



# **INSTALLATION INSTRUCTION MANUAL**

**CAILIN STONE COATED METAL ROOF**



**BUTYL TAPE**



**BATTEN STRIPS**



**COMPOSITE UNDERLAYMENT**



**WATER DRAINAGE SYSTEM**

This installation manual is primarily crafted to provide accurate application techniques of this product for designers, constructors, and end-users. It encapsulates several years of successful design and construction expertise within our company. Should you contemplate employing construction techniques or roofing materials beyond the scope of this manual, we welcome you to seek advice from our company. This ensures the presentation of rational and appropriate recommendations.



We firmly believe that customers are the lifeblood of our business. It is through their patronage that our enterprise thrives. Therefore, we consistently focus on the market, guided by the principles of prioritizing service excellence. Continuously meeting our customers' needs, providing personalized services, and creating added value for them are our constant endeavors. We understand that only when our customers succeed can we progress!

As you close this construction manual, we hope you can feel the warmth and meticulousness of the CAILIN team. We deeply acknowledge that all of CAILIN's achievements, splendor, and honors stem from your generous support and unwavering encouragement. Your support serves as the eternal driving force propelling us forward, for which we are deeply honored! We sincerely hope to maintain a long-lasting and positive partnership with you, continuously delivering efficient, outstanding, innovative, and personalized services.

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# 1.Characteristics, Specifications, and Applications of CAILIN Stone Coated Metal Roof Tile

## 1.1 Characteristics

CAILIN stone coated metal roof tiles are innovative roofing materials composed of multi-layered construction, utilizing a substrate of aluminum-zinc steel with exceptional corrosion resistance. These tiles are crafted with acrylic resin, known for its exceptional weather resistance, serving as the adhesive. The surface layer consists of colorful natural gravel. These roofing materials are manufactured through advanced processing techniques, distinguishing them from other metal roof, offering an environmentally beneficial solution.

## 1.2 Specifications

Product Name	Length(mm/ft)	width(mm/ft)	Coverage Size(mm)	Coverage area(length)
Bond tile	1340/4.4	420/1.38	1290*370	0.48m <sup>2</sup> /5.14ft <sup>2</sup>
Shingle tile	1340/4.4	420/1.38	1290*370	0.48m <sup>2</sup> /5.14ft <sup>2</sup>
Milano tile	1340/4.4	420/1.38	1290*370	0.48m <sup>2</sup> /5.14ft <sup>2</sup>
Golan tile	1340/4.4	420/1.38	1250*340	0.425m <sup>2</sup> /4.57ft <sup>2</sup>
Classical tile	1340/4.4	420/1.38	1290*370	0.48m <sup>2</sup> /5.14ft <sup>2</sup>
Roman tile	1300/4.27	420/1.38	1250*370	0.46m <sup>2</sup> /4.983ft <sup>2</sup>
Shake tile	1340/4.4	420/1.38	1290*370	0.48m <sup>2</sup> /5.14ft <sup>2</sup>
Interlock shake tile	1348/4.42	440/1.44	1275*375	0.48m <sup>2</sup> /5.17ft <sup>2</sup>
Interlock shingle tile	1348/4.42	365/1.2	1280*315	0.40m <sup>2</sup> /4.31ft <sup>2</sup>
Tudor tile	1340/4.4	420/1.38	1290*370	0.48m <sup>2</sup> /5.14ft <sup>2</sup>
Long span bond tile	1215-2340	920/3		
Long span corrugate tile	1215-2340	920/3		
Circular ridge cap 1	420/1.38			380mm/1.25
Circular ridge cap 2	1200/3.94			1100mm/3.6
Angle Ridge cap	2000/6.56			1900mm/6.23
Square ridge cap	2000/6.56			1900mm/6.23
Square ridge cap	2000/6.56			1900mm/6.23
Valley Tray	2000/6.56			1900mm/6.23
Eave Flashing	2000/6.56			1900mm/6.23
Sidewall flashing	2000/6.56			1900mm/6.23
Flat board	2000/6.56			1900mm/6.23

Note: Actual product specifications may vary. For specific product varieties and specifications, please contact the company's technical department at: +86 13164007633.

### 1.3 Application Scope

CAILIN Stone Coated Metal Roof Tile are suitable for European-style roofs in villas and hotels, as well as landscaping in gardens and residential sloped roofs. They are also applicable for renovating old roofs and converting flat roofs to sloped roofs (termed as flat - to - sloped roof projects), along with serving as partial decorations in various types of buildings.

## 2. Construction Requirements for CAILIN Stone Coated Metal Roof Tile

### 2.1 Roof Slope

Stone Coated metal Roof tiles can be laid on slopes ranging from 10-90°.

### 2.2 Roof Structural Layer

Suitable for both reinforced concrete-based sloped roofs and wood-based sloped roofs.

### 2.3 Roof Insulation Layer

For cold regions, consider adding an additional roof insulation layer.

### 2.4 Roof Leveling Layer

The surface should be level and firm, with a thickness of  $\geq 25\text{mm}/0.984''$

### 2.5 Roof Underlayment

It is recommended to use a waterproof underlayment of 1.5mm-2mm single-sided self-adhesive or polypropylene rolls. For roof renovations, the asphalt tiles remaining on the roof can be used as underlayment.

### 2.6 Construction Temperature

Construction is feasible throughout the year at temperatures above 0°C. Avoid construction during rainy, snowy, or when weather conditions exceed a wind force of five.

### 2.7 Construction Personnel

Personnel should wear soft-soled shoes and safety belts.

## 3. Supporting Materials for the Installation of CAILIN Stone Coated Metal Roof

### 3.1 Various Specifications of CAILIN Stone Coated Metal Roof

### 3.2 Accessories

Utilized for treating Angle Ridge cap, Valley Tray, eaves, and other nodes (specifically configured based on the roof structure type).

### 3.3 Steel Nails and Screw

Used for securing colored stone metal tiles. Steel nails should have a length of no less than 50mm ( 2") and a diameter of no less than 25mm ( 1"). Drill tail nails should have a length of no less than 40mm ( 1 37/64") and a diameter of no less than 3.5mm ( 9/64"). The nails should undergo anti-rust treatment.

### 3.4 Sealant

Applied for waterproof treatment at nodes such as valleys.

### 3.5 Batten Strips

Used for hanging CAILIN Stone Coated Metal Roof. Standard batten strips are wooden beams of 35mmx45mm(1.38" x 1.77"). Alternatively, metal materials like galvanized square tubes can be used. Recommended specifications are listed in the table below.

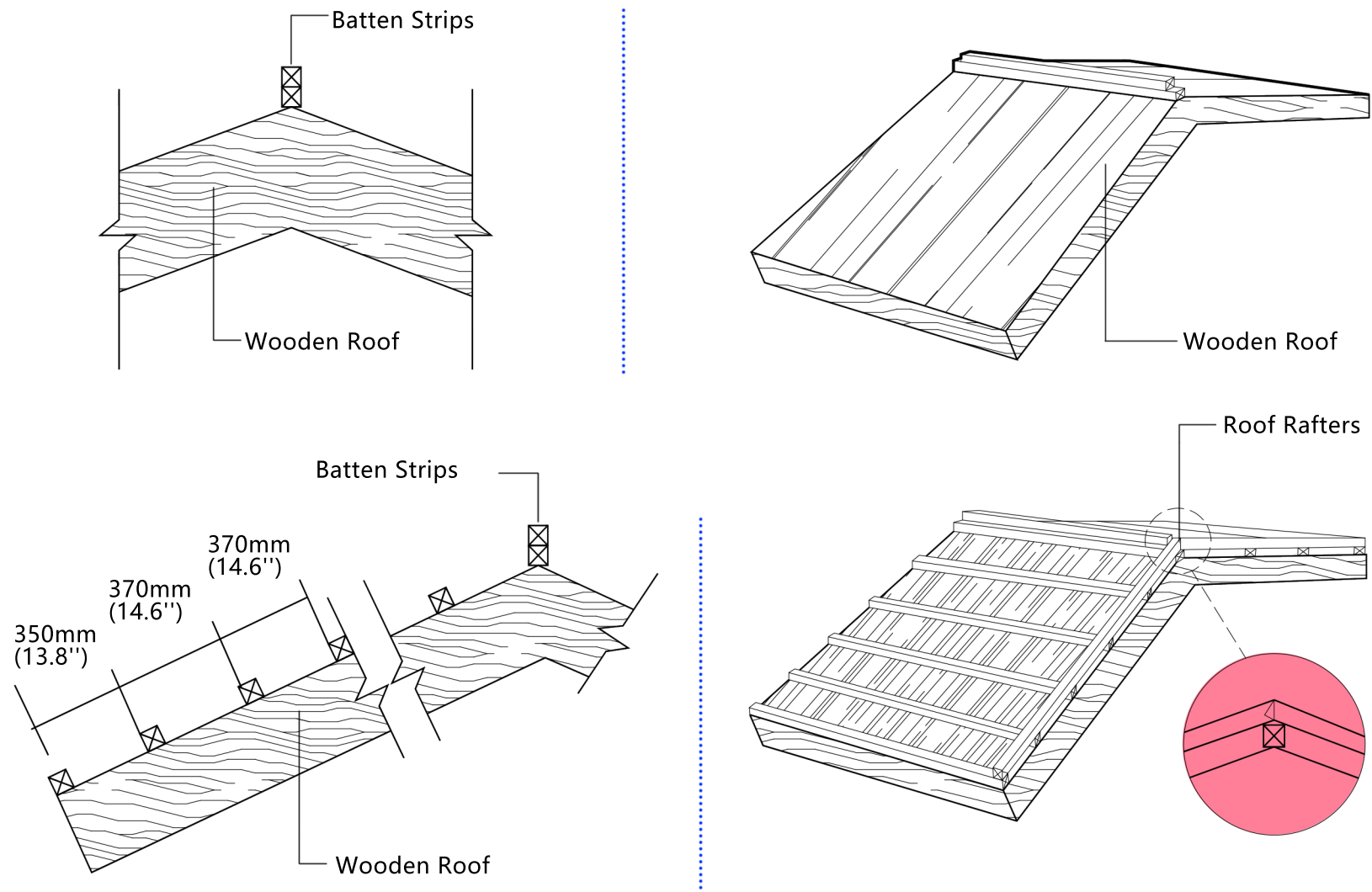
<b>Rafter or Roof Truss Center-to-Center Spacing</b>	<b>Galvanized Square Tube Metal Batten Strip Specifications</b>
≤900mm (35.43")	40mmx40mmx2mm (1.57" x 1.57" x 0.08")
≤1200mm (47.24")	40mmx50mmx2mm (1.57" x 1.97" x 0.08")
≤1500mm (59.06")	50mmx65mmx3mm (1.97" x 2.56" x 0.12")
≤1800mm (70.87")	50mmx75mmx3mm (1.97" x 2.95" x 0.12")

