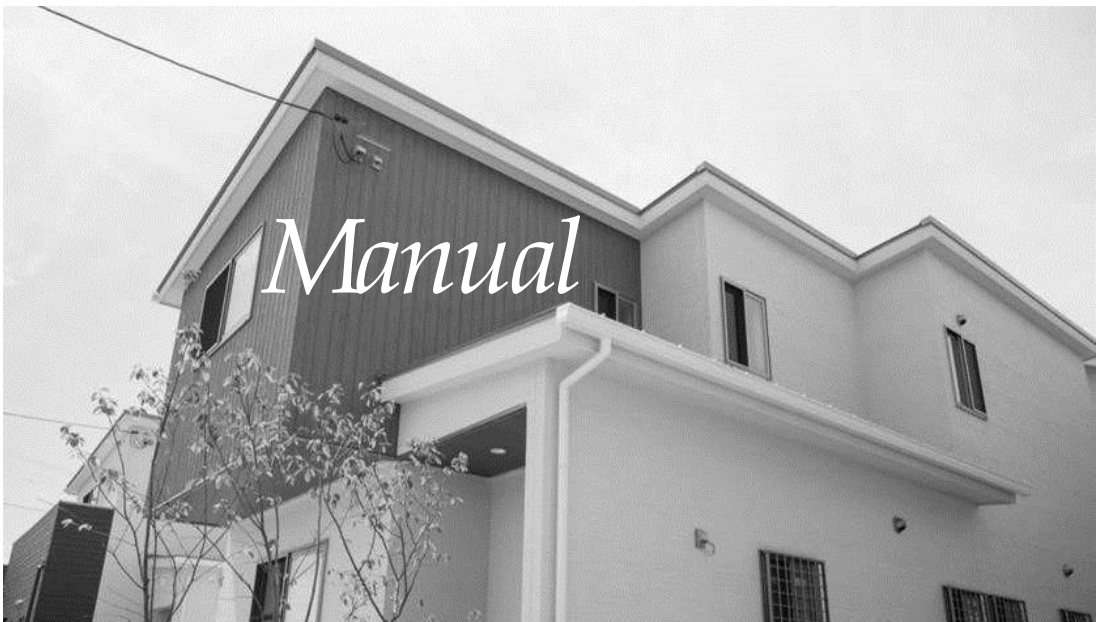


KMEW

CERACLAD *Panels*

Design/Installation Manual for Australia

27 July 2017



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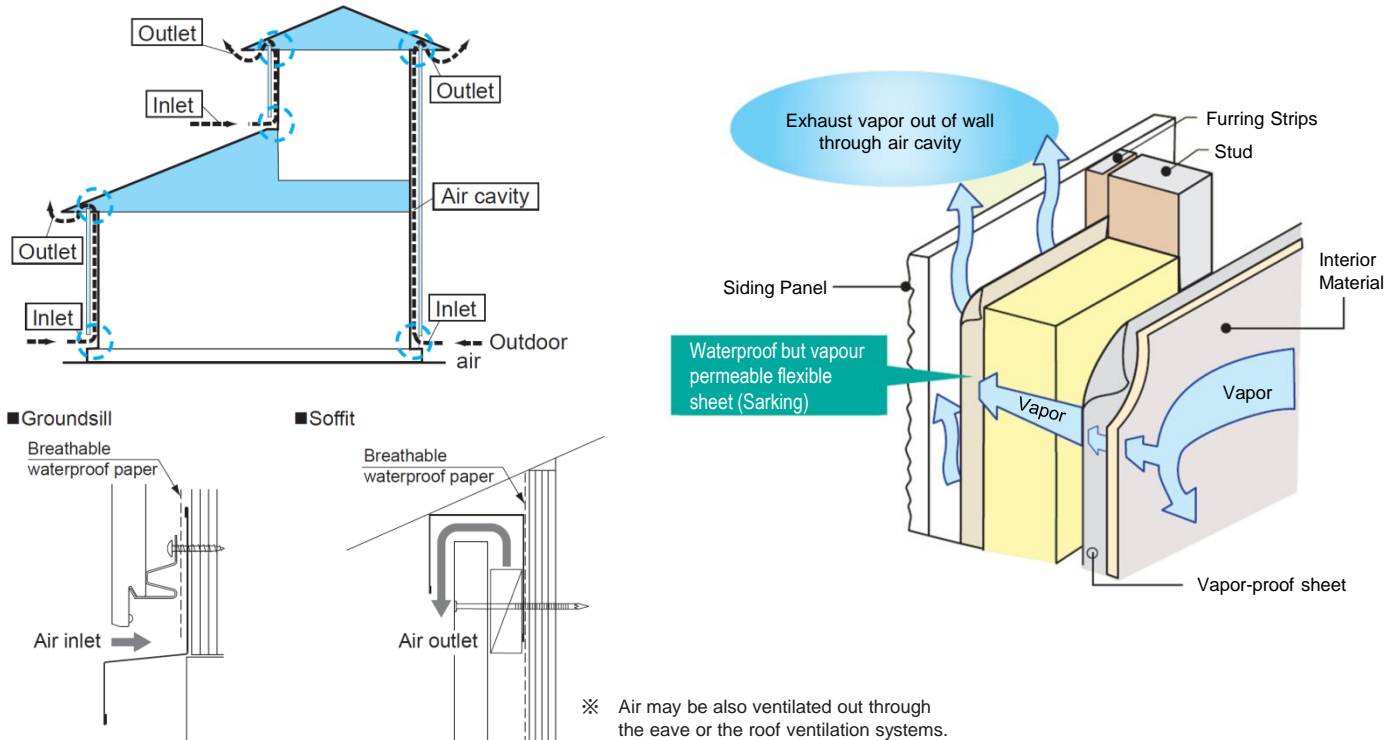
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Description

- 1 The CERACLAD System is a cavity-based extruded fibre-reinforced cement panel wall claddings. CERACLAD panels are available in a range of surface profile patterns and prefinished colours. CERACLAD panels are rebated to form hidden laps and are fixed with clips to form a drained and ventilated cavity.
- 2 The system incorporates a primary and secondary means of weather resistance (first and second line of defence) against water penetration by separating the cladding from the external wall framing with a nominal 15 mm drained and ventilated cavity.

■ Details of the rain screen system



Safety precautions

 Caution	
 Prohibited	<ul style="list-style-type: none"> ● Do not use CERACLAD panels for any purpose other than exterior walls. ● Do not get CERACLAD panels wet; otherwise, the CERACLAD panels may warp or shrink after installation, causing rain penetration.
 Very Important!	<ul style="list-style-type: none"> ● CERACLAD panels installation includes work in high places. Wear appropriate clothes and protective equipment, and check that the scaffolding is secure. ● CERACLAD panels are heavy. Take extreme care with safety during carriage; otherwise injury may be caused. ● When storing, 2 cladding pallets may be stacked to a maximum 160 cm height. ● CERACLAD panels are made of cement. Wear gloves when handling them. In particular, when handling wet CERACLAD panels, wear rubber gloves or other protective equipment. Otherwise your skin may be damaged. ● When CERACLAD panels are installed on a high place or balcony, together with clip fasteners, additional nails or other reinforcement must be secured into the CERACLAD panels to prevent accidents and injury.

Precautions

be sure to follow

Use the CERACLAD panels safely and properly and follow the alarms and cautions below to prevent injury to users and others as well as damage to property.

■ The marks below indicate the levels of hazards and damages caused by inappropriate use.



Alarm

Indicates that erroneous handling may lead to death or serious injury



Caution

Indicates that erroneous handling may lead to injury or property damage

■ The marks below indicate what the users are required to follow.



Indicates prohibited action



Indicates compulsory action (must)



General precaution

Precautions for prevention of dropping

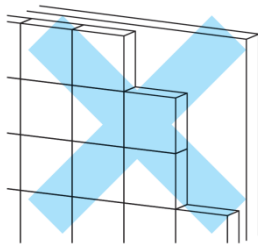


Alarm



Prohibited

Direct fastening of tiles, etc. on the CERACLAD panels

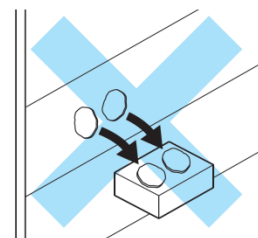


If tiles are fastened directly on CERACLAD panels, tiles may drop off, be broken or cracked.



Prohibited

Fastening objects on the CERACLAD panels



The CERACLAD panels may be broken or fastened objects may fall if the objects are fastened on the CERACLAD panels alone.



The CERACLAD panels do not provide sufficient retention force. Objects shall be fastened on frames. Avoid joints of the CERACLAD panels and fasten with consideration for distance from the edge.

Precautions

be sure to follow

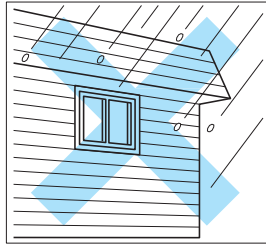
Shall not be used under the following conditions


Caution



Installation on tilting parapets

Prohibited



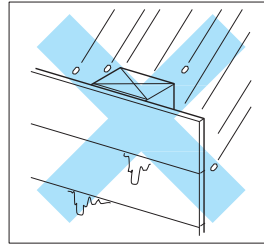
Parapets are subjected to severe conditions equivalent to those of roofs, unlike vertical walls, resulting in deterioration of coated film, freezing and leakage of rainwater.

 Please use roofing materials.



Installation on fences, etc. which get wet due to rain from backside

Prohibited

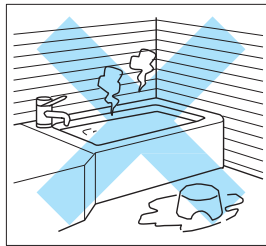


Backside of the CERACLAD panels is protected by sealer alone, and they may be warped due to repeated wetting and drying caused by water absorption from backside.



Installation on areas that are constantly subjected to water or steam

Prohibited

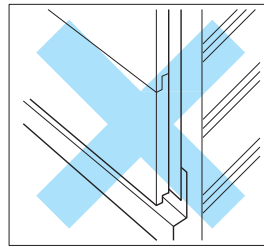


They will be affected by water, heat, etc, resulting in warping, freezing, deterioration in strength and cracking.



Direct fastening of the CERACLAD panels on ALC/RC walls

Prohibited

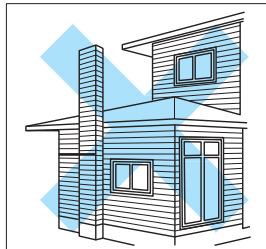


It could cause breakage of the CERACLAD panel fastening areas or falling of the CERACLAD panels.



Installation on centralized smoke stacks




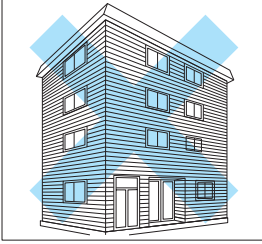
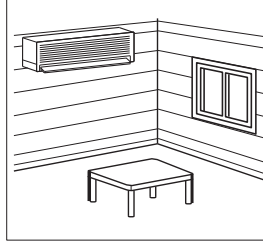
Prohibited






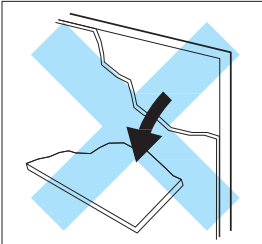
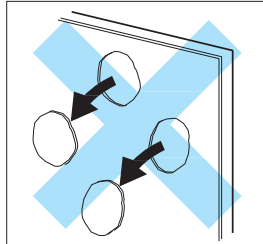
Moisture generated inside smoke stacks will leak through mortar and the moisture will be absorbed by the CERACLAD panels from backside, causing warping and freezing.

Precautions be sure to follow




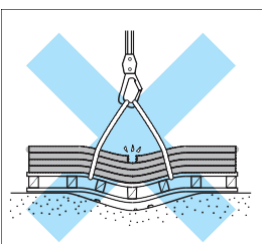
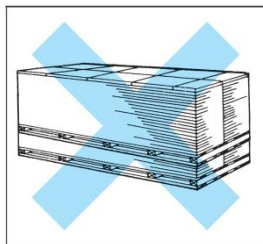
Shall not be used under the following conditions

	<p style="text-align: center;"></p> <p>Installation on fireproof structures and areas exceeding specified height</p> <p style="font-size: small;">Prohibited</p>	<p style="text-align: center;"></p> <p>Installation of the CERACLAD panels as interior finishing material</p>
	 <p>Installation of the CERACLAD panels on fireproof structures and areas that exceed 13 m in height is not allowed.</p>	 <p>As for interior finish materials, emission of formaldehydes, etc. should meet the local Building Code or Regulations. Some CERACLAD panels may satisfy those requirements however the designer should verify it as well as a proper installation method according to this manual.</p>

Precautions for on-site coating

 <p>Caution</p>	<p style="text-align: center;"></p> <p>Thick layer of multilayer finish coating or stucco cement</p> <p style="font-size: small;">Prohibited</p>	<p style="text-align: center;"></p> <p>On-site coating using materials not recommended for photocatalytic / hydrophilic ceramic coat products</p> <p style="font-size: small;">Prohibited</p>
	 <p>Thick coating may cause separation, breakage or cracks due to insufficient adhesion strength.</p>	 <p>Usage of recoating materials that are not recommended for the products may result in peeling of coating, etc.</p>

Precautions for storage, transportation and handling

 <p>Caution</p>	<p style="text-align: center;"></p> <p>The products shall be stored on a stiff and flat place.</p> <p style="font-size: small;">Very Important!</p>	<p style="text-align: center;"></p> <p>Do not place a palette containing a small number of products under the one with a large number of products.</p> <p style="font-size: small;">Prohibited</p>
	 <p>Storage on uneven or non-flat place may result in cracks and breakage of the products.</p>	 <p>It may cause cracks and breakage.</p>

Precautions

be sure to follow

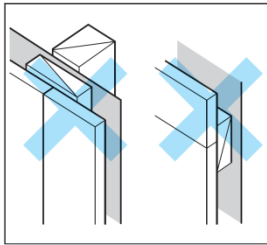
Precautions for prevention of rainwater leakage


Caution



Butt joints

Prohibited

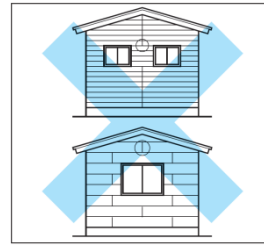


Sealing of butt joints may cause rainwater leakage or freezing, because sealing materials do not follow the joints, resulting in improper sealing.



Erratic installation where vertical joints are not on a straight line

Prohibited

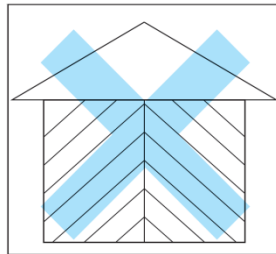


Improper sealing, etc. may occur at joints between hat-shaped joiners and the CERACLAD panels or between sill flashings and the CERACLAD panels, causing rainwater leakage.



Diagonal installation

Prohibited

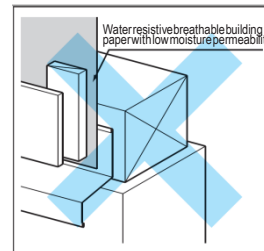


When the CERACLAD panels are installed diagonally, the amount of water that flows along the grooved joints increases at the bottom of the wall, causing water to flow into the wall, resulting in rainwater leakage.



Usage of water resistive breathable building paper with low moisture permeability

Prohibited



Do not use sarkings with low moisture permeability, such as PVC sheets. They will cause condensation.



Installation without water resistive breathable building paper in exterior insulation structures

Prohibited

Be sure to use water resistive breathable building paper and waterproof tapes, even if the exterior insulation method is incorporated. Improper installation may lead to rainwater leakage.



Very Important!

The CERACLAD panels shall be installed immediately after installation of water resistive breathable building paper and furring strips.

If water resistive breathable building paper and furring strips remain uncovered, rainwater leakage may occur during rainstorm.

Precautions

be sure to follow

Precautions for prevention of cracks

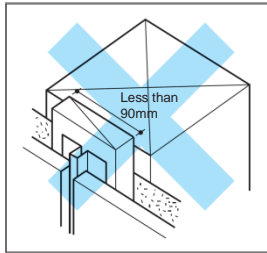


Caution



Prohibited

Usage of furring strips less than 90 mm in width on joints

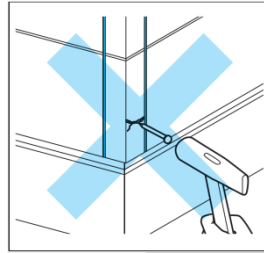


When furring strips less than 90 mm in width are used, the distance from the edge of the CERACLAD panels to fastening nails or screws become short, resulting in cracks, etc.



Prohibited

Nailing on areas with steel sheets without pilot holes



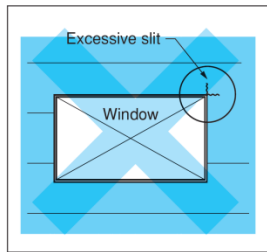
Cracks may be caused if CERACLAD panel nails are hit directly on areas where sill flashings are overlapped, such as outside corners of the sill.

⚠️ **Avoid sill flashings and hit nails after drilling pilot holes.**



Prohibited

Excessive slit, installation of the CERACLAD panels that are less than minimum allowable width without division

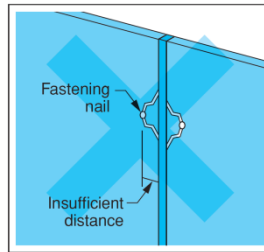


They may cause cracks. Excessive slit could also lead to rainwater leakage and freezing.



Prohibited

Insufficient distance from the edge



Insufficient distance from the edge could result in cracking or chipping of the edge.

⚠️ **The distance from screw to the edge shall conform to the specifications.**

Precautions for prevention of lateral displacement (in installation using brackets for horizontal installation)

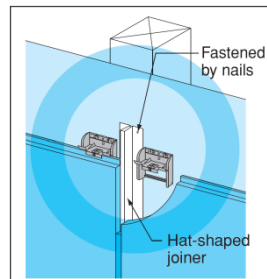


Caution



Very Important!

Hat-shaped joiners shall be fastened on studs at intervals of approximately 1 m, using nails or screws.

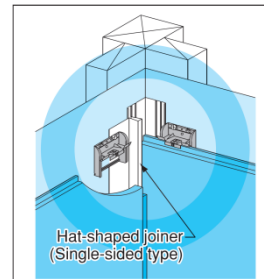


Lateral displacement of the CERACLAD panels, cutting and lifting of sealed areas on vertical joints may occur if the hat-shaped joiners are not fixed.



Very Important!

Use single-sided hat-shaped joiners on inside corners and beside openings.



Lateral displacement of the CERACLAD panels, cutting and lifting of sealed areas on joints may occur if the hat-shaped joiners are not used.

Precautions

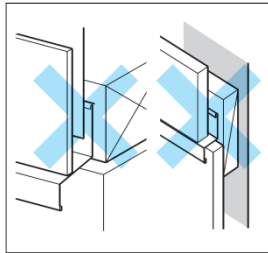
be sure to follow

Precautions for prevention of base material deterioration



Butt joint with sill flashing and intermediate flashing

Prohibited

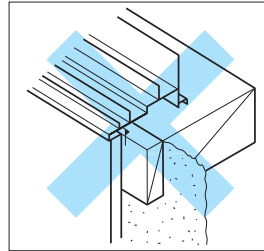


Butt joint with sill flashing and intermediate flashing could lead to water absorption caused by capillary action, resulting in deterioration of base material or freezing. In addition, it does not conform to the standard installation method for the ventilated structure.



Installation under openings for sashes, etc. of limited overhang

Prohibited



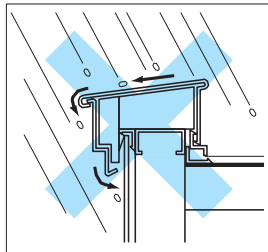
It could lead to staining and freezing of CERACLAD panels due to water flowing down the sashes, etc.

⚠ **Prevent water flowing down the sash from flowing on the surface of the CERACLAD panels.**



Headboards that are tilted outward

Prohibited

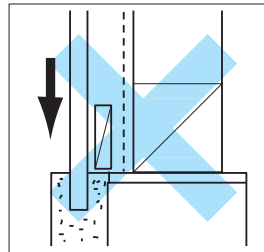


If head boards are horizontal or tilted outward, a large amount of rainwater flows on the external wall, causing stains and freezing.



Embedding in mortar portion of foundation or butt joint with the area

Prohibited

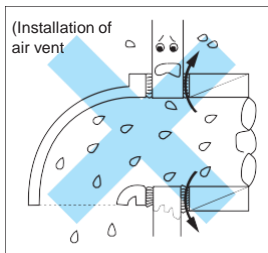


The CERACLAD panels will absorb water from embedded areas or butt joints, causing separation of coated film, deterioration of base material, freezing, etc. In addition, it does not conform to the standard installation method for the ventilated structure.



Installation of air vents after installation of the CERACLAD panels

Prohibited



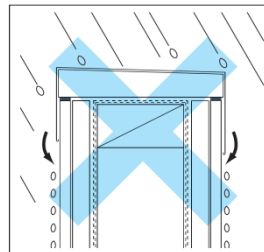
If air vents are installed after installation of the CERACLAD panels, moisture tends to intrude into the wall, causing condensation, rainwater leakage, freezing, etc.

⚠ **Ventilation hoods and connecting pipes shall be installed before installation of the CERACLAD panels, and the edges of water resistive breathable building paper shall be fastened by waterproof tapes, etc. to prevent intrusion of water.**



Head boards with limited overhang, etc. that cause flow of rainwater along the CERACLAD panel surface, or installation methods that prevent ventilation

Prohibited



These conditions may cause staining and freezing of the CERACLAD panels due to water running down from head boards. Condensation and freezing will be caused if the walls are not ventilated by the ventilated structure.

Precautions

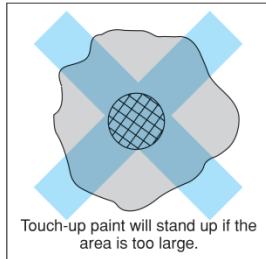
be sure to follow

Precautions for prevention of staining and discoloration



Prohibited Improper touch-up for nail head, etc.

Prohibited

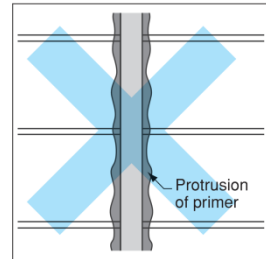


In touching up the nail head, if the area is too large, the paint is not fully mixed or sealing material is used, the area stands up after years of aging.

⚠ **Touch-up paint on nail heads should be limited to the minimum amount.**

Prohibited Protrusion of primer, sealing material and stain-proof agent

Prohibited



Protruded primer, sealing material and stain-proof agent will be discolored and stand out.

⚠ **Prevent protrusion by attaching masking tapes along the edge of the CERACLAD panels and along patterns of the CERACLAD panels.**

Prohibited Dividing or adding of touch-up paint for hydrophilic ceramic products

Prohibited



They may cause mismatching in color or insufficient performance.

Very Important! Touch-up paint for hydrophilic ceramic products shall be mixed and stirred 30 minutes or more before use.

If the paint is used immediately after stirring, the paint may not provide proper performance

Prohibited Cleaning of powder on the surface of the CERACLAD panel using water

Prohibited

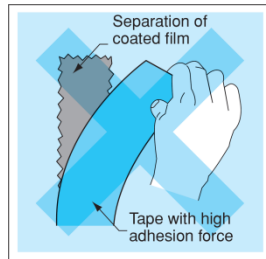


If water is used to wipe or wash the surface, whitish patch may appear on the area.

⚠ **Remove completely by air or use dry and clean rug, cloth, soft brush, etc.**

Prohibited Attaching tapes with high adhesion force on the surface of the CERACLAD panels

Prohibited



If tapes with high adhesion force (such as cloth tapes and masking tapes) are attached on the surface of the CERACLAD panels, coated film on the surface could be separated or bond could remain on the surface.

⚠ **Avoid attaching tapes on the surface of the CERACLAD panels if possible.**

Health and safety

1. Warning about silica dust

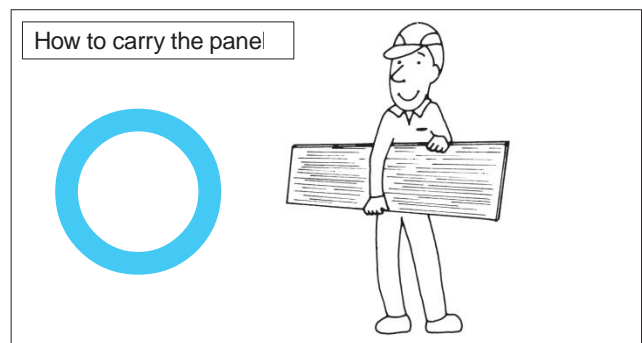
WARNING: AVOID BREATHING SILICA DUST

CERACLAD panels contain silica. Inhalation of respirable silica dust can cause silicosis a potentially disabling lung disease. When drilling, cutting, or abrading cladding panels during installation or handling, (1) Work outdoors where feasible, otherwise use mechanical ventilation, (2) Wear a dust mask or, if dust may exceed **PEL**, use **NIOSH/MSHA** approved respirator, (3) Warn others in area. For further information, refer to material safety data sheet or consult employer.

FAILURE TO ADHERE TO WARNINGS, MSDS, INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY.

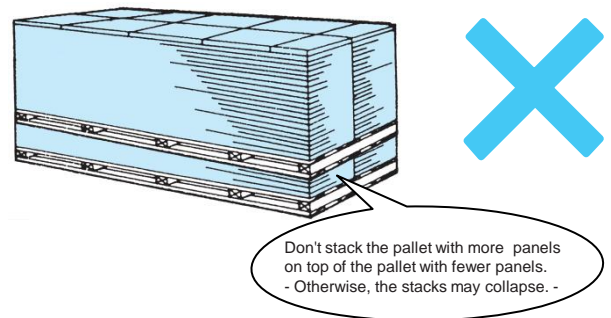
2. Handling and carrying

- One pallet weighs approx. two tons.
- Carry the panels by holding their lengthwise edges under your arm.
- Take extra care to avoid hitting anything with the panels or drop them, or the edges may be damaged.
- Don't touch panels with dirty hands.



<Transport by vehicle>

- When transporting the panels by vehicle, stack them flat.
- Tie panels with a rope and protect them with plates to avoid damage due to sudden braking.
- When loading/unloading panels, take extra care to avoid damaging them.
- When hoisting panels, put plates between the panels and ropes to avoid damaging the panels.
- Don't stack the pallet with more panels on top of the pallet with fewer panels.



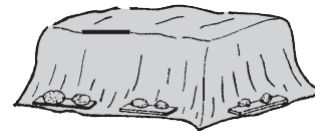
Health and safety

3. Handling and storage

- Store the panels flat and under cover. Keep the panels dry and off the ground prior to installation to avoid moisture conditions that could effect the quality of the work.
- The panels are not to be stacked more than 2 pallets high. Pallets should be loaded and unloaded with a forklift or sling. Taking care not to drop the pallet.
- Keep the panels clean when handling on site, and take care not to damage the edges.
- When necessary to stand panels on edge prior to installation, take care to avoid contact with rough and abrasive surfaces that could damage the factory-applied coating or sealer.
- Panels should be carried mid span and on edge for ease of handling and to avoid breakage.

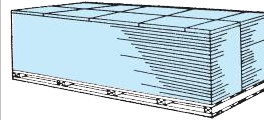


Temporary outdoor storage:

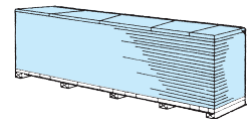


Indoor storage:

a) On a pallet



b) On spacers



- Do not place panels directly on the ground.

4. Health precautions

- 1) When cutting the panels, prolonged inhalation of a large amount of dust during may be harmful to your health. Follow the instructions below.
 - Use a dustproof cutter equipped with an interlocked dust collector, or local exhaust equipment.
 - Wear a dustproof mask and dustproof glasses.
 - Work in a well-ventilated location.
 - Make sure to gargle and wash your hands.
- 2) When using a solvent-based material, such as repair paint, waterproof sealer, sealant, and sealant primer, wear an appropriate mask or protective gloves, and work in a well-ventilated location.



Design Criteria

1. General

All design and construction must comply with the appropriate requirements of the current Building Code of Australia (BCA) and other applicable regulations and standard.

2. Fire

2.1. The CERACLAD System is suitable for use on exterior walls of BCA Volume 2 – Class 1 and Class 10 Buildings, (a) positioned a minimum of 900mm from an allotment boundary (other than the boundary adjoining a road alignment or other public space), and (b) positioned a minimum of 1.8 meters from another building on the same allotment (other than an appurtenant Class 10 building or a detached part of the same Class 1 building).

