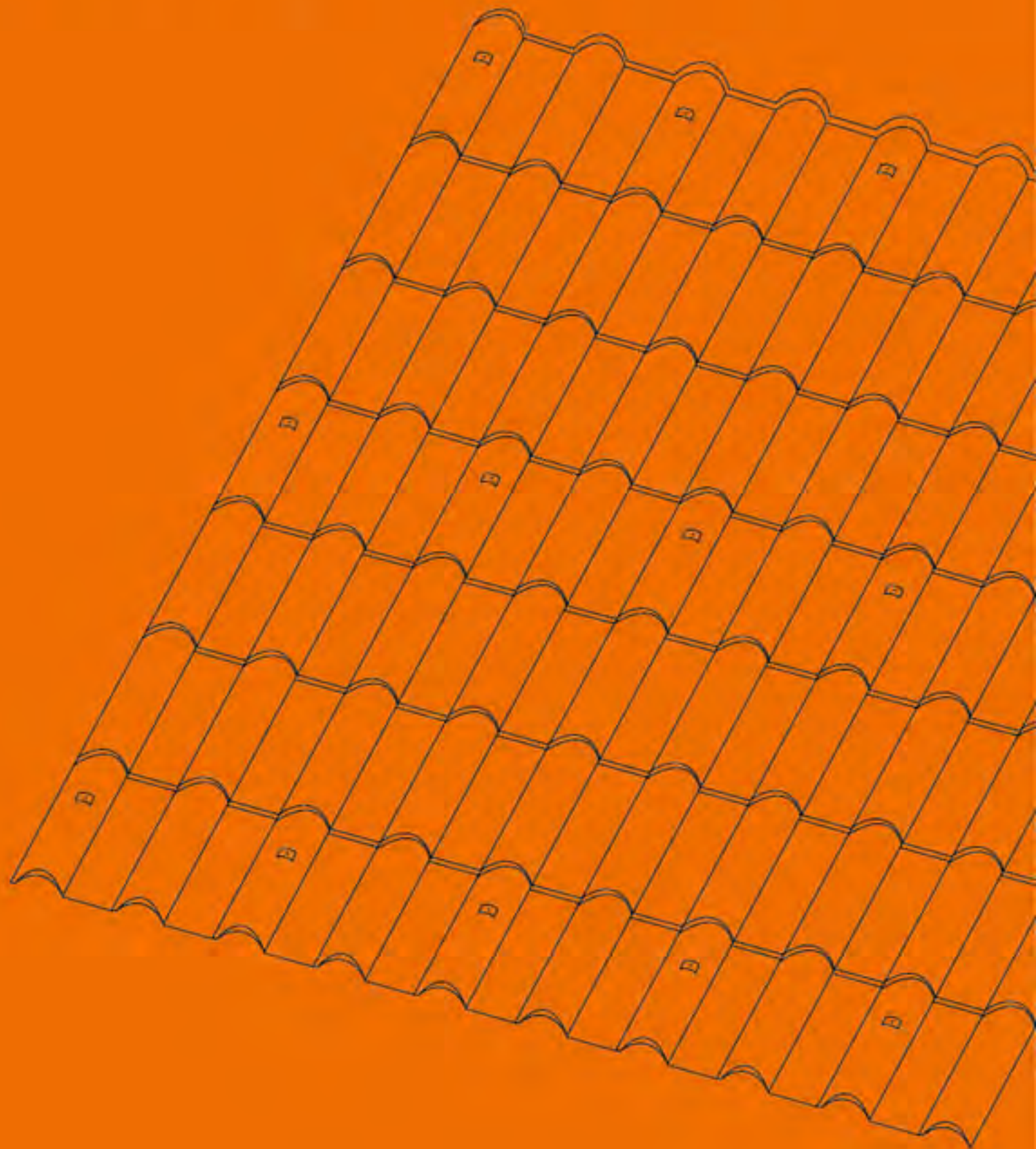
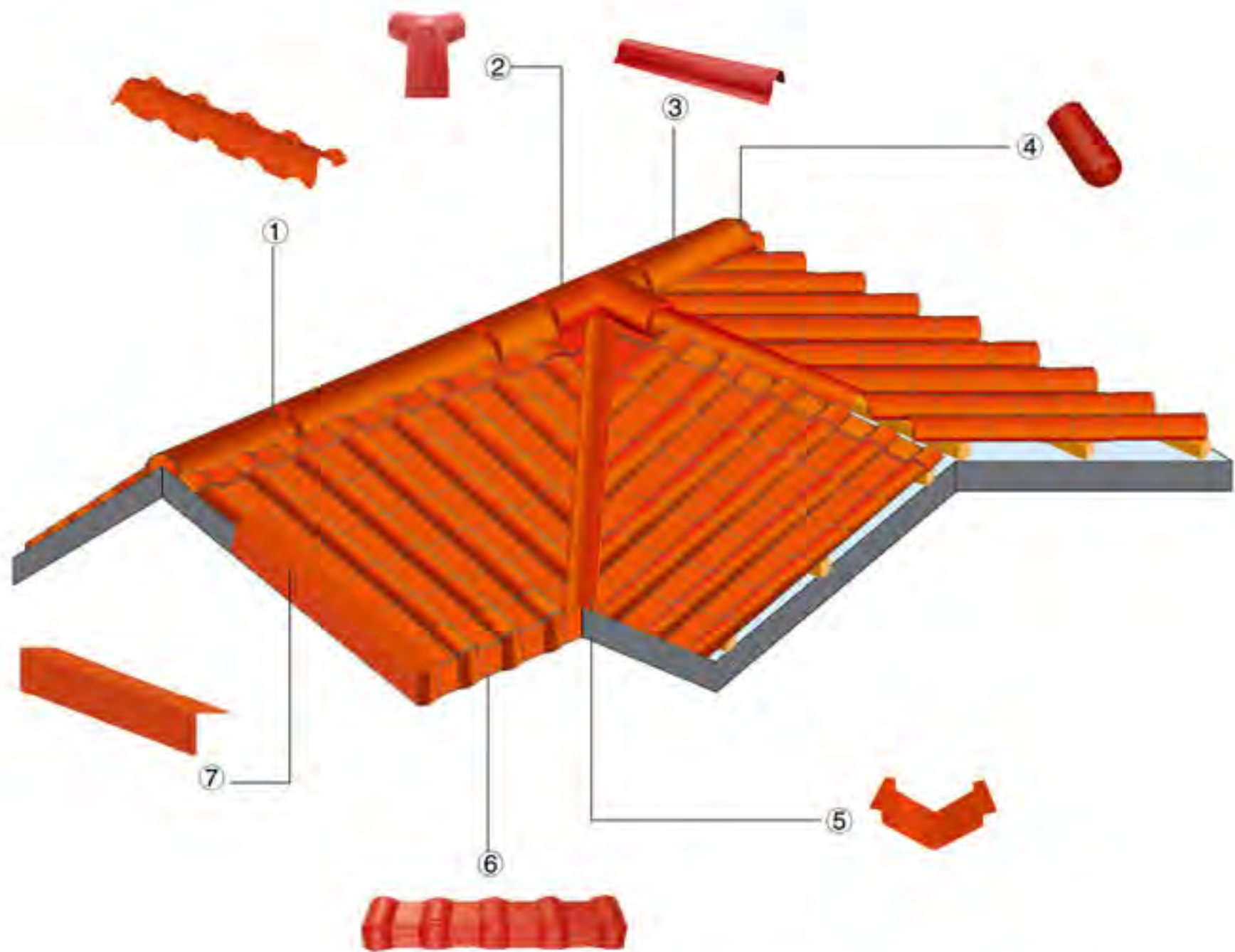




