FIBRE CEMENT SOLUTIONS

ETERPAN®
FACADE PANEL

ETERPAN® Facade Panel

Technical Specification

1 Application Details

1.1 APPLICATION

When installed to correct specifications, ETERPAN® Facade Panel offers hard-wearing, expressed joint solutions for a wide range of commercial and residential applications.

For the specifier

Before beginning your project, please ensure that the information detailed below is appropriate for the application. Please undertake specific design and detailing for areas which fall outside the following specifications.

For the installer

Please ensure you follow the design, moisture management principles, associated details and material selection provided by the designer. The details outlined in this document must be adhered to in accordance with the specifier's specifications.

1.2 DETAILS

A range of typical ETERPAN® Facade Panel construction details are provided in this document's Details section. Dimensions are shown in millimetres unless specified.

2 Design Stage

2.1 RESPONSIBILE PARTIES

The responsibility of ensuring the details in these technical specifications are suitable for the intended application is that of the specifier or other party assigned to the responsibility of the project.

The responsible party agrees to deliver on all appropriate NZBC requirements. Any penetration through the flexible underlay/rigid air barriers must be appropriately flashed and weatherproofed. The other materials and components used to manage moisture must be installed to manufacturers' specifications and comply with the relevant NZBC standards.

The designer/specifier must ensure all reference documents and standards are current throughout the entire design and installation process. The designer must identify any moisture-related risks associated with the particular building design. The design and construction must effectively manage the external moisture.

2.2 SURFACE CLEARANCES

The lower-edge clearance for cladding on paved/unpaved ground and finished floor level must comply with section 9.1.3 of 'E2 /AS1' throughout the life of the building.

ETERPAN® Facade Panels must overhang the bottom plate of a concrete slab by a minimum of 50mm.

ETERPAN® Facade Panel must maintain a 100mm clearance from paved grounds and 175mm from unpaved grounds. On roofs and decks etc. a minimum clearance of 50mm must be maintained.

Installed ETERPAN® Facade Panels should not remain in contact with standing water.

2.3 MANAGEMENT OF MOISTURE

The specifier must identify all moisture-related risks of any particular building design.

All wall construction designs must effectively manage moisture content, considering both the interior and exterior environment of buildings, especially in buildings with a higher risk of wind-driven rain penetration or that are artificially heated or cooled.

Walls must include all provisions stated by NZBC Acceptable Solution 'E2/AS1-External Moisture'.

All wall penetrations, junctions, openings, connections, windowsills, heads and jambs must be appropriately waterproofed with flashings.

Materials, components and installation methods used to manage moisture in external walls, must comply with NZBC requirements and all other applicable regulations.

Flexible sealant in vertical panel joints must be applied as detailed in this technical specification

For projects within the scope of E2/AS1 where the walls are higher than two storeys, a horizontal flashing joint after two floors must be applied to drain the cavity.

The free flow of moisture must never be restricted by the addition of chimneys, pipe penetrations or other fixtures.

2.4 STRUCTURE

Timber Framing

For residential projects, timber framing must be delivered in accordance NZS 3604 (Timber- framed Buildings). Should the framing be provided as per a specified engineering design, its rigidity must be no less than the minimum rigidity stated in NZS 3604.

For framing-specific engineering design, please refer to NZS 3603 and AS/NZS 1170 .

If the timber frame walls are longer than 12m, allow for construction joints to accommodate for timber shrinkage, deflection or any other movement.

3 Framing Specifications

3.1 GENERAL

ETERPAN® Facade Panels have been designed to fix to timber-framed structures. Fixing to any other materials is subject to a specific engineering design.

Maximum stud spacing centres = 600mm

Maximum Nog/dwang spacing centres = 800mm centres (when studs are at 600mm centres)

3.2 TIMBER FRAMING

Dimensions

Minimum required stud width = 45mm.

Structural Grade

The structural grade of timber framing must meet the minimum specifications outlined in NZS 3604.

Durability

All external framing must be treated to a minimum of H1.2. For higher treatment levels, please check chemical treatment compatibility with other materials. The NZBC Acceptable Solution B2/AS1 'Durability' has more information about these durability requirements.