2.2. Bush Fire Zones. The use of the CERACLAD System on buildings located within designated bush fire zone shall be restricted by the requirements of AS.3959. The building designer is responsible for determining the Bushfire Attack Level (BAL) for the building accordance with AS 3959, which will in turn determine the suitability for use. The 16mm thickness of CERACLAD panels exceed the minimum 9 mm thickness required for fibre cement cladding on external walls for compliance with BAL-40.

3. Energy Efficiency

3.1. Total construction R-Value depends on the insulation material use and the framing ratio. To achieve higher construction R-Values the wall insulation material shall be replaced with a higher R-Value insulation material.

3.2. Refer to the table below for Total Construction R-Value:

	CERACLAD 16mm Panel R-Value (m ² · K/W)	Air Cavity (mm)	Stud Cavity (mm)	Insulation R-Value (m ² · K/W)	9mm thk Interior Plasterboard R-Value (m ² · K/W)	Winter Total Construction R-Value (m ² · K/W)	Summer Total Construction R-Value (m ² · K/W)
1	0.114	15	70	None	0.06	1.6	1.3
2			70	1.4		2.3	2.0
3			75	1.5		2.4	2.1
4			90	2		2.9	2.6

- ※ Values are calculated in accordance with AS4859.1, and based on unventilated cavity.
- ※ The Insulation R-Values (m²·K/W) of glass wool were assumed.
- ※ Frame type (timber or steel), size, or configuration are not considered in the calculations.
- ※ If a the vapour barrier on the outside of the studs was reflective on one side the R-value could be increased by 0.2 in all cases.

4. Corrosivity Zone

CERACLAD system is suitable for use in Corrsivity Categories upto and including C4 - High according to ISO 9223 (AS4312).

Design Criteria

5. Fixing requirements

5.1 The CERACLAD system is suitable for the wind speed classifications N1 to N3 specified in AS4055.

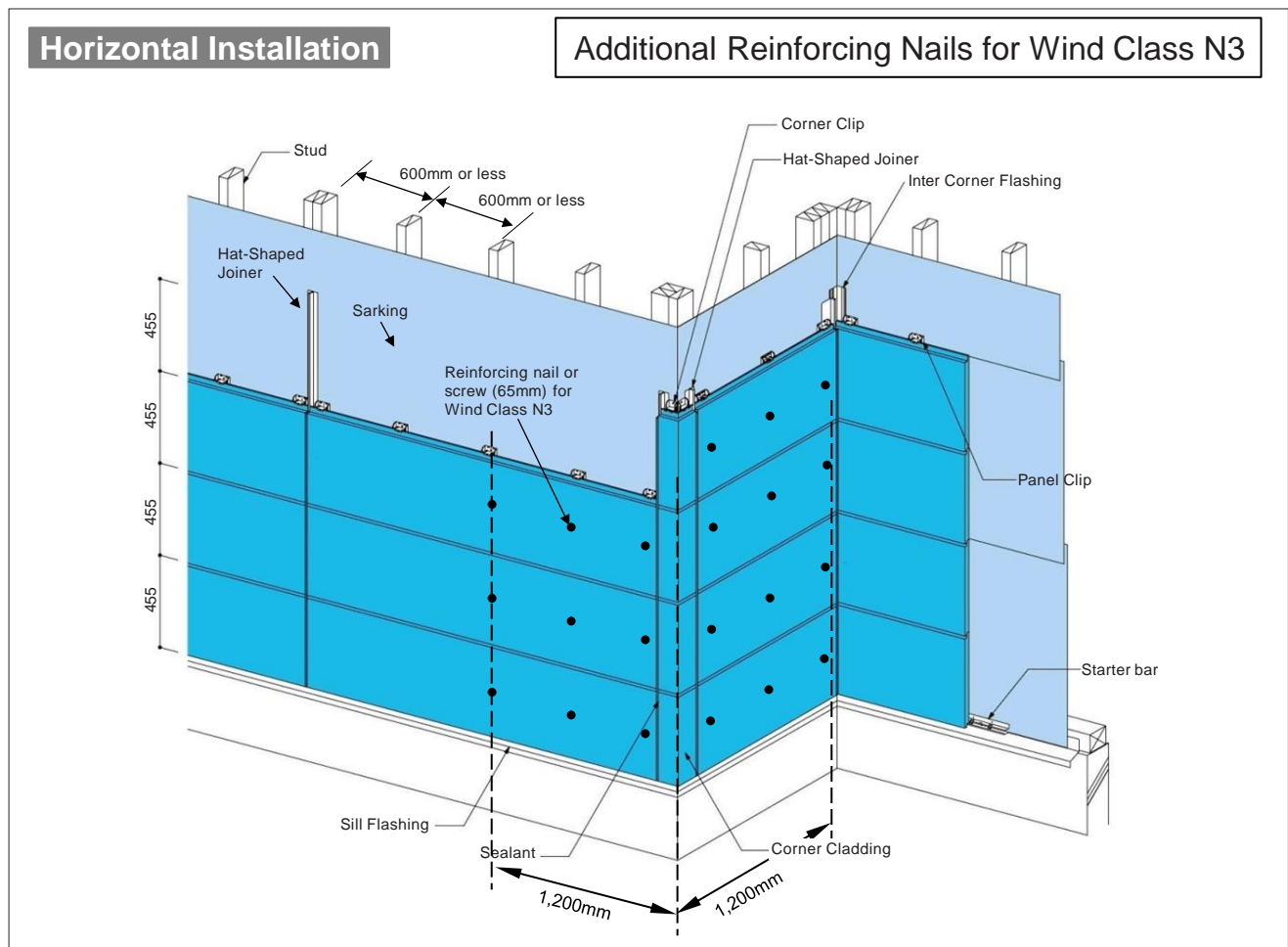
5.2 Refer to the following table for Fixing Requirement:

Wind Class	Timber frame	
	Panel Zone (Areas greater than 1,200mm from an External Building Corner)	Corner Zone (Areas less than 1,200mm from an External Building Corner)
N1	1 Panel Clip @ 600 ^{*1}	1 Panel Clip @ 600
N2	1 Panel Clip @ 600	1 Panel Clip @ 600
N3	1 Panel Clip @ 600	1 Panel Clip @ 600 + 1 Face Nail ^{*2}

*1 -For horizontal installation, panel clips must be fixed on every stud which maximum intervals are 600mm.

For vertical installation, panel clips must be fixed on every horizontal furring strip which maximum intervals are 500mm.

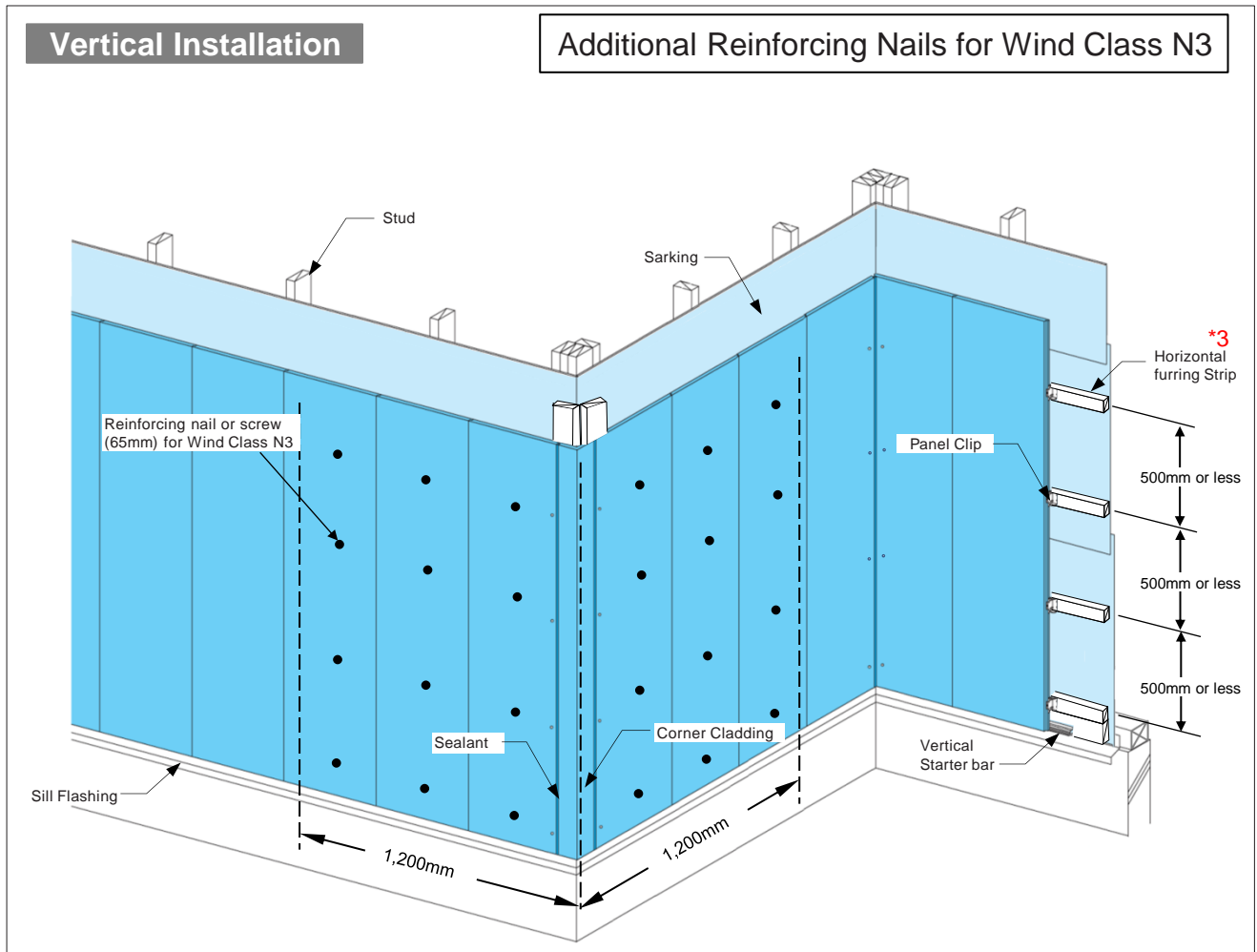
*2 - Additional reinforcing Face Nails are required as shown on the following pictures.



Design Criteria

Vertical Installation

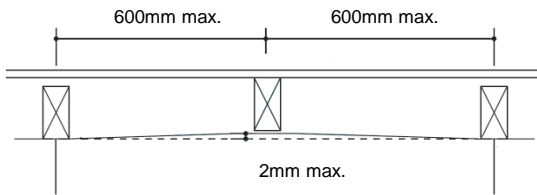
Additional Reinforcing Nails for Wind Class N3



*3 - The horizontal furring strips must have a minimum thickness of 30mm. The recommended size of the furring strip is 35mm thickness by 42mm width. At the sill, double 42mm wide or a 90mm wide furring strips (both 35mm thickness) should be used for the starter bars and the first panel clips.

General Note for Installation

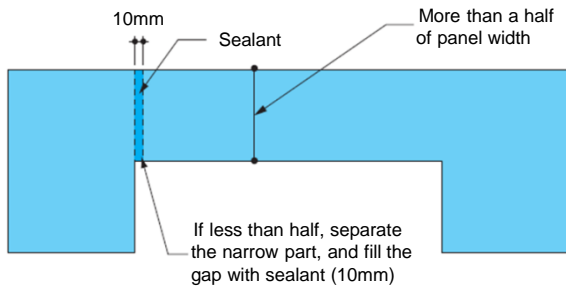
■ Structure Unevenness



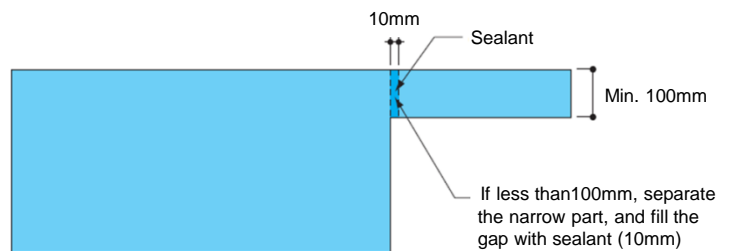
※ If the sheathing board is noticeably uneven, reduce the unevenness to within 2 mm by using spacers, plywood boards, etc.

■ Cutting panels

Example (A): The finished width must be half or more the original panel width.



Example (B): The finished width must be 100mm or more.



※ If the width becomes less than the above specification, separate the narrow part, and fill the gap (10mm) with sealant.

■ Fixing panels

- CERACLAD panels are to be fixed with panel clips for both horizontal and vertical installation.
- A clip is to be fastened with a clip screw.
- However, clips cannot be used to install panels in some areas where the shiplap portion (the top of the panel) is cut such, as the eave and the top / bottom of the opening.

In this case, put spacer 15s or furring blocks/strips (pressure treated), make pilot holes (of about 2 mm in diameter) on the panels, and fix them to the studs or furring blocks/strips with ring nails. Make sure that the nails must have $30 \pm 5\text{mm}$ or $50 \pm 5\text{mm}$ clearances from the panel edge as shown on the pictures below.

Be sure to apply touch-up paint onto the nail heads.



Panel Clip (B1015)

Cut portion	Top of panel	Bottom of panel
<p>30mm \pm 5mm</p>	<p>30mm \pm 5mm</p>	<p>50mm \pm 5mm 20mm</p>

Accessories for the panels installation

Common Accessories

Panel Clip (B1015)
 The clip material is hot-dip zinc-aluminium-magnesium alloy coated steel (ZAM). AS 1397-2011 now covers ZAM (referred to as AM).
 Dimensions: 15 mm, 66 mm, t=0.8mm, 60 mm.

Hat-Shaped Joiner (B277)
 Joint backing joiner material: Zinc/aluminium coated steel
 Dimensions: 49 mm, 9 mm, 9 mm, 4.5 mm, 49 mm, 21 mm, t = 0.3mm, ℓ = 2730 mm.

One-Side Hat-Shaped Joiner (B2711K)
 Dimensions: 54mm, 9 mm, 9 mm, 4.5 mm, 54 mm, 18 mm, t = 0.3mm, ℓ = 2730 mm.

Spacer 15 (RY82S15)
 Dimensions: 45 mm, 15 mm, 40 mm.

Clip Screw (RY8830)
 Stainless Steel Grade SUS410
 Dimensions: 25 mm, φ 4.2.

65 mm Nail (B8765R400)
 Stainless Steel Grade SUS304
 Dimensions: 5 mm, 65 mm, φ 3.0.

Metal outside trims
 Material: Hot-dip zinc/aluminium coated steel with a polyester paint finish
 Dimensions: t = 0.25 mm, ℓ = 3,030 mm.

Trim Section for 16mm panel (RE213*)**
 Dimensions: 35 mm, 12.5 mm, 28 mm, 3.5 mm, 15.5 mm, 1.25 mm.

Repair Paint (B...)
 (Image of three paint cans)

Accessories for Horizontal Installation

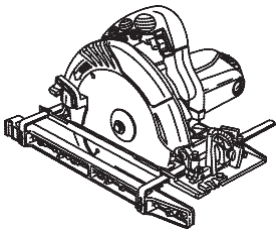
Corner Clip (B10153)
 Dimensions: 15 mm, 49 mm, t=0.8mm, 45 mm.

Starter Bar (B10152)
 Material: hot-dip zinc/aluminium coated steel with a polyester paint finish.
 Dimensions: t = 0.8mm, ℓ = 3030 mm, 30 mm, 15 mm.

Accessories for Vertical Installation

Starter Bar (B10157HG)
 Material: hot-dip zinc/aluminium coated steel with a polyester paint finish.
 Dimensions: t = 0.8mm, ℓ = 3030 mm, 35.6 mm, 36 mm.

Necessary tools



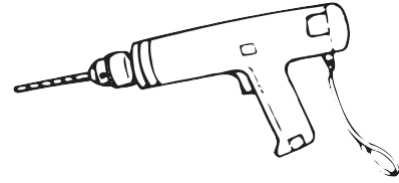
Dustproof circular saw

Manufacturer:
(Makita Corp./Hitachi Koki Co., Ltd.)



Dust collector

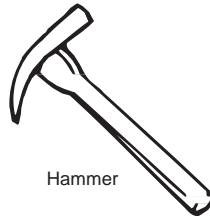
Manufacturer:
(Makita Corp./Hitachi Koki Co., Ltd.)



Electric drill/screwdriver



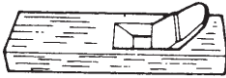
Tacker



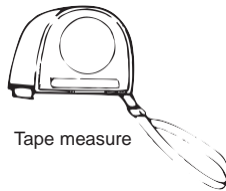
Hammer



Nail claw



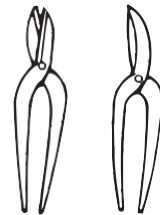
Melamine planer



Tape measure



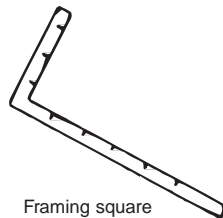
Hand file



Tin shears



Cutter knife



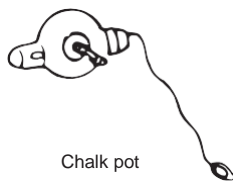
Framing square



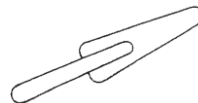
Sealant cartridge gun



Plumb bob



Chalk pot



Sealant spatula



Slate saw

Common installation procedure

Key points

Check alignment of timber wall framing

- The unevenness or the difference in level must be 2 mm or less.

Panel set-out

- Take the appearance, material waste, and workability into consideration.

Installation of groundsill flashing

- Mark a reference horizontal line.

Application of water resistive breathable sheet (Sarking) with waterproof tape

- Ensure that the sarking has no breaks or wrinkles.
- Provide sufficient overlap.
Overlap the sarking by 90 mm or more along the longer sides, 150 mm or more along the shorter sides, and 300 mm or more along the outside / inside corners.
- Apply waterproof tape around openings.

Installation of trims (e.g. outside/inside corners, vertical joints)

- Follow the specifications of the nailing positions on panel edges (in the case of installation with nails).
- Check the perpendicularity using a leveling tool.

Cutting and fastening of panels

- Ensure that panels are securely fastened.
- The clips must not rattle or loosen.
- There must be sufficient clearance between the panel and Sill Flashing, through wall flashing, and soffit flashing.
- There must be no gaps in the shiplap joints.
- Follow the specifications of the nailing positions on panel edges.

Touch-up and check

- Apply the repair paint to the nail heads and partial flaws.
- Check for the omission of nails and clean panels.

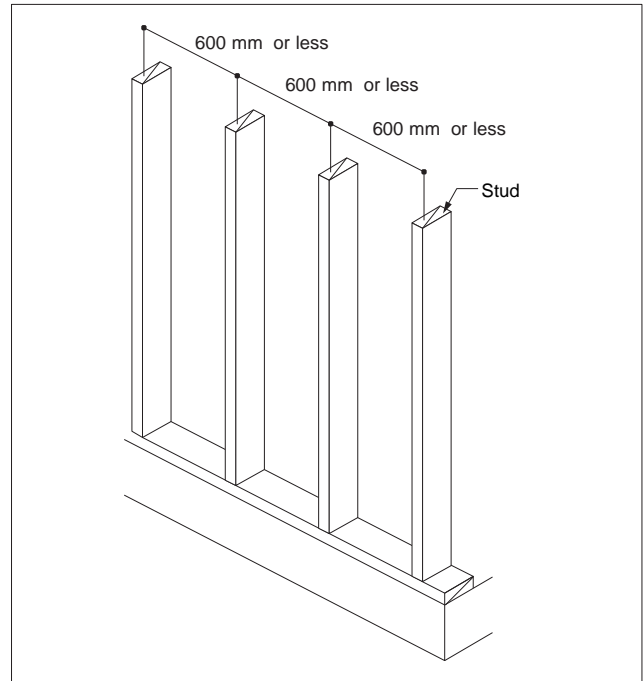
Applying Sealant

- Check the weather before applying sealant for the panels.

Cleaning and disposal of waste materials

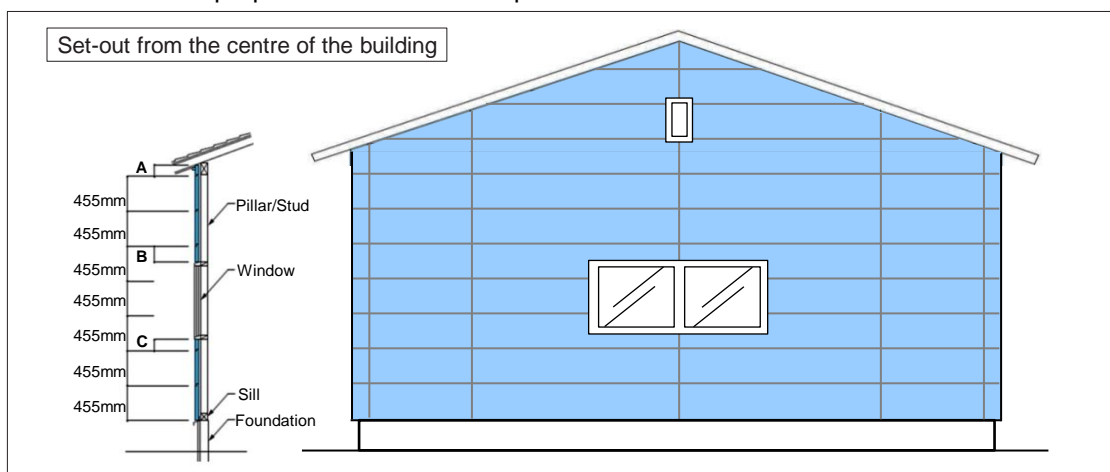
Frame Check

- Stud spacing should be maximum 600 mm or less before installation.



Panel set-out

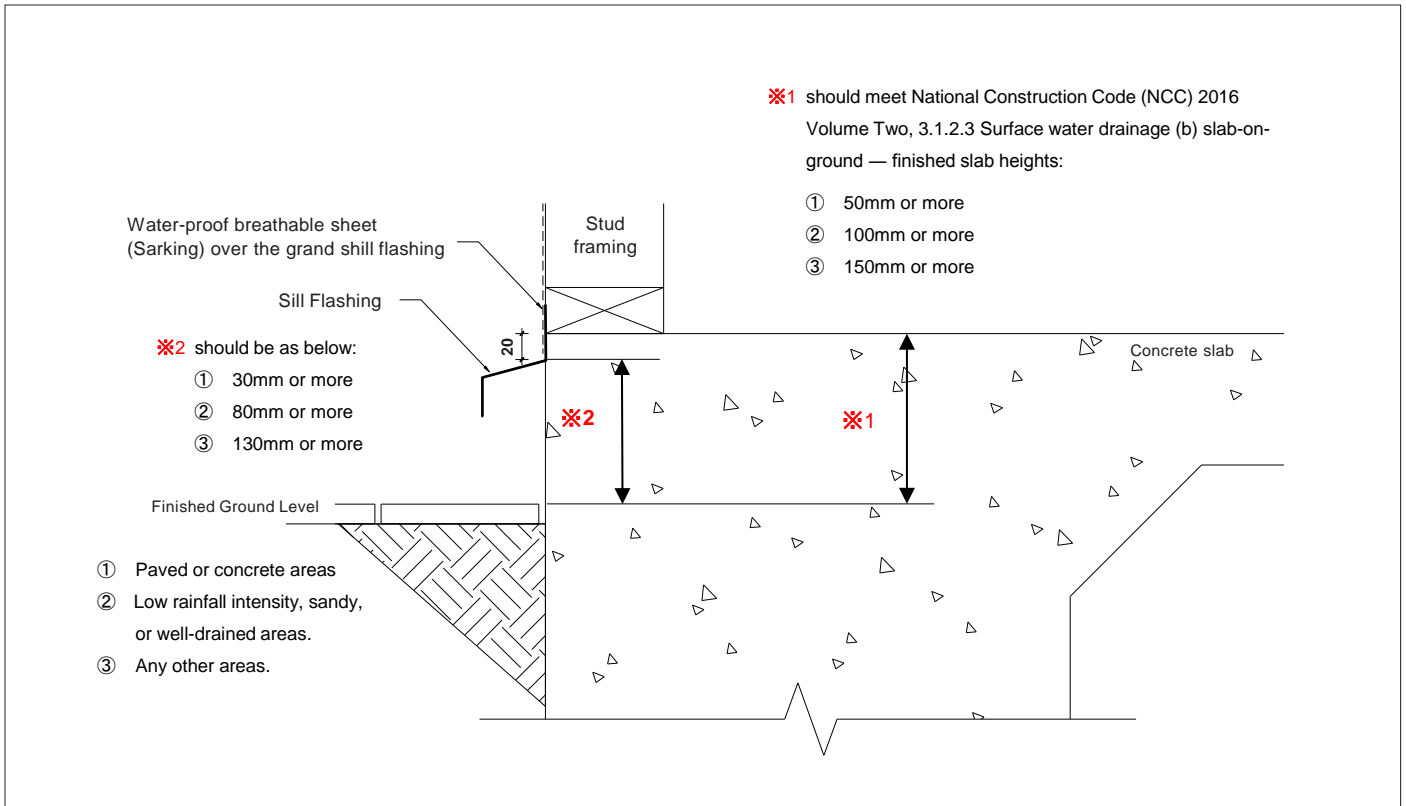
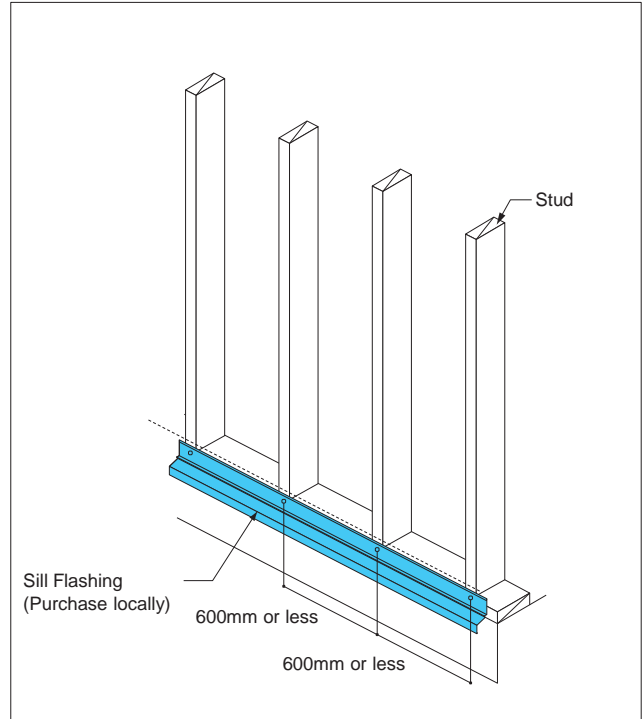
- When laying out the panels, take into consideration the appearance of the building, the length of provided accessories and how to minimize material waste.
- Layout sealant joints in advance to create an aesthetically pleasing finish.
- Include the inside dimension of the pre-formed outside corners in consideration of panel arrangement.
- Vertical joints should be aligned with studs.
- Include the sealant joint width (10mm) for each vertical joint.
- Pay attention to window locations and eave soffit height to provide more than 150mm if possible (minimum 100mm) for the panels above and below window frames (B, C, figure below) and panels below the soffit. (A).
- Panel set-out should be prepared in advance and provided to the installers.



Installation of Sill Flashing

1. Installation of Sill Flashing

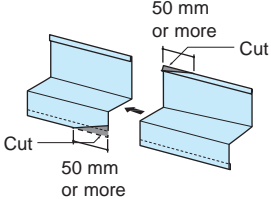
- Sill Flashing must cover and protect the timber frame bottom plate (approx. 20mm) from water splash as shown on the figure below.
- Flashing to be made from material complying with AS/NZS 2728.
- Fasten Sill Flashing (purchase locally) on the stud positions on the Sill Flashing with screws or nails with a 600 mm or less pitch.
- Level the Sill Flashings with a leveling tool.



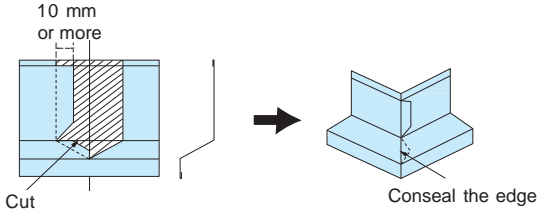
Installation of Sill Flashing

- Overlap the Sill Flashing joints by approx. 50 mm.
- Make inside and outside corners as shown on the diagrams right.

