Insulated Lightweight Cladding Systems

* Cost Effective
* Complete System Packages
* Energy Efficient
* 10 Year Guarantee

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www.rhinoboard.com.au
**Why use Rhinoboard EPS Wall Panel System**

Rhinoboard is an energy efficient lightweight building panel. When used in the external cladding system as described, the end result is an authentic looking seamless render finish to the exterior of your new home, renovation or commercial project.

**Warranty & Quality Assurance**

Rhinoboard EPS Wall Panels conform with Australian Standards 1366:1992 Part 3, containing both flame retardant & insect repellent additives. Our complete system when installed to manufacturers specifications carries a written 10 year warranty.

**Minimum Stud & Fastener Spacing’s**

<table>
<thead>
<tr>
<th>Rhinoboard Minimum Stud &amp; Fastener Spacing’s</th>
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<tbody>
<tr>
<td>Regions – Wind Study</td>
<td>Spacings (mm)</td>
<td>Spacings (mm – Vertically)</td>
<td>Number of Fasteners M2</td>
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<td>N2</td>
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<tr>
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<tr>
<td>Cyclonic</td>
<td>450</td>
<td>300</td>
<td>12</td>
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*In accordance with AS1684.3 – 2010/AS 4055 - 2012*

**LRV (Light Reflective Value)**

The LRV value for Rhinoboard EPS Cladding System is 40%.

This means it is not recommended to use colours over Rhinoboard EPS Cladding system with a LRV of less than 40%.

**R Value**

Rhinoboard™ has excellent insulation quality. Rhinoboard™ keeps inside warm in winter and cool in summer. The rating is measured in R-Value, the higher the R-Value, the greater the insulating effect.

**Total R Value for Rhinoboard™**

Thickness: 40mm 60mm 75mm 100mm
R-Value: 1.92R 2.44R 2.83R 3.48R

**The Wall System**

The system comprises of an EPS wall panel measuring 2500mm x 1200mm and is available in 40mm, 60mm, 75mm and 100mm thickness. The M grade EPS Grooved Panel contains termite treatment and has a flame retardant additive with zero ignitability properties. After a light duty breathe sarking has been installed to the frame, the panel is then mechanically fixed directly to the timber, steel or masonry substrate or if using the cavity system a H Grade polystyrene batten is used to form an air gap between panel and substrate. UV stabilised PVC trims are then fixed to all exposed edges in preparation for the render system. A modified polymer render is then applied with the 160gsm fibreglass mesh embedded then a 100% acrylic textured trowel on is applied. The system provides a weather resistant seam free rendered finish and in addition provides a continuous thermal insulation over the entire wall.

**The Cavity System**

H Grade Polystyrene battens are to be affixed or glued to sarking over studs to allow for an air gap in between substrate and panel. Generally, a 15mm thick batten will be used for 60mm Panel and a 25mm thick batten is used for 75mm panels. Calculate 2.5lm of batten per m² of wall.

**The Reinforced Render System**

The reinforced render system consists of approved render reinforced with an alkali resistant 160gsm fibreglass mesh finished with a 100% acrylic topcoat as a texture coating with a membrane finish. The system has a finish thickness of approximately 4.5mm. Experience has shown us that the traditional method of 6mm render without the 100% acrylic topcoat is prone to hairline cracking. The RRR System overcomes this and has a written 10 year warranty.

**Note:** To be used as a guide only. Please check render/paint manufacturer specifications for exact details and procedures.
Rhinoboard Installation Guidelines

These guidelines provide information on the correct procedures and materials to be used for the installation of the Rhinoboard Insulated Cladding System over standard framed and solid structures. The drawings and details are provided to assist specifiers in the correct design and detailing of the RhinoBoard™ Insulated cladding system.

The components that make up the RhinoBoard™ Insulative Cladding System are: RhinoBoard™, screws, washers, PVC beading, fibreglass mesh, render and texture coatings. All components are available through Pro-lite Architectural Systems. These components form part of the complete system and must not be substituted with other possibly non-conforming materials.

