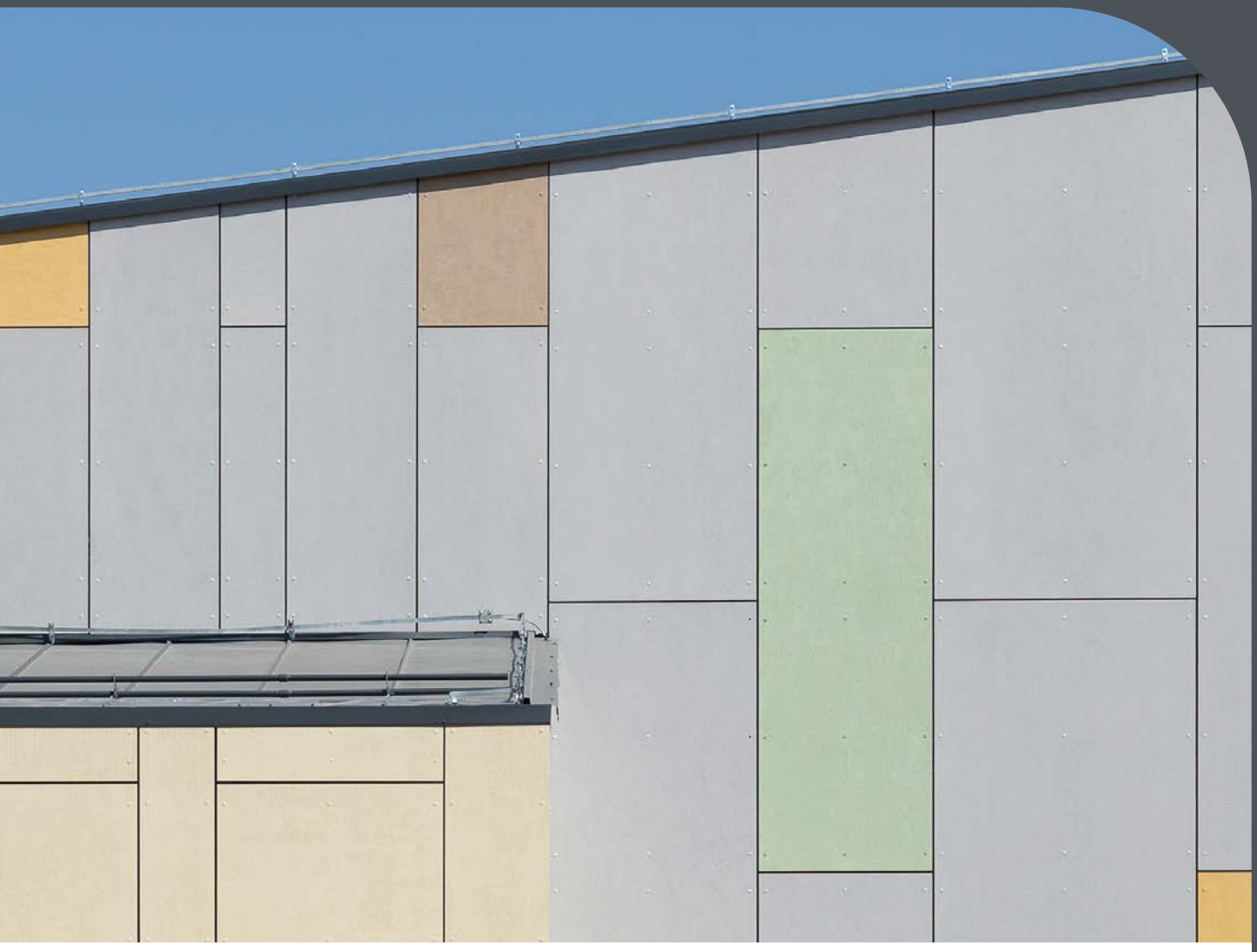
vetérro®

HIGH-DENSITY PRE-FINISHED FIBRE CEMENT



INSTALLATION SEQUENCE GUIDE

VETÉRRO® BENEFITS

DURABILITY & PERFORMANCE

- Durable and weather resistant
- UV stable for lasting colour and finish
- Long-lasting with minimal maintenance
- Crack, paint, and sealant–free solution
- Resistant to living organisms (termites, fungi, rot, bacteria, algae)

SAFETY & COMPLIANCE

- Non-combustible and impact resistant
- High strength and proven performance

SUSTAINABILITY

- Sustainable, environmentally responsible material choice
- Rear-ventilated façade supports healthy building design
- Backed by Environmental Product Declaration (EPD – European manufacturer supplied)

DESIGN FLEXIBILITY

- Wide range of colours and finishes
- Enables creative, customised architectural expression
- Suitable for diverse applications and installation methods

SUPPORT & EXPERTISE

- Simple installation across all climates
- Nationwide distribution
- Local architectural, technical, and sales support

CONTENTS

WHAT IS A VENTILATED FAÇADE?

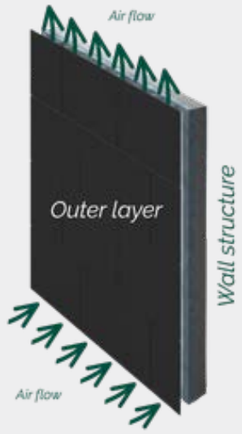
A ventilated façade, also known as a rainscreen façade, is a façade system which incorporates a continuous air gap between the insulation and chosen cladding, for the purpose of providing ventilation and assisting with improved thermal performance.

HOW DOES A VENTILATED FAÇADE WORK?

Natural air flow enters the cavity behind the façade panels. In the warmer months hot air within the cavity will rise, therefore needing to exit at the top of the system, helping to regulate the temperature of a building.

