

INSTALLATION GUIDE





INTRODUCTION

The QUEENTILE® roofing systems are designed for sloped roofs, and the complex of stone coated steel roof tiles and accessories is suitable for both traditional and insulated roofs, including those on attic floors. The stone coated steel roof tiles are made from cold-rolled structural steel with a protective aluminum-zinc and polymer coating applied through a hot process.

The recommended pitch slope for roofs is 10-90 degrees. When waterproofing roofs with a low slope (up to 20 degrees), it is essential to use additional waterproofing coatings.

The installation guide provides general recommendations for installation. The roofing organization is responsible for adhering to all national standards and regional building norms and regulations.

The stone coated steel roof tiles come in five profiles: TM "QUEENTILE" STANDARD, TM "QUEENTILE" CLASSIC, TM "QUEENTILE" VERONA, TM "QUEENTILE" SHAKE, and TM "QUEENTILE" SLATE.





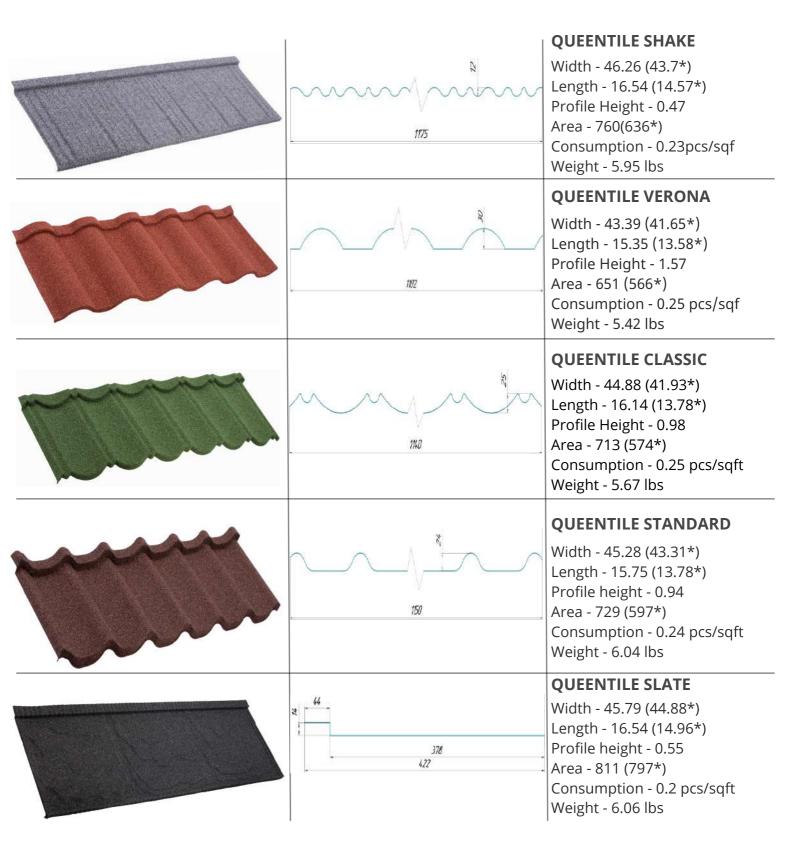
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2 COLLECTION

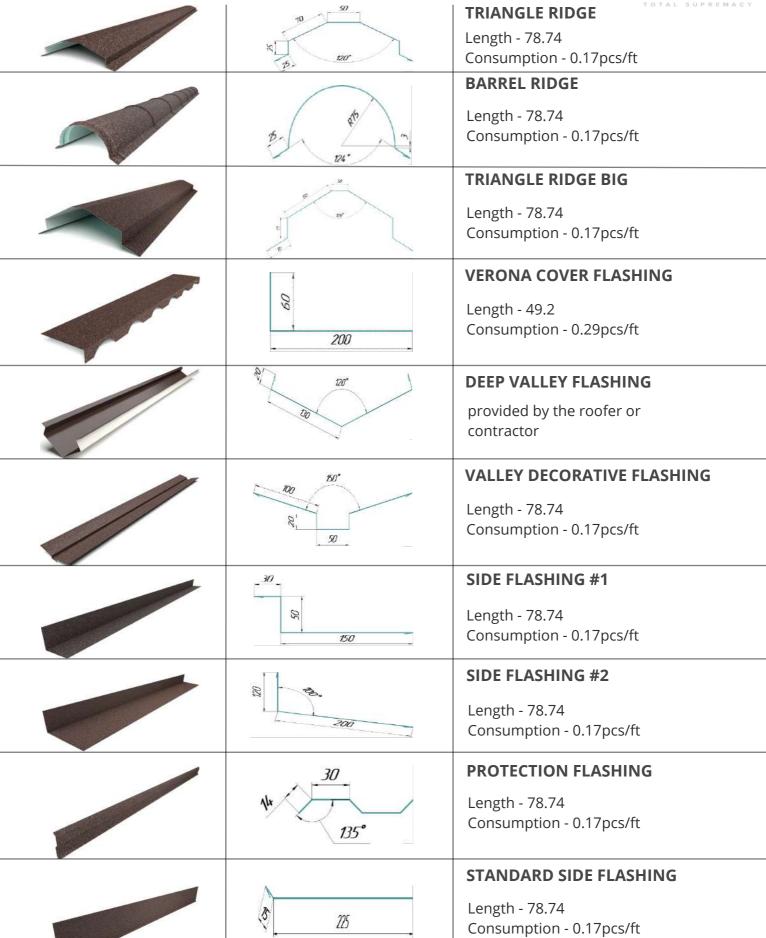


Stone coated steel roof tiles TM "QUEENTILE" is manufactured on five profile types: TM "QUEENTILE" STANDARD, TM "QUEENTILE" CLASSIC, TM "QUEENTILE" VERONA, TM "QUEENTILE" SHAKE, and TM "QUEENTILE"SLATE.

