Non-Flammable Melamine Board Installation Manual

- Read through this installation manual in advance to ensure correct installation.
- Confirm the model number and check for any damage or defects incurred during shipping before installing.
- Install Module panels in accordance with the Building Control Act, fire prevention ordinances, and other similar laws and regulations in your country and region.
- For installation on dry areas, panels from both Module and Module+ collections can be applied.
- For installation on bathroom walls or walls of facilities using large amounts of water, refer to Installation Manual 3 (Bathroom & Wet Areas). Only panels from Module+ collection can be applied for wet areas.
- Module panels may expand or contract due to surrounding conditions such as temperature and humidity. Be sure to observe the precautions when installing.
- Install so that the protective film and model number indication label are on the front surface side.
- Do not install on backing materials that are damp or may become damp after installation or in places with high temperatures and humidity. (This may cause the panel to become detached or cause a gap to form between.)
- When transporting, 2 or more people should lift and carry the material to avoid cracking as Module panels bend easily.
- Do not install in environments with a temperature of 5°C or colder. (Cold temperatures may cause inadequate hardening of glues.)
- Check the safety data sheet of the respective glues, sealants, and primers prior to use.

! SAFETY PRECAUTIONS

Observe the following precautions without exception to prevent injury or accidents.

Precaution	Possible risk
• Do not use anything other than double-sided tape and glue. • When installing wall materials, observe the methods specified by each manufacturer of tape and glue.	**Dropping due to detachment**
• Provide a sufficient distance between household cooking stoves and the surface of Module panels. See page 4 of this manual for details. • Do not use on walls adjacent to commercial cooking stoves as their heat is drastically greater than that of household cooking stoves.	**Surface discoloration**
• When transporting and during installation work, use slip-resistant gloves, a protective mask and protective glasses since fine particles occur when machining. Use a circular saw equipped with a dust collector and work in a well-ventilated area. If fine particles come in contact with your skin or enter your eyes, nose, or mouth, quickly rinse them away with plenty of water. Also, if you sense any abnormality, seek medical attention. • Be sure to bevel down edges with sandpaper since edges which have been cut or machined can cut your hand.	**Occurrence of injury or health hazards**

Installation Process

1. Check the wall surface to be installed
2. Arrangement of panels
3. Primer treatment
4. Cutting and machining
5. Application of double-sided tape
6. Application of glue
7. Adhesion and pressure bonding
8. Sealing
9. Remove protective films

Curing (2 days)

Installation Materials

Glue	
Double-sided tape	
Aluminium join accessories (optional) Length 2730mm	End part Flat join External corner Internal corner

Machining Tools

Use the following machining tools. Be sure to use a new blade to avoid large chipping.

1. Cutting — Electric circular saw (toothed or diamond saw blades) equipped with a dust collector

Blades used for cutting during installation:

- Blade specifications include outer diameter, blade thickness, and number of teeth.
- Choose a toothed blade with an outer diameter and blade thickness compatible with your saw.
- Use a blade with the greatest number of teeth available.
  Example number of teeth on toothed blades: 60 teeth for a diameter of 100mm and 80 teeth for a diameter of 125mm

2. Creating openings — Drill, hole saw, router, or trimmer

3. Finishing — Sandpaper, file, or planer for melamine

Other Materials Required

Primer Sealant

① Check the wall surface to be installed

Prior to installation, confirm if the wall is suitable for installation of Module panels.

Appropriate backing materials on which Module panels can be installed

Apply primer along the entire surface

- Gypsum board (12.5mm or thicker recommended)
- Mortared surfaces (with a water content of 4.5% or less, adhesive strength of 1.0 N/mm², smooth steel trowel finish, and unevenness of 2mm or less)
- Calcium silicate board (6mm or thicker recommended with a specific gravity of 0.8 or more)
- Lauan plywood board (9mm or thicker recommended)

Note: When using any other backing material that is not listed in this section, please check with the respective distributors or shops from which they were purchased prior to installation of Module panels.

Inappropriate backing materials

- Backing materials that are damp
- ALC building frame, to which panels cannot be adhered directly
- Reinforced concrete walls, to which panels cannot be adhered directly
- Painted, cross-sectional, and decorated surfaces, to which panels cannot be adhered directly

Inappropriate environments for installation

- Temperatures less than 5˚C
- Humidity levels over 90%
- Where condensation is expected

CAUTION

- When selecting backing materials and creating structures, be sure to adhere to the Building Control Act, fire prevention ordinances and other similar laws and regulations in your country and regions.
- Even with the appropriate backing material, if there is a layer of decorative material applied on the finish. e.g., paint or wallpaper, peeling may occur due to poor adhesion.