FANGXING
GELOY™ ROOFING TILE

TECHNICAL AND INSTALLATION





- | | | | |
|-----------------|---------------|------------------|---------------------------|
| ① Ridge Unit | ② 3-way Ridge | ③ Diagonal Ridge | ④ Terminal Diagonal Ridge |
| ⑤ Valley Gutter | ⑥ Eave Tile | ⑦ Barge Board | |

PRODUCT INTRODUCTION

FANGXING Gely™ Roofing Tile coated with ASA resin are special 3-layer co-extruded sheets. As the top layer material, ASA anti-climate engineering resin is extraordinarily suitable for outdoor use. Even exposed to ultra-violet radiation, dampness, heat, chillness and impact, the products remain the stability of color and physical properties. Tests held in Aging Test Center of Arizona and Florida by GE prove that ΔE is less than 5 within 10 years, which means the color will preserve for more than 10 years in nature. Moreover, it has excellent performance on anti-corrosion. They offer a wide range of advantages over traditional roof covering. The specific technical performances permit installation of the tile and wall cladding in both industrial and residential applications.

TECHNICAL FEATURES



Fast Color

FANGXING Gelay™ Roofing Tile is protected by ASA resin, and tests held in Aging Test Center of Arizona and Florida by GE prove that the color will preserve for more than 10 years in nature.



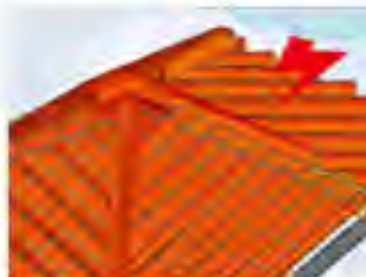
Anti-corrosion

The material of synthetic resin roofing tile is totally anti-corrosive, which can withstand most chemicals like acid, alkali and salt and industrial emissions.



Acoustic Insulation

The physical properties of FANGXING synthetic resin roofing tile have excellent acoustic insulation performance, which is 10~15% lower than metal sheets.



Electric Insulation

The material of synthetic resin roofing tile does not conduct electricity.



Resistance to High and Low Temperatures

FANGXING new technology make the synthetic roofing tile can be used in wider ranges of climates. The roofing tile can keep the physical stability from -20℃ to 85℃.



Anti-load

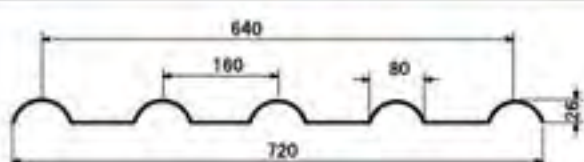
Tests by National Test Center of Polymer & Building Materials show that with purlin space of 660mm roofing tiles have no breakage under 150kg loading pressure.



Fire Resistance and Self-extinguishing Material

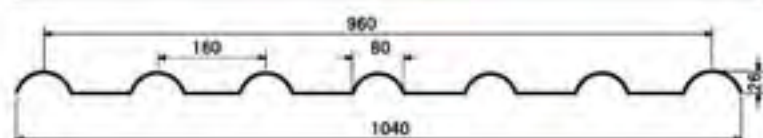
Tests by National Test Center of Polymer & Building Materials prove that FANGXING Gelay™ Roofing Tile is Class B1 material.

PRODUCT SERIES



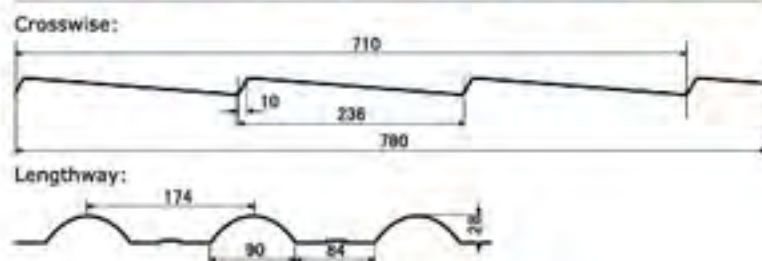
ROYAL 720

Standard length of tile:	2180mm/5668mm
Width:	720mm
Working width:	640mm
Wave length:	218mm
Length:	Customize
Purline space:	660mm
Head lap:	218mm(1wave)
Thickness:	2.5mm,3.0mm



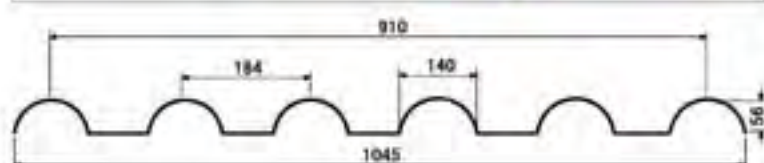
ROYAL 1040

Standard length of tile:	2180mm/5668mm
Width:	1040mm
Working width:	960mm
Wave length:	218mm
Length:	Customize
Purline space:	660mm
Head lap:	218mm(1wave)
Thickness:	2.5mm,3.0mm



