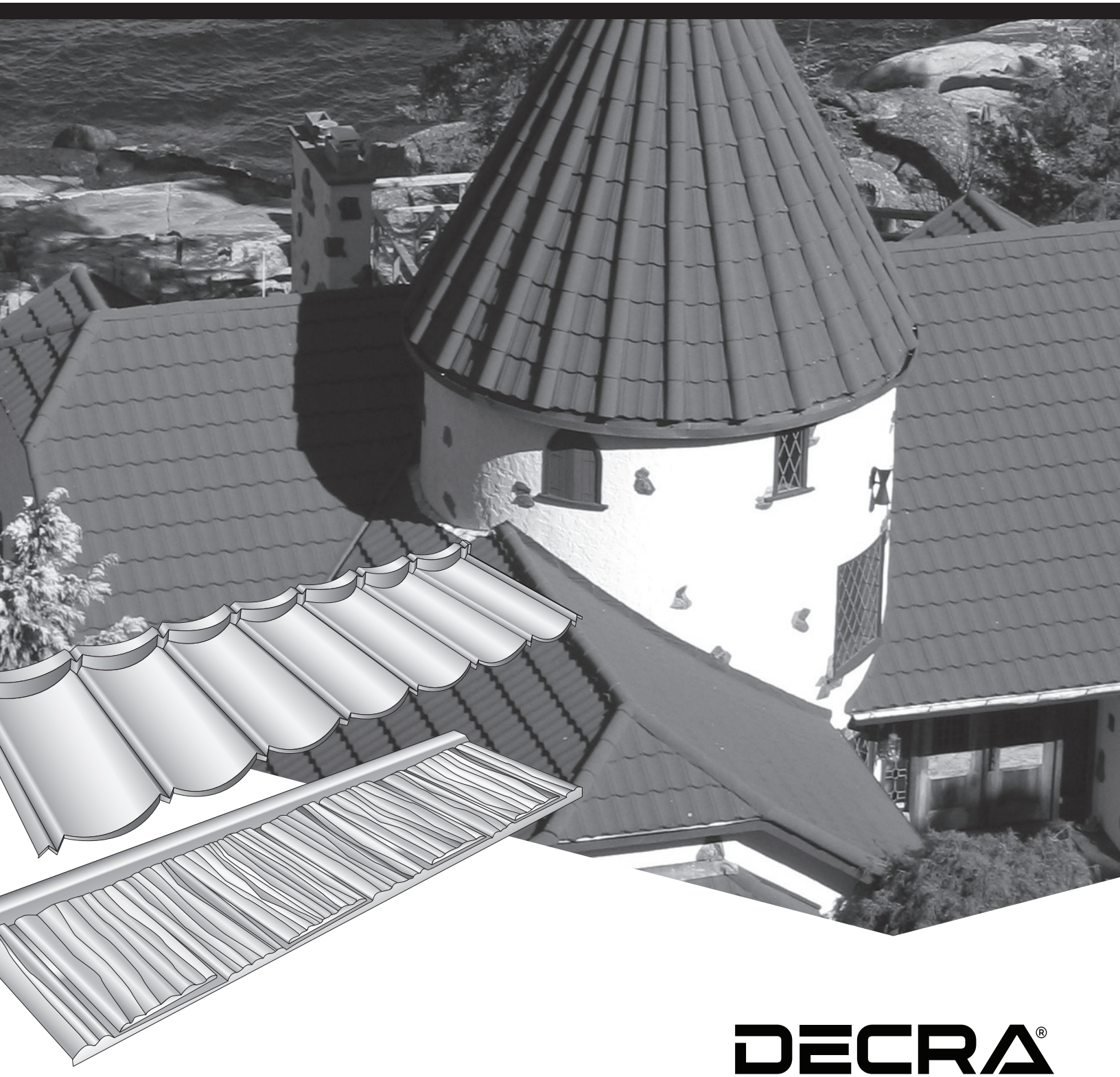
DECRA® Tile & Shake
INSTALLATION GUIDE



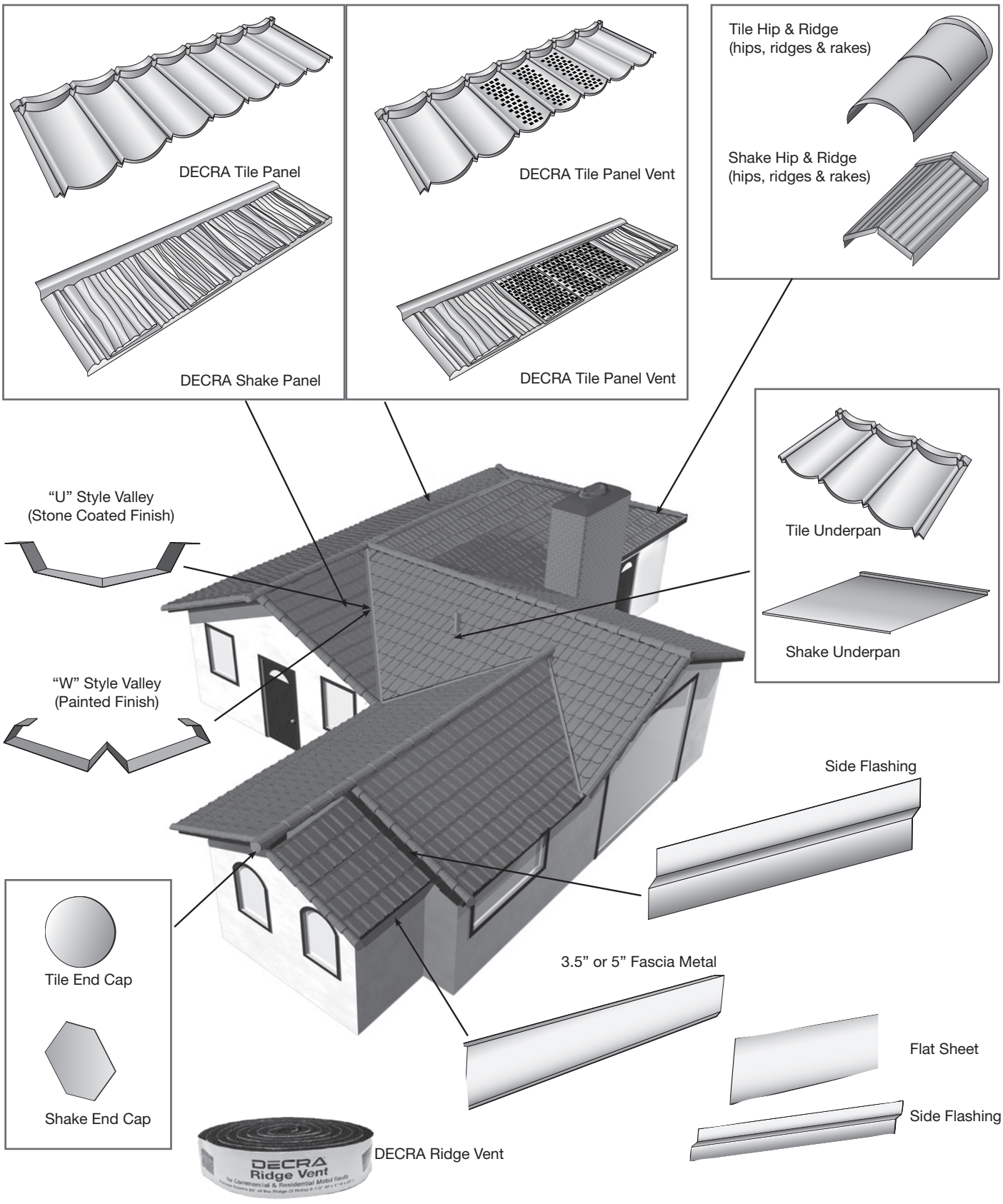
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DECRA®
METAL ROOFING

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DECRA Tile & Shake (installed on battens)



DECRA panel vents should be installed on the last full course below the ridge, and no more than 4 feet down from the peak of the roof facet. Panel vents should NOT be used for air intake.

Introduction

The instructions and drawings included here are intended only as a guide for the installation of DECRA Roofing Systems' Tile and Shake profiles. The materials and methods specified help maintain the overall integrity of the roofing system. These instructions are not intended to address all aspects of roofing installation; a quality installation is ultimately dependent upon the workmanship of the roofing contractor. Information regarding alternative situations not covered in these instructions can be obtained by contacting DECRA Roofing Systems.