### 3.6 Tools

Hammer (or electric drill), tin snips, trimming knife, bending machine, steel ruler, angle square, level, plumb bob, string, etc.

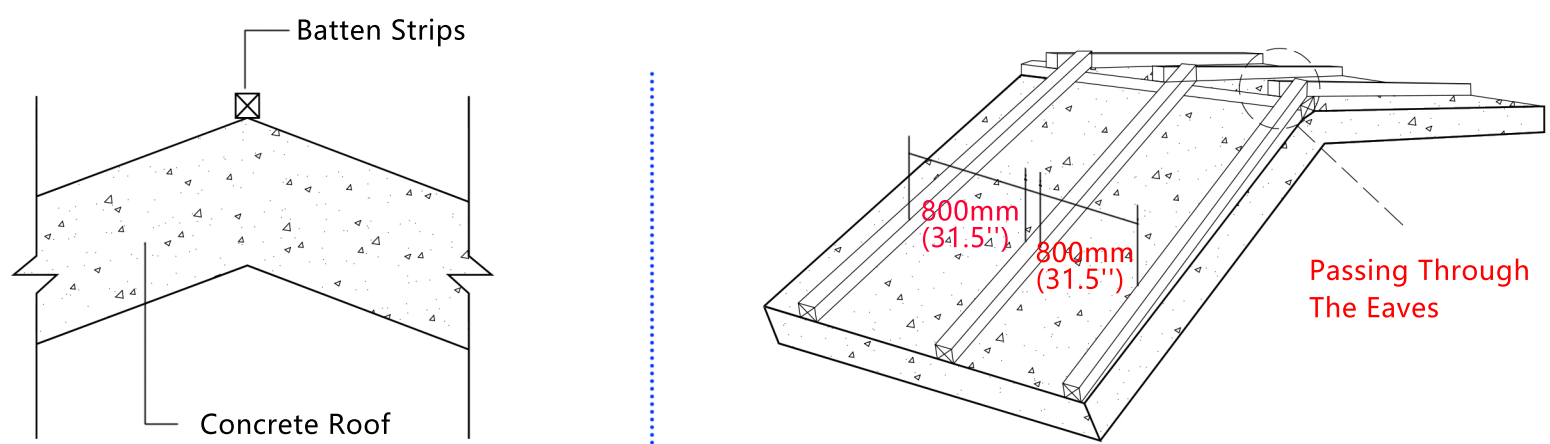
## 4. Construction Methods of CAILIN Stone Coated Metal Roof (with Batten Strips)

### 4.1 Installation of Batten Strips on Wooden Roofs



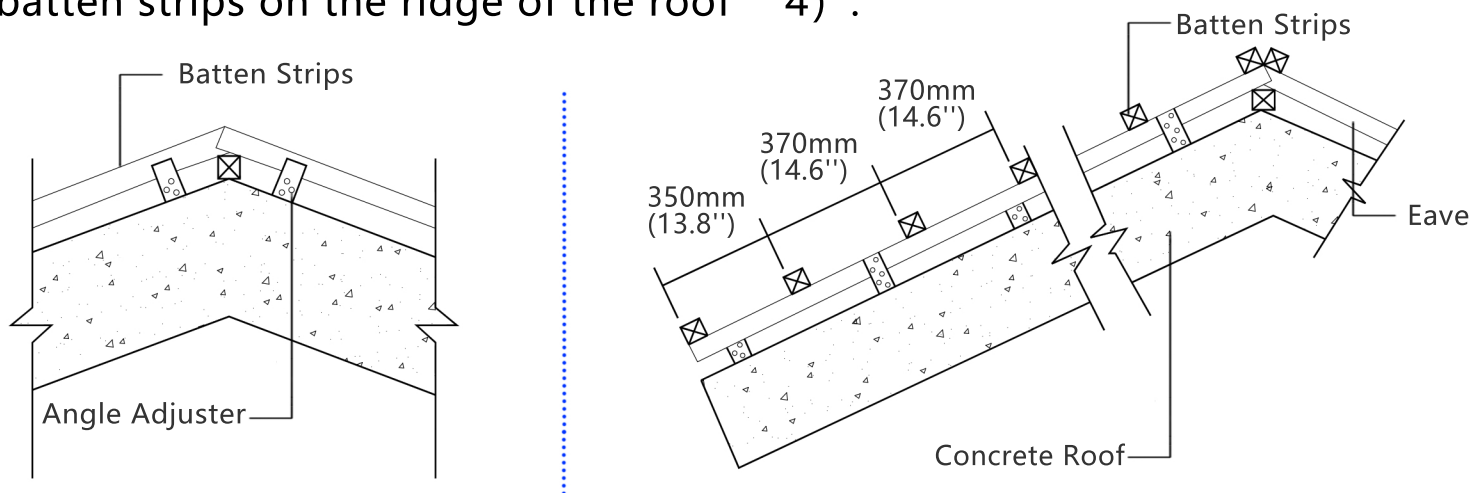
### 4.2 Installation of Batten Strips on Concrete Roofs

1) . Fix a batten strips on the ridge of the roof 2) .

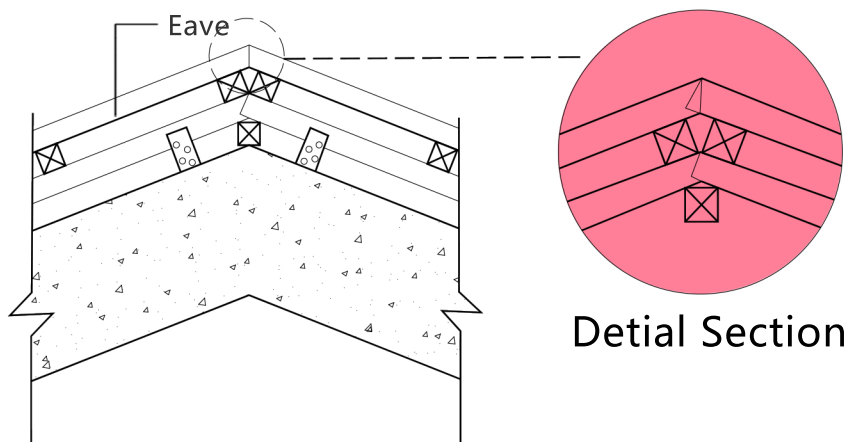




3) .Fix a batten strips on the ridge of the roof 4) .



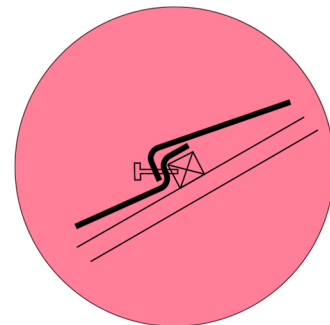
5) .



