

EVERTILE

STONE COATED STEEL ROOFING TILES

QUADRIC

INSTALLATION GUIDE



1. These instructions will help with the installation of a simple roof. For installations of more complicated roofs, it is recommended to hire an authorized roofing company.

2. The panels/tiles are designed for roofs that pitch range from 15° to 90° depending on the altitude above sea level of the site and the „snow area“.

3. Minimal temperature of the air, as well as the panels, during installation should be above +5°. In the case that the installation has to be proceeded even in temperatures below 5°C, it is necessary to keep the temperature of the material above 5°C until the moment of installation. The surface finish can crack or exfoliate in lower temperatures in the areas of cutting, bending or nailing.

4. The panel is a lightweight material and under windy conditions the un-secured panels can fall down and cause damage and/or injury. Respect the rules for safe work.

5. During storage of the panels on the site, keep the material away from dust and water, that could leak inside the palettes and between tiles.

6. Stepping on the roof should be minimized. If necessary, step onto the bottom section on one of the vertical grooves, where the panel is supported by a batten.

7. Tiles should be installed from the ridge to the eaves. Spots for the correct nailing of the panels, ridges and trims can be found in the enclosed pictures. It is recommended to install just 3 rows of panels at the same time and resolve all details contained (chimneys, ventilators, etc.) immediately. This prevents further stepping on the installed panels.

8. The warranty is valid, under condition of correct installation and use. The warranty is not relating to roofs with incorrect installation, insufficient or missing ventilation, and if it's used other than the original rustless screws, screw-nails or nails and the system accessories. Atypic details shall be made with materials with adequate durability and corrosion resistance along with materials which do not cause an electro-chemical reaction in a contact with the panels and which do not exude compounds effecting color and changes on the surface finish.

9. Ventilation must be provided with the system ventilators, or other proceeding, backed by technical calculation.

10. Be sure, that panels are not exposed to permanent contact with construction parts, which contain copper, cement, lime, bitumen, corroded iron, contaminated with carbon blacks from local heating devices, animals excrements and other materials which can chemically attack the surface finish or accelerate corrosion of the panels. Do not allow any water pouring down on the panels, contaminated by the mentioned chemicals and materials, too.

WARNING!

Panels should not be cut with circular saws or grinding wheels because they could burn the anticorrosive protection of the material. It is recommended to use guillotines, hand or electrical scissors only.

Zinc galvanized nails or screws do not reach a lifetime of the panels and can significantly shorten a lifetime of the roof and pollute its' surface.

NAILS / SCREWS.

Original screw-nails and screws supplied by the manufacturer are rustless and painted.

Screws (SCR-TX25) 4,6 x 35mm (AISI410 stainless steel) are available in boxes by 500pcs. **5 screws/1 panel are recommended for installation in the hurricane zones.**

Screw-nails are available in coils (NCS) to be used with pneumatic guns. 4 nails/1 panel are needed for proper fixing.

WOOD BATTENS (valid for the USA)

Wind resistance was tested with SYP No.2 wood battens, size 2x2 and with fixing of panels by screws (SCR-TX25) 4,6 x 35mm.



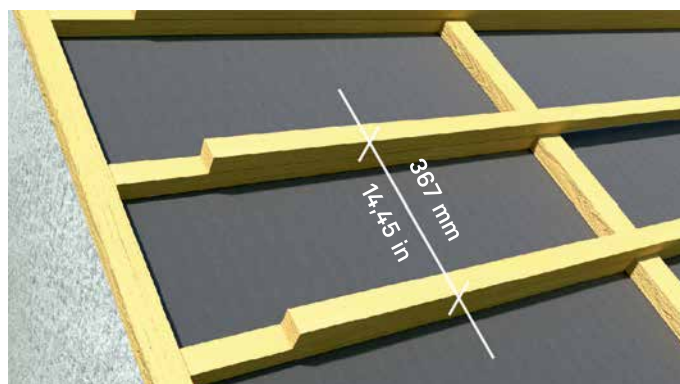
Screws (SCR-TX25) 4,6 x 35mm (AISI410 stainless steel)



Screw-nails in coils (NCS) 3,4x35mm (stainless steel A2 AISI 304)

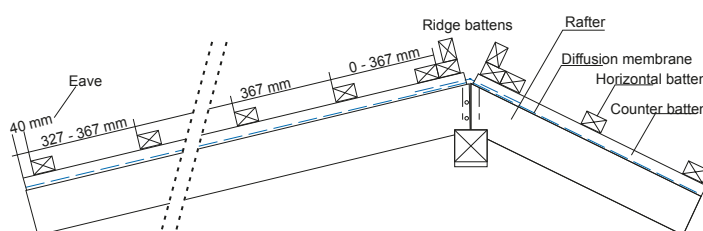
PLYWOOD DECK

Tiles QUADRIC are fixed on horizontal battens. The plywood deck makes installation easier but is optional. Cover the plywood deck with a diffusion membrane horizontally from the eave to the ridge with overlap. Fix the membrane under the counter battens, which must be fixed vertically (rectangular towards the ridge) into the rafters with screws 100mm long. Fixing of the counter battens into the plywood is not sufficient to secure the roof against strong wind (hurricanes).