How to Anchor Backing Material on the Building Frame

(1) LIGHTWEIGHT STEEL FRAME WALL BACKING MATERIALS

- Use a stud with a width of 65mm or greater.
- Anchor the base material (plaster board, etc.) using dedicated screws at a distance of 200-300mm.
  Note: Use screws to anchor the base material's edges securely around the frame, exterior corner, and interior corner.

(2) REINFORCED CONCRETE WALLS

- **On Mortar Finishes**
  Select a material for mortar that has good adhesion to reinforced concrete walls and finish with a steel trowel so that no unevenness occurs.
  Note: Install on mortar with a water content of 4.5% or less (adhesive strength of 1.0 N/mm² or greater).
- **On Wood Furring Strips**
  Attach vertical and horizontal furring strips of about 24mm × 45mm to the building frame with board anchors, curl plugs, nails, or other similar means at a distance of 300mm, and anchor the base material (plaster board, etc.) using both dedicated screws (at a distance of 200–300mm) and dedicated glue.
- **With Gypsum Lining**
  Observe the gypsum board manufacturer's specifications.
  Note: Let properly cure after installation since gypsum lining glue is aqueous. Approximately 20 days are required for curing. (Check to make sure it has dried before installing.)

Check the Accuracy of the Backing Material Installation

- Check the horizontal and vertical angles against the wall.
- Make sure there is no unevenness on the wall.

Check the position of the wall to be installed against

Adhere to laws and regulations in your country and region when performing base structure work on a kitchen wall.
To avoid extreme thermal conductivity on the surface of Module panels, check to make sure of the following.

For built-in stoves

- Keep at least 15cm away from the lateral side of the stove to the surface of the Module panels. Use heat insulating panels if there is not a distance of at least 15cm, since the heat from the stove may cause discoloration and burns.
- The wall behind stove tops with a grill vent on the back may experience high temperatures due to the air vented from the grill, which can cause discoloration and burns. Use heat insulating panels for a worktop with a depth of less than 65cm.
- Even for a worktop with a depth of 65cm or greater, if there is a possibility of the wall heating up, use heat insulating panels in areas adjacent to the stove and grill duct.

For stand-alone stoves

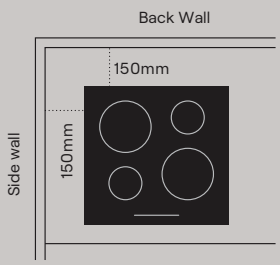
- Use heat insulating panels if a distance of at least 15cm cannot be created between the stand-alone stove (the side surface(s) and rear surface) and the walls. When setting up the heat insulating panels, be sure to create a distance between the panels and the walls in accordance with the heat insulating panel manufacturer's installation manual.

Note:

- Be careful so flames do not come directly into contact with the Module panels even when the conditions above have been met.
- Wall structures around stoves are regulated by the fire prevention ordinances and other similar laws and regulations of each country and region. Create structures following such regulations.
- Do not use in places close to industrial stoves exceeding 4,600 kcal.
- Take care to not let hot pots and other utensils directly touch Module panels.
- Module panel surface layer can resist heat up to 180°C. If the panel is heated up above 180°C, discoloration, burns, or peeling may occur on the decorative surface layer. (Discoloration, burns, or peeling on Module panel surface layer does not adversely affect its non-combustibility.)

Installation requirements for kitchen application

Allow for a distance of 150mm from stove to the wall.

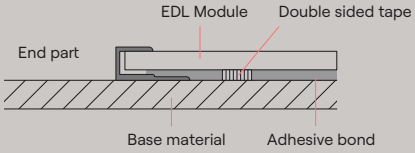


Do not position joins around stove area.