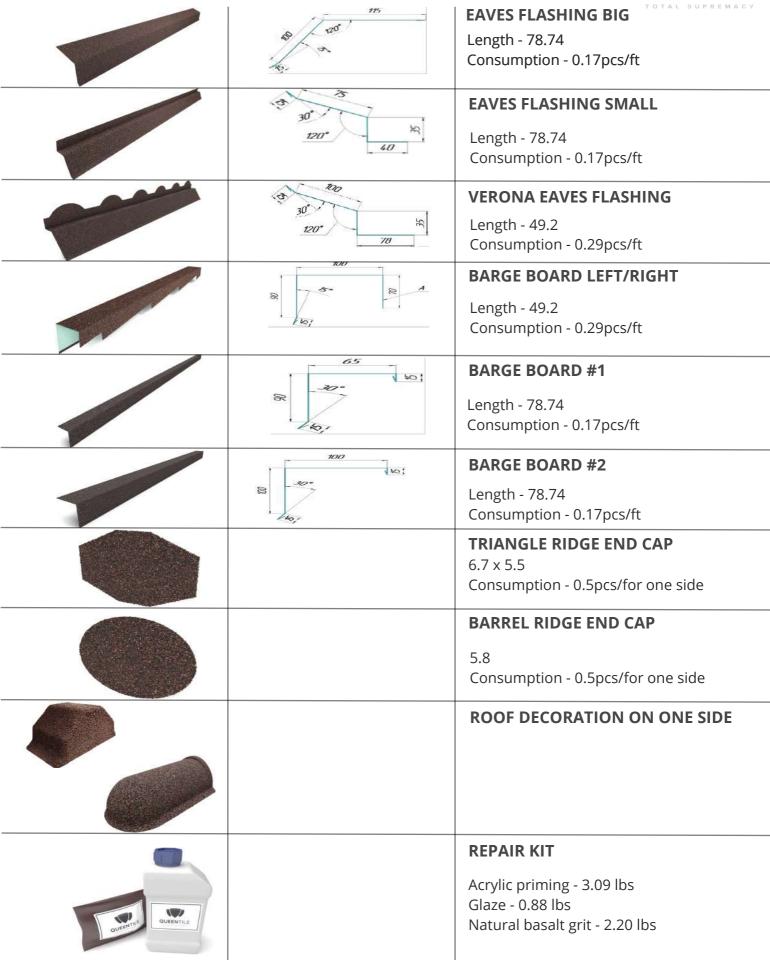


*EFFECTIVE AREA









4 MANUFACTURING TECHNOLOGY

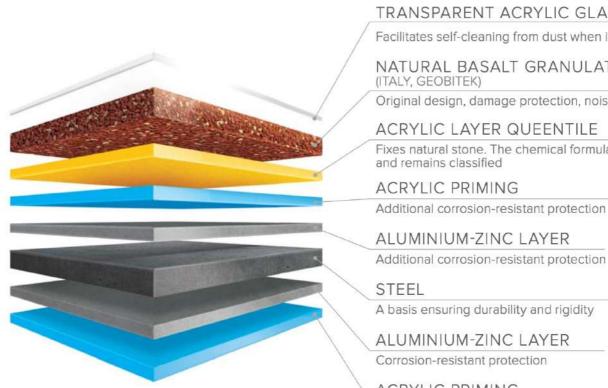


QUEENTILE® stone-coated steel roofing is manufactured using cold-rolled structural steel from leading metallurgical plants. The steel is coated with a protective layer of aluzinc which provides up to 3-6 times more corrosion protection than standard galvanization. Additionally, a polymer coating is applied to both sides of the metal to further enhance its corrosion-resistant properties.

The roofing sheets are produced using an automated line from SAMESOR OY in Finland, which ensures that each sheet has identical characteristics and a tighter lock closure. This results in a decreased possibility of roof leakage during extreme weather conditions and provides a greater architectural expressiveness to the building.

After undergoing mechanical treatment, the sheets are supplied to an application line for a protective and decorative outer coating, which is designed and manufactured in Italy. The sheets are coated with an acrylic primer, followed by basalt chippings, which give the roofing material the appearance of ceramic tiles. Finally, an acrylic glaze is applied to enhance the decorative properties, increase cohesion between the basalt layer and the roofing material, and extend the life of the roofing system.

Throughout the manufacturing process, strict control of all parameters ensures that QUEENTILE® stone-coated steel roofing has a durability of up to 50 years.