Treatment and Moisture Content

Refer to NZS 3602 (Timber and Wood-Based Products for use in Buildings) and NZS 3640 (Chemical Preservation of Round Sawn Timber) for minimum timber treatment selection and treatment requirements. For further guidance on timber selection please refer to the framing manufacturer's specifications.

Frame Stability

All framing must be rigid of its own accord and not rely on cladding panels for strength.

Timber set out and framing sizes should comply with NZS 3604.

If gable end trusses sit on the external wall frame top plate, frame size must be in follow truss design and specification supplied by the frame and truss manufacturer/supplier supported by an independent design producer statement.

4 Ventilation and Moisture Control

4.1 VENT STRIP

Using the drained and ventilated cavity construction method, a uPVC cavity vent strip must be installed at the bottom of all walls. Vent strip openings must be kept clear of obstructions to allow free drainage and adequate ventilation of cavities. The uPVC vent strip has an opening area of 1000mm2/m length.

4.2 FLASHING

All wall penetrations, junctions, openings, connections, windowsills, heads and jambs must be appropriately waterproofed with flashings prior to installation. Refer to moisture management requirements for more information.

5 Panel Installation

5.1 PREPARATION

ETERPAN® Facade Panel and cavity battens must be kept dry while being stored and must be dry at the time of their installation. Any panel edge that has been cut on site must be sealed with an appropriate sealer compatible with the finish coat before installation e.g. Resene® Quick Dry or Dulux AcraPrime 501/1.

Make sure all timber framing is flat and flush to ensure a flatness of the panel surface. All panels should sit flat against the battens to prevent drumminess.

If an ETERPAN® Facade Panel is cut any smaller than 1200 x 1200mm, or cut to narrower width eg. 600mm or 400mm and fixed horizontally: apply a continuous 6mm thick bead of Sika® Sikaflex-11FC or Bostik® Seal N Flex®-1 adhesive sealant to the batten to adhere the panel to it. Panels must be pressed firmly against the cavity batten during fixing.

5.2 ETERPAN® FACADE PANEL INSTALLATION

Table 3

ETERPAN® Facade Panel fixing		
Fixings to be used with adhesive sealants	**Suitable up to design wind pressure kPa (ULS)**	**Fixing to cavity battens centres (mm)**
25mm x 10g counter sunk screw class 3/4 or stainless steel	2.5 (> VH wind zone)	200
25mm x 8-15g OR Pan/Wafer head exposed screw class 3/4	2.5 (> VH wind zone)	200

Countersunk Screws

Fixing holes must be pre-drilled on the ground with a counter-sunk drill bit before installation. Use 65mm x 8-10g countersunk screws for this installation. Screw heads must be countersunk to a depth of 2mm maximum below the panel surface. Apply a 6mm thick continuous bead of Sika® Sikaflex-11FC or Bostik® Seal N Flex®-1 adhesive sealant over the cavity batten before fixing the ETERPAN® Facade Panels.

Set drills to a low torque level to ensure screws are not overdriven into the cavity batten. Screws should be manually tightened before epoxy filling is applied.

It is mandatory to use Allnex Epoxy Fairing Cream to fill countersunk screw holes. Allow the epoxy to cure as per product instructions, sand smooth with 60/80 grit sandpaper and prime.

Exposed Head Screws

Use a masonry bit to pre-drill your ETERPAN® Facade Panels.

A continuous, 6mm bead of Sika® Sikaflex-11FC or Bostik® Seal N Flex®-1 adhesive sealant should be run over the panel where it will come in contact with the cavity batten.

5.3 FASTENER DURABILITY

The durability of fasteners must comply with NZBC requirements. The requirements for fixing materials to be used in relation to exposure zones are specified in NZ3604 and are summarised in Table 3.

To ensure the durability of complete assembly, fasteners must be compatible with other materials they come in contact with.

If using steel framing, fasteners must be compatible. Check fastener manufacturers guidelines for more information.

5.4 ADHESIVE SEALANT

Polyurethane adhesive sealants Sika® Sikaflex-11FC and Bostik® Seal N Flex®-1have both been tested with ETERPAN® Facade Panels. These must be used as per the manufacturer's specifications. A continuous 6mm bead of sealant must be applied to the face of the cavity batten before fixing the ETERPAN® Facade Panel. An excessive amount of sealant is not recommended.