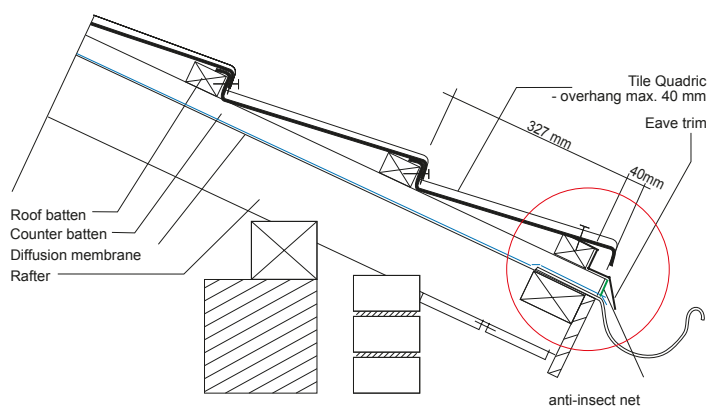
BATTEN DIMENSIONS

Vertical battens (counter-battens) create a ventilation gap (20-50mm) between the diffusion membrane and the tiles. Dimension shall comply to the norm. It is also used to attach the diffusion membrane, which is laid horizontally from eave to the ridge with sufficient overlaps.



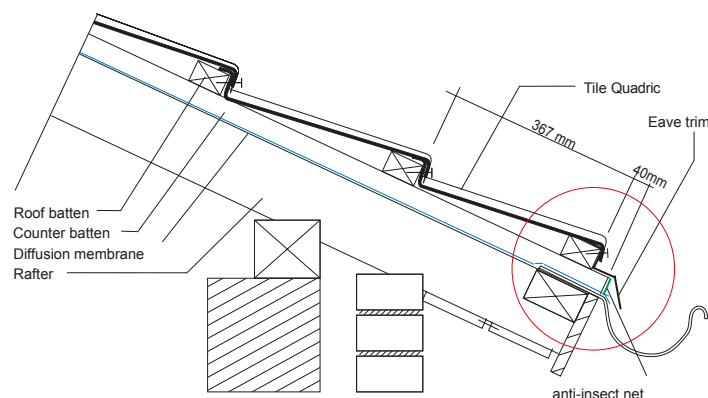
HORIZONTAL BATTENS

The size is determined by the distance of the rafters, expected snow loads or wind speed and the slope of the roof. Take into consideration also a safe move of the workers on the roof. Minimum size is 30x50mm (1x1 inch) -when there is a plywood deck over the rafters or very close distance between rafters (less than 750mm). Recommended sizes are 40x50mm or 40x60mm (1x2 inches). Pay close attention to fixing of the vertical and horizontal battens and use impregnated battens.



INSTALLATION OF THE HORIZONTAL BATTENS

After attachment of the diffusion membrane under the counter battens, fix the horizontal battens successively from the eave to the ridge. When using eave trims, lay the first batten 40mm from the edge of the vertical batten. The second batten should be laid and fixed at a distance 327-367mm. Other battens need to be fixed at a distance of 367mm (bottom edges of the battens) and the last batten as near as possible to the ridge (pic. No.1.). Accurate measuring, spacing, fixing and using straight battens are the important points for easy, safe and proper installation of panels.



EAVE TRIM (ETN)

Eave trims finishes the gap between the panels and the gutters (created by the counter-battens and battens). They can be laid on the counter-battens edge or laid with a ventilation gap between the trims and the front of the rafters. It is recommended to cover the front of the rafters and counter-battens also with an anti-insect protective net.



DIRECTION OF THE INSTALLATION

Installation starts on the upper edge of the roof and continues downward to the eave. All details and accessories will be installed at the same time with the tiles, in order to avoid stepping on fixed tiles.

WARNING:

Finish all construction works above the roof (chimney, facade,...) before the beginning of installation. Otherwise there is a risk of damage or pollution of the roofing tiles.

