



# ECOPANEL

AUTOCLAVED AERATED CONCRETE BY CHAD



The ECOPANEL AAC (Aerated Autoclaved Concrete) system is an innovative, lightweight, cement based material. It incorporates small and uniformly distributed bubbles, which is what results in its unique properties (lightness, high thermal resistance, workability, and strength). It can be used for walls or floors as it is reinforced with steel.

## ABOUT AAC

Autoclaved aerated concrete (AAC) is a solid but lightweight building material. It's widely used in construction throughout the world. The technology used to manufacture AAC was developed in Scandinavia over 70 years ago. In the AAC manufacturing process, water and a few readily available dry ingredients - sand, lime, and cement - are mixed with an expansion agent to form a semi-liquid that is called a slurry. This slurry is then poured into a mould. Of course, if you want to produce panels, then steel mesh reinforcements will be appropriately placed in the mould before the slurry is poured.

When the sand, lime, cement and water mix together a chemical reaction occurs that produces hydrogen. This chemical reaction then causes the slurry to rise. This is called the pre-curing stage. The hydrogen gas then dissipates and leaves extremely small (and finely dispersed air spaces). This is the secret to why AAC is much lighter than traditional concrete (and yet still strong and solid with excellent thermal properties). When the mix is solid but still soft it is separated from the mould and then cut to form the right-sized blocks or panels for the batch. Any waste is then recycled.

But the manufacturing process doesn't stop there! The still uncured AAC panels are "baked" under elevated heat and steam. Finally, the blocks (or panels) are ready when they're hardened or cured.



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

# WHY BUILD WITH CHAD'S ECOPANEL?

ECOPANEL (AAC) are steel reinforced AAC wall or floor panels.  
Available in 50mm and 75mm panels.



## 1. STRONG & SOLID

The ECOPANEL (AAC) system is a versatile building solution offering unique properties of lightness, high thermal resistance, workability, and strength. ECOPANEL (AAC) can also be reinforced for use in wall or floor panels or as blocks.



## 2. FASTER BUILD

CHAD Group Australia are committed to building better and smarter, and this all starts with 50mm OR 75mm ECOPANEL. CHAD's AAC ECOPANEL provides ultra-high integrated insulation and facilitates building a home quicker. Since it can go up much faster than conventional bricks, construction reaches key stages quickly. ECOPANEL is as solid and as durable as traditional masonry, its lightweight properties will get any project to "Lockup".



## 3. SAVES TIME AND MONEY

When you build with CHAD'S ECOPANEL your construction time will be reduced without compromising on quality.

How exactly can you save time (and therefore money) with CHAD'S ECOPANEL? Well, one standard ECOPANEL is the equivalent size of 75 traditional bricks. Which means that a 150m<sup>2</sup> home can go up in as quickly as three days when it is built by experienced ECOPANEL installers.

ECOPANEL also helps create a safer and cleaner worksite that requires less cleanup at the conclusion of the project. Which, of course, helps save money too!



## 4. ENERGY EFFICIENT

ECOPANEL is very well thermally insulated, meaning that it will help you keep your house cooler for longer in the summer and warmer for longer in the winter. In short, you will have to heat and cool your home less, leading to savings on energy and running costs. And saving money is always a good thing!



## 5. SOUND ACOUSTIC REDUCING QUALITIES

ECOPANEL offers better noise reduction over traditional masonry. When compared to polystyrene and many other fibre cement substrates, the use of ECOPANEL for external walls reduces noise transferred from external sources like traffic. Which means that when ECOPANEL is used for external walls it reduces noise from outside sources like traffic. Also ECOPANEL offers the same benefits of noise reduction when used between floor levels. Which means that an ECOPANEL home is a quiet home!



## 6. ECO-FRIENDLY

AAC ECOPANEL is an environmentally friendly product. It is pollution free, emits no harmful emissions, and has an excellent environmental performance.



## 7. FIRE RESISTANCE

ECOPANEL is renowned for its fire resistant properties and is a non-combustable building material. ECOPANEL does not combust in the event of a fire and will not emit toxic gases. 75mm ECOPANEL provides a Load Bearing FRL of 240/240/240. 50mm ECOPANEL provides a Load Bearing FRL of 120/120/120.

AAC panels are reinforced and are designed for floors and walls in multi-residential, commercial, residential (domestic), and industrial construction.



### MULTI-RESIDENTIAL CONSTRUCTION USES

- Non-load bearing external wall panels are generally panels that are fixed to a reinforced concrete structural frame.
- Internal wall panels, such as party walls, risers, and shaft walls.

