BRAVA
ROOF TILE

Brava Old World Slate

Installation Guide

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This document includes the recommended and suggested installation procedures for **Brava Old World Slate** roofing material.

Brava Roof Tile is the manufacturer of the Brava Old World Slate Tile and all other related roofing products.

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OVERVIEW

The information provided in this manual is for a guideline and a suggested method to install roofing products manufactured by Brava Tile.

As with all roofing materials, acceptable and proven practices should be followed. All application procedures should be done in accordance with local building codes in your area.

The information provided in this manual is strictly a guideline and does not imply responsibility for the final installation of the product. Brava Tile assumes no responsibility for methods of installation or the final results of such installation.

Brava Tile warranties its products for a 50-year period and applies to the product only and not the workmanship of the installed product. The roofing contractors should provide a separate warranty of their own.

Material for this manual has been compiled from various authoritative and professional sources. Many of the methods described and shown herein are sound, time – proven guidelines and standards of good roofing practice that meet the requirements of national and local building codes throughout the U.S. Each geographic area may employ “area practices” that are also sound and time-proven, which by exclusion does not mean to imply that proven area practices are unsatisfactory.

CAUTION !!!

Spacing Requirements

The required spacing for Brava Old World Slate is a minimum of 3/8” between the tiles. This will allow for expansion and contraction in various weather applications. This will also give a more natural, aesthetic appearance of real slate. DO NOT install pieces that are damaged or lifted, as they will not lie down properly.

Color Blending

For better color blending, we suggest you unload Brava Old World Slate tile from ALL pallets. This applies for both solid and blended colors.

Caution

Take extra caution due to the fact that this product can be slippery!

Disclaimer

The Brava roofing products manufactured by Brava Tile are intentionally designed to replicate the natural appearance of actual roofing products. This manufacturing process contains a variation within all colors. Care should be exercised by the installer to mix this variation as randomly as possible.

PRODUCT SPECIFICATIONS

Profile	Brava Old World Slate *Cavity back*
Exposure	10”
Weight/Piece (lb.)	2.85 ± 0.1
Pieces/Square	117
Lb./Square	333
Height	23.25” ± ⅛"
Width	12 ⅛"± ⅛"
Pieces/Bundle	10
Bundles/Square	11.7
Squares/Pallet	5.00
Pallets/Truck	24
Squares/Truck**	120
Fire Rating	Class A or C
Impact Rating	Class 4

Accessory	Dimensions	Weight (lb.)	Pieces/ Bundle
Starter	14” Length 12" Width	1.7	10
Hip & Ridge	16” Length 6” x 5-5/8” Width	2	10
Solid Tile Accessory	22.875” ± ⅛" Length 12.125"± ⅛" Width	4.5	10

GENERAL INFORMATION

No special tools required

- Old World Slate tiles can be hand nailed or nailed with a pneumatic nail gun
- Old World Slate tiles can be cut with a standard skill saw
- Old World Slate tiles can be scored with a utility knife and separated by bending over your knee. This makes laying cut pieces in tight spots easy, since no power tools are required.

Product Description

Brava Old World Slate is manufactured with a cavity back and multiple embossed patterns. Brava Old World Slate is available in Class A or Class C Fire Rating.

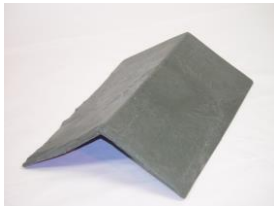
Length	23.25” ± ⅛"
Width	12 ⅛"± ⅛”
Exposure	10”

Field Tile

Accessories

Hip & Ridge

Length	16”
Width	6” x 5-5/8”
Exposure	Variable
Slope	variable



Starter

Length	14”
Width	12”

Solid Tile Accessory

Length	22.875” ± ⅛”
Width	12.125” ± ⅛”

Fastener Requirements

Brava Old World Slate

Brava Old World Slate should be installed with two corrosion resistant fasteners, such as stainless-steel type (304 or 316), hot-dipped zinc coated, copper, aluminum or corrosion resistant pneumatic roofing nails with a 3/8" diameter head and 1.75" in length. Depending on exposure the fastener length requirement will change. **The nails should be long enough to penetrate the sheathing ½".**

Caution should always be used to insure against over/under penetration. In areas that experience high humidity or other severe climatic conditions, consideration should be given to using stainless steel fasteners and higher-grade accessories.

Underlayments

Ice and Water Shield

- Single layer of 36 mil rubberized asphalt on 4 mil polyethylene carrier sheet
- A 36" wide sheet in all valleys is recommended
- 1 row of 36" wide along all eaves, lap end joints 6" and side joints 3" extended 3' inside the plate line
- Apply around all dormers, roof projections, skylights, etc.
- Always refer to your local building codes

NOTE: Ice and water shield should not be installed over felt.

Felts

- Asphalt saturated and coated organic felt base sheet
- Meets requirements of ASTM D226
- Referred to a 30 lb. felt and without perforations
- Secured with 3/4" long galvanized roofing nails

NOTE: Minimum requirement on a solid deck is one layer of 30 lb. This is a minimum. To insure better performance one may choose to use a higher performance underlayment. If you have questions regarding high performance underlayments, please call Brava Tile @ 319-338-5706. When installing over a solid tongue and groove deck, 43 lb. felt is the suggested minimum.

Metals

Valleys

Minimum recommendations

- 16 oz. Copper
- 26 ga. Corrosion resistant metal

Stainless Steel
Color Clad Steel
Color Clad Aluminum

Eaves, gables

- Eave Drip Starter Strips
- Gable Edge Strips

Roof Decking Materials

Solid Deck

- Minimum of 15/32" CDX plywood deck or equal
- Minimum 1" tongue and groove wood decking

Roof Slope

- 4:12 and above recommended
- For roof slopes of less than 4:12
  - Special consideration should be taken for sub roof installation. The water barrier will need to be looked at closely. An adhesive back underlayment or rubber roof system may be needed

Roof Venting

For every 300 feet of attic floor space, you will need one (1) square foot opening in the roof. Fifty percent (50%) of this needs to be at the eave line. Venting is important and needs to be thought out thoroughly.

NOTE: If screening is involved, opening areas should be doubled.

Spacing Between Slate Tiles

A spacing of 3/8" minimum between slate tiles is required. This will allow for any movement of the roof deck and expansion/contraction of the materials.

Cold Weather Installation

It is recommended that the Brava Old World Slate not be installed in temperatures below 20° F. Special consideration should be given for cold weather installation regarding items such as ice and water shield and felt underlayment. **Be sure to follow the manufacturer's installation requirements for all other applications and to refer to local building code requirements.**

Note of Caution: The tiles can be slick and safety methods need to be enforced.

Storing the Product

For better and easier installation, the slate tiles need to be stored on a flat surface. The slate tiles can become twisted or bent when stored on an uneven surface. Twisted or bent slate tiles can cause an initial appearance concern and a possible problem with blowing snow and rain, and therefore should **NOT** be installed.

Vent Flashings

Normal type of roof stacks or flashings can be used. A lead stack vent for plumbing pipes is recommended. Permanent types of materials should always be used.

Snow Guards

Due to the smooth surface of the slate tiles, snow will slide off rather easily. The need for snow guards will increase in areas with above average snowfall. Be sure to follow the snow guard manufacturer's installation specifications for the correct spacing, and always refer to local building code requirements.

Roof Clean Up

In areas of hips and valleys where there may be an increased need to cut slate tiles, it is recommended that these areas are swept off and the cuttings removed from the roof surface. This is for safety reasons and to keep the cuttings from stopping up the gutters and down spouts.