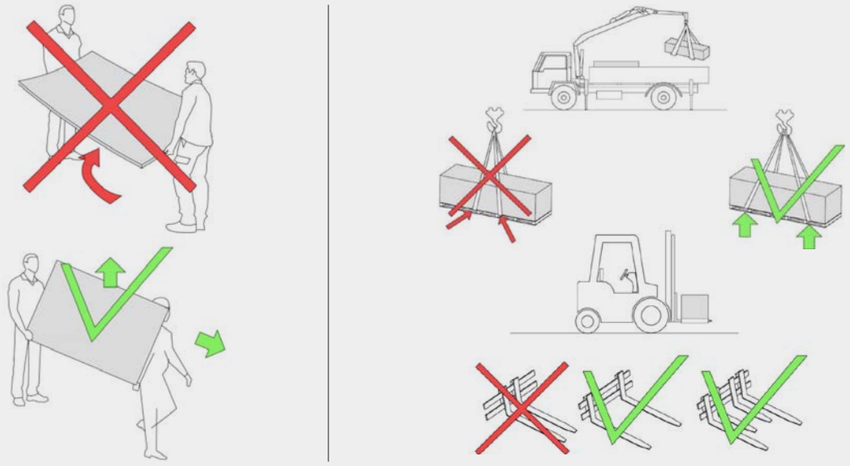
In the colder months the temperature between the building's external wall and the insulation is balanced, therefore there is less risk of condensation forming.

In the case of a standard drained and ventilated façade, in order for it to work efficiently it requires the air cavity to be open at both the top and bottom of the system which provides continuous air flow.



HANDLING PROCEDURE

Before any panel fabrication and installation takes place, it is first important to understand how each panel must be handled. The correct handling procedures of each panel must be followed to help avoid any potential damage happening to the panels prior to installation.



Damage to any panel during preparation, often unseen, can lead to installation issues when pressure is being applied at fixing points, and under wind pressure during day-to-day weather cycles.

***PLEASE REFER TO THE FULL HVG FACADES VETÉRRO® HANDLING PROCEDURES DOCUMENT FOR GUIDANCE BEFORE MOVING, UNLOADING AND HANDLING ANY MATERIAL RECEIVED.**

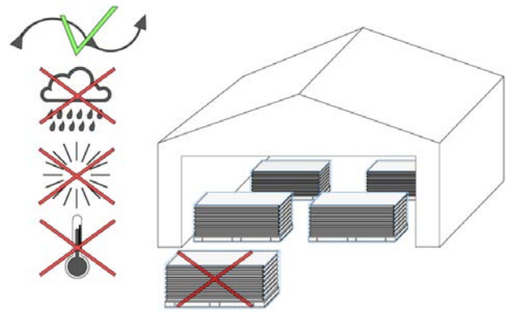
STORAGE

The panel packages must be stored in well-ventilated, indoor, and dry rooms, protected from atmospheric agents and sunlight.

If panels do get wet, immediately separate and stand them up to dry before restacking.

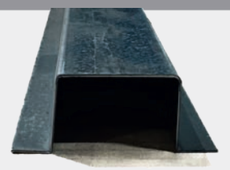
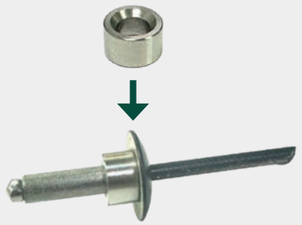
The panels must be stored on their own pallet, which must lie on a flat, dry surface.

For prolonged storage, various small cuts should be made in the surrounding shrink wrapping to help prevent moisture from building up beneath the surface of the packaging. The panels must never come into direct contact with the ground. During this storage phase, condensation, rain, or stagnant water may permanently damage the panels.

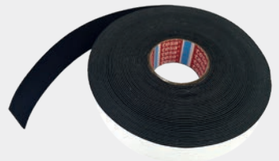
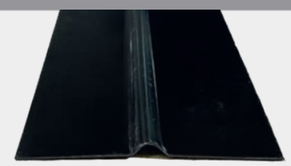


***REFER TO THE HVG FACADES HANDLING PROCEDURES DOCUMENT FOR INFORMATION RELATING TO HOW PALLETS CONTAINING PANELS MUST BE STORED WHEN NOT UNDERCOVER.**

REQUIRED ACCESSORIES

PRODUCT	DESCRIPTION	SIZE / QTY
Fibre Cement Saw Blade		
Supplied by others		
9.5mm Fibre Cement Drill Bit for Drilling Holes in Panels		
Supplied by others		
Vetérro® Intermediate Top Hat		
	Metal top hat installed vertically for intermediate sheet support.	50mm x 35mm / 3600mm or 6000mm length
Vetérro® Joining Top Hat		
	Designed to span vertically across the building structure to support the façade panels at vertical joints.	120mm x 35mm / 3600mm or 6000mm length
Vetérro® Stainless Steel Rivet		
	– Used to face fix Vetérro® panels – Colour–coded to match panel – Entire range of rivets come with washers attached	16mm x 5mm x 18mm
Vetérro® Stainless Steel Fixed Point Sleeve		
	Fixed point rivet sleeves are placed over rivets and the rivet is then inserted into the pre-drilled top hat. These must be installed prior to the sliding points. Refer to HVG Facades for correct locations of fixed point rivets. **These must be installed prior to the sliding points.**	2 fixed point sleeves (in conjunction with a rivet) required per panel All remaining rivets are to be installed without a fixed point sleeve
Vetérro® Rivet Centralising Tool		
	For use when pre-drilling top hats to accept Vetérro® rivets. Ensures that the 5.1mm hole in the top hat is central inside the panel's 9.5mm holes.	N/A

REQUIRED ACCESSORIES

PRODUCT	DESCRIPTION	SIZE / QTY
Vetérro® Top Hat Drill Bit		
	For use when pre-drilling top hats to accept Vetérro® rivets. Used in conjunction with the Vetérro® Rivet Centralising tool.	5.1mm x 85mm
Vetérro® Rivet Gun Nose Piece		
	Provides correct spacing of the rivet head from the panel to help prevent damage to the rivet head and panel.	N/A
Vetérro® Gasket Tape		
	Assists with reducing vibration of panels against the framework. Also hides the appearance of the framework between panels. Assists with movement allowance. Required for all top hats.	12mm x 3.2mm – For intermediate top hats (50mm x 35mm) 48mm x 3.2mm – For joining top hats (120mm x 35mm)
Vetérro® Horizontal Backing Strip		
	Fixed horizontally to sub-frame behind panel joints.	65mm x 16mm / 2990mm length