6 Panel Joints

A nominal gap of 10mm must be kept between fixed ETERPAN® Facade Panels at vertical and horizontal joints.

6.1 VERTICAL JOINT

Cavity battens are fixed over the studs and a vertical joint is formed over the batten.

A 10mm gap is required between the panels to form a vertical expressed joint. Once the installation of panels to cavity battens is complete, the joints must be sealed with a flexible sealant.

When ETERPAN® Facade Panel is laid horizontally, ensure that panel is the correct length for the vertical joint to be centred over the cavity batten.

6.2 HORIZONTAL JOINT

An aluminium 'T' socket or a Z flashing is used to form a horizontal joint between each ETERPAN® Facade Panel

All 'T' sockets need to be cut to the exact width of each panel. Two 6mm thick continuous beads of adhesive sealant are run over the bottom (short) portion of 'T' socket and the socket is then glued to the lower panel. The 'T' lip sits over the top edge of lower ETERPAN® Facade Panel.

When a horizontal joint using a 'T' socket is formed at the floor joist level, a cavity batten flashing is required at the cavity batten joint.

At internal and external corners a cavity batten corner flashing must be used. A horizontal joint flashing is required at every floor.

6.3 HORIZONTAL DRAINAGE JOINT

Wall cavities must be drained every two floors to allow adequate moisture ventilation and drainage.

6.4 EXTERNAL AND INTERNAL CORNERS

Cavity battens must be fixed into the corners to allow ETERPAN® Facade Panel to be fixed on each side of the batten. Ensure 200mm minimum wide polypropylene or flashing tape is applied to building paper over timber framing prior to any cavity battens being fixed.

Allow a 10mm gap between the panels to form a vertical expressed joint at the corners. Check the correct orientation of the batten for panel installation and a continuous 6mm bead of adhesive sealant has been applied between cavity battens. Alternatively, an aluminium box corner can be used.

7 Panel Finishing

7.1 PAINTING

It is mandatory to paint ETERPAN® Facade Panel to meet the durability requirements of the NZBC and the 15 year product warranty conditions. Ensure ETERPAN® Facade Panels are dry and free of any dirt or dust before painting. Panels must be painted within 90 days of installation. There is no restriction on the LRV of paint to be applied on the ETERPAN® Facade Panel.

To seal site-cut edges or sanded patches, use Dulux® AcraPrime 501/1 acrylic primer, Dulux 1 Step, or a similar product should be applied. The primer should be compatible with the paint to be used.

If panels have been fixed with brad nails, the nail heads must be finished flush with the panel surface. If required, the nail heads can be skimmed over with an exterior grade 2 part builders fill. The skimmed area must also be primed prior to site-applied finishing.

For site-applied finishes where brad nails or exposed head screws are used, FCS recommends at least two coats of high-build acrylic paint. Prepare the surface to the paint manufacturer's recommendations to adequately cover and conceal the panel fixings.

For site-applied finishes when countersunk screws are used, one coat of acrylic primer and two coats of high-build acrylic paint (total DFT not less than 150 microns) is recommended.