Timber and Steel Framing

- The timber or steel framework to which the RhinoBoard™ Insulated wall cladding is to be installed must conform to all requirements of the Building Code of Australia and be approved by Local Authorities. Check the frame for straightness, this is the Builders responsibility and the straightness of the finished wall will reflect the degree of alignment of the frame (It is preferable that the sheet bracing be placed on the internal walls where possible).

Specifications

- Moisture Control
Vapour permeable sarking must be installed to the outside face of the building prior to installation of Rhinoboard.

- Existing Framing
When over-cladding existing timber buildings, inspection must be carried out to identify any deterioration or infestation by wood boring insects by a fully qualified person. Although the RhinoBoard™ is impregnated with an effective insect repellent, it will not prevent existing infestations of timber framing to continue. Where necessary repairs must be undertaken to ensure that the timber substrate is sound, straight and true.

- Back Blocking
Where sheets join off the studs it is necessary to back block the joint by fitting a noggin behind the joint and fixing with screws and washers. Horizontal "back blocks "does not need to be a full noggin, spaced approximately every 300mm. This is essentially a floating back block.

- Solid Blocking
Consult with the builder to provide for solid blocking to be installed where fixtures are to be fitted to the finished walls: e.g. Clothes Lines, Balustrades, Handrails, Hot Water Services, Air Conditioning Units, Downpipes, Taps, Large Light Fittings etc.

- Fitting RhinoBoard Insulation Panels
Timber frames must have a moisture content of less than 15% before panels are fitted. RhinoBoard™ panels may be fitted either vertically or horizontal, although are recommended to be fitted horizontally in a brick pattern, creating straighter walls & less wastage.

RhinoBoard™ panels should be fixed off at 300mm centres along the studs and around all edges, at both internal and external corners the sheets are overlapped the full thickness of the sheet. All edges of the RhinoBoard™ Panel must be securely fixed to the structural frame on a stud or noggin. All joints should be glued using an approved PU Expandable Foam glue.

Glue external angle beads to all external corners using recommended construction adhesive. Ensure that the beads are straight, plumb and line up with the starter strips to allow for the correct thickness of render and texture to be applied.

- Curved Walls
40mm and 60mm panels can be fitted to curved walls with a radius greater than 2.4 metres. Where a tighter radius is required multiple layers of 20mm panels are used with the joints offset.
• Expansion Joints
Expansion joints must be provided to allow for movement in the building. Place joints vertically every 8 metres and over floor joist intersection. Expansion joints must be provided where the RhinoBoard™ panel covers different substrates, joins adjacent materials, or where there is a construction joint in the substrate.

• Cutting
RhinoBoard™ can be cut using a handsaw, knife or a power saw with a diamond blade. For the most accurate cut the power saw with the diamond blade has proven the preferred method. It has also been proven that for environmental reasons the power saw with a diamond blade or a hot wire table is a must when cutting RhinoBoard™ on building sites, as there is no debris or any material polluting the environment.

• Gluing and Sealing
All joints are to be glued using PU Expandable Foam. For sealing of windows use an approved PU marine Sealant and Primer where plastic meets windows.

• Beading
Pro-Lite Architectural Systems have a full range of UV stabilized PVC beads specifically designed for RhinoBoard™ cladding. Use only UV stabilized beads for external application. All external corners must be protected with External Angles. Exposed window reveals of greater than 15mm in depth must have an external angle installed and rendered back into window. Sills should be cut at 14 degrees to allow for sufficient fall.

Concrete and Masonry Walls

• Preparation
All walls must be clean and dust free from dirt, oil, vegetation, and crumbling or loose materials.

When installing via the Power’s Foam adhesive system, apply a large application of foam adhesive to the middle of each and every Masonry block.