TRANSPARENT ACRYLIC GLAZE

Facilitates self-cleaning from dust when it rains

NATURAL BASALT GRANULATED MATERIAL

Original design, damage protection, noise insulation

Fixes natural stone. The chemical formula is patented

Additional corrosion-resistant protection

A basis ensuring durability and rigidity

ACRYLIC PRIMING

Additional corrosion-resistant protection

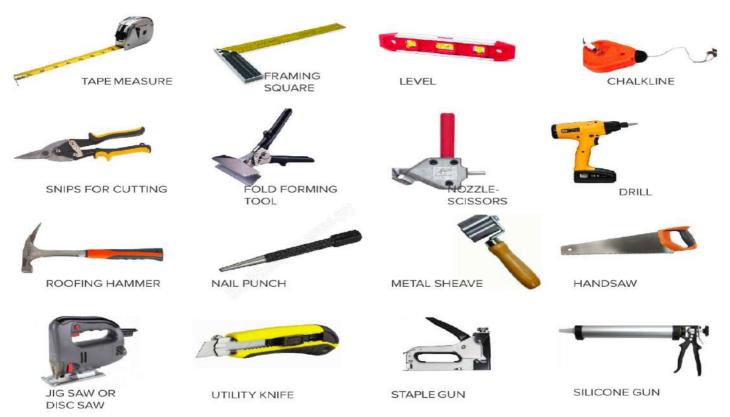
5 STORAGE



Sheets and accessories of stone coated steel roof tiles TM " QUEENTILE" should be stored on pallets in the factory packaging in a dry, well-ventilated room. During the installation of the stone coated steel roof tiles TM " QUEENTILE" and when the pallets are outside, the sheets and accessories must be kept on pallets in protective film under a waterproof shelter. It is FORBIDDEN to store the repair kit at a temperature below +41 °F. When freezing and subsequent thawing, the paint and lacquer products lose their physical and chemical properties. It is not allowed to move the sheets of stone coated steel roof tiles TM " QUEENTILE" by dragging them across other sheets or on the ground. If the elements received minor mechanical damage during loading and unloading work, the damaged areas must be covered with a repair kit. Stacking pallets with the roofing system TM "QUEENTILE" is FORBIDDEN. The product in factory packaging can be stored outside the room for no more than 1 month, protecting it from the effects of the environment (precipitation, UV radiation). Longer storage is carried out in dry, ventilated rooms. In this case, the transport packaging should be removed and air circulation ensured. It is forbidden to store the elements of the roofing system TM "QUEENTILE" directly on the ground, even inside buildings.



6 TOOLS USING DURING INSTALLATION



7 ROOF INSULATION AND WATERPROOFING Depending on the regulations and requirements in each state.



Effective roof insulation is crucial for maintaining a building's thermal insulation system, as the majority of heat loss occurs through the roof. For pitched roofs, vapor-permeable insulation materials like fiberglass, mineral wool, and basalt wool are commonly used and can be obtained in packages as slabs or rolls. It's important to note that if vapor-proof insulation is used, the roof will no longer be self-ventilated, resulting in excess moisture accumulating on the insulation and adjacent surfaces in the form of condensate. This can cause rapid deterioration of the insulation and wooden roof structures. There are two methods for insulating pitched roofs:

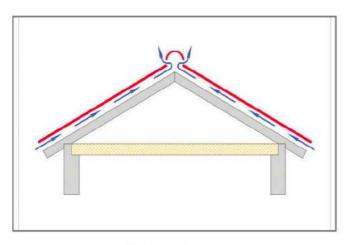


Fig 7.1 Cold roof

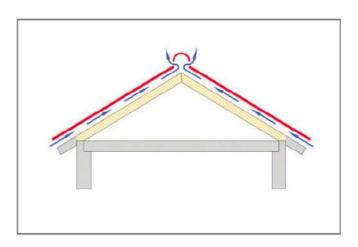
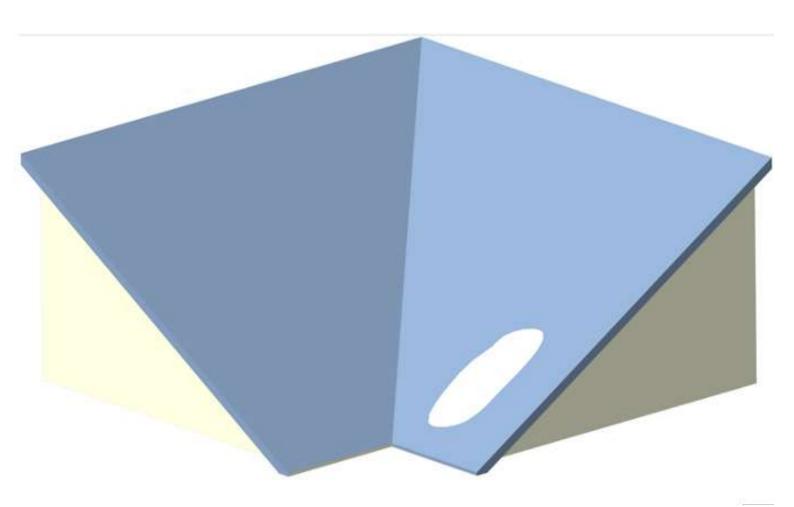


Fig 7.1.2 Warm roof

When the attic space is not intended to be used as a living area, horizontal insulation can be used to save on insulation quantity. This type of insulation is limited by the building's construction and is situated within it, allowing for a reduced volume of heated space in the future compared to insulation along the rafters. Proper density is essential for long-term insulation effectiveness. Membranes and films should be sealed with specialized adhesive tape or film sealant at junctions. Thicker insulation leads to lower heating costs, and necessary insulation should be calculated during the design stage. Insulation can be laid from either the top or bottom of the rafters. A vapor barrier should be applied along the roof contour, wrapped to the top, and sealed to prevent moisture from entering the insulation. It is important to note that vapor barrier film cannot bear weight, so the insulation must be placed on a wooden or other flooring. The insulation should be laid with attention to seam dressing, avoiding excessive pressure or sealing to ensure it lies freely.



The crate is attached to a pre-prepared surface of the roof slope, providing sufficient strength, solidity, and surface waterproofing. Materials such as OSB sheets or solid planks with self-tapping screws or nails attached to the roof trusses can be used. The waterproofing is laid on top and fastened with a stapler. Super-diffusion membranes or other materials allowed in the region can be used.



The battens are made of wooden beams with a cross-section of 2" x 2" with a spacing of:

13.66" for TM "QUEENTILE" STANDARD;

13.78" for TM "QUEENTILE" CLASSIC;

13.58" for TM "QUEENTILE" VERONA;

14.57" for TM "QUEENTILE" SHAKE;

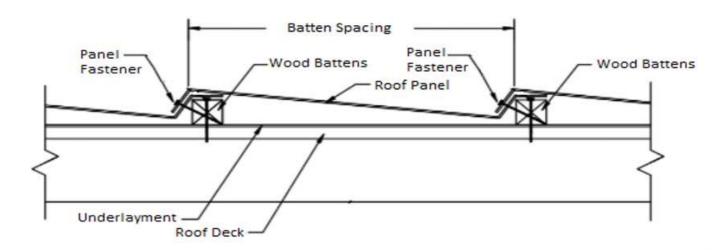
13.96" for TM "QUEENTILE" SLATE.

The battens are mounted from bottom to top towards the ridge.