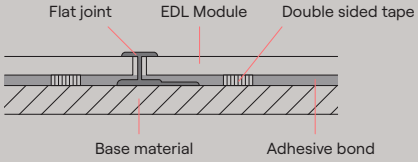
Points to take note for areas with join detailing

(1) DETAILING WITH JOINERS

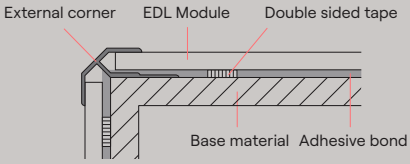
End part



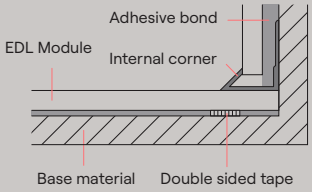
Flat joint



External corner



Internal corner

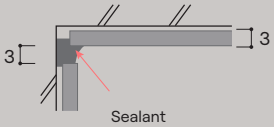


CAUTION

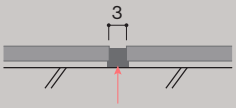
- Insert Module panels into joiners before installing them. Securely anchor joiners using double-sided tape or another adhesive.
- If installing in a wet area, be sure to inject a sealant into the joiners.

(2) DETAILING WITH SEALANT

Interior corner area

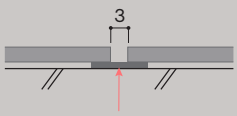


Flat joint area



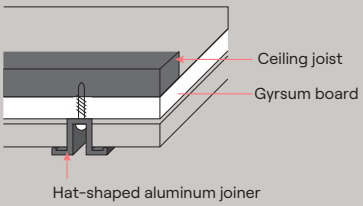
(3) DETAILING WITH GAPS

Gap

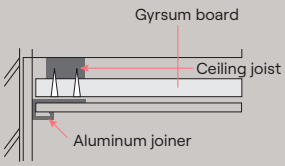


(4) DETAILING ON CEILINGS

Flat joint section



Wall–ceiling junction area



CAUTION

- Make sure to use a hat-shaped aluminium joiner when installing on ceilings since there is a risk of panels falling.
- When installing Module panels on ceilings, use pieces cut down to a size of 935mm x 1,225mm or smaller.
- Do not install Module panels with a butt join. High humidity may cause Module panels to expand towards one another whereas low humidity may cause the panels to contract, creating gaps.
- If setting with sealant or gaps, pair factory-cut faces whenever possible.

② Arrangements of panels

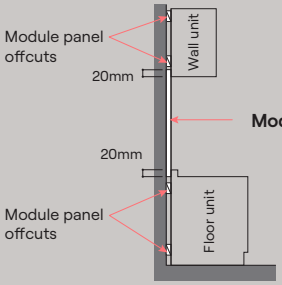
Observe the following precautions in arranging panels and priming backing materials.

! Points of caution when arranging

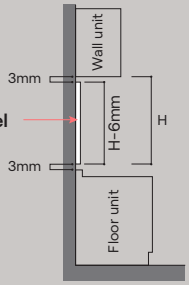
- Arrange the backing material and Module panels so their joints do not align.
- Do not install Module panels with a butt joint.
- Leave a gap of 3mm or greater between joints if installing with sealant or gaps. Be sure to leave some clearance if installing with joiners.
- Take the position and appearance of openings to be made in the panel into consideration and arrange the panels in order not to produce many offcuts.

For use in kitchens

INSTALLING PANELS BEFOREHAND

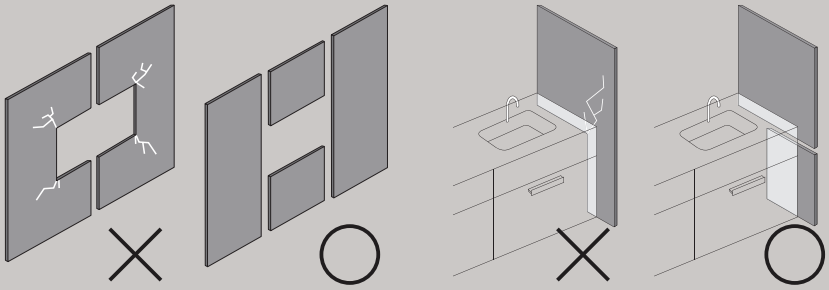


INSTALLING PANELS AFTERWARD



- If installing panels before installing fixtures, install the panels so that 20mm of the upper portion lies behind the wall unit and 20mm of the lower portion lies behind the floor unit.
- If installing panels after installing fixtures, install the panels with a 3mm gap between the wall unit and the floor unit.
- Leave a 3mm gap on the left and right.

For sections with cut-outs



- If cut-outs are large like in the figures above, cracks can occur. (If the shape is similar to one of the figures above, arrange using multiple panels rather than cutting out a section.)