#### 4.3 Nailing Methods

Special nail details:

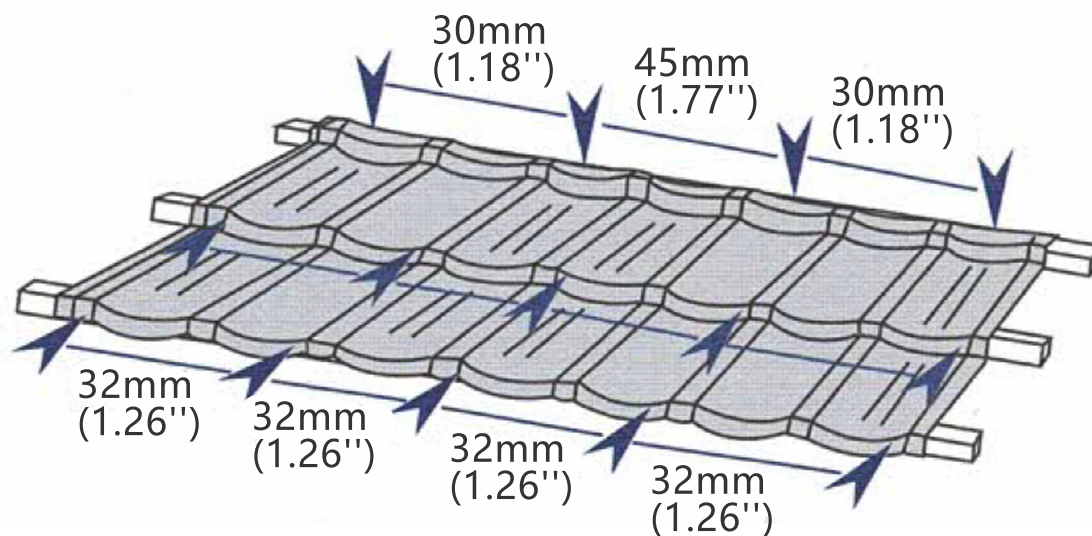
- Nail: 5cm (galvanized/electroplated)
- Screw: 5cm (galvanized/electroplated)



- During nailing, ensure to stand on the tile where nailing is required and nail at an angle parallel to the roof surface.
- Use 6 to 8 nails per tile.
- In windy or coastal areas, use 10 nails per tile.
- After nailing, apply adhesive to the nailed areas to prevent water leakage.

Nail Placement Guidelines:

- Caution: Avoid nailing where there are wires above or below.
- Roofing: Install 20m<sup>2</sup> (215.28 sq ft) /kg of steel nails.
- When installing nails, drive them in at the red marked points in the diagram.
- Nails should be oriented upwards. (If nails are oriented downwards, it may result in leakage.)

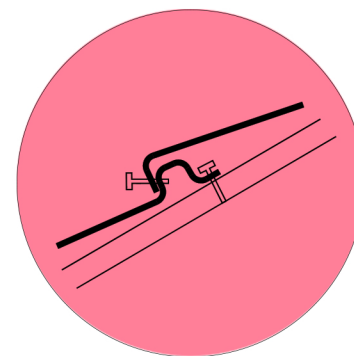


## 4. Construction Methods of CAILIN Stone Coated Metal Roof (without Batten Strips)

### 4.3 Nailing Methods

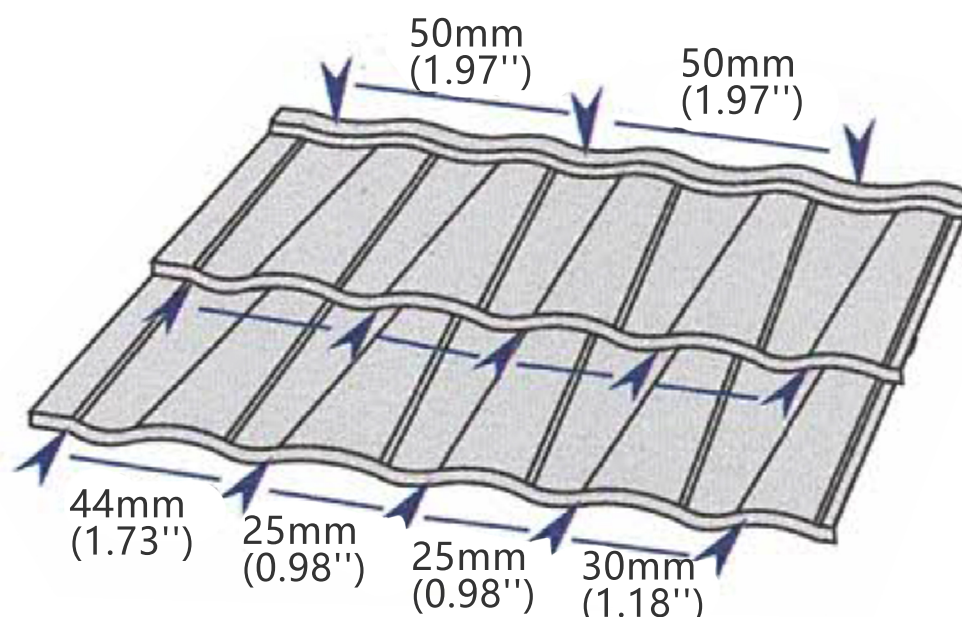
Special nail details:

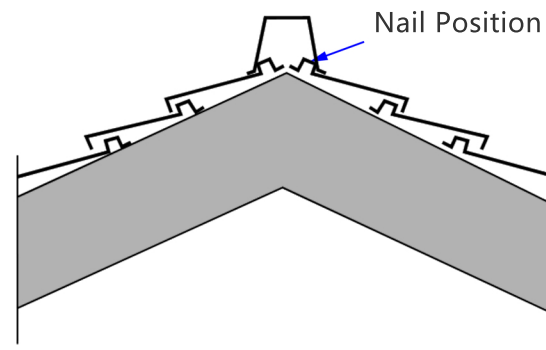
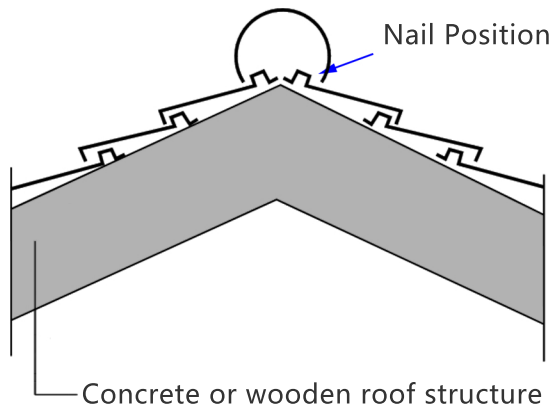
- Nail: 5cm (galvanized/electroplated)
- Screw: 5cm (galvanized/electroplated)



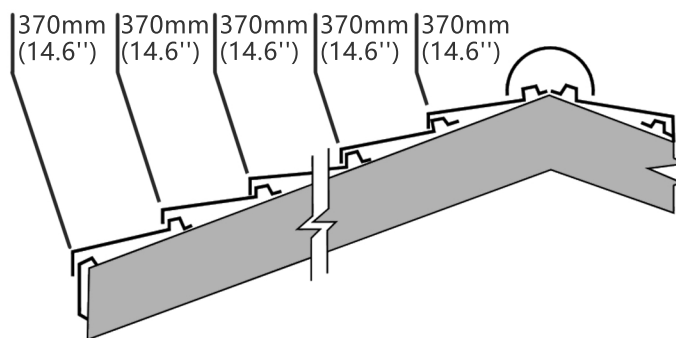
- During nailing, ensure to stand on the tile where nailing is required and nail at an angle parallel to the roof surface.
- Use 6 to 8 nails per tile.
- In windy or coastal areas, use 10 nails per tile.
- After nailing, apply adhesive to the nailed areas to prevent water leakage.

Other precautions are the same as 4.3 Please refer to the picture for detailed information



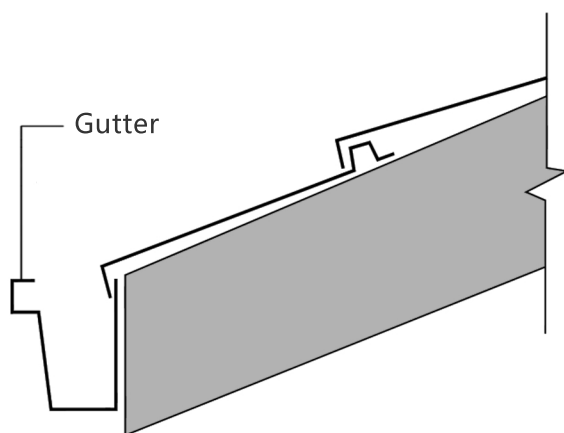


### Main Tile Installation

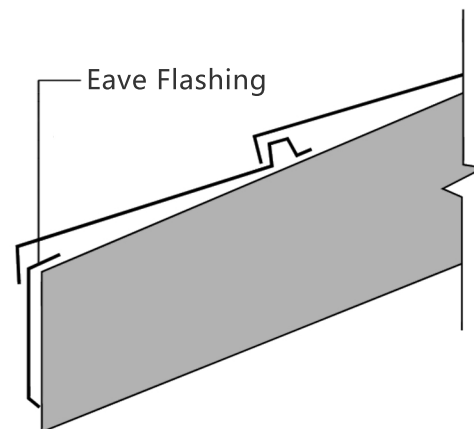


CL stone Coated Metal Roof Tiles with a front to back distance of 370mm (14.6' ' ) per piece