ROYAL 780

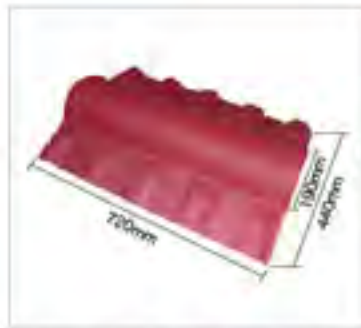
Standard length of tile:	2180mm
Width:	780mm
Working width:	710mm
Wave length:	236mm
Length:	780mm
Purlin space:	710mm
Head lap:	70mm
Thickness:	2.5mm,3.0mm



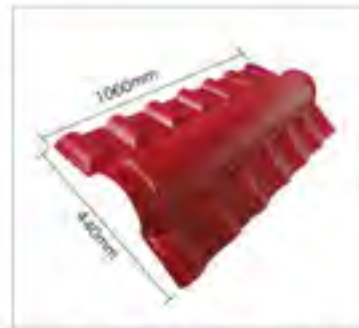
ROMA TILE

Standard length of tile:	1968mm/5576mm
Width:	1045mm
Working width:	910mm
Wave length:	328mm
Length:	Customize
Purlin space:	990mm
Head lap:	328mm(1wave)
Thickness:	2.5mm,3.0mm

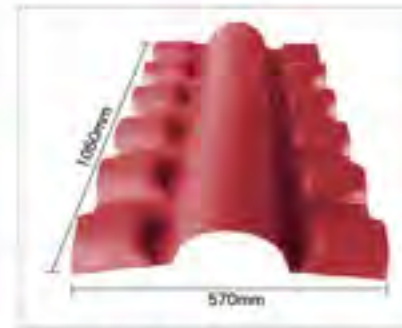
FITTINGS & ACCESSORIES



Ridge Unit for Royal 720



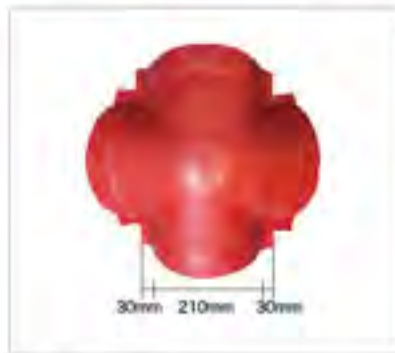
Ridge Unit for Royal 1040



Ridge Unit for Roma Tile



Ridge Unit for Royal 780



4-way Ridge



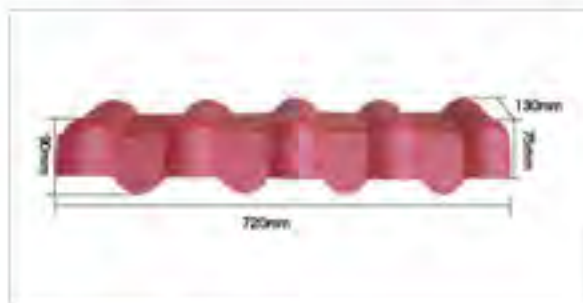
3-way Ridge



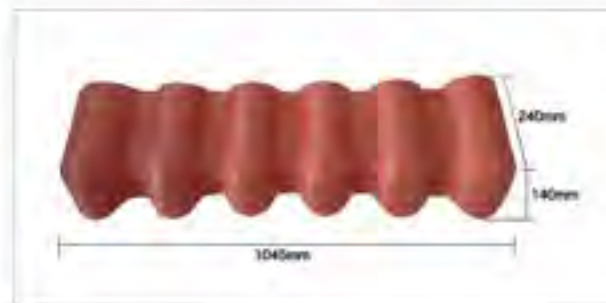
Diagonal Ridge for Roma Tile



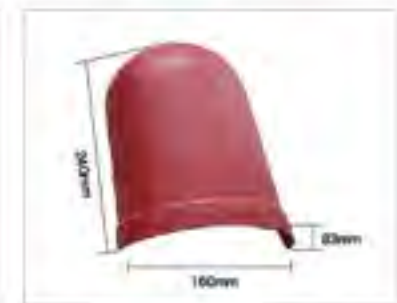
Diagonal Ridge for Royal Series



Eave Tile for Royal 720-1



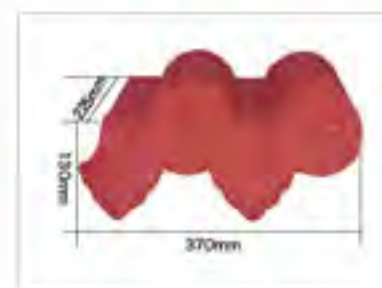
Eave Tile for Roma Tile-1



Terminal Diagonal Ridge



Eave Tile for Royal 720-2



Eave Tile for Roma Tile-2



Headwall Flashing for Royal Series



L Shape Barge Board



Flexible Barge Board for Roma Tile



Flexible Barge Board for Royal Series



Terminal Ridge

STORAGE

Store the tiles in dry and flat site with good ventilation. Products should be protected by coverings with good air permeability. Ridge units should be stored vertically.

INSTALLATION TOOLS



PURLIN

1. Anti-corrosion treatment: Metal purlins should be coated with one layer of anti-rust paint and two layers of finishing coatings. Wood purlins should be coated with anti-corrosion or asphalt oil.
2. The top purlin should have 180mm distance from the ridge line in order to install the ridge tiles.
3. The bottom purlin should have 50-70mm distance from the eave.
4. The purlin space is 660mm for Royal Tile and 990mm for Roma Tile.

UNDERNEATH STRUCTURE



Deck structure

The surface of the deck should be smooth, the material of the deck should be of small deformation, the deck should be more than 12mm thick (according to the purlin span). A 3-5mm gap between two decks is essential for deformation.

The waterproof rolls should be unrolled smoothly and vertically with accurate overlaps.



Steel structure

The angles of steel structure should be precisely controlled during processing, which will influence the pitch of the roof. The deviation of angles will cause an uneven roof.

All the steels should be anti-corrosion treated.