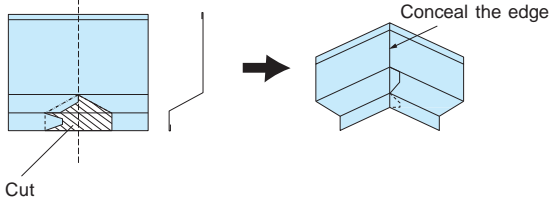
Overlap the Sill Flashing joints



Outside corner Sill Flashing



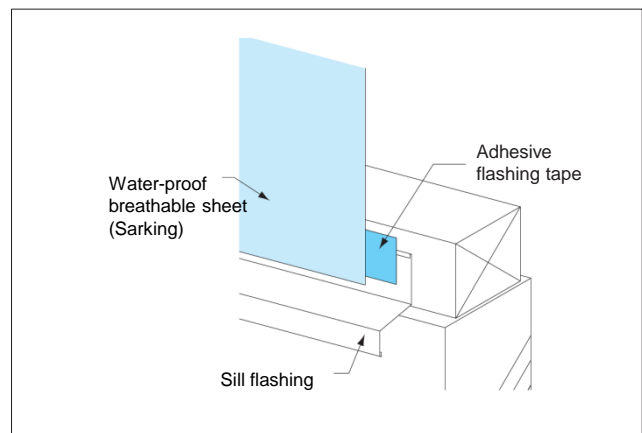
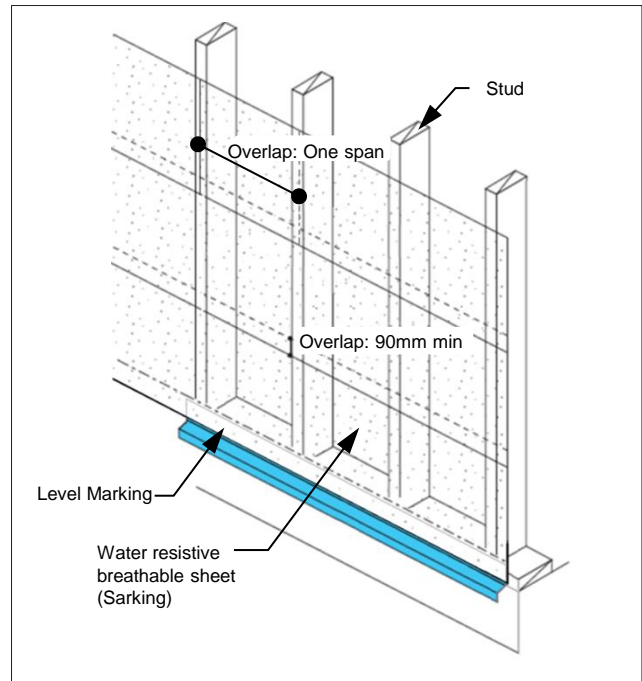
Inside corner Sill Flashing



Installation of water resistive breathable sheet (Sarking) with waterproof tape

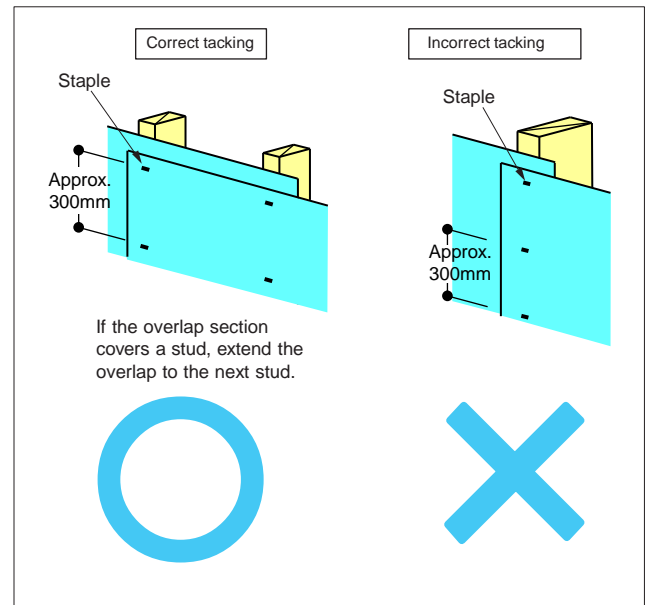
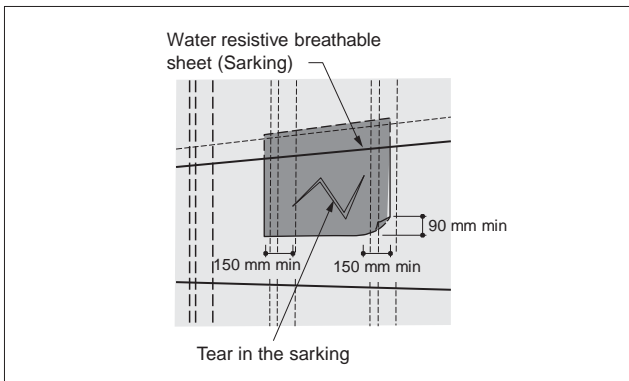
1. Installation of water resistive breathable sheet (Sarking)

- The selected sarking must comply with and be installed in accordance with AS/NZS 4200 and the sarking manufacturer's instruction prior to the installation of the clips and metal profiles.
- Water resistive breathable sheet (Sarking) shall be applied horizontally from the bottom to the top of the wall.
- Overlap the sarking one span at horizontal laps and 90 mm at vertical laps.
- The sarking shall be installed continually around external and internal corners. Avoid gaps, tearing, and other defects that degrade waterproofing performance.

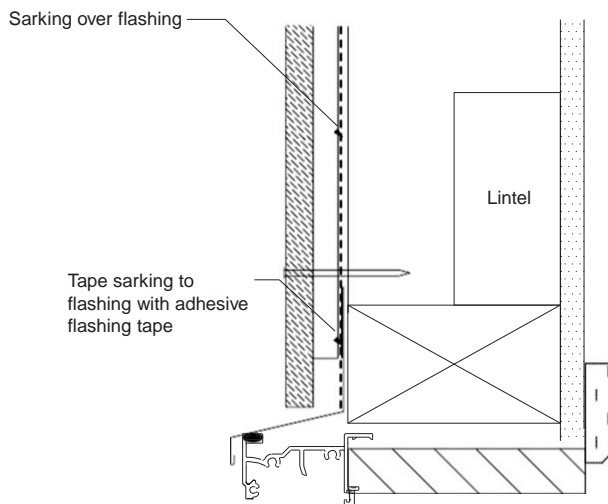


Installation of water resistive breathable sheet (Sarking) with waterproof tape

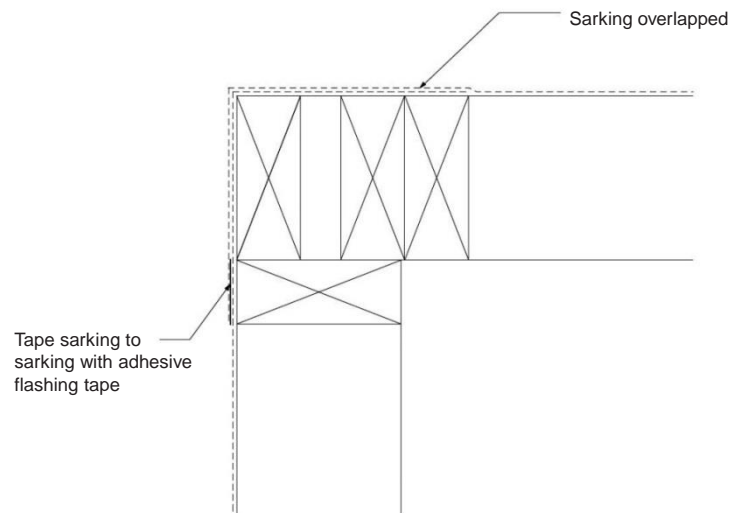
- Any tears in the sarking or gaps around service penetrations must be sealed with adhesive tape.
- The selected sarking must be installed taught and rigid so that bulging of bulk thermal insulation into the drainage cavity does not occur.
- Avoid tearing the sarking or letting it sag. If the sarking is torn, insert another layer as shown in the figure below.



Typical detail for taping of flashing/sarking junctions-elevation



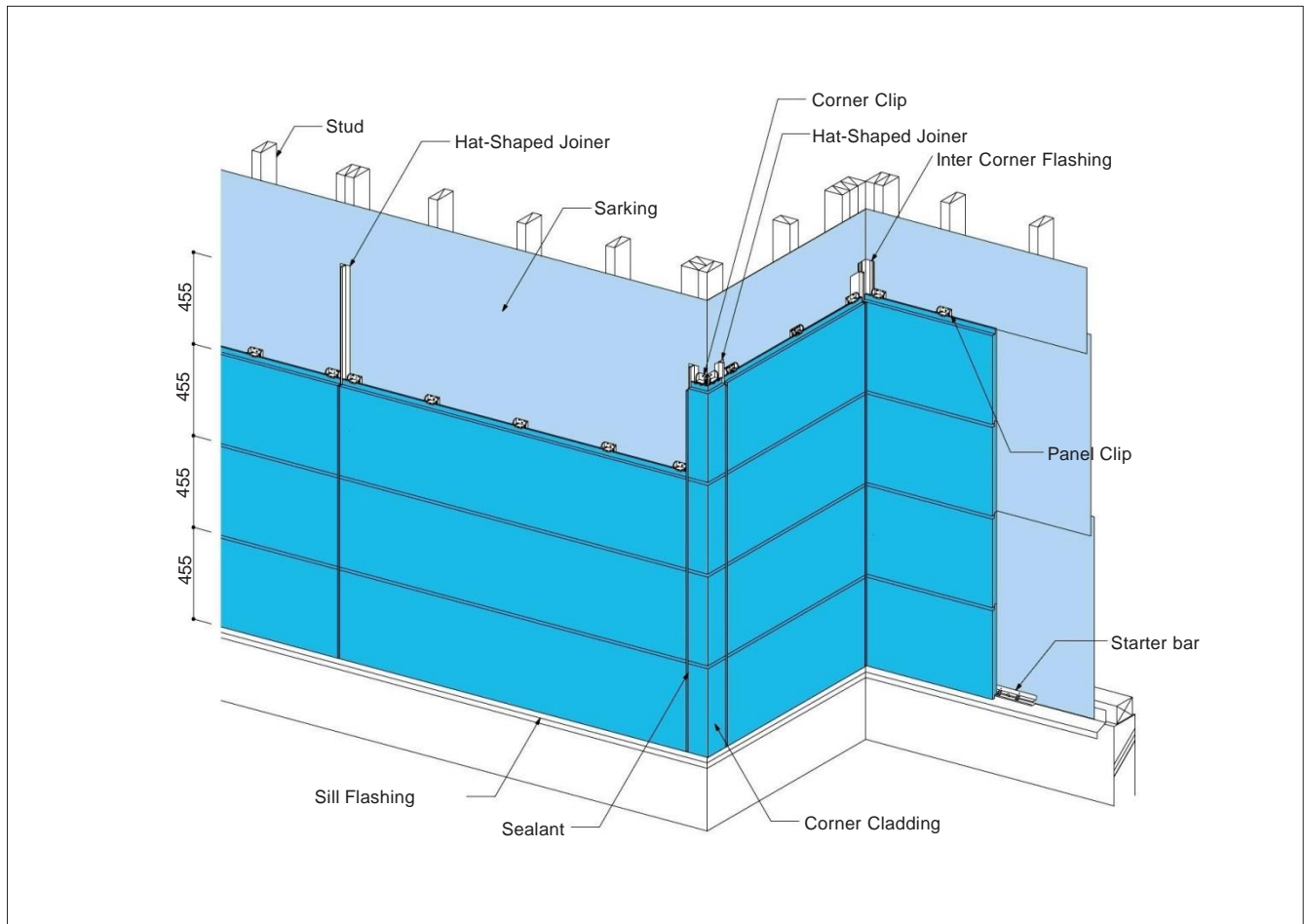
Typical detail for taping of sarking to sarking at overlap-plan view



Horizontal Application

1. Points for Installation

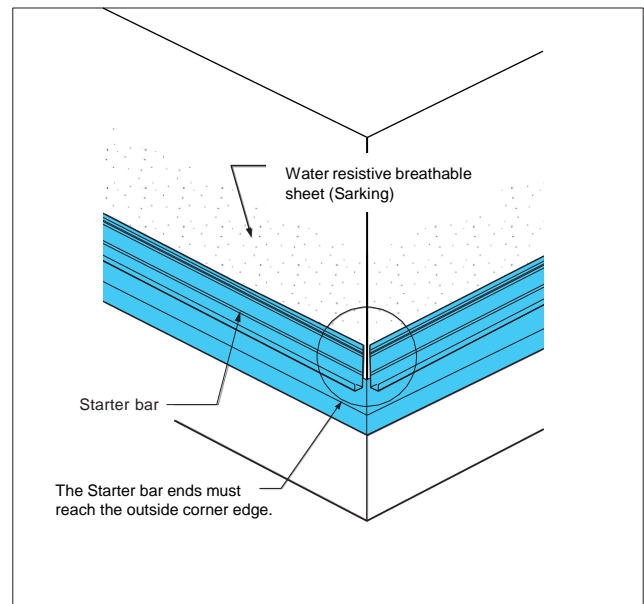
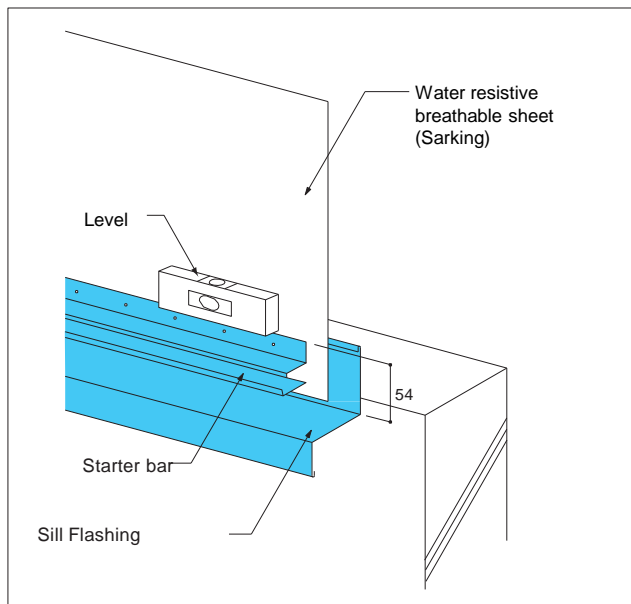
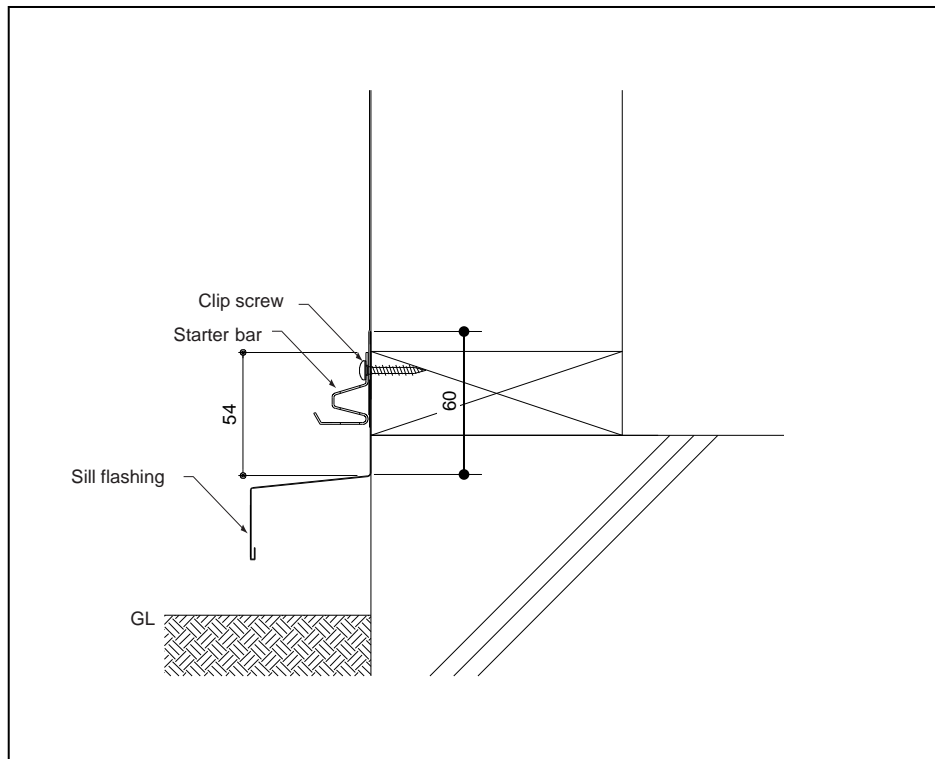
- CERACLAD System (Horizontal Application) is for Wind Class N1 to N3.
- Install the CERACLAD panels with panel clips. The additional reinforcing nails or screws need to be used for the corner areas (less than 1,200mm from an external building corner) in the Wind Class N3 as shown on the diagram in Design Criteria, page 13. Fix the nails near the middle position in the cross-the-width direction.
- Install the corner cladding with corner clips or install a metal corner instead.
- To fix the panel clips, use clip screws.



Horizontal Application

2. Starter bar installation along sills

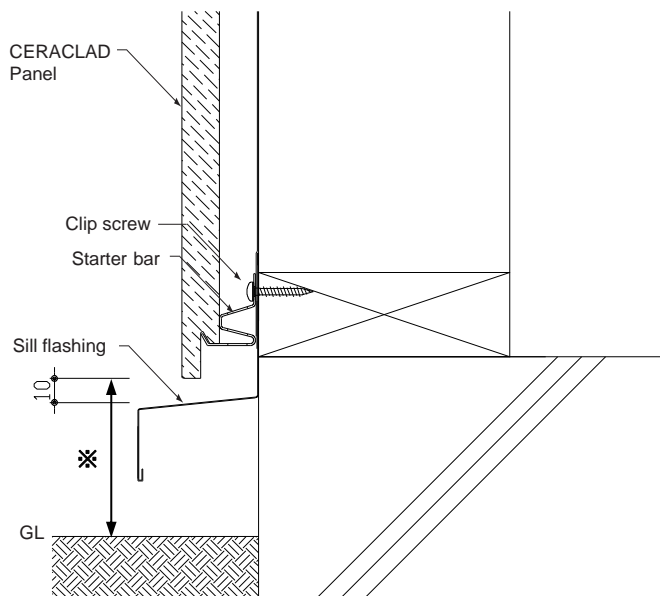
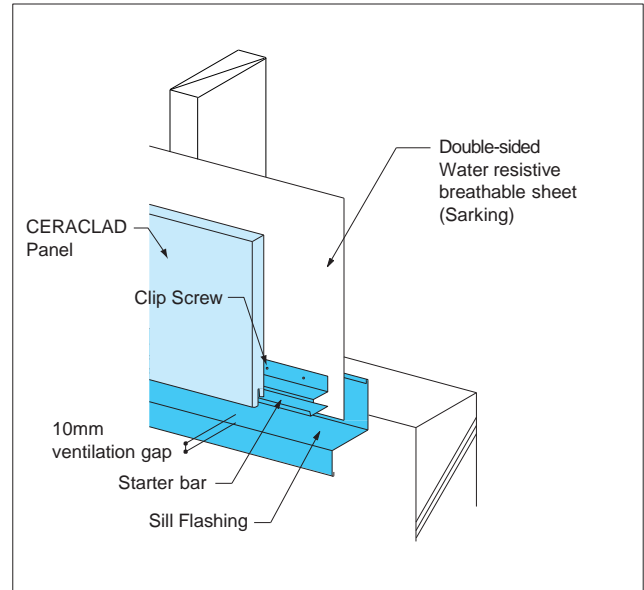
- Starter bars for horizontal application on the sill serve as the base of the CERACLAD panels.
- Mark a level line, 54mm from the sill flashing top as shown on the drawings below for the Starter bars to end up with approximately 10 mm ventilation gap between the bottom of the CERACLAD panels and the sill flashing.
- Fasten the Starter bars securely along the mark with clip screws.
- Maximum distance between the clip screws must not exceed 600 mm.
- Make sure that the starter bars are leveled.



Horizontal Application

3. First CERACLAD panel installation

- Begin installing the first CERACLAD panel by working from a left-hand joiner. The leading edge of the panel, which is the edge with the concealed groove, should sit squarely on the lower lip of the Starter bar.
- Make sure that the 10 mm ventilation gap between the bottom of the CERACLAD panels and the sill flashing is maintained.
- Make sure that the first panels are leveled.
- At ground level, finished surface must be kept clear of the bottom edge of the cladding system by a minimum of 40mm, 90mm, or 140mm based on the type of the finished surface as shown on the figure below.



※Required clearance between the ground surface and the bottom of the panel:

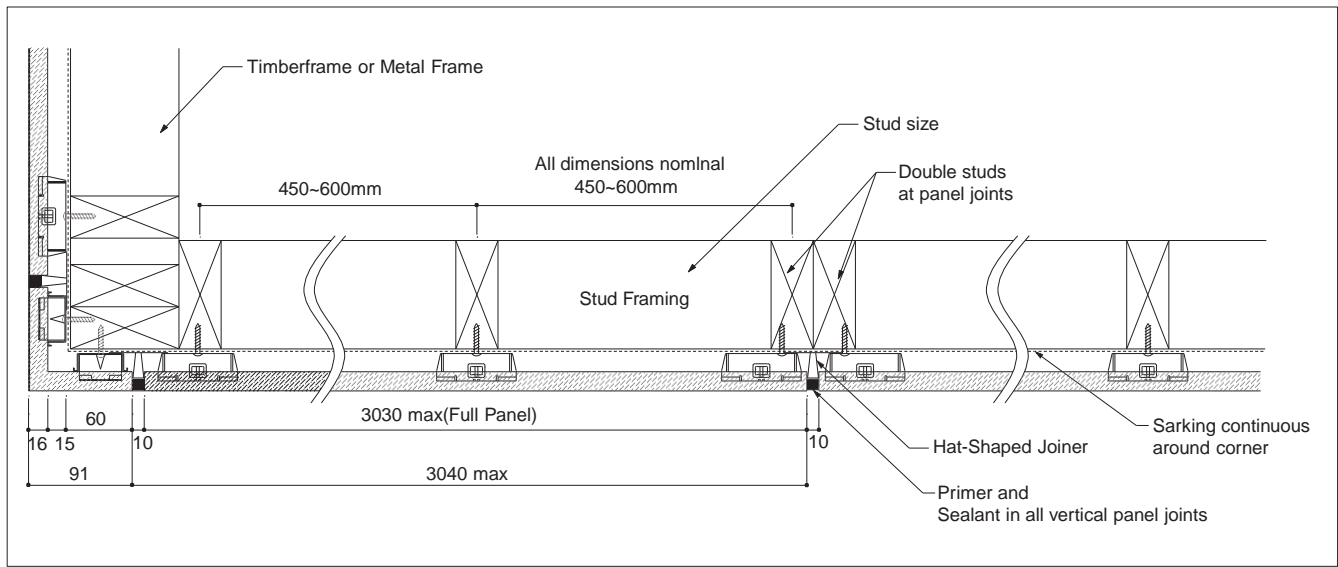
- ① 40mm or more for Paved or concrete areas
- ② 90mm or more for Low rainfall intensity, sandy, or well-drained areas.
- ③ 140mm or more for Any other areas.

Refer to P.20 and National Construction Code (NCC) 2016 Volume Two, 3.1.2.3
Surface water drainage (b) slab-on-ground — finished slab heights:

Horizontal Application

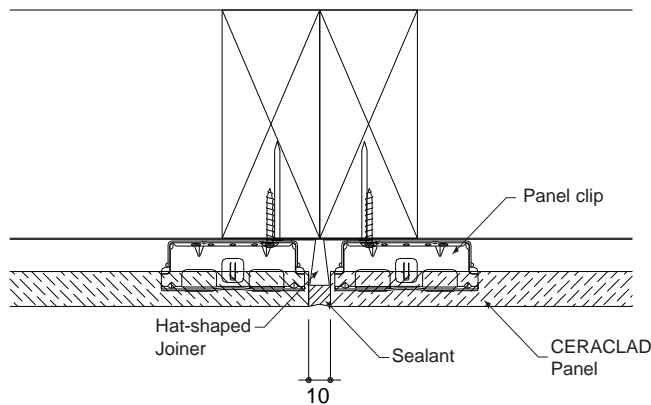
4. Clip installation

- Fasten the clips securely on each stud (chalk line) with one clip screw.
- Attach hat-shaped joiner at the vertical joint of CERACLAD panels, so that CERACLAD panels butt-up to the hat-shaped joiner.
- Maximum distance between clips must not exceed 600 mm, so that one CERACLAD panel (3,030 mm) is required to be fastened with six clips.



5. Vertical Joint

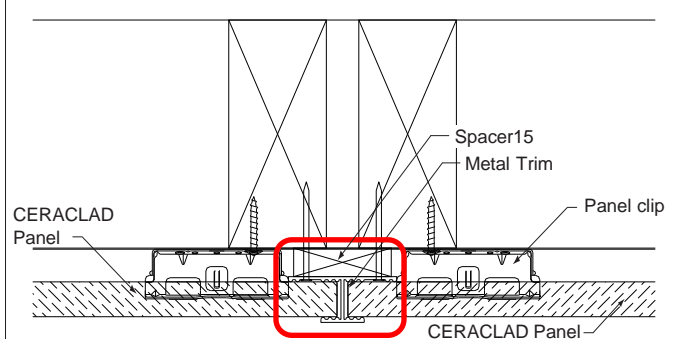
(1)



(1) Sealant finish

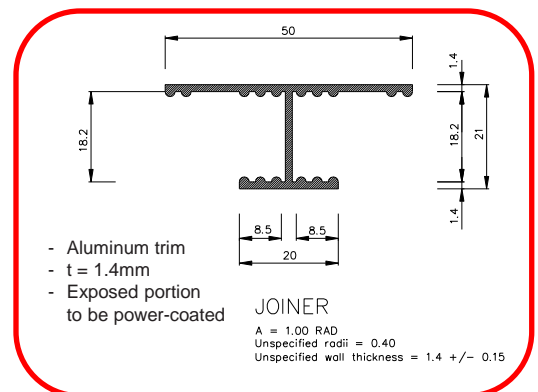
- Use the hat-shaped joiners for vertical joint.
- Attach the joiner with nails or screws staggered at approximately 1 meter on center.
- Install panel clips on the panels adjacent to the joiner as shown on the figure left.

(2)



(2) Metal trim

- Alternatively locally produced metal trims may be used as shown on the diagram left below.
- The metal trims should meet local requirements such as Corrosivity Zone (AS4312). Refer to page 12.
- Below is the recommended metal trim as an example.



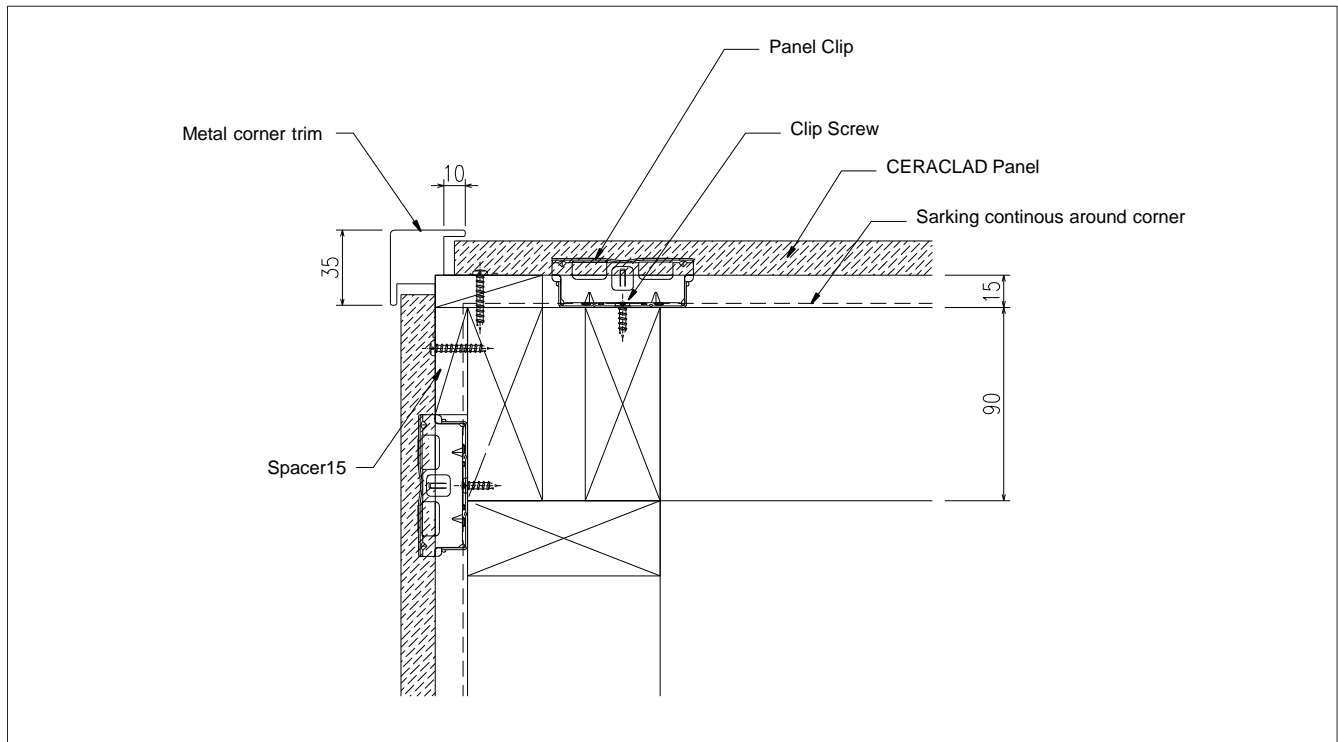
※ Dimensions are subject to future changes.