Fastening

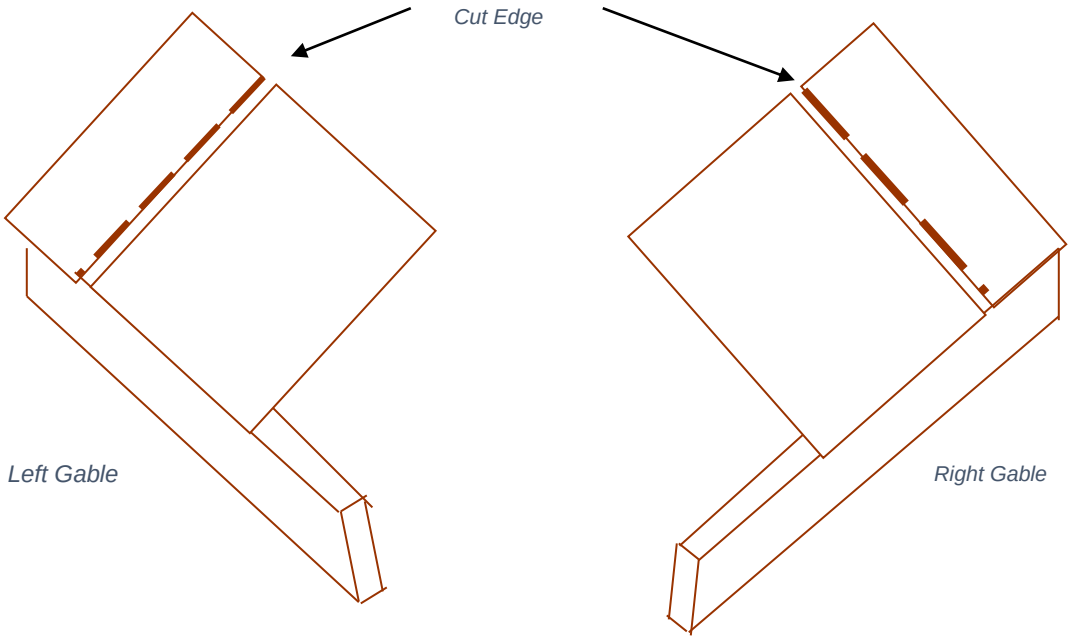
All slate tiles (including cut pieces) will be nailed with two nails, as per Brava's instructions. Two nails will be used on the pre-marked nail hole indicators.

Blending of Slate Tiles

It is recommended for both solid and multi-colored patterns, that the installer load the roof with Brava Old World Slate out of all pallets, rather than from a single pallet. Good blending is the responsibility of the installer.

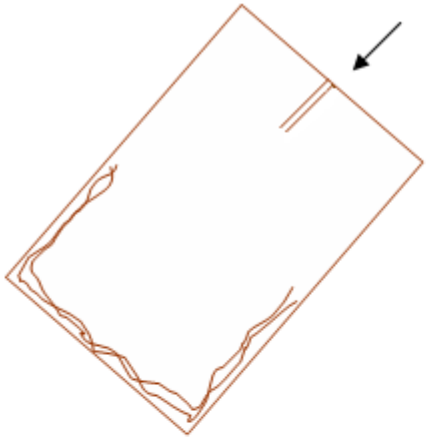
Laying Out ½ Slate or Cut Slate Tiles

When starting out or finishing with a cut piece of Old World Slate tile, a solid tile accessory piece is recommended. This will ensure a finished look without exposing the cavity back design on the edges of the cut tile. The manufactured edge should always be installed to the outside (or the gable edge) of the roof. This is for appearances only. (See diagram below)



The centerlines on slate tile can be used as a guide to cut ½ slates. There are double spacer lines to use as a guide to keep courses straight and to assist in maintaining the proper 3/8" spacing. Due to imperfections in some roof surfaces, these lines may not always keep your rows straight. Ultimately it is the installer's responsibility to ensure proper layout.

Centerlines



Roof Preparation

Inspect all areas of the roof to be tiled to ensure that:

1) Surface area is uniform, smooth, sound, clean and free of irregularities.

2) Even though metal flashing and other specialty flashings may not be the responsibility of the roofer, these must be in place prior to the installation.

3) Work by other trades, which penetrate the roof plane, is completed.

Underlayment

1) Install Ice and Water Shield at all eaves, valleys and around projections that are greater than 12"x 12" in lieu of any felt underlayment.

2) Felt underlayment should **not** be placed under the ice and water shield but should overlap the ice and water shield no less than 2".

3) Install Type 30 felt beginning at the eave and overlapping fascia board or metal roof edging if installed and laid parallel to eave. Cover the roof deck with felt maintaining a 2" headlap and 6" end laps. Hips and ridges should be lapped 6". Secure underlayment with 3/4" galvanized roofing nails at 9" on center along all laps and 12" on center down the center line of each row of felt.

NOTE: In designated high wind areas or when the structure is more than 40' above the ground, install Type 43 lb. coated base felt or greater in lieu of the Type 30. If the roof slope is less than 4:12, a double layer of Type 30 or heavier, unperforated felt either set in mastic, rubber roof, or hot asphalt is recommended to insure a watertight roof.

Layout

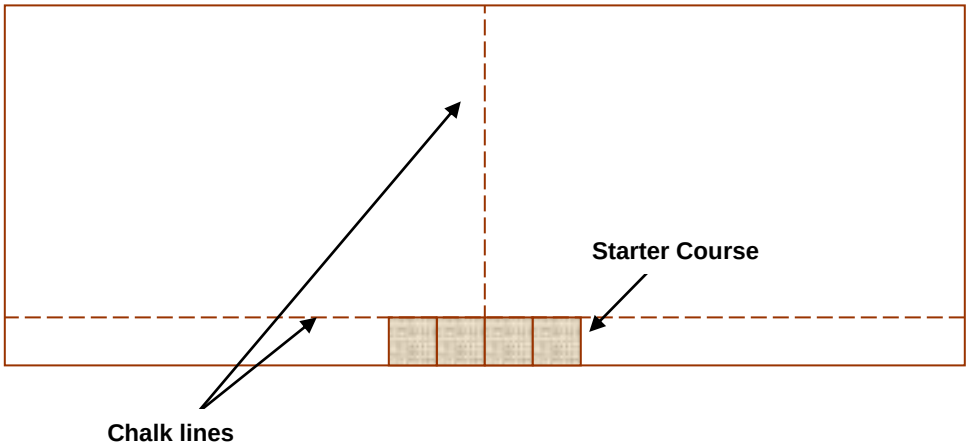
1) The starter course should project 1" beyond the fascia board at the eave and 1 ½" at the gable end.

2) From both ends, position starter pieces and snap a horizontal line from the tops of the starters between these two points. Next snap a vertical line from eave to top ridge. These chalk lines will insure that the slate tiles will be started true and plumb. More horizontal and vertical lines may be snapped to insure the slate tiles will stay true and plumb throughout installation.

3) Initial starting points may be from left side, right side or center of the area to be tiled. A minimum spacing of 3/8" between all slate tiles is required.