The panels are fixed using both gluing and mechanical fixing. Mechanical fixings are Hilti IDP polypropylene anchors Adhesive used is approved Render or “Powers” foam adhesive.

• Finishing
Before rendering any irregularities in the surface of the sheet or joints are sanded back using a coarse rasp.

Bead and Sealant Procedures

The RhinoBoard™ approved PVC bead details require accuracy of detail at intersecting points. Either external or internal ‘rail edges’ must be precise in practice to ensure a uniform complete finish in readiness for render stage.

• Sealing
Seal around any extrusions through the wall and around windows with a flexible joint filling compound such as Sika Pro.
• **Sealant Procedure**

You will require: Bostik N40 Primer, Clean rag, Masking tape, ‘Sika Pro.’

With clean rag, dampen cloth with primer and quickly clean the internal joinery to Rhinoboard line that is to be sealed.

Using masking tape, accurately adhere to frame of joinery, 4mm form edge creating a neat parallel margin, ready for sealant application.

Cut a medium size end off nozzle of ‘Sika Pro.’ Proceed in applying sealant. Using a coving tool, neatly create an internal cove finish.

Remove masking tape off joinery leaving a completely 100% water proof joint seal.

Emphasis is placed strongly, that this procedure is not just a gap filling exercise. It is an integral part of the total Rhinoboard composition.

• **Approved Render Application Hints**

  • The first layer of approved reinforced render should be a minimum of 3.5mm.

  • Continuously hang the pre-cut mesh (hook the corner of the steel trowel into the top corner of the mesh - locate then ‘swipe’ the trowel across the mesh and into the render.

  • Approved fibreglass mesh must cover PVC bead joints and mesh to mesh overlap must be 100mm

  • Cut out all the apertures in the mesh (windows, doors etc.)

  • From these cut outs, cut out the 600x200 diagonal reinforcement strips of mesh to bond at 45 degree angles at the corners of openings.

  • Trowel in the above on all corners of doors, windows etc.

  • Finish off with a minimum 1.5mm approved acrylic trowel on texture coating.

  • On completion, the system is ready to be sealed and painted with a high build protective paint.

**PLEASE NOTE:** If the internal linings are to be installed after the application of the external coatings, the internal linings must be screw fixed as nailing may damage the external linings.

• **Reinforced Render, Texture & Membrane Coating**

  • **Application Procedure**

Approved render will be a pre-blended polymer modified cement render that is mixed with water immediately prior to use. The powder is mixed with clean water to achieve a smooth paste and applied to the wall using a steel trowel or suitable spray machines. The first coat is applied to a thickness of approx 3.5mm. The fibre mesh is lightly trowelled into the surface of the render while it is still wet and trimmed around the edges with a knife. The mesh is laid onto the wall in strips 1 metre wide and the edges are overlapped at least 100mm. Extra reinforcing mesh, 200mm x 600mm must be trowelled into the render at 45 degrees diagonally across the corners of all openings.

  • **Second Application**

A further application of 100% acrylic trowel on texture coating must be used to prevent any hairline cracks. If this is not adhered to all warranties are void.
Sill Detail

- Sealant bead across 6mm gap
- External angle
- Window frame
- Window reveal & architrave
- 10mm plasterboard
- Stud frame
- 3.5mm render & reinforcement
- 60mm RhinoBoard panel
Window Detail

- Sealant Bead Across 2mm Gap
- 3.5mm Render & Reinforcement
- 60mm Rhinoboard Panel
- 10mm Plasterboard
- Stud Frame
- Window Reveal & Architrave
- Window Frame

External angle
Wall Base Detail

Detail 3.1.
External Corner Detail

Detail 4.1.

10mm Plasterboard

60mm Rhinoboard Panel

3.5mm Render & Reinforcement

Corner Bead
Horizontal Expansion

Joint Detail

Sealant Bead Across 6mm Gap

Expansion Bead

Stud Frame
10mm Plasterboard

60mm Rhinoboard Panel

3.5mm Render & Reinforcement

Joists

Skirting

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Raking Roof Detail

Detail 6.1.