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INSTALLATION SEQUENCE

1 PANEL CUTTING

1. Panels should be cut with a machine in a well-ventilated factory space
2. Safety measures when cutting panels should include;
   a. Using cutting equipment with dust extraction to avoid dust inhalation
   b. Ensure that you are wearing correct protective equipment such as;
      i. Protective clothing
      ii. Safety goggles
      iii. Appropriate dust mask and respirator
3. Ensure that the correct panel handling procedures are adopted
4. Place panels face down onto a clean, flat and fully supported surface
   a. Do not slide panels on/off table
   b. Always use two persons to place and lift panels
   c. Ensure that the surface will not scratch the panels
5. Ensure that the panels cannot vibrate or move when being cut
6. Each saw blade has a recommended RPM. It is imperative that the chosen blade is compatible with the saw, in order for the saw to safely reach the desired RPM
7. Saw blade is to reach 5mm beyond panels

FIGURE 1
SAW BLADE

8. It is recommended that the panel edge surfaces are smoothed using a very light sandpaper after being cut, as well as removing any small imperfections
9. After cutting any panels, any dust must be removed, as the dust can eventually stain panels if left to bake in after a period
   a. Dust on dry panels can be removed by using a microfibre cloth
   b. A soft brush is recommended for dust on a damp panel, before drying the panel immediately

2 EDGE TREATMENT

– Vetérro® Lusso panel edges **do not** require re-sealing after being cut, making the fabrication process highly efficient and less expensive.

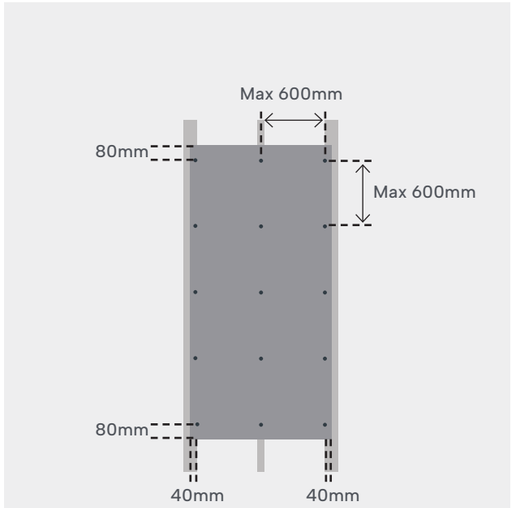
3 PANEL HOLE DRILLING

– Place panels face up on a clean, flat and fully supported surface
– Carefully mark out each hole location
  • Top hats at 600mm centres
  • All recommended locations including top hats and edge distances as recommended in the HVG Facades Vetérro® drawings suite
  • Please see Figure 2 for standard recommended edge distances;
    • 80mm from horizontal edge at top and bottom of panel
    • 40mm from vertical edge (side) of panel

These dimensions should always be verified by a qualified engineer to ensure that they provide suitable structural performance with respect to each project wind load serviceability requirements.

– Use a suitable high density fibre cement 9.5mm drill bit to drill panel holes in required locations as per HVG Facades Vetérro® drawings suite
– Use only one panel at a time
– Do not drill through multiple panels at the same time
– Drill hole at 90° angle
– Clean any dust or markings immediately

FIGURE 2
STANDARD RECOMMENDED EDGE DISTANCES



4 TOP HAT HOLE DRILLING

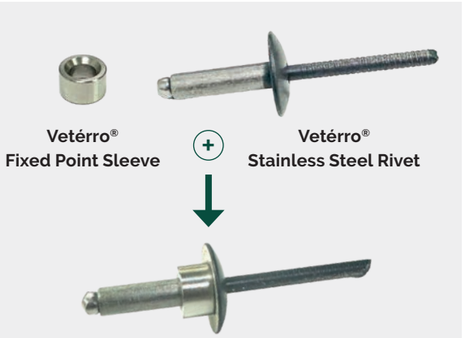
– Place the Vetérro® rivet centralising tool and accompanying 5.1mm drill bit into a drill

– Place the centralising tool into the pre-drilled 9.5mm panel holes after placing the panels against the top hat frame
– With the rivet centralising tool and drill bit inside the 9.5mm hole, drill a 5.1mm hole into the top hat
  • This ensures that the top hat holes are located in the centre of each 9.5mm panel hole

This is a critical step, as incorrectly located top hat holes can affect the expansion performance of each panel, leading to potential cracking of the panels.

