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1 Introduction

1.1 General
PRIMA\textsuperscript{plank}\textsuperscript{\textregistered} is an autoclaved cellulose fibre reinforced cement siding board manufactured by Hume Cemboard Industries Sdn Bhd, an MS ISO 9001:2000 accredited company. Manufactured from Portland cement, cellulose fibre, finely ground sand and water, PRIMA\textsuperscript{plank}\textsuperscript{\textregistered} has become extremely popular when a relatively maintenance free timber planking appearance is desired.

1.2 Applications
PRIMA\textsuperscript{plank}\textsuperscript{\textregistered} is designed for external applications where superb weatherability and long-lasting durability form part and parcel of performance criteria. These applications includes:-

- External wall cladding
- Gable end cladding
- Cladding to masonry walls
- Fascia board
- Decorative fencing

PRIMA\textsuperscript{plank}\textsuperscript{\textregistered} is used where there is a requirement for traditional timber look and to add character and depth to flat mundane surfaces.

1.3 Features & Benefits
- Natural timber look (Woodgrain)
- Weather resistant
- Will not rust or rot
- Termite resistant
- Does not warp or twist
- Fire resistant- Class ‘0’

1.4 Tests and Certification
PRIMA\textsuperscript{plank}\textsuperscript{\textregistered} has been approved by Fire and Rescue Department, Malaysia as a Class ‘0’ building material under the Malaysian Uniform Building By-law 1984.

PRIMA\textsuperscript{plank}\textsuperscript{\textregistered} has been tested in accordance with BS 476; Fire tests on building material and structure. The test results are as follows:-

<table>
<thead>
<tr>
<th>Thickness x Width x Length</th>
<th>Approximate Mass per Piece</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smooth &amp; Woodgrain</td>
<td></td>
</tr>
<tr>
<td>7.5mm x 230mm x 4200mm</td>
<td>10.6kg</td>
</tr>
<tr>
<td>7.5mm x 300mm x 4200mm</td>
<td>13.8kg</td>
</tr>
</tbody>
</table>

2 General Fixing Instructions

2.1 Material Selection
PRIMA\textsuperscript{plank}\textsuperscript{\textregistered} thickness should be selected based on the intended applications. For general cladding, fascia board and fencing applications, 7.5mm thick plank is adequate.

Trimming plank to a size less than the standard width will reduce its capacity to withstand loads. In instances where reduced-width planks are desirable such as for fencing application, always refer to Hume Cemboard before specifying or applying them.

Do not apply PRIMA\textsuperscript{plank}\textsuperscript{\textregistered} in areas where it remains in contact with standing water.

2.2 Framing Specification
PRIMA\textsuperscript{plank}\textsuperscript{\textregistered} can be applied to timber or light gauge steel framing members. Construction shall be in accordance with local building practice.

Framing components must have adequate durability for the intended use. These durability criteria shall among others include resistance to weather; corrosion and pest (i.e. termite attack).

Framing timber should be thoroughly dry and selected to minimize shrinkage when planks are installed.

Steel framing must be fabricated from cold-formed galvanized light gauge steel of a minimum 0.55mm to 1.60mm base metal thickness.

As the straightness of finished wall is highly dependent on workmanship of framework, best result can be achieve when frame straightness is between 3mm to 4mm in any 3000mm length.

2.3 Batten Specification
Thick hot rolled structural steel sections and masonry wall must be battened prior to installation of PRIMA\textsuperscript{plank}\textsuperscript{\textregistered} cladding.

Use timber batten with a minimum of 25mm thick x 50mm wide to allow adequate nail penetration.

Steel battens must have a minimum 35mm face width. They are typically ‘Z’ or top hat sections. Use only galvanized light gauge steel of a minimum 0.55mm to 1.55mm base metal thickness.
2.4 Fasteners
Select the appropriate type of fasteners based on the type of framing. Fasteners should have acceptable level of durability and be suitably coated for the intended application.

PRIMAplank™ can be fixed by hand nailing or air gun nailing. For screw fixing, use screw gun with high torque and variable speed of zero to 2,500 revolution per minute fitted with a depth control attachment.

Nail head should finish flush with the PRIMAplank™ face and avoid overdriving.

Drive screw slightly below the plank face and cover fastener head with exterior grade cementitious patching compound. Smoothen with sandpaper if necessary before painting.