Reinforced concrete structure

The underlay of concrete has no crucial influence on the evenness of the roof, while the embedded inserts and purlins should be very neat and in a plane.

Both steel and wood embedded inserts and purlins should be anti-corrosion treated to extend the life of roof structure. Steel purlins should be welded to the steel embedded inserts and wood purlins can be nailed to the wood embedded inserts directly.

Attention! No roof tile can completely solve the problem of waterproofing by itself, for normal houses, there should be underneath structure with good waterproofing treatment.

PITCH

Fangxing Royal&Roma Tile are applicable to roof pitches from 20° to 80°. For the pitch beyond this range, special measures should be taken during installation.

FITTINGS & ACCESSORIES

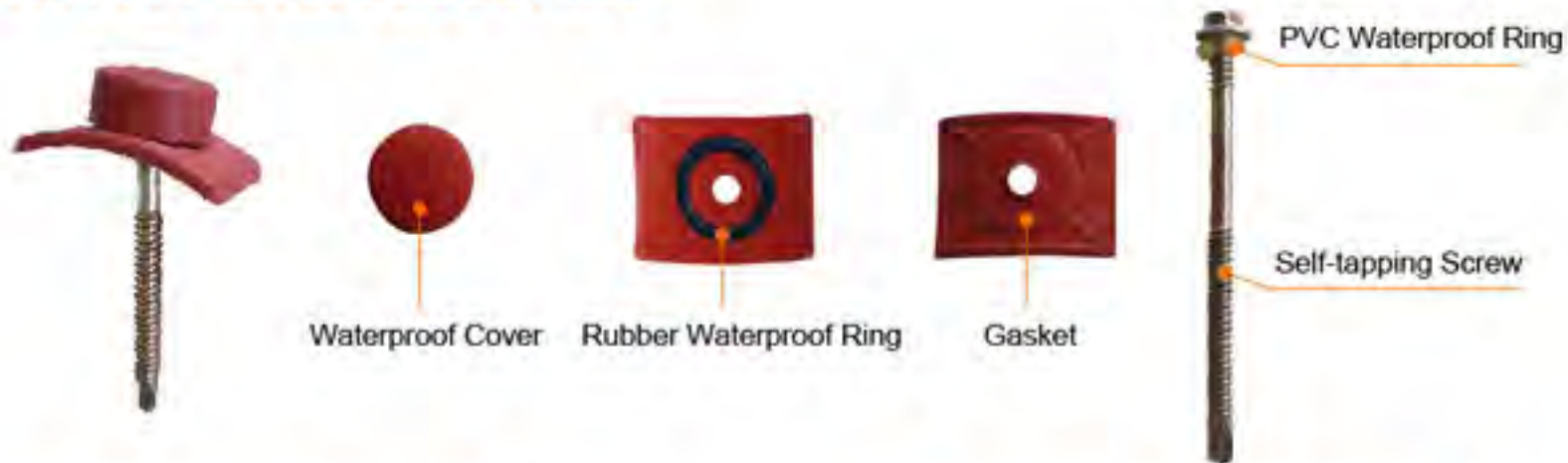


Table Lengths for Roma Tile

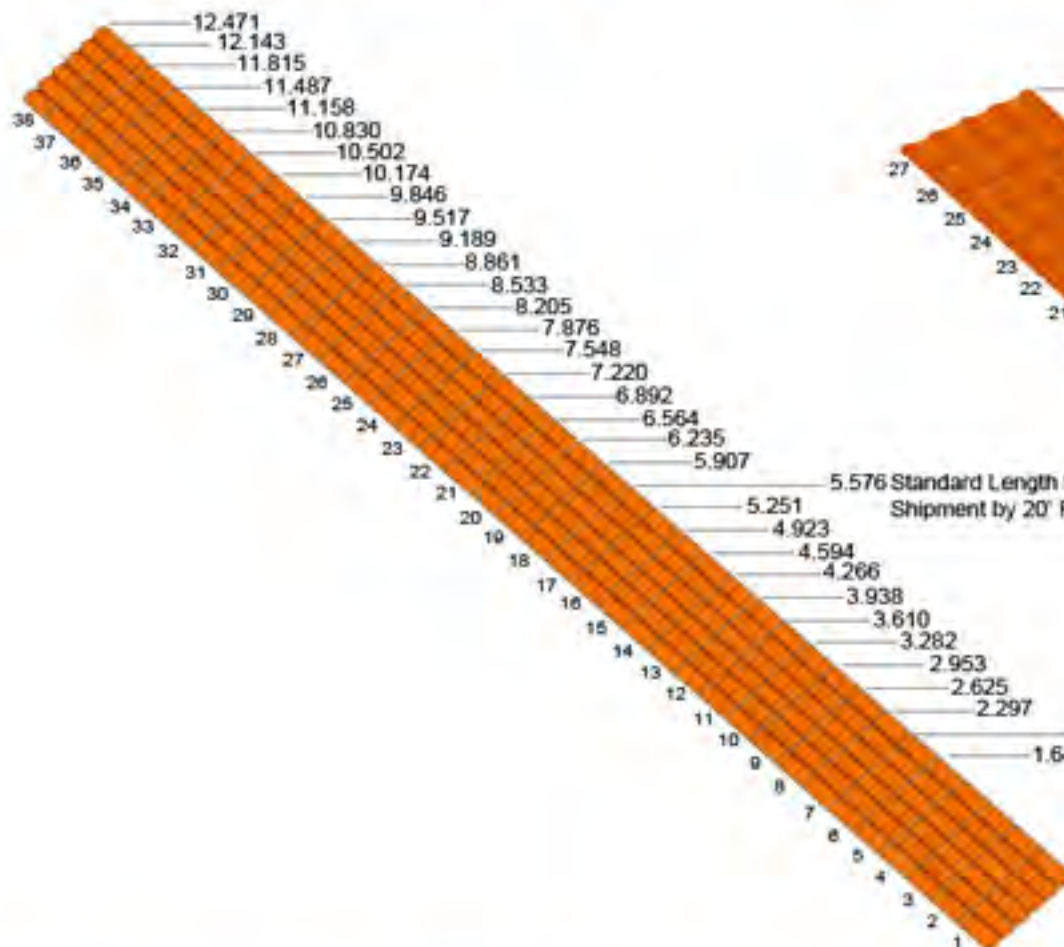
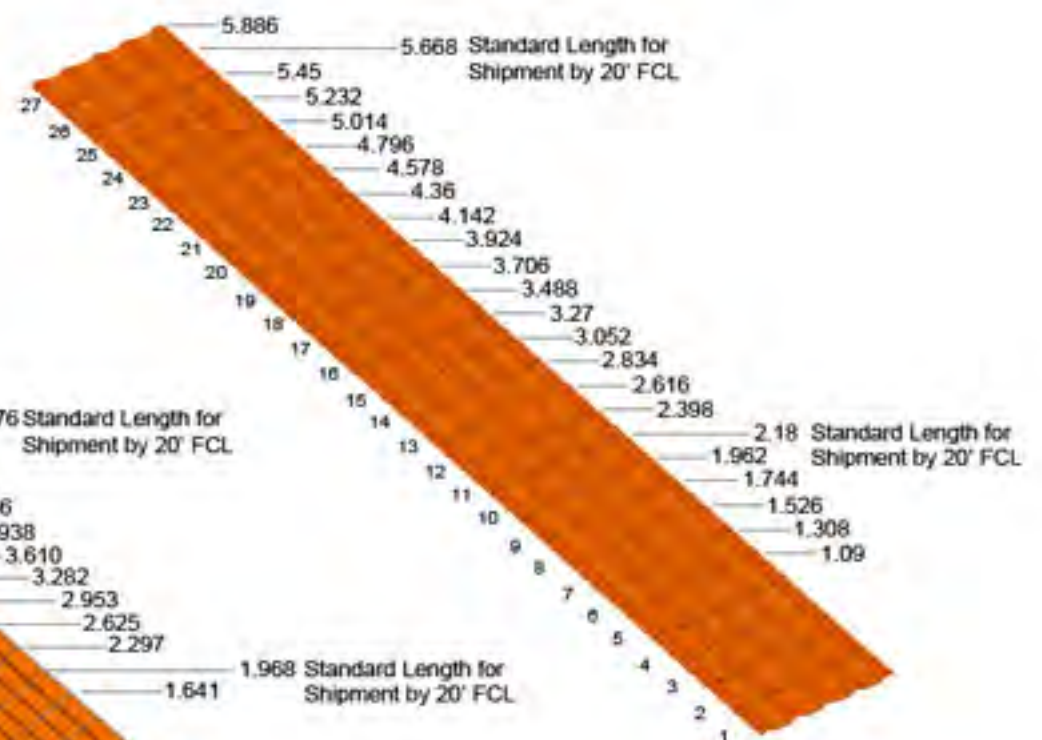
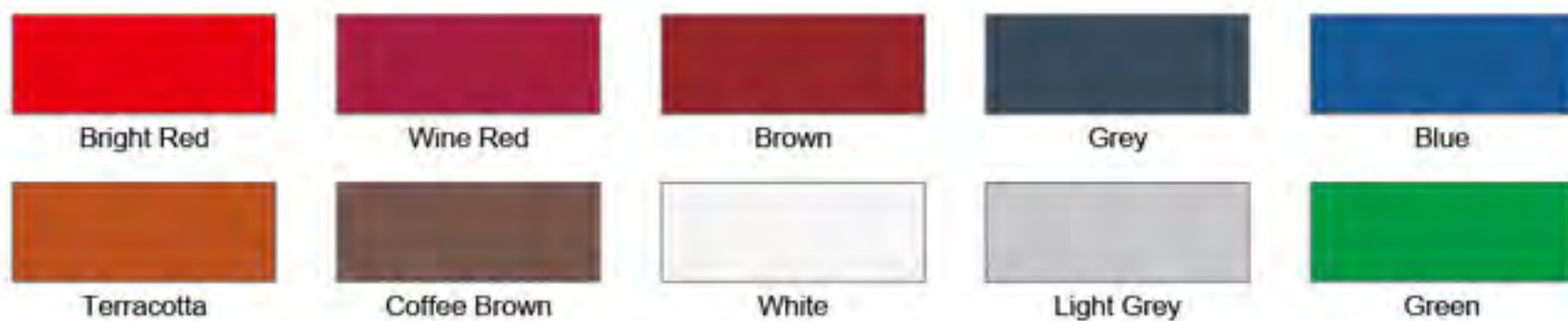


Table Lengths for Royal Tile



ASA STANDARD COLORS



The color swatches are only for reference.

INSTALLATION GUIDELINE

VENTILATION

FANGXING Gelay™ Roofing Tile is a kind of thermal-plastic, which carries out its best functions within a wide range of temperatures: from -20°C to +85°C. To prevent a roof temperature of more than 85°C, it is necessary to have ventilation space below the sheet itself and as a consequence, sufficient openings on the gutter line and the ridge.