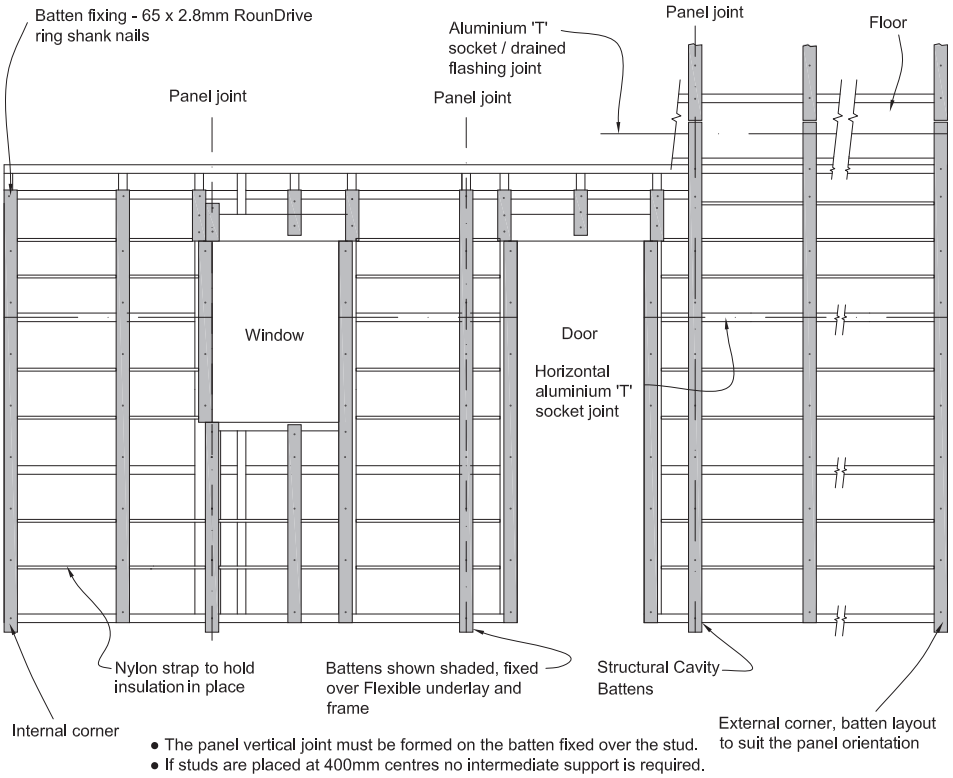
7.2 SEALANT

Sealant used must comply with the relevant requirements of the NZBC. Usage and application should meet the manufacturer's instructions. Check with the manufacturer before coating over sealant as some sealant manufacturers do not recommend coating over their product.

7.3 EPOXY FILLERS

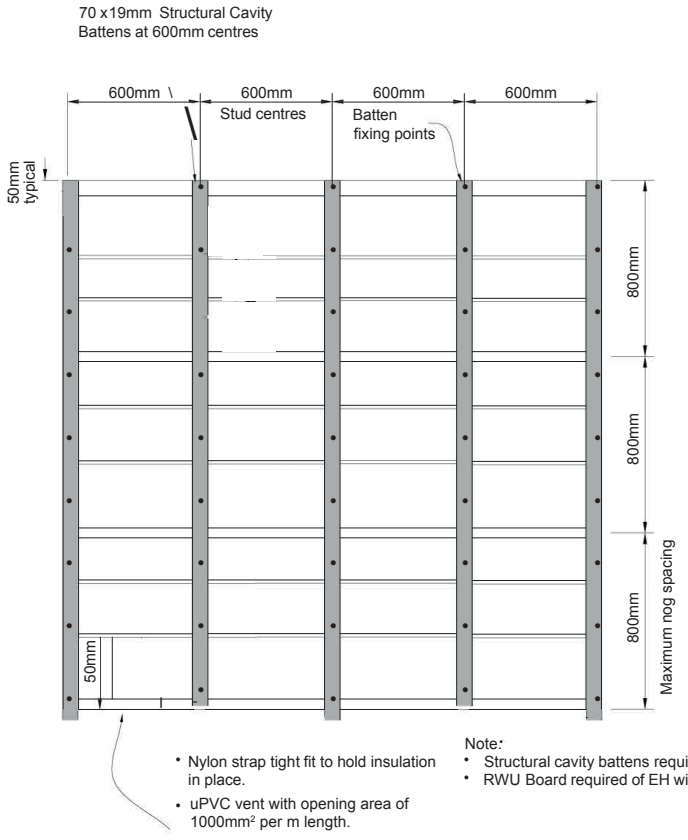
All countersunk screw holes must be filled with a two-part epoxy Allnex Fairing Cream epoxy filler. Screws and screw holes must be free of dirt and dry before filling. Sand epoxy fillers flush with the panel surface. Always refer to the epoxy manufacturer specifications before use.

Figure 1: Framing



- The panel vertical joint must be formed on the batten fixed over the stud.
- If studs are placed at 400mm centres no intermediate support is required.

Figure 2: Batten fixing



- Nylon strap tight fit to hold insulation in place.
- uPVC vent with opening area of 1000mm² per m length.

Note:
- Structural cavity battens required.
- RWU Board required of EH wind zone.