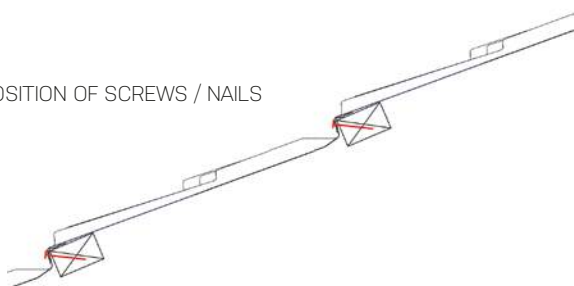
FIXING OF TILES

Recommended fixing of QUADRIC panels is with the screws (SCR-TX25) 4,6 x 35mm (AISI410 stainless steel). 4 screws / 1 panel in normal climate areas or 5 screws / 1 panel in the hurricane zones.

Panels are fixed throughout the front edge (never from the top!), which is supported by a batten. Three spots of the tile must be fixed, at least, and always through overlap with the next panel. Place the nails in the center of the front edge of the panels.

The heads of screws must be tight to the panel. Check a proper grip of the screws in the battens.

POSITION OF SCREWS / NAILS



INSTALLATION OF THE EAVE TRIM

For the correct installation of the trim the first horizontal batten should be laid between 20-40mm from the edge of counter-battens. The upper section of the trim is placed on the batten, the middle section overlies the counter-batten and the bottom section enters to/above the gutter. The trim shall be fixed by 3-4 nails to the batten and with an overlap of 75-100mm.

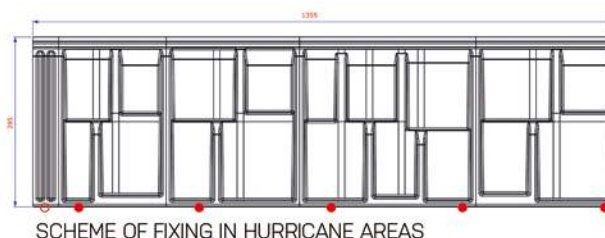
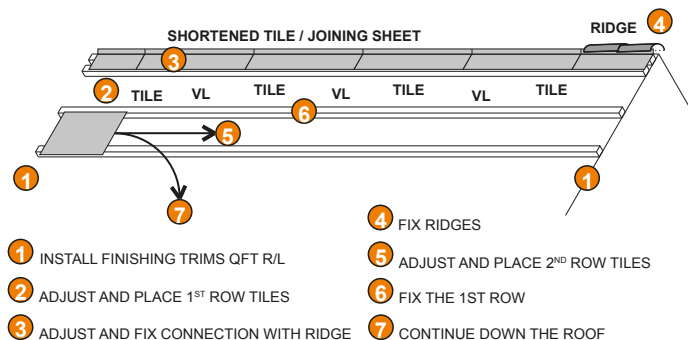
ROOF VENTILATION

In a case of ordinary roof with the length of rafters no more than 30ft, one ventilator is usually sufficient (QVL or QLV120) between two neighbor panels in the upper row of panels. The area of the gap in the eave for air coming in shall be 1/500 of the whole roof area.

If the original ventilators QVL or QLV120 are not used, the engineer's calculation must be stated what efficient ventilation was created for maintaining the warranty.

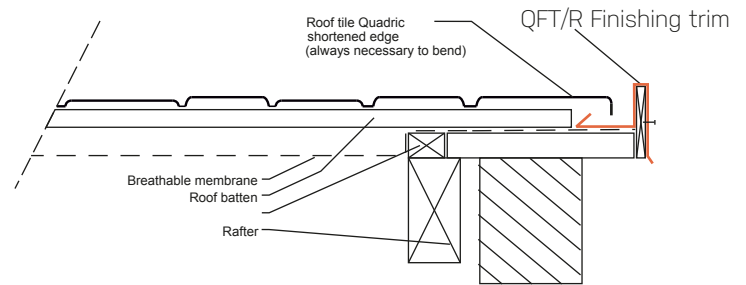
Ventilation area QVL is 12500mm²

Ventilation area QLV120 is 12000mm²



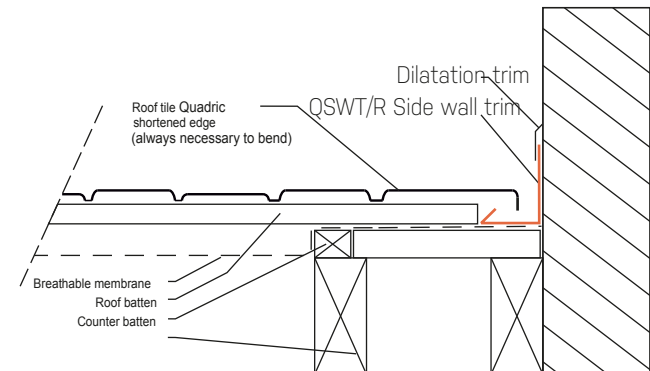
SADDLE ROOF – START WITH GABLE / WALL EDGES