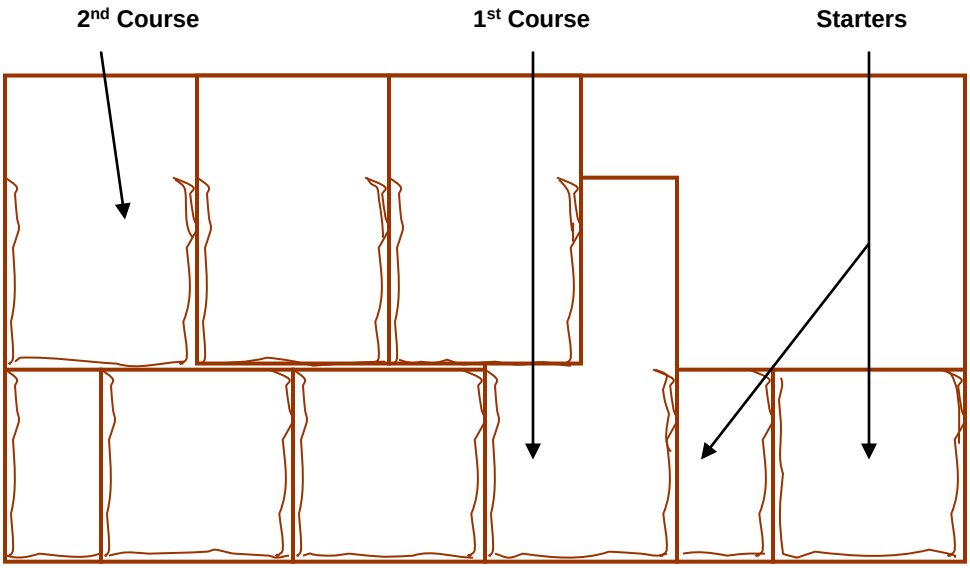
4) Solid tile may vary in size. **Do not use them to establish your roof layout.** They are a trim accessory. Be sure to snap proper lines to initialize and ensure proper layout.

5) One method of starting is to locate the center of the roof area to be covered. Snap a vertical and horizontal line at this point. Begin by placing a starter tile on the right and left side of the vertical line maintaining a 3/8" spacing and continue to both ends. Starter pieces should be applied with the tapered edge (thin edge) at the top of the starter course.

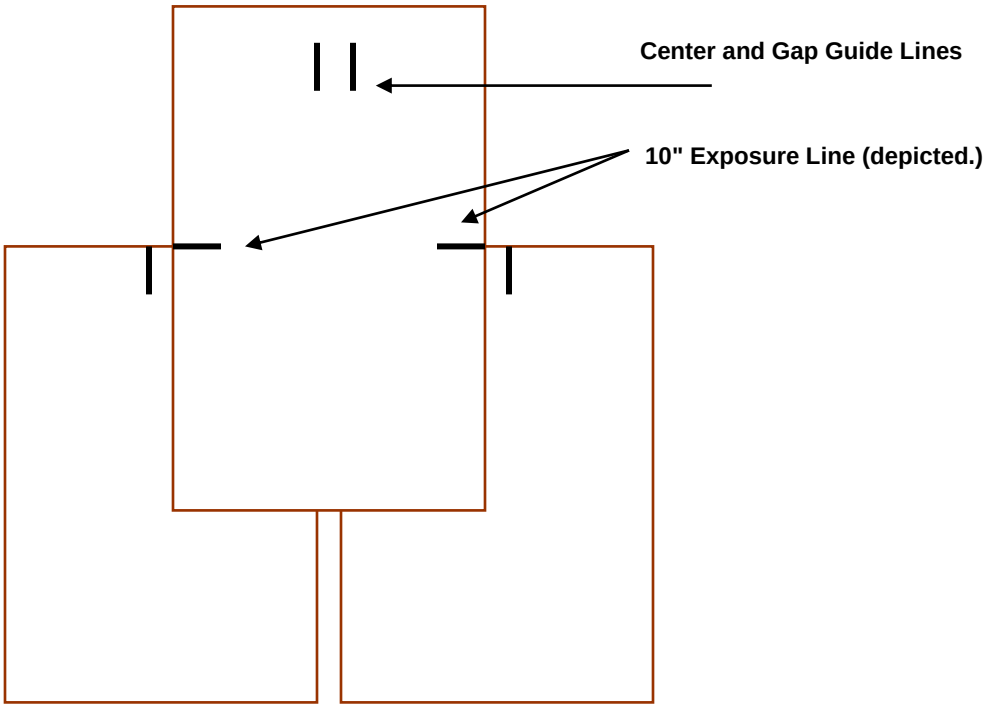


6) Now start the first course. With a full slate tile, align center locator line of the slate tile directly over the vertical chalk line. Continue to both ends, maintaining a 3/8" spacing between slate tiles.

(See diagram below)

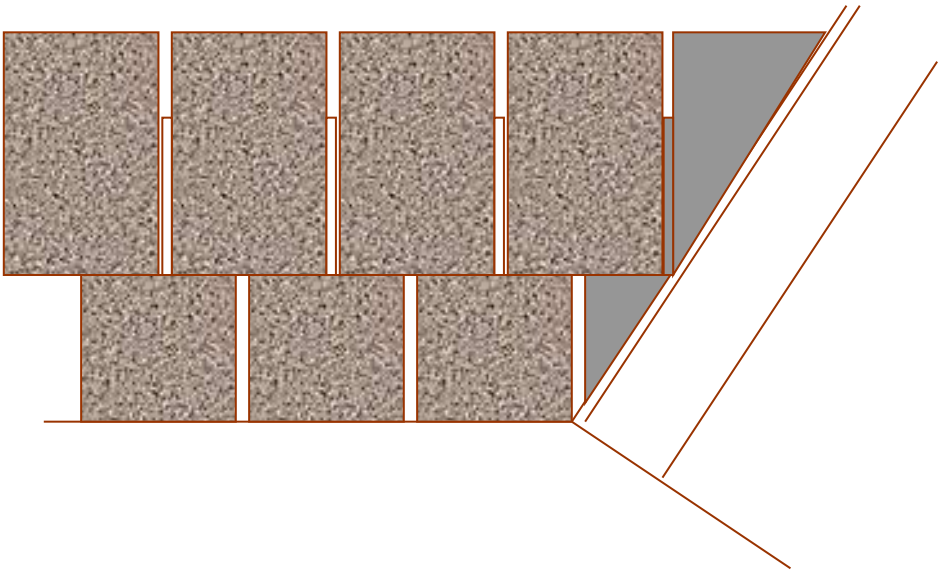


7) Start the second course with a 6" (half tile) setback from the course below. Align the tile between the centerline locators from the lower course. Next adjust the tile up or down to align the exposure lines with the top of the lower course. (See diagram below)



Valleys

1) Either an open or closed valley design can be used. In all valley applications, the solid tile accessory piece is suggested. It will save time from grouting or sealing the openings in an open valley system. In the closed valley system a regular tile can be used at the installer's discretion, but we still suggest a solid tile to be used. Install the solid tile accessory along the valley and trim as needed. (See diagram below).



A. With an **open valley design**, leave a minimum 4" opening at the top of the valley, graduating ½" per 8 lineal feet down slope. For roof slopes of 4:12 or greater, valley flashing should be center crimped, painted, galvanized steel, aluminum, copper or stainless steel and extend a minimum of 10" on each side of the valley centerline. For roof slopes less than 4:12, valley flashing should extend no less than 24"each side.

B. **Closed valleys** are formed by laying slate tiles tight to the valley line and placing pieces of metal under the tiles. The size of the metal sheet is determined by the length of the slate tile and the slope of the adjoining roof section. Each metal sheet should extend 2" above the top of the tile course that it will be applied to so that the sheet may be nailed directly to roof deck. Each metal sheet should lap the sheet below by at least 3" and set in back of the butt edge of the tile above in order to be concealed. Each metal sheet should be wide enough to extend 7" from the center of the valley to the roof surface.

Flashings

1) Flashings should be used around all roof projections, such as walls, chimneys, dormers, parapets, vent pipes, skylights etc. Proven durable flashing materials are copper, tin, lead, galvanized iron and stainless steel.

   NOTE: When dissimilar metals are placed in contact with one another, galvanic action will result which can cause electropositive metals to deteriorate. One way this can be avoided is by placing strips of sheet lead between the two metals.