Safety

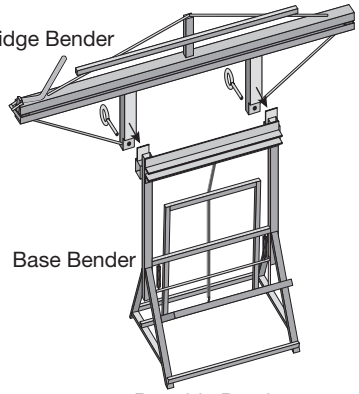
Adhere to recommended safe roofing practices. Wear appropriate clothing and use safety equipment, such as protective eyewear. Light, soft-soled shoes are recommended. Use proper tools and keep the roof clear of debris as you work.

Tools

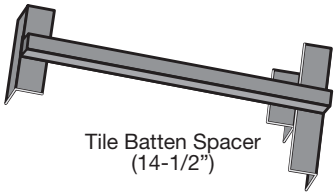
DECRA panels may be cut using a cutter/guillotine, tin or aviation snips, or a circular saw using metal-cutting blades. A portable brake (DECRA Bender) or hand bender is recommended to bend the panels for hips, ridges and valleys. Safety equipment should be worn during the installation process.



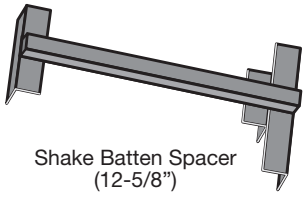
Cutter/Guillotine



Portable Bender



Tile Batten Spacer
(14-1/2")



Shake Batten Spacer
(12-5/8")



Cordless Drill



Circular Saw



Aviation or
Tin Snips



Hand Bender

Estimating Sheets

The DECRA Tile and DECRA Shake Estimating Sheet (With Battens) is available at **DECRA.com**.

Codes & Requirements

Refer to local codes and/or ICC Reports. A link to DECRA ICC reports is available at DECRA.com.

Roof Slope

Roof slopes less than 3:12 are considered decorative and panels must be applied over a roof system complying with local codes.

Underlayment

It is required that one layer of underlayment be used before applying the DECRA Tile or DECRA Shake panels to a roof deck in new construction or if the existing roofing material is removed. If the panels are installed over another roofing material, additional underlayment is not required unless specified by local code. Underlayment should be placed between the roof deck and the counter battens or battens.

Underlayment shall comply with ASTM D 226, Type I or Type II, ASTM D 4869, Type I or Type II or ASTM D 1970. Check local code requirements as ice and water shield and additional requirements may apply.

Deck Preparation

New Construction: Prepare roof deck to meet local building codes.

Roof Tear-off (Solid Deck): If tearing off old roof, clean and prepare deck to meet local building codes.

Re-Roof Tear-off (Skip/Spaced Sheathing): There are two options available when skip/spaced sheathing is encountered. Use counter battens and battens without filling or fill as necessary and install just battens.

Re-Roof Over Even Surfaces (i.e. Asphalt Shingles): Prepare the asphalt shingles by cutting them back, flush with the fascia or rake, as needed. Remove existing hip and ridge material. Install Tile or Shake with battens.

Re-Roof Over Irregular Surfaces (i.e. Wood Shake or Wood Shingles): When needed, use counter battens to obtain a level surface for battens when installing over an irregular surface. Additionally, some codes require specified underlayments when roofing over wood shakes. Prepare the roof deck by removing all existing hip and ridge. Cut the existing overhang back as needed to install battens and accommodate flashings.

Venting Preparation

If using DECRA Ridge Vent material, prepare the deck for ridge venting (without center beam) by cutting both sides of the plywood 3/4” from the center of the ridge to expose attic space, or as required by local codes. Refer to Venting section or DECRA Ridge Venting wrapper for additional installation details. If DECRA Panel Vents will be used, ***See Panel Installation - Installing Panel Vents and Venting.***

Measuring, Cutting, Bending Panels

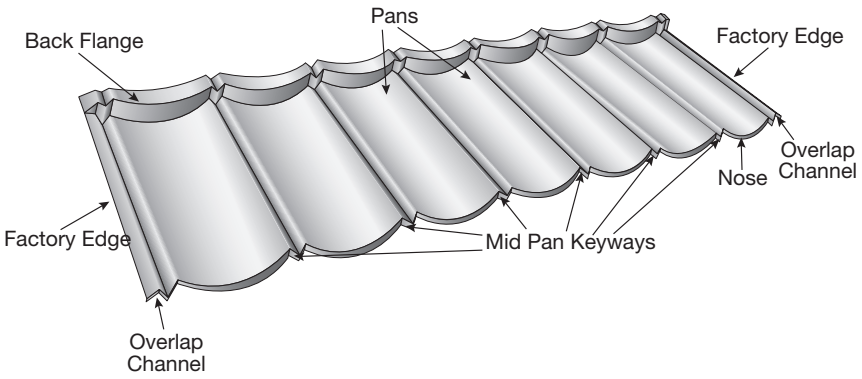
Measuring: Measurements are made on the roof, however, the panels are normally marked, cut and bent on the ground. Panels may be cut with a guillotine, tin snips, or circular saw with metal cutting blade. Cut roof panels and accessories must have all residue and metal shavings completely removed, especially metal shavings on the roof. A portable brake press or hand bender is used to bend the cut edge of the panel for hips, ridges, and valleys.

Measurements should be taken using front edge of battens for accuracy.

Panels: The DECRA panels are formed from corrosion resistant aluminum-zinc alloy coated steel with a protective coating of ceramic coated stone granules that provide an attractive appearance. The Hip & Ridge used at the ridge, rake/gable and hip is produced in a similar manner.

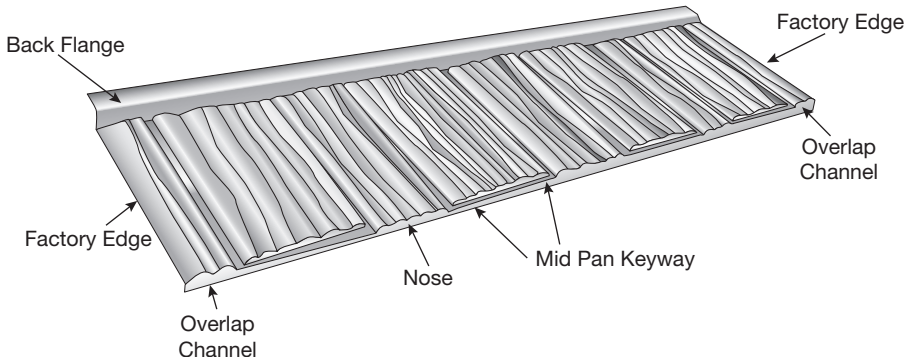
Do not use LEAD or COPPER with this steel roofing system.
Do not use pressure treated lumber i.e. decking or batten.

DECRA Tile (installed on battens)



Installed Exposure: 14-1/2” x 50”
Panels per Square: 20
Installed Weight: 150 lbs./sq.

DECRA Shake (installed on battens)

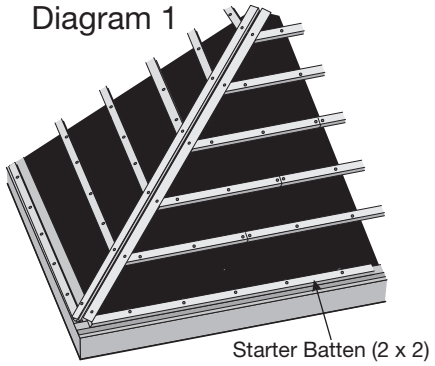


Installed Exposure: 12-5/8” x 51”
Panels per Square: 22.4
Installed Weight: 150 lbs./sq.

Preparation for Panel Installation: Set the top front edge of the first batten flush at the edge of the fascia board parallel with the ridge. Install 2 x 2 nominal size battens in standard grade lumber using a 16d minimum common nail or equivalent at a maximum of 24" on center into rafters *(See diagram 1)*. Install 2 x 2's at hips. Batten spacing will be determined by the panel profile, see chart below.

Starter Batten must be parallel with the ridge.

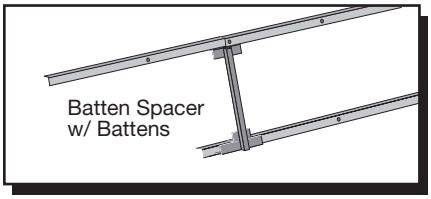
Diagram 1



BATTEN SPACING	DECRA PANEL
12-5/8"	DECRA Shake
14-1/2"	DECRA Tile

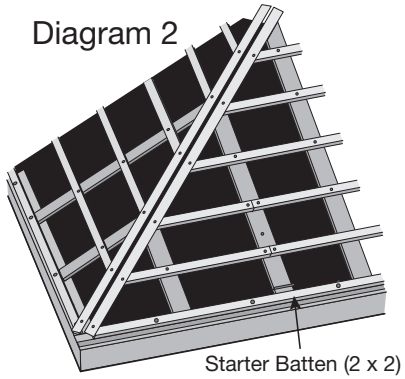
NOTE: BATTEN SPACING IS MEASURED FROM FRONT OF BATTEN TO FRONT OF NEXT BATTEN AS YOU GO UP THE ROOF. SEE DIAGRAMS BELOW.