Figure 3: Panel layout options

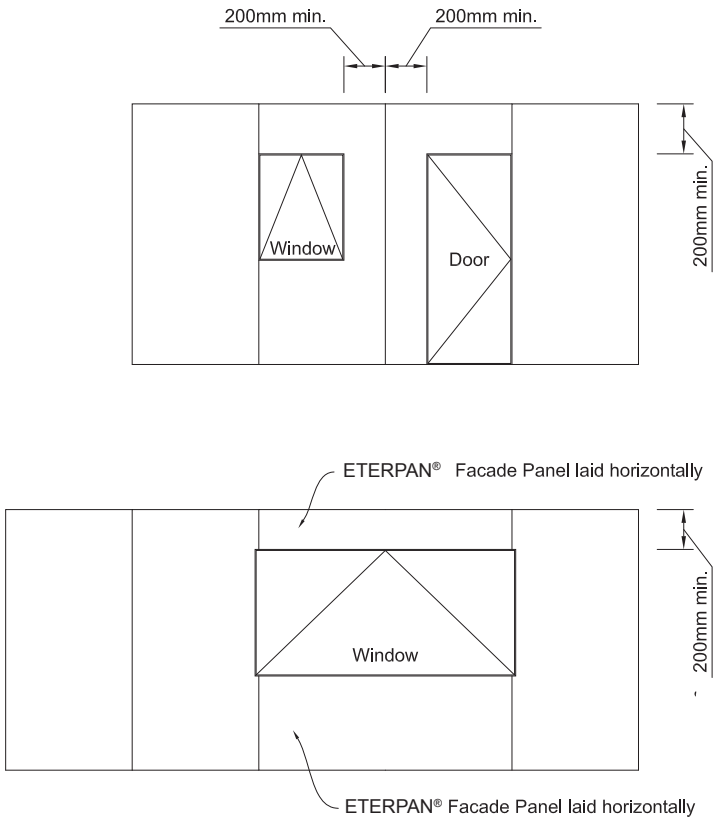


Figure 4: Panel fixing

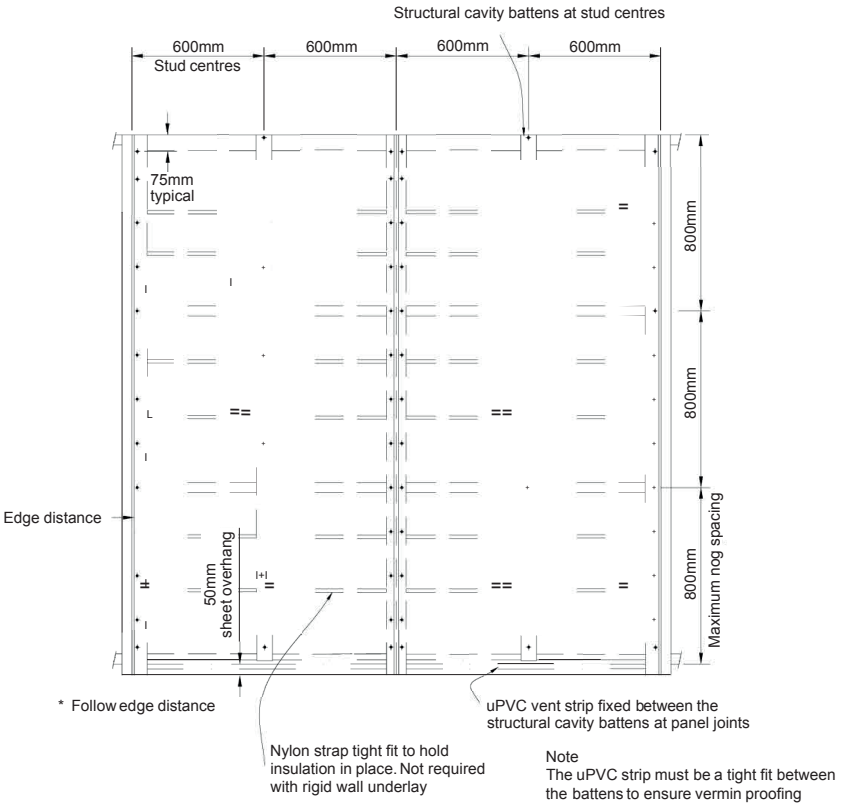
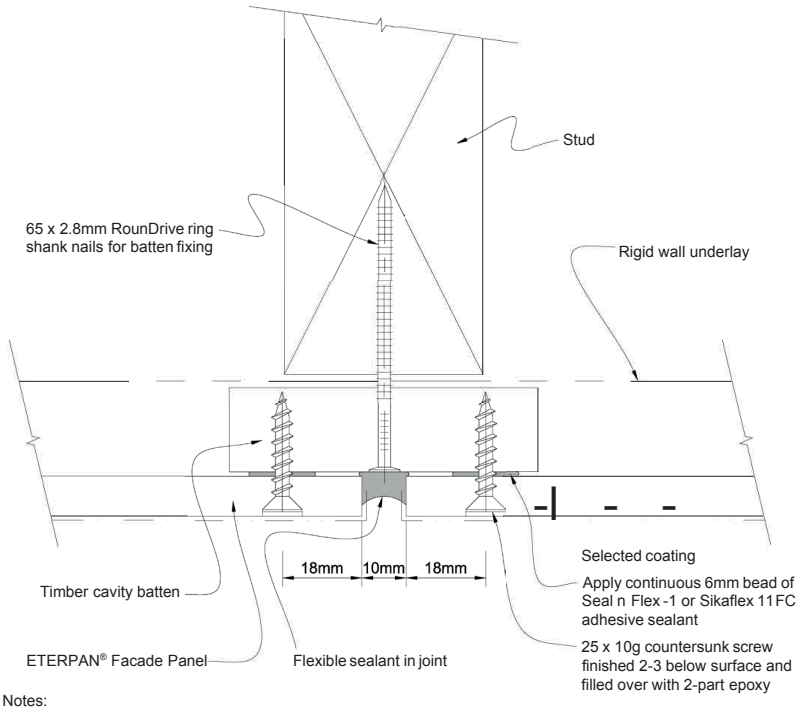


