TECHNICAL SPECIFICATIONS

External Cladding_ Internal Lining_



PRÎMAplank[™] **PRÎMA**/ux[™] **PRÎMA***alpha*^α WeatherClad

PRÎMA*flex*[™] **PRÎMA** base[™] **PRÎMA**aqua™ **PRÎMA**CTU[™]

೫ Hume Cemboard Industries Member of the Hona Leona Group

Introduction

HUME CEMBOARD INDUSTRIES SDN BHD offers alternative premium quality building products under "**PRÎMA**^{**} brand for use in residential houses and commercial buildings.

PRÎMA cellulose fibre reinforced cement flat sheets are autoclaved single faced building boards manufactured by **HUME CEMBOARD INDUSTRIES SDN BHD** in accordance with AS/NZS 2908.2 Cellulose-cement products, Part 2: Flat Sheets.

Accredited with MS ISO 9001:2000, **HUME CEMBOARD INDUSTRIES SDN BHD** delivers products with consistent premium quality, backed with excellent customer service.

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Cladding, Eaves and Ceiling Boards

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PRÎMAbase[®]

_Texture Coating System

Product Description Fixing Instructions Movement Joints Window / Door Openings Corners Flush Jointing and Texture Coating Systems

PRÎMAaqua[™]

_Internal Lining

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PRÎMAplank[™]

Siding

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PRÎMACTU[™]

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PRÎMA/ux[™]

_Wall and Ceiling Linings

Product Description Installation Instructions Wall Lining Ceiling Lining Exposed Beam Ceiling Joints and Corners Finishers

PRÎMA*alpha*^α WeatherClad

_Aesthetic Cladding | External Wall Cladding

Framing & Fastening Surface Clearances Installation Procedure

_Working Instructions

Delivery, Handling and Storage Cutting Methods Notching Penetrations Working Safer with PRIMA Products

Building Code Compliance

The requirements set out in the Building Code and local Building Regulatory Authority must be checked and verified prior to the commencement of work to ensure their compliance.

Serviceable Life

The performance of **PRÎMA**[®] products is limited only by the durability of the supporting structure and the materials used in the installation. When installed and maintained as per good building practice and specifications described in this manual, **PRÎMA**[®] products are expected to have a serviceable life of 50 years*.

*Appraised by BRANZ based on New Zealand Buildina Code.

Maintenance

Periodic maintenance of the coating system must be performed as specified by the manufacturer. The jointing and texturing systems are also to be inspected periodically over the life of the building. All joints and sealants must be checked for cracks to prevent the intrusion of water. Make good any defects in accordance with the systems outlined in this manual and the coating manufacturer's recommendations.

Fasteners

_Fixing to Timber Framing	
Galvanised Fibre Cement Nails	Nail Size (for fixing to softwood)
PRÎMA plank [™]	2.8mmØ x 40mm
PRÎMA <i>flex</i> ™	2.8mmØ x 30mm
PRÎMA base [™]	2.8mmØ x 30mm

• Drive nail head flush with board surface.

 For recladding applications, ensure a minimum of 20mm nail penetration to the framing.

_Fixing to Steel Framing	
Self-embedding Head Screws (SEH)	Screw Size (for fixing to light gauge steel up to 1.6mm BMT)
PRÎMA plank [™]	8 gauge x 32mm
PRÎMA <i>flex</i> ™	8 gauge x 22mm
PRÎMA base	8 gauge x 32mm
• Do NOT use SEH screws with 4.5mm sheets.	

- · Screws head must be embedded 0.5mm below sheet surface
- Screws must have Class 3 finish.

3. In areas of severe coastal and corrosive environments, consult fastener manufacturers for recommendations.

Notes:

^{1.} All nails shall comply with AS 2334: Steel nails - Metric Series or equivalent standards.

^{2.} All screws shall comply with AS 3566: Self-drilling screw - for the building and construction industries.

^{4.} To avoid undulations in finished product, fix individual sheets working from the centre towards the edge.

General Guide Line for External Installation

Sarking

It is recommended that a layer of vapour permeable building sarking be applied to the exterior side of the wall framing prior to installation of cladding material. Sarking can be of the reflective or non-reflective type. Reflective sarking such as foilbacked building will improve the thermal insulation properties of a wall, and protect against water ingress. Sarking must be installed as per manufacturer's instructions.

Vapour Barrier

In cold climates or applications where substantial temperature difference is anticipated, provide a layer of a vapour barrier on the higher temperature side of the wall. The vapour barrier will prevent condensation within the wall cavity. Refer to Figure 1.

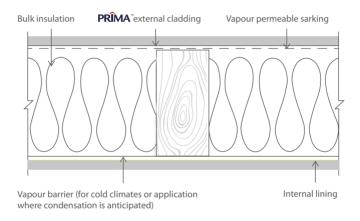


Figure 1 : Typical External Wall Section

Thermal Insulation

A typical exterior wall constructed with **PRÎMA***plank*, **PRÎMA***flex* or **PRÎMA***base*⁻ cladding, a layer of reflective building paper, 100mm timber stud and 10mm plasterboard lining will produce an R value of 0.8°C m²/W. In applications where higher thermal insulation is required, the R value may be increased by filling up the wall cavity with insulation material such as fibreglass batts. Sarking must be provided when using bulk insulation.

Example: The inclusion of R1 .5 batts in the above construction will give an R value of approximately 1.8°C m²/W.

Concrete Floor Slab Detail

Sheets should be installed clear of the ground level by approximately 150mm to provide for adequate protection against constant contact with ground water. This would prevent sheets from getting saturated, which may result in coating adhesion failure. Additionally, the ground clearance would allow for early termite detection.

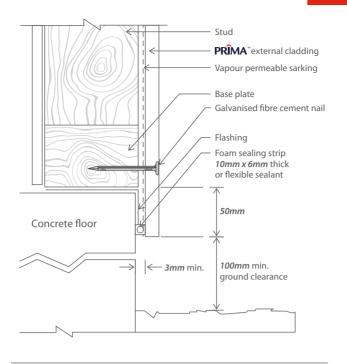


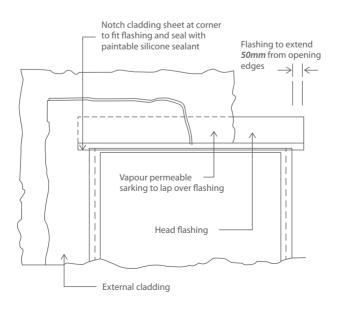
Figure 2 : Bottom Plate Detail

Window and Door Openings

Where **PRÎMA**[¬] boards are applied above the windows or doors, head flashing should be installed. Ensure sarking overlaps the head flashing. Flashings should be extended 50mm beyond each side of the opening and boards should be notched around the opening and sealed with paintable silicone sealant that is compatible with cementicious products.

_Corner Flashings

When cladding with **PRÎMA***plank*", **PRÎMA***flex*" and **PRÎMA***base*", provide metal flashing at internal and external corners. Flashing is not required if foil backed building paper is utilized as sarking.



PRÎMA*flex*[™]

_Cladding, Eaves and Ceiling Boards



Product Description

PRÎMA*flex*⁻⁻ sheets are manufactured to a nominal 4.5mm and 6.0mm thickness and are suitable for use as eaves and ceiling linings, general purpose cladding and gable ends.

Fixing Instructions

Sheet Fixing

PRÎMA*flex*^{*} cladding sheets are normally installed vertically to minimize the number of horizontal sheet joints. Refer to Figure 16. When installed as eaves or ceiling linings, **PRÎMA***flex*^{*} can be laid parallel to or across the joist as shown in Figure 5 and Figure 6.

Fastener fixing distances:-

- 12mm from edge
- 50mm from corner
- 200mm centres at perimeter
- 300mm centre at elsewhere

PRÎMA*flex*

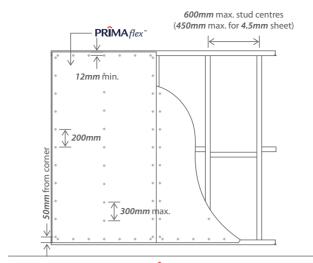


Figure 4: PRÎMA flex "Cladding

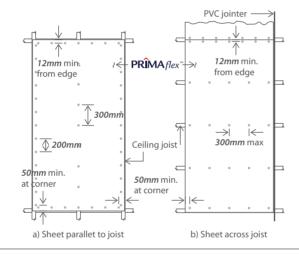


Figure 5: PRÎMA flex " Ceiling Lining

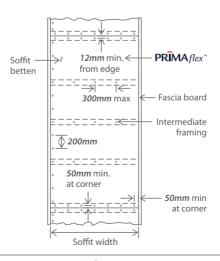


Figure 6: PRÎMA flex "Eaves Lining

External Cladding Joints

Vertical Joints

Alternative vertical jointing systems which include Timber Batten Jointing, PVC Jointing and Flexible Sealant Jointing are illustrated in Figure 7 to Figure 8.

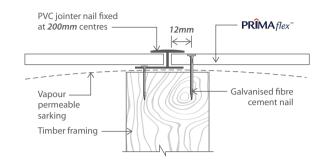


Figure 7 : PVC Jointing

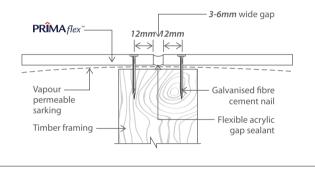


Figure 8 : Flexible Sealant Jointing

Horizontal Joints

Horizontal joints are likely to occur when a building wall height is more than one sheet length. Exterior grade PVC or galvanized flashing must be used for all **PRÎMA** flex^{*} horizontal joints. When the building height is more than one storey high, provide a horizontal control joint along the junction of the floor joist on the upper storey. Similar construction to PRIMAbase horizontal movement joints can be adopted. See Figure 21 and Figure 22 on page 15.