Adjust placement of first batten to accommodate uneven fascia.

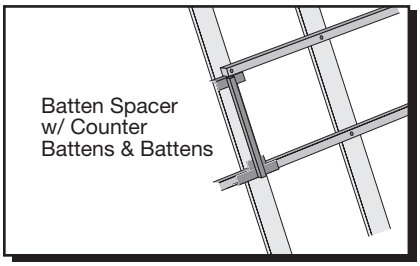


Check batten spacing for accuracy every few rows with tape measure.

Diagram 2

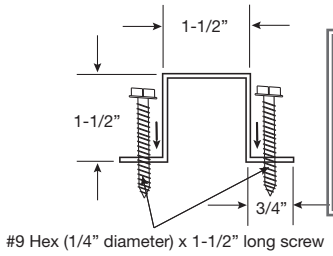


Note: Additional fasteners are required for battens in high wind areas per local code.



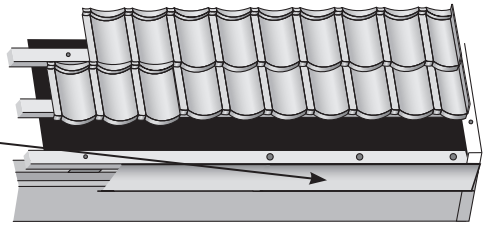
Counter Battens and Battens: Use counter battens when installing over an irregular surface or skip/spaced sheathing *(See diagram 2)*. Position 1 x 4 counter battens over the framing members (or no more than 24" on center) and secure using a minimum 16d common nail or equivalent into rafters or through sheathing 7" on center. Proceed with batten installation as described above.

Steel Hat Sections: As an alternative to wood battens, steel hat section purlins can be used. Different configurations of lighter and heavier gauge purlins can be used for various rafter spans. Fasten steel hat section through to rafters using minimum two #9 Hex (1/4" diameter) x 1-1/2" long screws at each hat section to rafter intersection. Fasten panels using minimum #9 Hex (1/4" diameter) x 1-1/2" long corrosion resistant screws.



20 gauge thick batten suitable for rafters up to 4' on center.

Fascia Metal Flashing: Flashing is required along the fascia to cover the build up at the first batten. Stone coated Fascia Metal is available in 3.5" and 5" exposures in all colors.



Panel Layout: Lay full panels starting with the first full course down from the ridge. Fasten the first course along back flange. Start laying the panels by tucking them under the upper panels. DECRA Tile panels should be staggered sideways a minimum of one pan. DECRA Shake panels should be staggered to create an irregular appearance. The Tile and Shake panels can be laid either right to left or left to right depending on what looks best when viewing the roof. The overlapping panel must cover the overlap channel. After laying three courses, begin fastening through the nose of the panel, working down the roof. See Fastening Panels with Battens *(Below)*.

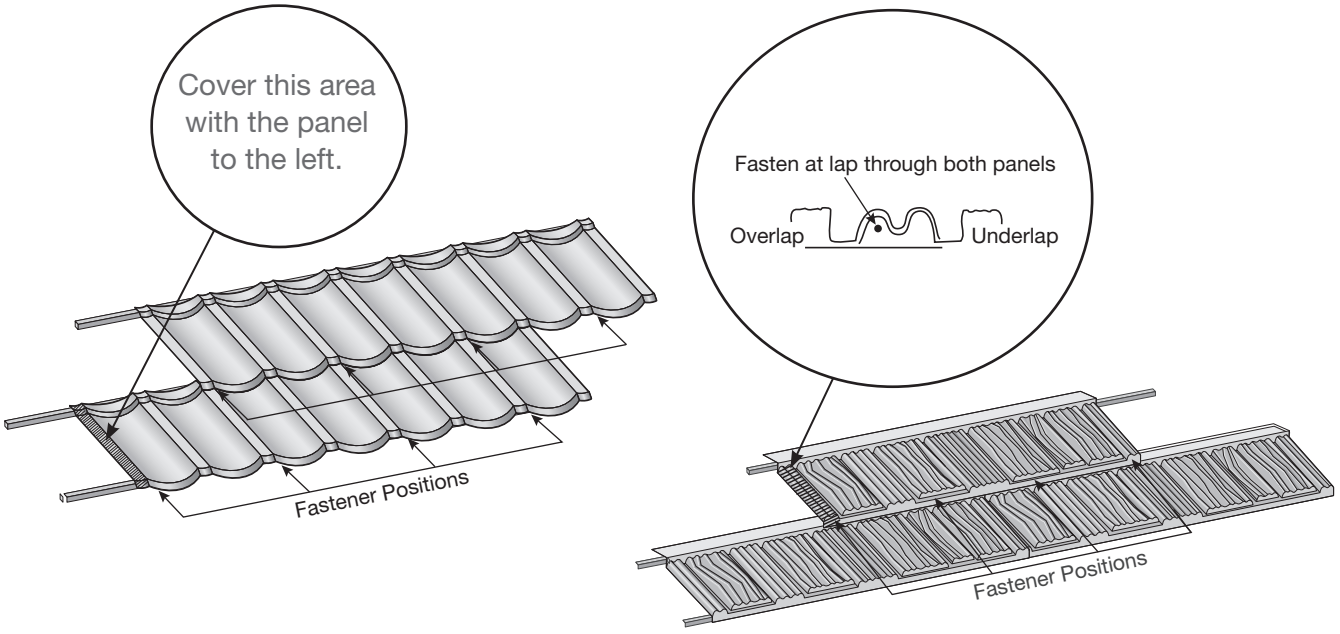
DO NOT rack panels (DO NOT line them vertically up the roof) or use even panel offsets that will detract from the appearance of the roof.

Do Not Make A Pattern.

Fastening Panels: Panels are fastened to wood battens with a **minimum of four 8d corrosion resistant common nails or four minimum #9 Hex (1/4" diameter with integral metal washer) x 1-1/2" long corrosion resistant screws** (color coordinated). **Screws should be used in freeze/thaw areas. For the first roof course on the roof eave perimeter, install with five fasteners evenly spaced on panel nose to enhance wind uplift protection. For balance of roof install use four fasteners evenly spaced per panel.**

One fastener is placed near the bottom on the downturn of the panel 1" from the overlapped edge. The remaining fasteners are evenly spaced across the panel.

Care must be taken while fastening to avoid striking the finished panel surfaces. Damaged surfaces can be refinished by using a Touch-Up Kit. Apply the roofing grade sealant to the affected area followed by embedding it with matching stone granules. Touch-Up Kits are available from DECRA Roofing Systems.



Apply downward pressure to "seat" panel when fastening.

Valley Application: Install standard "W" or "U" style valley. All valley metal should be minimum 26 gauge pre-finished aluminum-zinc alloy coated steel. Valley metal should be a minimum 7" wide.

In new construction, the metal valley flashing must have one layer of Type 30 felt underlayment, 36" wide or ice and water shield underneath as required by local building code.

Install the valley metal overlapping the valley pieces a minimum of 6". Secure the valley metal to the top of the batten by notching the return at top of the valley and fold the tab onto the top of the batten and secure with a fastener. Make sure the end of the valley extends beyond the fascia at least 1" or onto a lower roof area. DECRA Valley extension over facia may be bent at a downward angle. Paint visible areas of valley prior to installing panels.

For fast accurate hip and valley angle measurements, use a T-Bevel, which can be purchased at your local hardware store.

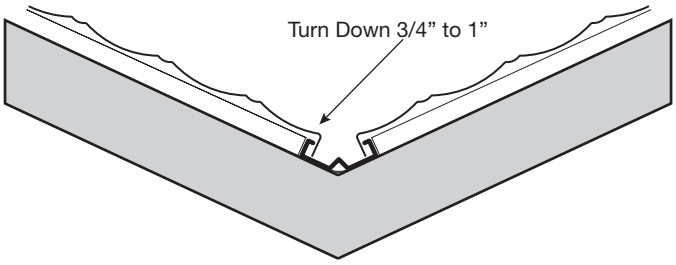
After valley flashing has been fit and secured into the valley area and full panels have been positioned up to the valley, measure for cut panels. See Open and Closed Valley Sections *(Below)*. Panels are cut and bent down into valleys leaving either an open or completely covered (closed) valley. See section on Measuring, Cutting and Bending *(Page 5)*.

