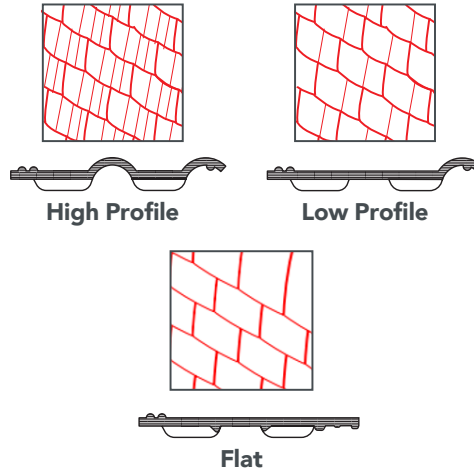


Figure 1: Detailing

## TYPES OF 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:



## 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

- New common bricks
- New lightweight concrete blocks
- Dense concrete blocks
- Old bricks
- Old lightweight concrete blocks
- Stone masonry

### Counter Battens (RECOMMENDED)

- Dense concrete blocks
- Old bricks
- Old lightweight concrete blocks
- Stone masonry

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

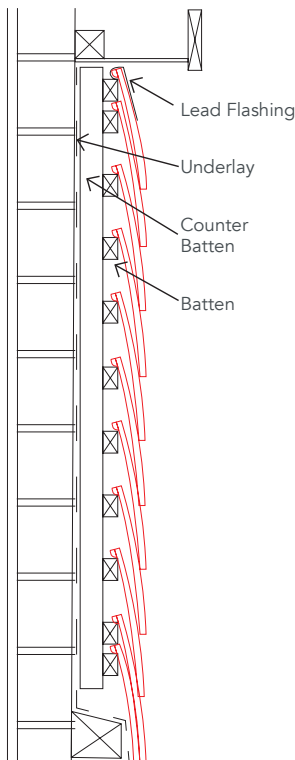


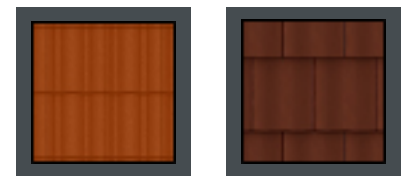
Figure 2: Side View

This fact sheet outlines the basic design principles and key considerations for vertical hanging roof tiles on various masonry walling systems.

## 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 masonry walling system using correct fasteners. Use a laser level for installation of battens.
- **Counter battens** spaced at 450–600mm centres may be fixed to specific masonry walling systems using correct fasteners.
- All roof tiles shall be **double mechanically fixed** through the top of the tile and into the batten/counter batten.
- For **waterproofing**, a vapour permeable membrane (underlay) shall be installed between the battens/counter battens and the masonry walling system.
- For **windproofing**, the resistance of the tile, fasteners, batten, and counter batten shall be greater than the design wind uplift force.

## BONDING PATTERNS



Straight Bond

Broken Bond

## FIXING

All roof tiles used in vertical tiling shall be double mechanically fixed through the top of the full tile into the batten. Uncut tiles shall be additionally be fastened with cyclone clips at the bottom and secured to the batten.

'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

The mechanical fasteners shall provide no less than 15mm 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.

It is recommended that:

- flashing be lapped at joints by a minimum of 150mm and extend 150mm over the vertical tile where flashing is required (see Figures 1–2);
- an underlay shall be installed between the battens/counter battens and masonry walling system to prevent condensation from entering the building;
- where a different walling system meets the vertical tiled wall, a continuous horizontal or vertical flashing 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; and
- a closure flashing be provided at the base of the wall.

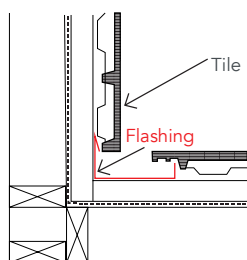


Figure 3: Internal Corner

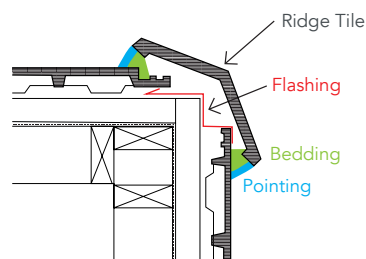


Figure 4: External Corner

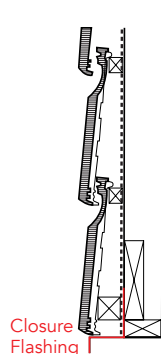


Figure 5: Above Lintel

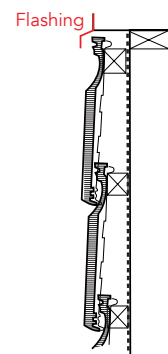


Figure 6: Below a Sill

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.

## 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; and
- 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 100mm over the top course of tiles.

## 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 4201.4.