### Eave Flashing and Gutter Installation



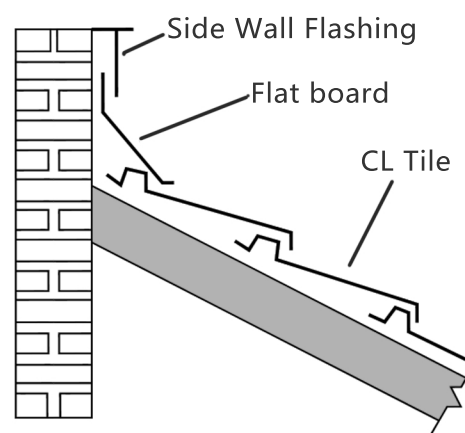
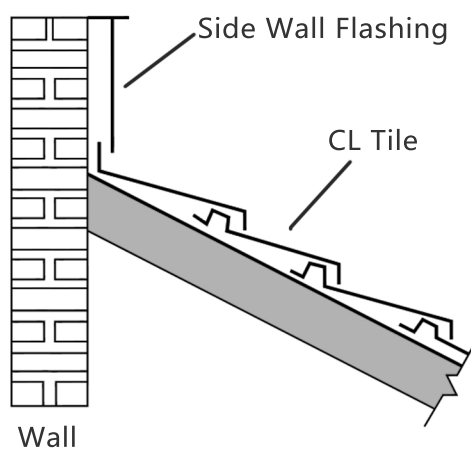
Gutter Installation



Eave Flashing Installation

### Barge Board Cover Installation

Insert the top edge of the roof tile or a portion of the metal sheet into the flashing board



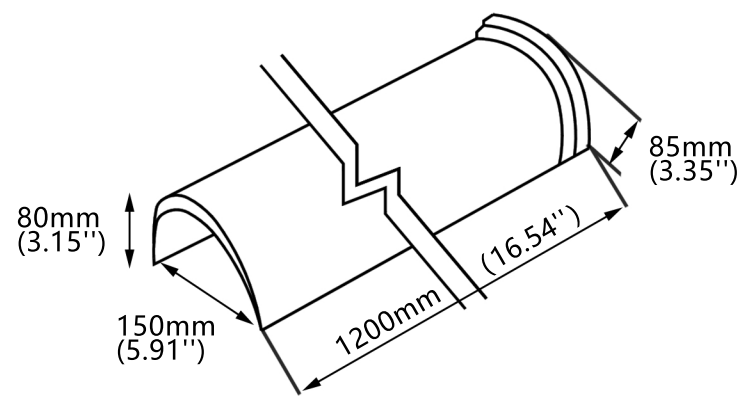
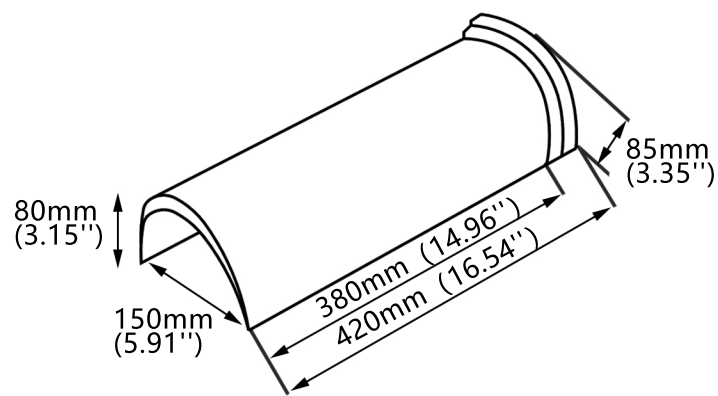
## 4. Installation of Accessories

### 6.1 List of Attachments

Roof ridge/Ridge CAP

Total length: 400mm(15.7")/1200mm(47.24")

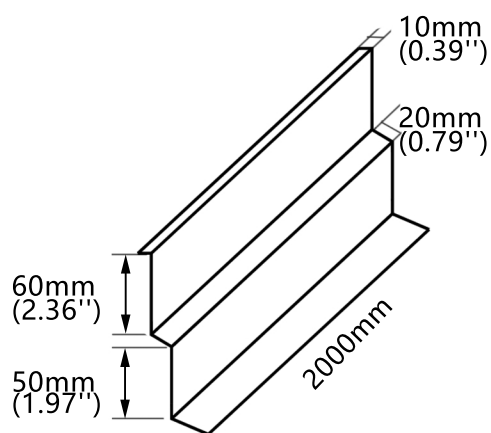
Length after overlapping: 380mm(14.96")/1180mm(46.45")



Sidewall Flashing

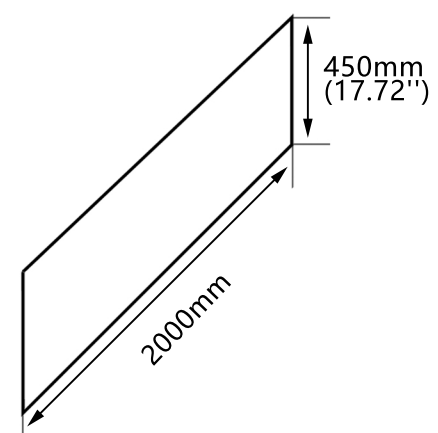
Total length: 2000mm(78.74")

Length after overlapping: 1950mm(76.77")



Flat Board/Flat Sheet

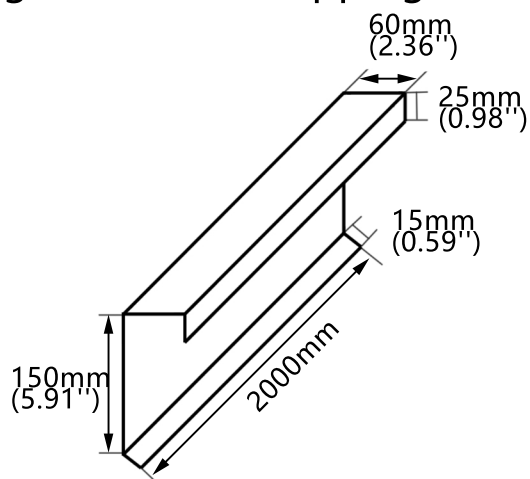
Total length: 1200mm(47.24")



Barge Board Cover

Total length: 2000mm(78.74")

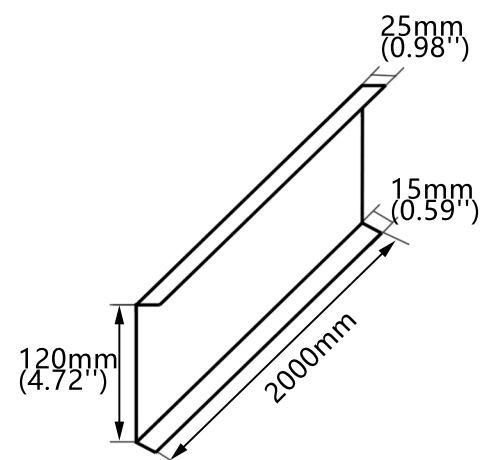
Length after overlapping: 1950mm(76.77")



Eave Flashing

Total length: 2000mm(78.74")

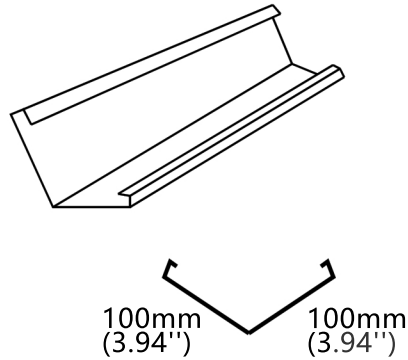
Length after overlapping: 1950mm(76.77")



### Valley Tray

Total length: 2000mm(78.74")

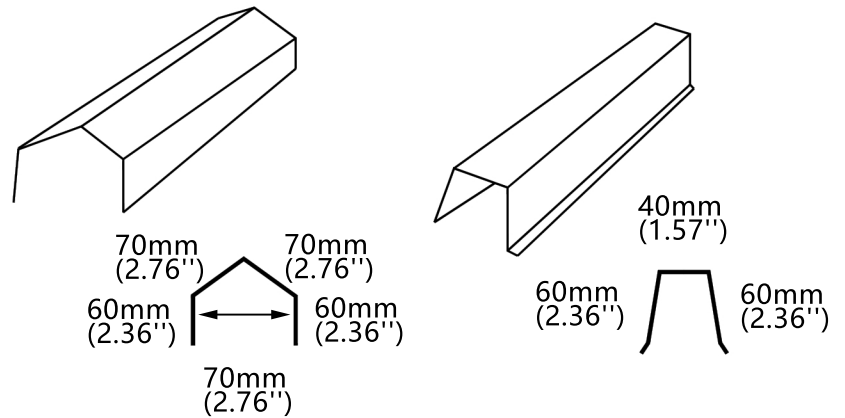
Length after overlapping: 1900mm( 74.8")



### Angle/Square Ridge Cap

Total length: 2000mm(78.74")