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③ Priming of backing material

For use on mortared, calcium silicate board, and plywood board base materials.

Apply primer in advance along the entire surface of the backing material on which Module panels will be adhered.

! Caution

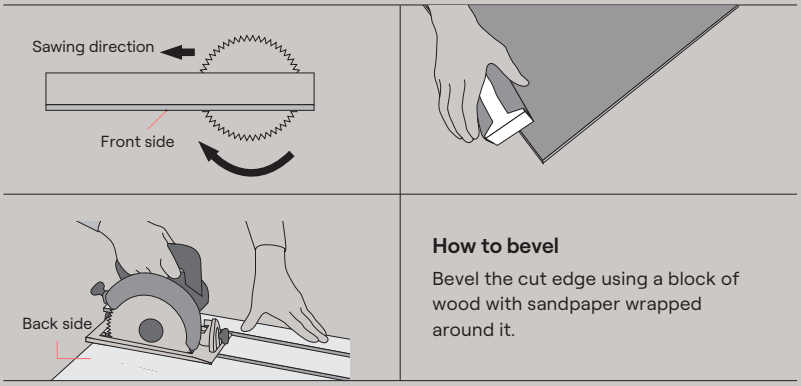
- Read instruction manual of primer before use.
- Use primer undiluted, as it is.
- Adhere the Module panels within a period of 2 hours to 7 days after priming. Work in a well-ventilated area when using primer.

④ Cutting and machining

Observe the following precautions when cutting, creating openings, and cutting out sections.

Points of caution when cutting

- When cutting, use a guide board and be sure that the saw blade enters from the front side and exits from the back side.
  (The front surface has the protective film.)
- Although the protection film is on, exercise care when handling the panel.



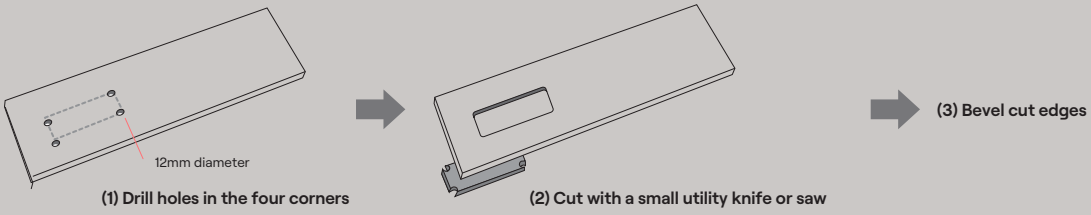
How to bevel

Bevel the cut edge using a block of wood with sandpaper wrapped around it.

Points of caution when creating opening and cutting out sections

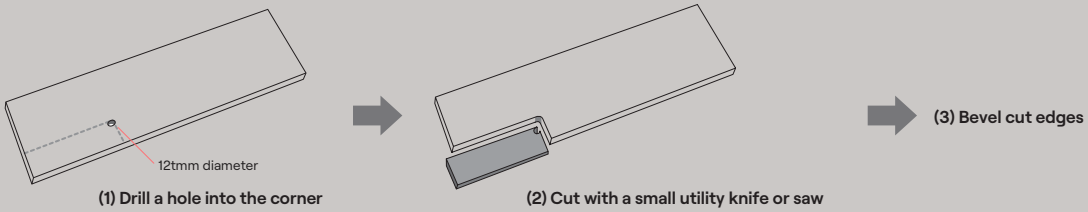
- Be sure to use a bit with a diameter of at least 12mm to first drill holes from the front side in the corners of the section to be cut out when creating an opening or cutting out sections.
- Burrs and chips caused by cutting may result in cracks. Smooth down cut edges with sandpaper.

Creating openings for outlets, etc.



(1) Drill holes in the four corners → **(2) Cut with a small utility knife or saw** → **(3) Bevel cut edges**

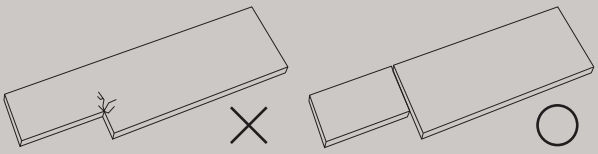
Cutting out sections



(1) Drill a hole into the corner → **(2) Cut with a small utility knife or saw** → **(3) Bevel cut edges**

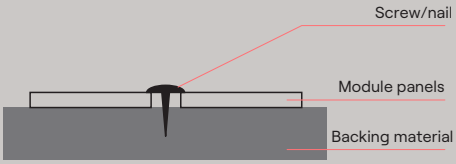
Caution

- Cutting out sharp corners like in the figure to the right can cause cracks. If you are cutting out sharp corners, arrange the shape you want with multiple panels rather than cutting out a section.