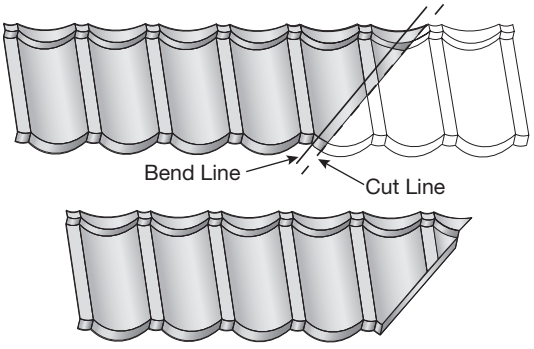
Make sure the ends of the valley metal extend 1" beyond the fascia or onto a lower roof area.

All measurements need to be taken from the center of the panel Overlap Channel. Refer to diagrams in the Panel Section *(Page 6)*.

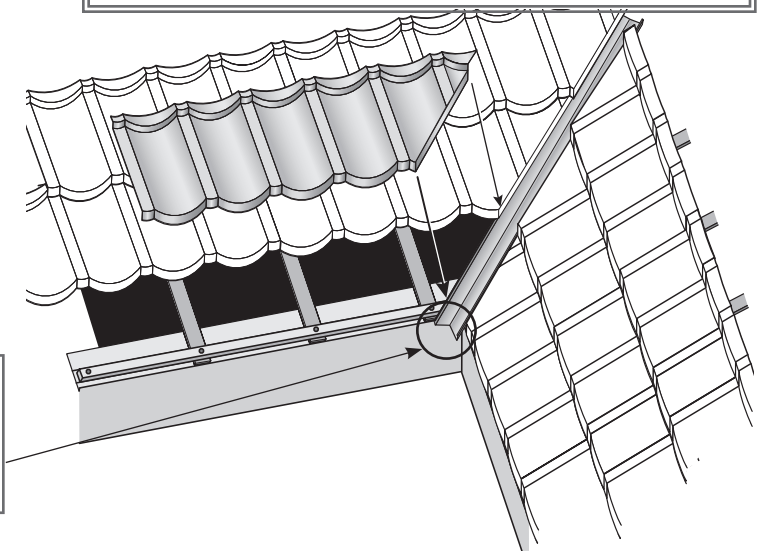
See diagrams in Open and Closed Valley Sections *(Below)*. Cuts are denoted with dashed lines and bends are denoted with solid lines.

Open Valley: To create an open valley, snap lines to desired opening. Working on one side of the valley at a time, measure, cut and bend panels starting at the bottom of the valley and working up. Bend cut edge of panels down against the up-stand of the valley metal as indicated in the drawing.



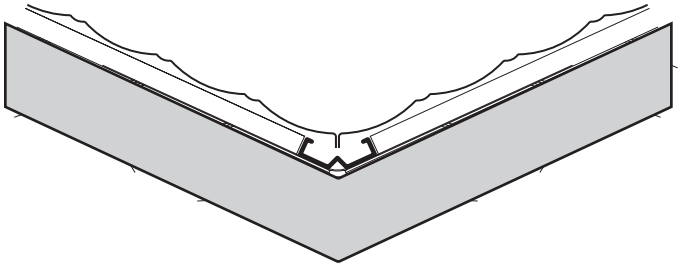


Verify batten spacing along the valley to ensure accuracy.



Make sure the ends of the valley metal extend beyond the fascia 1" minimum or onto a lower roof area.

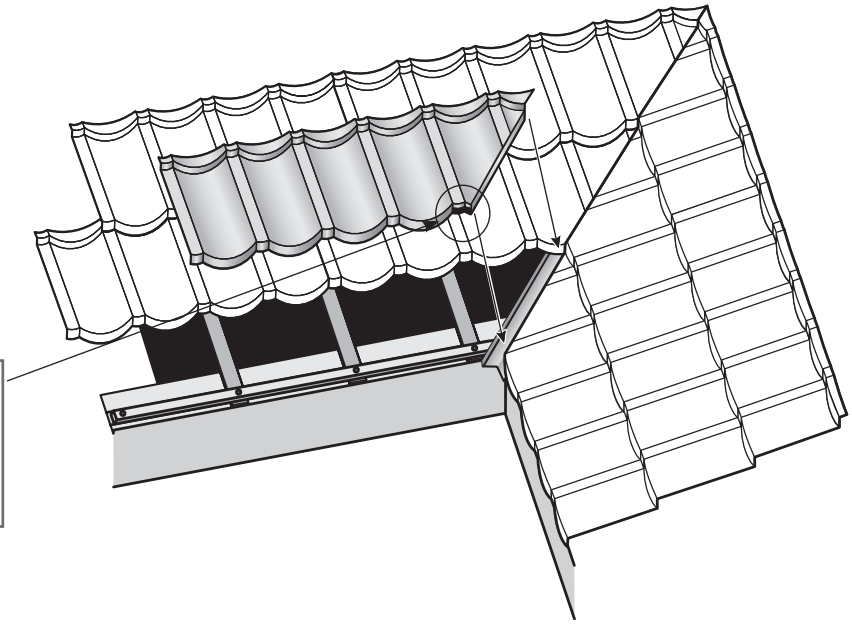
Closed Valley



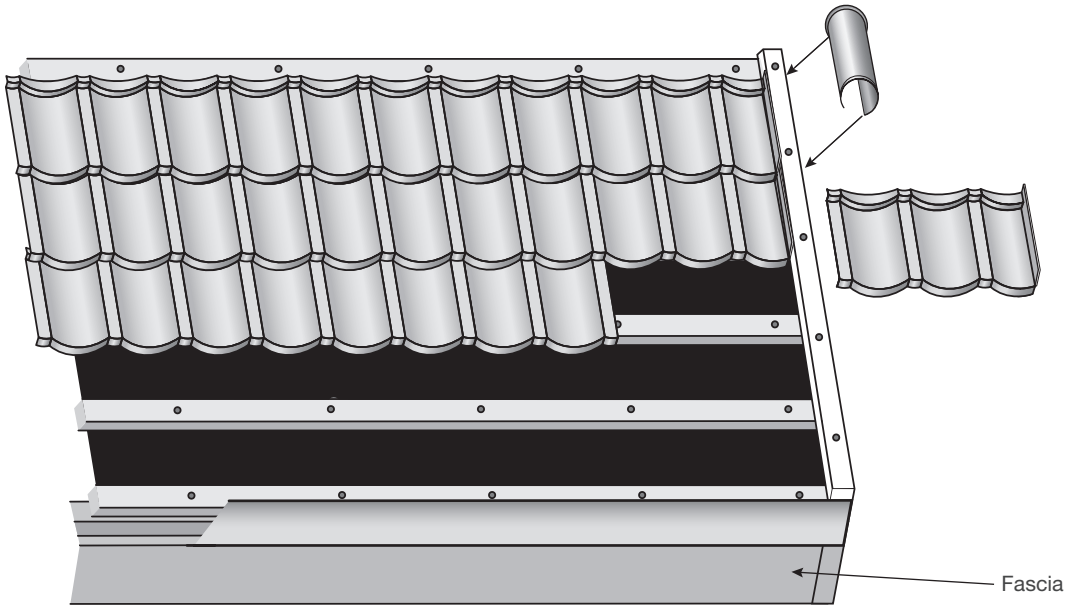
Find and establish the center of the valley by either snapping a line or following existing center rib. After valley flashing has been fit and secured into the valley area, start on one side of the valley by measuring, cutting, bending and installing panels as accurately as possible to create a clean straight line.

Next, measure, cut and bend panels to fill in the other side of the valley. Make sure these panels meet the opposing side of the valley. The panels from the two sides of the valley should fit as closely as possible and the line between them should run straight up the valley.

Notch nose of panels terminating in a closed valley to accommodate the width of the valley.