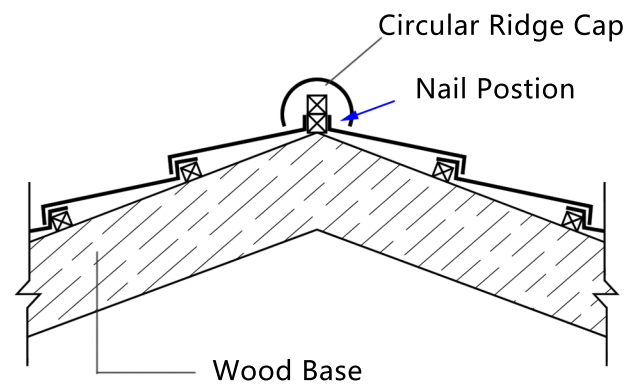
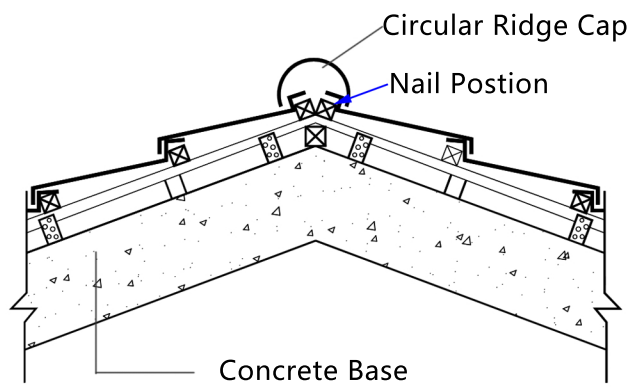
Length after overlapping: 1950mm(76.77")



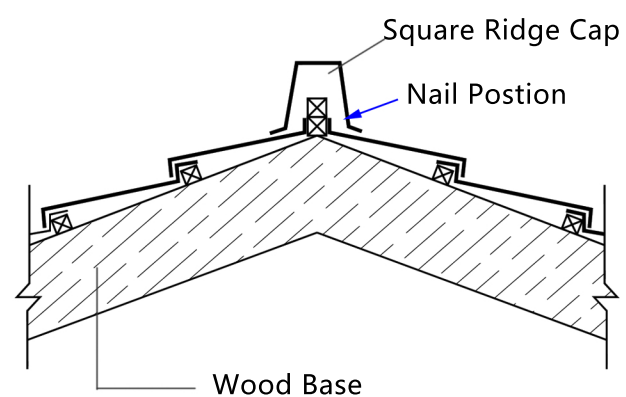
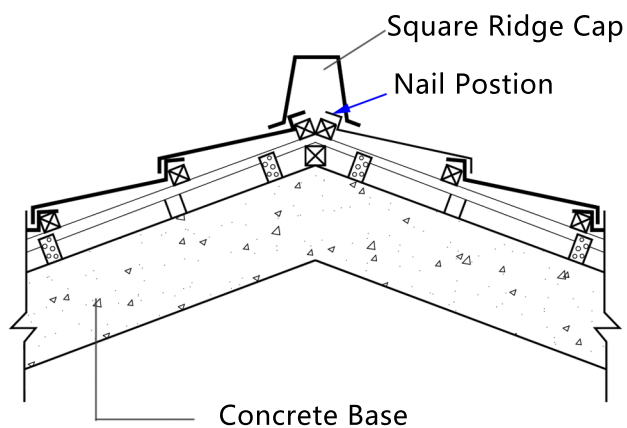
- The size of accessories can be customized according to customer requirements
- Storage method: Cover with waterproof material
- Packaging: The tray size is 1.35m \* 0.95m \* 1.2m
- Slope: The roof slope is 10-90 degrees
- In coastal or windy areas, it is recommended to use AZ150 aluminum zinc plated metal plates

### A. Roof and Ridge Plate Installation

#### Install Circular Ridge Cap

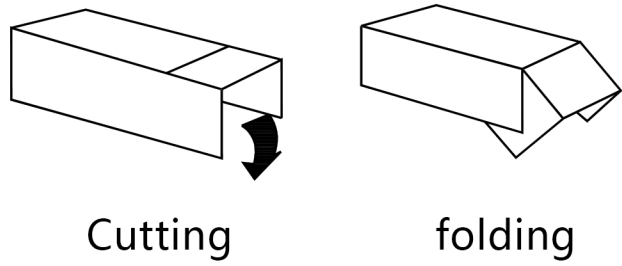


#### Install Square Ridge Cap



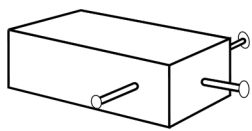
## B. Treatment of Ridge and Surface

1.



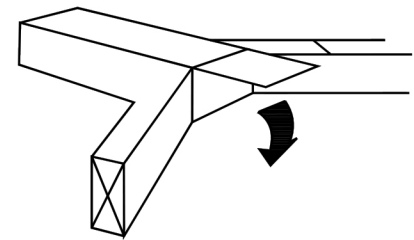
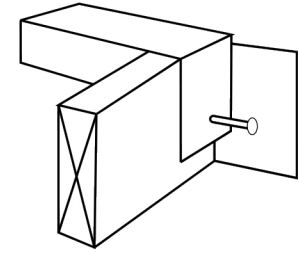
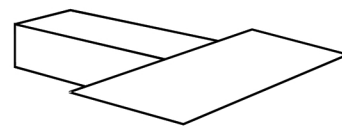
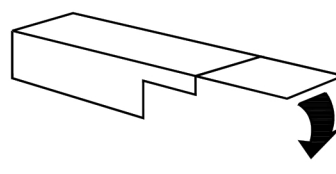
Cutting

folding

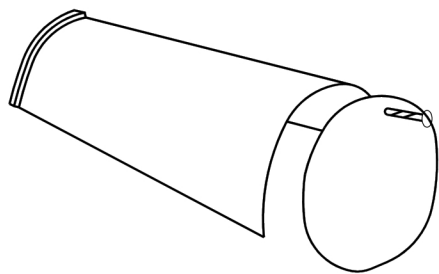


Fix each side with nails

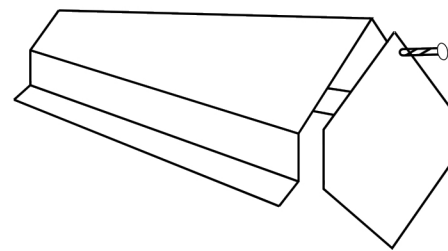
2.