The pitch and length of the roof is highly relevant to the functioning of ventilation. The more inclined the pitch and the shorter the roof, the more accentuated the movement of hot air. A long roof only slightly inclined, in order to have enough ventilation, needs to increase the air volume below the roof sheet.

LINEAR HEAT EXPANSION

No material exists which is not subject to dimensional alterations in the presence of notable changes in temperature. Fangxing synthetic roofing tile has a coefficient of linear expansion of 0.0000493/°C.

The linear expansion must be understood to be in the two longitudinal directions of the sheet: for example, if a 6000mm sheet with a heat rise of 40°C has an expansion of 12 mm, this is overall and therefore 6mm for each of the two sides.

HANDLING

During handling, the products must not be thrown rudely to avoid damaging or scratching the product surface. For single sheet longer than 8m, enough supporting points are essential to avoid the cracking of tile.

FIXING

In order to allow normal linear heat expansion of the sheets, it is necessary to pierce the sheet with a Ø10mm drill bit, then fasten the sheets with Ø6.3mm fittings

We advise you not to use direct fixings without piercing the sheets with self perforating screws because doing so prevents any dilatation of the sheet. Do not use a hammer to put the screws in.

Original FANGXING supplied fixings must always be used.

INSTALLATION OF MAIN TILE



Correct alignment is very important to no matter what kind of roof structure, only this can the sheets be assembled closely and straightly. The vertical line should be 50~70mm to the interior of sidewall for a gabled roof, and horizontal line 150mm to the bottom purlin .