- Stud Frame
- 10mm Plasterboard
- 60mm Rhinoboard Panel
- Setting 4. Render & Reinforcement
- Flashing
- Roof Sheeting
- Approx 10mm

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Flat Roof Detail

- 60mm Rhinoboard Panel
- 3.5mm Render & Reinforcement
- Flashing
- Roof Shingles

Stud Frame
10mm Plasterboard
11.

Detail

= 7.1.
Detail 8.1.

Pre Formed Capping by Others
Pre Formed Flashing by Others
FR
Lining
60mm Rhinoboard
4.5mm Render
Reinforcement
Seal as Required

Parapet Wall Detail
Staggered Installation of Interlocking Panel System

Horizontal Textured Surface. Greater Catchment, Surface Area and Bonding for External Treatment.

Detail 9.1.

Stud Back Blocking @ 300mm Centres
Corner Mesh Reinforcing
All of the following items must be adhered to during installation and checked off by not only the applicator but also the site supervisor.
Rhino Architectural Systems Pty. Ltd WILL ONLY warrant the installation on the provision that the above has been completed, both parties signed the declaration and that a copy of the signed document is received by Rhino Architectural Systems Pty. Ltd. (each party to tick the boxes and add a signature).

1. Ensure entire frame structure is straight and true from eg: Roof Parapet through frame, through subfloor intersections.

STAGE 1.
Stage 1. Can be completed by either a trained applicator/ renderer or by a trained carpentry crew.

2. The RhinoBoard™ is fixed with the fixings provided and spaced according to the specification eg: 300mm centres on timber/steel framework.

3. Each RhinoBoard™ sheet is adhered to its neighbour with the construction glue provided (‘PU Expandable Foam’).

4. All off stud joints must be ‘back blocked’ ie: small horizontal pieces of stud material 300mm apart) or one long vertical screwed into place.

5. All cutting should be neat and straight (masonry diamond blade in standard power saw) so as to allow for the PVC bead to be glued straight.

6. A 3mm gap should be left around the head and sides of all windows and doors. A 10 - 12mm gap should be left on all windowsills.

7. The gap between the window head and sides needs to completely primed and sealed using an external UV type of Polyurethane sealant eg: Sikaflex Pro.

9. The gap on the window sills needs to be sealed using the same sealant as above but directly to the RhinoBoard™. A section of ‘External Bead’ is adhered to the RhinoBoard™ sill so the renderer is able to create a ‘sill with a fall angling up and back to the sealed window fin.

10. All exposed base edges need to have either ‘Cover Bead’ adhered (eg: RhinoBoard™ Overlapping flashing) or a specific ‘Base Bead’. (Base Bead is only available for 40mm and 60mm RhinoBoard™ sizes in excess of 60mm use a Cover Bead).

STAGE 2.
Stage 2 can only be completed by a trained renderer.

11. The renderer must check the installation of the RhinoBoard™ and associated PVC bead to ensure that it complies with the Rhino Architectural Systems specification.

12. The RhinoBoard™ fibreglass mesh provided must by ‘lightly’ trowelled into the 1st coat of render making sure that it overlaps all the PVC Bead joints and itself (mesh to mesh overlaps to be 100mm).

13. Cut away the mesh that is covering windows and doors (making sure that the overlap is maintained) and cut these pieces into approximately 250mm and 600mm - place and trowel them in lightly on the diagonal at all window and door corners.

14. Approved Render must be applied to a minimum total of 6mm thickness over two coat applications.

15. Second coat must be flexible acrylic trowel on.

16. Sponge finish the wall.

STAGE 3.
17. Applied Finish Paint Specification

Party 1 Signature

Party 2 Signature

Print Name ____________________________

Company ____________________________