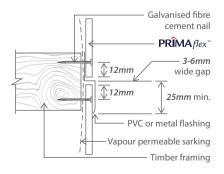
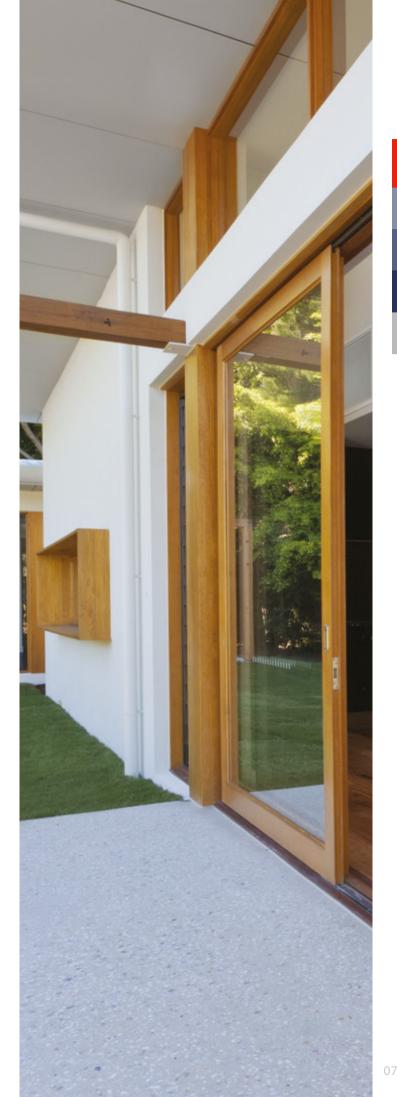
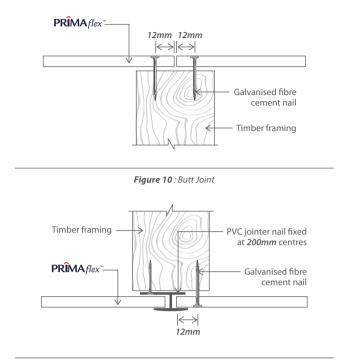


Figure 9 : PVC Horizontal Joint



Eaves and Ceiling Joints

PRÎMA*flex*^{*}eaves and ceiling sheets can be butt jointed or alternatively decorated with PVC jointing strips. When butt jointing **PRÎMA***flex*^{**} sheets, ensure sheets join at centre line of ceiling support.





Internal and External Wall Corners

PRÎMA*flex*^{**} corners may be battened with treated timber or finished with proprietary metal or PVC corner moulds. Timber batten corner details are shown in Figure 12 and Figure 13.

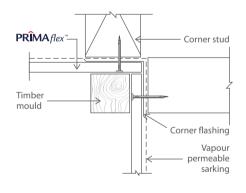


Figure 12 : Internal Corner (Timber Betten)

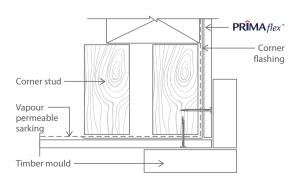


Figure 13 : External Corner (Timber Betten)

Finishing

Under normal circumstances, **PRÎMA** external cladding boards must be coated within 3 months after installation. For best results, decorate **PRÎMA***plank*⁻and **PRÎMA***flex*⁻ with 2 coats of 100% quality water-based acrylic paint. For general purpose applications, there is no requirement for primers or sealers. Use exterior grade coating systems that are compatible with fibre cement cladding products. In all cases, coating manufacturer's recommendations must be strictly adhered to.

For **PRÎMA***base* board, refer to 'FLUSH JOINTING AND TEXTURE COATING SYSTEMS' section on page 10.





_Texture Coating System



Product Description

PRÎMA*base*^{*} is a premium quality 7.5mm thick board specifically designed as a substrate for exterior texture coating systems.

PRÎMA*base*⁻ has 3 rebated edges and one short edge for flush jointing purposes.

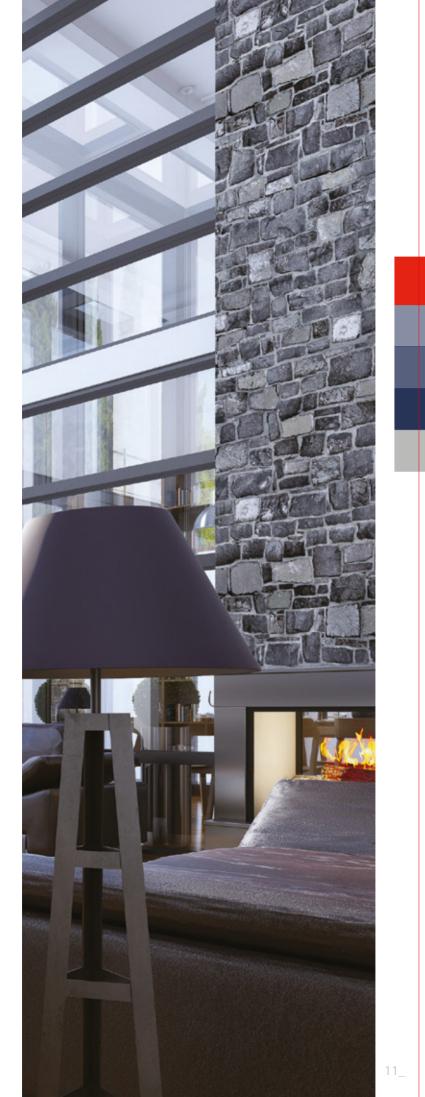
_Applications

PRÎMA*base*⁻ is suitable for residential and commercial buildings of a maximum height of two storeys. Higher structures may require specific designs and therefore greater care must be exercised by the building designer and engineer to ensure the stability of the entire building system to protect sheet fixing and jointing.

Fixing Instructions

_Sheet Orientation

PRÎMA*base*⁻ sheets can be fixed vertically or horizontally. Generally vertical sheet layout is preferred and horizontal sheet layout is only recommended for cladding not more than 1200mm height.



_Fixing Points

Fix nails or screws no closer than 12mm from the edge of the sheet and 50mm from the corner of the sheet. Fix fasteners to all studs, top and bottom plates at 200mm maximum centres. Fasteners fixing should commence from the sheets centre working outward toward the sheet edges.

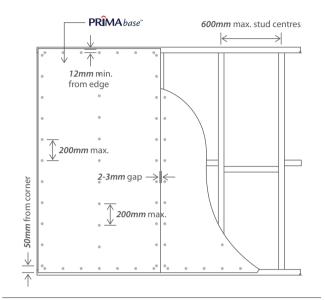


Figure 14: Vertical Sheeting

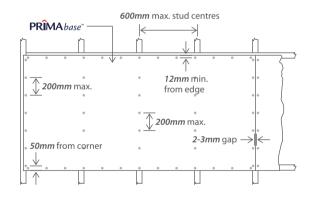


Figure 15 : Horizontal Sheeting

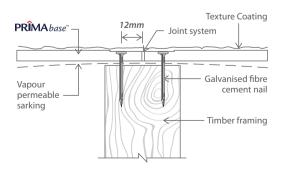


Figure 16: Normal Sheet Joint



Ensure that all sheet edges join on the stud centre line. Flush joint must only be performed with rebated edge sheets. Avoid sheet joints over or near window and door corners, as these are points of stress.

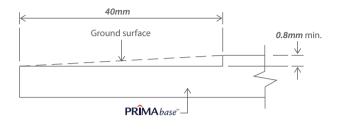


Figure 17: Square Rebated Profile

On-site Sheet Edge Rebating

At times it may be necessary to grind a rebated edge on site. This can be achieved using an electric grinder equipped with an appropriate carborundum / diamond blade. Ensure the sheet edge retains 6.0mm minimum thickness.

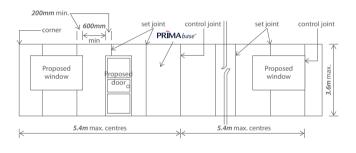


Figure 18: Sheet Layout at Openings and Control Joint Location

Control Joints

Minimal movement of flush jointed sheets is to be taken up by control joints. Control joints should be located at 5.4m centres and formed using sheets with square cut edges. Door and window sides are ideal locations for control joints. Provide an approximately 6mm wide gap between sheets and seal with paintable flexible sealant. Do not apply texture coating on the control joints.

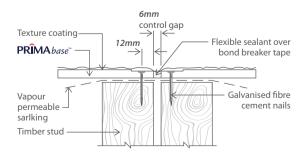


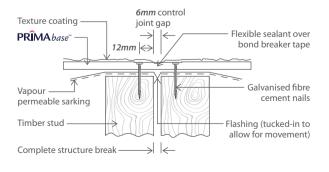
Figure 19: Control Joint Detail



Movement Joints

Vertical Movement Joints

The application of vertical movement joints is more associated with industrial and commercial constructions. These joints must be provided to cater for structural movement as and when required by the building designer. Use sheets with square cut edges to form these joints. A correctly designed movement joint will incorporate total separation of the top and bottom plates, internal lining and the **PRÎMA***base*⁻ sheet. See Figure 20.





Horizontal Movement Joints

Horizontal movement joints are generally required for two-storey construction, where sheet joints occur at the floor joist line. They must be located at 3.6m maximum centres. Movement joints are particularly important to cater to any framing shrinkage or other structural movement. Alternatives on horizontal movement joints are shown in Figure 21 and Figure 22.

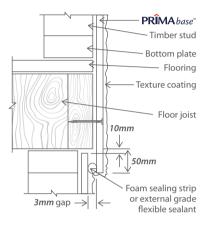


Figure 21 : Horizontal Movement Joints (Option 1)

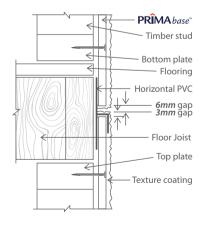


Figure 22: Horizontal Movement Joints (Option 2)

Movement Joints (cont.)