Points of caution when driving in screws and nails

- Do not drive screws or nails directly into Module panel. Drive screws and nails into holes with a larger diameter.
  Note: Driving screws or nails directly in can cause cracks.

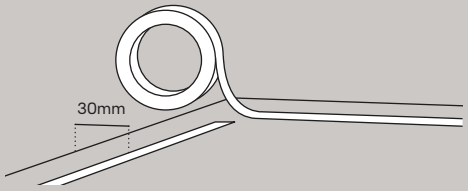


⑤ Application of double-sided tape

Observe the following precautions when applying double-sided tape and glue.

! Points of caution when applying tape

- Apply double-sided tape with a space of 30mm from Module panel's edge so the glue can be added.

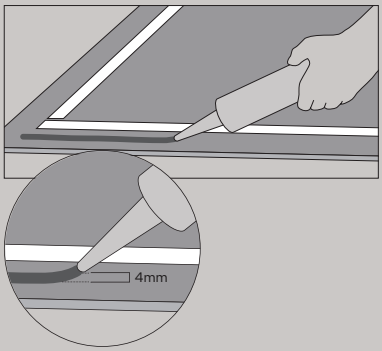


⑥ Application of glue

! Points of caution when applying glue

- Add glue in lines about 4mm tall.
- Be sure to apply glue to the periphery of the Module panels.
- One tube of glue is the standard amount to be applied to a 3' x 8' (935mm × 2,450mm) Module panel.
  Detachment and other such issues can occur when an insufficient amount is applied.
- After applying glue, adhere and pressure bond the panel within 10 minutes.

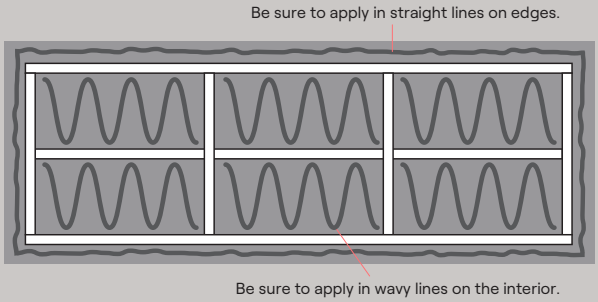
CAUTION WHEN USING GLUE
Install at a temperature of 5°C or higher.



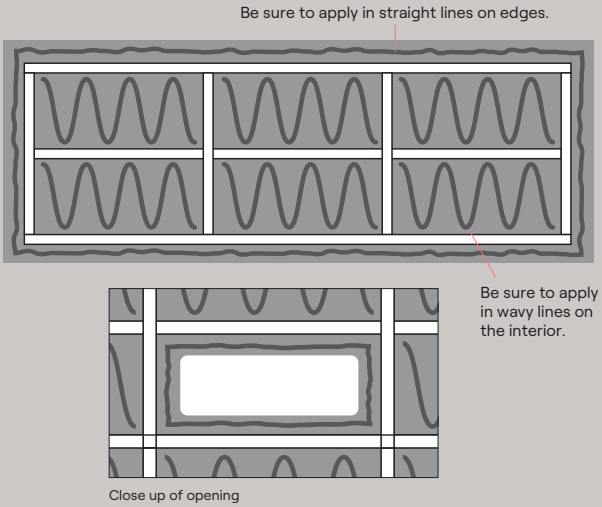
Standard Application Patterns

Representation: Module panels (back side) | Glue | Double-sided tape

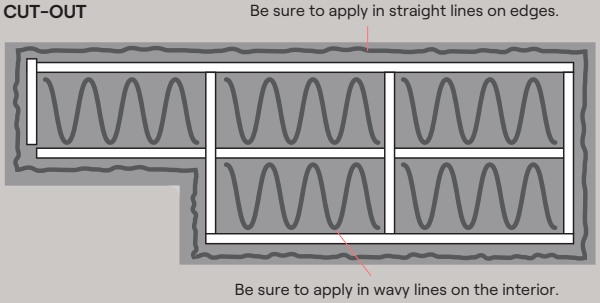
NORMAL



OPENINGS CREATED FOR OUTLETS, ETC.