Place the first sheet as close as possible to the vertical construction line, fix onto the first tile of the second vertical row, according to the supporting framework. The first row must under no circumstances be perforated.

Fixings should be assembled at the wave crest of tile.

Particular care needs to be taken when aligning the first row because on long sheets even an off lining of a few millimeters for each sheet will cause problems.

Then go on to do the second fixing, overlap the second sheet laterally onto the first and fix with self-tapping screws on the first lowest tile which corresponds to the overlap.

To keep the correct alignment of the fixings we recommend the use of a line of reference fixed to the extreme of the rafter.

Continue in the same way with the third and fourth sheets, and re-check the condition of the four sheets, then fix on every other tile. Assemble the sheets in the same way until the final one, if necessary, the width of the final sheet may have to be cut accordingly.

Attention! Every sheet should be assembled as close as possible to the one overlapped.

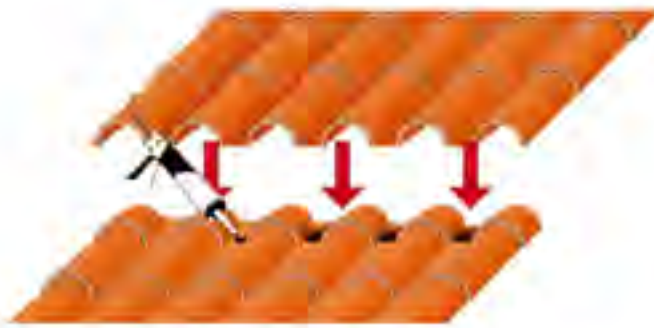
For the second row we recommend as always that you begin from the left with a sheet that is cut in half lengthways (three rows of tiles). This allows you to continue with a horizontal overlap of staggered rows, and as such you avoid a crossover of four sheets on the overlap.



The remaining sheets cut at the beginning are not wasted as they can be used at the end of the roofing as adjustments.

Complete the opposite side in the same way.

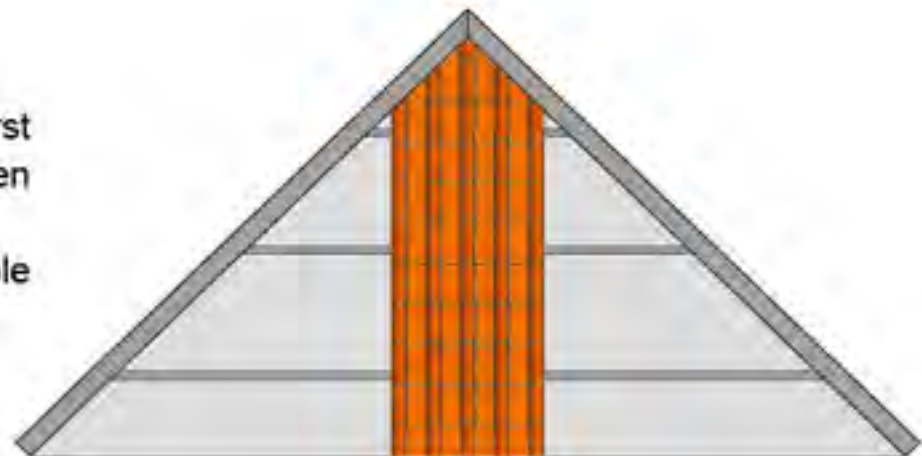
Line up the vertical rows of tiles on the opposite side with those of the first, in order to assemble the ridge tile.



Attention! For lower slope or in particularly windy or rainy zones it is appropriate to seal the overlap by resin sealant or silicon sealant.

For the triangle side of a four slope roof, the first sheet should be started from the middle, then continue to both left and right directions.

Cut the sheets along the hip line to assemble diagonal ridge.



RIDGE TILE

The installation of ridge tile should begin from one side. For the first tile, it should be half cut to avoid the crossover of four sheets on the overlap.

Self-tapping screws with length of 75mm(Royal Tile) or 90mm(Roma Tile) and diameter of 6.3mm will be needed to fix the ridge tile into the main tile. Take care not to fix the ridge near to the edge and therefore not to have infiltration problems.

Attention! For lower slope or in particularly windy or rainy zones it is appropriate to seal the overlap using the resin sealant or silicon sealant.



DIAGONAL RIDGE

As to the installation of diagonal ridge, it should be aligned to keep straight with the hip line. Self-tapping screws with length of 75mm and diameter of 6.3mm are needed to fix the prefabricated edges to the main tile. Diagonal Ridge tile must be installed from bottom to top with an overlap of 50mm.



THREE-WAY RIDGE

A three-way connection is used as the joining element between the linear ridge and the diagonal one for a four slope roof.



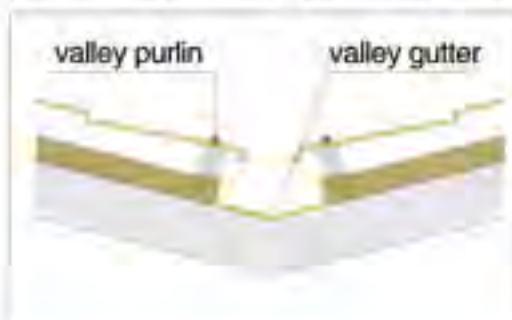
VALLEY

The corner created by joining two converging pitches is called the valley. Position and fix two parallel strips, 240 mm from the centre of the corner, parallel to the corner of the valley.

Fix the valley gutter made in synthetic resin panel or metal on the strips using self-tapping screws or nails.

Galvanized valley roll can also be used for valley gutter. Position it on the corner starting from the ridge line, setting it down carefully on the slab. Begin to fix the extreme edges of the valley on the strips using self-tapping screws or nails.

The sheets corresponding to the valley line must be pre-shaped before positioning, but leaving the possibility to hang them again, after fixing, to have a perfectly straight valley line.