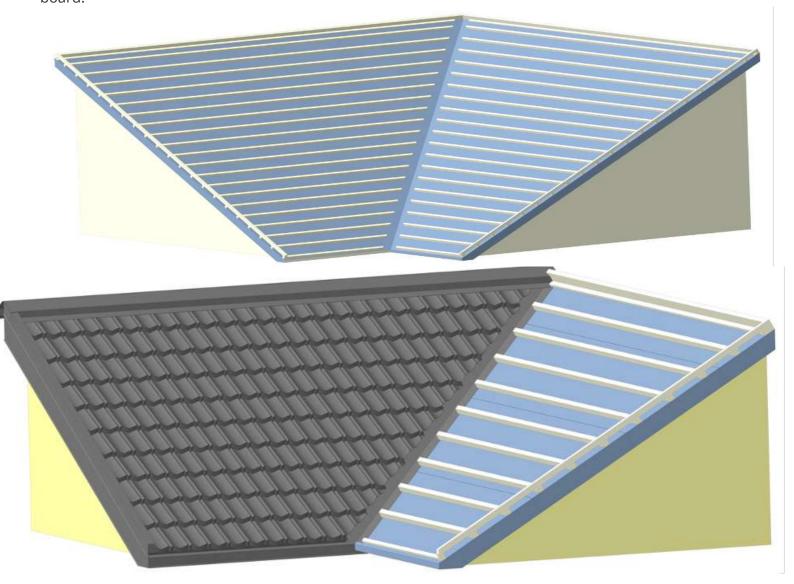


Options for installing the batten.

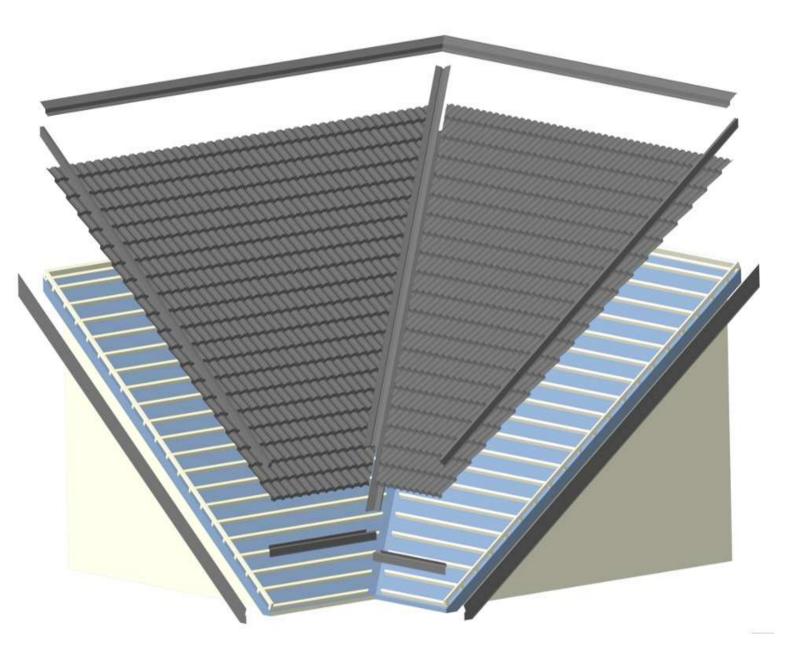
For the TM "QUEENTILE" CLASSIC and TM "QUEENTILE" STANDARD tiles.



Installation of the batten with a $2" \times 2"$ cross-section, with a spacing according to the recommendations for the tiles. The position of the first row of battens is determined by the dimensions of the chosen fascia board.







The figure shows an example of sequential installation using:

- TM "QUEENTILE" Eaves Flasing Big
- TM "QUEENTILE" Deep Valley Flashing
- TM "QUEENTILE"CLASSIC
- TM "QUEENTILE" Side Flashing
- TM "QUEENTILE" Barge Board left/right
- TM "QUEENTILE"Valley Decorative Flashing
- TM "QUEENTILE" Triangle Ridge



8.1.Fastening of the TM "QUEENTILE" RIDGE (TRIANGLE RIDGE OR BARREL RIDGE) for TM"QUEENTILE' STANDARD, VERONA, CLASSIC

If the roof slope ends with a ridge, then the last batten of the lathing should be installed after mounting the holders for the ridge beam. The basis for mounting the ridge plank is the ridge beam device. The ridge beam is mounted on steel plates (Simpson Strong-Tie). https://www.homedepot.

com/p/Simpson-Strong-Tie-HRS-12-in-12-Gauge-Galvanized-Heavy-Strap-Tie-HRS12/100375113

Let's consider step-by-step instructions for mounting holders for the ridge beam for roofs with a slope of 30-50 degrees:

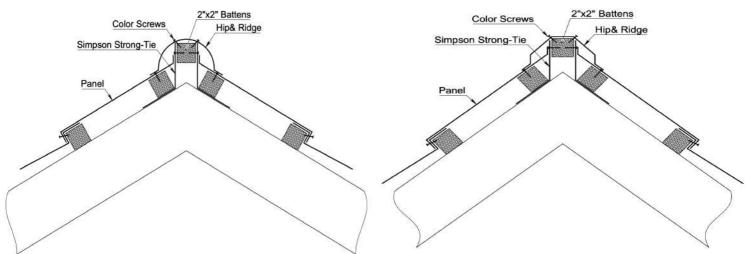
Find the center of the ridge.

Pre-bend the Simpson Strong-Tie plate to the desired angle of the roof.

Attach two Simpson Strong-Tie plates on the edges, with a height of 5.5-5.9 inch from the control rail to the upper surface of the wooden beam.

Stretch a cord between the extreme plates of the ridge beam and mount the remaining plates with a step of no more than 19.7 inch.

Secure the ridge beam to the plates. Note that the beam should be joined on the holders. For roofs with a larger or smaller angle, the height of the ridge may vary for the sake of the attractiveness of the roof.