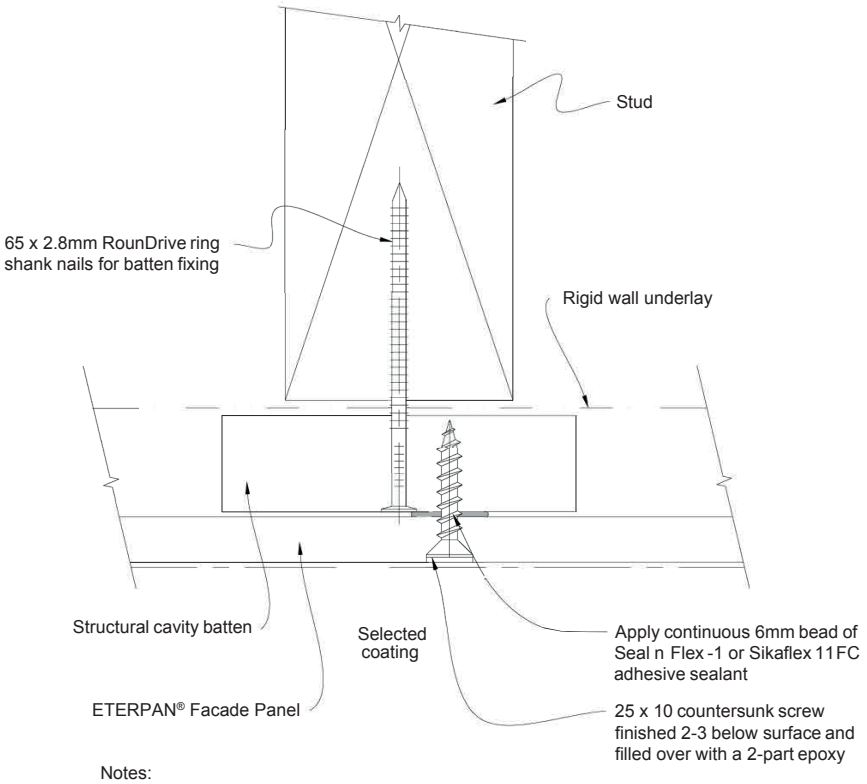
Figure 5: Alternative vertical expressed joint using countersunk screws



Notes:

- Ensure that a continuous 6mm bead of adhesive sealant is applied between structural cavity batten and ETERPAN® Facade Panel.
- Ensure that the required edge distance is maintained when fixing.
- Seal cut edges with a primer compatible with final coatings.
- Push panel hard against structural cavity batten.