Horizontal Application

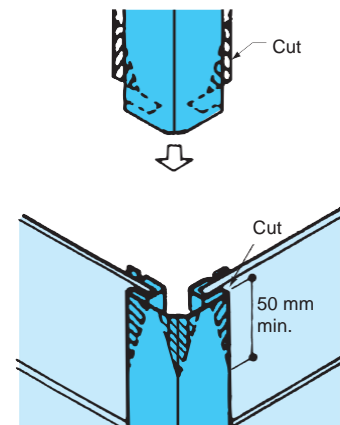
6. Outside corner finishing

(1) Metal outside trims

- Metal outside trim to be made from material complying with AS/NZS 2728.
- Attach Spacer 15s to the corner over the water resistive breathable sheet (Sarking) and sheathing.
- Install metal corner trims (purchase locally) onto spacer15s with nails or screws.
- Insert CERACLAD panels into the metal corner trims and fasten with panel clips.



How to splice metal corner trims





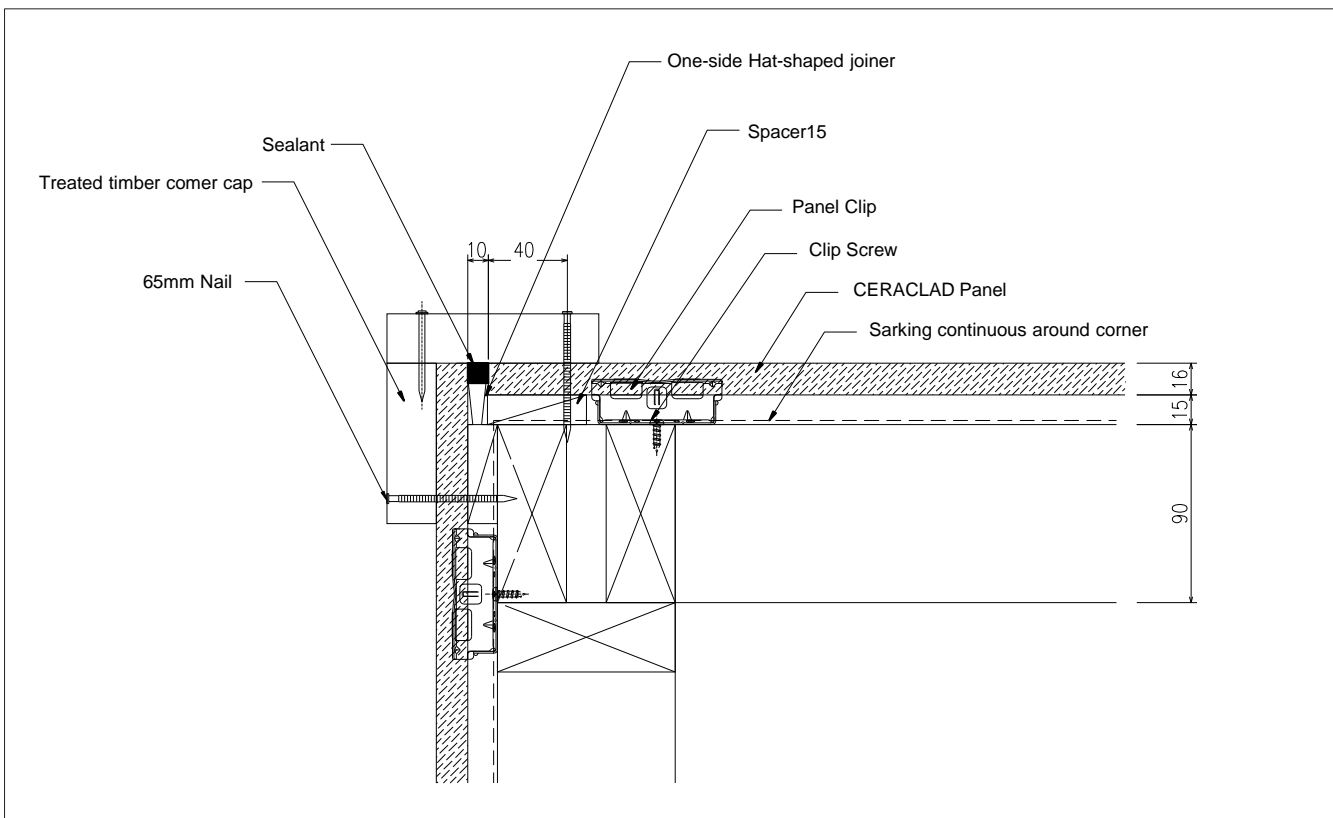
Horizontal Application

(2) Timber corner caps

- Attach spacer15s to the corner over the water resistive breathable sheet (Sarking).
- Incorporate a hat-shaped joiner to one of the furring strips.
- Install the CERACLAD panels so that they butt-up to the Hat-shaped joiner at the corner. Apply sealant in the joint.
- Drill pilot holes (approx. 2 mm diameter) in the timber corner caps and CERACLAD panels with 400 mm pitch, and then nail on the corner caps.

- Corner caps should be securely fastened on the stud, not on CERACLAD panels.

 Caution	
 Very Important!	<ul style="list-style-type: none">● Without drill pilot holes in CERACLAD panels, CERACLAD panels will be broken.

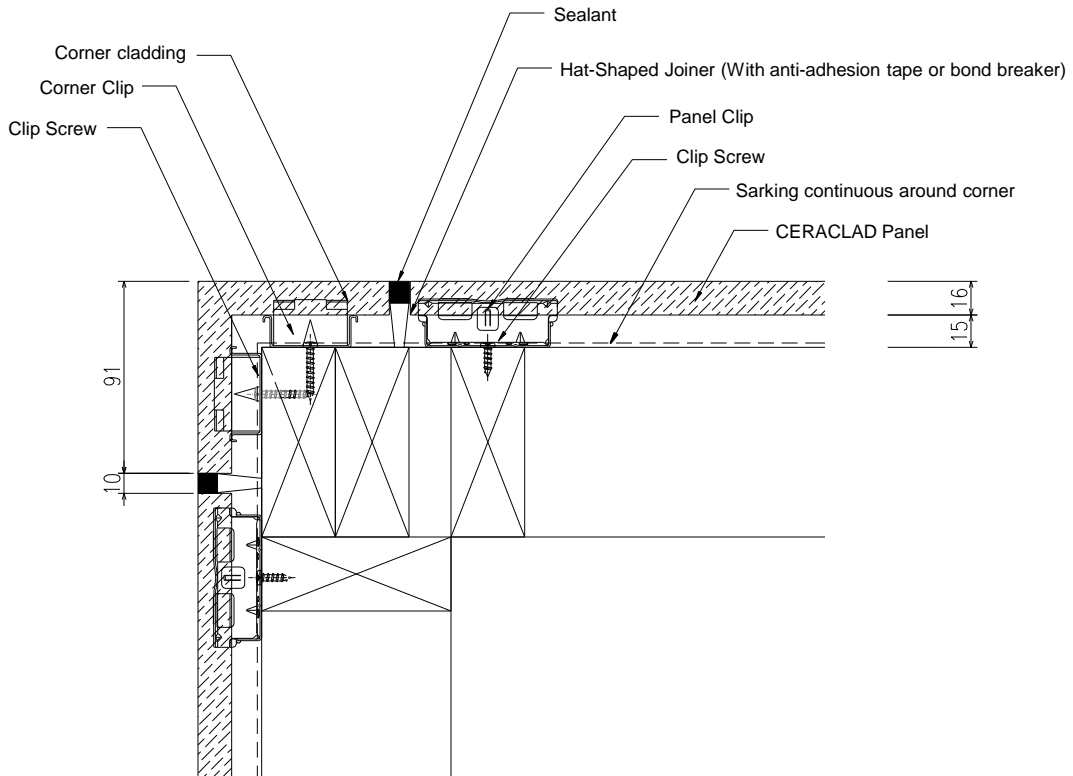


Horizontal Application

(3) Corner cladding

(made of matching materials)

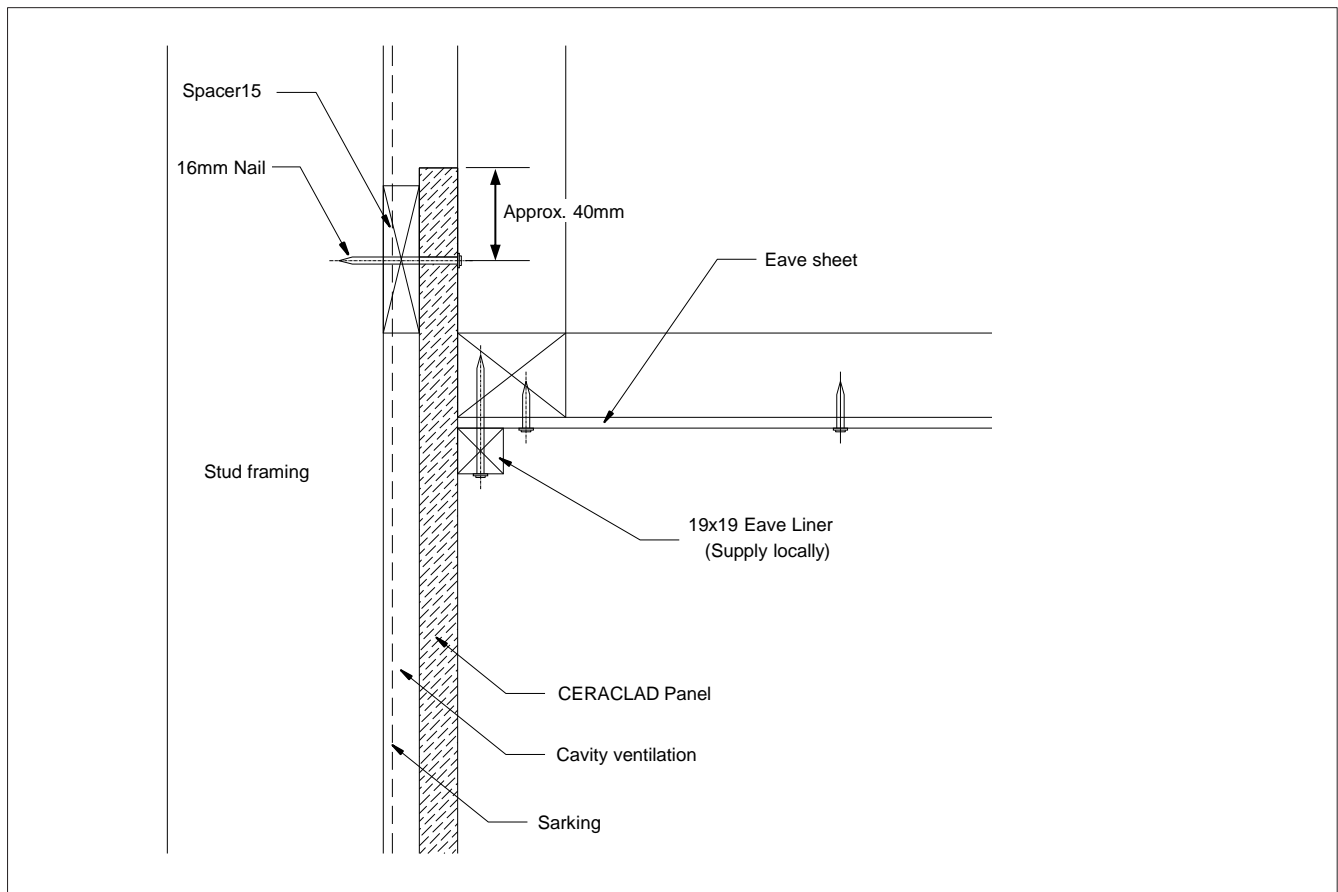
- Attach hat-shaped joiner at end of the CERACLAD panels where the corner panels are to meet.
- Install corner cladding with corner clip.
- Ensure that the CERACLAD panels and the corner claddings are leveled every time a row is finished.



Horizontal Application

8. Under eaves

- Attach spacer15s on the sarking at the stud positions as shown on the diagram below.
- Pre-drilling pilot holes in the CERACLAD panels at the locations where the spacers have been set, and fasten the panels with 65mm nails.
- Make sure that air from cavity is ventilated out through the eave or attic/roof ventilation system.
- Provide sufficient protection on the CERACLAD panels before application of paint on the eave liner and eave sheet.



Horizontal Application

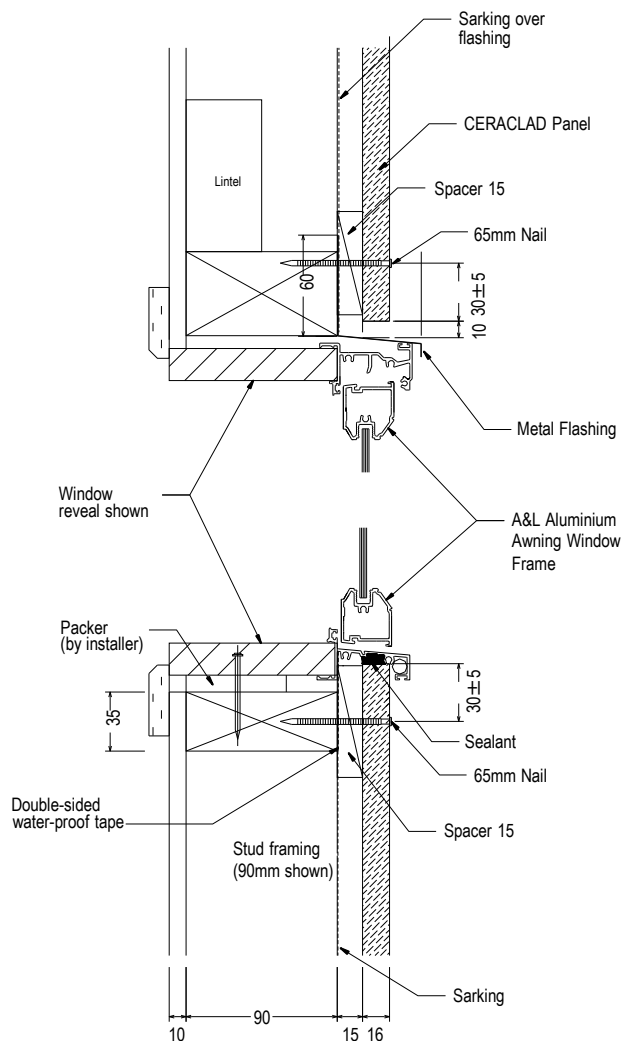
9-1. Opening (Permanently-set window)

<Above opening>

- Install a metal flashing above the window, and then cover the metal flashing with water resistive building sheet (Sarking).
- Metal flashing should have 15 degree slope and a 60 mm upstand as shown on the diagram below.
- Leave approximately 10 mm of space from the metal flashing to install a CERACLAD panel.
- To fix the CERACLAD panel above the opening, use the spacer 15 to provide 25 to 35 mm of space for edge finishing, make pilot holes (of about 2 mm in diameter), and then fix the CERACLAD panel to the studs with 65mm ring nails.

<Under opening>

- Seal space between the CERACLAD panel and the opening.
- The CERACLAD panel cut edges at the metal flashings ends are to have sealant applied.
- To fix the CERACLAD panel under the opening, use the spacer 15 to provide 25 to 35 mm of space for edge finishing, make pilot holes (of approximately 2 mm in diameter), and then fix the CERACLAD panel to the studs with 65mm ring nails.
- Under openings the panel clips must not be located directly under the line of the opening corner, however they must be located at least 50 mm clear of the opening corner.



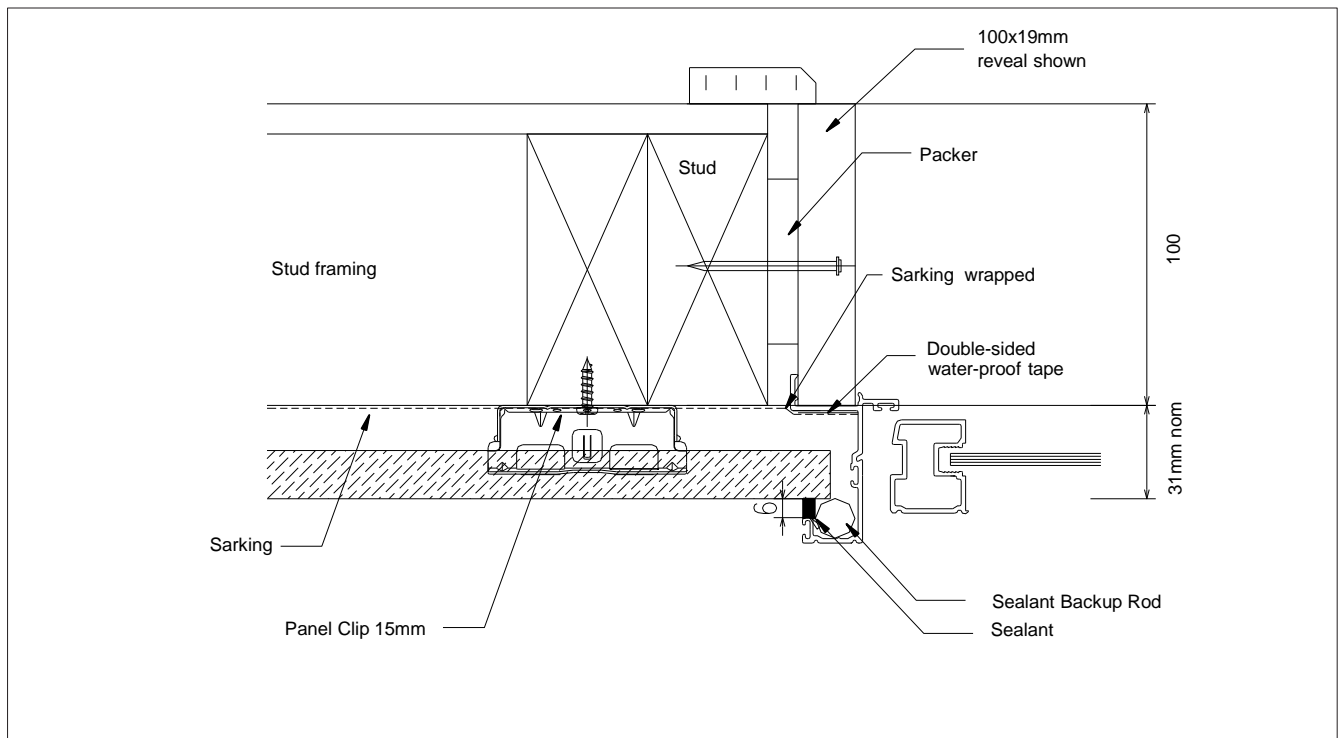
Horizontal Application

9-1. Opening (Permanently-set window)

<Side of opening>

- Sarking must be firmly fixed around the opening with double-sided waterproof tape.
- Install a CERACLAD panel with panel clips.
- Adjacent to openings, the clips must be fixed to a doubling stud, i.e. one stud away from the opening stud.

- Provide sealant between the CERACLAD panels and the frame of opening with backup materials.



Horizontal Application

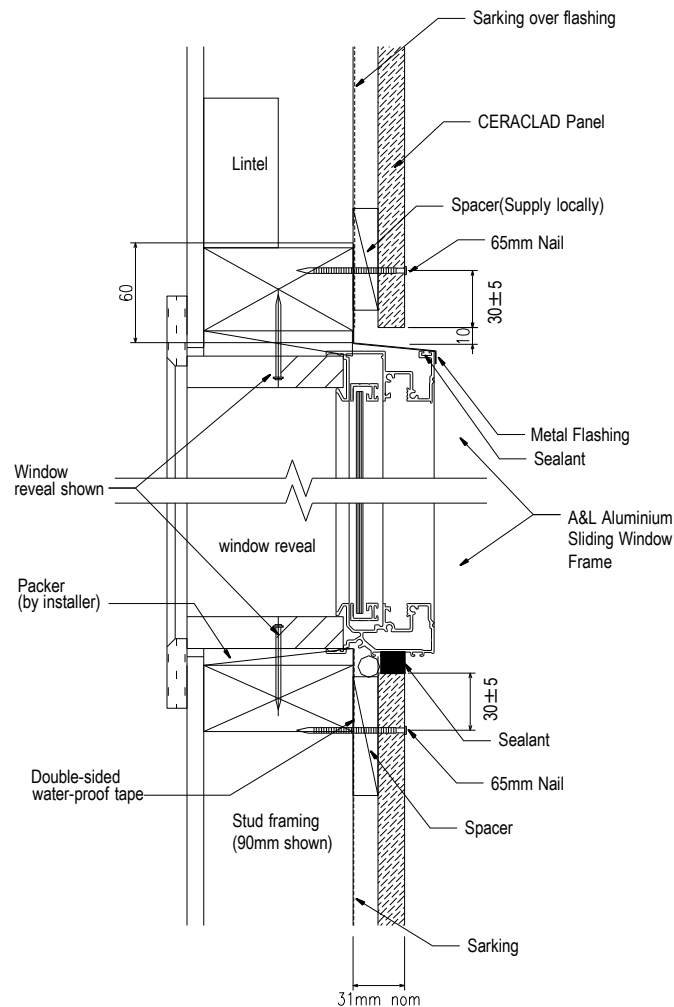
9-2. Opening (Sliding window)

<Above opening>

- Install a metal flashing above the window, and then cover the metal flashing with water resistive building sheet (Sarking).
- Metal flashing should have 15 degree slope and a 60 mm upstand as shown on the diagram below.
- Leave approximately 10 mm of space from the metal flashing to install a CERACLAD panel.
- To fix the CERACLAD panel above the opening, use the spacer 15 to provide 25 to 35 mm of space for edge finishing, make pilot holes (of about 2 mm in diameter), and then fix the CERACLAD panel to the studs with 65mm ring nails.

<Under opening>

- Seal space between the CERACLAD panel and the opening.
- The CERACLAD panel cut edges at the metal flashings ends are to have sealant applied.
- To fix the CERACLAD panel under the opening, use the spacer 15 to provide 25 to 35 mm of space for edge finishing, make pilot holes (of approximately 2 mm in diameter), and then fix the CERACLAD panel to the studs with 65mm ring nails.
- Under openings the panel clips must not be located directly under the line of the opening corner, however they must be located at least 50 mm clear of the opening corner.



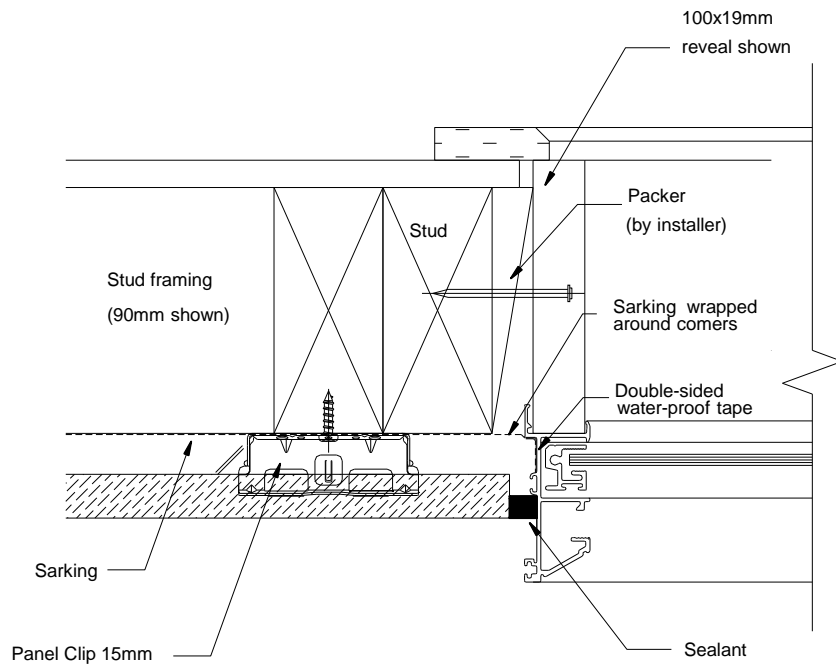
Horizontal Application

9-2. Opening (Sliding window)

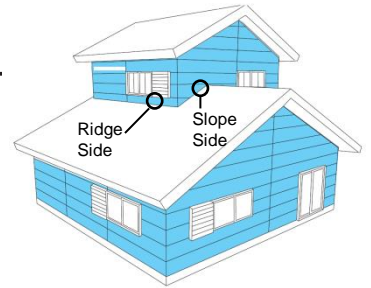
<Side of opening>

- Sarking must be firmly fixed around the opening with double-sided waterproof tape.
- Install a CERACLAD panel with panel clips.
- Adjacent to openings, the clips must be fixed to a doubling stud, i.e. one stud away from the opening stud.

- Leave approximately 10 mm of space from the opening to install a CERACLAD panel, and then seal the said space.