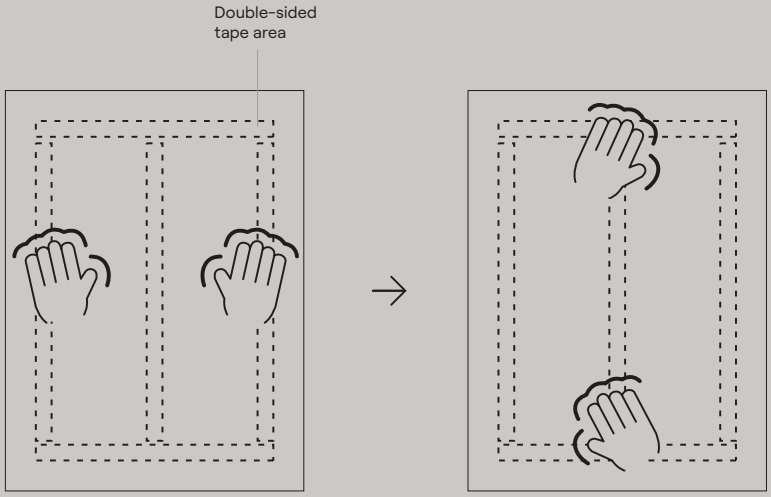
CUT-OUT



- Reinforce openings and cut-outs with double-sided tape and glue. (The same goes when applying double-sided tape and glue to base materials.)

7 Adhesion and pressure bonding

Observe the following precautions when adhering and pressure bonding.



Points of caution when adhering

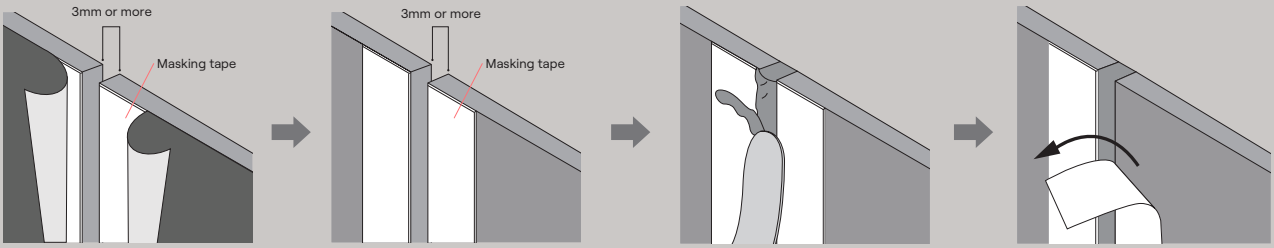
- When applying Module panels, be careful not to lift it in the center.
  Also make sure no warping occurs in openings and cut-outs when adhering (since this can cause cracks after installation).
  Note: Once double-sided tape is applied to the wall, it cannot be adjusted

Points of caution when pressure bonding

- Press down hard on the areas with the double-sided tape.
  Note: Be careful since separation can occur when pressing down on the area with the glue.
- When using a plastic hammer or similar tool, use a block of wood as a buffer in order not to pound directly on Module panel.
  Note: Pounding directly on Module panel's surface can cause cracks.

8 Sealing

Follow the procedure below to seal (to set with sealants).

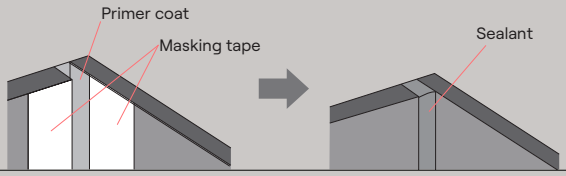


Peel off part of the protective film where masking tape will be applied.

Apply masking tape and inject an ample amount of sealant.

Use a spatula or similar tool to scrape away excess sealant.

Slowly pull up the masking tape toward the center.



Caution

Sealing interior corners

Make sure to use a primer on Module panel since sealants do not adhere well to the surface of the panel.

9 Remove protective film

Remove the protective film from the surface after 2 or more days of curing.

Stocking and storage

Caution

- Stock and store in an indoor location with good air circulation and away from direct sunlight and rain.
- Stack on pallets or other horizontal surfaces in a flat area, avoiding placement directly on the ground.
- Do not lean panels against a wall or other vertical places since this can cause warping.