_Wall Intersection Movement Joints

When **PRIMA** *base*⁻ wall intersects with an existing clad wall or masonry wall, a movement joint must be provided as shown in Figure 23 and Figure 24.

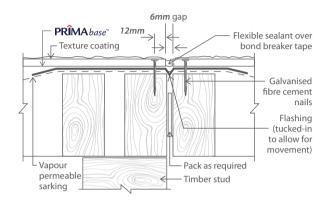


Figure 23 : Vertical Movement Joints - Intersection with Clad Wall

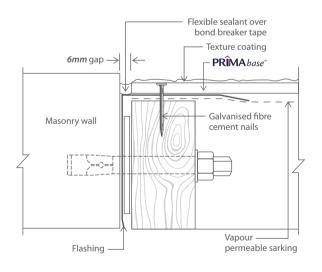


Figure 24: Vertical Movement Joints - Intersection with Masonry Wall



Window / Door Openings

Ensure that flashings are properly installed at the head, jamb and sill of an opening. Typical details at opening are shown in Figure 25 to Figure 27.

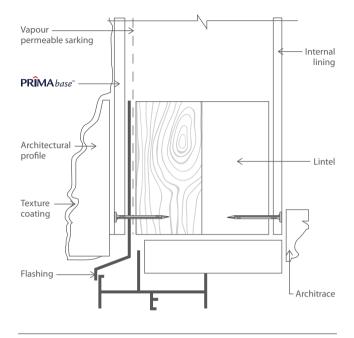


Figure 25 : Window / Door Head Detail

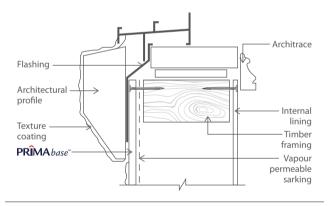


Figure 26 : Window Sill Detail

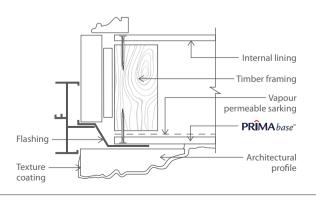


Figure 27 : Window / Door Jamb Detail

Corners

PRÎMA*base*⁻⁻ internal and external corners can either be formed using square rebated edges or cut edges. A combination of square rebated edge and cut edge is not recommended due to the difficulty when applying texture coating jointing system.

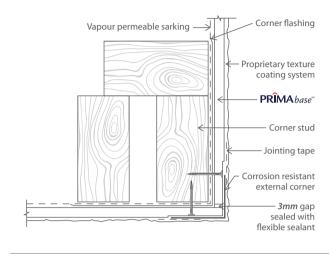


Figure 28 : External Corner (PVC or Metal Angles)

External Corners

External corners are normally finished by using PVC or metal external corner angles. Use only exterior grade and corrosive resistant corner angles. Alternatively, external corners may be finished with a tape-reinforced flexible joint. Refer to Figure 28 and Figure 29.

Ensure that sheet edge is set flush with the sheet face of the other side if the corner. Provide a gap of 2mm - 3mm between adjacent sheets. Seal gap with flexible sealant.

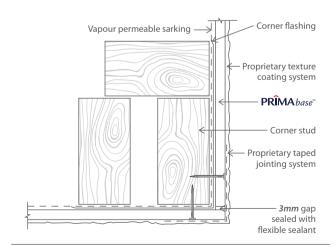


Figure 29: External Corner (Tape Reinforced Flexible Joint)

Internal Corners

Internal corner sheet joints may be set flush using tape reinforced flexible joint. Provide 2mm - 3mm gap at the adjoining sheets and seal gap with flexible sealant prior to flush setting. Refer to Figure 30.

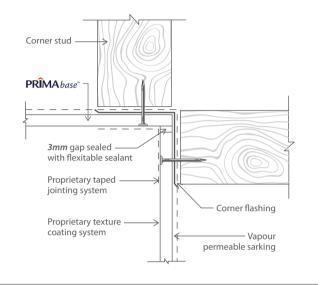


Figure 30: Internal Corner (Tape Reinforced Flexible Joint)

Finishing

PRÎMA*base*[~] should normally receive a sealer coat prior to application of texture coat. The texture coating must be applied to the entire **PRÎMA***base*[~] sheet to at least the minimum thickness recommended by the coating manufacturer.

The mesh tape-reinforced joint is to be sufficiently flexible so as not to crack as a result of thermal expansion and contraction. The texture coating should generally be minimum of 3mm thick. Smooth finishes are not suitable.

Where possible avoid using dark colours due to unacceptable heat build-up. In all instances refer to the coating manufacturer's specifications and recommendations.

All jointing and texture coating applications are to be performed by manufacturer approved, reputable applicators.

Note:

Ensure the jointing and coating components are from the same manufacturer and are compatible with each other.





_Internal Lining



Product Description

PRÎMA*aqua*" sheets are manufactured to nominal 6.0mm and 9.0mm thickness and are suitable for use as internal wall and ceiling linings, soffit linings as well as wet area applications where sheets are subjected to severe or intermittent wetting.

PRÎMA *aqua*^{*} sheets are manufactured with a sanded and sealed surface, and its long edges are square rebated, for seamless, and flush set joint.

PRÎMA*aqua*" has a typical moisture movement of 0.06% - from Equilibrium Moisture Content to saturation. This feature allows the sheets to be flush set, without fear of cracks.

Installation Instructions

_Sheet Thickness Selection

The selection of sheet thickness should be based on the following criteria: -

- For general residential construction and ceiling applications
 6.0mm PRÎMA*aqua*
- For construction where high impact resistance may be desirable, e.g: Hotels, Schools, Hospitals and Shopping Centres - 9.0mm **PRîMA**aqua^{**}

Stud face width must be at least 38mm.

_On-site Sheet Edge Rebating

Best result on **PRîMA***aqua*^{*} joint can be obtained with square rebated edges. At times it may become necessary to form a rebated edge on a building site. This can be achieved using an electric grinder equipped with an appropriate carborundum blade. Ensure the ground edge retains at least 4.5mm thickness for 6.0mm sheet and 7.5mm for 9.0mm sheet.

Framing Specification

PRÎMA*aqua* can be applied to timber or steel framing. Framing timber must comply with AS 1684 - Residential Timber-Framed Construction. To minimize shrinkage, it is preferable to use kiln-dried framing timber.

Steel frame must comply with AS3623; Domestic metal framing. Steel framing must be fabricated from light gauge steel of a minimum 0.55mm to 1.60mm base metal thickness. Use only cold-formed steel sections. The use of hot rolled sections is not recommended due to the excessive thermal differential movement.

Stud face width must be at least 38mm.

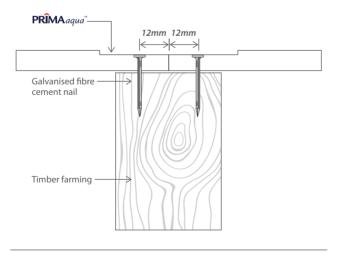


Figure 31 : Fixing Timber Support

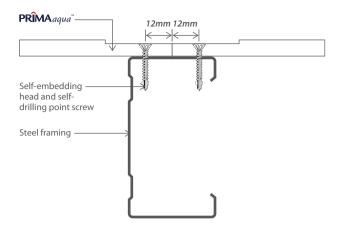


Figure 32 : Fixing to Steel Support

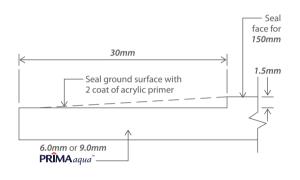
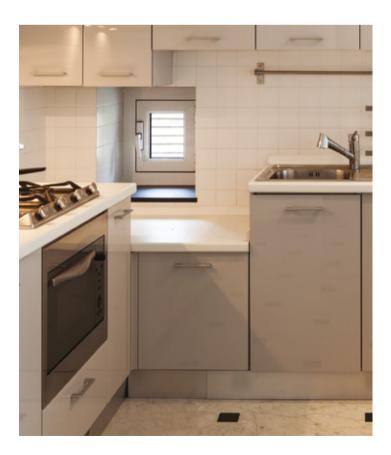


Figure 33 : Square Rebated Edge



PRÎMAaqua[™] Wall Lining

Sheet Orientation

PRÎMA*aqua*" sheets may be installed vertically or horizontally. Generally, sheets are placed to minimize the number of joints. Horizontal sheeting is more convenient for residential construction. When fixing horizontally, sheets must be laid in staggered or brick pattern. Sheet joints must not coincide with sides of openings. Refer to Figure 34.

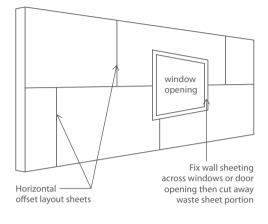


Figure 34 : Sheet Layout at Openings

_Framing Construction

Framing must be constructed with studs at maximum 600mm centres with continuous top and bottom plates. Framing stability must not be dependent on lining material. Where necessary, provide noggings for framing stability.

Nail / Screw Fixing

Fixings are to be installed at 200mm maximum centres to all sheet edges and all intermediate framing members. Fixings are to be a minimum of 12mm from sheet edges and 50mm from corners of sheet. Commence fixing each sheet from centre working outward to ensure sheeting is installed firmly against the framing. Do not fix sheets to top and bottom plates and noggings, unless wall is to be tiled.