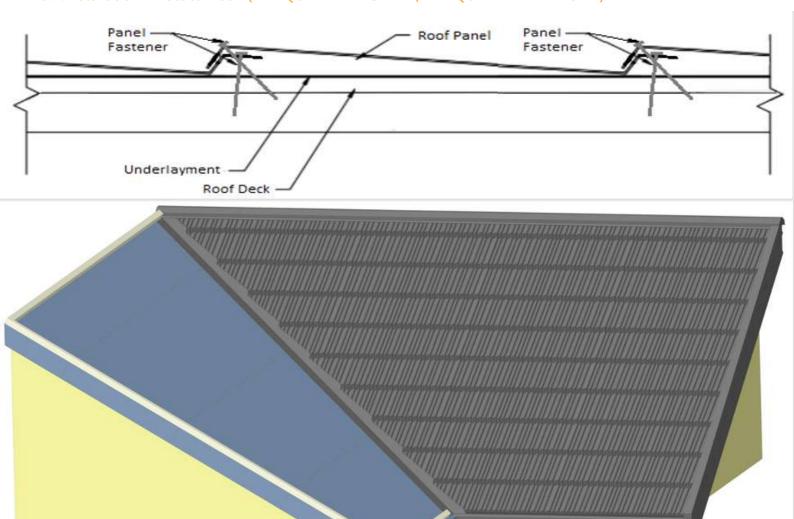


Installation of a roof over existing asphalt shingles. In most cases a layover is highly recommened by all experts. Stone coated steel roof tiles over one layer of asphalt = good for environment. Assuming the deck is

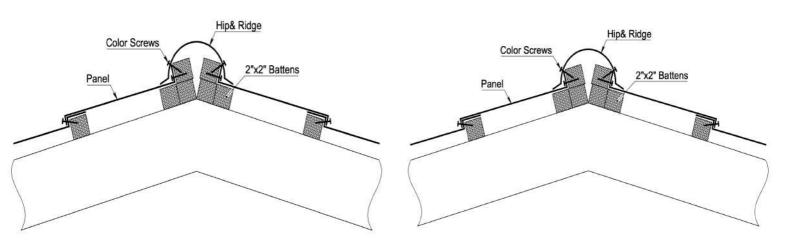




8.2.Installation Direct to Deck (TM"QUEENTILE" SHAKE, TM "QUEENTILE" VERONA)



Fastening of the TM "QUEENTILE" RIDGE (TRIANGLE RIDGE OR BARREL RIDGE) only TM"QUEENTILE" SHAKE AND TM"QUEENTILE" SLATE"





9.1. Installation of the TM "QUEENTILE" Eaves Flashing (Small, Big)

Before installing the bottom tile, secure the eave flashing with two to three nails. Ensure that any roofing accessories overlap by at least 4 inches.



Fig 9.1.1 Small eave flashing installation



Fig 9.1.2 Big eave flashing installation

TM "QUEENTILE" CLASSIC Installation

For the installation of QUEENTILE® CLASSIC tiles, it is recommended to start from the second row from the top and work downwards towards the overhang, with a chequerwise shift between tiles. The upper row should be left until last, allowing for cut tiles to be fitted in place with proper overlap.

When installing QUEENTILE® CLASSIC shallow profile tiles, it is important to bend them along the ridge and front units, as well as at places where they meet with other roof components. Tile laying may be done from left to right or right to left, depending on factors such as wind loads and aesthetic considerations. It is important to choose a direction that best suits the design of the roof.



Fig 9.1.3 Benting up the tile on the gable



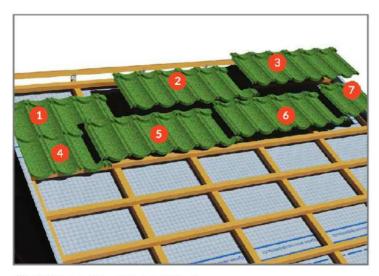


Fig 9.1.4 Laying a horizontal raw

Fig 9.1.5 Laying a vertical raw

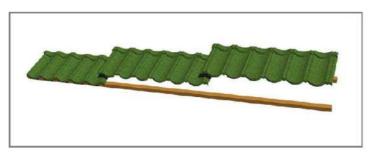
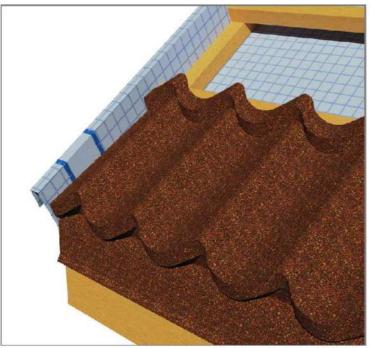


Fig 9.1.6 Overlapping the tiles from left to right



Fig 9.1.7 Overlapping the tiles from right to left

QUEENTILE® STANDARD and QUEENTILE® VERONA deep profile tiles are not recommended to be bent during installation. The unique lock design in QUEENTILE Standard provides visual appeal by concealing the vertical seam, however, it only allows for one installation direction where the left tile overlaps the right tile.



technology and has a projecting part at the top that can be bent with a hammer to secure the tile against the sheathing and when installing multi-tile sheets on a roof, the installation should begin with these tiles. An important feature of QUEENTILE® STANDARD stone coated steel roofing is that it can be installed in the traditional method used for all types of roofing coats, from the eave projection to the ridge node.