CONNECTION WITH WALL

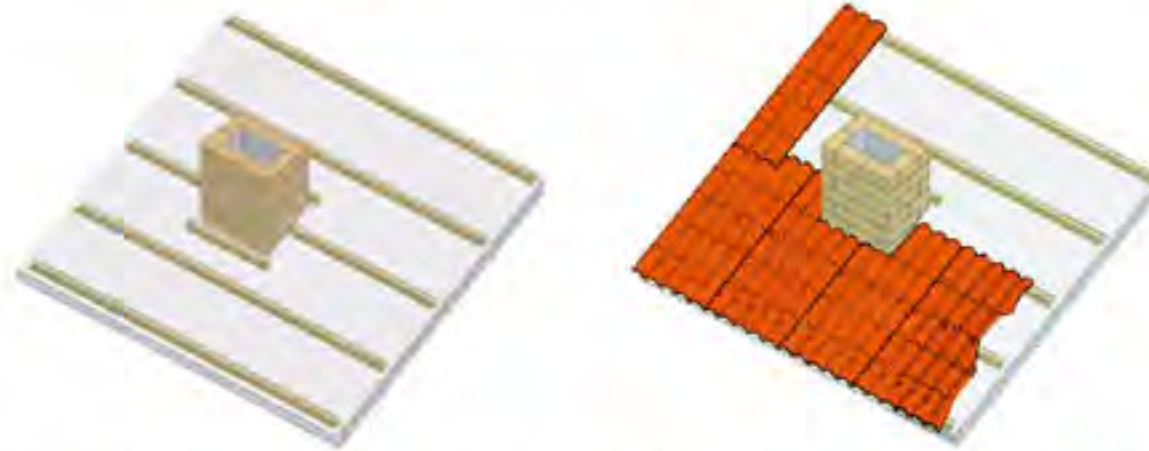
Use sidewall flashing made in synthetic resin panel or metal, stick the flashing board to the wall and tiles by self-tapping screws or nails and seal the higher end of flashing with silicon sealant.



CONNECTION WITH CHIMNEYS

Assemble the sheets from one side normally until they get close to the chimney. Cut the sheets around the chimney accordingly.

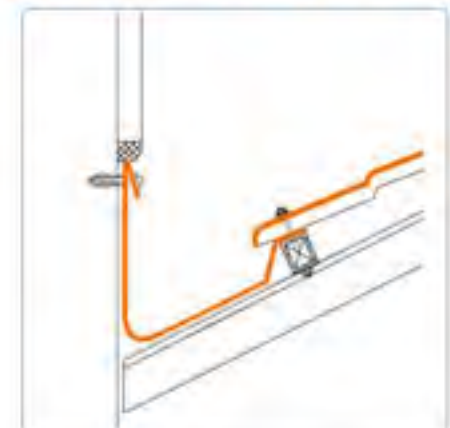
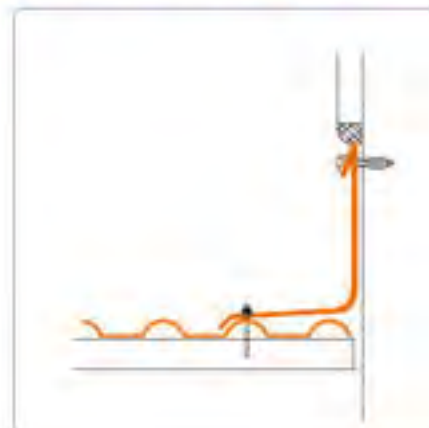
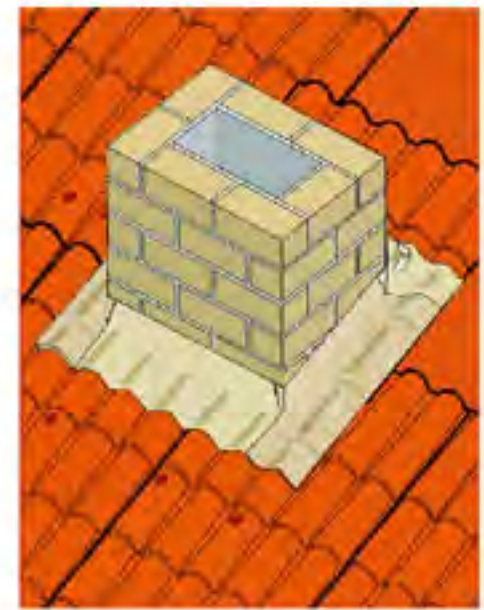
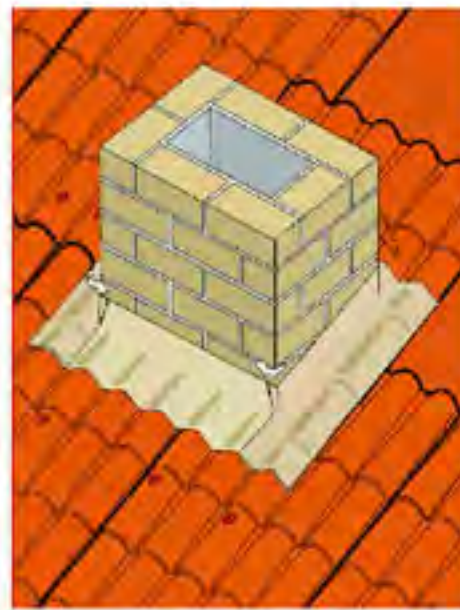
Add extra purlins next to the chimney if necessary to fix roof sheets.



Use synthetic resin or metal flashings, stick the flashing board to the wall and tiles by self-tapping screws or nails and seal the higher end of flashing with silicon sealant. (See diagrams above)