### COMMERCIAL CONSTRUCTION USES

- Non-loadbearing external wall panels.

### RESIDENTIAL (DOMESTIC) CONSTRUCTION USES

- External cladding for load bearing wall panels (limited to two story construction).
- Floor panels

### INDUSTRIAL CONSTRUCTION USES

- Non-load bearing wall panels - larger, vertical panels can be successfully incorporated into industrial wall applications.
- Mezzanine doors



### SUMMARY OF PROPERTIES OF THE PANEL AAC PRODUCTS

Application	Wall Panels 50mm			Wall Panels 75mm			Floor Panels 75mm		
Panel thickness, T, mm	50			75			75		
Panel width, W, mm	600			600			600		
Panel length, L, mm	2200			Varies			1,800		
Wet density kg/m <sup>3</sup> (wout reo weight)	720-820			720 - 820			720 - 820		
Oven-dry density, kg/m <sup>3</sup>	520-620			520 - 620			520 - 620		
Compressive strength average Mpa	5.0			5.0			5.0		
Number of layers of Reinforcement	1			1			1		
Main reinforcement diameter, mm	5			5			5		
No of reinforcement strands	5			5			5		
Reinforcement centres	25/25			37/37			37/37		
Characteristic uncond compressive	1.1			1.1			1.1		
Characteristic oven dry compressive	1.9			1.9			1.9		
Mean elastic modulus E Mpa	1800/1800			1800			1800		
Panel Kg weight per m <sup>2</sup> approx	28			55			55		
Acoustic Performance dBA1	28			32			32		
With Insulation	R2.0	R2.5	R3.0	R1.5	R2.0	R2.5	R1.5	R2.0	R2.5
Thermal Resistance	2.5	3.0	3.5	2.32	2.82	3.32	2.32	2.32	3.32
Fire Rating	120/120/120			240/240/240			240/240/240		



# COATINGS AND RENDER SYSTEMS FOR ECOPANEL

Building with EcoPanel offers you a clean, modern palette to achieve the exterior look you want in a range of textures, finishes and colours.

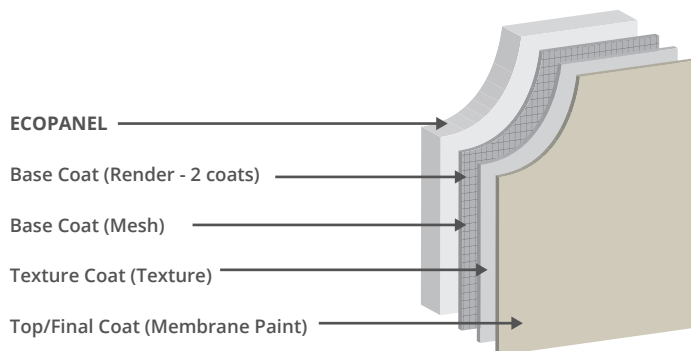
## WHAT COATING DO I NEED TO USE WITH ECOPANEL?

It is important to select the right coating system to protect your investment.

CHAD only recommends using an acrylic coating system like CHAD Surface Coatings with our products. CHAD's Surface Coatings are Acrylic and contain the technology to help prevent superficial cracking and won't delaminate, ensuring you have a quality finish for longer.

## HOW DOES IT WORK?

CHAD recommends using a suitable acrylic coating system with our product such as CHAD Surface Coatings. Each coat plays a unique role and helps keep your house looking great for longer.



## PATTERNS AND FINISHES

Whether its the clean and modern look of a rendered finish you are after, or a routed design to personalise your house, the choices are endless when it comes to ECOPANEL. What ever you desire, you can create it with CHAD's ECOPANEL.

## CHAD SURFACE COATINGS – RENDER

We have the render to suit your requirements.

Our superior quality of renders include:

- Trade Render
- Pro Render
- High Build Render
- FR Renders

See [www.chadgroup.com.au/facades/render-bags/](http://www.chadgroup.com.au/facades/render-bags/) for our full range of render products.

## CHAD SURFACE COATINGS - PRIMER/TEXTURE

Texture coating or 'texture' is another external coat that has become a growing popularity in housing finishes. Texture is an acrylic product that is applied over a base render coat and has hundreds of different combinations of colours and textures. Texture coatings offer many finishes that differ in thickness and profile.

See [www.chadgroup.com.au/facades/texture/](http://www.chadgroup.com.au/facades/texture/)

Our superior quality of textures include:

- CHAD Clear Base Medium Texture
- CHAD White Base Medium Texture
- CHAD Clear Base Fine Texture

A top coat of CHAD Surface Coatings Membrane Render Paint is recommended.



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