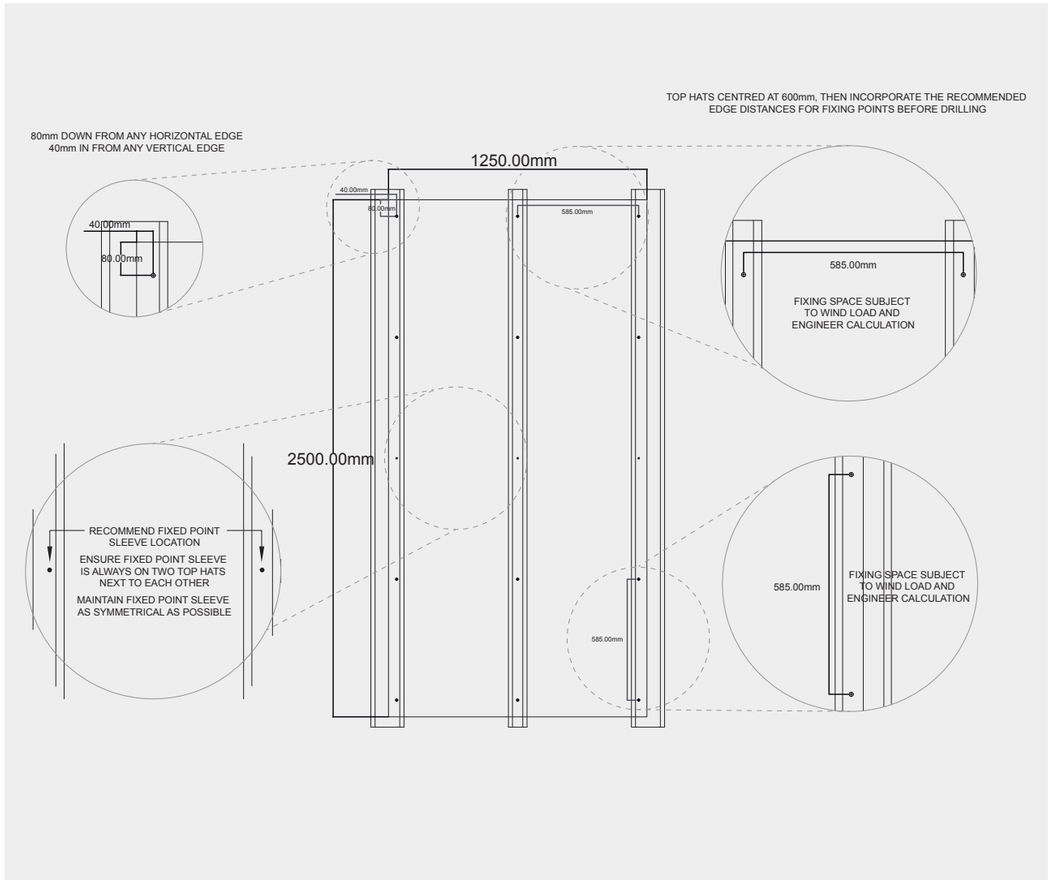
5 FIXED AND SLIDING POINTS

- Each panel will require a combination of rivets with fixed point sleeves and rivets without fixed point sleeves



- The rivets with fixed point sleeves must be installed first, with the locations as per the set-outs in the HVG Facades Vetérro® drawings suite (see Figure 3)
- Each panel requires two fixed points
  - One in the centre of each panel, and the other to the left of centre
- Two fixed points should never occur on the same supporting profile (top hat etc)
- Do not use temporary screws to pin the panel in location before placing the two fixed points
- Where smaller panels dictate that there are no central supports behind the panel, and only at the sides, the supporting frame will need to be amended so that two fixed points do not occur on the same profile

FIGURE 3
VETÉRRO® TYPICAL 2500mm SHEET FIXING LOCATIONS



6 RIVET GUN NOSE PIECE

- The Vetérro® rivet gun nose piece accessory must be used when installing rivets
  - The accessory helps to create a small gap between the drill and panel, therefore reducing the load and vibration against the panel surface
- Attach the Vetérro® rivet gun nose piece accessory to the drill

- Slide the fixed point sleeve over the rivet stem

- Place the rivet into the rivet gun nose piece accessory
- Install into the panel
- Two rivets with fixed point sleeves per panel only
- Place rivets horizontally in line with fixed point rivets first, then continue vertically (up/down)
- All other rivets (without sleeves) will act as sliding points
- Do not apply excessive pressure to the panel when riveting
- Use the rivet gun nose piece accessory to install the remaining rivets without sleeves
- The fixed point sleeves will help to hold each panel in place whilst the remaining rivets (without fixed point sleeves) are installed

7 SUPPORT FRAMING

- HVG Facades recommends using galvanised steel top hats
- Intermediate top hats (behind the centre of the panel) to be 50 x 35mm
- Joining top hats (where one panel meets another) to be 120 x 35mm
- Minimum recommended BMT (base metal thickness) = 1.15mm

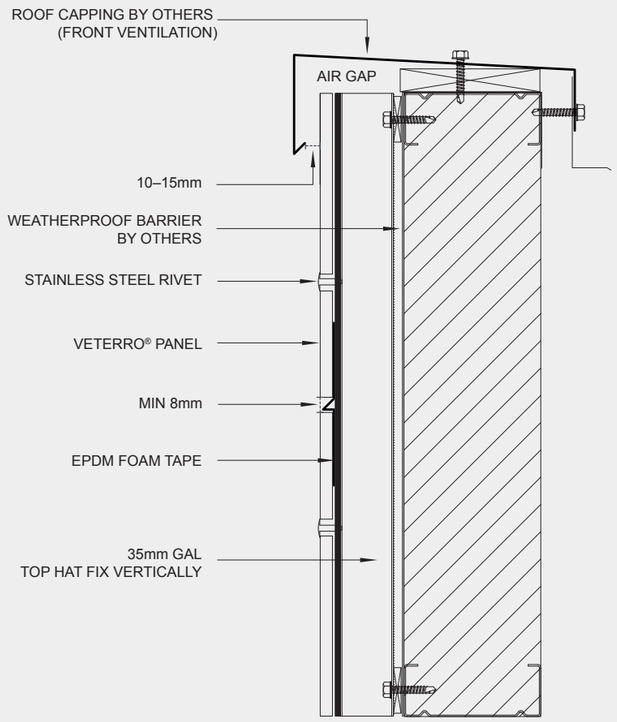
The Vetérro® system has been tested using the materials referenced above, it is recommended that any departure from those should be verified by a qualified engineer to determine suitability based on specific load and performance requirements.