## Installing Circular Ridge Cap

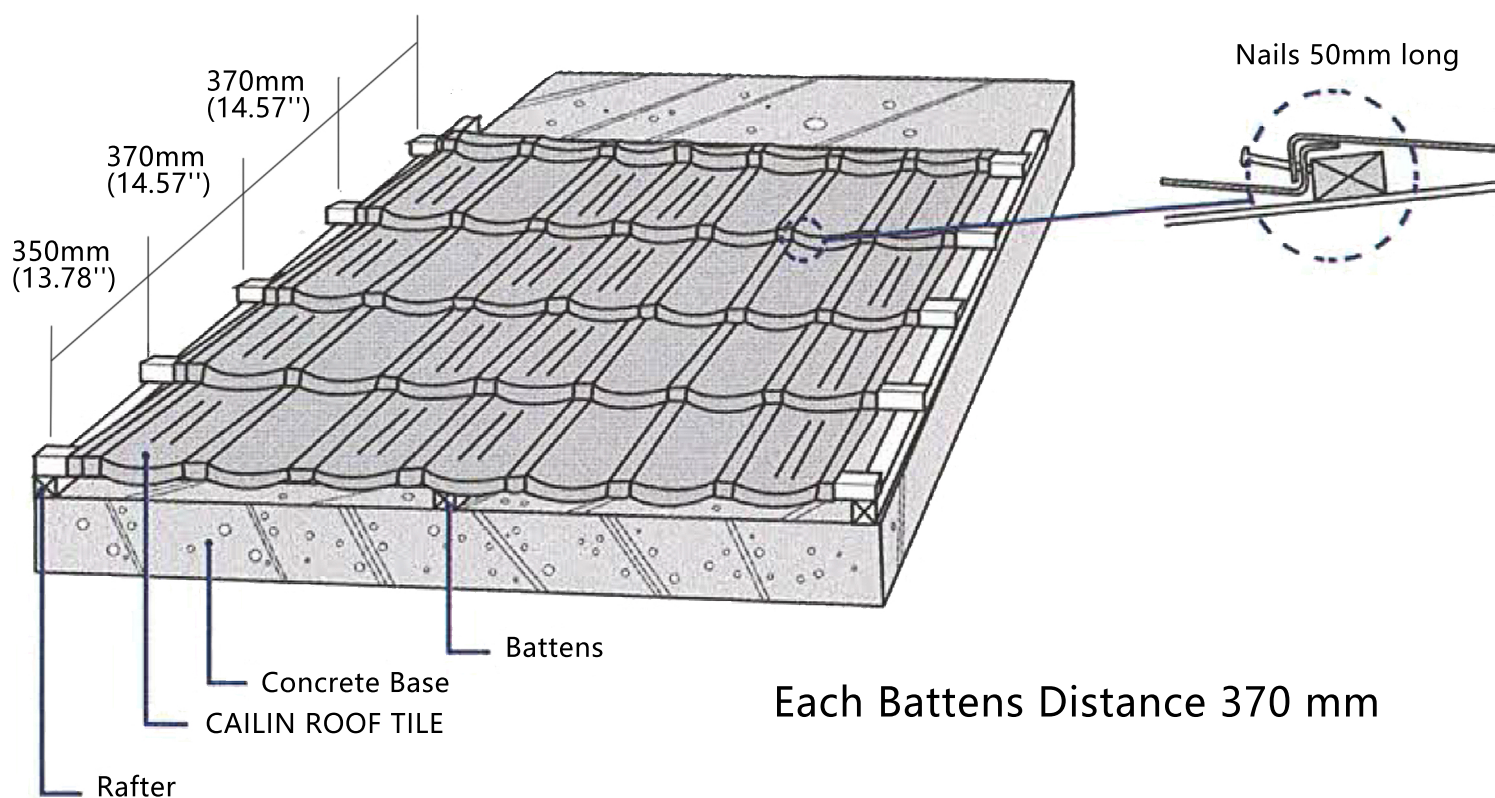


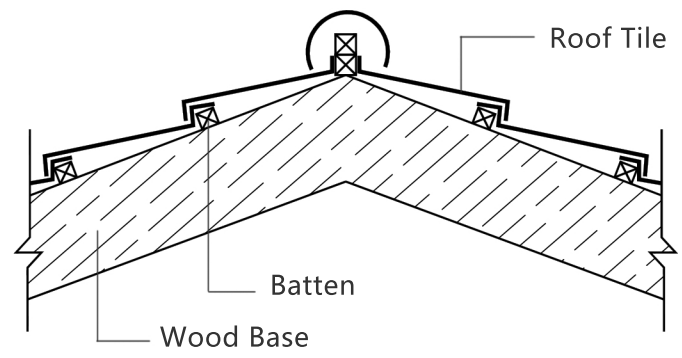
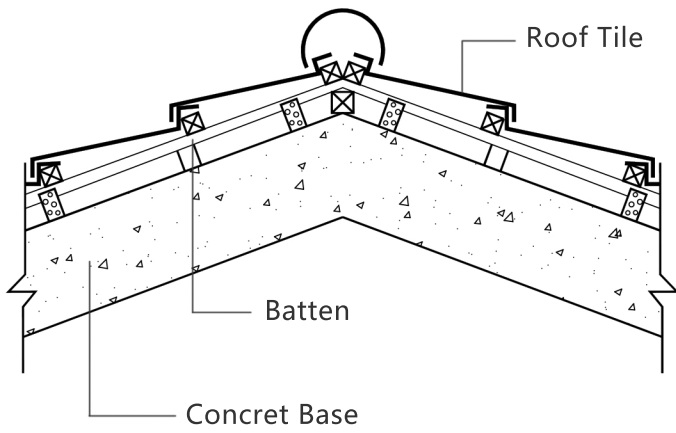
Cover and Secure the End with  
Ridge Cap Top



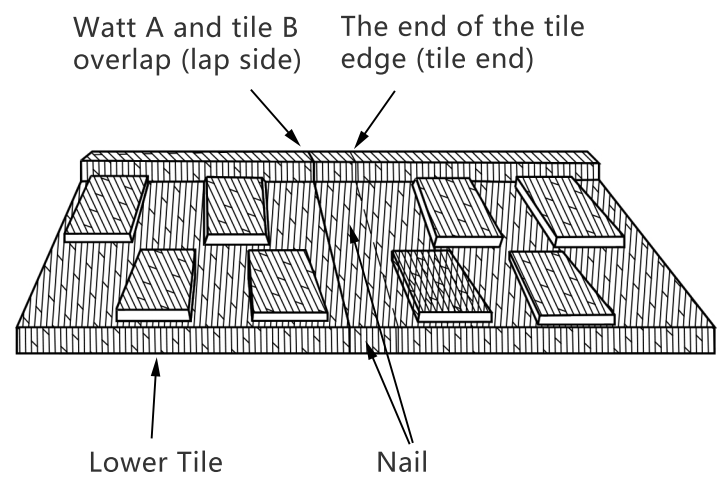
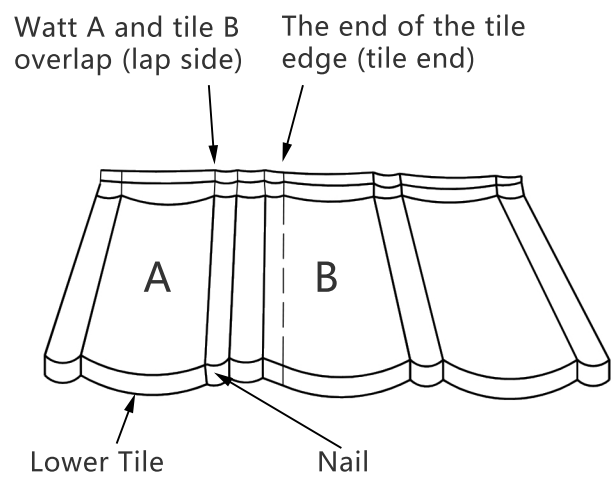
Cover and Secure the End with  
V Shape Ridge Cap Top

## C. Layout of CAILIN Stone Coated Metal Roof Tiles

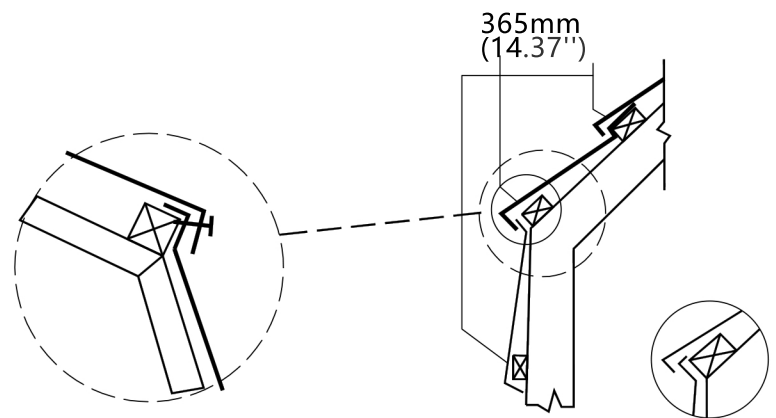
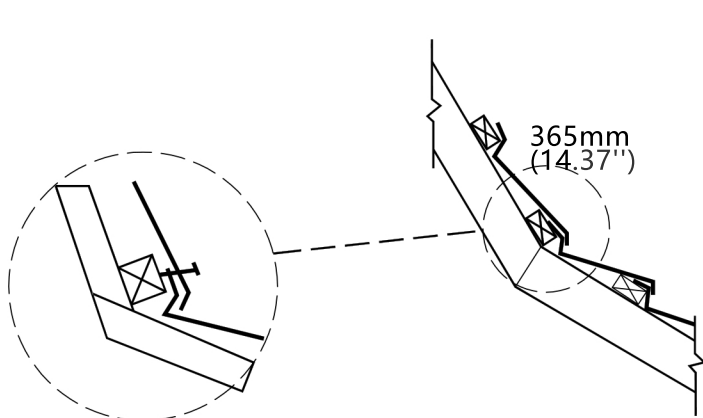