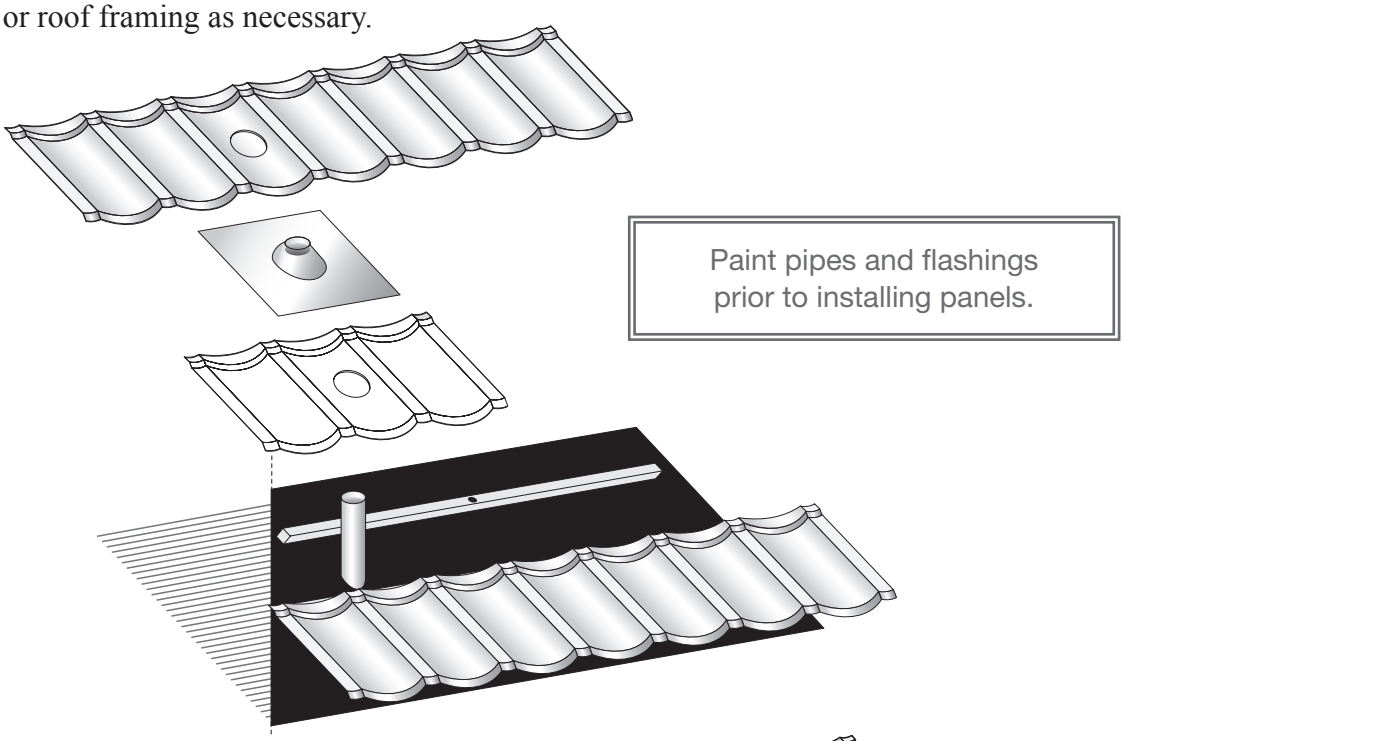
Rake/Gable: When installing Tile or Shake along the rake/gable and finishing it with Hip & Ridge, run a 2 x 2 vertically along the rake. Position the 2 x 2 vertically just back from the edge of the rake to accommodate the proper look and fit of the Hip & Ridge pieces. In a batten installation the 2 x 2 will sit on top of the battens. Bring the panel up to the 2 x 2 and bend the panel up 1-1/2". At fascia, cover the open end of Hip & Ridge with appropriate End Cap. See Hip & Ridge Section *(Page 15)*.



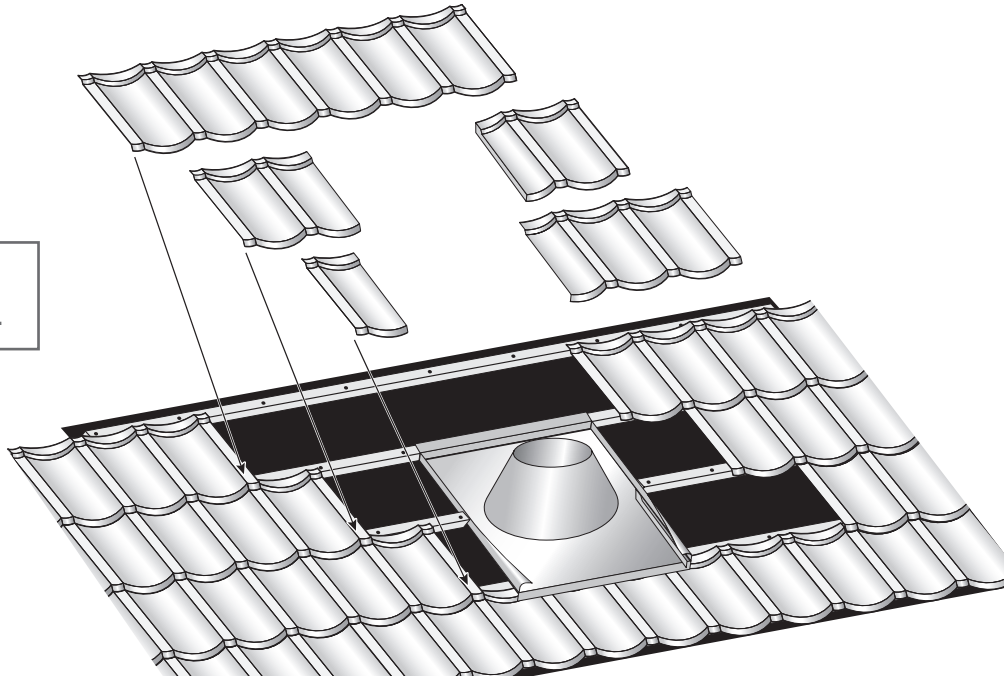
Penetrations

Roof penetrations are to be flashed with aluminum, galvanized, or aluminum-zinc alloy coated steel, standard roof jacks and flashings as required by code. DO NOT USE COPPER OR LEAD WITH THIS ROOFING SYSTEM. Use the correct Underpan for Tile or Shake to properly flash pipe penetrations. Cut the Underpan to fit tightly around the plumbing stack. The Underpan must lap over the lower field panel when positioned around the pipe. Cut the pipe-flashing apron so it will fit onto the Underpan. Apply roofing grade sealant/adhesive on three sides. Finish with field panel by measuring and cutting panel to fit snugly around pipe flashing. Cut hole according to flashing profile. Align roofing panel and seal around base using a roofing grade sealant/adhesive and finish with Touch-Up Kit.

Care should be taken to adequately weatherproof the flashings and to support them with additional blocking or roof framing as necessary.



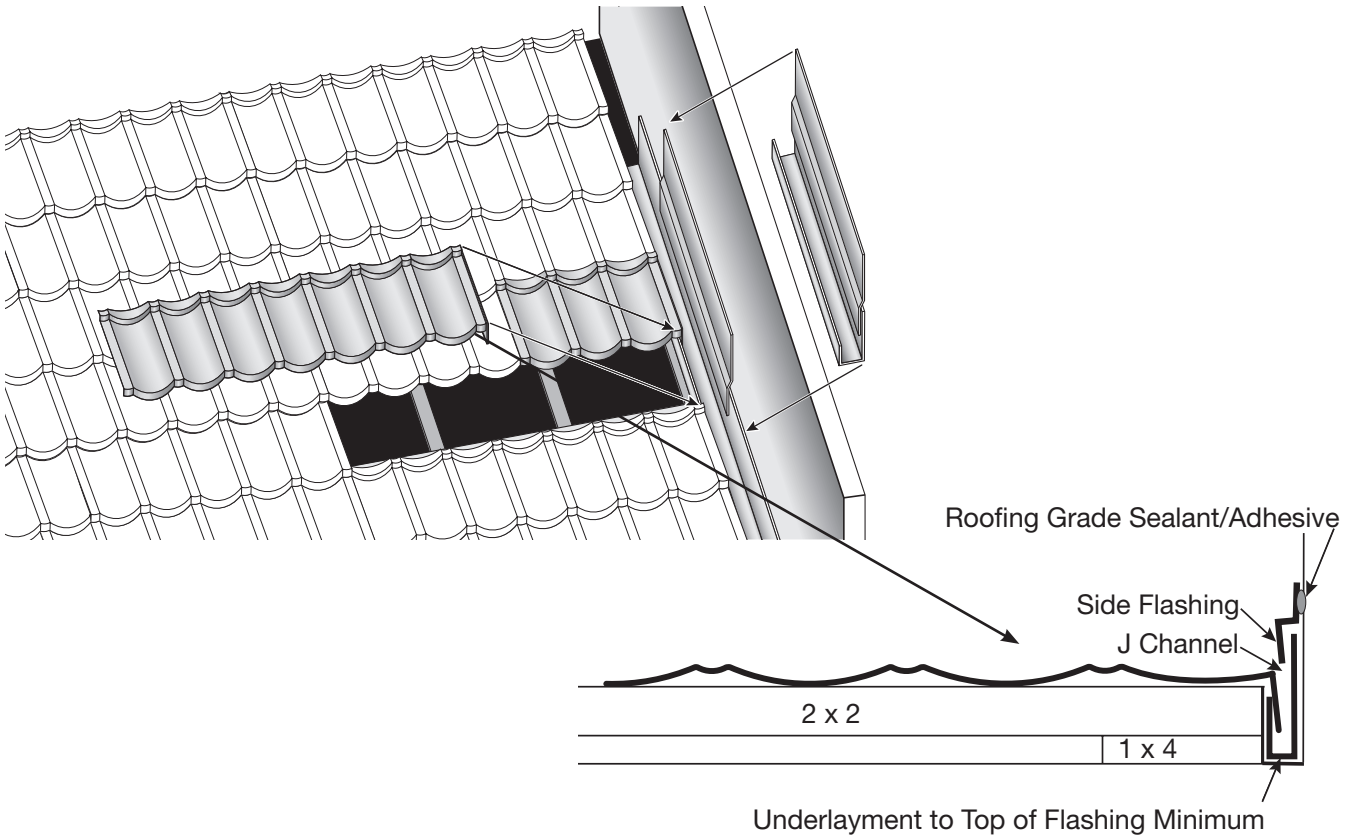
Paint pipes and flashings prior to installing panels.