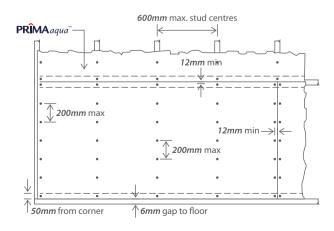


Figure 35 : Horizontal Sheet Fixing (Untiled Wall)

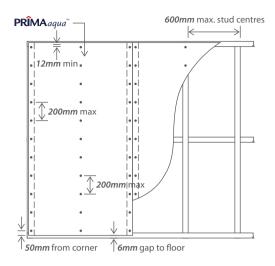


Figure 36 : Vertical Sheet Fixing (Untiled Wall)

_Adhesive and Fastener Fixing Method (Untiled Walls)

This fixing method is only suitable for untiled wall applications. Install **PRÎMA***aqua*^{**} as follows :-

- 1. Ensure framing surface and the reverse side of **PRÎMA***aqua*^{**} is free from any dust or other contaminants.
- Apply approximately 25mm diameter x 15mm thick daubs of wallboard adhesive at intermediate framing member surface at 250mm centres maximum.
- 3. Nail or screw the sheet ends at 200mm centres and ensure sheet's long edges are fixed to each framing member.
- 4. Fastener fixing point must not coincide with daubs of adhesive.
- Provide temporary blocks at sheet centre and allow adhesive to cure prior to removing the temporary blocks. (Not required for ceiling application).

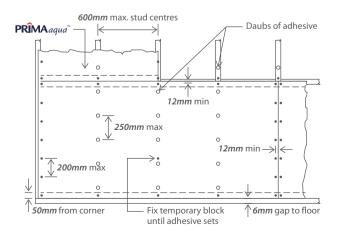


Figure 37 : Adhesive and Fastener Fixing (Untiled Wall)

PRÎMA aqua[™] Ceiling and Soffit

Framing Construction and Sheet Layout

Ceiling joists or battens must be spaced not exceeding 600mm centres. Provide intermediate framing where necessary. Intermediate framing does not necessarily coincide with sheet edges.

PRÎMA*aqua*[¬] sheets must be laid with the long dimension at right angles to the supporting structure, in a staggered or brick pattern.

Sheet Fixing

Nail or screw **PRÎMA***aqua*^{*} as depicted in Figure 38. When using wall adhesive in conjunction with nails and screws, apply about 25mm diameter x 15mm thick daubs of adhesive at 250mm centres as shown in Figure 39. Use double nailing at sheet centre when fixing**PRÎMA***aqua*^{*} as ceiling lining.

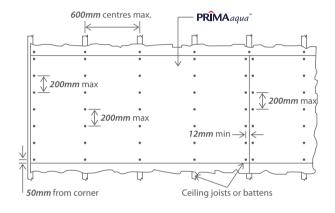


Figure 38 : PRÎMA aqua Ceiling - Nail or Screw Fixed

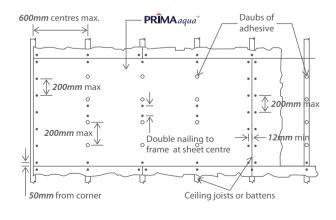
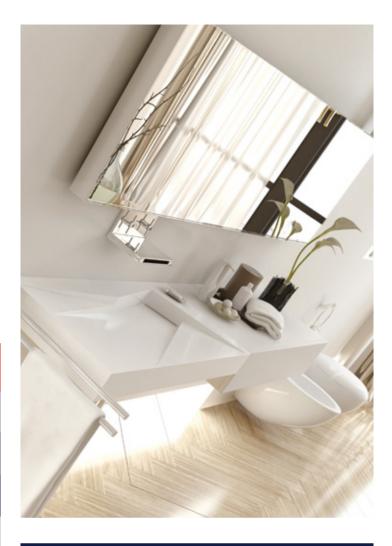


Figure 39 : PRÎMA aqua" Ceiling - Fastener and Adhesive Fixed



Joints and Corners (Untiled Walls and Ceilings)

_Flush Jointing

PRÎMA aqua" sheets may be loosely butt jointed. Gap between sheets should not exceed 3mm. Sheet joints must occur at the centre line of supports.

PRIMA aqua" joints may be flush set with proprietary plaster compounds. The jointing method is as follows:-

- 1. Ensure that the sheet joint is free from dust, grease and / or any contaminants.
- 2. Prepare the joint compound as per the manufacturer's recommendation.
- 3. Apply the first layer of joint compound onto the sheet joint to cover the joint recess and embed the perforated paper jointing tape into the bedding material. Cover the tape with a thin layer of the joint compound and allow it to dry.
- 4. Apply the second coat of joint compound, spreading to approximately 200mm wide and allow to dry.
- 5. Apply the third coat of joint compound, feathering out to approximately 270mm wide.
- 6. When topping compound is completely dry, sand off with 120 grit sandpaper prior to applying finishes.

Notes:

^{1.} Ensure that the perforated paper jointing tape is thoroughly embedded to eliminate any air

bubbles being trapped between the tape and the jointing compounds. 2. Most Plasterboard Jointing and Topping Compounds are compatible with, and suitable for flush jointing **PRÎMA**aqua".

Movement Joints

At the movement joint, wall or ceiling construction must have total separation of the framing and lining sheets. A minimum of a 5mm gap must be provided. If an expansion joint kit is used, a minimum gap of 15mm is required. Tiles or any nonflexible finishes must not bridge over movement joint. Refer to Figure 41 and Figure 14.

Movement joint must be provided as follows:-

- 7.2m centres for untiled walls and ceiling
- 4.8m centres for tiled walls

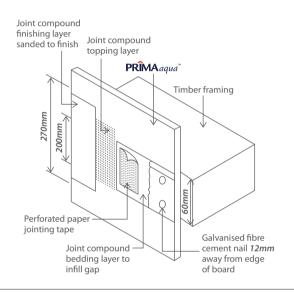


Figure 40 : Flush Joint Detail (Untiled Wall and Ceiling)

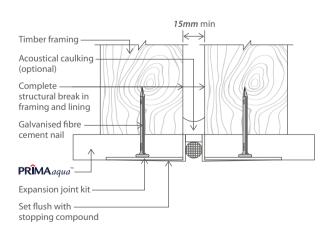


Figure 41 : Movement Joint Detail (Untiled Wall and Ceiling)

Internal Corner

Apply bedding compound to both faces of the internal corners to a width of approximately 60mm from the corner. Fold the perforated paper tape to form a 90 degree angle, embed the tape into the compound and cover the tape with a thin layer of compound. Allow the compound to dry thoroughly. Apply the second coat of bedding compound and allow to dry thoroughly. Apply a coat of topping compound feathering out approximately 200mm from the internal corner. Allow to dry thoroughly and sand with 120 grit sandpaper. Refer to Figure 42.

External Corners

PRÎMA*aqua*[°] external corners may be finished with proprietary external corner beads. For wet area applications, use only PVC corner angles. Trowel a layer of joint compound onto the external corner beads to a width of 150mm and allow it to dry. Spread the second coat to 250mm from the corner. Upon drying of the second coat, spread the final coat of the topping compound to approximately 300mm from the edge. Refer to Figure 43.

Note:

Finishing coat of joint compound must be sanded with 120 grit sandpaper prior to application of paint or wall covering.

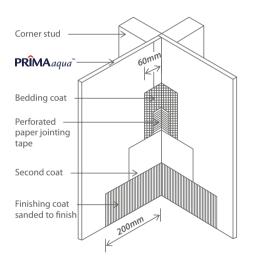


Figure 42 : Internal Corner Detail

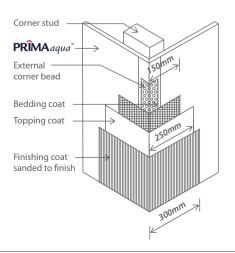


Figure 43 : External Corner Detail

Intersections

_Wall to Ceiling and Floor

The intersection between **PRÎMA***aqua*^{*} wall and ceiling may be finished with plaster cornice, timber moulding or PVC angle. **PRÎMA***aqua*^{*} wall to floor intersection may be finished with suitable skirting. Refer to Figure 44

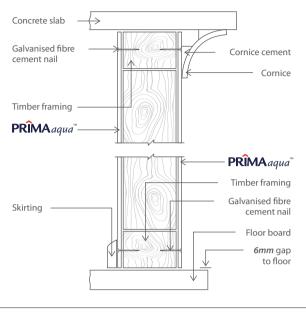


Figure 44 : Junction of Wall to Ceiling & Floor

Will Abutment (Masonry Wall)

Where **PRÎMA***aqua*^{*} walls intersect with masonry walls, a flashing material should be installed to isolate stud wall from moisture migration through masonry. Refer to Figure 45.

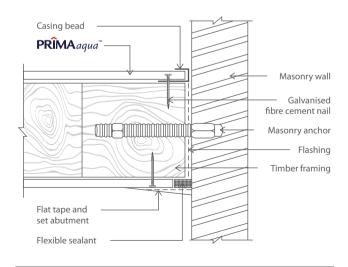


Figure 45 : Detail at Masonry Wall Abutment

Wet Area Waterproofing Systems

Wet area waterproofing should comply with Australian Standard, AS 3740: Waterproofing of wet areas within residential buildings, or equivalent. Construction must be in accordance with good building practices and fulfill the local building regulations.

General Wet Area

Provide perimeter flashing at floor-to-wall intersections in all general wet areas such as kitchen, laundries and bathroom, other than shower. Flashing must extend a minimum of 40mm from finished floor level. Alternatives of perimeter flashing are shown in Figure 46 to Figure 48.