2) **Base flashings** are flashings that are used over or under the roof coverings and are turned up on the vertical surface:

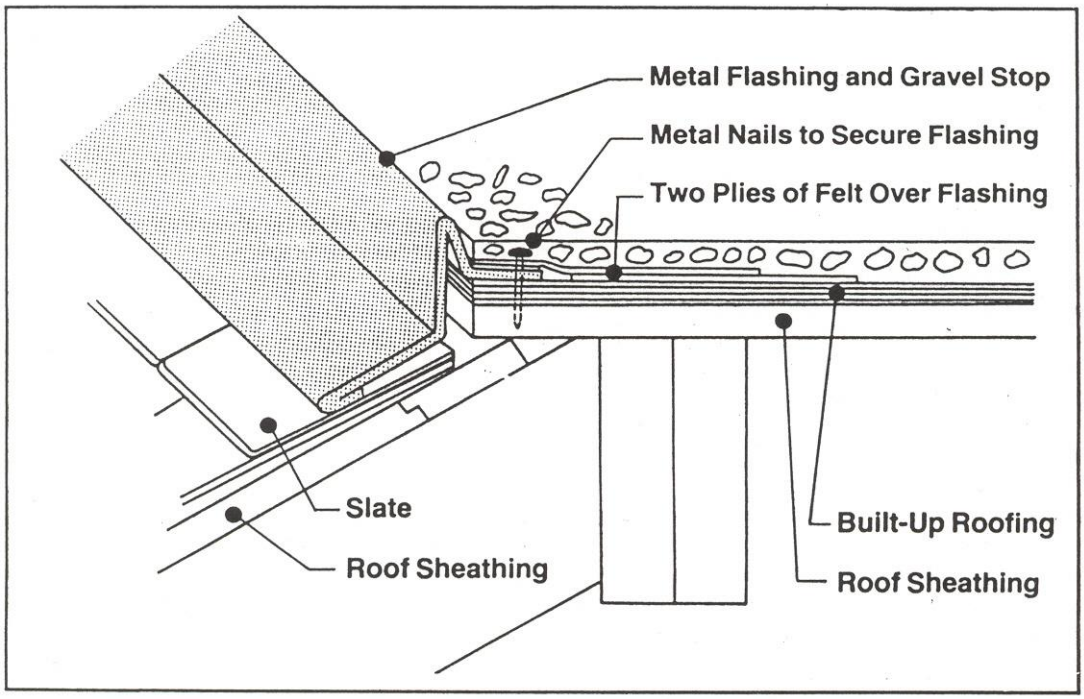
   a) Base flashings should extend under the uppermost row of slate tile the full depth of the tile or at least 4" over the tile immediately below the metal. The vertical leg of the metal should be turned up a minimum of 4" and extend 4" on the tile as it is laid.

3) **Cap flashing** (Counter flashing) is metal built into the vertical surface of a roof and bent down over the base flashing.

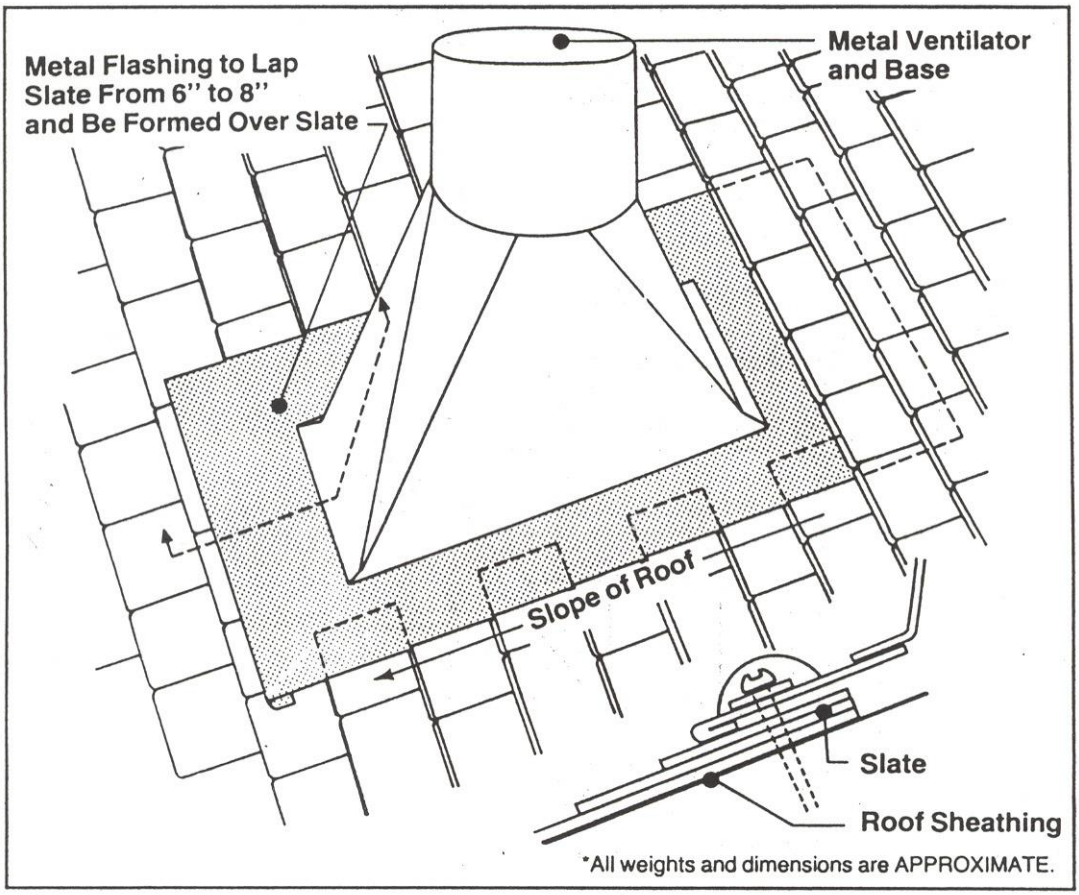
   a) Where base flashing is not covered by vertical siding, a cap flashing should be built into masonry joints a minimum of 2", extending down over the base flashing 4" with the edge bent back and up ½"

Illustrations

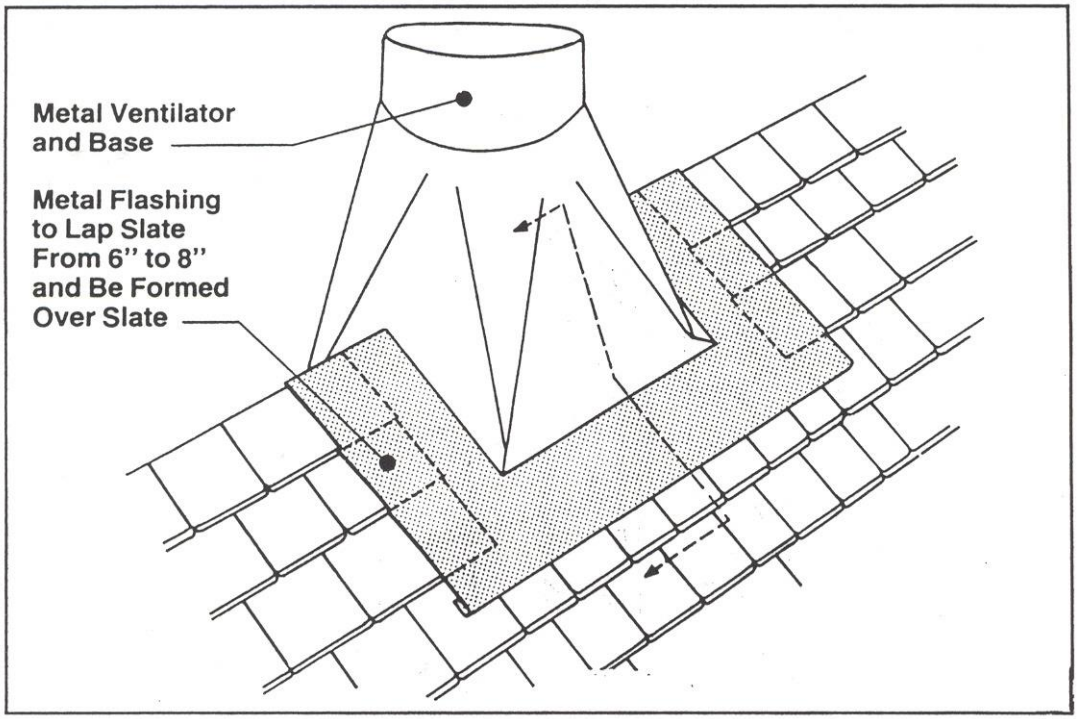
The following illustrations show proper flashing procedures for tiled roofs.