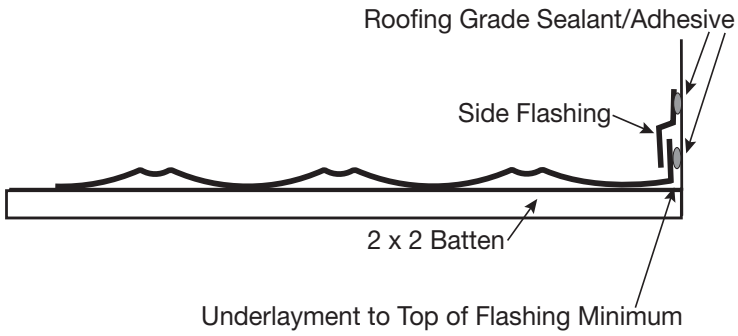
For larger flashings, an Underpan is not required.

Roof-to-Wall

Roof to Side Wall w/ J Channel (Tile Pan): Slide J Channel under existing sidewall flashing; turn panel down into J Channel (Tile Pan). If J Channel will not fit up under the existing flashing, slide the J Channel up under the existing siding.

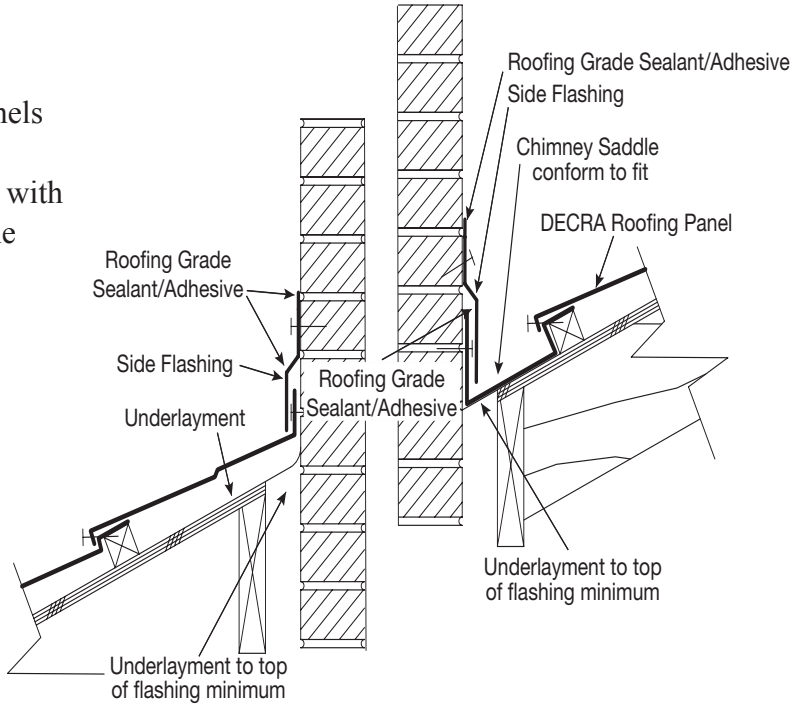


Roof to Side Wall w/ Side Flashing: If no existing flashing is present, turn the panel up 2" and counter flash with Side Flashing. Seal turn up against the wall and seal Side Flashing before applying to wall with roofing grade sealant/adhesive.



Chimneys

The following steps detail the procedure for installation around a chimney. Run full panels up to the chimney as noted in the Chimney Illustration. All the open areas will be filled in with cut panels that have been bent up 2” toward the chimney.

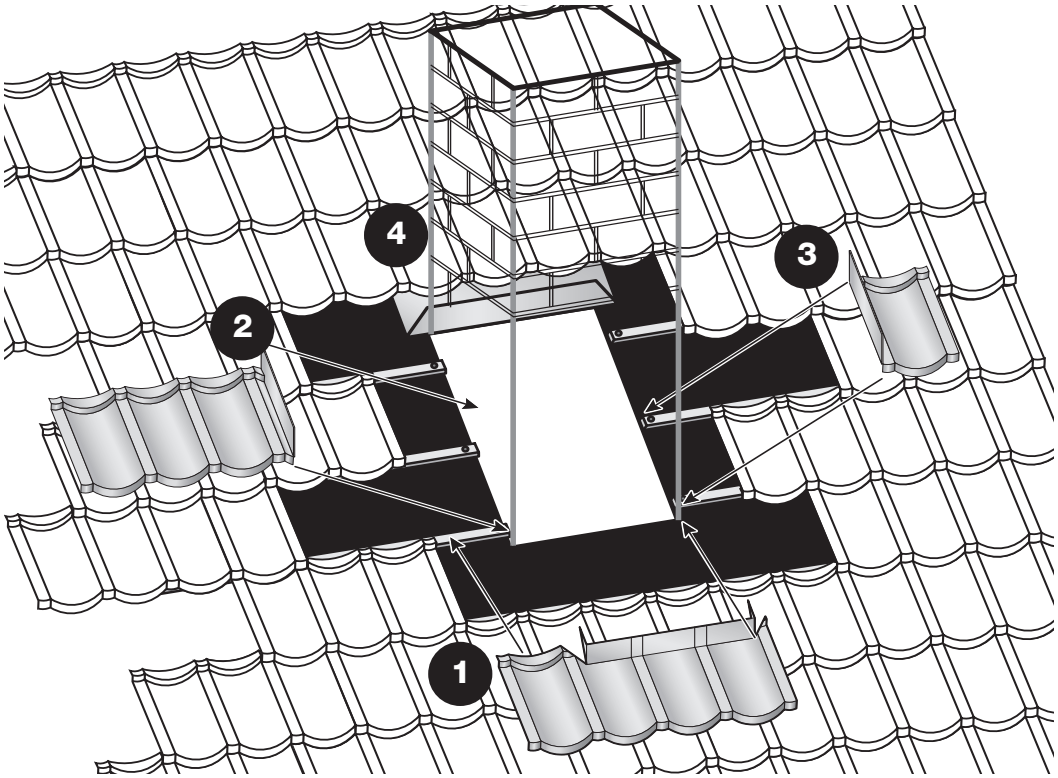


1. Start by measuring from the full panel below the chimney up to the base of the chimney. Cut panel(s) to fit this area. Add 2” to all of the measurements to accommodate for the 2” bend up.

2. 3. Panels to fit the left and right sides of the chimney will be measured and cut the same way.

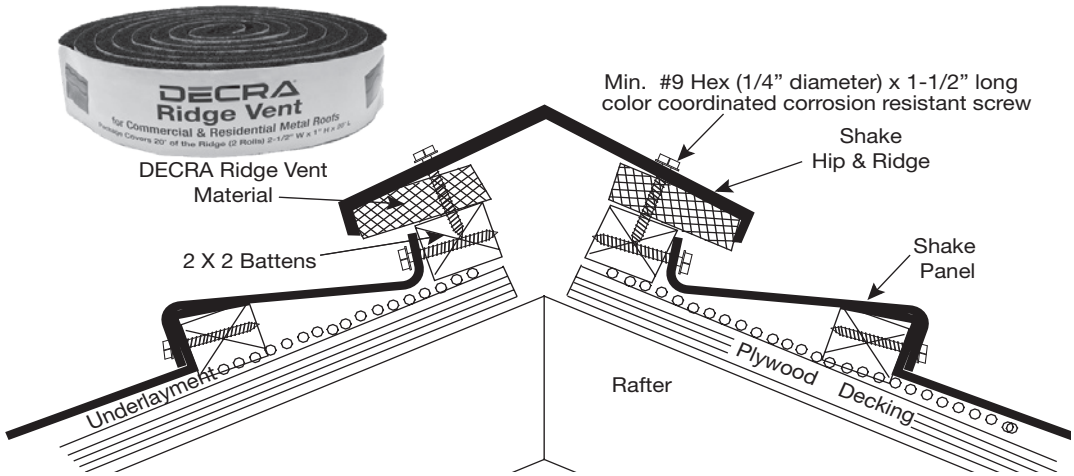
4. Finally, measure the width of the chimney, cut, conform and install the chimney saddle to fit above the chimney. For brick and stucco, counter flash over the top of the chimney saddle. For siding, tuck the chimney saddle up under the siding.