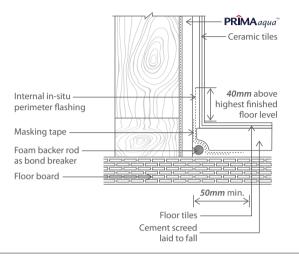


Figure 46 : Cast In-situ Perimeter Flashing

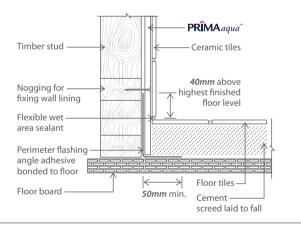


Figure 47 : Angle Perimeter Flashing

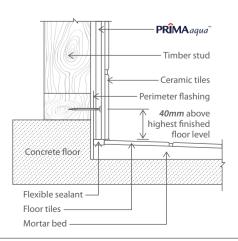


Figure 48 : Flashing at Concrete Floor Slab

Internal Lining

_In-situ Internal Shower Tray

Cast In-situ Internal Membrane System must be constructed as follows: Refer to Figure 49 and Figure 50.

- 1. Floor must be completed prior to installation of wall lining.
- 2 Provide galvanized mild steel angles with minimum leg of 40mm at corner studs.
- 3. Fix **PRÎMA***aqua*[®] as per fixing instructions.
- Seal the gap between PRÎMA aqua[®] edges and the floor with compatible flexible acrylic sealant or its equivalent.
- Construct a bond breaker at wall-to-floor intersections. This can be done by adhering 13mm diameter backer rod to the intersection corner by means of self-adhesive paper tape.
- 6. Apply the waterproofing membrane to the floor and PRÎMA aqua" wall. Waterproofing on PRÎMA aqua" must extend a minimum of 150mm above the finished bathroom floor level or 25mm above the highest possible water level. Refer to Figure 49 and 50. In all cases, refer to membrane manufacturer for details.
- Extend waterproofing membrane to form angle flashing (min.75mm legs) along the vertical corner. Flashing must also be applied at all sheet joints.
- 8. Lay the cement screed to the required gradient.
- 9. Fix tiles as specified in the 'WALL TILING PROCEDURE' section on page 36.

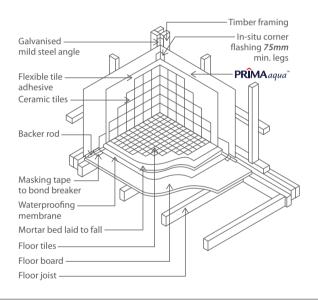


Figure 49 : Cast In-situ Internal Membrane

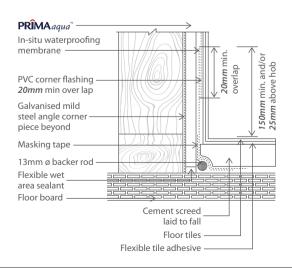


Figure 50 : Detail of Cross-section at Wall-to-Floor

Pre-formed Shower Tray

The shower tray installation may be as per Figure 51. Provide 6mm gap between the sheet and shower tray. Seal gap with waterproof flexible acrylic gap sealant or silicon sealant.

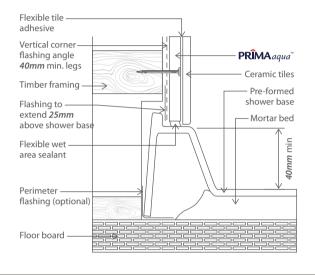
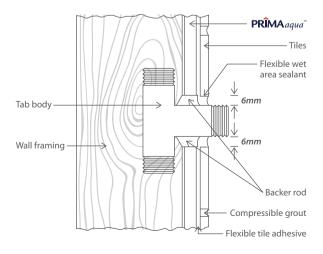


Figure 51 : Shower Recess Detail

Detail at Pipe Penetration

Provide a 6mm clearance around pipe penetrations. Seal gap with acrylic gap sealant and silicone sealant. Refer to Figure 52.





Tiling to **PRÎMA**aqua[™] Wall

PRÎMA*aqua*^{*} wall lining is an excellent substrate for tiling. Flexible tile adhesive must comply with AS 2358 - Adhesive For Fixing Ceramic Wall Tiles. Sheets to be tiled must not be fixed using wallboard adhesive.

For general purpose application of ceramic tiles up to 6.0mm thickness, framing must be constructed with studs at 600mm maximum centres and noggings at 1200mm maximum centres.

PRÎMA*aqua* sheet must be fixed to studs, noggings, top and bottom plates. Refer to Figure 53.

To cater for increased loadings in heavy duty installations and where tiles exceed 6.0mm in thickness, studs must be spaced at 400mm maximum centres and noggings at 600mm maximum centres.

Installation of tiles with a mass of 20kg/m2 or more may require specific detailing for the provision of adequate structural support. Generally the bottom edge of tiles must be supported by a metal angle which has been fixed to the bottom plate prior to commencement of tiling. For heavy tile installations, 9.0mm thick **PRÎMA** aqua^a must be installed as a substrate.

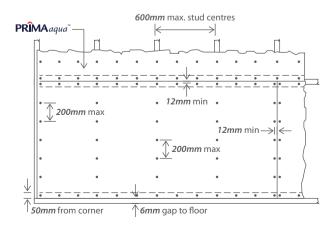


Figure 53 : Horizontal Sheeting (Tiled Wall)

_Wall Tiling Procedure

- 1. Ensure that the board is free from dust or grease. Wipe board surface with damp cloth if necessary.
- 2. Mark the height of the proposed tiled wall.
- 3. Estimate the number of tile courses required.
- 4. Indicate the bottom edge of the first course of full-sized tiles.
- Apply flexible tiling adhesive to the board surface with a notched trowel. Spread the adhesive not more than 1m² at a time. Refer to the adhesive manufacturer's recommendations.
- Fix tiles to PRÎMA aqua" with an allowance of approximately 2mm gap between each tile. Use tile spacer to achieve consistent gap at tile joint.
- 7. Apply adequate pressure to the tile to ensure that the back face of the tile is covered with the tiling adhesive.
- 8. The bottom course is normally fixed last.

_Tiled Joint

Sheet joint to be tiled must not be finished with topcoat joint compound. Refer to Figure 54.

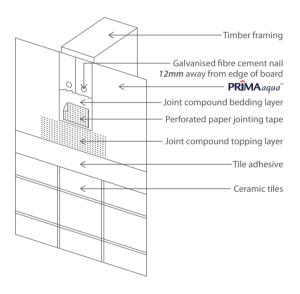


Figure 54 : Tiled Joint Detail

_Tiled Vertical Corners

Where internal and external vertical corners are to be tiled, seal junctions of sheets with flexible wet area sealant. Use mould-resistant silicone to seal tile corner joints (colour matched with tile or grout). Refer to Figure 55 and Figure 56.

Tiled Movement Joint

When tiled walls exceed 4200mm in their dimensions (i.e. length or height), a movement joint must be provided. Tiles must not bridge over a movement joint and construction must be detailed as shown in Figure 57.



Finishing & Wall Covering

The smooth surface of **PRÎMA***aqua*^{**} is ideal for quality acrylic-based paint. Generally, a minimum of two coats is required. Coating should be of a vapour permeable type. Other types of coating such as polyurethane or epoxy paints are also suitable. In all cases, coating manufacturer's recommendations should be adhered to. **PRÎMA***aqua*^{**} will also accept decorative wall coverings without any special surface preparation. Alternatively, **PRÎMA***aqua*^{**} wall linings may be finished with ceramic, marble or granite tiles. Refer specific section on **PRÎMA***aqua*^{**} tiling procedure.

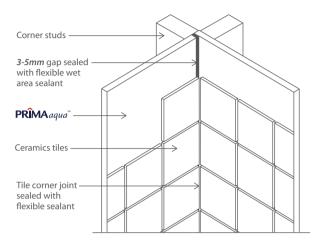


Figure 55 : Tiled Internal Corner

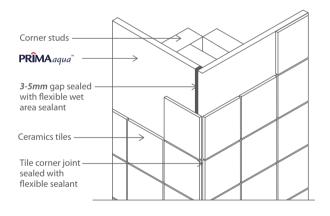


Figure 56 : Tiled External Corner

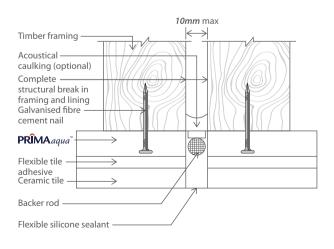
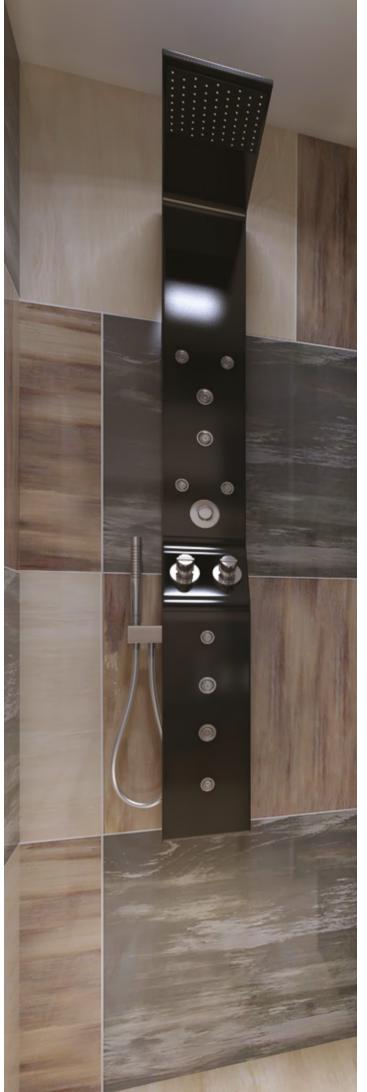


Figure 57 : Tiled Expansion Joint





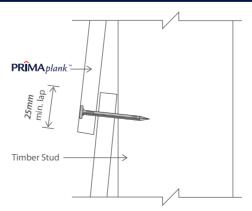
_Siding and Weather Boards



Product Description

PRÎMA*plank*[~] is a 7.5mm nominal thickness siding which offers the durability of fibre cement, with the appeal of timber and is available in a smooth surface and a woodgrain pattern.

