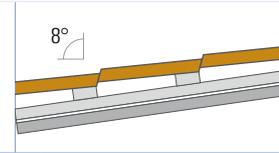


ROOF PITCH

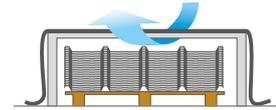
The minimum roof pitch for the roof-tile panels is 8°



INSTRUCTIONS FOR HANDLING AND MACHINING

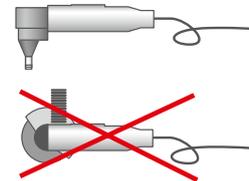
Storage

The roof-tile profiles can be stockpiled outdoors temporarily (max. one month). The sheets are, preferably, covered, provided there's adequate ventilation between the sheets and the covering material. The sheets should be supported at spacings of 1m.



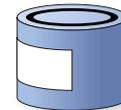
Machining

The roofing is supplied to order, based on the client's plan. If it has to be cut to size (or cut to fit), use a fretsaw or a metal saw with thin saw teeth. You are discouraged from using grinding wheels or other devices with a high grinding speed because the grinding edges will start to glow, destroying the zinc plating and the coating of the sheet in the process. Red-hot particles of metal would fly about everywhere and burn holes in the protective coatings of the sheet.



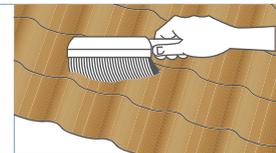
Relacquering

Every instance of damage to the surface layer must be relacquered at once using touch-up paint.



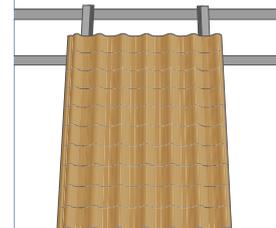
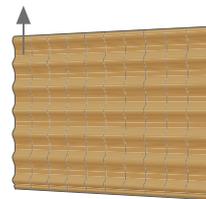
Cleaning

All drilling filings and drilling residues should be scrupulously cleaned off using a soft-bristled brush.



Tips

- It is best to carry the panel vertically so that the sheet doesn't bend.
- You can lay 2 beams from ground level up to the wall sheet so as to support the sheet when hoisting it onto the roof.
- Always step on the hollow part of the corrugation when walking over the roofing.



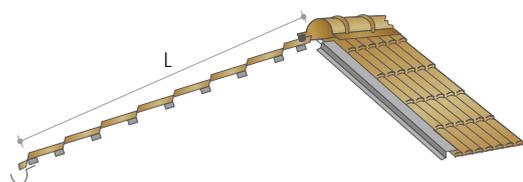
DETERMINING THE KEY DIMENSIONS

The roof-tile panels are supplied to order, based on the client's plan; the maximum length is 8.40m

Length

measure the distance between the top and bottom eaves and, to that, add the requisite no. of centimeters so that the panel will extend beyond the lower eave, to just over the gutter.

$L = \text{length of the roof} + \text{the gutter overhang}$



ASSEMBLY

Width

The useful width of the sheet is 1,100m. To determine the number of sheets, divide the width to be covered by 1,100m. the sheet is cut lengthwise if necessary. For roof pitches longer than 8.40m, 2 sheets are laid in a single bay with the requisite overlapping.

To do that, proceed as follows: take, as the bottom sheet, a multiple of 350mm + 200mm for the overlap.

The length of the overlying sheet is given by the overall length of the bottom sheet plus 200mm.

e.g.:

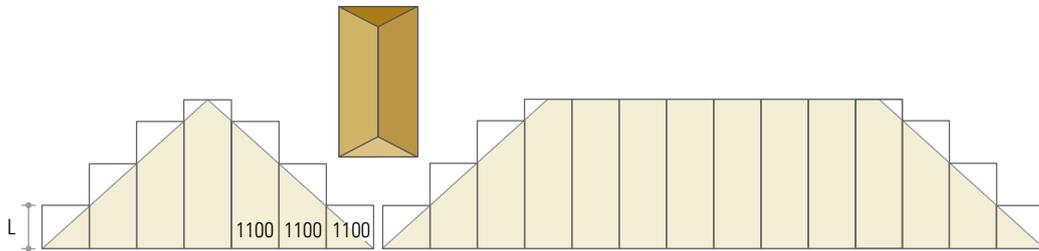
$L = 10\text{m}$ or 10,000mm. Take, as the bottom sheet, an arbitrary length (to be fixed by you in practice) as follows:

15 tiles \times 350mm (the length of one tile) + 200mm for the overlap = 5,450mm

Hence, the length of the overlying sheet is: $10,000\text{mm} - 5,450\text{mm} + 200\text{mm} = 4,750\text{mm}$

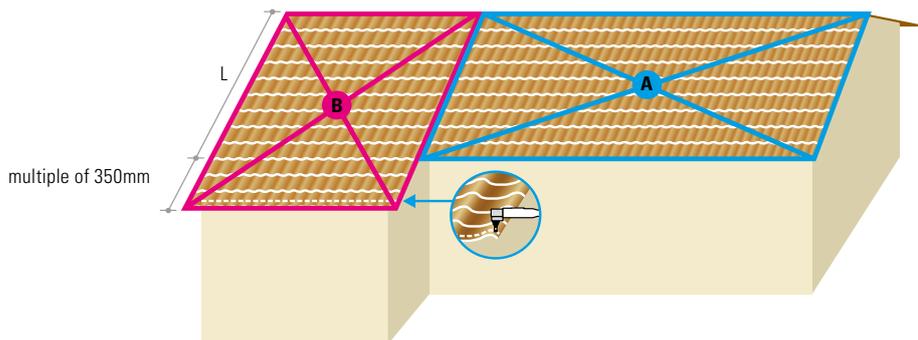
Hipped roof

In the case of a hipped roof first draw a plan to scale of every roof bay in order to determine their number (how many sheets) and the sizes.



Roof with 2 different lengths in one and the same roof plane

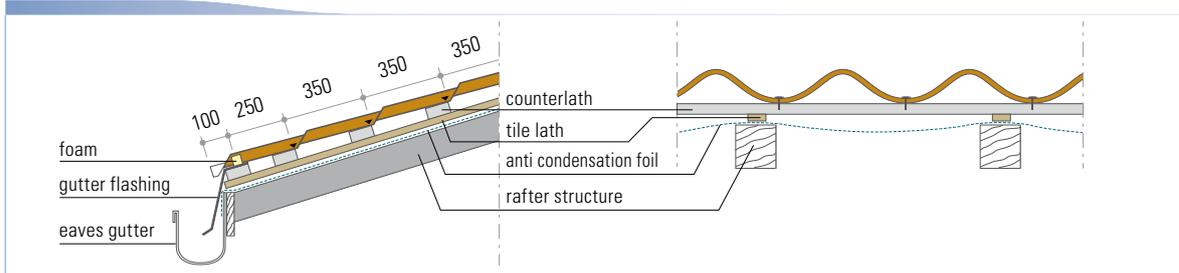
First take the dimension L of the widest roof bay (bay A). The size of the longest sheets is the length of the shortest sheet + a multiple of 350mm, until these sheets extend beyond the lower eave, to just over the gutter. These sheets in bay B are then, at the lower eave, shortened with tailor-made tools. Using this technique, the number of sheets to be shortened is confined to the narrowest roof bay.



UNDERROOF

In the case of certain applications, it's necessary to lay an underroof. As an underroof, we can warmly recommend our anti condensation film which lets through all the vapours from inside but which is 100% waterproof so that the condensation that forms on the underside of the panel can be drained away into the gutter. For this purpose a small gap has to be left between the underroof and the tile laths. Counterlaths, therefore, have to be laid in the longitudinal direction of the underroof.

UNDERROOF



Counterlaths and tile laths

Begin, on the underroof, by laying the counterlaths. The tile laths are then fixed to these counterlaths at a c/c spacing of 350mm. Important: underneath the first row of tiles on the gutter side, 2 tile laths are laid the bottom one of which is 1cm thicker than the other. The other tile laths are fixed in place to coincide with the end of each tile. IMPORTANT: it's advisable to use a wider type of lath for your tile laths.

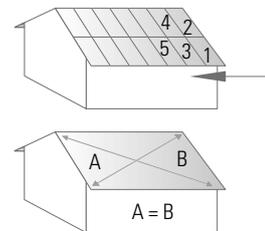
MEANS OF ATTACHMENT

The tiles are attached by means of self-drilling screws (4.8 x 35mm), galvanized and pre-painted in the same colour as the sheets, which come complete with a washer (i.e. a neoprene sealing ring). The screws are screwed down in the valley part and just below the kink of the tile. The roofing sheets are secured along the top and bottom rows and at the lap joints of each tile. The other screws are screwed in alternately; allow for an average consumption of 10 screws per m. At the overlap, in order to get a neater joint, you can screw one sheet to the next in the optimal place, on top of the corrugation, just before the kink in the sheet.