QUEENTILE® STANDARD is made using rolling

Fig 9.1.8 Gable adjoining



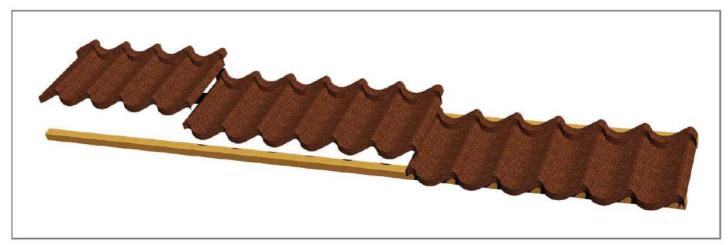


Fig 9.1.9 The overlapping is possible from right to left



Fig 9.1.10 The installation of the first row



Fig 9.1.11 The installation of the following rows

In addition, it should be noted that the standard installation method from the ridge to the eave can also be used. To secure the stone coated steel roofing, it is recommended to use anticorrosive painted nails. During the initial installation, the tiles should be fastened to the roof sheathing in the upper part using 12-14 nails or screws perpendicular to the slope plane. These fastening points will later be concealed under the upper tiles or roofing accessories.

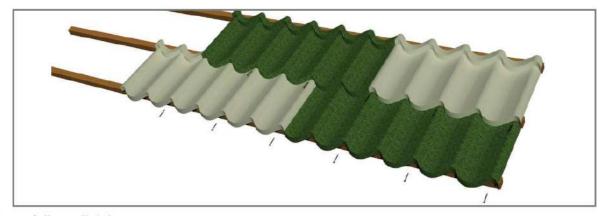


Fig 9.1.12 Points of tiles adjoining



The sheets should be securely fastened to the vertical ledge that separates the transverse rows of tiles, with the following exceptions: the first row adjacent to the eave and the final row at the top, which are arranged at an incline. Nailing can be done either manually or with the assistance of a pneumatic hammer.

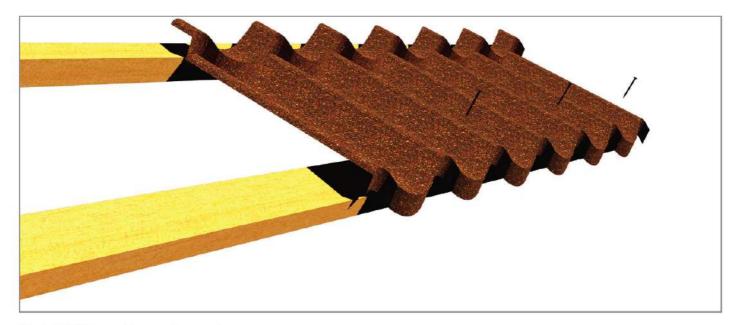


Fig 9.1.13 Fixing points on the overhang

Secure a nail or crews at a 45-degree angle to the slanted surface of the roof sheathing skid, ensuring it is firmly attached to the edge. When manually driving the nail or screws, use a nail punch for assistance. Please note that only original products should be used for installation. The company cannot be held accountable for the quality or durability of any additional elements created by the customer using non-standard materials. Such products are not covered under warranty.

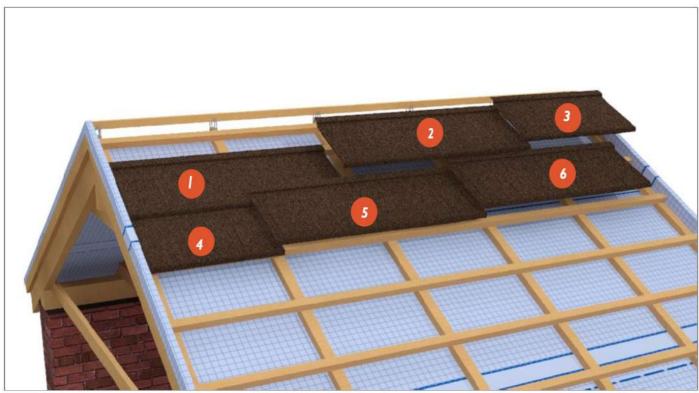


TM"QUEENTILE" SHAKE

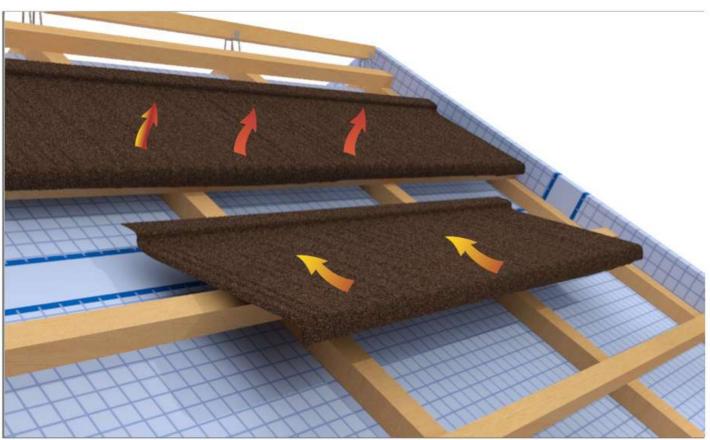
To begin installing QUEENTILE® SHAKE tiles, start from the second row from the top and work downwards towards the overhang. The tiles should be shifted in a checkerboard pattern. Install the top row last, using cut tiles that have been prepared in advance to ensure proper overlapping.

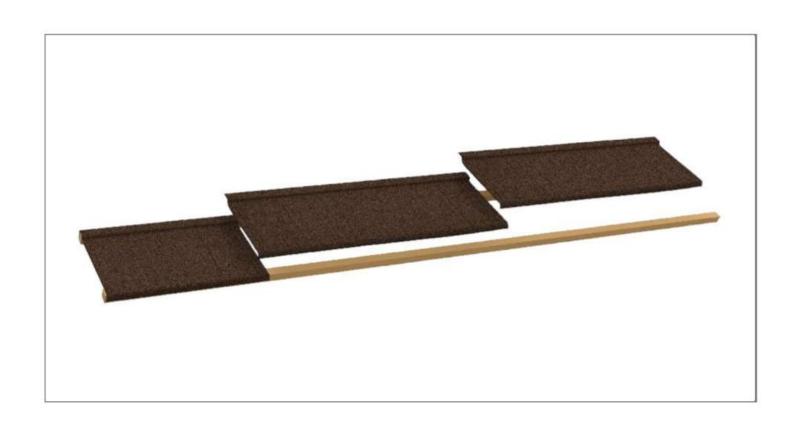
When installing QUEENTILE® SHAKE tiles with a shallow profile, bend them at the ridge and front units, as well as at adjoining areas. The tiles may be laid from left to right.