Add 2” to all measurements to cover bend up.



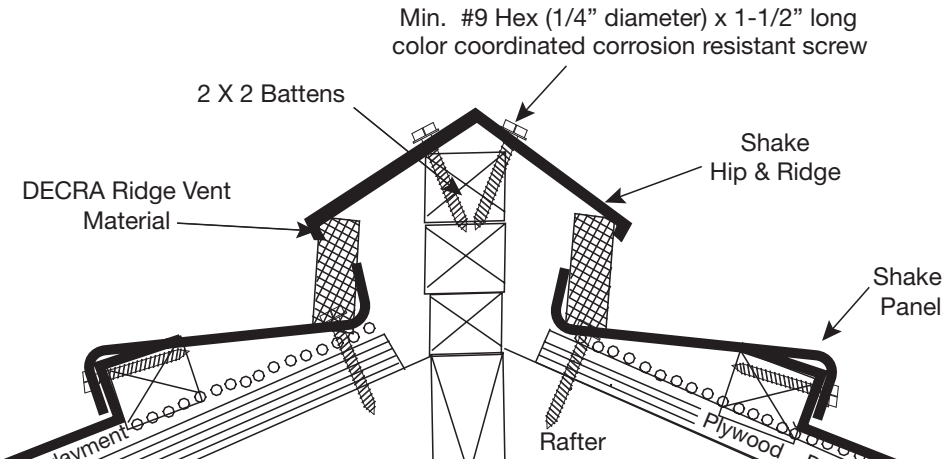
Ridge Venting Options

Ridge Venting - No Center Beam: Install Tile or Shake panels up the last full course before the ridge to the edge of the opening that has been cut for the ridge vent. Install 2 x 2 wood battens along the ridge. Align the top edge of the 2 x 2 along the edge of the plywood on both sides of the ridge to expose the attic opening. Measure, cut, bend, and install the final course of panels. Roll out the vent material along the tops of the battens. Remove the white paper while unrolling to expose the adhesive dots. Apply pressure over the adhesive dots to hold the material in place during installation. Apply pressure over the adhesive dots to hold the material in place during installation (see diagram below). Install Tile or Shake Hip & Ridge pieces over the vent material. Fasten the screws through the vent material into the battens. *See Hip & Ridge Install at Hips & Ridges for Hip & Ridge Installation.*



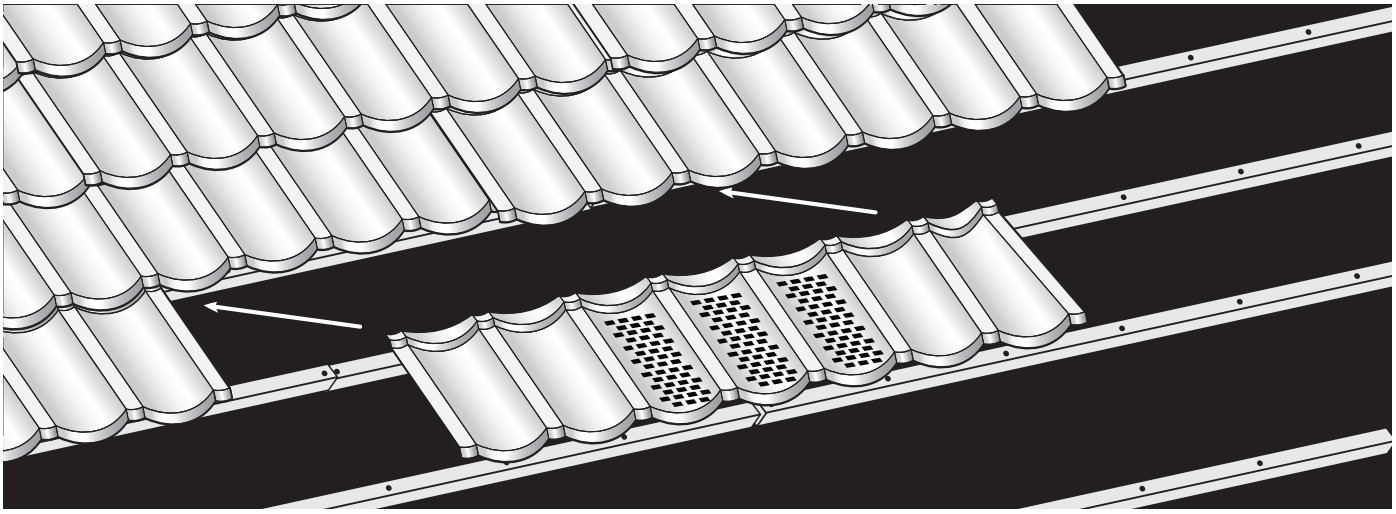
Ridge Venting - Center Beam: Install panels up to last full course before ridge according to installation instructions. *(Optional: Install 1x4 wood battens along both sides of the ridge to support the last course of panels.)* Cut, bend and install the last course of panels. Allow for a 1-1/2" bend. Stack the needed number of 2 x 2 and 1 x 2 lumber to the roof center beam to allow the attachment of the hip and ridge pieces. The exact number needed depends on the roof slope and configuration. Ensure that the 2 x 2 and 1 x 2 provide enough height for a ¾"– 1" clearance between the hip and ridge piece and top panel. Roll the vent material to the bend up on the last course of panels while removing the white paper to expose the adhesive dots. Apply pressure over the adhesive dots to hold the vent material in place during installation.

Install the Hip and Ridge pieces, making sure the vent material is slightly compressed between the bend on the last course of panels and the hip and ridge pieces.



Venting

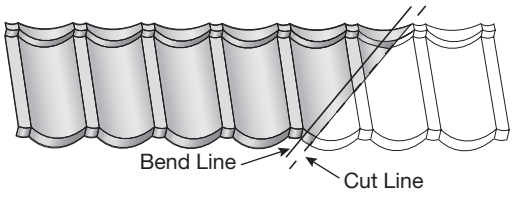
DECRA Tile & DECRA Shake Panel Vents: If DECRA Panel Vents will be used, determine the number of panel vents and estimate the approximate location. Install the DECRA panels up to the approximate panel vent location. Install the Tile or Shake Panel Vent per the DECRA Roof Panel Installation Guide found inside the panel vent carton, or available at DECRA.com.



DECRA panel vents should be installed on the last full course below the ridge, and no more than 4 feet down from the peak of the roof facet. Panel vents should NOT be used for air intake.

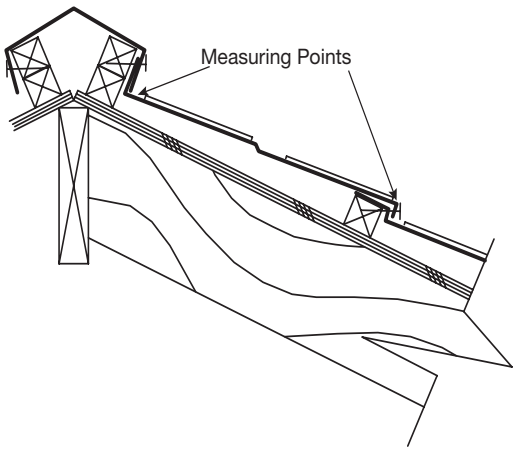
Hip

When installing Tile or Shake, run a 2 x 2 vertically up the battens next to the hip. Bring the panel to the 2 x 2 and turn the panel up 1-1/2". Masurements for hip cuts are made much like the valleys cuts. After cutting the panels, make a 1-1/2" bend that will run along the 2 x 2 at the hip.

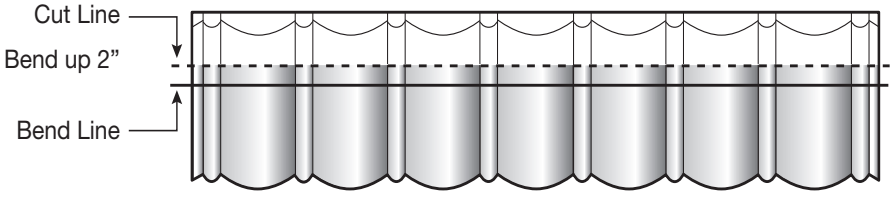


Ridge

Tile and Shake panels use the same procedures. Measure from the front of the back flange to the front of the 2 x 2 at the ridge *(See diagram right)*. This will be the bend line. Bend the panel at the bend line. Add 2" to the bend line and cut the panel. See Cutting & Bending diagram below. Install the panels along the ridge one side at a time. Conform each panel to the ridge and fasten. Next, install the panels along the other side of the ridge. Keep panels straight and level along the ridge as this is the foundation for the Hip & Ridge pieces.