Installation begins by attachment of all finishing trims (QFT), side wall trims (QSWT) or different flashings around chimneys and dormers. The first step is to trim and bend the first-from eave - finishing trims (QFT) or the side wall trims (QSWT) and to attach them from outside to the rafter/batten. The other trims are fixed with 10-15mm overlap over the bottom trim. The next step is to trim and lay the upper finishing trims (QFT) or the side wall trims (QSWT) and to attach them from both sides of the ridge. The trims are conic shaped for easy fitting one over the other. Follow the direction of arrows.



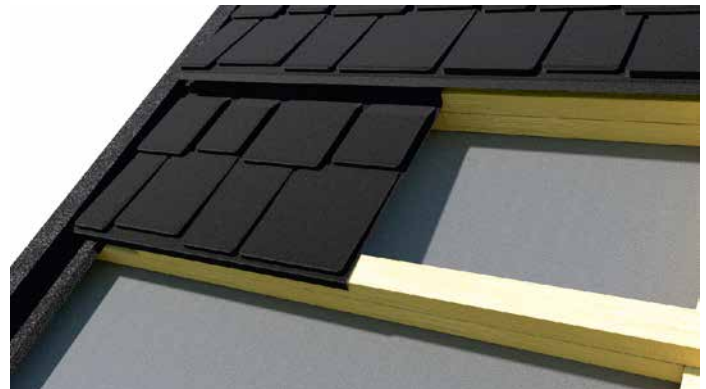
START WORK WITH PANELS / TILES

Installation of tiles begins by attachment of the tiles in the first full module row below the ridge. Bend the edge of the first tile in the row downwards (20mm) and place it with a 20-30mm gap near to the vertical part of the finishing trim. Tiles in the first row need to be attached in its position, but the front edges must be left free. This is why the tiles are fixed by 2 or 3 nails through the upper edge to the batten. After underlaying next bottom row of tiles, the front edge will be fixed in the normal way.



LENGTH TRIMMING

Tiles on the opposite side of the roof and on the beginning of every second row will usually be shortened and the edges should be bent downwards by 20mm keeping a space of about 20-30mm near to the vertical part of the finishing trim/wall. All cut edges will be finished with a paint from the repair set (REP).



HALF-BOND LAYOUT

The first tile of every second row shall be shortened by 1-3 profiles. This will make the tiles lay in "half-bond" and will avoid meeting 4 corners of tiles in one spot. Ventilators and other elements must be installed at the same time, with tiles in the first row (full module) below the ridge.

CONNECT PANELS / TILES TO THE RIDGE

The next step after laying the first 2 full module rows is to cover the space between the tiles and the ridge batten. Usually the distance is shorter than the module of the tile.

The detail can be made in two ways.

a) With shortened tiles.

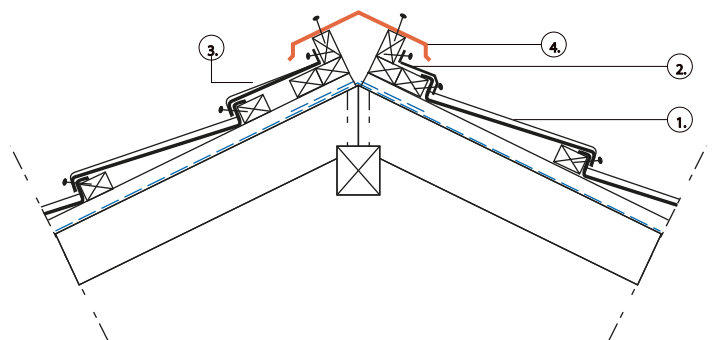
Mark a horizontal line where the tile will be bent upwards along the ridge batten (20mm out from the ridge batten to keep a space for ventilation) and another mark – 40 mm outside from the bend line – where the tile will be trimmed. Bend the tiles, then trim.

b) With a trim (UNI).

When the distance from the last module to the ridge batten is shorter than 120mm, then the joining sheet (UNI) can be used instead of the tile.



