

# Elite Fixing Guide



**BMI**

**Coverland**

Recommended fixing for Elite  
concrete roof tiles

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## ROOF PITCH

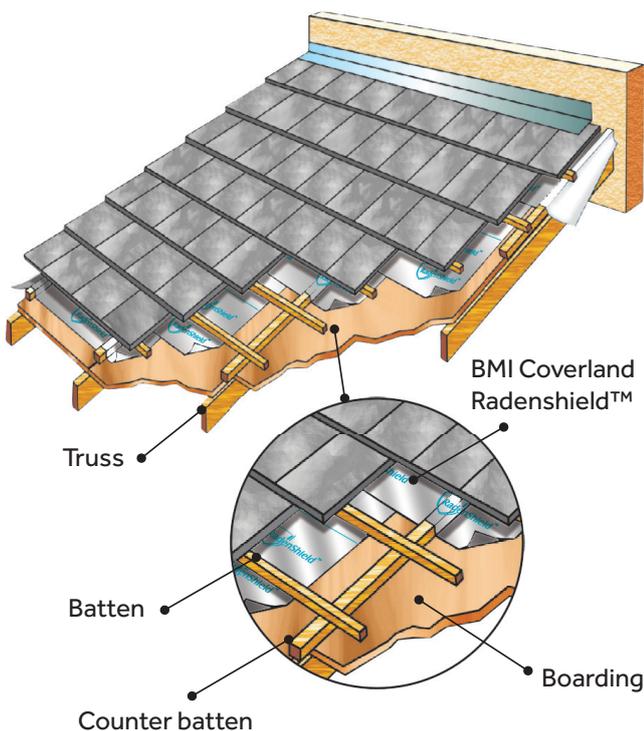
The basic principle to be considered in roof design is that the roof pitch should be adequate to discharge rainwater in the shortest time possible. When using the flat Elite tile water runs across the tile faster than on other curved tiles as there is no shape or curve directing the flow of water.

Another important factor which should be considered when choosing a pitch for the roof is the effect wind forces have on roofs. These forces vary according to the speed and direction of the wind, the degree of exposure, the height and pitch of the roof. The uplift or suction created by wind forces is greater on lower roof pitches. It is thus important to choose the correct design and pitch of the roof when deciding to use the flat Elite tile to prevent leaks and to prevent tiles shifting or being uplifted by gusts of wind.

Boarding allows Elite concrete roof tiles to be laid on roofs that have a pitch of below 25°.

The illustration below provides a detailed cutaway of a roof incorporating the Elite concrete roof tile, boarding, undertile membrane, battens, counter battens and trusses.

When laying a roof with boarding, the boarding is first secured directly onto the trusses, thereafter the counter battens, followed by the undertile membrane. The counter battens are fixed through the boarding onto the trusses.



## WIND FORCES AND FIXING RECOMMENDATIONS

To ensure the satisfactory performance of a roof, the following factors should be taken into consideration:

- Type of building
  - Single, double or triple story roof
  - Mono pitch or Hip roof
- Pitch of roof
- Terrain category
- Basic wind speed
- Height of roof from ground to ridge
- Length of the roof slope

There are three minimum fixing specifications:

- Category A - Unexposed roof situations;
- Category B - Semi-exposed roof situations;
- Category C - Exposed roof situations and roofs in coastal areas, for concrete roof tiles which are suitable for all normal roofing situations.

We at BMI Coverland however recommend the following tiling procedure when using the flat Elite tile at all times:

- Laying 15mm external quality plywood boarding, selected to comply with standard SANS 929(3), over the rafters with joints supported by rafters or noggins between the rafters.
- Tape all plywood joints with 50mm wide strips of duct tape.
- Install well fixed 38mm x 19mm timber counter battens (to SANS 1783 (5)) at spacings to suit the rafters.
- Lay one layer of BMI Coverland Undertile Membrane or Radenshield™ over the counter battens with a minimum horizontal lap of 180mm and a vertical lap 180mm. This underlay must be allowed to sag between the battens and not be pulled tight.
- Fix 38mm x 38mm (up to 760mm rafter centres) tiling battens at maximum gauge necessary to provide a headlap
- The minimum fixing for all tiles is to nail every third course and the full roof overhang. See SANS 10062 for further details. Nails used for the fixing of tiles should be non-corrosive clout nails of sufficient length to penetrate the battens to a depth of at least 50mm.

To ensure that a high standard of roof construction is achieved, it is essential that the timber structure is sound. It is therefore important that the following pre-tiling inspection be completed:

- Batten spacing must confirm with specifications and recommendations as set out by BMI Coverland.
- Roof trusses are properly spaced, secured and adequately braced.
- Undertile Membrane / RadenShield™ is properly installed.
- Trusses and battens must be true and level.
- Battens have been fixed at valleys to support the valley flashing.
- The position of the first batten must be accurately established to ensure the correct overhang of the roof tiles.
- Fascias, gutters and valley gutters have been installed.
- Parapet walls or any walls extending above the roof have been completed including plastering and painting.
- Abutment flashings have been installed.
- Beam fillings have been completed.

### LAYING OF TILES

For positive location of the tiles, ensure that the tiles are fully supported by the battens on the batten bearers, and that the lugs of the tile butt-up squarely against the top edge of the battens. This will ensure that the tiles are in straight courses horizontally and vertically.

Work according to chalk lines marked during setting out. The chalk lines will assist in keeping the vertical rows of the tiles in straight parallel lines. Tiles must be laid loose and not tight against each other to allow for thermal movement.

Elite tiles must be laid in a broken bond requiring half tiles in every second course at the gable ends. These tiles, due to their flat design, do not have the inherent strength of profiled tiles and may be damaged or broken if walked upon after installation. Care should therefore be taken when carrying out maintenance work and traffic on the roof should be at a minimum.

### INSPECTION AFTER TILING

- Roof level across the plain. No sagging visible (especially at eaves tiles).
- Roof pitch, truss spacing and batten spacing according to specifications.
- Fixing of tiles carried out in accordance with recommendations in the Concrete Manufacturers Association "Technical and Detailed Manual of Concrete roof tile".
- Undertile Membrane / RadenShield™ properly installed (especially at closed eaves).
- Ridge and hip tiles properly bedded in mortar or installed using BMI Coverland's Dry Ridge System. Hip iron installed when required.
- Tiles in valley neatly cut and properly secured.
- Verge tiles secured to verge counter batten.
- Roof left perfect and watertight on completion. All gutters and valleys cleaned out.
- All cracked tiles are replaced.
- All tiles to be in straight course horizontally and vertically.



Tiles must be laid broken-bond and mechanically fixed according to specifications



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## BRANCHES

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Our expertise and innovations are bringing advantages in sustainability, performance and architectural design to residential, commercial, and public sector projects. Our product offering integrates functionality, energy efficiency and aesthetics for the homeowner. As the largest concrete roof tile manufacturer in Southern Africa, our reach expands across 7 production facilities and 4 depots nationally.

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