Fixing Instructions





41_

Fixing Instructions

Plank Fixing

PRÎMA*plank*[~] is a normally fixed horizontally with a minimum of 25mm overlap at each successive plank course. A timber lap gauge may be used to provide consistent laps. When fixing to timber framing, nails must be driven flush with plank face through both plank thicknesses as shown in Figure 58.

When fixing to light gauge steel framing, care should be taken to install screws only through the top plank, above the lap. Fixing through two thicknesses of planking is not recommended. Refer to Figure 59.

Nail or screw **PRÎMA***plank*^{*} to each stud. Fix **PRÎMA***plank*^{*} to the top and plate bottom at 200mm maximum centres. Drive fastener 50mm from **PRÎMA***plank*^{*} end. With predrilling, fastener can be driven up to 20mm from the **PRÎMA***plank*^{*} ends. Pre-drilling may not be required if selfdrilling screws are used. Refer to Figure 62.

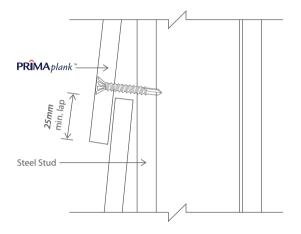


Figure 59: Fixing to Steel

Jointing

PRÎMA*plank*[~] is normally applied horizontally and fixed with an "off-stud" jointing method using PVC jointer mould. Refer to Figure 60. On-stud jointing can be done by butt jointing plank ends with the provision of 3mm gap as shown in Figure 61. Seal gap with exterior grade paintable sealant.

Installation Procedure

- 1. Ensure framing is correctly aligned prior to fixing **PRÎMA**plank :
- 2. Fix flashing at all internal / external corner studs and below the bottom plate.
- 3. Flashing should also be installed at the heads of any openings such as windows or doors.
- Install a 40mm wide PRIMA plank⁻ starter strip or treated timber strip along the lower edge of the bottom plate.
- Use a spirit level to locate the top edge of the first course of the plank and drive a series of guide nails around the perimeter of the timber framework to indicate the top edge of the first course of the planking.
- 6. Install the first plank commencing from the external corner. Set the top edge of the plank flush against the guide nails and the end abutting the timber corner stop. Drive fasteners to the bottom plate through the plank thickness and the starter strip at 200mm centres maximum. Use 2.8mmØ x 40mm galvanized fibre cement nails.
- 7. Fix the balance of the planks of the first course around the building. Planks may be joined with PVC joining strips.
- Remove the guide nails and continue the next course of the plank with an off cut plank. This is done to ensure that the plank joints would be staggered between courses. Nail plank lap at each stud.
- 9. Check level occasionally.

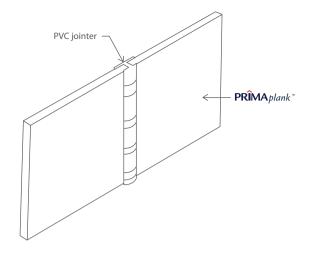


Figure 60 : PVC Mould (Off-Stud Jointing)

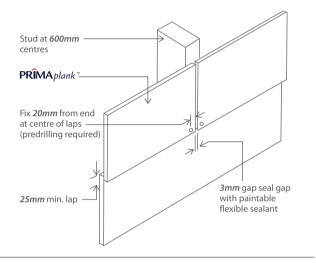


Figure 61 : On-stud Jointing

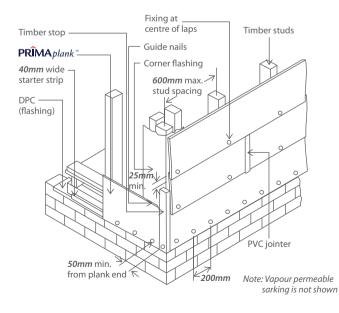


Figure 62 : Horizontal Planking

Window / Door Openings

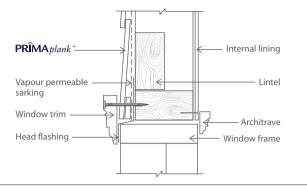
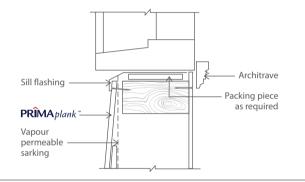


Figure 63 : Head Flashing Detail





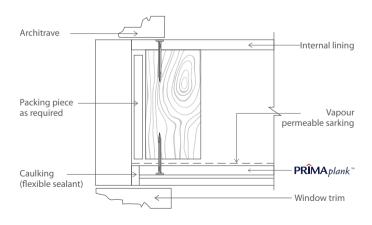


Figure 65 : Jamb Sealing Detail





Internal Corners

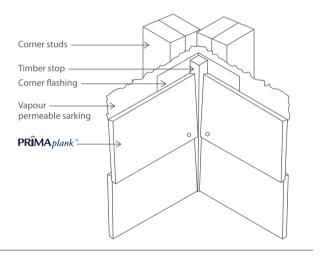


Figure 66 : Timber Stop

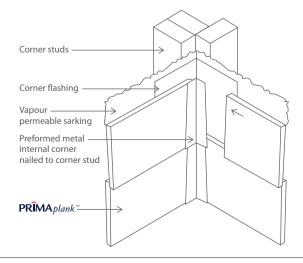


Figure 67 : Metal Corner

External Corners

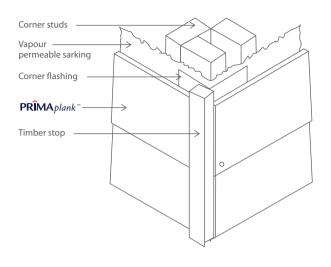


Figure 68 : Timber Stop

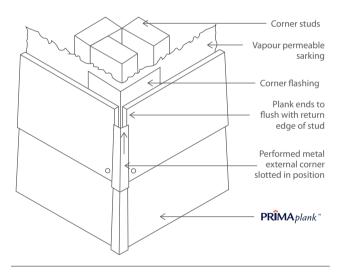


Figure 69 : Metal Corner



Finishing

Under normal circumstances, **PRÎMA** external cladding boards must be coated within 3 months after installation. For best results, decorate **PRÎMA***plank*⁻and **PRÎMA***flex*⁻ with 2 coats of 100% quality water-based acrylic paint. For general purpose applications, there is no requirement for primers or sealers. Use exterior grade coating systems that are compatible with fibre cement cladding products. In all cases, coating manufacturer's recommendations must be strictly adhered to.

For **PRÎMA***base* board, refer to 'FLUSH JOINTING AND TEXTURE COATING SYSTEMS' section on page 10.





Ceramic Tile Underlay



Product Description

PRÎMA*CTU*[~] is manufactured to nominal 6.0mm thickness. The material is suitable for use as a substrate for ceramic floor tiles on existing floorboards with minimal surface preparation. The product has preprinted fastener points for ease of installation.

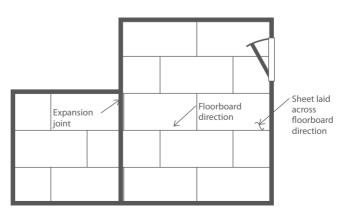
Installation Instructions

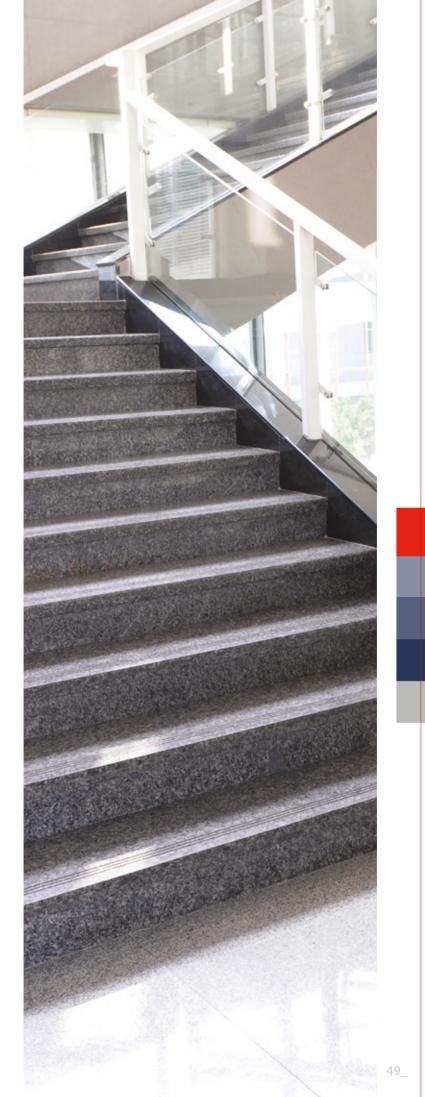
_Preliminary Preparation

Ensure that the underside of the existing floor is adequately ventilated. Check and replace any damaged floorboards and firmly renail any loose boards. The floor surface should be reasonably flat. Rough sand any undulations prior to fixing the ceramic tile underlay.

_Underlay Orientation

PRÎMA*CTU*⁻ sheet should be laid in a staggered or brick pattern, across the direction of floorboards. Sheet joints must not coincide with floorboard joints.





Fixing Method

Nail underlay sheet at the pre-designated fixing locations with 25mm x 2.5mm diameter annular threaded underlay nails. Nail fixing distances must be as follows:



- 12mm minimum from sheet edge
- 50mm minimum from corner
- 75mm maximum centres spacing at perimeter
- 150mm maximum centres spacing at sheet centre

Drive nail head flush with the surface of the underlay sheet. Start nailing from the sheet centre and work outwards toward the sheet ends and edges.