Attach the prepared items (tiles or sheets) in the right position by nails hammered through the bottom edge to the horizontal batten. If necessary, insert short pieces of board (20mm thick) between the ridge batten and the vertical fold of the tile (or UNI) to provide ridge ventilation gap and fix the tile through the ridge batten, too.



1. Full module tile - 1st row 2. Connection to the ridge UNI 3. Shortened tile QST 4. The ridge

BATTENING of the RIDGE V-FORM RV and V-FORM 155 (RV/RV 155)

Two parallel ridge double-battens (minimum 60mm high) will be installed – one on each side – and 30-40mm from the outer edge of the ridge. The height of the ridge battens should be measured according to the slope of the roof, so the ridge can sit down firmly on the ridge battens and in a straight line with the tiles keeping a space of 5-10mm above the tiles. The last horizontal batten needs to be fixed 20-30mm from the ridge battens in order to create a ventilation gap. The last two battens will usually have shorter distances than the full module (367mm). The upper batten supports the elements connecting the tiles below the ridge – shortened tiles or connecting sheets (UNI).



Ridge element RV can be used on NON VENTILATED ridges within a slope < 30°. The type RV155 for ridges with a slope >30° or with ventilation function.

VENTILATED RIDGE (RV155)

The last horizontal batten will be fixed on the edge of the counter-battens, and then one more batten fixed below, as a support for a shortened tile or the connecting UNI sheet. To make it ventilated, there must be a sufficient gap between the ridge element and the battens, which it is fixed to. This can be made with attached short battens on the first horizontal batten in intervals of about 250mm. With the batten thickness 50mm we can get a ventilation area approx. 400cm²/m, which will be reduced to ½ after bending of the tile edge upwards.

200cm²/m, it is the recommended ventilation area by the norm for roofs with the rafter length up to 10m.

The gap has to be kept also between the ridge and the bended edges of the tiles and the bottom edge of the ridge has to be 10-15mm above the tiles.



NON-VENTILATED RIDGE

(RV or RV155 with a slope >30°)

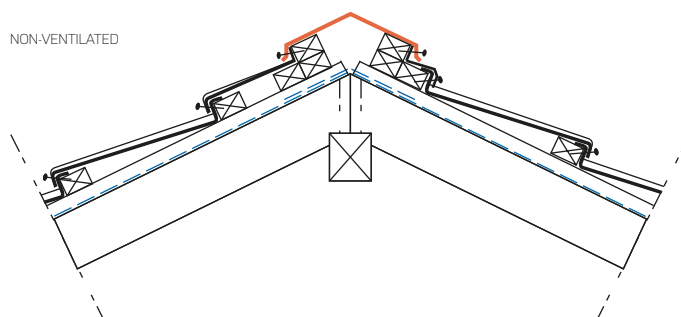
The process is the same, but the double upper batten will be continual and from the outer edge of the ridge moved about 5-10mm upwards, in order to create a space for bending the edge of tiles between the ridge and the batten.

The bottom edge of the ridge has to be 10-15mm above the tiles. Nailing is possible through this bottom edge to the batten.

FIXING OF THE RIDGE

(RV or RV155)

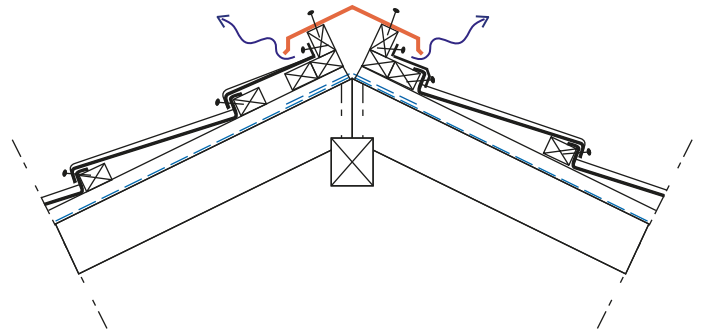
The ridge elements shall be fixed with screw-nails from both sides into the parallel ridge battens in the interval approx. 300mm and always in the overlap, which shall be min. 100mm. See schemes.



FIXING OF RIDGES

RIDGE V-FORM

Ridge RV / RV 155 will be fixed from the top into the 2 parallel ridge battens in each 350mm and in the overlay. (Ventilated ridge will be fixed into the interrupted battens. Non-ventilated ridge can be fixed through the front edge covering the upper bent edge of tiles). Heads of nails will be protected with acrylic or silicon and the granules from the repair set. RV and RV 155 have conic shape making easy overlay of the elements. Follow the mark on the bottom side.