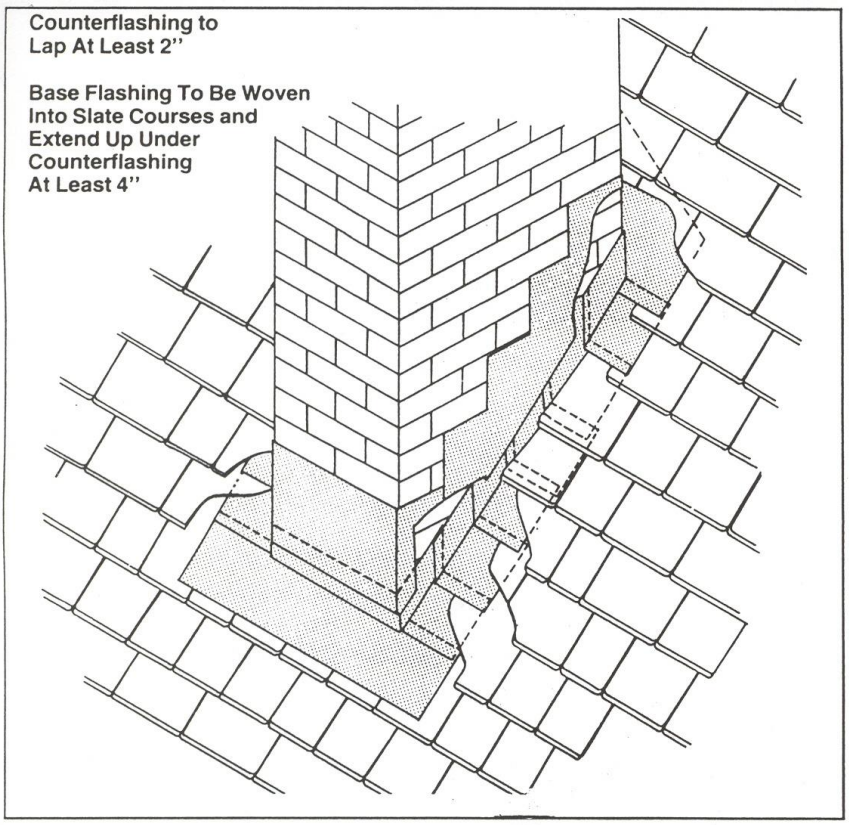
Flashing for Edge of Composite Roof above a Sloping Slate Roof



