

RECOMMENDED FIXING

Elite Concrete Tile Profile

Roof Pitch

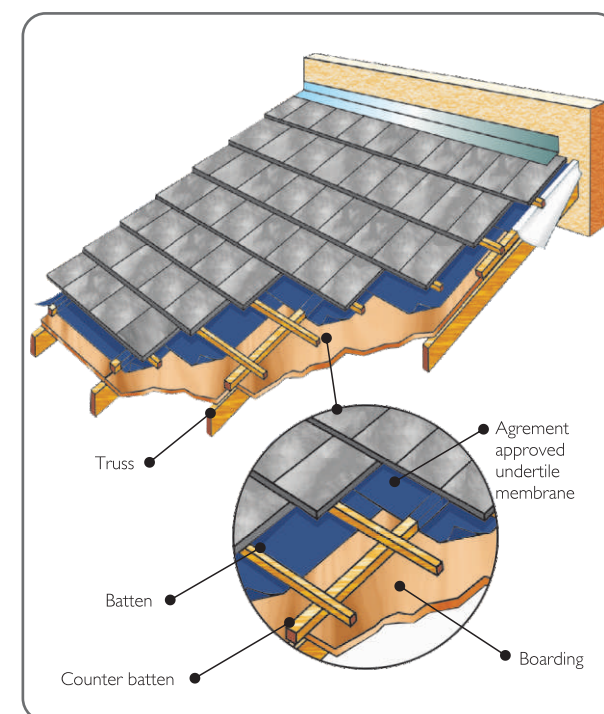
The basic principle to be considered in roof design is that the roof pitch should be adequate to discharge rainwater in the shortest time possible. When using the flat Elite tile water runs across the tile faster than on other curved tiles as there is no shape or curve directing the flow of water.

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.

In case of complex roof designs, exceptionally long rafter lengths or buildings located in areas where extreme wind conditions prevail; more stringent fixing specifications may be required. Refer to Laying & Fixing Specifications.

We at 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 Coverland Undertile Membrane or Radenshield™ over the counter battens with a minimum horizontal lap of 200mm and a vertical lap 200mm. This underlay must be allowed to sag between the battens and not be pulled tight.
- Fix 38mm x 38mm (up to 760mm rafter centers) 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 25mm.

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 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 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.