ASSEMBLY OF ROOF-TILE PANELS

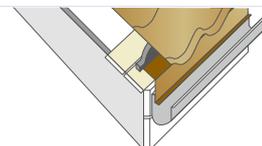
These are laid working from right to left and from bottom to top (see sketch). Check that the roof is at right angles. Measure the diagonals from corner to corner. If these differ the roof isn't exactly square. In that case the sheet should be laid so that the bottom of the sheet hugs the line of the lower eave. Small differences can be compensated for by the bargeboards and ridge tiles. You would do best to lay a few panels on the roof so that the bottom edges run parallel with the eave. On wider roof bays lay the first sheet, in from the corner, at an angle to the right and then connect the others to it.



ASSEMBLY OF ACCESSORIES

Gutter flashing or wall sheet trim

To hide the eave or gutter, a wall sheet trim is used. Sealing profiles (i.e. sealing strips) are used between the gutter and the sheets.



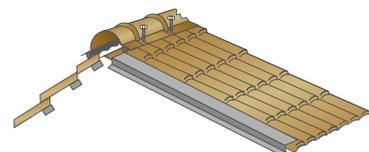
Flat sheets and angles sections

Flat sheets of 1,250mm by 2,000mm, as well as several kinds of bent-to-measure angle sections, are available in the same colours as the sheets.



Ridge tile

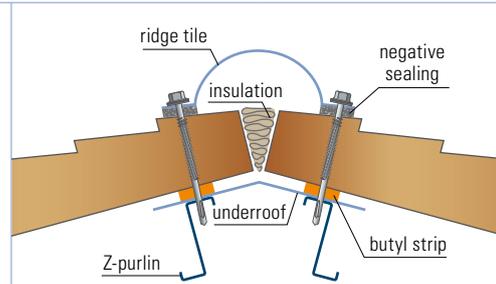
Each ridge tile is screwed to the top of corrugation by means of self-drilling screws. If necessary, a watertight sealing profile is fitted beneath the ridge tile.



ASSEMBLY

Ridge tile

When using Permapan it is important to look after the vapour-density of the ridge in order to avoid condensation. Therefore an underridge is used and insulation is put between the two panels.



Sealing profiles

positive profile: sealing between wall sheet and roof-tile panel



flat profile: sealing between verge flashing and sheet

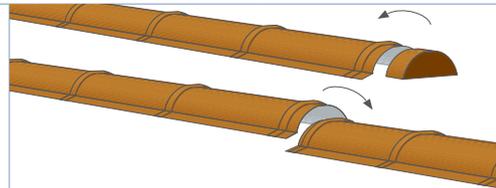


negative profile: sealing between ridge tile and roof-tile panel



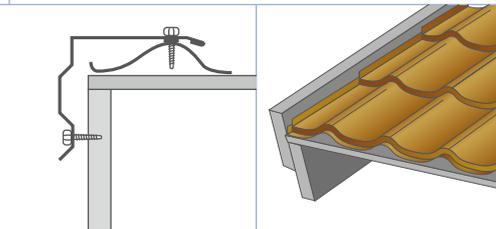
Terminal tiles

A terminal tile is put at each end of the ridge and screwed down. The seams are sealed with a silicone mastic.



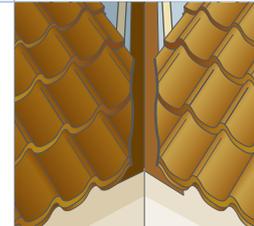
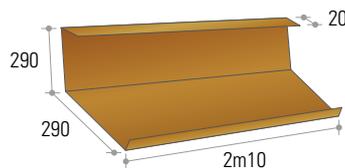
Verge flashing (verge board)

To hide the side walls and protect them from rain, verge flashings are available in lengths of 2.10m. If desired, a profile filler can be inserted between the tile and the bargeboard. On the left-hand side you can, if desired, bend the far end of the cut-off sheet a little.



Valley gutters

Valley gutters come in lengths of 2.10m. The minimum overlapping is 15cm.



Pipe feed-throughs

Pipe feed-throughs ensure a watertight joint in places where pipes have to pass through the roof surface. They are made from EPDM (Ethylene propylene diene rubber). In the pipe feed-through a hole is made which is smaller than the outside diameter of the pipe. The pipe sleeve is pulled over the pipe and sealed using a silicone mastic. After the silicone mastic has been applied, the pipe feed-through is screwed down using self-drilling screws that pass through the deformable aluminium wall.



Mansard roof

On a mansard roof, the bottom part of the roof-tile panel fits exactly on top of the leading part of the next sheet.