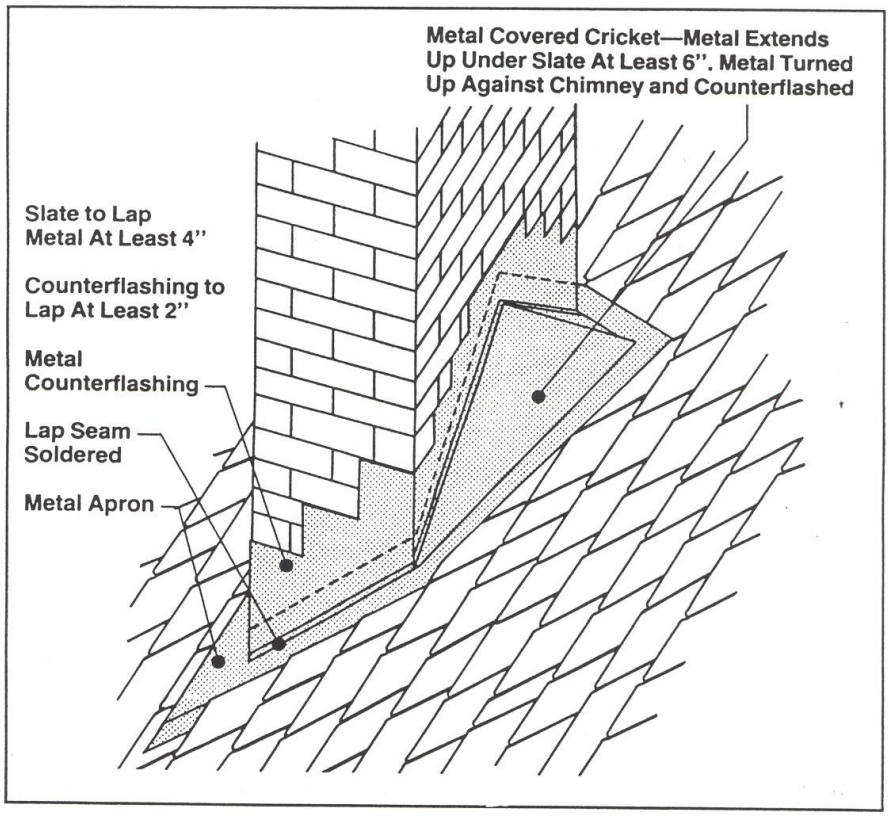
Flashing for a Ventilator



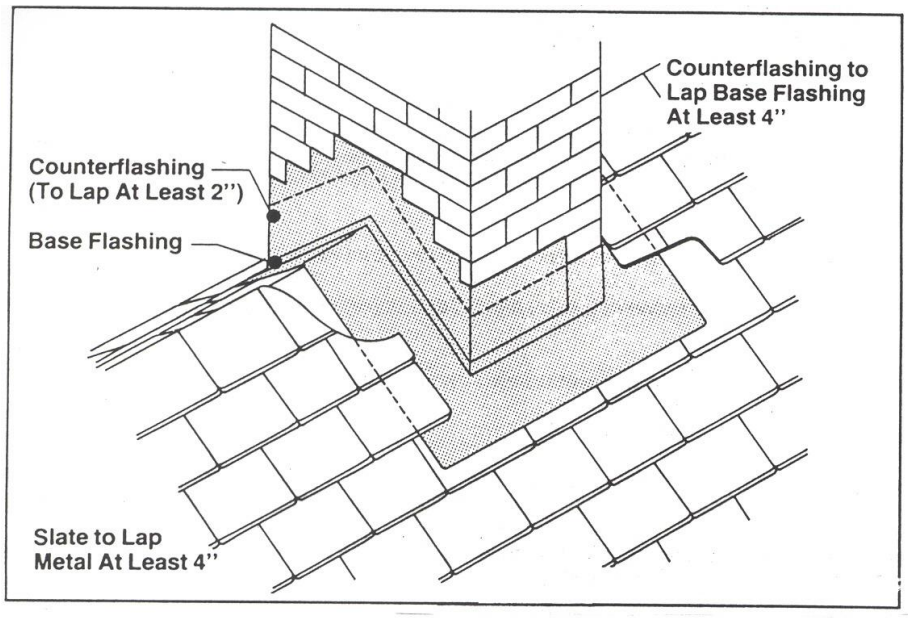
Flashing for a Ventilator at Ridge



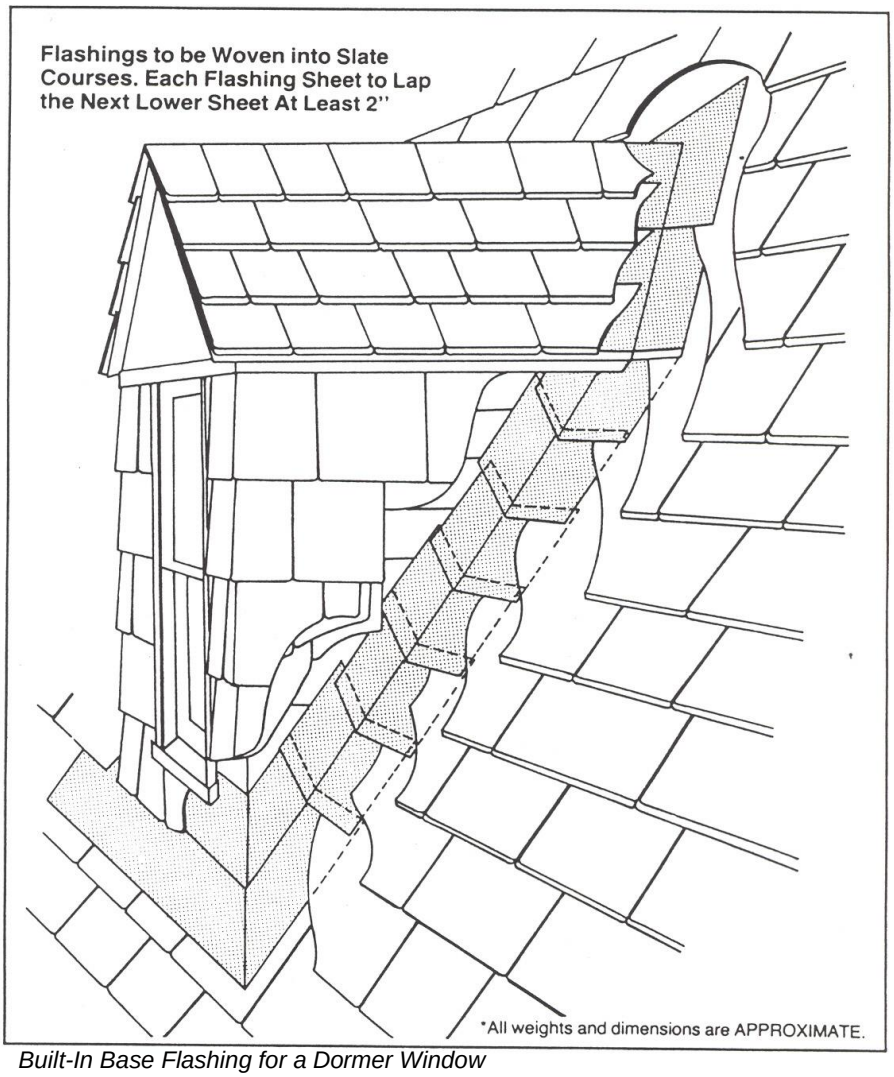
Built-In Base Flashing for a Chimney



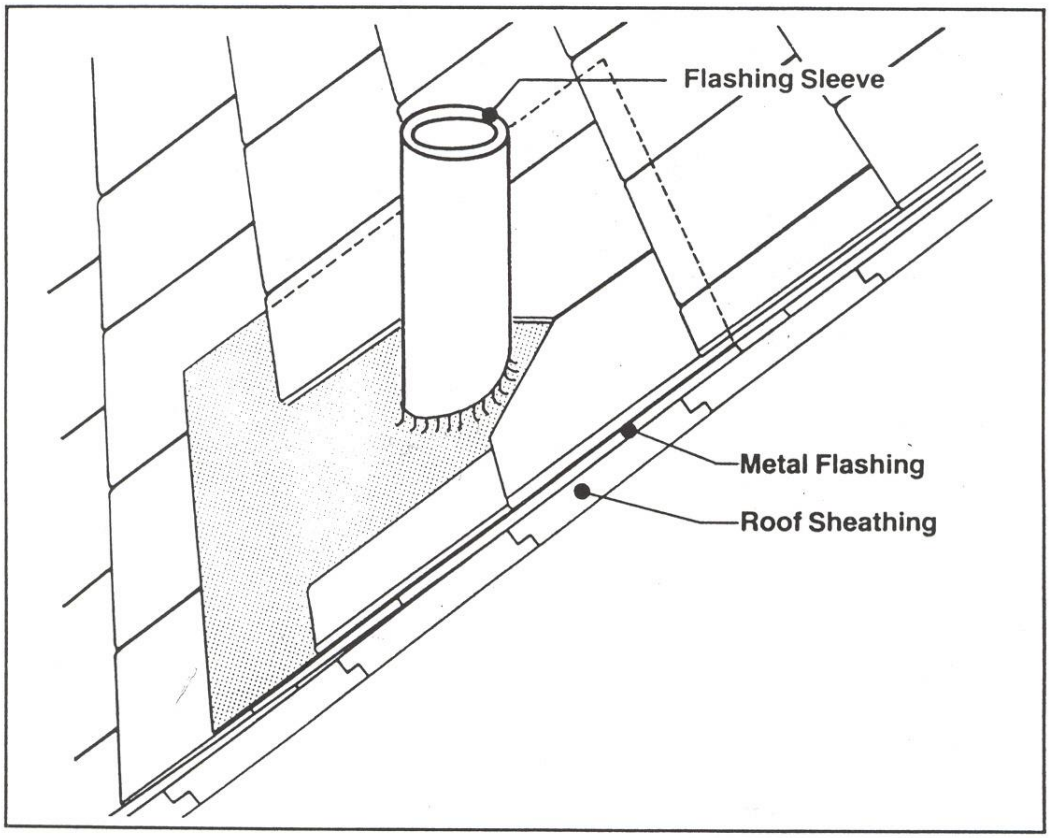
Flashing for a Chimney



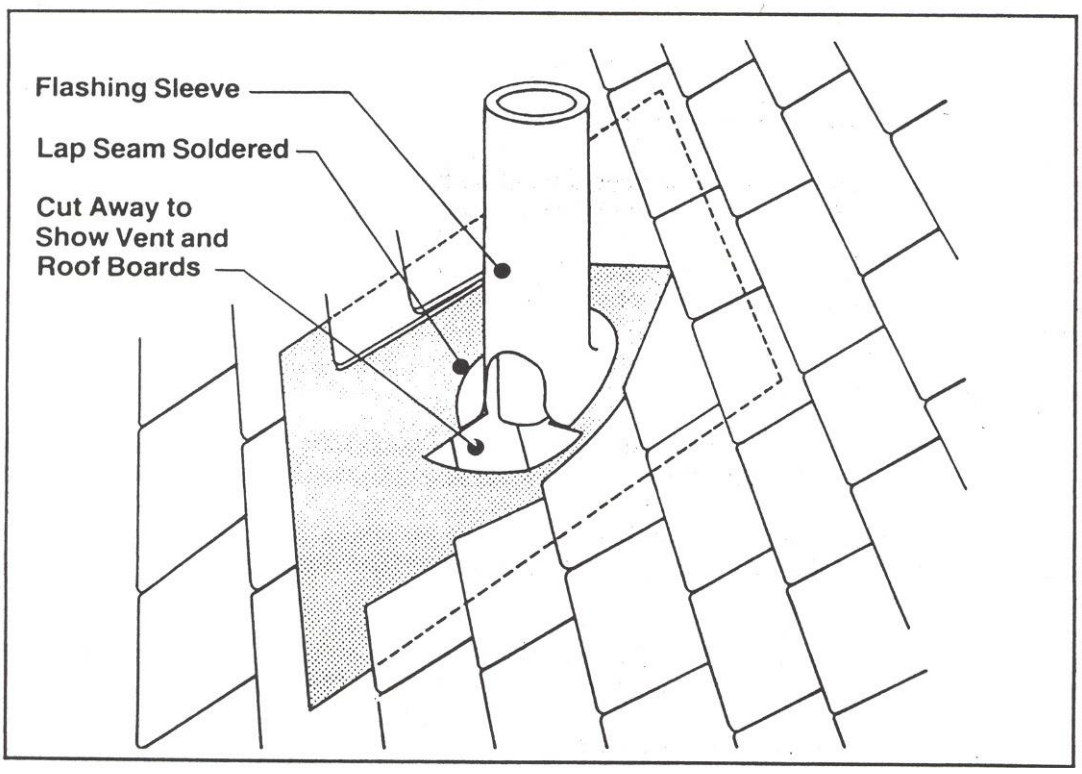
Flashing for Chimney on Ridge