### Fastener

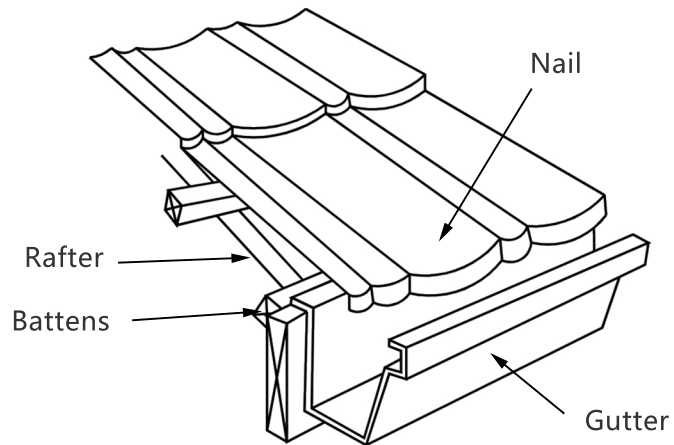


### Change in Inclination Angle

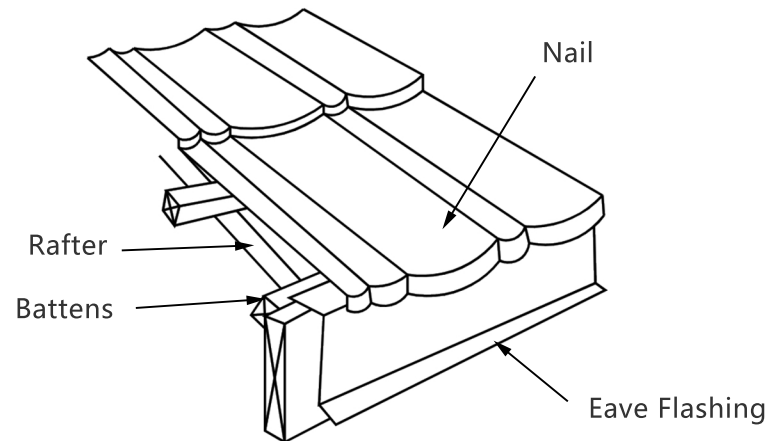


### D. Eave Flashing

Eaves flashing and gutter diagram

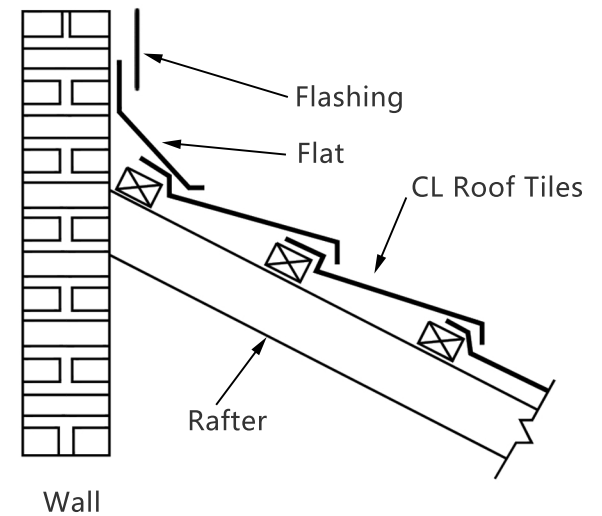
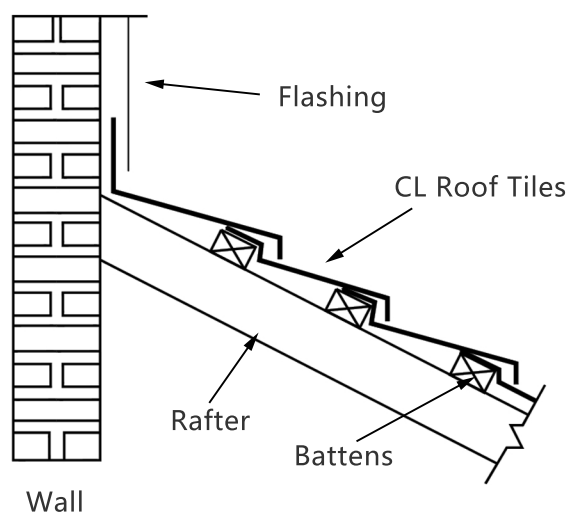


### D. Eave Flashing



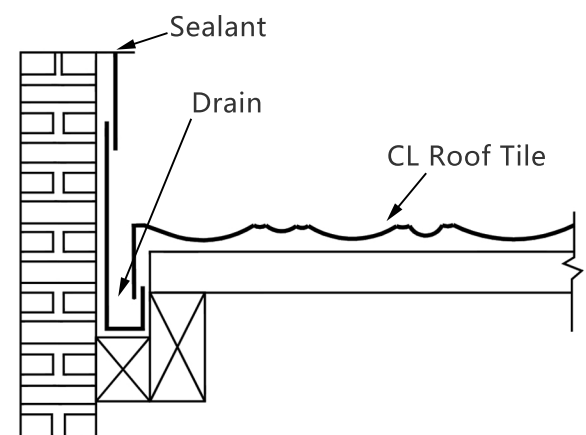
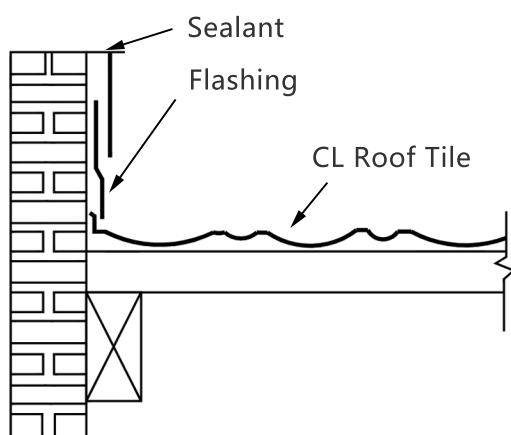
### E. Barge Board Cover

Insert the top of the roof tile or a portion of the metal sheet into the flush panel



### F. Vertical Joints

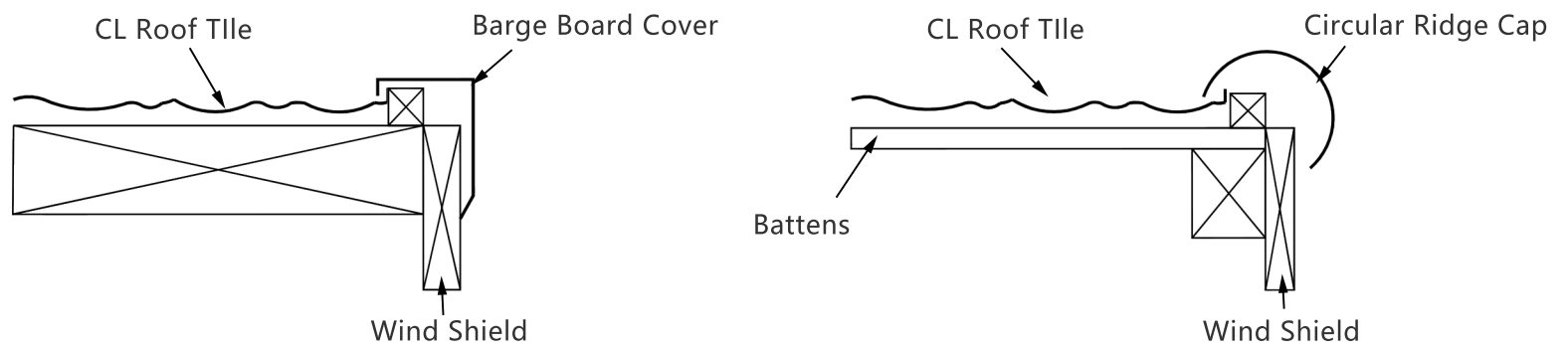
- If the roof tiles has a vertical wall on one side, connect the roof tiles to the vertical wall. and then deal with the vertical wall surface with the water board.
- If there is water flowing between the roof tiles and the vertical wall, install a drain between the roof tiles and the vertical wall.