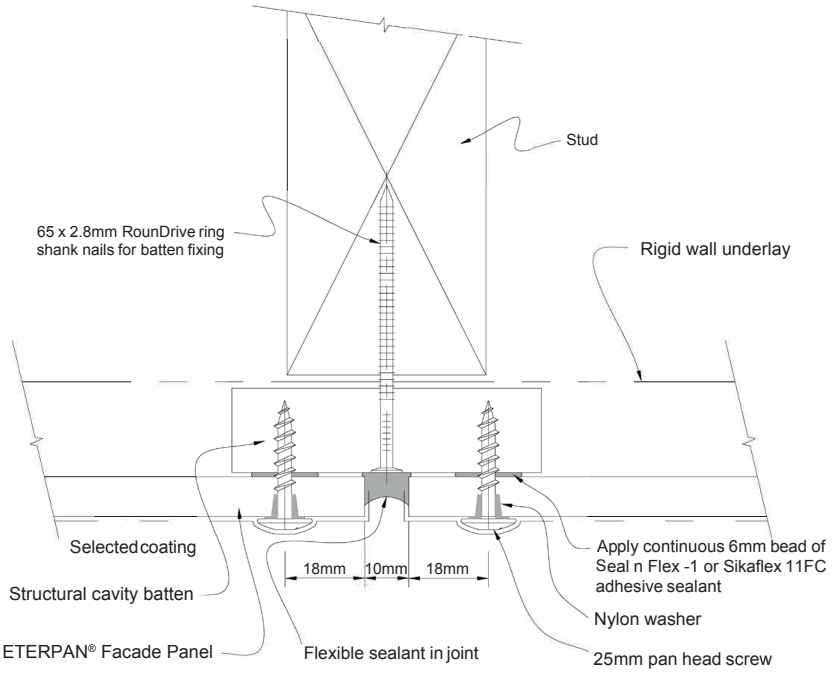
Figure 6: Alternative intermediate stud fixing using countersunk screws



Notes:

- Fix panel from the middle of the board outwards.
- Push panel hard against structural cavity batten.

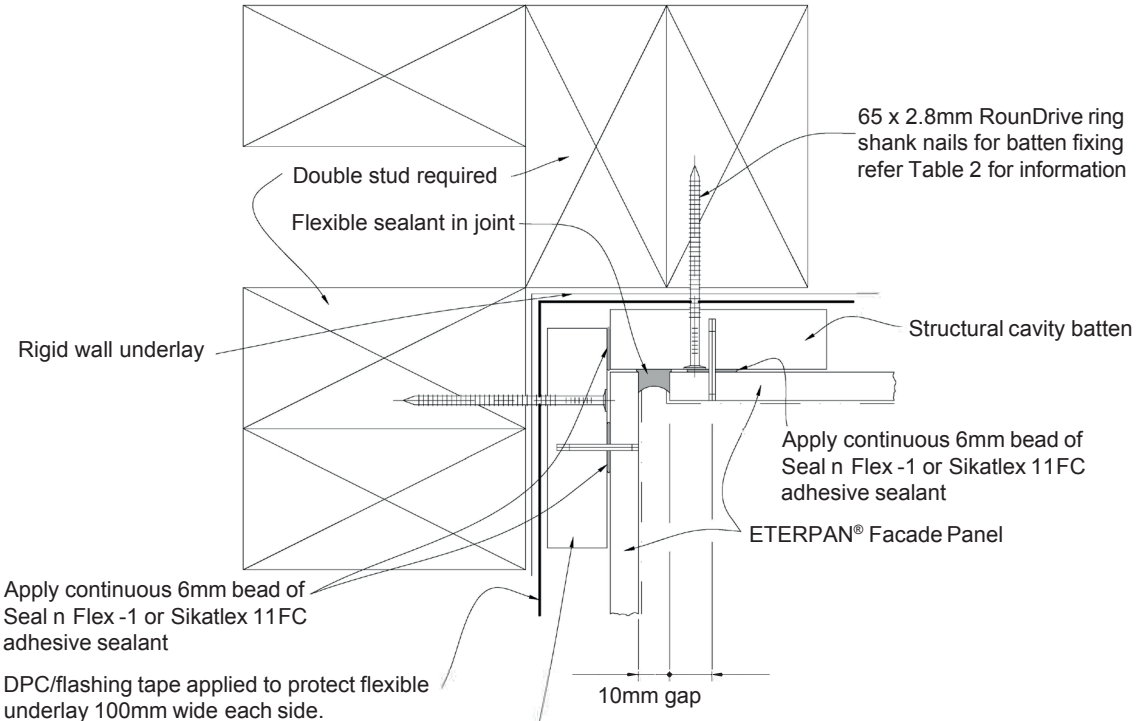
Figure 7: Alternative vertical expressed joint using exposed screws