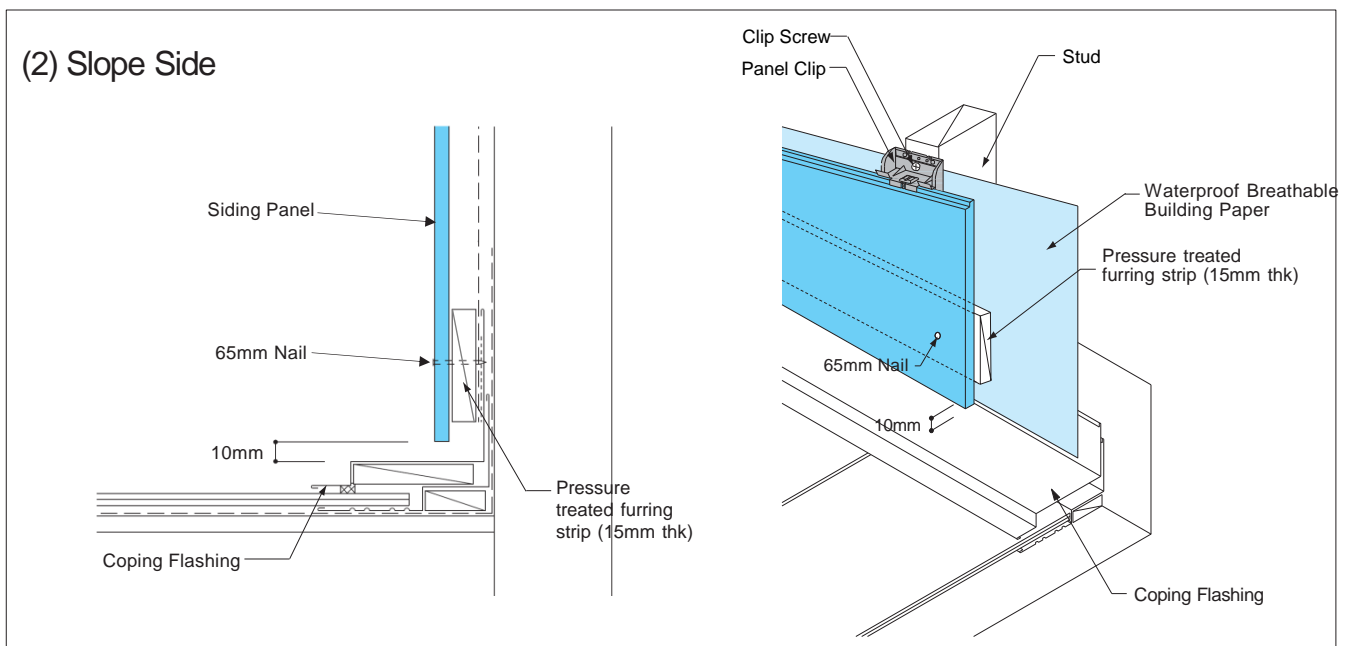
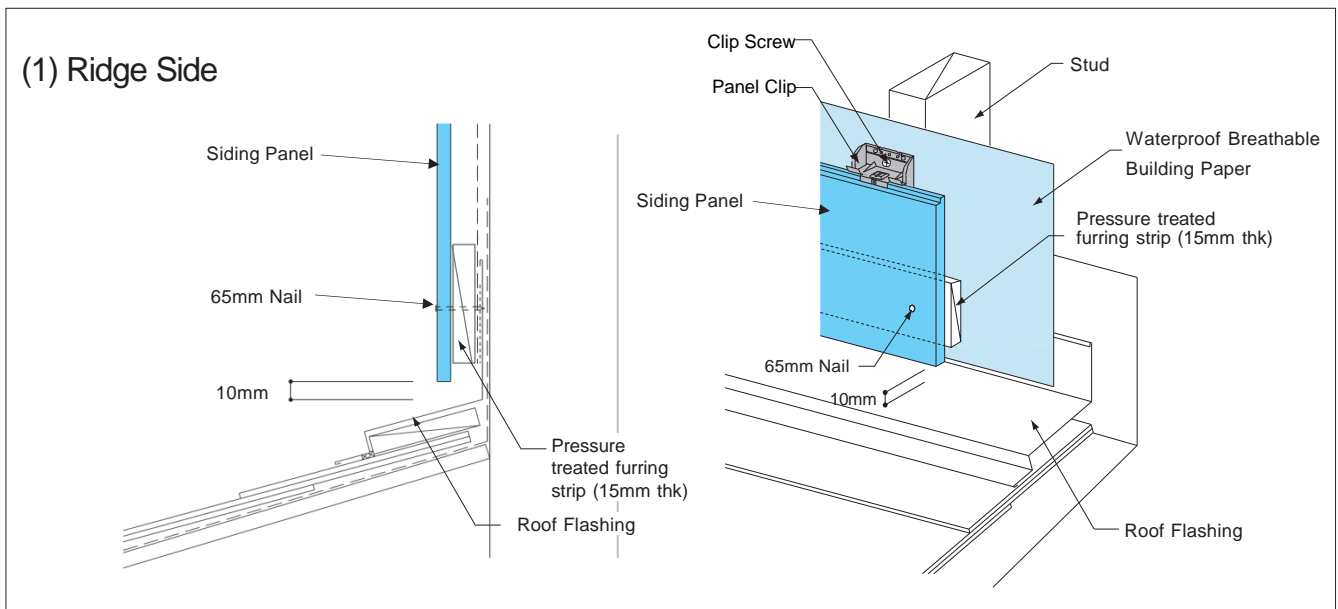


Horizontal Application



10. Intersection with roof

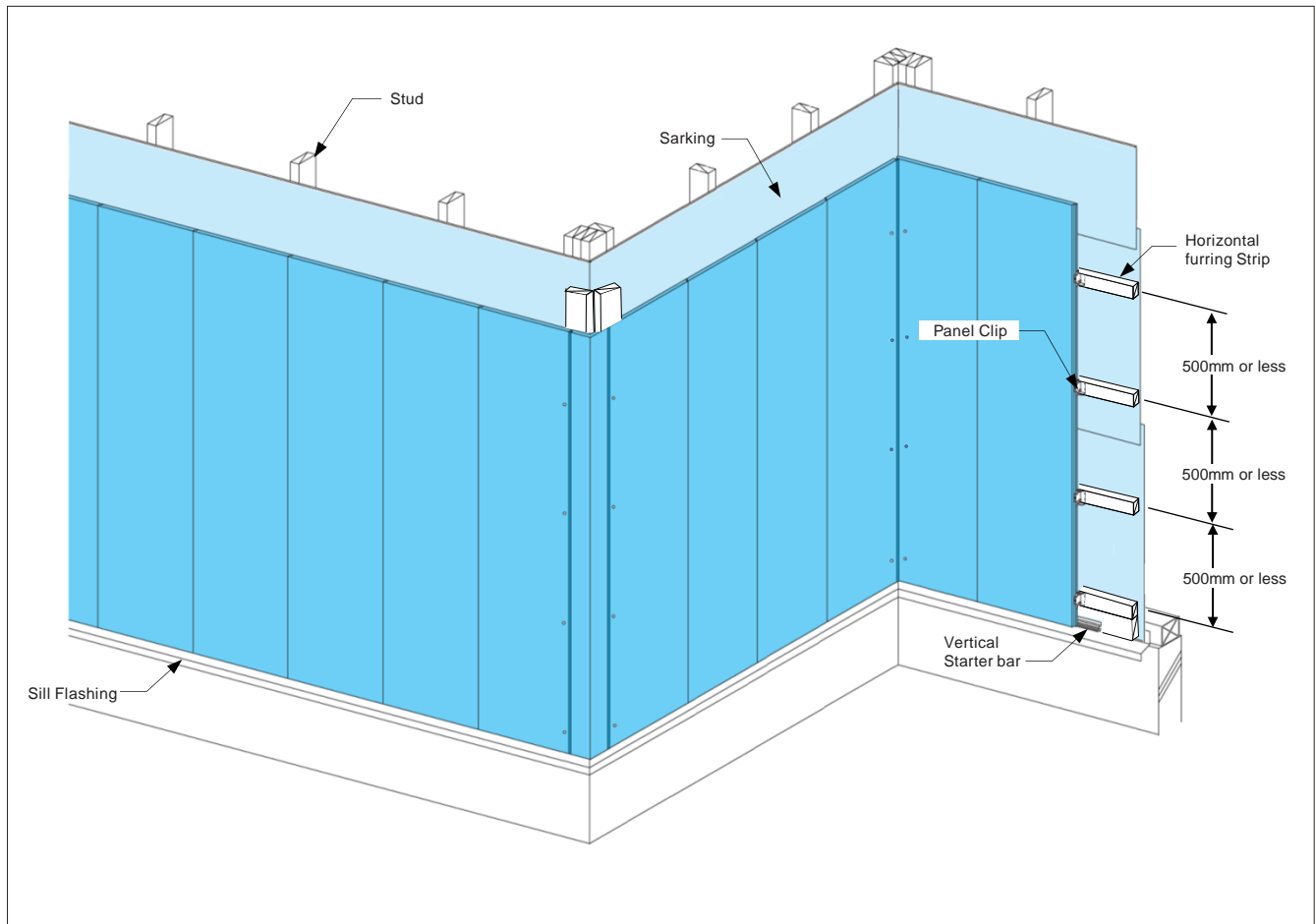
- Siding panel and coping flashing should be installed with a gap of about 10 to 15 mm. (To prevent capillary phenomenon, maintain air intake, drain condensation, and absorb displacement due to structural load)
- Waterproof breathable building paper should be overlapped on the coping flashing as shown below.
- Attach the water proof breathable building paper to the coping flashing with a double-sided water-proof tape. (To prevent the paper from rattling by wind and from leaping up in the air cavity.) However, the double-sided water proof tape is not required in case that the paper is stuck with horizontal furring strips, or starter bars.
- Place a 30mm gap every 2000mm on horizontal furring strips for air circulation.
- For horizontal installation, the starter bars might be used only for the ridge sides. Otherwise, the first (bottom) panels are to be fixed with nails to the furring strips as shown below.



Vertical Application

1. Points for Installation

- CERACLAD System (Vertical Application) is for Wind Class N1 to N3.
- Install the CERACLAD panels with panel clips. The additional reinforcing nails or screws need to be used for the corner areas (less than 1,200mm from an external building corner) in the Wind Class N3 as shown on the diagram in Design Criteria, page 14. Fix the nails near the middle position in the cross-the-width direction.
- Install the corner cladding with nails or install a metal corner instead.
- To fix the panel clips, use clip screws.



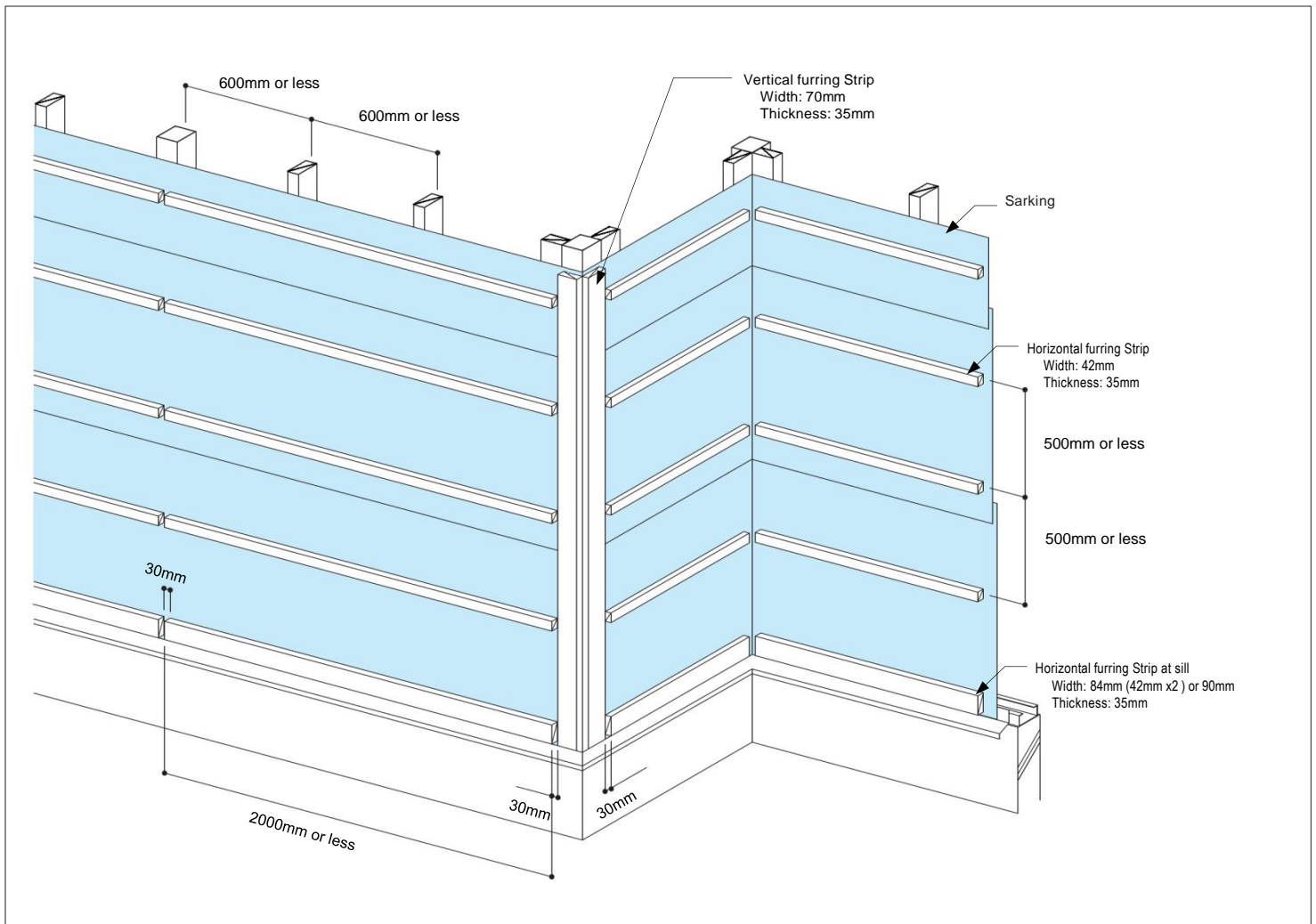
Pre cautions for vertical installation:

- ※ Make sure to use starter bars to fully support the siding panels and ensure that the starter bars are fastened onto the structural framing.
- ※ The lowest panel clip installed on each vertical siding panel must be secured as close to the starter bar as possible, and at least within 75mm. If it is not possible to install a panel clip within 75mm of the starter bar, then fasten the panel with a 65mm nail and a spacer block instead.

Vertical Application

2. Install horizontal furring strips

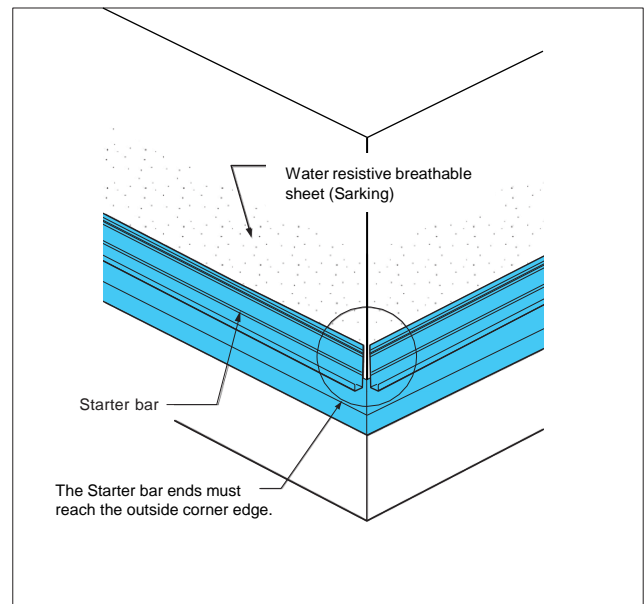
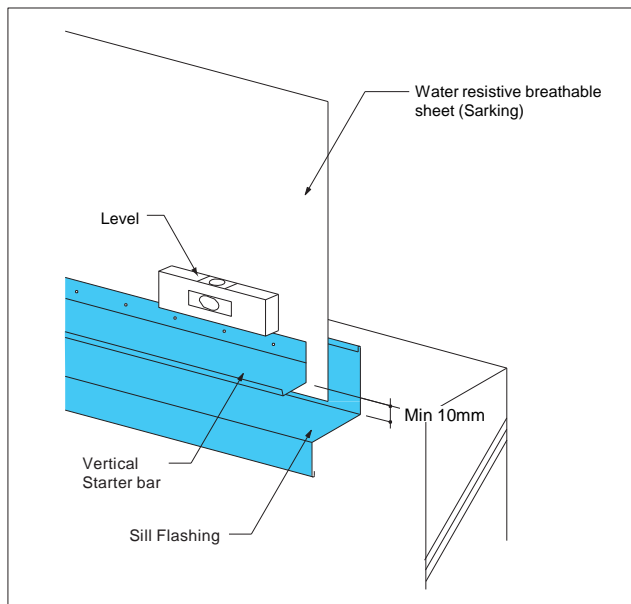
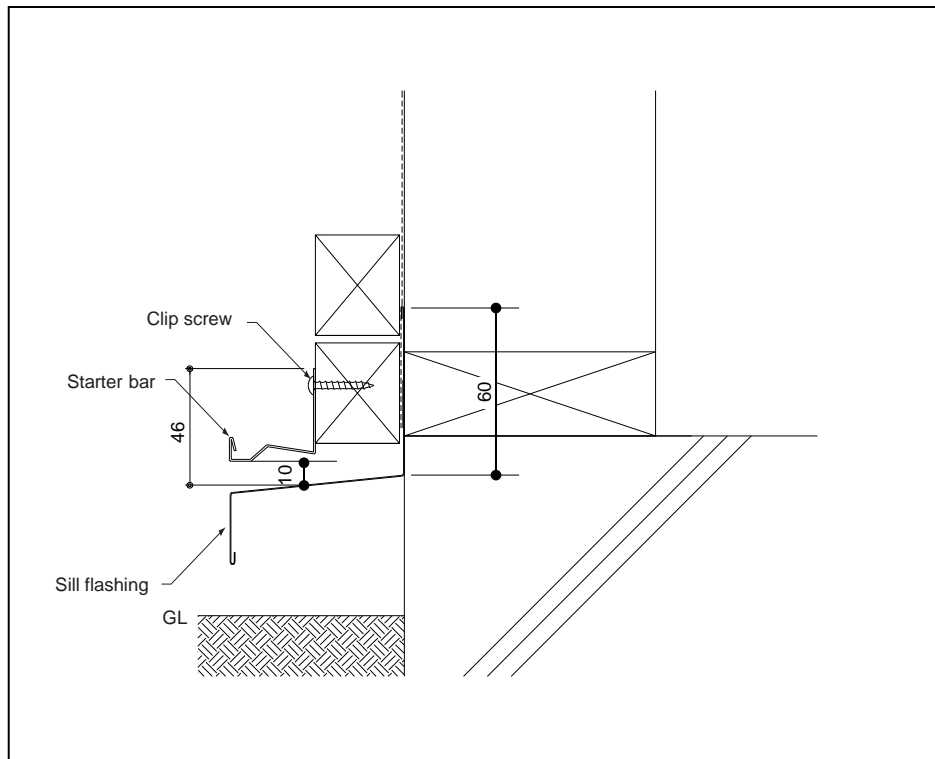
- The horizontal furring strips must have a minimum thickness of 30mm. The recommended size of the furring strip is 35mm thickness by 42mm width.
- At the sill, double 42mm width or a 90mm width strips should be used for the starter bars and the first panel clips.
- The interval of horizontal furring strips must be 500mm or less.
- A gap (30mm or more) must be provided every 2000mm on the horizontal furring strips.
- At outside corners, vertical furring strips should be installed. The recommended size of the furring strip is 35mm thickness by 70mm width.



Vertical Application

3. Starter bar installation along sills

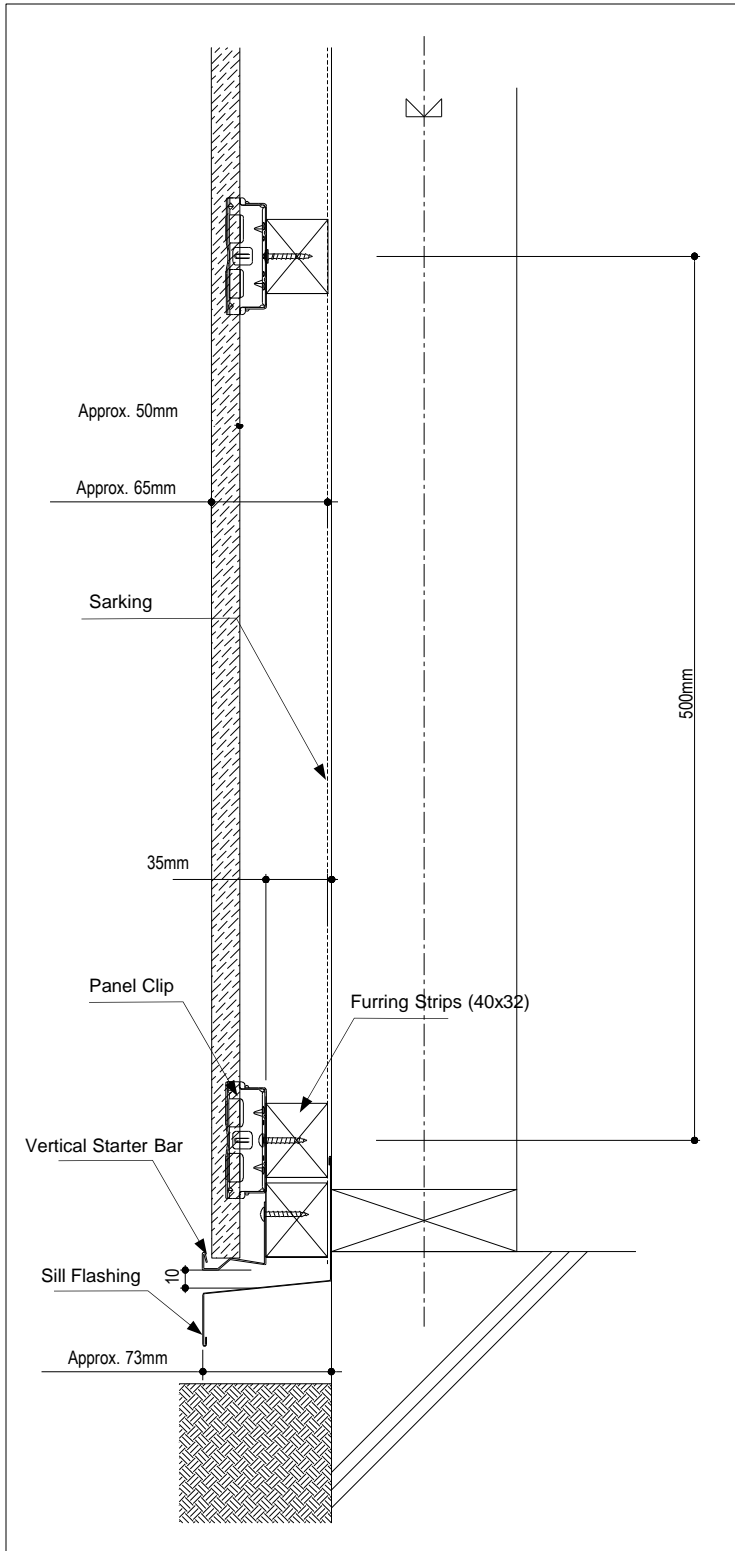
- Starter bars for vertical application on the sill serve as the base of the CERACLAD panels and bear the entire weight of the panels.
- Mark a level line for the Starter bars to end up with approximately 10 mm ventilation gap between the bottom of the CERACLAD panels and the sill flashing.
- The distance between screws to fasten the starter bars must not exceed 455 mm.
- Fasten the Starter bars securely along the mark with clip screws.



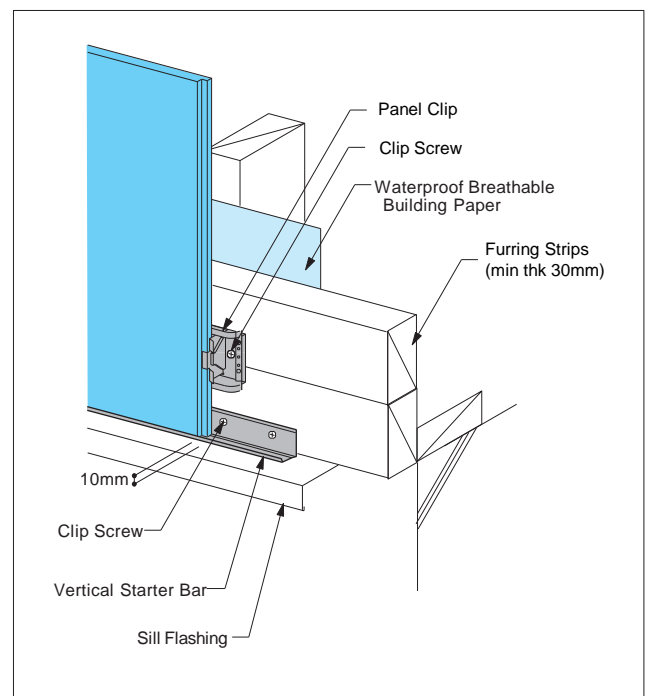
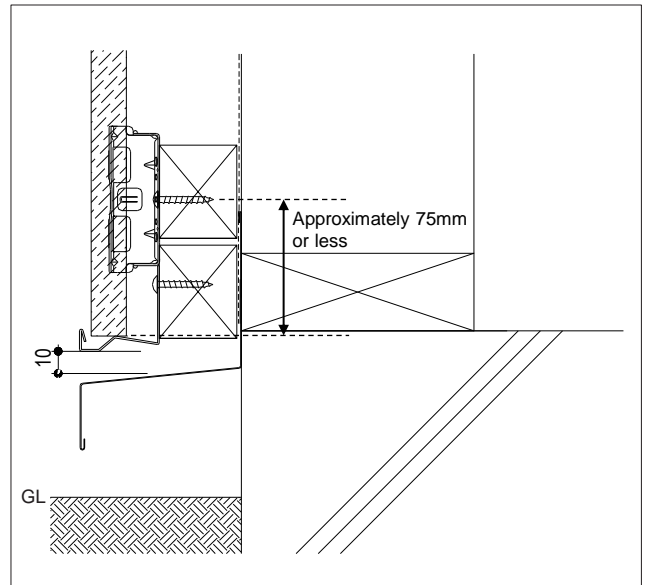
Vertical Application

4. First CERACLAD panel installation

- Begin installing the first CERACLAD panel by working from an outside or inside corner.
- Make sure that the panel is level and sits squarely on the vertical starter bar as shown.
- The first CERACLAD panel is fastened to the furring strips with nails one side and panel clips the other side.



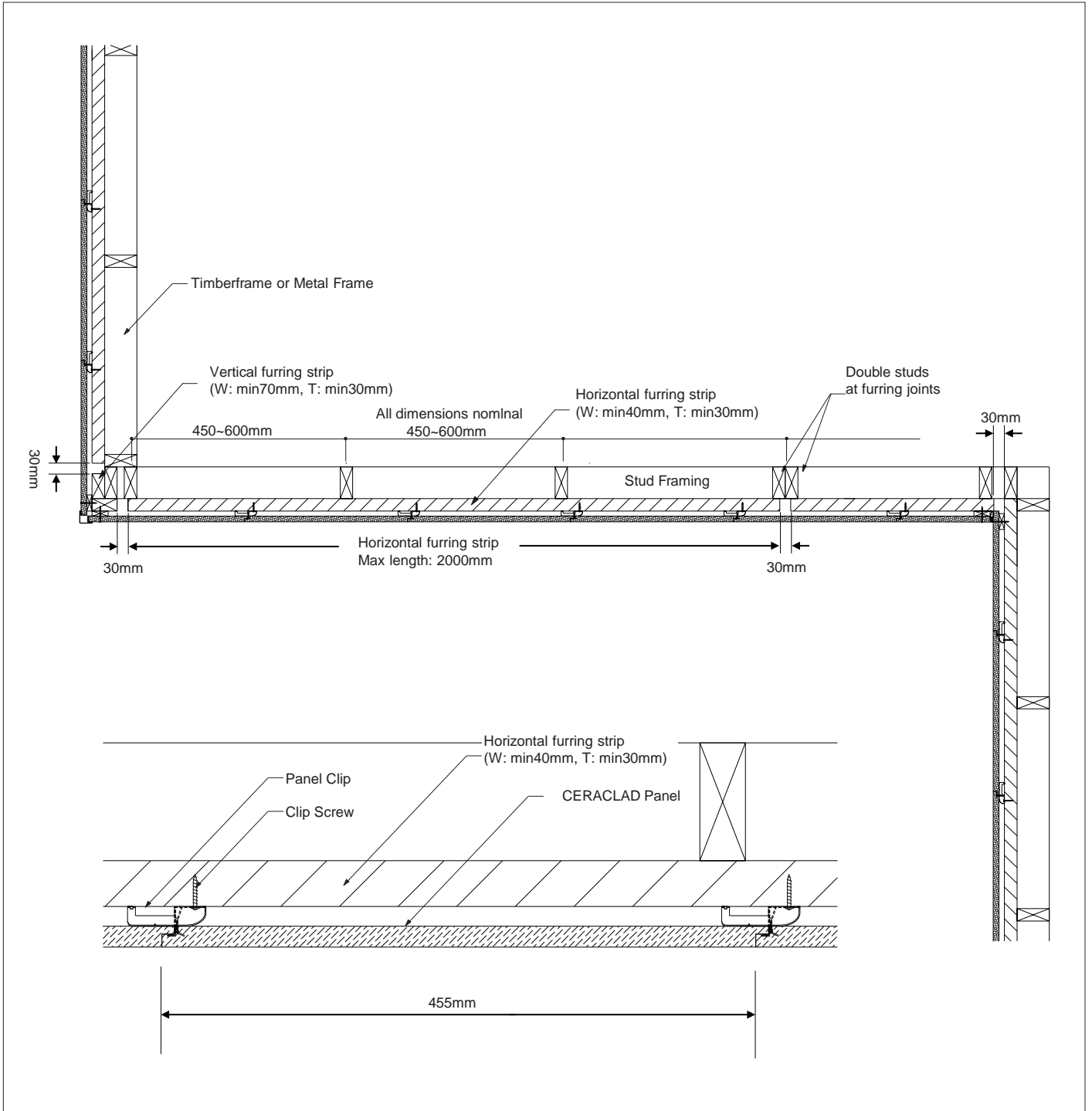
- The panel clip is the same clip for horizontal installation.
- Fasten the first clip right above the starter bar within approximately 75mm or less from the starter bar as shown on the diagram below.