2.5 Sealing Joints and Gaps
Gaps at plank joints, corners and openings must be sealed with flexible/paintable polyurethane sealant. Sealant must be compatible with cementitious panel products. Apply masking tape at both plank edges and start filling the bottom edge and squeezing the sealant in the upward direction. Use spatula to smoothen and remove any excess sealant. Remove masking tape immediately upon completion. Sealant manufacturer’s instruction must be adhered to. Sealant must only be painted as recommended by the manufacturer.

2.6 Jointing Against other Material
When butt jointing PRIMAplank™ and other building materials such as masonry wall, a minimum of 6mm gap must be provided. Seal gap with paintable/flexible sealant, as shown in Figure 1.

---

**Table: Fastener Specification**

<table>
<thead>
<tr>
<th>Fasteners to Timber</th>
<th>Fasteners to Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.8mm Ø x 40mm Wire Nails</td>
<td>Steel thickness 0.55mm to 0.75mm No. 8 x 32mm Self-embedding head, self-drilling Screws</td>
</tr>
<tr>
<td>Steel thickness 0.8mm to 1.6mm No. 8 x 32mm Self-embedding head, self-drilling “Wing Teks” Screws</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
1. Drive nail head snug or flush with plank face.
2. Pre-drilling is required when nailing between 20mm to 50mm from the plank end.
3. Drive screw heads not more than 1mm below plank face.
4. Overdriven fastener point should be cover with exterior grade cementitious patching compound before painting.
5. Hold plank firmly against the frame while driving the fasteners.

---

3 External Wall & Gable End Cladding

3.1 General
PRIMAplank™ is suitable for general wall cladding application when a lightweight wall system is preferred. The usage includes construction of new buildings such as residential dwellings and resorts. In addition, PRIMAplank can also be used for renovation/extension of existing buildings especially in the construction of upper storey.

3.2 Framing Construction
PRIMAplank™ must be supported at 600mm maximum centres. Refer Figure 2. The minimum stud face width shall be as follows:-

- Timber framing - 50mm min.
- Steel framing - 35mm min.

Timber framing is typically 50mm x 75mm and light-gauge metal framing is typically 35mm x 64mm x 0.55mm BMT.

When on-stud jointing is preferred, stud face width must be increased to provide for adequate edge fixing distance. Use frame off-cuts to pack stud at plank joint if required.

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![Figure 1: Jointing with other material](image1)

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![Figure 2: Horizontal planking](image2)
3.3 Flashing
When applied as external wall cladding it is a good building practice to apply flashing material at corners, above the head and under the sill of an opening.

3.4 Sarking
During windy condition, the external pressure would generally be greater than the building’s internal pressure. The pressure differential will likely draw water into the wall cavity through the plank’s joints and laps. It is recommended to install vapour permeable sarking between PrimaPlank® and the framing surface. The use of reflective sarking will enhance the thermal insulation property of the cladding system.

3.5 Plank Overlaps
For external cladding applications, plank must overlap the previous course by a minimum of 25mm. Plank overlap may be increased to achieve the desired exposed plank surface. Higher overlaps may also improve the weatherproofing of a framed-wall particularly when sarking material is not applied. When necessary, overlap may be increased to full-course planking to match the wall height.

To facilitate plank installation with consistent overlaps, use a lap gauge. A lap gauge can be fabricated from PrimaPlank® off-cuts or timber piece. Refer Figure 3.

3.6 Installation Procedure
These steps provide a general guide for installation of PrimaPlank®:

1. Ensure framing is true and align prior to fixing PrimaPlank®.
2. Apply building paper sarking over the framework.
3. Fix flashing at all internal and external corner and heads of openings such as door and window.
4. Install timber moulds at internal and external corners.
5. Secure a 40mm wide PrimaPlank® starter strip or treated timber strip along the bottom plate.
6. Use a spirit level to locate the top edge of the first course of the plank.
7. Drive a series of guide nails around the perimeter of the timber framework to indicate the top edge of the first course of the plank.
8. Fix the first plank starting from the external corner. Set the top edge of the plank flush against the guide nails and the end abutting the (moderate contact) timber corner stop. Drive fastener to the bottom plate through the plank thickness and the starter strip at 200mm centres maximum.
9. Fix the balance of the planks of the first course around the building. Planks may be joined with proprietor PVC jointer.
10. Provide a minimum of 25mm overlap between each successive plank course. Measure the total wall height to be clad and calculate the suitable overlap so that a near full-width plank finishes at the top of the clad wall. 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.
11. Check level occasionally.