Notes:

- Ensure that a continuous 6mm bead of adhesive sealant is applied between structural cavity batten and ETERPAN® Facade Panel
- Ensure that the required edge distance is maintained when fixing.
- Seal cut edges with a primer compatible with final coatings.
- Push panel hard against structural cavity batten.

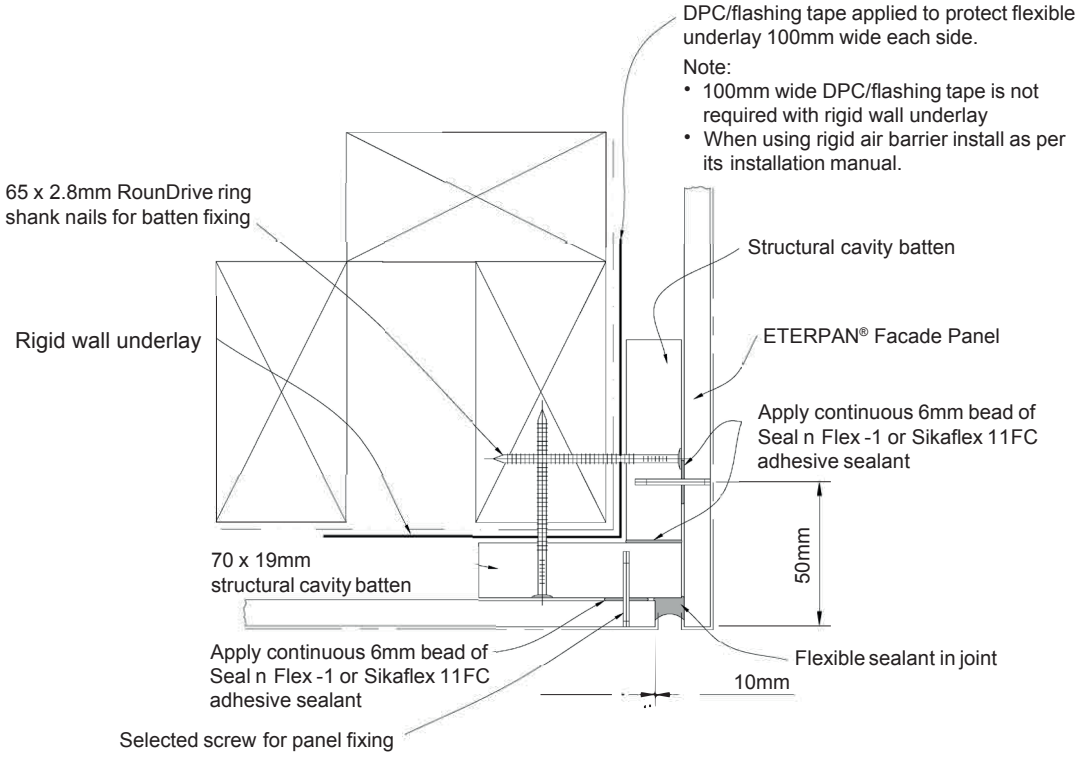
Figure 8: Internal corner



Note:

- 100mm wide DPC/flashing tape is not required with rigid wall underlay
- When using rigid wall underlay as per its installation manual.

Figure 9: External corner



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This ETERPAN® Façade Panel document is intended as a supplementary installation guide for the New Zealand market. Please refer to the ETERPAN® Technical Manual for a full guide on all other details. Available online **www.fibrecementsolutions.co.nz/documents**