curved façade of the eagle wings,” says Nazli.

“This unique project required all companies involved to work closely together and is reflected in this fantastic community meeting place. PERMAROCK® Cement Board was delivered, implemented and rendered on time and ensured that Bunjil Place is a spectacular building putting Narre Warren on the map and is a place that everyone at the City of Casey can be proud of,” concludes Nazli.

## PROJECT SNAPSHOT

**Date of completion** October 2017

**Client** Casey City Council

**Project Value** \$125 million

**Architect** Francis-Jones Morehen Thorp (FJMT)

**Builder** Multiplex

**Product** PERMAROCK® Cement Board Outdoor and StoMiral Render System



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**[knaufplasterboard.com.au](http://knaufplasterboard.com.au)**

**[knaufmetal.com.au](http://knaufmetal.com.au)**

**Warranty**

Knauf's products are guaranteed by a 10 Year Warranty.

For details visit

[knaufplasterboard.com.au/warranty](http://knaufplasterboard.com.au/warranty)

Technical Advice 1300 724 505

November 2018