8 FRONT VENTILATION

- In order for ventilated façade systems such as fibre cement to perform as expected, adequate ventilation must be provided at each and every joint to allow for a stack-effect
  - This includes around window openings etc
- Air must be allowed to enter at the base of each façade and exit at the top
- The air gap dimension will usually be determined by the height of each elevation, as well as panel colour and size
  - For example, a minimum of 10-15mm at the top should be provided for elevations up to and including 4 metres
- Consideration for air gaps at the top to be larger than those at the base to help allow warmer air to exit is recommended
- This dimension should increase as the elevation height increases
- Darker and larger panels typically also require larger ventilation gaps at the top, more so when panels terminate at soffit junctions
- HVG Facades always recommends verifying this detailing with a qualified engineer
- Of course, minimum gaps between each panel per the HVG Facades Vetérro® drawings suite must also be observed

FIGURE 4

TYPICAL CAPPING DETAIL – FRONT VENTILATION

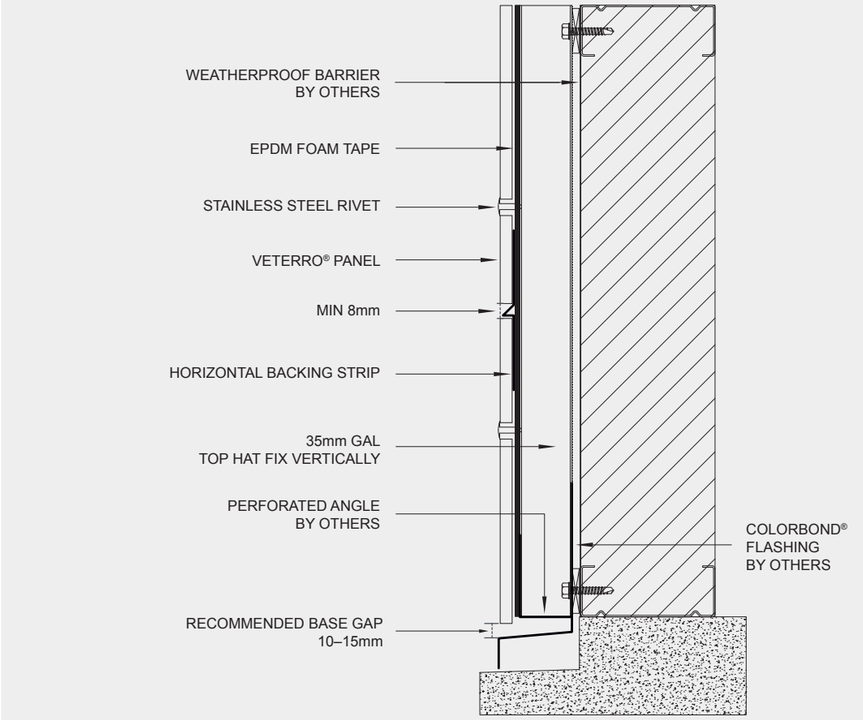


9 BASE DETAIL FOR VENTILATION

- A minimum of 10mm should be provided for elevations up to and including 4 metres. This dimension should increase as the elevation rises
- For applications where moisture ingress into the cavity at the base is likely to occur, consideration should be given to increasing the height of the air gap significantly
- Depending on the circumstances, gaps of up to 150mm should be considered for applications where the base of the panel terminates within close proximity to a surface where moisture ingress is a risk
- If a perforated profile is used at the base to resist birds or vermin entering the cavity, then this is likely to affect the overall ventilation volume
- Consideration should be given to increasing the depth of the cavity to offset the potential lack of adequate ventilation in this case

FIGURE 5

TYPICAL BASE DETAIL



10 PARAPET DETAIL FOR VENTILATION

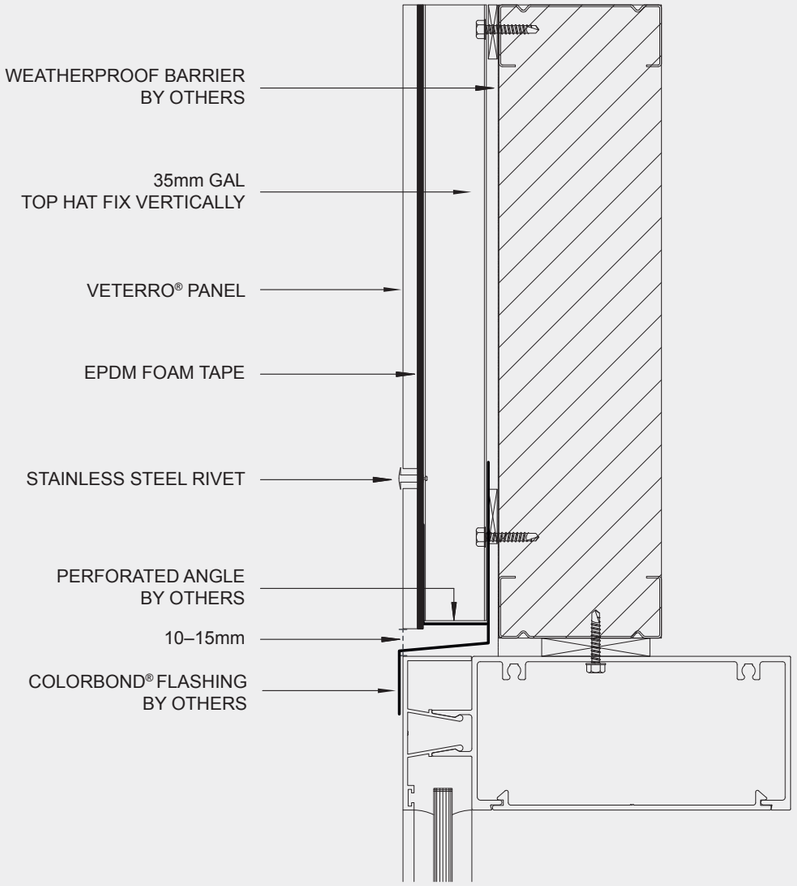
- As with the base detail, adequate ventilation must be provided at the top of each elevation
- Ideally the air gap at the top will be larger than that at the base, allowing greater capacity for warmer air to exit
- Gaps between a parapet flashing and the face of each panel should be up to 50mm, depending on the overall height of each elevation