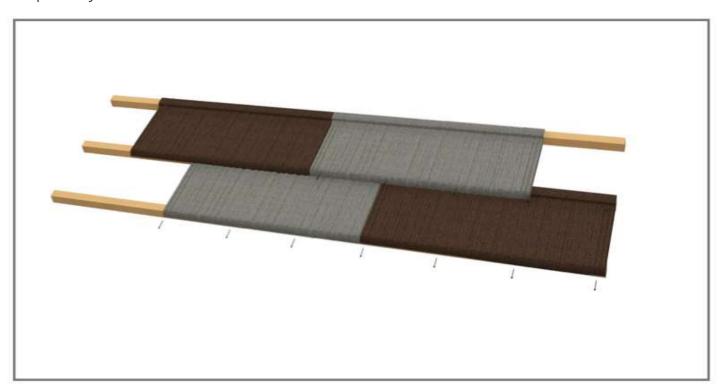




While the standard installation method involves starting from the ridge and working towards the eave, other installation methods are not excluded.

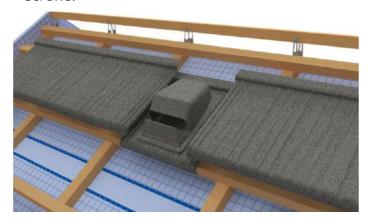
Use anticorrosive painted nails to securely fasten the stone-coated steel roofing in place. For the initial tiles, use 2-3 nails or screws to fasten them perpendicularly to the slope plane in the upper section. These fastening points will be concealed under the upper tiles or roofing accessories later on.

Ensure that the main points of tile fastening on the slope plane are located at sheet joints and that the sheets of Shake are evenly distributed. Each sheet should be fastened at least 12 nails or screws, respectively.



Position the ventilation outlets near the ridge at the top of the ramp. Mount the ventilation outputs in between the tiles.

Make sure that the chateau part is located underneath the tile and securely fastened with 4 nails or screws.

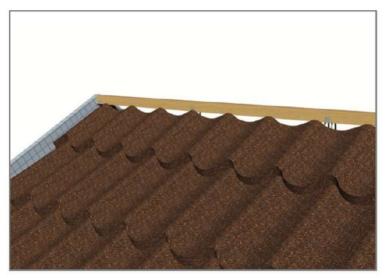






9.2. Installation of the TM "QUEENTILE" Triangle Ridge

Cover the ridge skid with ventilation tape that is wide enough to provide adequate coverage. Use staples to secure the tape in place, and use a roller to ensure that the edges are smoothly rolled down (Depending on the regulations and requirements in each state.) Finally, glue the edges of the tape to the surface of the stone-coated steel roofing.



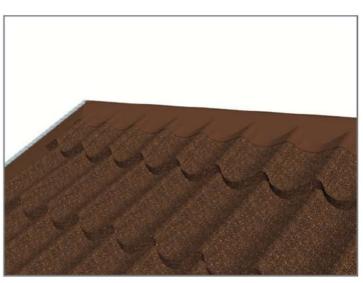


Fig 9.2.1 Tile adjoining to the ridge batten

Fig 9.2.2 Ventilation tape installation

Fasten the ridge flashing to the ridge skid at the top, ensuring that it is laid in a straight line. For best results, use a stretched thread as a reference.

For a more polished look, consider installing end caps on the ridge.



Fig 9.2.3 Ridge flashing installation

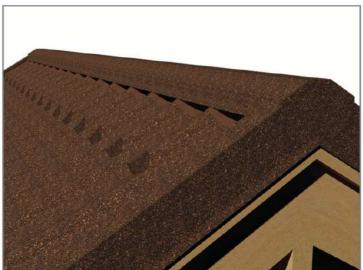


Fig 9.2.4 End cap installation



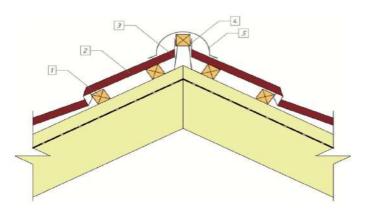


Fig 9.2.5 Ridge node without ventilation tape

- 1. Roof sheathing
- 2. Classic tile
- 3. The holder of the ridge batten
- 4. Tile's hemming
- 5. Ridge flashing

Fig 9.2.6 Ridge node with ventilation tape

- 1. Roof sheathing
- 2. Classic tile
- 3. The holder of the ridge batten
- 4. The ventilation tape of the ridge
- 5. Ridge flashing

For instance, cut the strip by 0.4-0.6 inches along the angles of the intersecting planes, and bend the resulting consoles inwards by 90°. To facilitate bending, the cuts may be made at a 45° angle to the point of intersection. Place the end cap of the ridge inside the sealant and secure it with either pop-rivets or self-drilling screws.



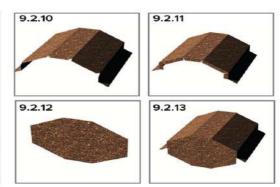
Fig 9.2.7 Tile's adjoining to the ridge batten without using the roofing tape



Fig 9.2.8 Tile's adjoining to the ridge batten without using the roofing tape







Alternatively, the end cap can be secured by attaching it to separately prepared cutting waste corners. Once the end cap is in place, seal the joints between the end cap and the ridge using a sealant and maintenance kit, if necessary.

If connecting three or more ridge flashings, or attaching to gable boards, adjust the connections in place before sealing and treating them with the sealant and maintenance kit.



9.3. Installation of the TM "QUEENTILE" Valley Decorative Flashing

Begin the installation process from the bottom and work your way up. Adjust the lower part of the first flashing and the upper part of the last flashing in place.