HIP FROM THE V-FORM RIDGES

V-FORM ridges will usually be installed on the hip with two parallel hip battens, too. The edges of tiles have to be finished and bent up by 20-25mm just in front of each batten and in a line along the hip and covered by the ridge completely. For lower slopes, it is recommended to leave a space for foam filler insertion. At least two nails should be fixed to the ridge on each side to the hip batten every 350mm. One nail shall always be fixed in overlaps.



GABLE - FINISHING TRIMS

The roof edge shall be covered/finished by the original finishing trims (QFT). Trims are available and designed specifically for either the right or left side and aren't interchangeable.

FINISHING TRIMS (QFT)

Finishing trims cover the verges of the saddle or shed roofs. Trims shall be installed from the eave to the ridge over as a bottom flashing and before the installation of tiles. Trims shall be fixed to the rafters or verge battens and on the edges of the horizontal battens by 2 or 3 "staples" from the side (pic.1). Bottom edge of the trim above the gutter shall be cut and bent in order to close its' front gap.

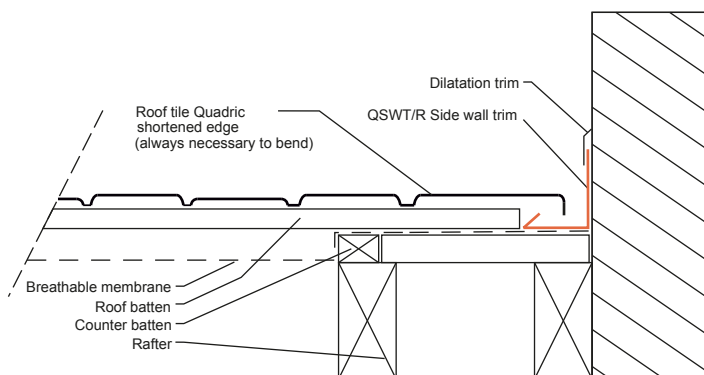
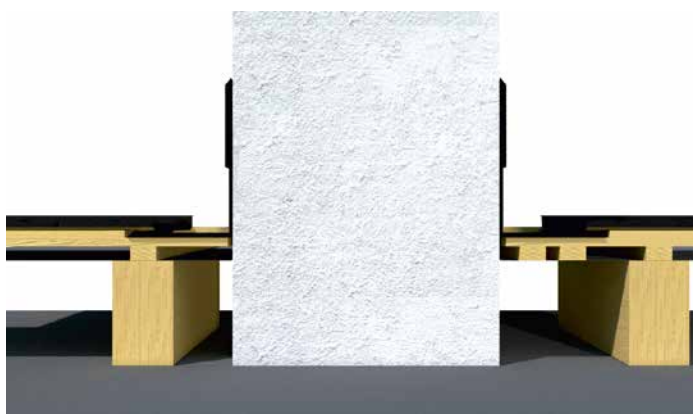


WALL - SIDE WALL TRIMS

SIDE WALL TRIMS (QSWT)

Side wall trim finishes verge on the roof to the vertical structure. Trims are available for both right and left sides. The elements are not inter-changeable.

Trims shall be installed from the eave to the ridge as a bottom flashing and before the installation of tiles. Trims shall be fixed to the verge batten and on the edges of the horizontal battens by 2 or 3 "staples" from the side. The vertical (flashing) part of the trim shall be left free along the structure and overlaid by a dilatation trim (fixed to the structure). The bottom edge of the last trim shall be cut and bent in order to close its' front gap. The trim has to be connected to the wall by a dilatation trim which is finished with silicon glue or inside the wall/structure.

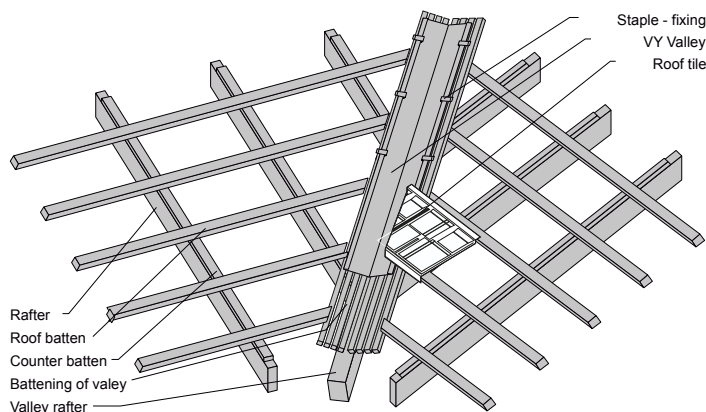


VALLEY

For water and snow diversion, it is possible to use the original valley sheet (VY) with a smooth surface. The valley shall be laid on the level with counter-battens. Then the edges of tiles can be laid over the valley sheet and bent down.