11 WINDOW DETAIL FOR VENTILATION

- A minimum 10-15mm gap should be provided around all sides
- As with parapet detailing, flashing should be up to 50mm from the face of each panel

FIGURE 6

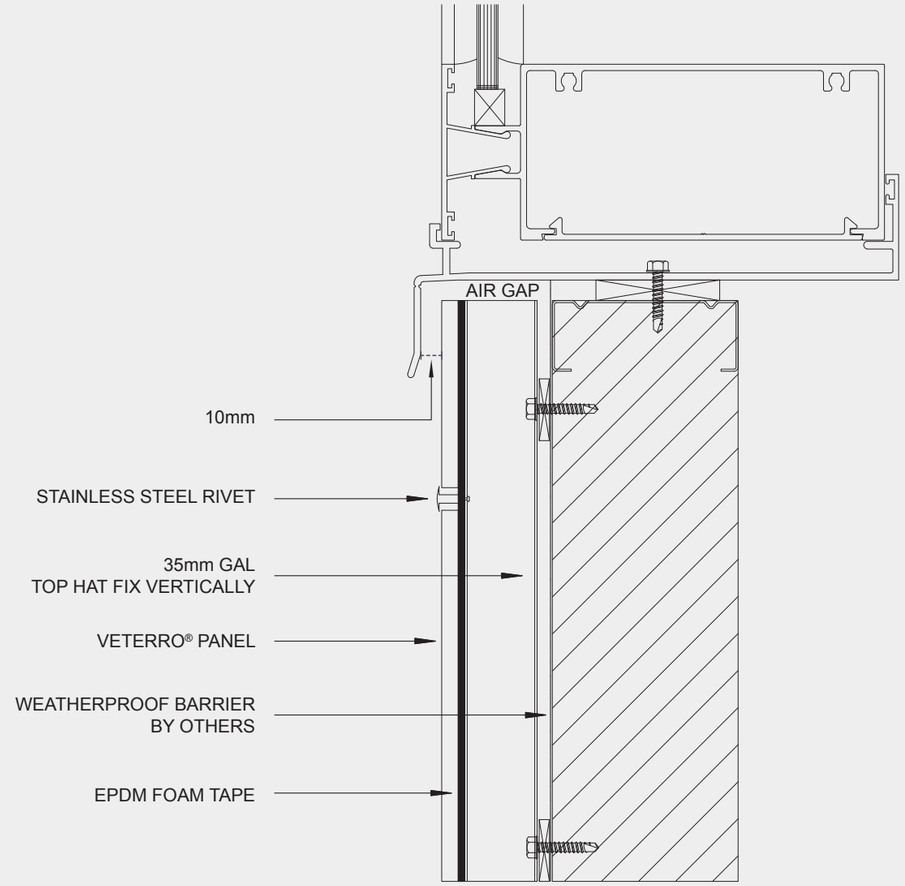
TYPICAL WINDOW HEAD DETAIL – FLUSH



12 WINDOW DETAIL FOR VENTILATION

FIGURE 7

TYPICAL WINDOW SILL DETAIL – FLUSH

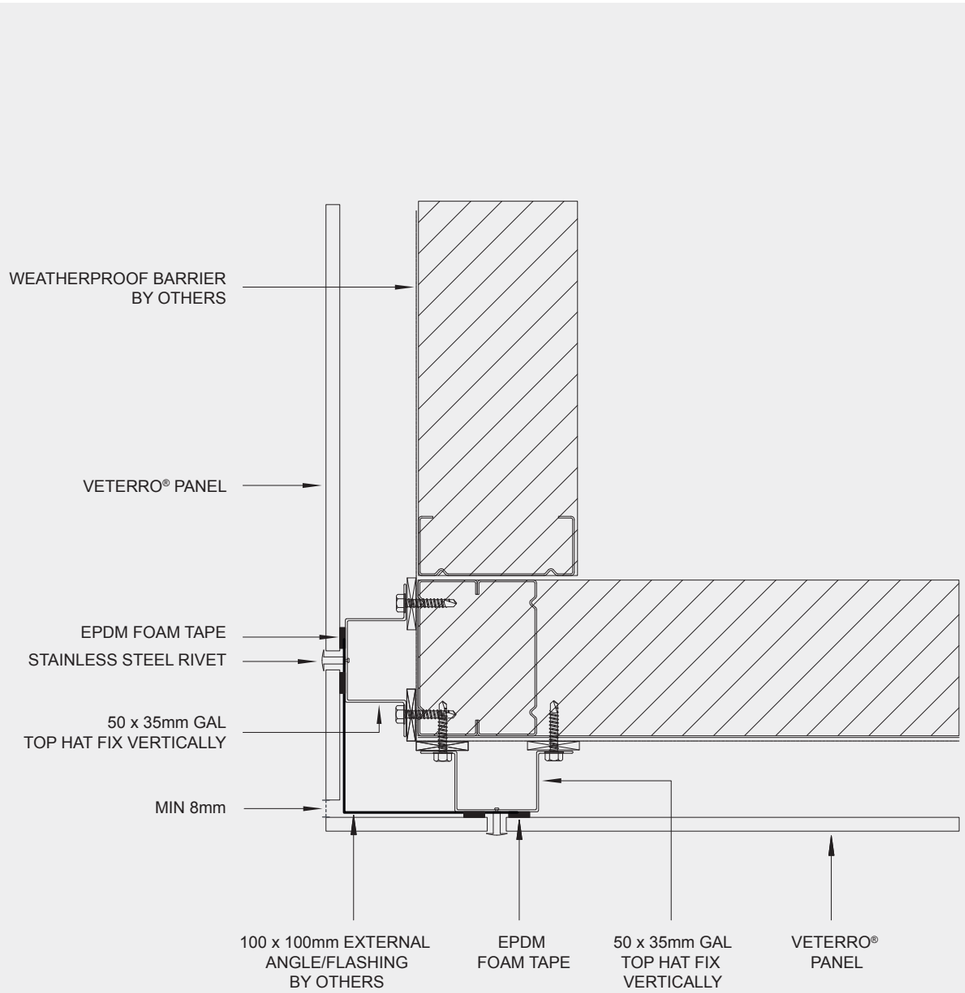


13 EXTERNAL CORNER FIXING

- Typically large aluminium angles such as 100mm x 100mm are used behind panels at 90 degree corners to support the panels
- If the large angle cannot be fixed to the wall, panels must be supported by fixing to a top hat 300-350mm from each corner

