

# VERTICAL TILING

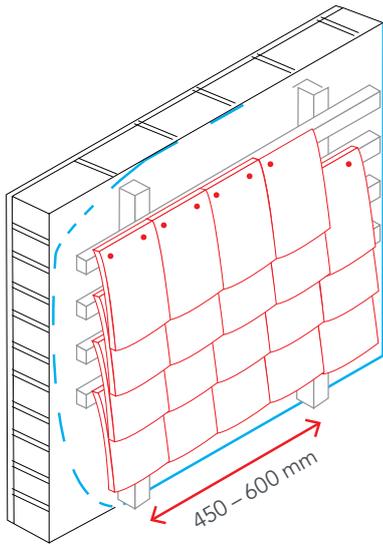


Figure 1: Detailing

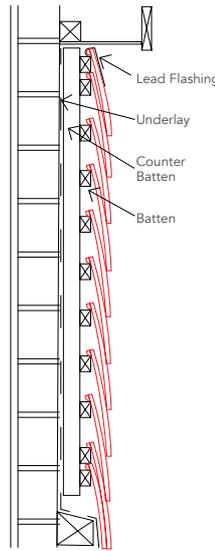


Figure 2: Side View

## DETAILING

Methods for securing battens and counter battens to a wall is influenced by the age and type of walling system.

Battens and counter battens shall be chosen for the following walling systems:

### Battens

- Timber/metal stud walling

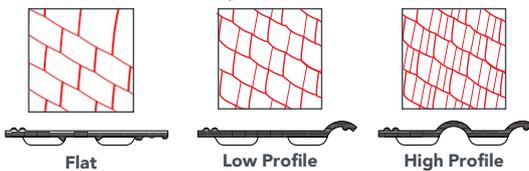
### Counter Battens (RECOMMENDED)

- Brick walls
- Block walls
- Concrete panels
- Stone masonry

### Roof Tile Profiles

Roof tiles come in a range of different profiles to provide texture and character to a building.

Common roof tile profiles include:



Note: The size of battens and counter battens shall be selected based on design vertical loading<sup>1</sup> and/or minimum waterproofing requirements.

## SOME OTHER VERTICAL TILES WE LOVE

TRADE SKILL LEVEL:



**Straight Bond:** Straight edged roof tiles can be used for curved structural frame application.



TRADE SKILL LEVEL:



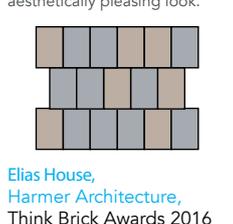
**Broken bond:** Ability to integrate seamlessly with a tiled roof.



TRADE SKILL LEVEL:



**Broken bond:** Multi-coloured tiles can be used to create an aesthetically pleasing look.



TRADE SKILL LEVEL:



**Broken bond & High profile:** Ability to integrate seamlessly with a tiled roof, brings texture to a wall.



## BACKGROUND

This fact sheet outlines the basic design principles and key considerations for vertically installing roof tiles on various walling systems. Tiled cladding is an excellent choice for homeowners as it provides a higher thermal mass, a lower chance of corrosion/condensation and a reduced risk of colour fade.

## COMPONENTS

- **Battens** spaced at centres according to the Product Technical Statement of the chosen roof tile shall be fixed to the counter battens, or directly to the walling system using correct fasteners.
- **Counter battens** spaced at 450–600mm centres may be fixed to specific masonry walling systems using correct fasteners.
- All roof tiles installed vertically require 'double fixing' with mechanical fasteners. Typically a fastener at the head of a tile and a side-lap fastener. This may vary according to wind rating or location.
- For **waterproofing**, a vapour permeable membrane (underlay) shall be installed between the battens/counter battens and the walling system.
- For **windproofing**, the resistance of the tile, fasteners, batten, and counter batten shall be greater than the design wind uplift force.

## FIXING

All roof tiles used in vertical tiling shall be double mechanically fixed through the head and tail of every tile.