Fasten the flashings with either anticorrosive self-drilling screws with a flat wide head or aluminum pop-rivets at the points where they come into contact with the tile. To ensure the flashings are laid straight, it is crucial to stretch threads as a guide.

A decorative valley is recommended for improving the aesthetic appeal of the roof and aligning the internal corners. Additionally, it serves to prevent snow and debris from entering the inner valley.

Note that the overlapping of the flashings in the valley node should be at least 4 inches.

9.4. Installation of the TM "QUEENTILE" Barge Board (#1,#2,Left/Right)

There are four versions of finishing gable flashings - barge board left and right, barge board #1,barge board #2 both of which are designed to fit perfectly with the pitch of the tile wave.

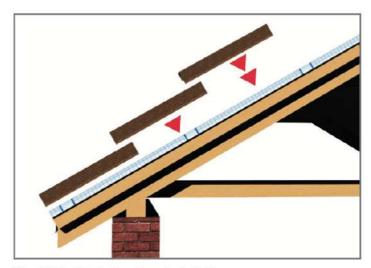


Fig 9.4.1 Gable flashing installation



Fig 9.4.2 Gable flashing installation

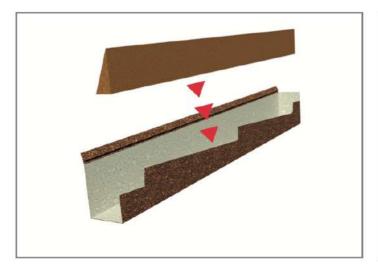


Fig 9.4.3 Glueing the sealant



Fig 9.4.4 The flashing with glued sealant

(Depending on the regulations and requirements in each state.)



When installing the gable flashing, it should be placed on the top part, allowing for the underlaying elements of the gable overhang to be installed later. The installation process should begin from the bottom and work your way up.



Fig 9.4.5 The gable board with ending cap installation

If there is a protruding end that needs to be covered, you can follow these steps:

- 1.Cut four corners from leftover material and attach them to the edge of the gable board.
- 2.Cut a rectangle out of a flat sheet with sides that are 2 inches smaller than the inner cavity of the board.
- 3. Fasten the rectangle to the corners using rivets or screws.
- 4. Finally, treat the area with a maintenance kit.







9.5. Arrangement of adjoining

It's crucial to ensure that the water isolation membrane is properly glued at the adjoining points. Before applying the tape, make sure to prepare the surface of the wall or pipe, depending on the material. Lay the adjoining tape from the bottom up and use a metal roller to roll it out. Then, cover the tape with a flashing of side adjoining and use fastening elements suitable for the material of the walls or pipe. Treat the upper edge of the flashing and connections with sealant. Avoid grooving or any other rough work on the stone coated steel roofing, as it can create fine dust that's difficult to remove from the surface.



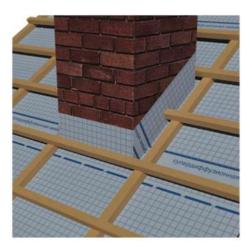


Fig 9.5.1 Gluing the membrane to the vertical surface



Fig 9.5.2 Tile installation in the place of adjoining



Fig 9.5.3 The roofing tape gluing in the lower part of adjoining

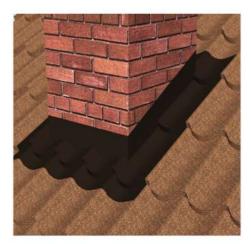


Fig 9.5.4 Gluing the roofing tape



Fig 9.5.5 Side flashing installation in the lower part of adjoining node



Fig 9.5.6 Side flashing installation at the side and top of adjoining node

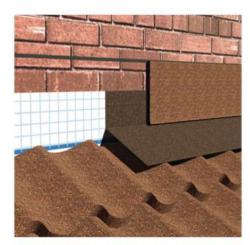


Fig 9.5.7 The adjoining of roof pitch to the wall sideways on the slope

- 1. Silicone sealant
- 2. Side wall flashing shield
- 3. Side flashing N°2

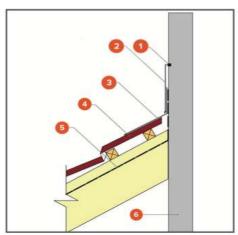


Fig 9.5.9 The adjoining of roof pitch to the wall sideways on the slope



Fig 9.5.8 The adjoining of roof pitch to the wall parallel to the slope

- 4. Standard tile
- 5. Superdiffusion membrane
- 6. Wall



9.6. Treatment with a maintenance kit

Once the roofing coat and accessories are installed, it is crucial to address any damages to the decorative coating or to any fastening elements such as nails, screws, or rivets. To facilitate this process, a standard QUEENTILE maintenance kit is available and includes the following items:

Acrylic priming - 3.09 lbs Glaze - 0.88 lbs Natural basalt grit - 2.20 lbs

To apply the binder and glaze, you will require brushes. It is recommended to apply the compound at a temperature above 5 °C on a dry roof surface. Apply the binder dropwise to ensure complete coverage of the damaged areas and fastening points of the stone coated steel roofing surface and firmly capture the granulate.

Please note that the glaze should only be applied the following day after treating the damaged areas and fastening points with the binder and granulate. Keep the acrylic components of the maintenance kit in a warm place with a temperature above 10°C.

Treating the roof with the maintenance kit is the final step in the roof arrangement process using QUEENTILE® stone coated steel roofing.

CONCLUSION

If you need help with calculating the required roofing components, please get in touch with our managers. Our engineers will quickly provide you with accurate calculations, accounting for any overlaps and waste materials.

QUEENTILE® is a state-of-the-art stone coated steel roofing system that rightfully belongs among the elite building materials. Its quality and appearance remain unchanged over time.

With advances in technology, roofing materials have evolved from heavy and cumbersome systems to simpler and more efficient structures. By choosing QUEENTILE® stone coated steel roofing, you are selecting a roofing solution that offers reliability, quality, and outstanding architectural expressiveness.