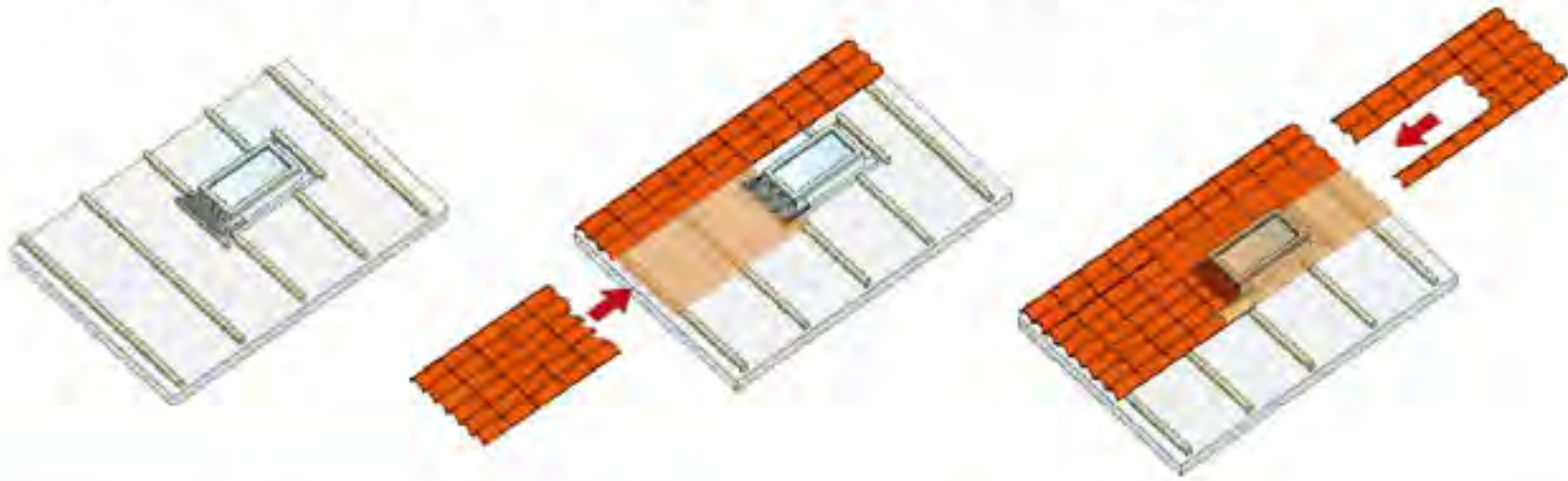
Flashings are recommended to be processed at site by metal board, as the roof pitches and position of chimneys are variable for different roofs.

Aluminum or galvanized rolls can also be used for the connection between tiles and chimney. Stick the rolls to the sheets all around the chimney. Fix the other end of rolls to chimney by nails and then seal the higher end.



CONNECTION WITH SKYLIGHT

The sheets must be assembled in the usual way until getting close to the skylight. Take exact measurements of the skylight, make an exact slot on the sheet with a flexible polisher or a portable thin-tooth saw. Overlap the lead hinge for the lower connection on the tiled sheet and shape it with your hands to fit the sheet well. Then, place the shaped sheet, fitting it well to the side and upper connections and overlap in part, with extremity of the inferior elements, the lead hinge on the lower side of the skylight.



TERMINAL DIAGONAL RIDGE

After finishing the assembling of diagonal ridge, insert the terminal diagonal ridge piece into the bottom end of diagonal ridge, and fix to the diagonal ridge by rivets.



BARGE BOARD

After finishing assembling of main tiles, fix the barge board on the last row of tiles by our supplied fittings. The dimension and shape of barge board can be processed customized.

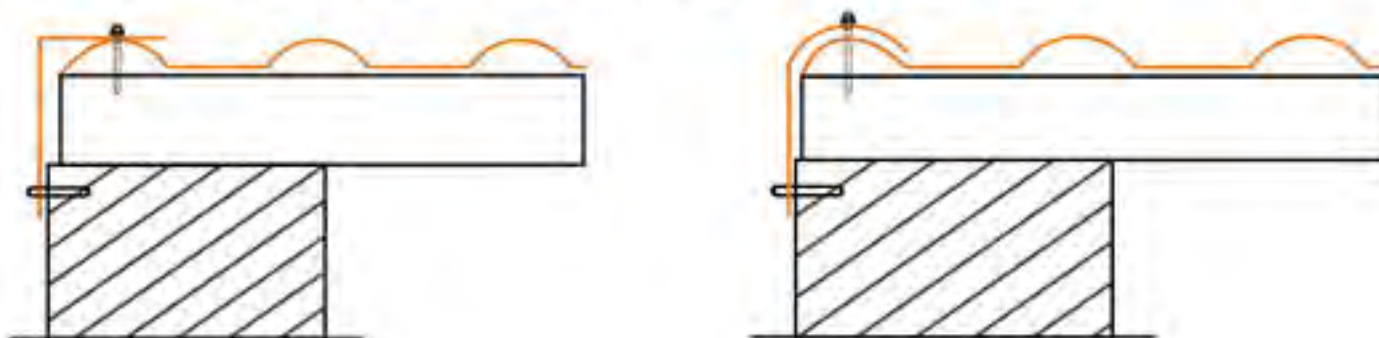


PHOTO GALLERIES



PHOTO GALLERIES



PHOTO GALLERIES



CERTIFICATION



▲ CE Certification



▲ 12000h Accelerated Aging Test Report



▲ Physical Properties Test Report



▲ Wind Resistance Test Report



▲ Freeze-thaw Cycling Test Report



▲ Fire Resistance Test Report

If you still need other certifications, please contact us.

HISTORY OF FANGXING

- >> **1987**, set up FANGXING enterprise, concentrated in manufacturing light weight roofing tiles and wall claddings.
- >> **2000**, invented 3-layer co-extrusion technology, made great contribution to industry.
- >> **2003**, developed synthetic resin tile with GE successfully; Signed 'Brand Sharing' agreement about the "GELOY" brand ASA.
- >> **2004**, FANGXING Gelay™ Roofing Tile got the National Key New Product Certificate, FANGXING edited the Industry Standard of Synthetic Resin Roofing Tile with the National Research & Analysis Center of Chemical Building Materials.
- >> **2007**, developed the first photovoltaic roofing tile in domestic market.
- >> **2013**, became the first and sole company applying fully automatic raw materials batching mixing and conveying system in this field, to ensure the product quality stability and solve the problem of environment protection.
- >> We have served many Major projects, such as Shanghai World Expo, Beijing Olympics, Guangzhou Asian Games, National Games in Jinan and so on, and we are the designated supplier of the Plain to Pitch project in Tianjin, Qingdao, Suzhou, Shenzhen, Shijiazhuang, Shenyang and scores of cities.
- >> We built the only folk museum of roofing tiles in China.



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**Shandong Fangxing
Building Materials Co., Ltd.**

Tel: 0086-532-85039204/05

Fax:0086-532-85039203

E-mail: inquiry@fangxing.com

Website: www.fangxingrooling.com

7150 Yuhai Road, Laizhou 261400, Shandong, PRC