'Mechanical fixing' refers to either screwing, nailing or clipping the tiles to the battens. Fasteners shall comply with the material compatibility and durability requirements found within AS 2050<sup>2</sup>.

## WINDPROOFING

Nail or screw type fasteners shall provide no less than 15 mm penetration into the tile batten. The wind uplift resistance of the tile, batten and counter batten fixings and resistance to shear of the counter batten fixings shall be greater than the wind uplift force.

## WATERPROOFING

Although vertical tiling provides excellent protection against wind driven rain, roof tiles are constructed from porous materials and require specific design considerations to prevent water ingress. Please refer to the Product Technical Statement of the tile manufacturers for further specifications. Test in accordance with AS 4284: Testing of Building Facades.

### Recommendations:

- Flashing shall be lapped at joints by a minimum of 150 mm and extend 150 mm over the vertical tile where flashing is required (see Figures 1–2).
- An underlay shall be installed between the battens/counter battens and walling system to prevent condensation issues.
- Where a different walling system meets the vertical tiled wall, a continuous horizontal or vertical flashing shall be provided at the abutment.
- Where a vertical tiled wall abuts a roof, a continuous horizontal flashing be provided at the abutment.
- The cavity between the vertical tile and masonry wall is greater than 50mm.
- A closure flashing shall be provided at the base of the wall.

The underlay shall have a vapour control membrane (VCM) category<sup>3</sup> of "Vapour Permeable" and a water control classification<sup>3</sup> of "Water Barrier".

## CORNERS

Internal and external corners of the wall are the most vulnerable areas for water ingress.

At an internal corner, a continuous flashing shall be secured onto the batten, as shown in Figure 3.

At an external corner, a continuous flashing shall be secured onto the batten where a cut ridge tile shall be mechanically fastened at the corner using bedding and pointing, or a valley seal product, as shown in Figure 4. Weep holes shall be installed for all downward facing bedding. Galvanized wire mesh or bitumen-impregnated foam may be used in the bedding to provide higher strength.

## OPENINGS

At openings (e.g. windows), specific detailing requirements shall be met to prevent water ingress. Tiles shall be cut using a grinder to ensure precise fitting. Where tile cuts are visible, caulk the interface using an appropriate sealant.

### Above the lintel:

- A closure flashing shall be provided at the base of the wall behind the underlay where the lintel begins (see Figure 5).
- The bottom batten shall be of a size that maintains tile pitch.

### Below the window sill:

- A flashing shall be provided at the base of the window sill frame where the window terminates and be dressed 100 mm over the top course of tiles (see Figure 6).

## NOTES

1. Sizing of battens and counter battens shall comply with AS 2050: *Installation of Roof Tiles*.
2. Refer to the *ARTA Roof Fasteners Datasheet*.
3. Water control classification of underlay shall be tested in accordance with AS 4201.4: *Pliable building membranes and underlays - Methods of test - Resistance to water penetration*.

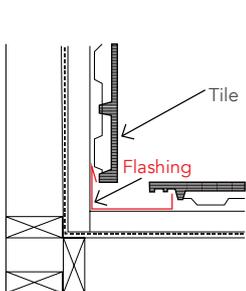


Figure 3: Internal Corner

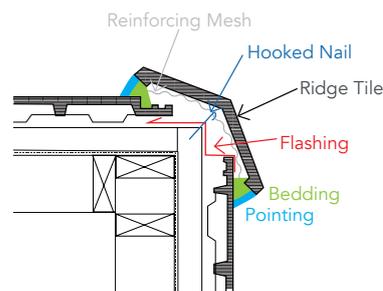


Figure 4: External Corner

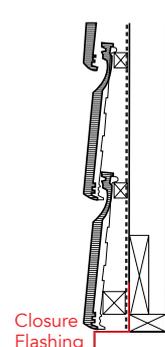


Figure 5: Above Lintel

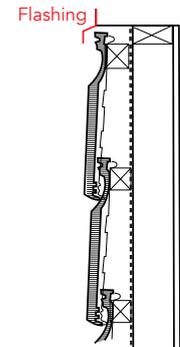


Figure 6: Below a Sill