Notes:

For fixing to particleboard or plywood floor, apply wallboard adhesive to the sheet back face with a notched trowel in addition to nail fixing as specified above.

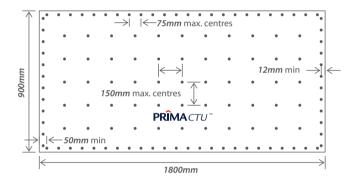


Figure 71 : Nail Fixing Locations

Expansion Gap and Joint

_Perimeter Expansion Gap

Leave a 3mm gap between sheet edges and wall at the wall-to-floor junction.

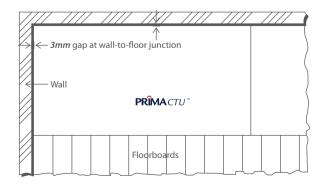


Figure 72 : Perimeter Expansion Gap

_Expansion Joint

Expansion joints must be provided at 5.0m maximum centres and must always coincide with the structural break joints of the existing floor structure. Do not tile over an expansion joint. Refer to Figure 73.

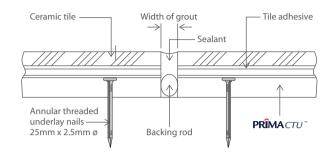


Figure 73 : Detail at Expansion Joint

Tiling and Grouting

Use only flexible tile adhesives that comply with AS 2358 - Adhesive For Fixing Ceramic Tiles. Refer to tile adhesive manufacturer for recommendations. Tile grout should be fully compressible.

Tiles should be laid in accordance with acceptable tile laying practice. Provide a minimum of 2 to 3mm gap between each tile.

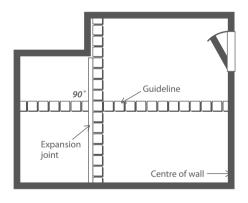


Figure 74 : The Laying Guide



_Wall and Ceiling Linings



Product Description

Manufactured in nominal thicknesses of 4.5mm and 6.0mm, **PRÎMA***lux* is designed specifically for wall and ceiling lining applications where a superbly flat and smooth surface coupled with elegantly designed expressed joints are the criteria.

The surface of **PRÎMA***lux* is sanded and is available with arrissed edges for neat butt joints or PVC joints.

Installation Instructions

_Framing Specification

PRÎMA*lux* can be fixed to timber or steel framing. Support framing must be spaced as follows:-

- 4.5mm thick PRÎMA/ux 450mm max. centres
- 6.0mm thick PRIMA/ux 600mm max. centres

Support framing must have at least a 38mm wide face to provide adequate support for **PRÎMA***lux* sheets. Where necessary, the face width may be increased by providing trim-packing to the side of the support.

Timber framing must comply with AS1684 - Residential Timber-framed Construction. Framing timber should be thoroughly dry and selected to minimize shrinkage when sheets are installed. The use of kiln dried timber is recommended.

Steel framing must be fabricated from light gauge steel of a minimum 0.55mm to 1.6mm base metal thickness. Use only cold -formed steel sections complying to AS 3623 : Domestic Metal Framing. The use of hot rolled sections is not recommended due to the excessive thermal differential movement.

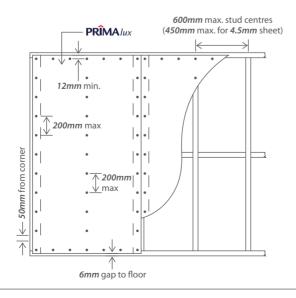
Fixing Distances

Fixings are to be a minimum of 12mm from sheet edges and 50mm from corner of sheet. The fastener spacings must be as follows:-

Application	Sheet Edges	Elsewhere
Wall Lining	200mm	200mm
Ceiling eaves and soffit	200mm	200mm
Exposed Beam Ceiling	300mm	400mm

Wall Lining

When applied as internal wall linings, **PRÎMA***lux* may be installed vertically, ensuring sheet joints coincide with the centre of supporting frame as shown in Figure 75.



Ceiling Lining

For ceiling, eaves and soffit lining applications, **PRÎMA***lux* can be fixed across or parallel to the supporting frame. Sheet butt joints must coincide with centre of supporting frames if PVC jointer is not utilized. Refer to Figure 76 and Figure 77.

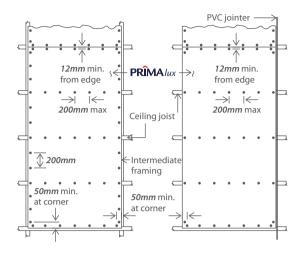


Figure 76: Ceiling Laid Across Joists

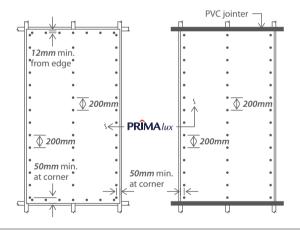


Figure 77: Ceiling Laid Parallel to Joists





Exposed Beam Ceiling

When it is desirable to have the ceiling beams or rafters exposed for aesthetic purposes, **PRÎMA**/ux serves a better alternative as ceiling lining material. Other than PVC joint and butt join, **PRÎMA**lux may also be flush joined. Sheet edges must be rebated prior to flush jointing. Refer to page 44 for details on flush jointing procedure and ensure the rear surface of the joint is supported. Use only 6.0mm PRIMA/ux for flush joint application.

Notes:

- 1. Sheets should be laid parallel to exposed beams or ratters 2. When rafter spacings exceed 600mm, provide additional support to stiffen the sheets. 3. Check with local building authorities on other requirements, i.e. insulation or sarking,
- prior to construction 4. When flush jointing, back-block sheet joint to avoid cracking due to support (beams / rafters) sag.

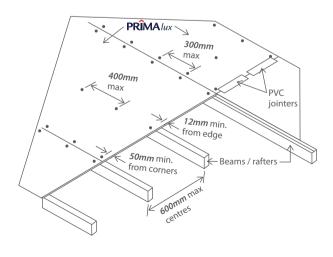


Figure 78: PRÎMA lux Exposed Beam Ceiling

Joints and Corners

_Joints

Alternatives of **PRÎMA** *lux* sheet jointing methods are shown in Figure 79 and Figure 80.

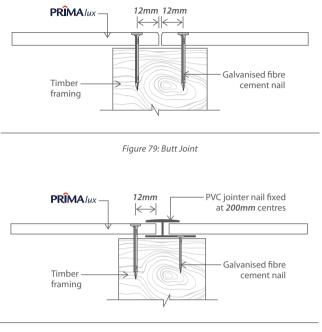


Figure 80: PVC Joint

_Corners (Wall Lining)

Internal and external corners may be finished with PVC corner moulds as described in Figure 81 and Figure 82.

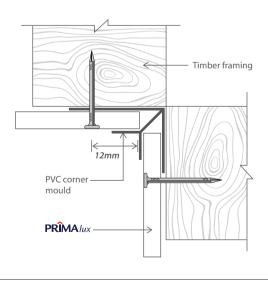


Figure 81: Internal Corner



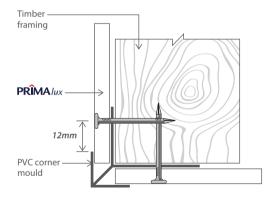


Figure 82: External Corner

Finishing

PRÎMA*lux* smooth surface is ideal for quality water-based acrylic paints. Generally, a minimum of two coats is required. Other types of coatings such as polyurethane or epoxy paint are also suitable. In all cases, coating manufacturer's recommendation must be adhered to.

PRÎMA*alpha*^α WeatherClad

_Designed to Attain Pure Luxury

Aesthetic Cladding | External Wall Cladding

Installation



_Framing & Fastening

PRÎMA*alpha^a* WeatherClad can be installed either on timber or steel framing. A 35mm minimum stud width is required for both timber and steel frames. Only seasoned timber frame should be used. The steel frame must be in the BMT (base metal thickness) range of 0.55 to 1.6mm. Stud spacing kept at maximum of 600mm.

PRÎMA*alpha*^{α}WeatherClad can be fixed with concealed and exposed/face fastening. The face nail will need to be pre-drilled on the upper board prior to nailing. The fasteners used for timber and steel framing are as Table 1 below:

Table 1.1: Timber Frame

Concealed Fixing

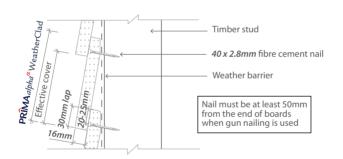
40 x 2.8mm fibre cement nail, Class 3 60 x 3.15mm bullet head nail, Class 3

Exposed Fixing

Table 1.2: Steel Frame		
Concealed Fixing	Exposed Fixing	
Self-Embedded Self Drilling	Self-Embedded Self Drilling	
Wing Tek Screw 8 x 40mm,	Wing Tek Screw 8 x 52mm,	
Class 3	Class 3	

For fastening to timber, the minimum edge distance to the end of the board is 20mm and 50mm for hand and gun nailing respectively.

Refer Figure 83 and 84 for concealed and exposed fastening. The exposed fastening is only applicable for bracing application where bullet head nails to be used with exterior grade filler and nail punch must not be more than 2mm under the surface and fill.





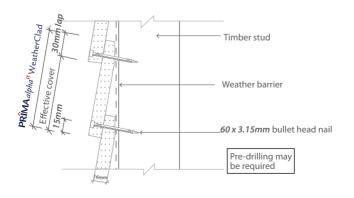


Figure 84: Exposed Nailing

_Surface Clearances

Provide a minimum of 150mm ground clearance between the bottom edge of $PR\widehat{I}MA$ *alpha*^{α}WeatherClad (or starter strip) and the earth as shown in *Figure 85*. The plank must be overhang at the bottom plate on a concrete slab by 20- 50mm. Maintain a minimum of 50mm clearance between $PR\widehat{I}MA$ *alpha*^{α}WeatherClad and roofs and decks, refer *Figure 86*.