FIGURE 8

TYPICAL EXTERNAL CORNER DETAIL

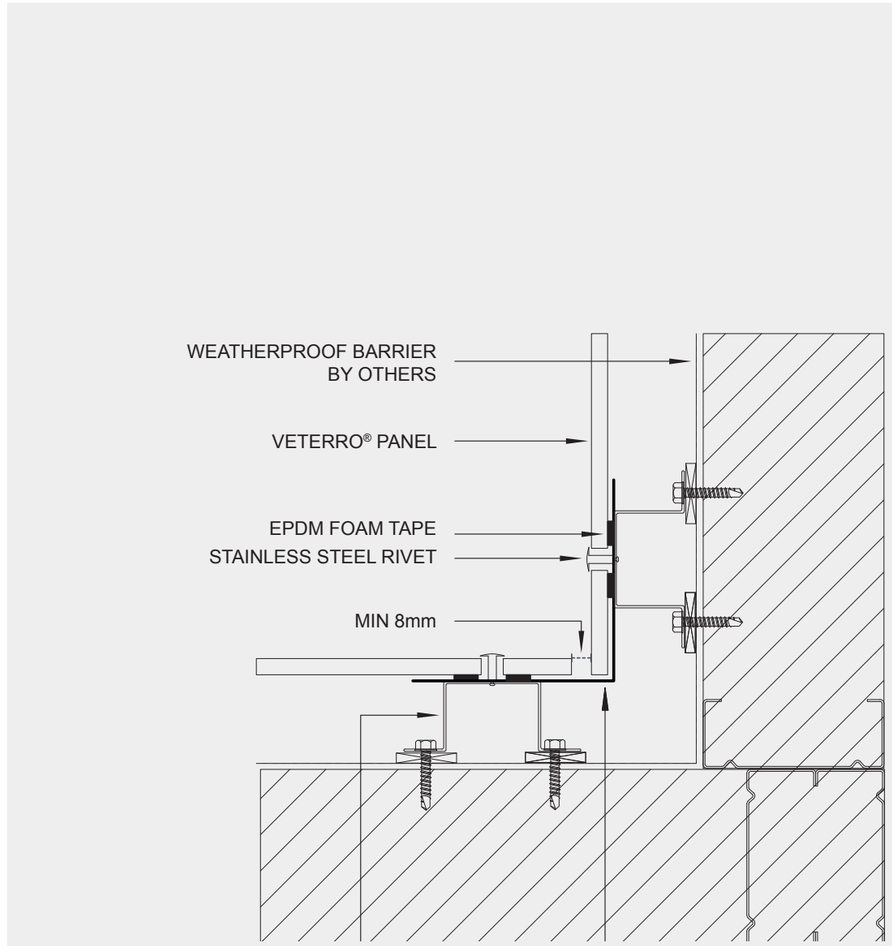


14 INTERNAL CORNER FIXING

- Typically use a large aluminium angle such as 100mm x 100mm to support the panel edges at 90 degrees

FIGURE 9

TYPICAL INTERNAL CORNER DETAIL

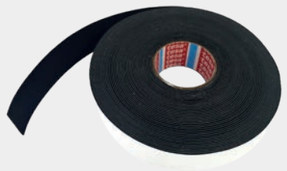


15 PANEL JOINTS

- A minimum of 8-10mm is always recommend between panels
- Sealants or any similar method of filling the gaps between panels is never recommended by HVG Facades
  - This negates the design intent of an open or express joint ventilated façade and can lead to serious performance issues
  - HVG Facades will not provide warranties for Vetérro® systems installed using this method

VERTICAL JOINTS

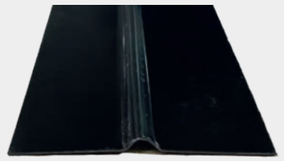
- For vertical joints it is recommended to install foam tape running down each top hat prior to the fitting of panels
  - Usually a black foam tape
  - HVG Facades stock the following tape options;
    - 48mm x 3.2mm
      - For joining top hats (120mm x 35mm)
    - 12mm x 3.2mm
      - For intermediate top hats (50mm x 35mm)



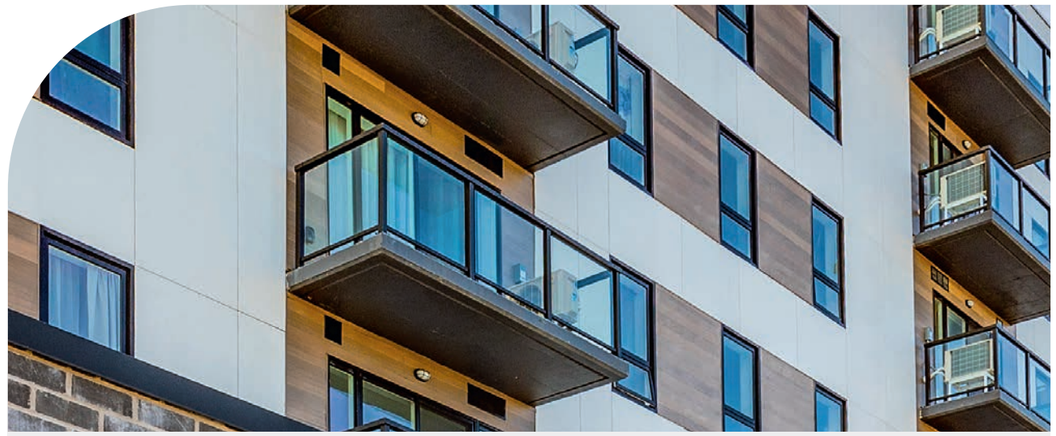
- The tapes provide the following functions and benefits;
  - hides the appearance of the top hat
  - helps to resist vibration of the panels against the frame
  - helps to accommodate the movement of the frame
  - helps to resist moisture ingress at joints