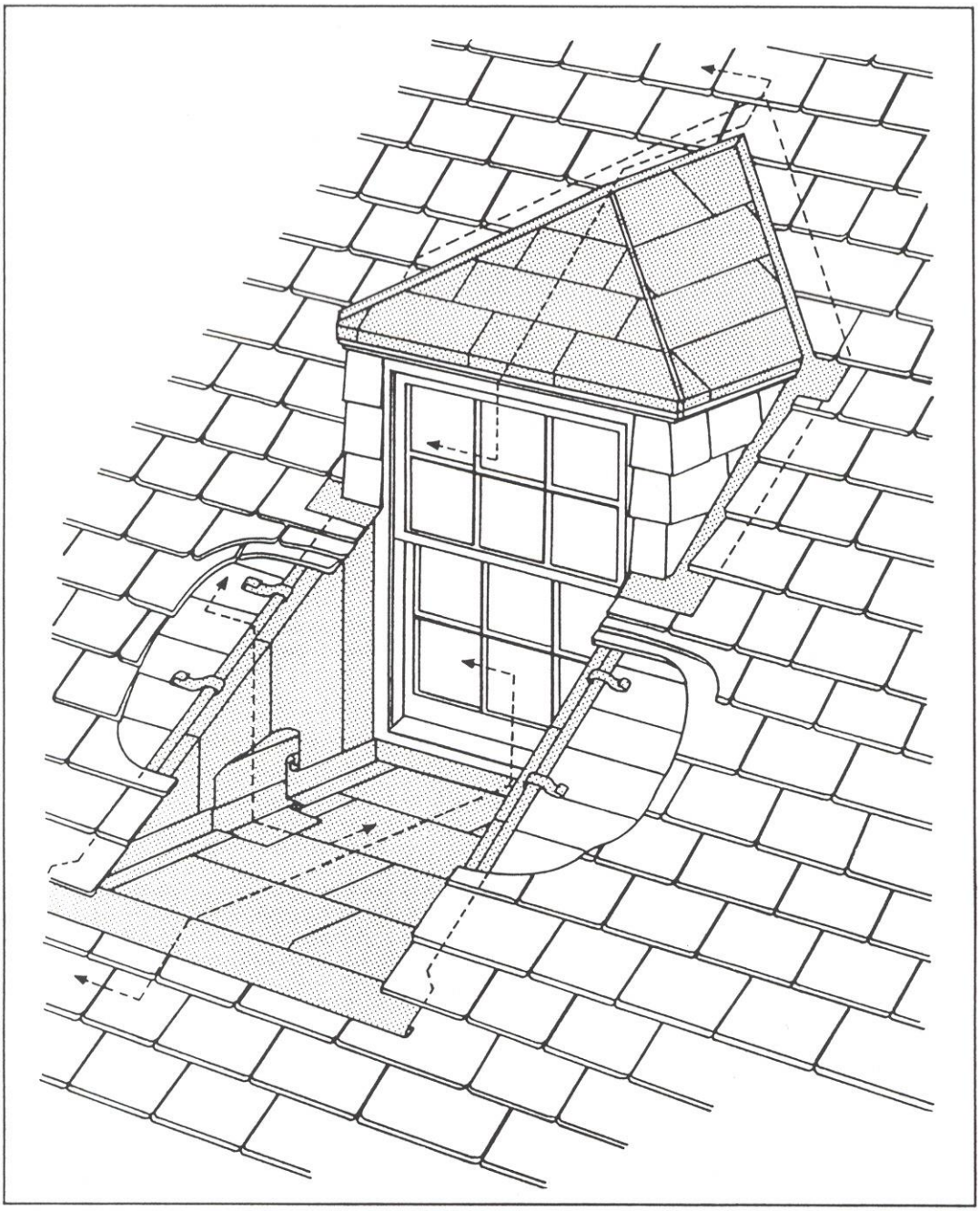
Built-In Base Flashing for a Dormer Window



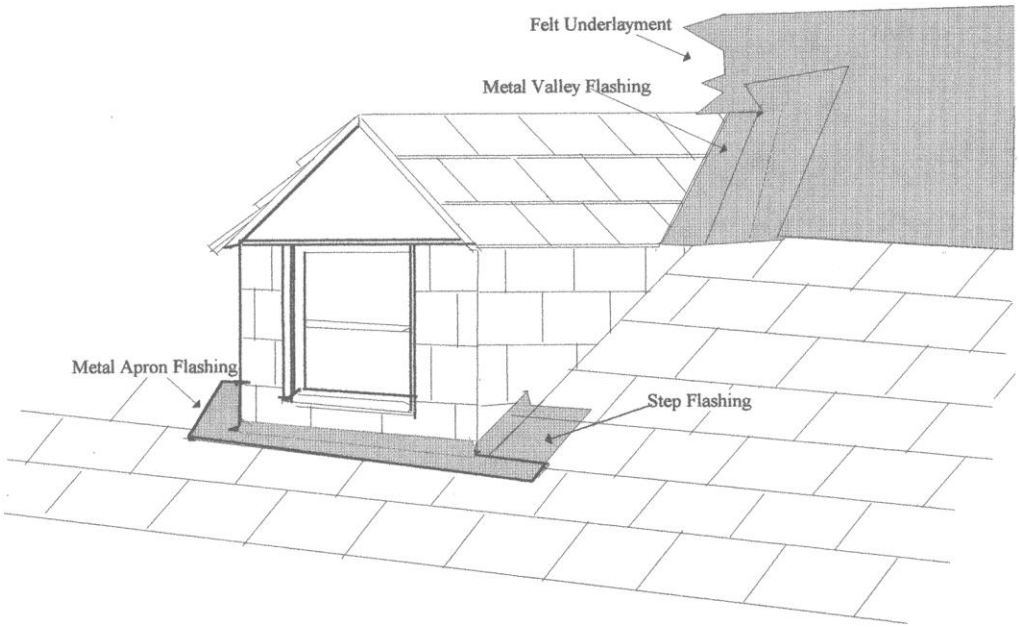
Flashing for Soil Stack



Flashing for a Vent Pipe



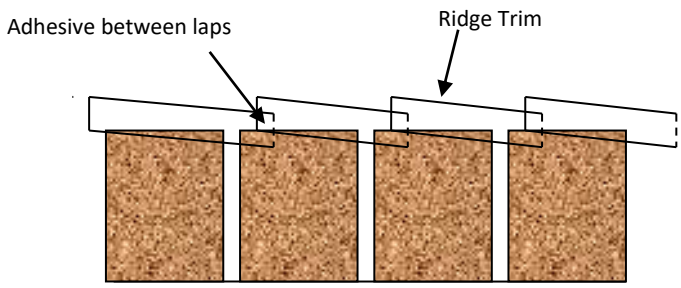
Flashing for a Recessed Dormer Window



Hip & Ridge Detail

Trim the hip tiles to fit as tight as possible. Install an 8" wide strip of 30 lb. felt minimum over the center of the hip.