3.7 Fixing to Timber
When applied onto timber framing, PrimaPlank® must be nailed at centre of overlap through both thicknesses, as shown in Figure 4.

3.8 Fixing to Steel
Planks are screwed to light gauge steel framing through the top plank only. Refer Figure 5.

new/ subsequent plank course
sarking/ building

PrimaPlank® cladding

vapour permeable sarking/ building paper (optional)

flat head nail fixed at centre of overlap

vapour permeable sarking/ building paper (optional)

internal lining board (Prima liner®/ Prima flex®)

Figure 4: Fastening to timber frame

Figure 5: Fastening to steel frame

Figure 3: Lap gauge
3.9 Joints
Joint options are shown below. When applied as wall cladding, plank joints should preferably be staggered between each plank course.

PRIMAplank® “off-stud” jointing method incorporates proprietary PVC jointer between plank ends. Refer Figure 6.

**On-stud jointing** can be done by butt joining plank ends with moderate contact. Alternatively, provide a nominal 3mm gap and seal joint with exterior grade paintable/ flexible sealant. Refer Figure 7.

3.10 Ground Clearance
Provide a minimum of 150mm clearance between bottom edge of plank (or starter strip) and the earth as shown in Figure 8.

3.11 Corners
Internal and external corners may be finished with timber stops as illustrated in Figure 9.

Alternatively, when timber posts are utilized, abutted to the side of the posts. Refer Figure 10.
3.12 Details at Openings
When applying plank at around window or door openings, allow an approximately 5mm clearance at the sill, jamb and head. Seal gap with paintable/ flexible sealant. Do not apply sealant between head flashing and plank edge.

Figure 11: Window/ door opening detail

Figure 12: Head Flashing Detail

Figure 13: Sill Flashing Detail

Figure 14: Door/ window jamb detail

4 Cladding To Masonry Wall

4.1 General
PRIMAplank™ can be clad onto masonry wall to enhance the aesthetic appearance of residential or commercial buildings.

4.2 Battening Requirement
Masonry wall must be battened prior to applying PRIMAplank™. Battens must be spaced vertically at 600mm maximum centres. Ensure batten’s straightness is within the acceptable tolerance. Battens must be adequately fastened onto the masonry wall.

4.3 Installation Method
PRIMAplank™ may be installed horizontally. In any case, support must be provided at 600mm centres. Installation method is similar to that of external cladding application.

Battens can be applied directly onto relatively flat/ even masonry wall. Refer Figure 15.

Provide spacers or brackets when battening uneven masonry wall as shown in Figure 16. Alternatively, sub-framing may be installed horizontally to uneven surface at approximately 1500mm maximum interval before securing the battens. All framing components must be adequately secured onto masonry wall. Consult a qualified engineer to verify structural adequacy if required.
4.1 General
Can be clad onto masonry wall to enhance the aesthetic appearance of residential or commercial buildings.

4.2 Battening Requirement
Masonry wall must be battened prior to applying. Battens must be spaced vertically at 600mm maximum centres. Ensure batten’s straightness is within the acceptable tolerance. Battens must be adequately fastened onto the masonry wall.

4.3 Installation Method
May be installed horizontally. In any case, support must be provided at 600mm centres. Installation method is similar to that of external cladding application.

4.4 Sarking
It is recommended to install a vapour permeable sarking material on the masonry wall prior to fixing battens.

4.5 Jointing
Planks can be jointed with PVC jointer or Butt Joined. These jointing methods are similar to the external cladding joints shown in Figure 6 & 7.

4.6 Corners
Internal and external corners can be decorated with exterior grade timber trim. Trim can also be fabricated using PRIMA plank™ cladding, cut to the desired width. Refer Figure 17.

4.7 Opening
Door or window opening may be finished with trims. Provide 5mm gap between PRIMA plank™ and trims around the opening as described in Figure 11.

When desired, opening may be decorated with in-situ concrete or pre-formed coping as illustrated in Figure 18, 19 and 20.
5 Fascia Board Introductions

5.1 General
PRIMA® plank™ superior durability makes it a perfect choice for fascia board around the roof perimeter. With the choice of ‘smooth’ and ‘woodgrain’ texture, PRIMA® plank™ fascia board is not only aesthetically pleasing but also cost effective.