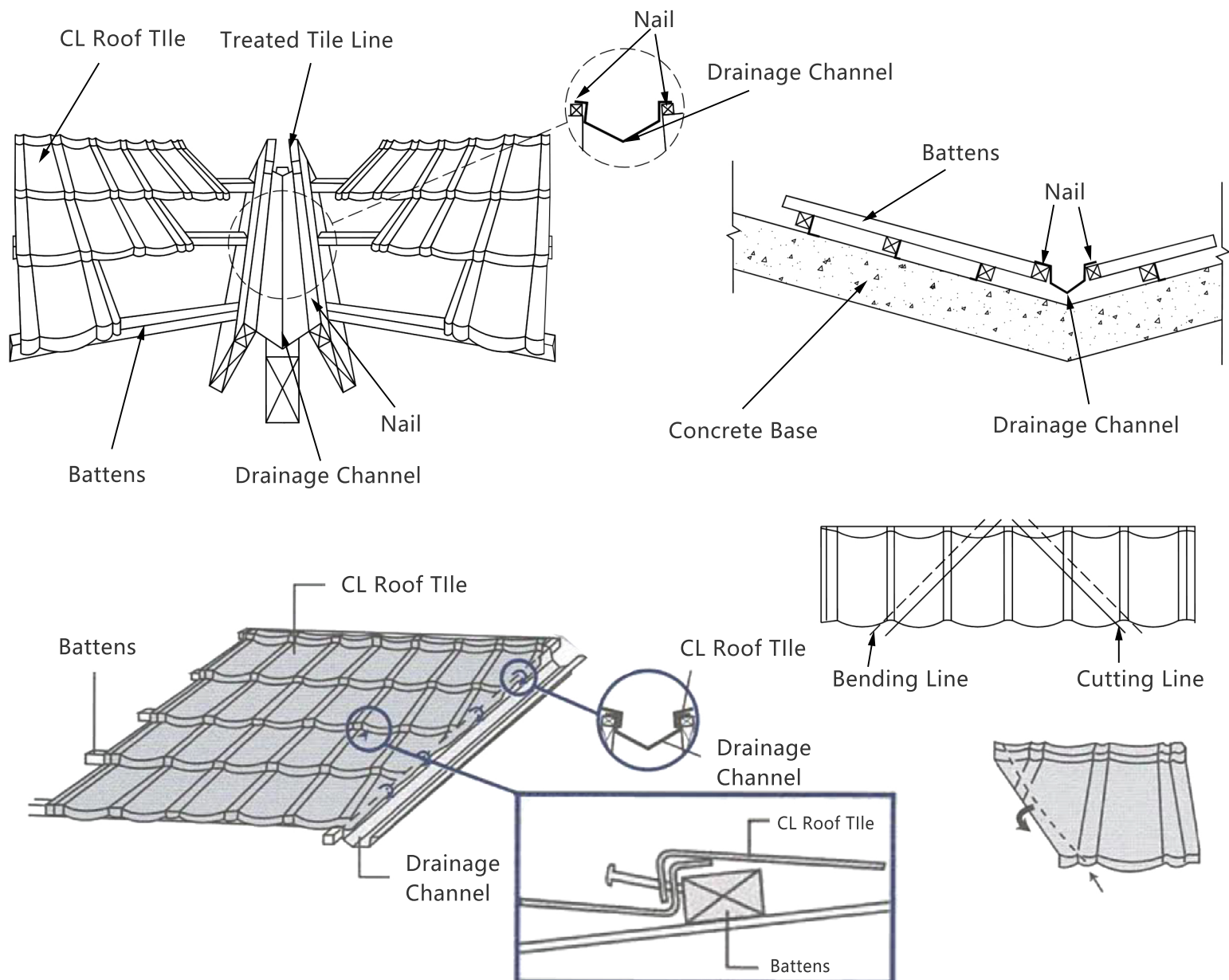
### G. Wind Shield

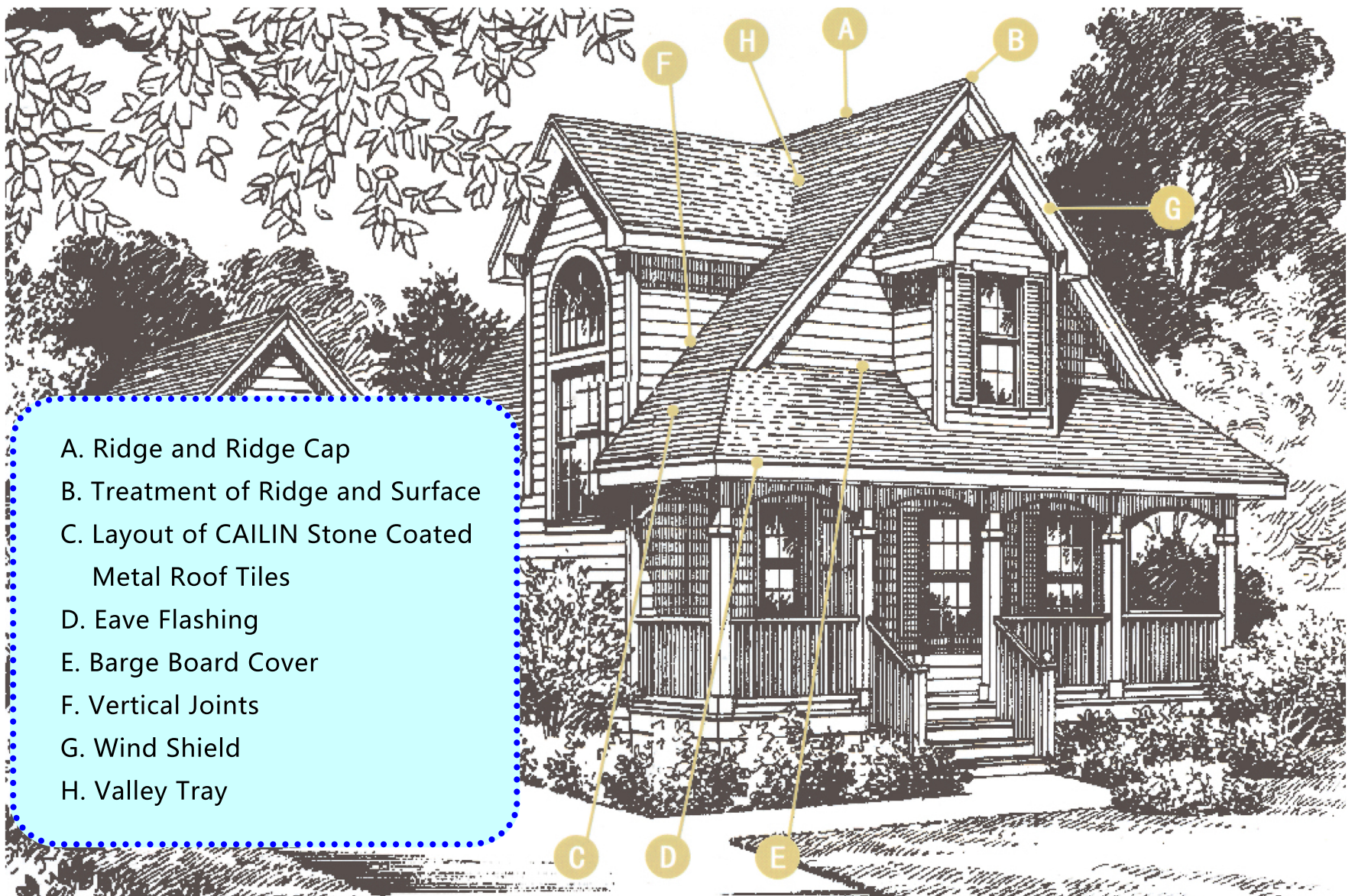
- When using the Flashing, install the battens on the rafters and adjust the position of the windshield and battens.
- The edges of the roof tiles are bent so that they can be inserted into the interior of the drain to prevent leakage.



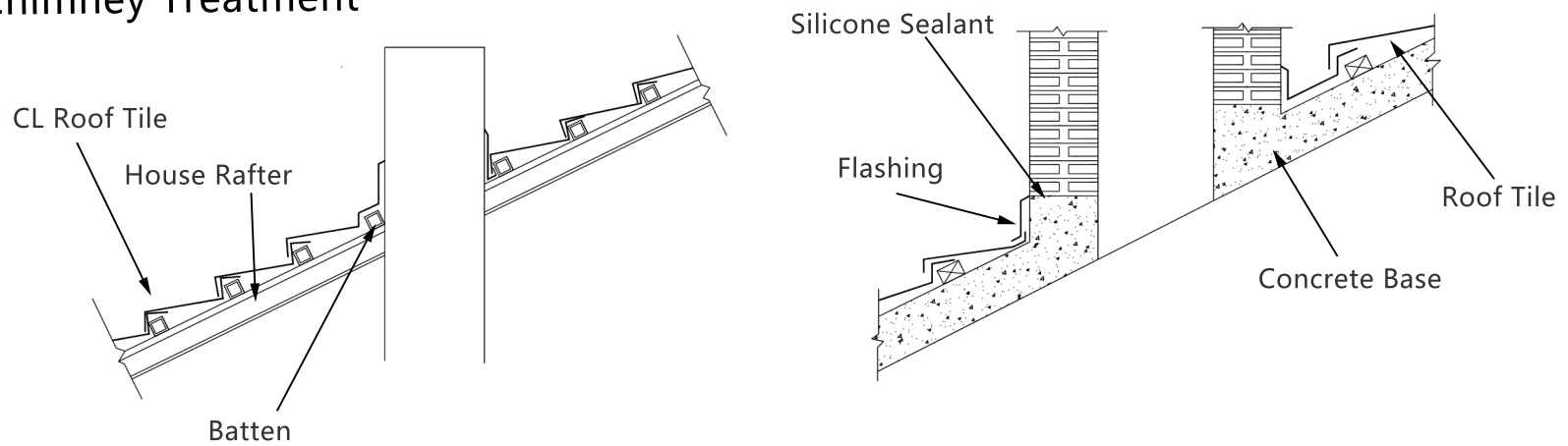
### H. Valley Tray

- It should bend the flat sheet if the drainage channel without flashing designing.

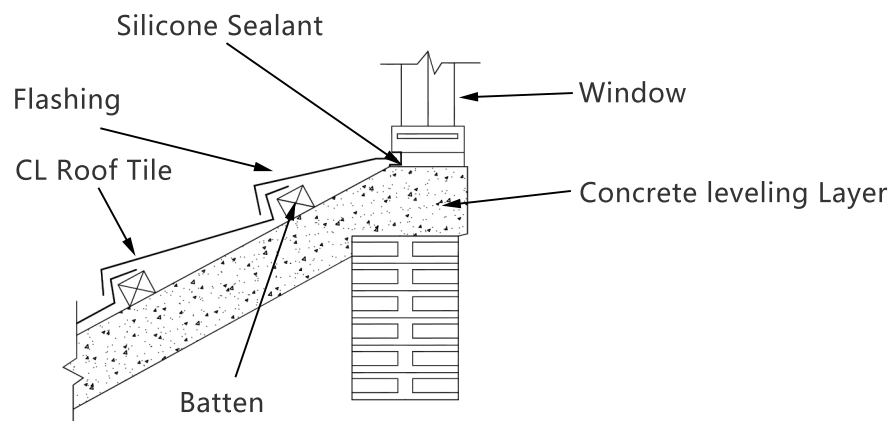




### I. Chimney Treatment



### J. Windows Treatment





**CAILIN**

**SINGER CAILIN BUILDING TECH CO.,LTD**

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