Vertical Application

5. Clip installation

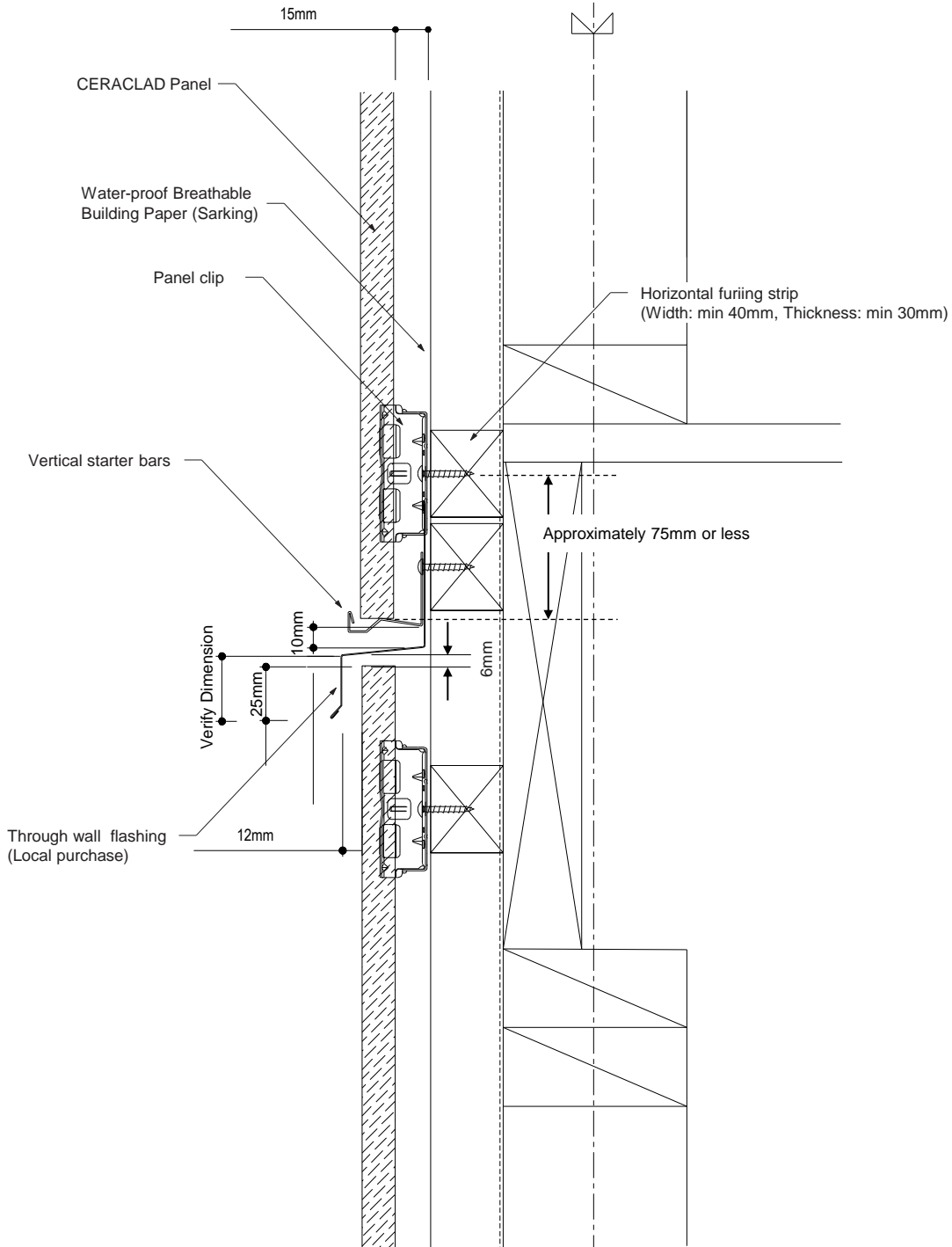
- Fasten the panel clips securely on each furring strip with one screw per clip.
- Maximum distance between clips must not exceed 500mm, so that one CERACLAD panel, in case of full length of 3,030 mm, requires seven clips.
- At outside and inside corners, and openings where the shiplaps are removed, clips cannot be used. So use nails instead in those areas.



Vertical Application

6. Through Wall Flashing

- Install through wall flashings with clearance of 6mm between the top of the panel and the flashing.
- Install vertical starter bars with clip screws.
- The distance between screws to fasten the starter bars must not exceed 455mm.
- Make sure that 10mm is kept between the flashing and starter bars for air intake.
- Fasten the first clip right above the starter bar within approximately 75mm or less from the starter bar as shown on the diagram below.

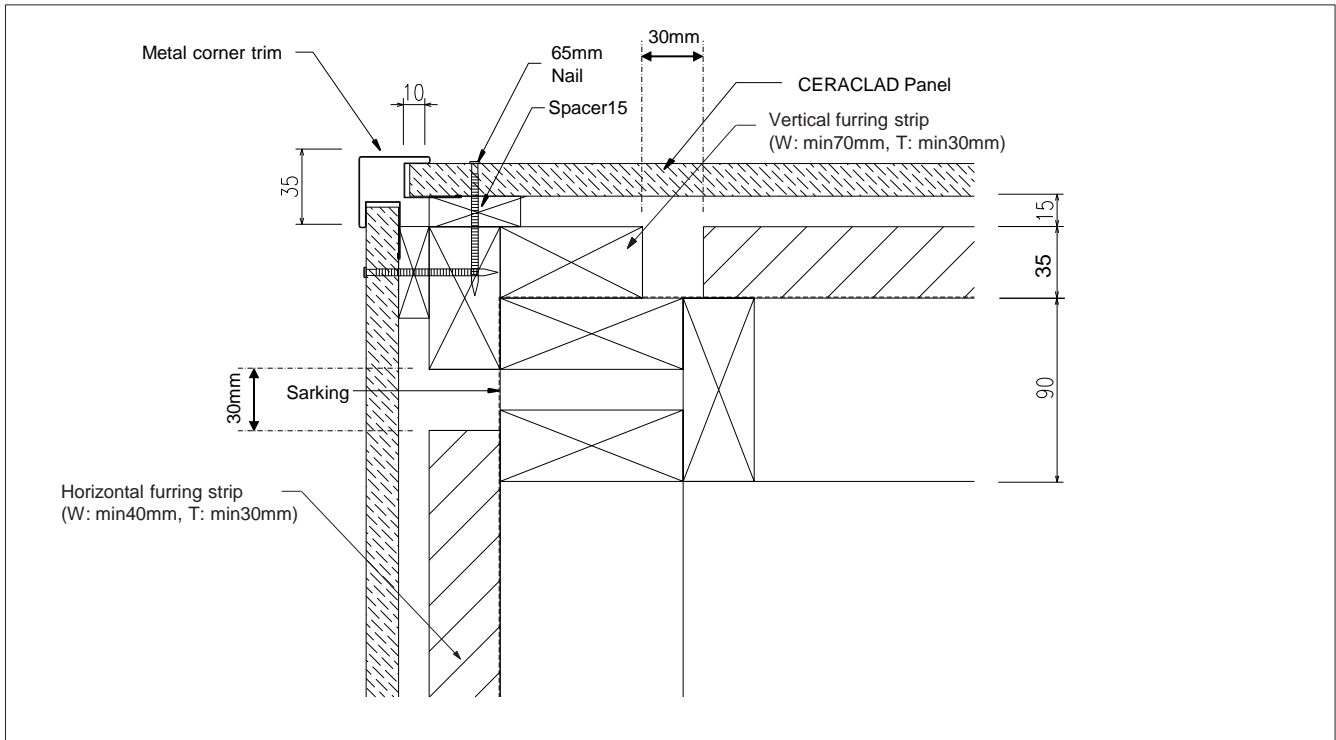


Vertical Application

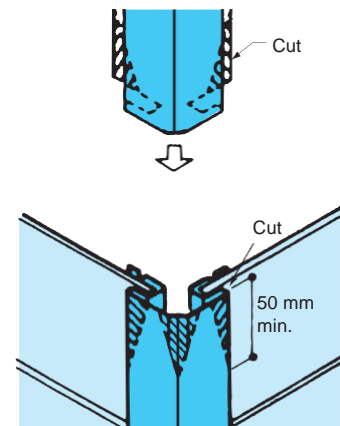
7. Outside corner finishing

(1) Metal outside trims

- Metal outside trim to be made from material complying with AS/NZS 2728.
- Attach Spacer 15s to the vertical furring strips at the corner with interval of 500mm or less.
- Fasten metal corner trim (purchase locally) onto the spacer15s with nails.
- Insert CERACLAD panels into the metal corner trim and fasten with 65mm nails and spacer15 as shown.



How to splice metal corner trims



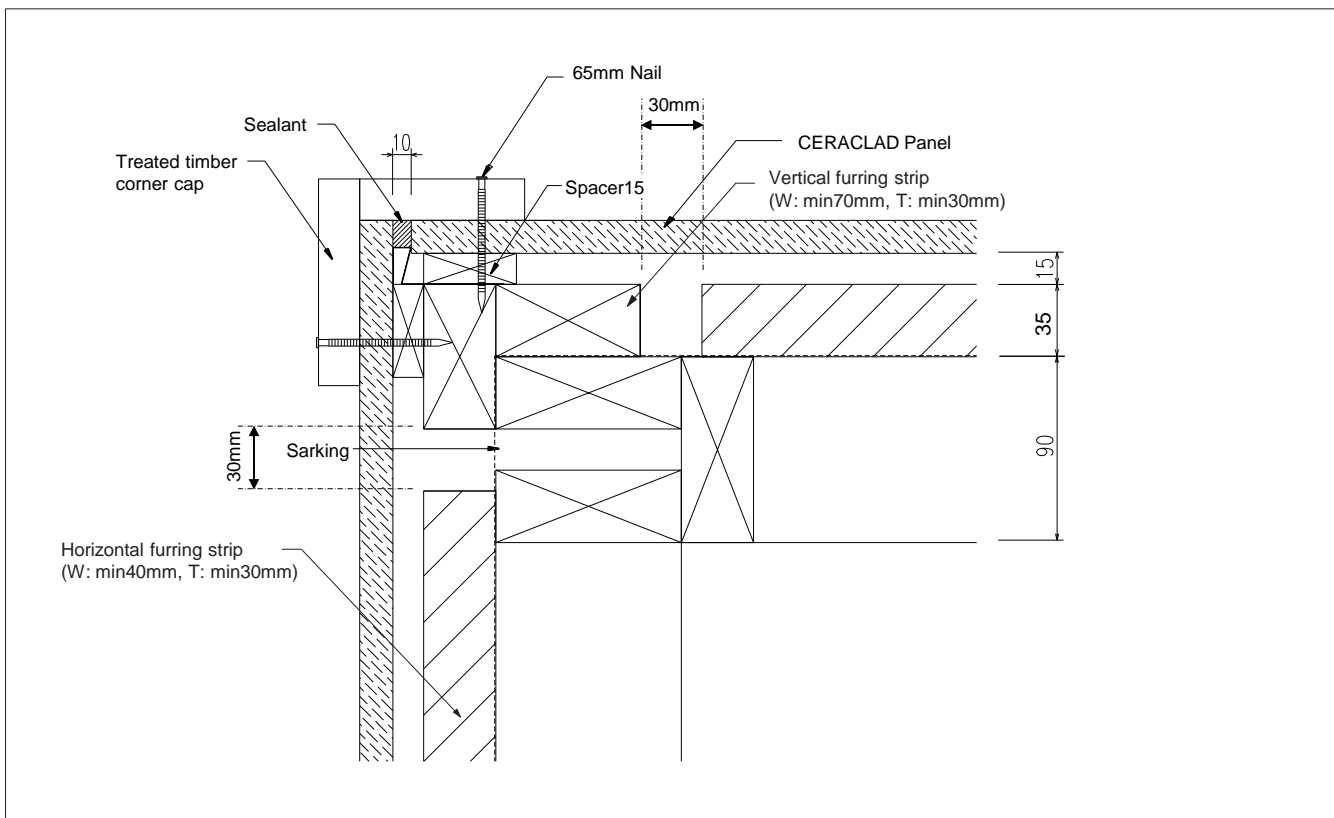
Vertical Application

(2) Timber corner caps

- Attach Spacer15s to the corner over the vertical furring strips as shown on the diagram below.
- Incorporate a hat-shaped joiner to one of the furring strips.
- Install the CERACLAD panels so that they butt-up to the Hat-shaped joiner at the corner. Apply sealant in the joint.
- Drill pilot holes (approx. 2 mm diameter) in the timber corner caps and CERACLAD panels with 500 mm or less pitch, and then nail on the corner caps.

- Corner caps should be securely fastened on the stud, not on CERACLAD panels.

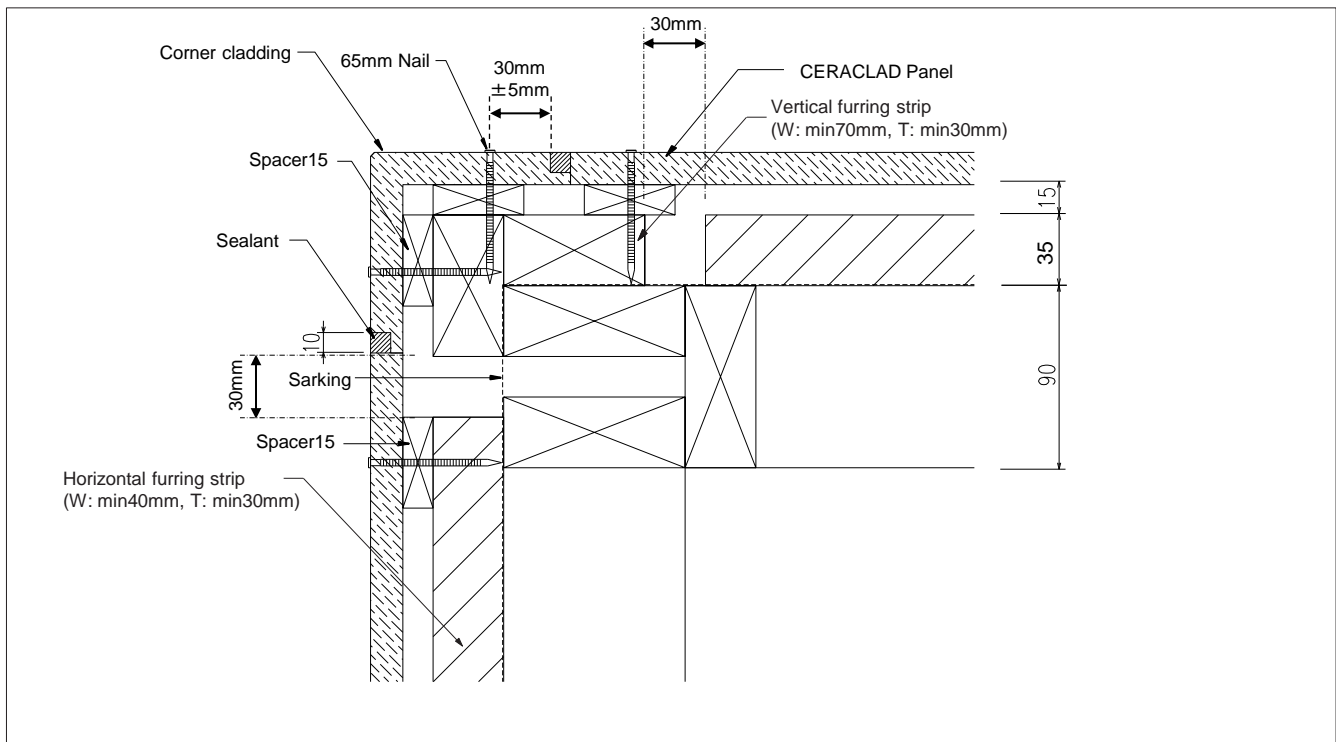
⚠ Caution	
⚠ Very Important!	<ul style="list-style-type: none">● Without drilling pilot holes in it, the CERACLAD panel might get cracks.



Vertical Application

(3) Corner cladding (made of matching materials)

- Ensure that the corner claddings are level.
- Pre-drill approximately 2mm diameter holes on the corner cladding at 30mm \pm 5mm position from the shiplap edges as shown every 500mm or less.
- Install corner cladding with 65mm nails and spacer15s.
- Remove the shiplaps of the CERACLAD panels.
- Install CERACLAD panels to butt up to the corner cladding.
- Fasten the panels with 65mm nails and spacer15 to the vertical furring strips.

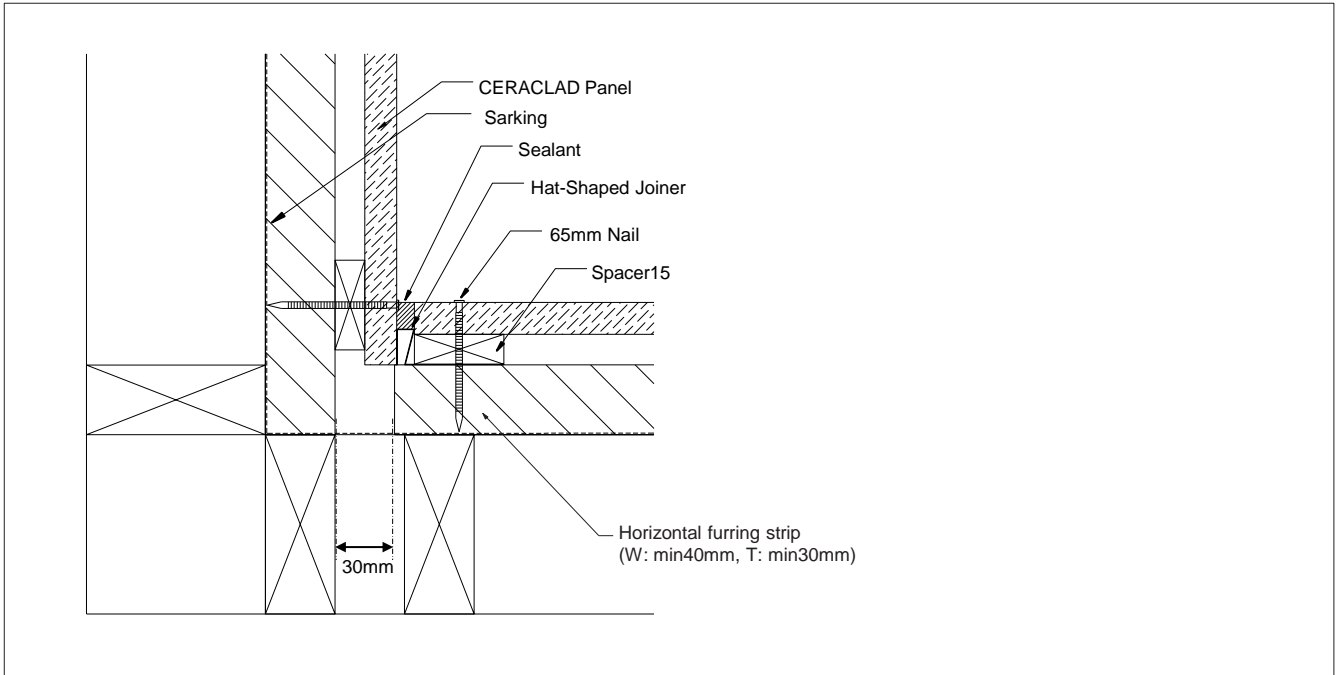


Vertical Application

8. Inside corner finishing

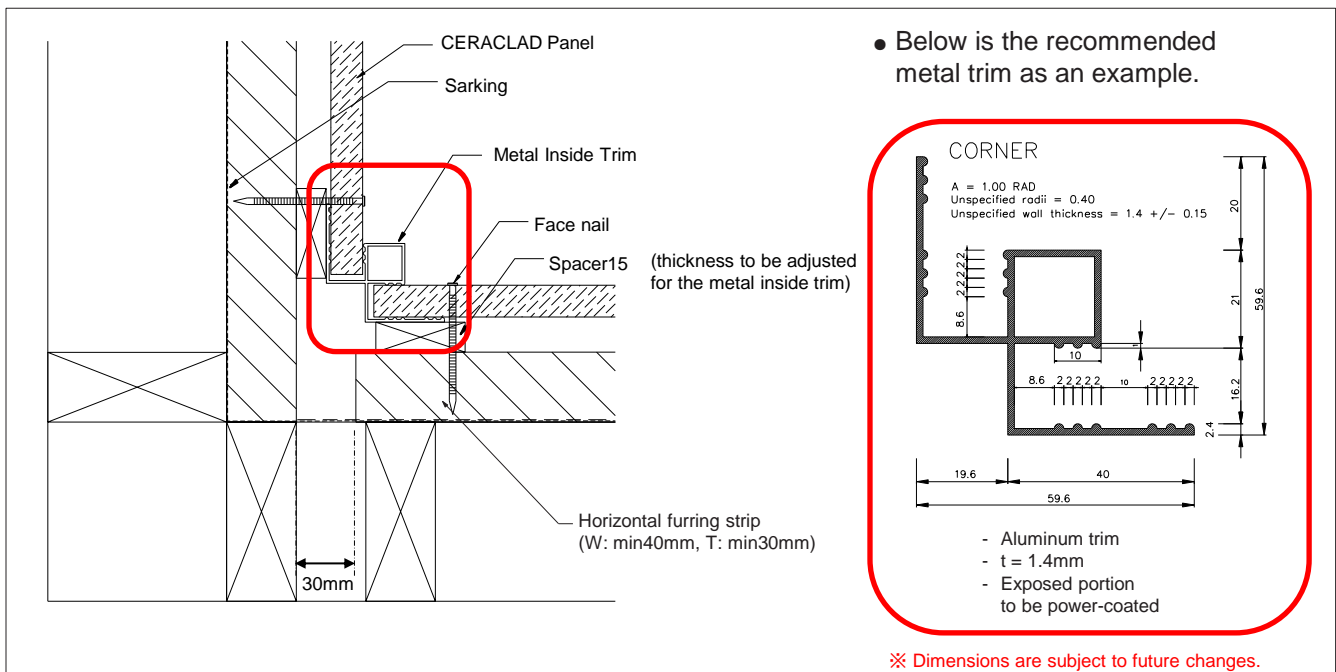
(1) Sealant finish

- Place spacer15s, pre-drill pilot holes (approximately 2mm diameter) on the CERACLAD panels, and fasten the either side panel to the horizontal furring strips with 65mm nails.
- Install the hat-shaped joiners at the corner and then install the other side panels.
- Apply sealant in the joint.



(2) Metal inside trim

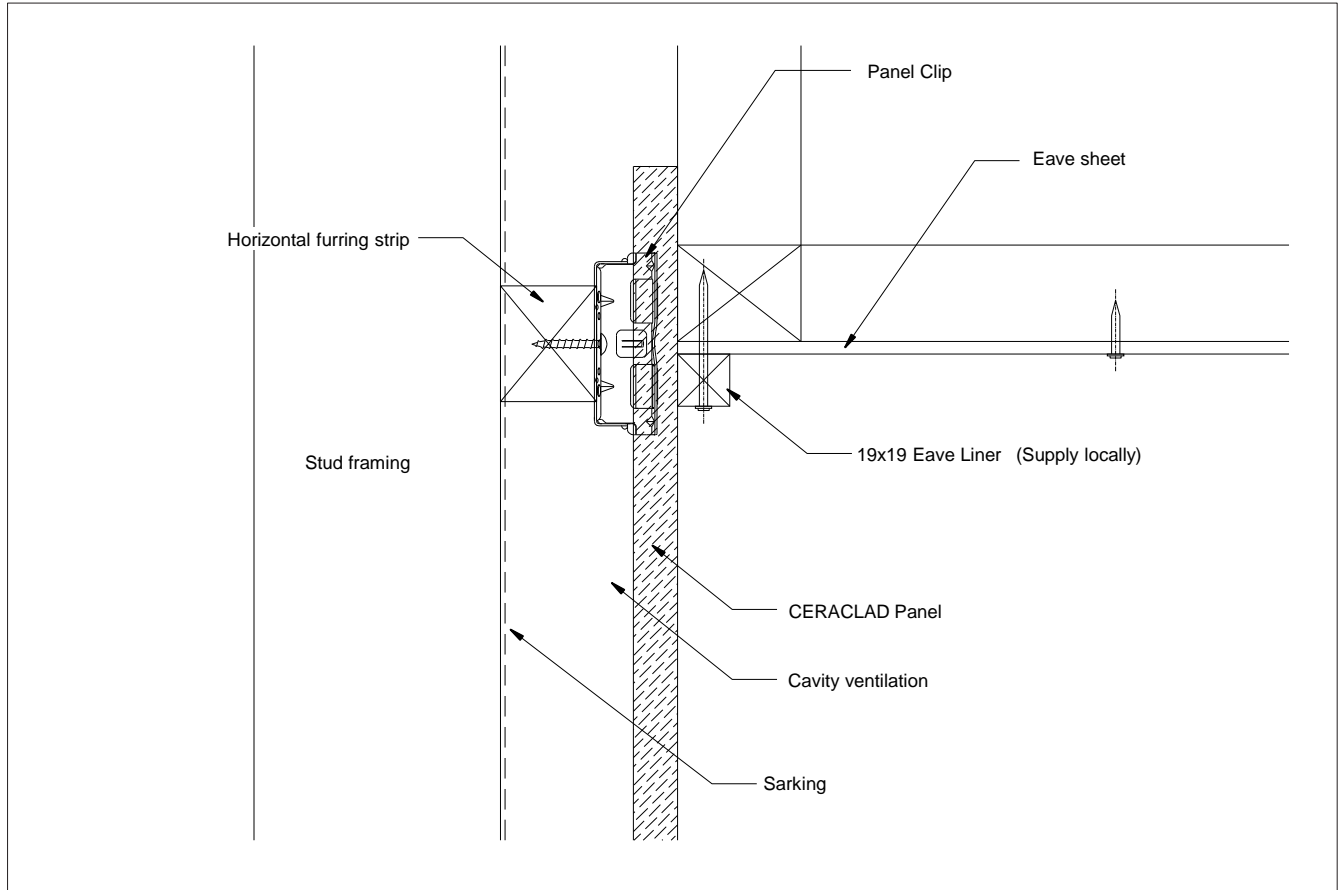
- Spacer thickness should be adjusted for the metal inside trim (locally produced) so that unevenness is within the 2mm requirement.
- The metal trims should meet local requirements such as Corrosivity Zone (AS4312). Refer to page 12.



Vertical Application

9. Under eaves

- Install the CERACLAD panels with panel clips as shown on the diagram below.
- Make sure that air from cavity is ventilated out through the eave or attic/roof ventilation system.
- Provide sufficient protection on the CERACLAD panels before application of paint on the eave liner and eave sheet.



Vertical Application

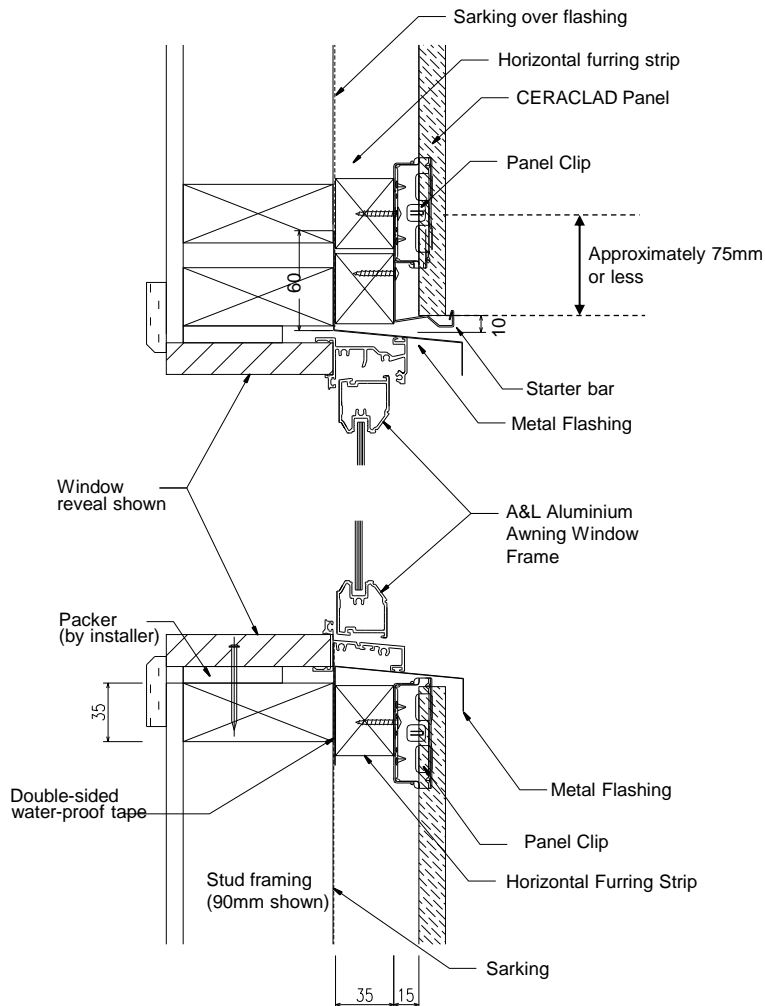
10-1. Opening (Permanently-set window)

<Above opening>

- Install a metal flashing above the window, and then cover the metal flashing with water resistive building sheet (Sarking).
- Metal flashing should have 15 degree slope and a 60 mm upstand as shown on the diagram below.
- Install vertical starter bars so as to maintain approximately 10 mm of space between the metal flashing and the CERACLAD panel.
- To fix the CERACLAD panel above the opening, use the panel clips as shown on the diagram below.

<Under opening>

- Use locally supplied metal flashing for under opening.
- Sarking must be firmly fixed around the window with double-sided waterproof tape.
- To fix the CERACLAD panel under the opening, use panel clips.

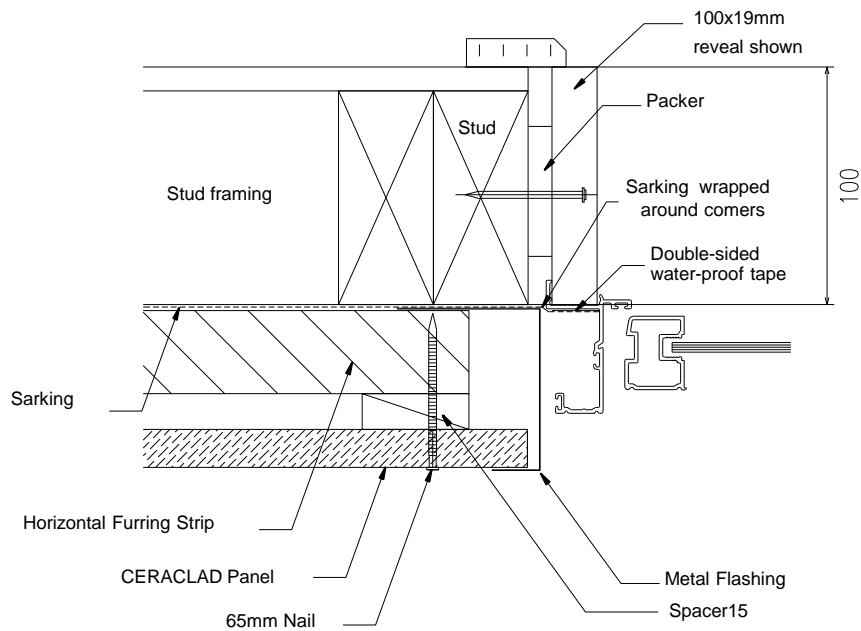


Vertical Application

10-1. Opening (Permanently-set window)

<Side of opening>

- Sarking must be firmly fixed around the opening with double-sided waterproof tape.
- Install locally supplied metal flashing to the side of opening.
- Install the CERACLAD panel with spacer15s and 65mm nails.
- Use sealant as necessary to improve weather tightness.