Do not install external cladding such that it will remain in contact with water and ground.

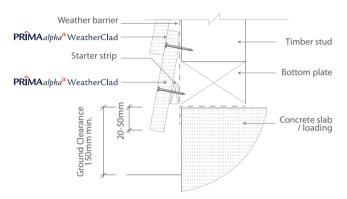
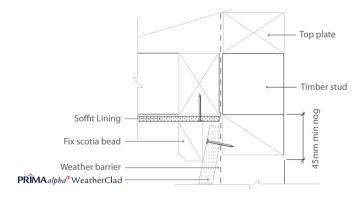


Figure 85: Foundation Detail





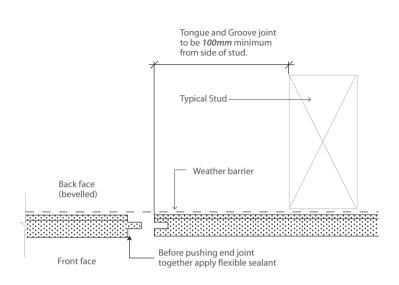
INSTALLATION

Installation Procedure

These steps provide a general guide for installation of $\ensuremath{\mathsf{PR}}\ensuremath{\widehat{\mathsf{I}}}\ensuremath{\mathsf{MA}}\ensuremath{\mathsf{alpha}}\ensuremath{^\alpha}\ensuremath{\mathsf{WeatherClad}}$ siding.

- 1. Ensure product is of acceptance quality and dry prior to installation
- 2. Ensure framing is true and align prior to fixing of **PRÎMA***alpha*^a WeatherClad .
- 3. Apply weather barrier over the frame work for external application.
- 4. Fix flashing at all internal and external corners and head of openings such as doors and windows.
- 5. Secure a starter strip along the bottom plate.
- 6. Use a water level to locate the top edge of the first course of the siding.
- 7. Fix the first siding starting from external corner. Fasten the bottom edge of the siding to each stud or bottom plate through the starter strip, refer Figure 85.
- 8. Fix the balance of the sidings of first course around the building.
- 9. The horizontal lap of $\mathbf{PR\widehat{I}MA}$ alpha^{α} WeatherClad must be at 30mm minimum.
- 10. Before fixing the second row of siding, calculate the overlap so a near full width of siding will finish at the top of the building.
- 11. Use a piece of timber or plank to fabricate a lap gauge to ensure the siding installation is level and uniform coverage. Check level occasionally.
- 12. The ends of **PRÎMA***alpha*^a WeatherClad are joined off-stud by means of tongue and groove edges. The tongue and groove joints must be at minimum of 100mm from the side of a stud, refer Figure 87. Joints must be staggered by a minimum of 600mm from the adjacent joints, refer Figure 88.
- 13. Flexible sealant must be applied in the tongue and groove joint during the installation.







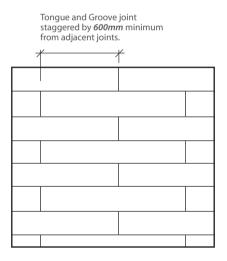


Figure 88 : Staggered Joints



Working Instructions

Delivery, Handling And Storage

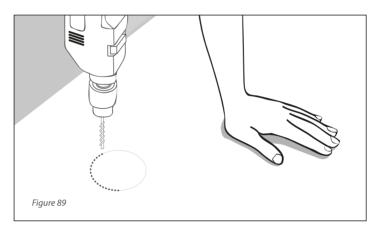
- To minimize the possibility of on-site damage, sheets should be delivered just prior to installation.
- · Always lift sheets vertically, (on-edge) lengthwise.
- Store sheets neatly on a flat surface supported evenly with bearers spaced at 600mm centres maximum, clear of the ground to avoid damage and moisture ingress.
- Store under cover and ensure sheets are dry prior to fixing. Never install damp sheets. Damp sheets must be allowed to dry to equilibrium moisture content (EMC) before fixing.
- Protect edges and corners from damage on site.

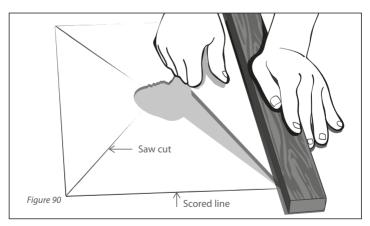
Note:

Floor loadings should be considered when stacking sheets.

Penetrations

Round holes may be cut using a power drill with a tungsten tipped hole saw attachment. Alternatively rectangular or circular holes may be formed by using a masonry drill to make a series of smaller holes around the perimeter of the proposed opening, and then tapping out the waste section carefully, refer to Figure 89.





Larger rectangular holes and openings can be made using the following procedure, refer to Figure 90.

- Score the perimeter of the hole using a scoring knife.
- Drill a larger circular hole at the centre of the proposed opening.
- Use a saw to cut from the centre to the corners of the proposed opening.
- Hold a straight edge or a piece of wood along the scored line and snap the waste piece upwards.

Working Instructions (cont.)

Cutting Methods

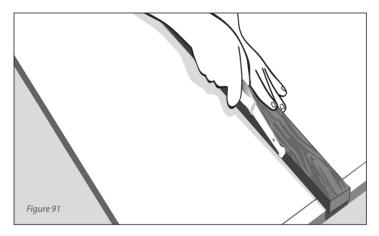
A dust mask and safety glasses should always be worn when cutting, drilling or grinding. Dry cutting with power tools should be performed in a well-ventilated area or open-air situation using a power-saw fitted with dust-extracting attachments.

A circular saw with dust collecting facilities should have carbide-tipped teeth or a carborundum blade.

_Scoring and Snapping

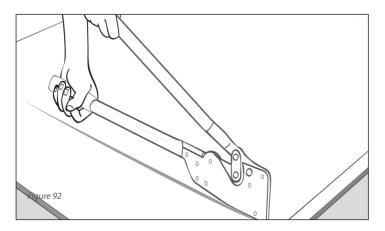
Any scribing tool or special tungsten-tipped scoring knife can be used for this method of cutting, refer to Figure 91.

- Score the face of the **PRÎMA**[®] board, repeating the action to obtain a depth of about 1/3 of sheet thickness.
- Snap the off-cut upward to achieve cut. If the edge is rough, trim with a rasp.



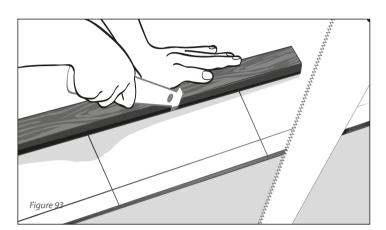
Hand Guillotine

When using a hand guillotine, best results are obtained when the board and the off-cut are both fully supported, refer to Figure 92.



Notching

Use hand saw to cut the sides of the notch. Score along the back of the notch with scoring knife and snap the waste piece upwards, refer to Figure 93.





Maintenance

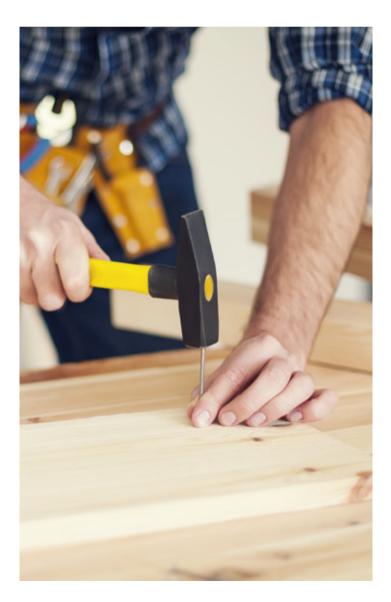
Periodic maintenance of the coating and finishes must be performed as specified by the manufacturer. The jointing systems should also be inspected periodically during the life of the building. All joints and sealant must be checked for cracks to prevent the intrusion of water. Make good any defects in accordance with the systems outlined in this manual and good building practices.

Working Safer With Prima Products

- · Always work in a well-ventilated area.
- Dust extraction equipment should be fitted to all power cutting tools.
- Wear safety goggles conforming to AS 1337.
- Wear protective clothing.

_Warning

Breathing dust from silica based products such as fibre cement can be hazardous over an extended period of time. Always use a mask, protective equipment and clothing that complies with the latest regulations of Occupational Safety and Healthy (OSH) or Workplace Health and Safety.



TECHNICAL SPECIFICATIONS

External Cladding_

PRÎMAbase[™]

PRÎMAplank **PRÎMA**flex

PRÎMA*alpha*^α WeatherClad

Internal Lining_ **PRÎMA**/ux[™] **PRÎMA**CTU[™]

PRÎMAaqua[™]

WARRANTY

Hume Cemboard Industries Sdn Bhd ("the Company") warrants that it will at all times ensure that the products referred to herein ("the Products") shall be supplied by it to the purchaser free of any manufacturing defects and defective materials used in their manufacture.

In the event and if contrary to this assertion the Products prove to be defective, whether as a result of manufacturing defects or arising from the Company's use of defective materials, the Company will supply replacement Products. The Company shall, however, have the option and may choose to reimburse the purchaser the purchase price of the Products instead. The Company shall not be liable for any economic or consequential losses arising from any use of defective Products.

This warranty shall be void unless the purchaser has, in its handling and installation of the Products, complied with the recommendations contained in this brochure and other good building practices expected of a reasonable purchaser.

ADVISORY NOTE

Successful installations of Hume Cemboard Industries Sdn Bhd's Products depend on a large number of factors that are outside of the scope of this brochure. Particular design, detail, construction requirements and workmanship are beyond the control of the Company. As such, Hume Cemboard Industries Sdn Bhd's warranty does not extend to non-usability of Products or damage to Products arising from poor or defective designs or systems or poor quality of workmanship in the installation of Products.



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