The valley sheet is conic-made. It can be used in one direction only. Follow the arrow mark on the bottom side, which shows the direction from up to down (water flow). The valley sheets will have vertical overlay 100-150mm according to the roof slope. The valley sheets will be fixed with "staples" only to horizontal battens (never fixed through the bottom flashing part).

If bigger streams of rainwater or pressure of melting snow comes to the valley, on one side, it is recommended to use the original valley sheet designed for Evertile Coppo (CVY).



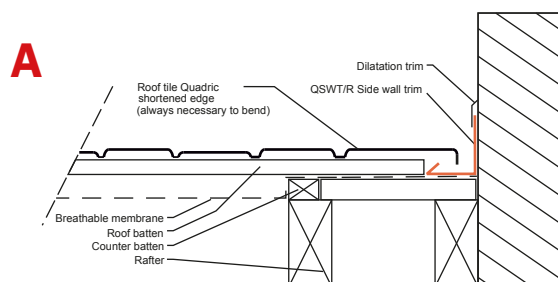
CHIMNEY FLASHING

"A" - The flashing around chimneys shall be imbedded in the level of the counter-battens.

Side flashing shall be made from QSWT trim or from the flat steel sheet VST (to be measured and prepared on the site, like for any other roofing tile). The tiles' edges are bent down to the flashing. The upper edge of the flashing has to be bended and finished on the nearest horizontal roof batten and overlaid by tile.

"B" - The flashing is made over the edges of tiles.

Below the chimney a flat sheet, again, has to be bent and joined. According to the plumbers' rules take the water away from the detail to the tiles. The bottom edge of the sheet has to be bended over the upper edge of the tile below the chimney and fixed by nails from the front in the spots, designated for tiles. The upper edge of the sheet has to be bent and finished to the body of the chimney and shall be overlaid by dilatation trim or filled with silicon roofing glue.



ROOF WINDOW

The installation of roof windows will be made according to the specification of its manufacturer. The only exception is that the frame and flashings shall be laid on level with the counter-battens in order to avoid lifting the tiles over the flashings. Tile edges shall be cut, measured and bent down to the flashing.

The upper side of the window is usually finished in the middle of the tile. For this detail, use "Upper Window Sheet - WUNI", which can replace the tile and be adjusted to fit with the tiles around and with the window flashing, too.

The bottom side of the window frame shall be installed 50-80mm above the horizontal roof batten. The upper corner of the batten shall be cut off under angle 45°. That makes moderate exit of the window flashing (and easy flow of water), which has always be finished over the upper edge of the tile.



ACCESSORIES

The system of accessories is divided in 2 groups.

1. Accessories with tile shape basement.

Installation of these accessories shall be made the same way as the tiles. The basement of each element shall be underlaid below edges of the neighbouring tiles on both sides. Align the grooves and nail through the front edge of the tiles.

Before nailing the plastic made accessories it's recommended to drill the spots first, to avoid breaking off the plastic. Important in cold temperatures!

QHV 110 - sanitary chimney, Slope of the roof 15°-50°

QGS MULTI – gas fluid weathering tile, Slope of the roof 15°-50°

QLV 120 - ventilator plastic 120 cm², Minimal slope 15°

QVL - ventilator steel body 125 cm². Minimal slope 18°

QAZ 16 - tile for antenna

2. Other accessories,

The other accessories are designed for a special function and it is necessary to learn individual instructions for use and installation. These instructions are a subject of training, provided by the manufacturer or available in printed form upon request. This guide describes some of them.

When fixing the elements of basic plate (QBP) and the footstep (QFS) it is necessary to reinforce the elements by screwing the stiffener to the upper batten.

QBP - basic plate

QFS - foot step

HSC -holder of solar collector

SHS – snow holder system

SNE- skylight

QBLC - UNI - holder of flash conductor

QSBN -snow breaker



BIBO SHINGLES

BIBO shingles are the original elements designed by EVERTILE. Material and the surface coatings are identical with the tiles. BIBO is to be used for siding vertical surfaces only – walls, chimneys, dormers, etc.

The cladding of the shingle is possible to change and create different structures of surfaces. BIBO is nailed by using stainless nails and can be easily bent and cut.

40 pieces of BIBO are needed for 1m².

BIBO cannot be used like a roofing material.