Vertical Application

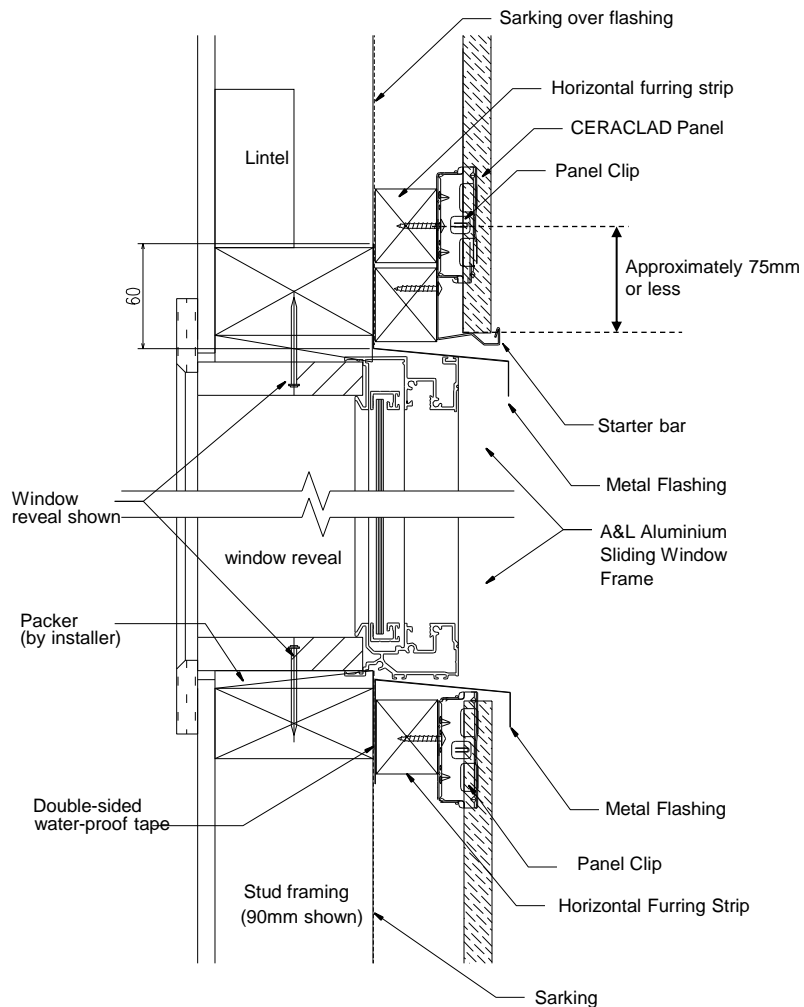
10-2. Opening (Sliding window)

<Above opening>

- Install a metal flashing above the window, and then cover the metal flashing with water resistive building sheet (Sarking).
- Metal flashing should have 15 degree slope and a 60 mm upstand as shown on the diagram below.
- Install vertical starter bars so as to maintain approximately 10 mm of space between the metal flashing and the CERACLAD panel.
- To fix the CERACLAD panel above the opening, use the panel clips as shown on the diagram below.

<Under opening>

- Use locally supplied metal flashing for under opening.
- Sarking must be firmly fixed around the window with double-sided waterproof tape.
- To fix the CERACLAD panel under the opening, use panel clips.

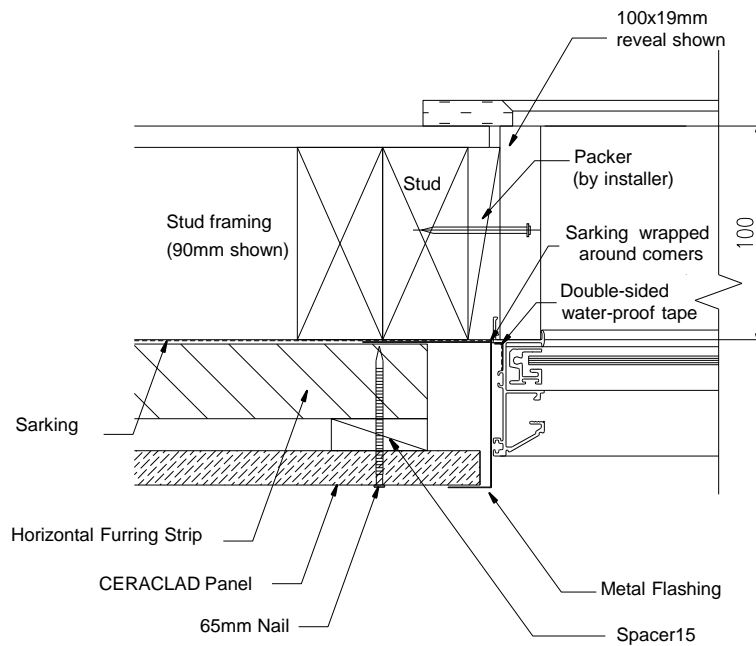


Vertical Application

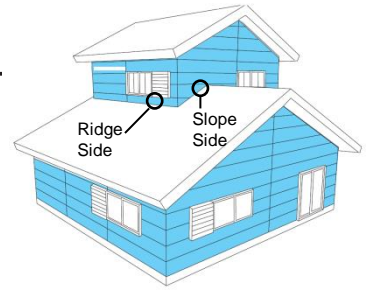
10-2. Opening (Sliding window)

<Side of opening>

- Sarking must be firmly fixed around the opening with double-sided waterproof tape.
- Install locally supplied metal flashing to the side of opening.
- Install the CERACLAD panel with spacer15s and 65mm nails.
- Use sealant as necessary to improve weather tightness.

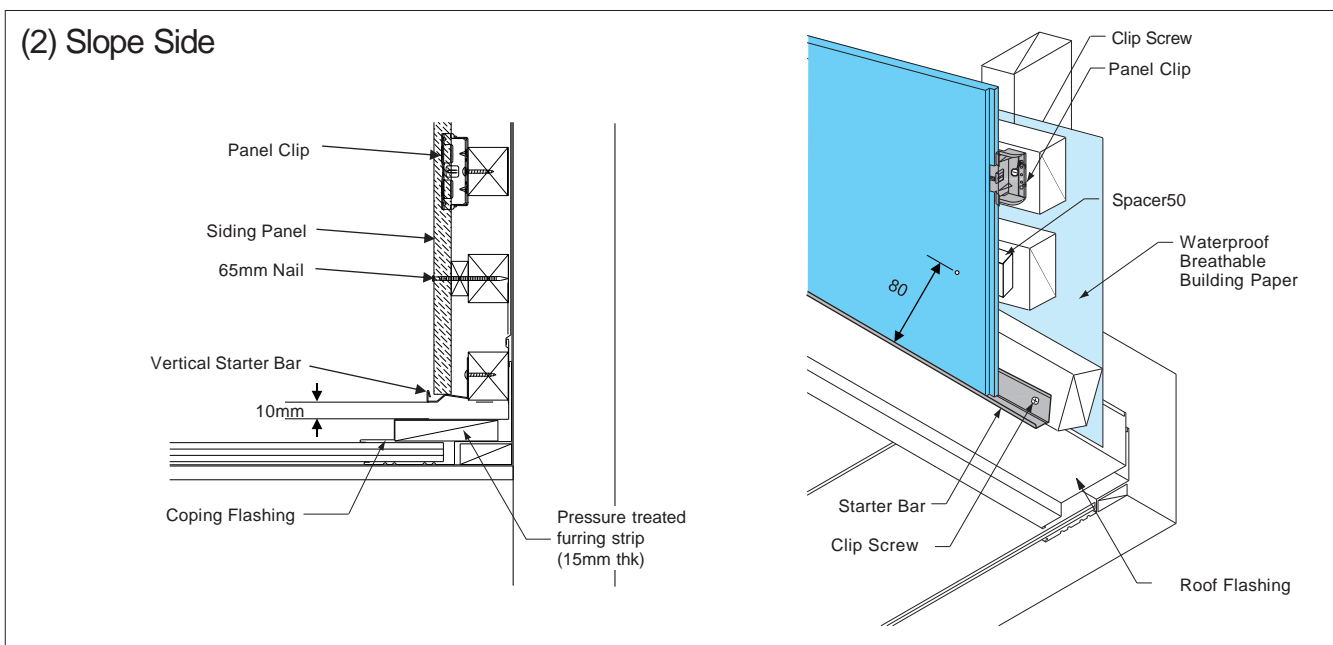
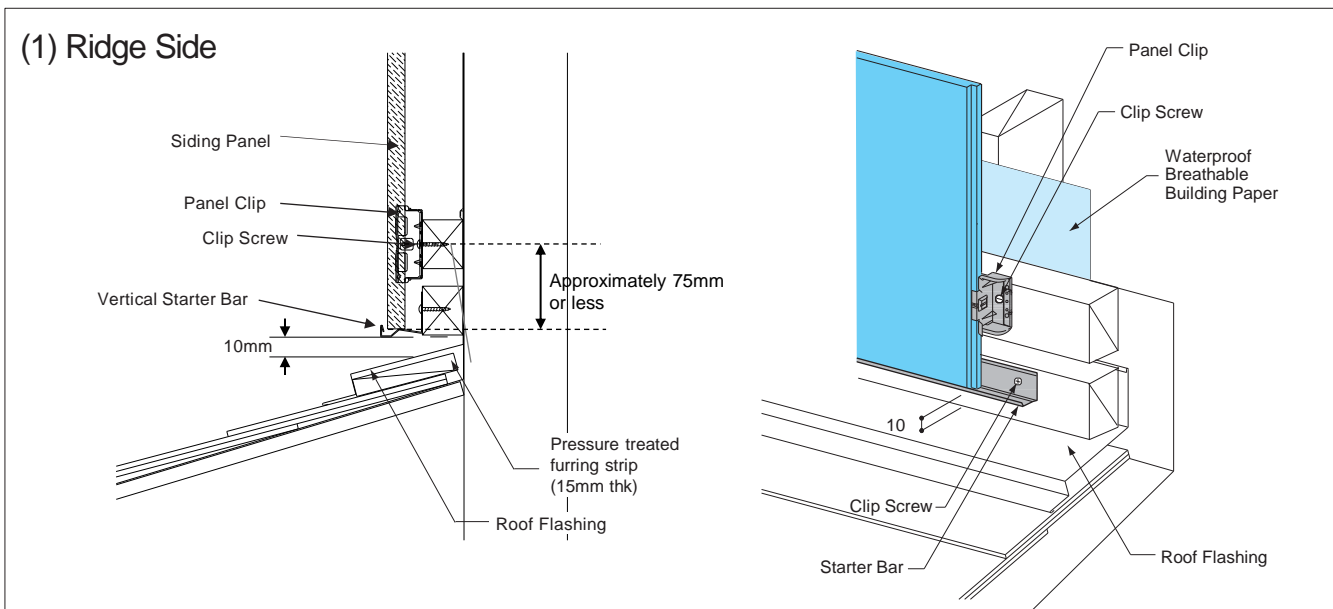


Vertical Application



11. Intersection with roof

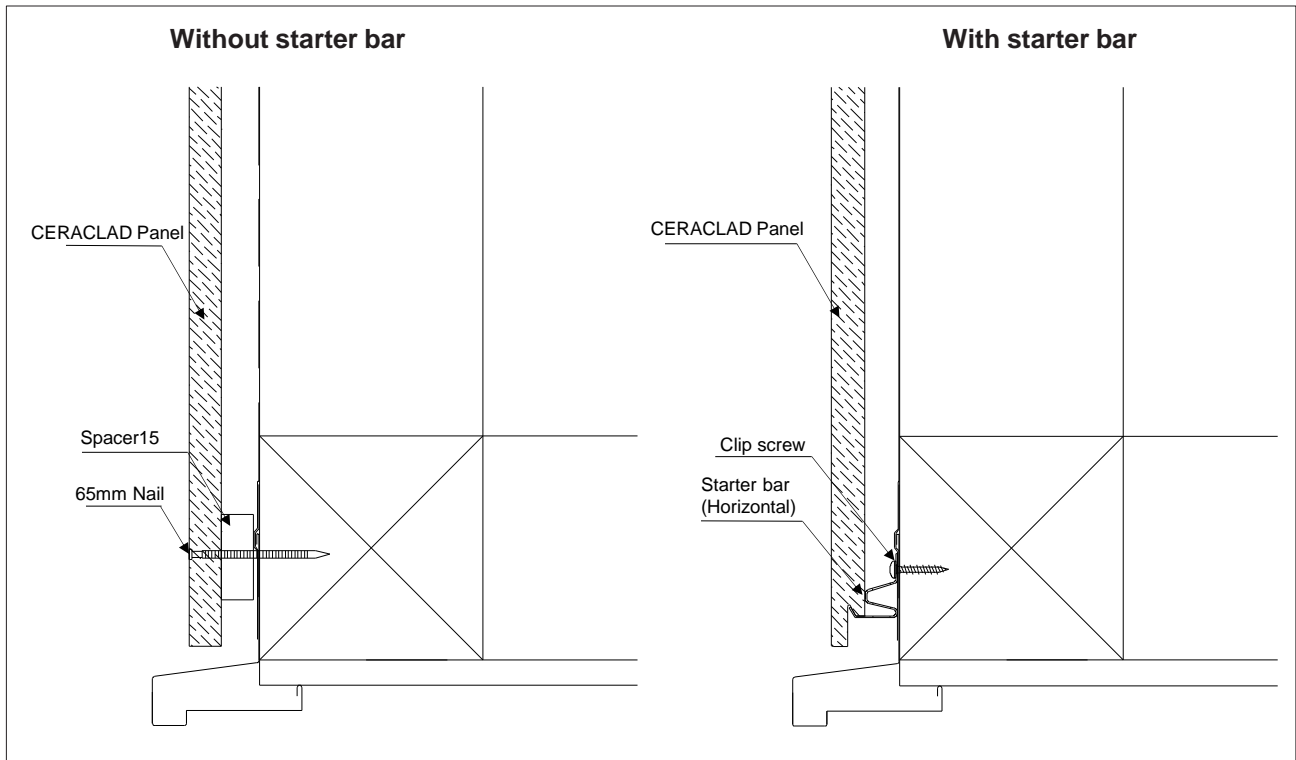
- Siding panel and coping flashing should be installed with a gap of about 10 to 15 mm. (To prevent capillary phenomenon, maintain air intake, drain condensation, and absorb displacement due to structural load)
- Waterproof breathable building paper should be overlapped on the coping flashing as shown below.
- Attach the water proof breathable building paper to the coping flashing with a double-sided water-proof tape. (To prevent the paper from rattling by wind and from leaping up in the air cavity.) However, the double-sided water proof tape is not required in case that the paper is stuck with horizontal furring strips, or starter bars.
- Place a 30mm gap every 2000mm on horizontal furring strips for air circulation.
- For vertical installation, vertical starter bars must be used for both ridge and slope sides as shown on below.



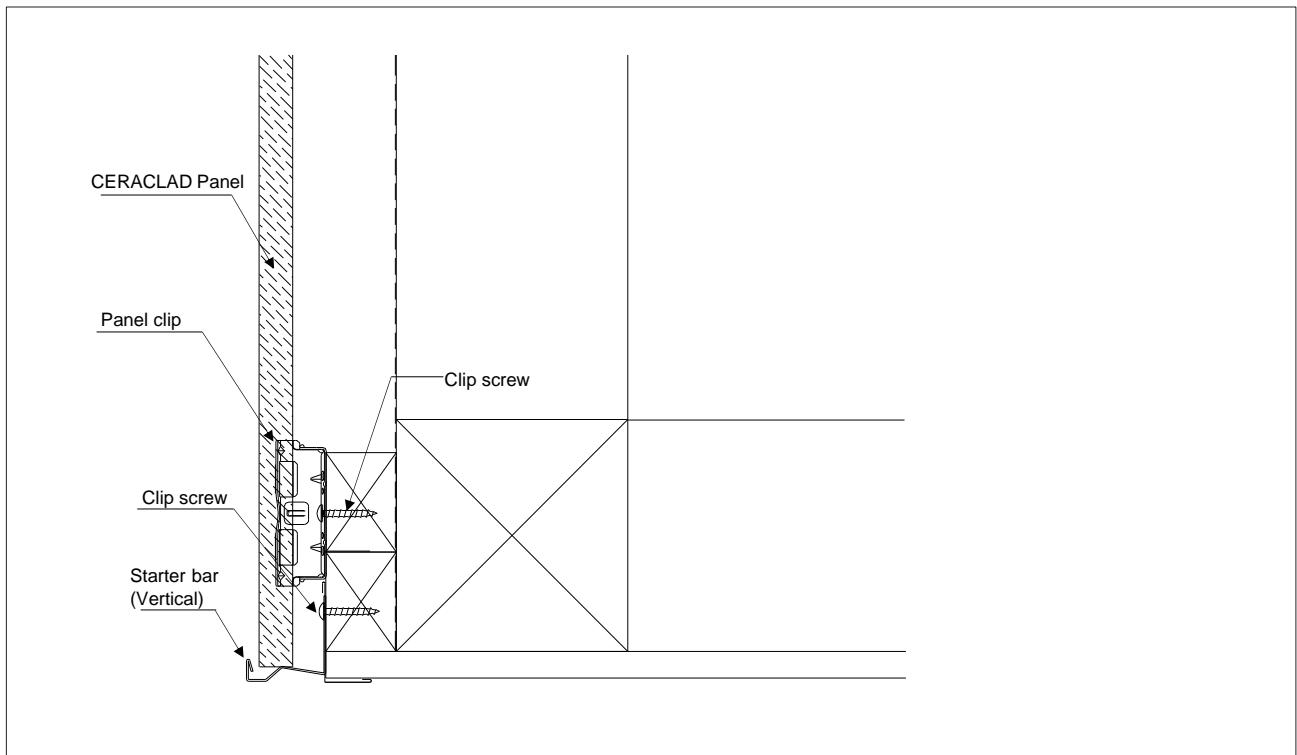
Other Common Details for Vertical and Horizontal Installations

1. Overhang

(1) Horizontal installation



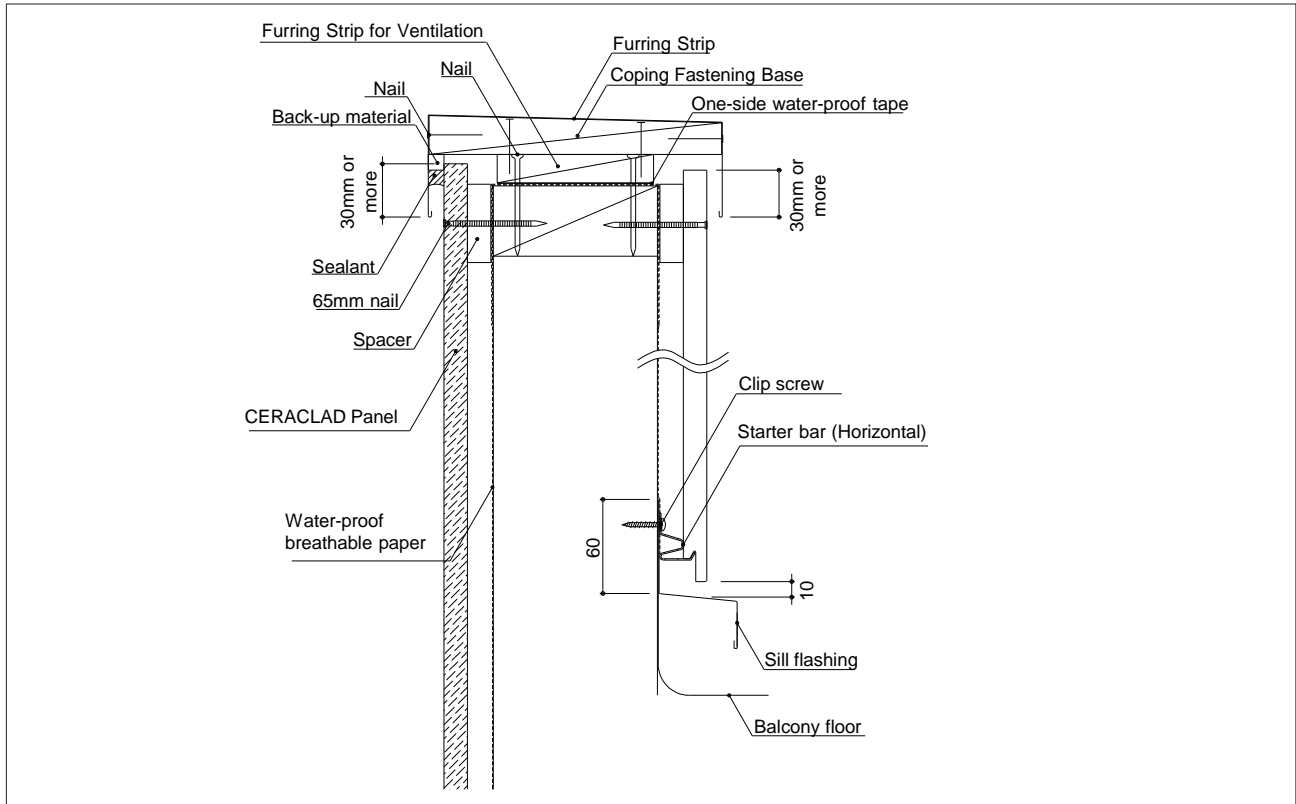
(2) Vertical installation (with starter bars)



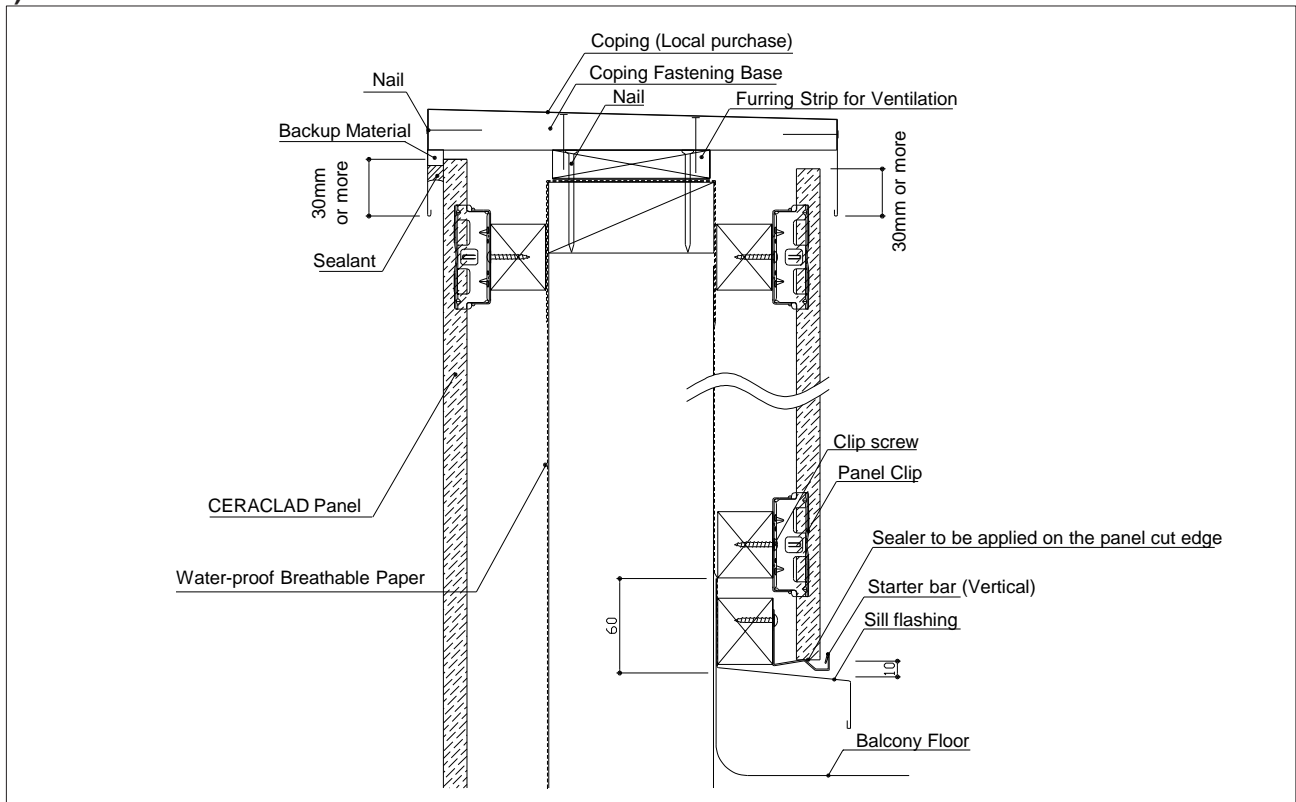
Other Common Details for Vertical and Horizontal Installations

2. Coping

(1) Horizontal installation



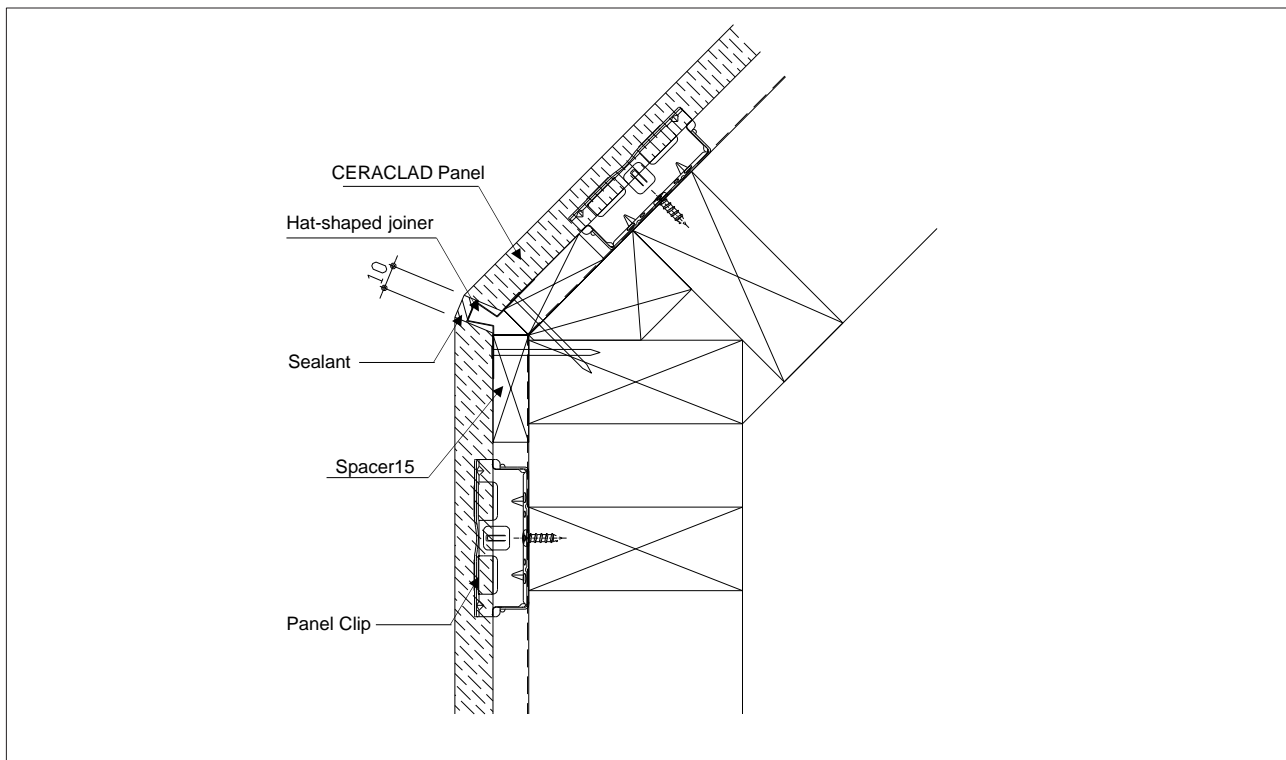
(2) Vertical installation



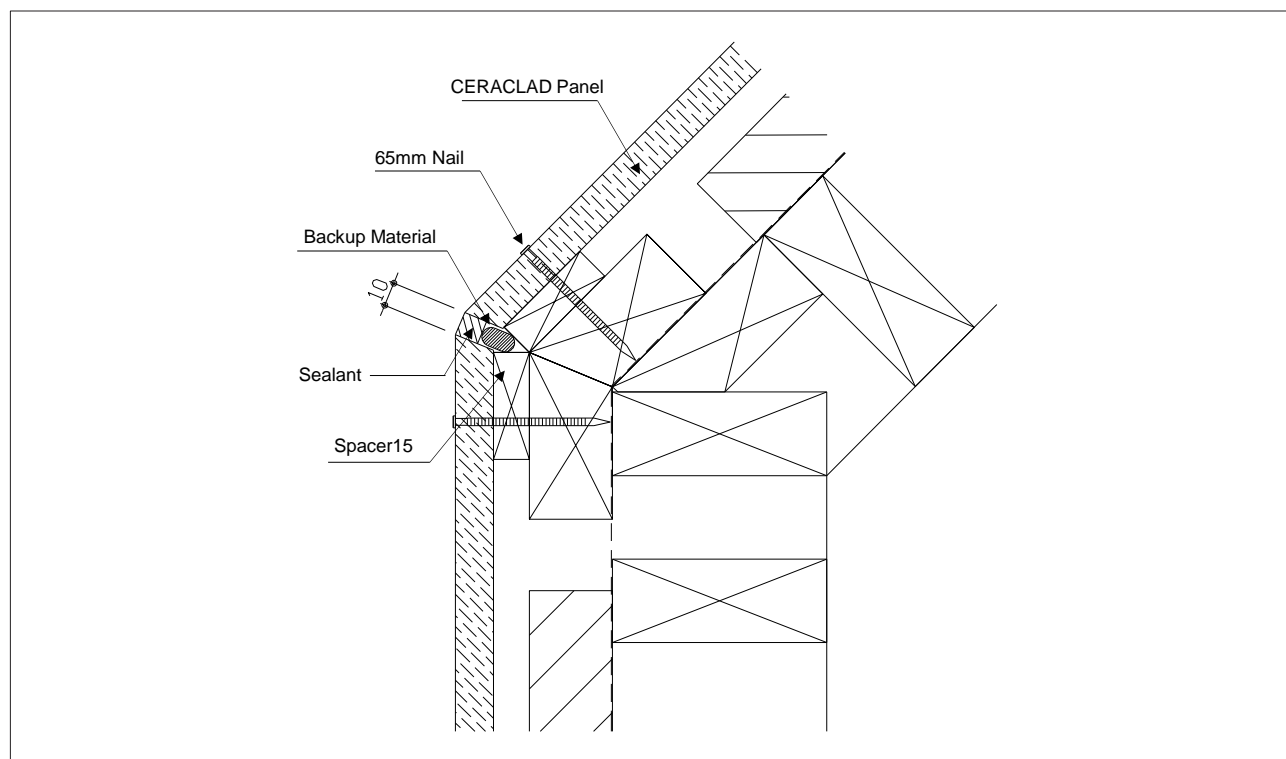
Other Common Details for Vertical and Horizontal Installations