HORIZONTAL JOINTS

- For horizontal joints, a continuous thin gauge black aluminium strip can be used to hide the appearance of each top hat
  - HVG Facades stock a 65mm x 16mm x 2990m profile



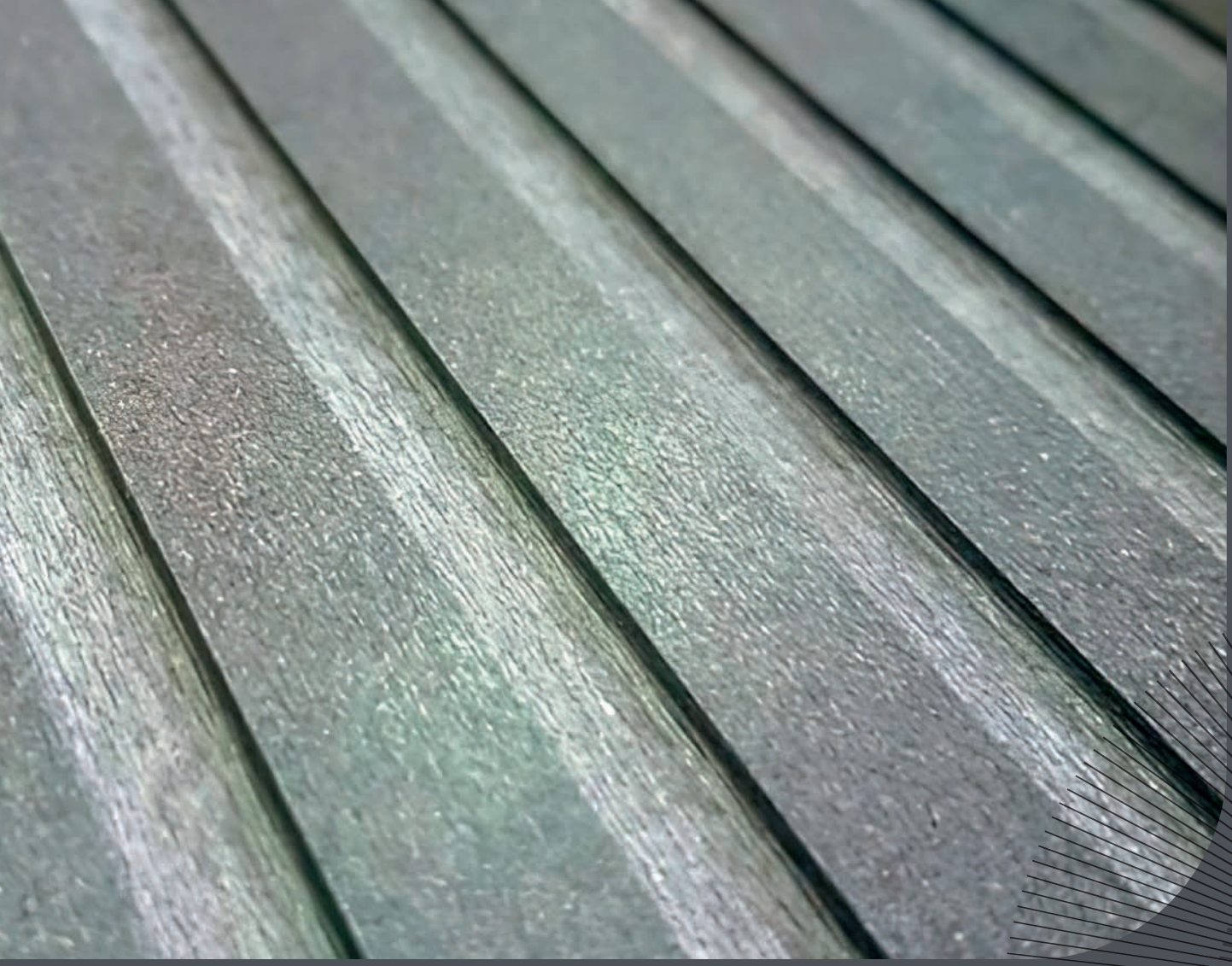
- Each profile has a raised centre
- Fix each aluminium strip profile below each installed row of panels so that the raised centre of the profile is facing outward
- Repeat panel and aluminium profile installation accordingly
- Each horizontal joint will now have a uniformed appearance without the appearance of the top hats



KEY DESIGN PRINCIPLES AND FOCUS POINTS

1. Consult with HVG Facades before finalising design
2. Minimum cavity depth of 35mm
3. Minimum 8-10mm ventilation gap between panels
   - Ideally 10mm is preferred, particularly for darker and larger panels
4. Minimum 10-15mm ventilation gap at the base of each elevation
   - Where moisture ingress is likely, this gap needs to be increased significantly
   - Grass, gardens etc
5. If a cavity closer is necessary for the base of any elevation;
   - choose perforated profiles
   - avoid using simple weephole applications with minimal air gaps
   - consider increasing depth of cavity when using perforated profiles

   By default the air flow is compromised already and may require balance
   - Ideally create as large a gap as possible
   - Much larger gaps are required for the following arrangements;
     - Darker and/or larger panels
     - Panels which terminate at soffits
       - Avoid warm to hot air becoming trapped in the roof space
       - Never extend panels beyond the soffit junction and into a roof space
6. Review panel hole and fixing point locations prior to cutting and drilling
7. Ensure that only two fixed points are used per panel
8. Adequately flash the top of any elevation to stop moisture ingress
9. Always use recommended Vetérro accessories to achieve an efficient and successful install
10. Always refer to the HVG Facades Handling and Procedures document before any handling of the product



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