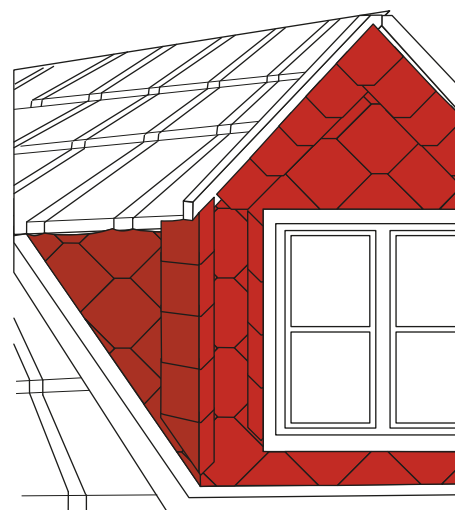
QHV 110 - sanitary chimney



QLV 120 - ventilator



QAZ 16 - tile for antenna

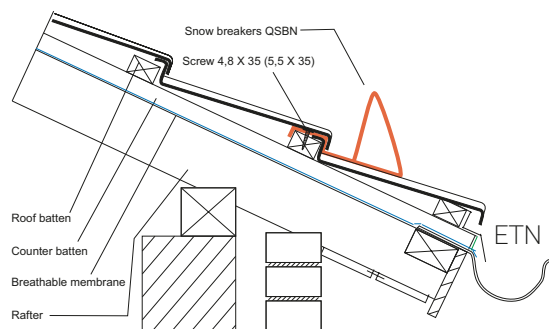


SNOW BREAKERS

Use of the snow breakers (QSBN) is recommended in the following cases:

- a) Prevention of snow falling from the roof.
Design and dimension depends on the snow territory, slope of the roof, length of the roof and type of the roof covering. (See your national or local norms)
- b) Prevention of snow move.
The snow, gliding down the roof can accumulate in details or damage some accessories – roof windows, valley, solar collectors, plastic sanitary vents etc.

Every snow breaker must be fixed with extra screws into the horizontal batten through the upper part.



QFS - foot step



QBP - basic plate



SAFETY ACCESSORIES

Installation of some technical devices and supplements on the roof after finished installation of tiles usually means heavy damage of tiles and often functional defects on waterproofing. This applies to the installation of solar panels, snow fences, servicing antennas and satellites, chimneys etc.

That's why EVERTILE developed this system, which provides a strong and stable support to the range of accessories and supplementary devices without penetration of tiles. According to the purpose use the right extender in the upper part during assembly (QFS/QBP/QHSC).

IMPORTANT!

Every safety element must be fixed with extra screws into the horizontal batten through the reinforcement plate.



CLEANING

Avoid stepping on the roof covering after finishing the installation. Tiles are maintenance-free.

Details, which could be filled with dirt (leaves, needles), are recommended to control and clean.

All places and details, demanding regular service shall be provided with foot steps and walkway grids.

If the tiles get polluted after installation (due to facade works, etc.), it is recommended to change the struck tiles. Any mechanical or chemical attempt at cleaning is breaching the warranty and liability of the manufacturer for damages and lifespan of the surface finishing.

SNOW REMOVAL

Remove snow from the roof only in the cases of emergency (too heavy snow layer on limited bearing roof construction, danger of fall to public spaces, cars, etc.). Always keep 100mm of snow cover on the tiles, to avoid mechanical damage of the surface. Cleaning shall be made from hydraulic platform in order to avoid stepping on the roof.

FINISHING WORKS AND MAINTENANCE

Make a visual control after finishing the installation.

Check the security elements, the foot steps and walkway grids and tightness of all screws.

Clean the roof from bits and pieces of wood or steel left during installation. It is recommended to clean the surface with pressure air or a soft stream of water. Other methods can cause damage on the surface finishing of tiles and accessories or deformations due to stepping on tiles!

Spots, where the coating was scratched during installation must be covered with paint (and granules) from the repair set (REP).

INSTALLATION OF OTHER DEVICES

It is forbidden to interfere with the roof after finishing the installation, due to installation of other devices like solar panels, antennas, windows or advertising signs and objects, etc. Such interference is breaching the warranty. All constructions and devices should be planned before installing the tiles. Any other service works must be made from foot steps, walkway grids or hydraulic platforms.

INSTALLATION TOOLS

Small roofs can be installed with rustless nails and a hammer, while larger roofs are recommended to install by using pneumatic guns with rustless and painted screw-nails.

Guns, electric scissors and benders can be bought or rented from the manufacturer or official dealer.

Using the proper installation equipment makes the installation easier, faster, safer and precise.



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