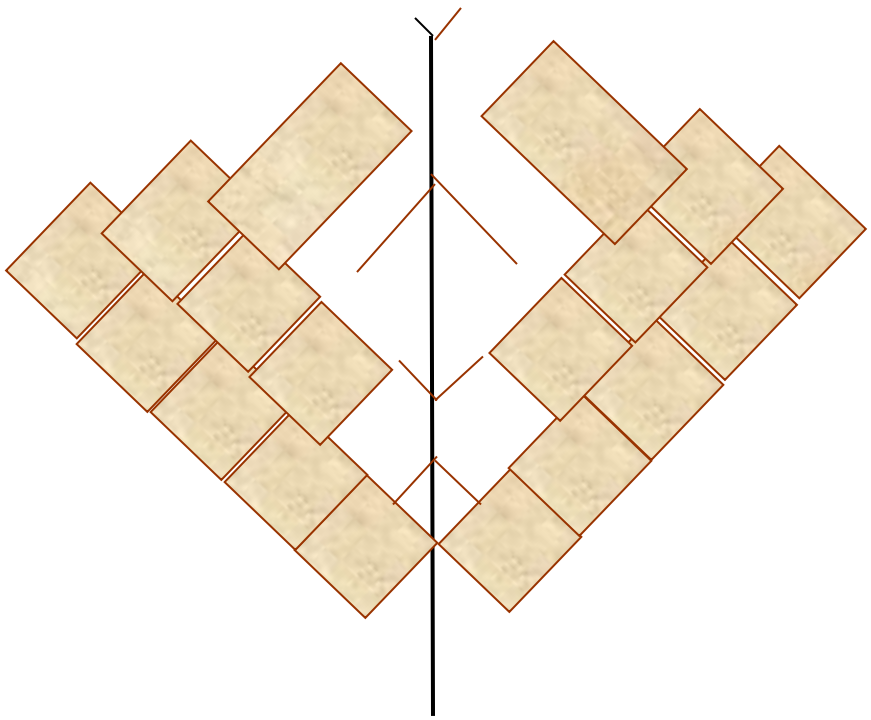
When pre-formed hip & ridge tiles are used, place nails at nail locator marks. Fasten hip tiles with 2 nails each on each side. Maintain a 3" head lap. The hip/ridge cap is adjustable.

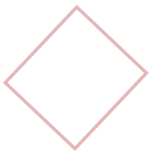


Ridge Detail

Miter Hip

This type of hip must have the same exposure on each course. The tiles should be cut to form a tight joint. Metal step flashing should be woven into each course of tiles. Place the metal flashing and nails so that they are covered by the next course of tile. Fasteners should be long enough to penetrate through the hip/ridge, layers of field tiles and penetrate into the decking a minimum of 1/2".





High Wind Specifications

Roof Decking Materials

Solid Deck

- Minimum of ½" plywood nailed at perimeter 6" on center and in the field 6" on center and on seams 4" on center. Using an 8d x 2" galvanized ring shank common nail for 110 MPH, or minimum of ½" plywood nailed at perimeter 4" on center, in the field 4" on center and on seams 3" on center. Using an 8d x 2" galvanized ring shank common nail for 228.5 PSF design pressure (Class A) or 198.5 PSF design pressure (Class C).

Underlayment

a. Install Ice and Water shield at all eaves, valleys and around projections that are greater than 12" x 12" (recommended)

b. Felt underlayment should not be placed under the ice and water shield, but should overlap the ice and water shield no less than 4". Side laps should be no less than 6"

c. Roofing felt 30# Asphalt Saturated organic felt paper nailed with 1 tin tab per nail 1 ¼" smooth roofing nail, at 6" oc on all seams and in the field 12" oc staggered 12".

Fastener Requirements

Brava Old World Slate should be installed with two 1/8" dia x 2" ring shank roofing nails for 110 MPH. Brava Old World Slate should be installed with two 2 -1/2" #10 screws for 228.5 PSF design pressure (Class A) or 198.5 PSF design pressure (Class C).

Caution should always be used to insure against over/under penetration. In areas that experience high humidity or other severe climatic conditions, consideration should be given to using stainless steel fasteners and higher grade accessories.

Layout

8) The starter course should project 1/2" beyond the fascia board at the eave and 1" at the gable end. The starter should be nailed with two 1/8" dia x 2" ring shank roofing nails.

9) From both ends, position starter pieces and snap a horizontal line from the tops of the starters between these two points. Next snap a vertical line from eave to top ridge. These chalk lines will insure that the slate tiles will be started true and plumb. More horizontal and vertical lines may be snapped to insure the slate tiles will stay true and plumb throughout installation.

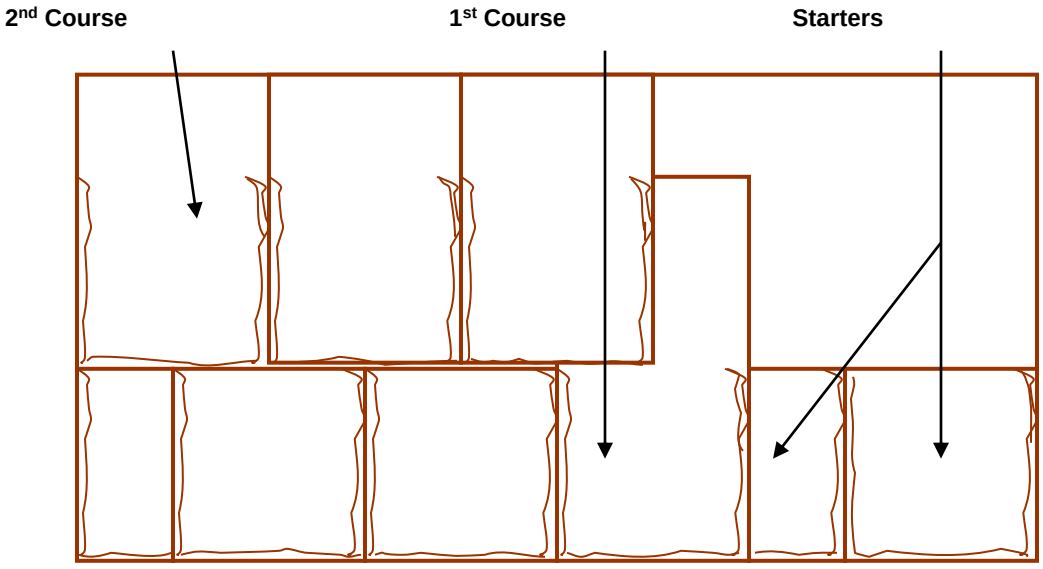
10) Initial starting points may be from left side, right side or center of the area to be tiled. A minimum spacing of 3/8" between all slate tiles is required.

11) Solid tile may vary in size. **Do not use them to establish your roof layout.** They are a trim accessory. Be sure to snap proper lines to initialize and ensure proper layout.

12) One method of starting is to locate the center of the roof area to be covered. Snap a vertical and horizontal line at this point. Begin by placing a starter tile on the right and left side of the vertical line maintaining a 3/8" spacing and continue to both ends. Starter pieces should be applied with the tapered edge (thin edge) at the top of the starter course.

13) Now start the first course. With a full slate tile, align center locator line of the slate tile directly over the vertical chalk line. Continue to both ends, maintaining a 3/8" spacing between slate tiles. For high wind specifications, the slate needs to be laid at an 8” exposure not the 10” exposure line on the Slate!!!

(See diagram below)



14) Start the second course with a 6" (half tile) setback from the course below. Align the tile between the centerline locators from the lower course. Next adjust the tile up or down to achieve a maximum 8” exposure.