3. Obtuse angle

(1) Horizontal installation



(2) Vertical installation



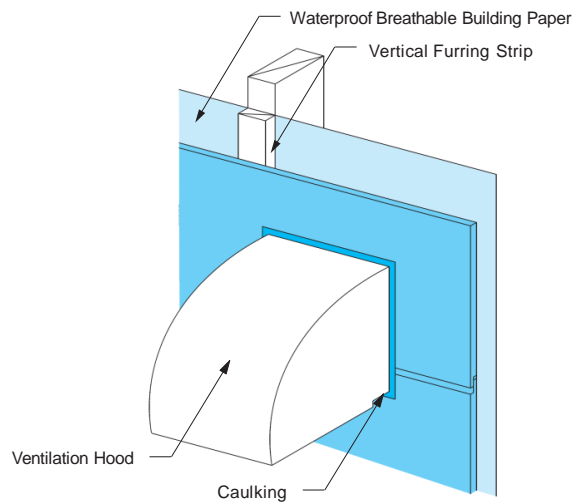
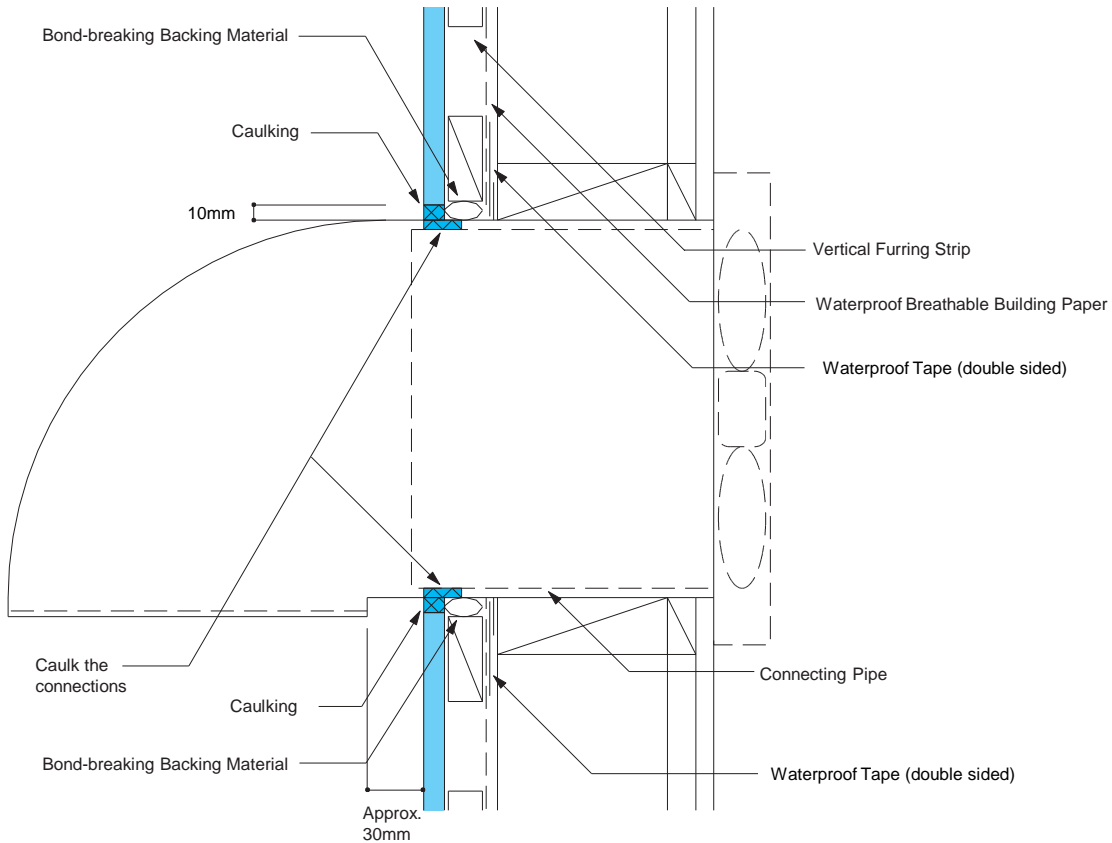
Other Common Details for Vertical and Horizontal Installations

4. Installation Around Ventilation Ducts

- Keep 10mm of space between the hoods and the panels and apply caulking.
- Separate the exhaust opening at least 30mm from the siding panel surface.



- Securely apply caulking on the connection of the pipe and hood to prevent humid air from entering the air cavity.



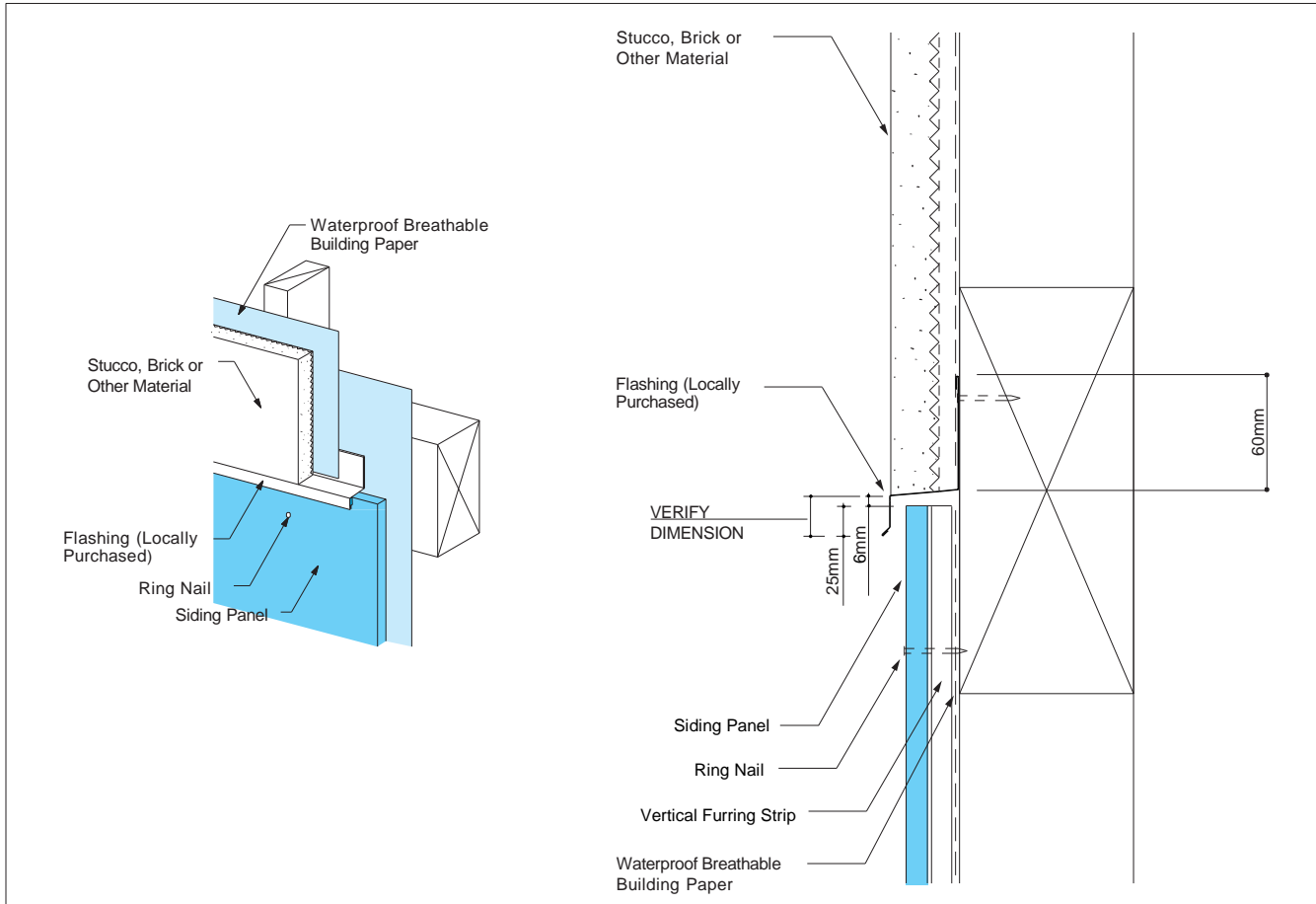
Other Common Details for Vertical and Horizontal Installations

5. Junctions With Other Materials

(1) Horizontal Junction

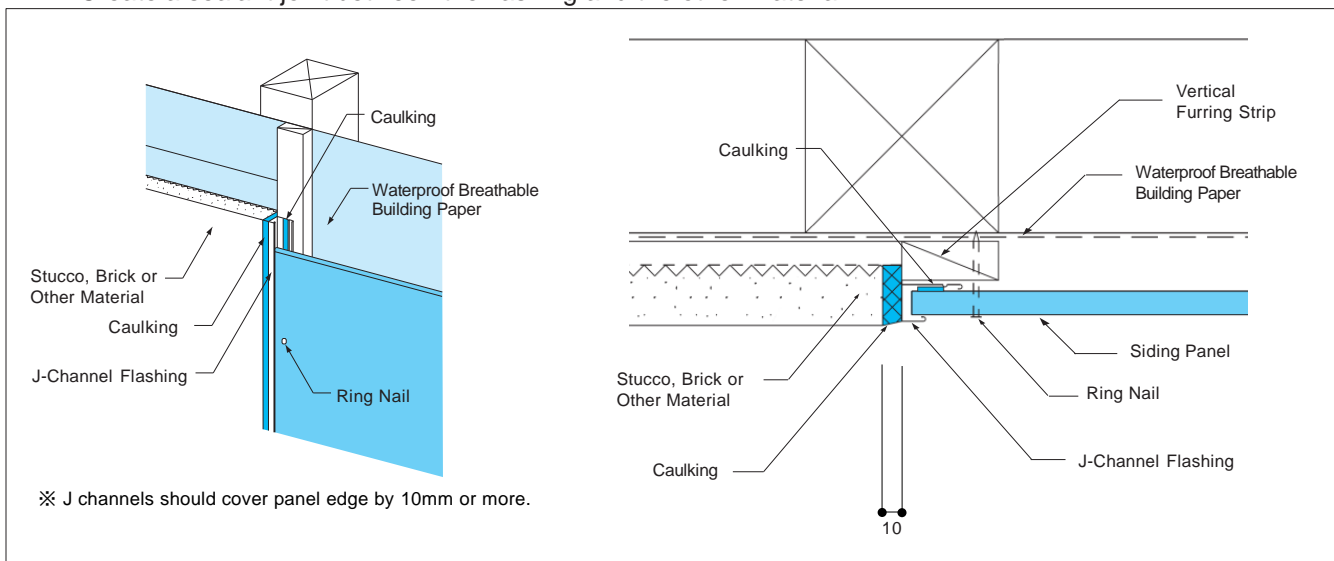
△ **Make sure to use flashing because the joints may fail if the siding panels are installed next to other materials without any separation.**

- Overlap the flashing approximately 50mm and apply caulking on the overlaps.



(2) Side by Side Vertical Junction

- Use a J-channel flashing to separate the siding panels and the other material.
- Create a sealant joint between the flashing and the other material.



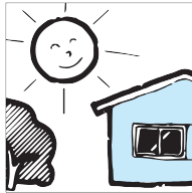
Applying Sealant

1. Standard procedures

* Secure an approx. 10 mm wide, 5 mm deep sealant space in the vertical joints.

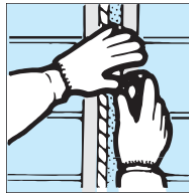
[1] Check the weather in advance.

- Apply sealant on a dry day. Ensure that the target joints are completely dry, especially if the previous day has been rainy or snowy, before starting applying sealant.



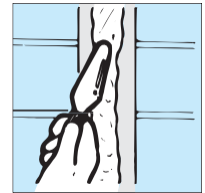
[4] Attach masking tape.

- Attach masking tape along both sides of the joint.



[7] Skim the surface.

- Skim the surface of the applied compound with a spatula or finger tip to smooth the surface.



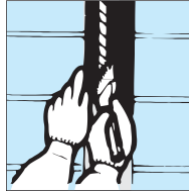
[2] Clean the target joints.

- Remove any dust, oil, or water from the target joints with a brush or cloth.



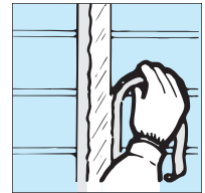
[5] Apply primer.

- Evenly apply sealant primer twice to end of the CERACLAD panels. Apply sealant between 30 minutes and 6 hours later.



[8] Remove the masking tape.

- Remove the masking tape before the sealant compound gets dry.

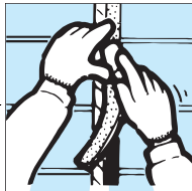


- If dust, oil, or water remain on the target joints, the sealant compound may fail to adhere and then peel off. -

- If sealant primer is not applied, the sealant compound may fail to adhere and then peel off. -

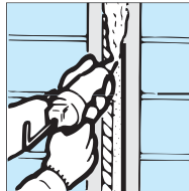
[3] Fill the joints with a backup material.

- When using a backup material around openings, provide adequate depth for the joints to be caulked.
- If metal joints with bond breaker are used, no need to fill the joints with a backup material.



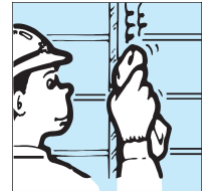
[6] Fill the joints with sealant.

- Inject the joints with the sealant compound at all corners using a nozzle that matches the joint width. Take care to leave no air bubbles or gaps.



[9] Clean.

- Clean off any remaining masking tape, sealant compound and primer.
- This should be conducted after sealant compound gets dry.



- Applying sealant without filling a backup material or with no bond breaker metal joiners causes three-sided adhesion of the caulking compound, and the compound may peel off. -

- If not enough compound is used, it may fail to adhere and then peel off. -

- If they are not completely wiped off, discoloration or stains may result. -

[10] Check the finish.

- Visually check the sealant finish for uncompleted or uneven sections on the surface, and air bubbles.

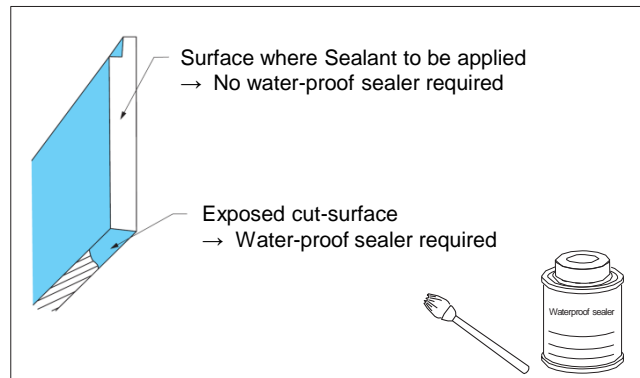
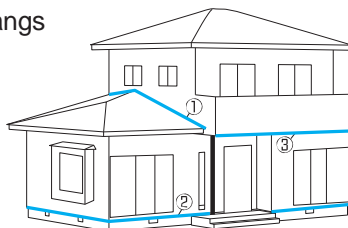
* If painting is required after applying sealant, carry out painting only after the sealant has completely gotten dry.

Waterproof sealer for uncaulked cut panel edges

- Make sure to apply the specified waterproof sealer to uncaulked cut panel edges to prevent damage due to water absorption and freezing.

- Apply the waterproof sealer to the following sections including all uncaulked cut panel edges:

- ① Rooflines
- ② Flashings
- ③ Balconies and overhangs



Caution

- Protect from fire.
- Seal the container and store it in a dark cold place.
- If the sealer comes into contact with your skin, immediately wash it off with detergent dissolved in water.

Application of Touch-up Paint

Please read before proceeding

- Paint should be finished within the same day of mixing the paint ingredients. If the application cannot be completed within the same day, be sure to finish painting within 24 hours of applying the primer.
- Failure to follow the procedures below can result in poor color matching and may cause repaired portions to discolor over time. Please note that we assume no responsibility for such a case.
- Use no caulking materials in touch up repairing. Caulking used for touch-up will fade over time.
- Although the solid paint base may appear hard, it will work properly after vigorous mixing with the liquid hardener.
- Please refer to the material identification key to identify the ingredients.

Material Identification Key.



Blue Label:
Paint Base














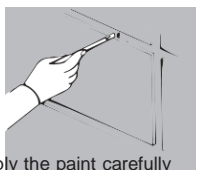

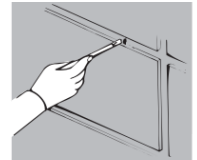
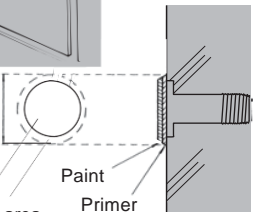


Red Label:
Primer



Green Label:
Hardener

- Follow these directions when applying touch-up paint.

<p>1)Preparation</p>	<ul style="list-style-type: none"> • Ensure that the siding surface is completely dry. Avoid painting when it is rainy and wet or the temperature is 40°F or less. • Clean dirty painting portions. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  <p>CAUTION</p> <p>Be sure to finish application within a day, if possible, as both the primer and the paint have a working life.</p> </div>	<p style="text-align: center;">Touch up Paint Kit</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  Paint Base </div> <div style="text-align: center;">  Primer </div> <div style="text-align: center;">  Hardener </div> </div> <p style="text-align: center; margin-top: 5px;">Brushes </p>
<p>2) Mixing of touch-up paint</p>	<ul style="list-style-type: none"> • Pour the entire bottle of hardener into the base paint bottle. Shake the bottle well. • The mixed paint is susceptible to air humidity; be sure to close the lid tightly after mixing and agitation. • The mixed paint should be used after 30 minutes and within 8 hours of mixing. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  <p>CAUTION</p> <ul style="list-style-type: none"> • For best results mix the entire quantities of the two bottles. Incremental mixing may result in poor performance. • Leave the mixed paint alone for 30 minutes after mixing to stabilize the color tone. • Apply the mixed paint within 24 hours after applying the primer. </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  Paint Base </div> <div style="text-align: center;">  Hardener </div> </div> <div style="margin-top: 10px;">  <p>Hardener</p> <p>Put all of the hardener into the paint base bottle.</p> </div> <div style="margin-top: 10px;">  <p>Paint Base</p> <p>Shake the bottle well until paint color becomes even.</p> </div>
<p>3) Primer application</p>	<ul style="list-style-type: none"> • Avoid dripping during application. In case of dripping, remove it immediately with a clean cloth. • The primer is susceptible to air humidity; be sure to close the lid tightly after use. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  <p>CAUTION</p> <ul style="list-style-type: none"> • For best results, apply sparingly. </div>	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">  Primer </div> <div style="margin-right: 10px;">  Brush </div> <div style="flex-grow: 1;">  <p>Apply the paint carefully to prevent dripping.</p> </div> </div>
<p>4)Drying</p>	<ul style="list-style-type: none"> • Allow 30 minutes for the primer to dry. 	
<p>5)Application of touch-up paint</p>	<ul style="list-style-type: none"> • The mixed paint should be used after 30 minutes and within 8 hours of mixing. • Use the included brushes to apply the paint without dripping. • Apply the paint over portions applied with the primer. • Apply the paint within 24 hours after applying the primer. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">  <p>CAUTION</p> <ul style="list-style-type: none"> • For best results, use the paint sparingly and cover only the nail head. • Prime all locations before painting. </div>	<div style="margin-top: 10px;">  </div> <div style="margin-top: 10px;">  <p>Approx. (7mm)</p> <p>Nail head Paint Primer</p> <p>Application area</p> </div>
<p>6)Inspection</p>	<ul style="list-style-type: none"> • Check for uncoated sections. Paint as needed. 	

Replacing a single panel



Replacement panels must be fastened with nails or screws, rather than clips.

Order	Content of Work	Images
1) Remove	<ul style="list-style-type: none"> Use a utility knife to remove the caulking. Cut the center of the panel with a power saw and remove the panel. ※ Be careful not to damage the sheathing, waterproof building paper, and adjacent panels. 	
2) Prepare the replacement panel.	<ul style="list-style-type: none"> Remove the part A (figure, right) of the replacement panel. Without removing this portion of the shiplapped edge the replacement panel will not fit. 	
3) Installation	<ul style="list-style-type: none"> Apply caulking to shiplapped edges to ensure a waterproof seal. Attach spacer blocks where the panel will be nailed (or screwed). Insert the replacement panel. 	
	<ul style="list-style-type: none"> Pre-drill pilot holes and nail or screw the panel into place. Apply touch-up paint to the nail or screw heads. Replace the caulking where it had been removed. 	

※ These repair instructions are only a general guide and additional steps may be required.

After Installation Completion

Window class:

- N1
 N2
 N3

Installation Completion Checklist

(KMEW Neorock Shinsui-Cera 16mm Horizontal Installation with Clips)

※ This checklist should be filled in by the person in charge of installation and be sent to Sumitomo Forestry Australia Co., Ltd.

Property Name		Date	
Property Address			
Builder		Installation Completion Date	
Installation Company		Person in charge of installation	
Siding Panel Stock #	NF		

Summary of Property	
Type of Structure	<input type="checkbox"/> Wood
Height and number of stories of the Building	()m <input type="checkbox"/> 1 Story <input type="checkbox"/> 2 Stories
Interval of Studs	1F ()mm 2F ()mm

Installation Checklist	
General	① Did you follow the design and installation manual? <input type="checkbox"/> Yes <input type="checkbox"/> No
Structure (Frame)	① Installation ensures the air flow? <input type="checkbox"/> Yes <input type="checkbox"/> No
	② Is the unevenness of the structure on which the siding panels are installed, less than 2mm? <input type="checkbox"/> Yes <input type="checkbox"/> No
	③ Is the width of the studs for vertical joints more than 90mm? <input type="checkbox"/> Yes <input type="checkbox"/> No
Installation of Siding Panels	① Were KMEW accessories (nails, screws, clips, and so on) used? <input type="checkbox"/> Yes <input type="checkbox"/> No
	② For nail direct fastening, were minimum distances from the siding edge maintained? Were spacers used? Pre-drilled? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
	③ Was sealer applied on the siding panels' cut surfaces to which no sealant is applied? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable
	④ Are there scratches, cracks, warping, scum, or swell on the siding panels? <input type="checkbox"/> Yes <input type="checkbox"/> No
	⑤ Were the panel surfaces wiped in chemicals and solvents (thinner, etc.)? <input type="checkbox"/> Yes <input type="checkbox"/> No
	⑥ Were sealant compound used instead of touch-up paints for repair? <input type="checkbox"/> Yes <input type="checkbox"/> No
	⑦ Had the siding panels been stored in wet conditions for a long time? <input type="checkbox"/> Yes <input type="checkbox"/> No
	⑧ Are there any significant dirt or abrasions on the siding panel surfaces? <input type="checkbox"/> Yes <input type="checkbox"/> No

Blank for Sumitomo Forestry Australia Co., Ltd. (SFA)	Date of Receipt:
	Person in charge:

Reference for Steel frames

Fixing requirement

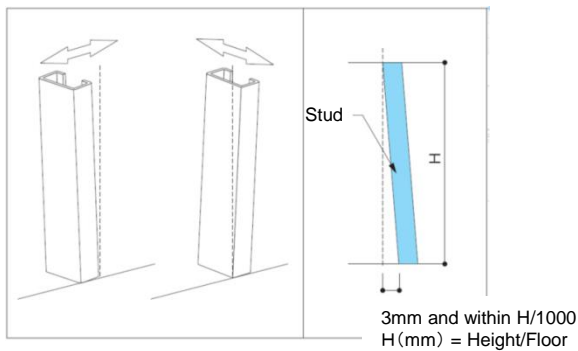
Wind Class	Steel frame (0.55mm thk)	
	Panel Zone (Areas greater than 1,200mm from an External Building Corner)	Corner Zone (Areas less than 1,200mm from an External Building Corner)
N1	1 Panel Clip @ 600 * ¹	1 Panel Clip @ 600
N2	1 Panel Clip @ 600	1 Panel Clip @ 600
N3	1 Panel Clip @ 600	1 Panel Clip @ 600 + 1 Face Nail * ²

*1 - Panel clips to be fixed every stud which intervals are maximum 600mm.

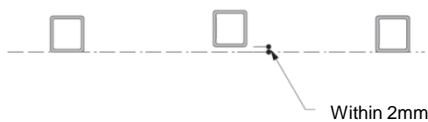
*2 - Additional reinforcing Face Screws are required as shown on page 13 and 14.

Structure Unevenness

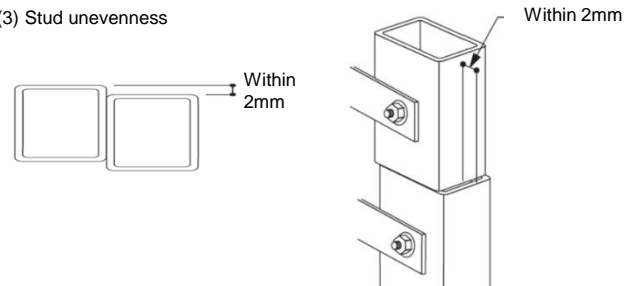
(1) Frame vertical unevenness



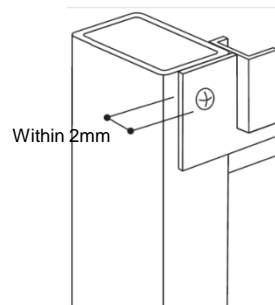
(2) Eye of height unevenness



(3) Stud unevenness



(4) Screw heads & Sash frame fringe



Accessories for 16mm panels (Steel frame)

16 mm

φ4.8mm

Clip Screw
(Powers SDHCC41016 or equivalent)

No picture available

CounterSunk (CSK) head

Drive the screw just below the siding panel surface, apply repair putty to it, and apply the touch-up paint after the putty has hardened sufficiently.

Approx. 11mm

Screw head Application Area Putty Countersink the screw head Touch up Paint

Direct Fastening Screw (Local Purchase)

- ※ Screw pull-out stress performance must be equal or higher than Powers SDHCC41016.
- ※ Minimum length of 50 mm from the tip of thread to the head is recommended.
- ※ CounterSunk (CSK) head screw is recommended for putty and touch-up paint finish.