5.2 Support
PRIMA® plank™ fascia board is normally fixed to timber or metal rafters/trusses with spacing not exceeding 600mm centres. When support spacing exceeds 600mm, provide a continuous battening behind the fascia board. Alternatively, a ‘dummy’ rafter/truss should be provided as intermediate support. The use of 9mm thick plank is highly recommended when support spacing is more than 600mm centres.

5.3 Installation
Apply a minimum of 2 fasteners at each rafter or truss end. Drive fastener 12mm from plank edge and 50mm from corner.

Fix a metal angle capping at ends of metal rafters/trusses to facilitate PRIMA® plank™ fascia board installation as described in Figure 23.

Fixings of attachment (such as bracket for gutter) to fascia board must be connected to the roof structural element.

5.4 Joints
Planks can be jointed with PVC jointer or Butt Joined. Provide 3mm gap if joint is to be sealed. These jointing options are shown in Figure 22 & 23. When Off-support Joint without PVC jointer is preferred, provide additional metal/timber backing piece behind the fascia board. Ensure planks are secured to the backing piece firmly while driving the fasteners.

4.8 Wall-to-Eaves Junction
Provide adequate ventilation between masonry wall and PRIMA® plank™ cladding. The ventilation can either be provided through the roof or below the eaves. Ventilated path though the roof is depicted in Figure 21 below.

ventilation through soffit/roof

Figure 20: Window detail

Figure 21: Wall ventilation detail

Figure 22: PVC joint (Timber frame)
6.1 General
PRIMAplank can be incorporated in the construction of conventional masonry, timber or steel framed fencing for medium to high-end terrace houses as well as semi-D or bungalows. 9mm PRIMAplank is recommended for this application.

6.2 Framing Requirement
Framing durability must satisfy the minimum requirement of the intended use. It is recommended to use exterior grade (treated timber) or steel hollow section to form the support. Steel hollow section must be suitably coated to resist external weather.

6.3 Installation
PRIMAplank can be installed vertically or horizontally. In any case, support must be provided at 400mm centres maximum. Install fasteners approximately 30mm from edge and 50mm from corner of plank. Fix at least 2 fasteners at each support. PRIMAplank ends must not overhang (cantiiever) more than 100mm from the support.

The following fasteners are suitable if it is desired to have screw heads exposed:
- Timber Support: Use No.10 x 30mm Hexagon head, Type 17 point screws
- Steel support: Use No.10 x 25mm Hexagon head, self-drilling point screws

Refer to screw manufacturer’s instruction on the minimum screw penetration to framing member:

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Figure 23: Butt joint & sealant (Metal rafter/ truss)

Figure 24: Vertical fencing
7 Finishes Recommendations

Under normal circumstances PRIMAplank™ must be coated within 3 months after installation. For best result, decorate PRIMAplank™ with 2 coats of 100% quality acrylic paint. For general-purpose applications, there is no requirement for primers or sealers. Ensure planks are dry prior to painting. For decorative fencing application, plank must be coated on both surfaces and all edges. All plank exposed surfaces and edges must be painted.

Semi-transparent stains and shellac/varnish are generally formulated for wood and not suitable for fibre cement products. In all cases, coating manufacturer’s recommendations must be strictly adhered to.

8 Working Instructions

8.1 Cutting
Cutting must be carried out in a well-ventilated area using one of the following methods:

- **Score and Snap** - Score the plank face with ‘score and snap’. Repeat until depth reaches 1/3 of plank thickness. Snap plank upward to achieve clean break. Trim cut edge with rasp if necessary.

8.2 Hand Saw
The use of fine-toothed hand saw coupled with quick jabbing action will normally produced best result.

8.3 Power Tool
When large amount of plank cutting is involved, use power cutting tool equipped with carbide-tipped or diamond-tipped circular saw.

Drilling
Small holes can be formed using high-speed (HSS) drill bits. Larger circular holes can be created by drilling a series of small holes around the perimeter of the proposed hole, and gently tapping out the waste piece. Smoothen the rough drilled edge with rasp if necessary.

Handling & Storage
PRIMAplank™ must be stacked on flat ground and supported with level bearers prior to installation. Ensure all timber bearers of a stacked plank are aligned with other stacks. Improper plank stacking may result in permanent plank deformation that causes unsightly appearance such as waviness. PRIMAplank™ must always be kept dry, preferably stored under a protected shade. When stored outdoors, it must be protected from water ingress and weather by covering with tarpaulin sheet. Allow wet plank to dry to equilibrium under a natural ventilated condition prior to installation.

To minimize breakages, PRIMAplank™ must be carried with up-right.
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.