Cutting & Bending Ridge Panels



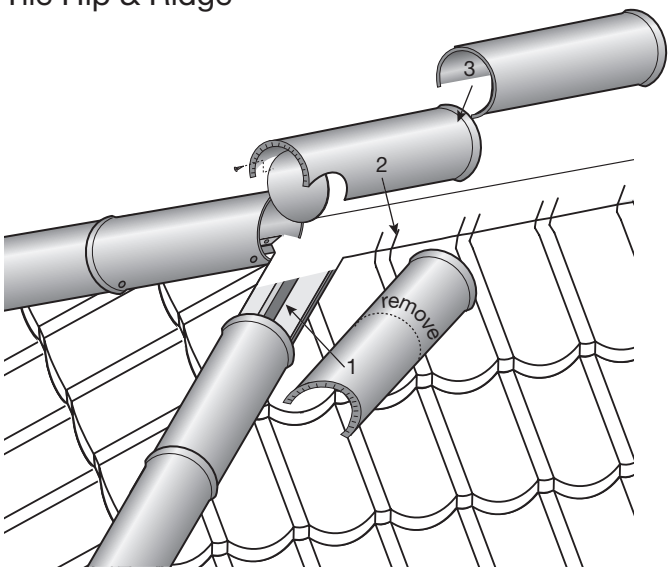
Bend full panels before cutting.

Hip & Ridge

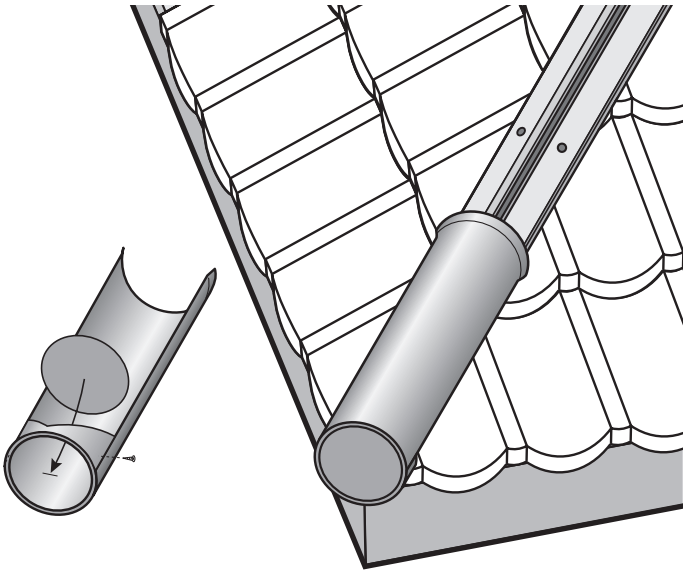
Panels have been cut and turned up vertically along the hips and ridges. Install Hip & Ridge pieces along hips, ridges and rakes. Hip & Ridge pieces are overlapped and fastened on both sides along the ridges, rakes/gables and hip boards with the same fasteners used for securing the panels.

Bend and fold exposed ends of hips and ridges neatly and finish with an End Cap or a piece of similar material. At the hip and ridge transition, miter into place.

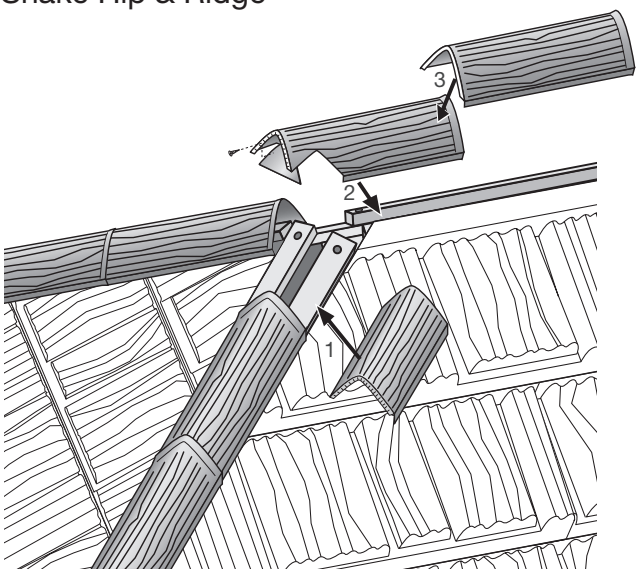
Tile Hip & Ridge



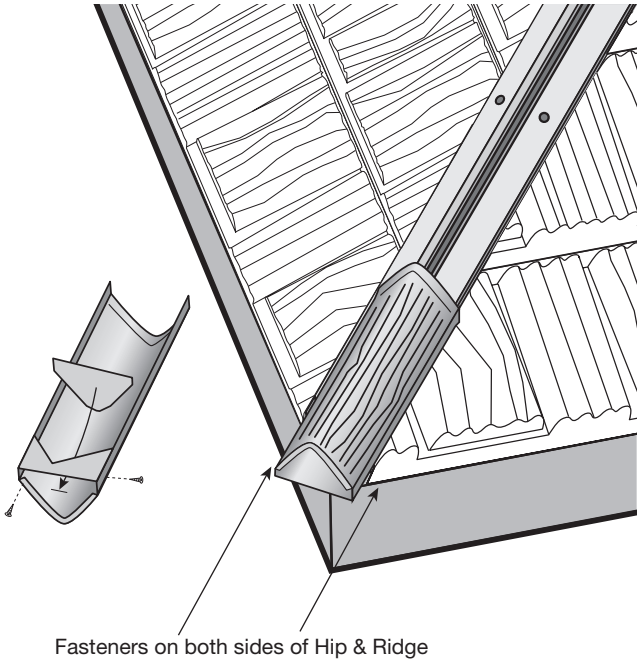
Tile Hip & Ridge End Cap



Shake Hip & Ridge

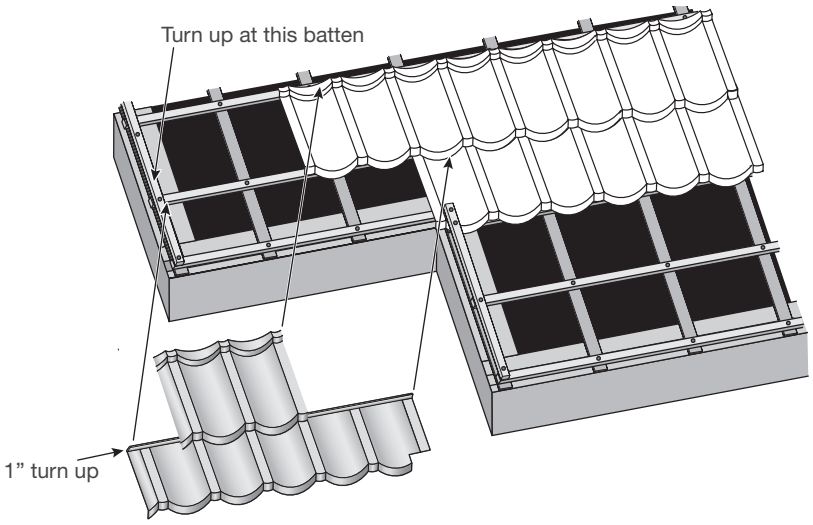


Shake Hip & Ridge End Cap



Short Course

In some instances a short course will be necessary. A short course is needed when a section of the fascia steps out and is not an even panel width difference from the main fascia. Start battening at the fascia with the longest width (or if installing without battens start laying panels) and work up to the course above or down to the course below the stepped fascia. Next, measure the first course of the stepped section and treat it like a ridge. Finish the short course by measuring the panel from the front and cutting the excess from the back of the panel. When installing battens, be sure to allow for a 1" turn up at the batten.



High Wind

In areas prone to hurricanes and high winds, installation must meet local standards and codes. Full panels on the top three courses and bottom three courses should be fastened with seven fasteners at seven evenly spaced locations. Also, panels along the perimeter and directly along the hips and gables must be secured at seven evenly spaced locations.

Freeze/Thaw

Use ice and water shield as recommended for cold climatic conditions. Fastening panels with minimum #9 Hex (1/4" diameter) x 1-1/2" long corrosion resistant screws is recommended.

Foot Traffic

Avoid walking on side laps. Foot traffic on DECRA Tile panels should be kept to the tile pans not on the high points. If installing over battens, walk directly over the battens. See walking instructions at **DECRA.com**.

Sealants

Roofing grade sealant/adhesive is recommended for use with this roofing system. Where possible, roofing grade sealant/adhesive should be covered by the roofing system or with matching stone granules. Sealant should not be used to refinish damaged panel surfaces.

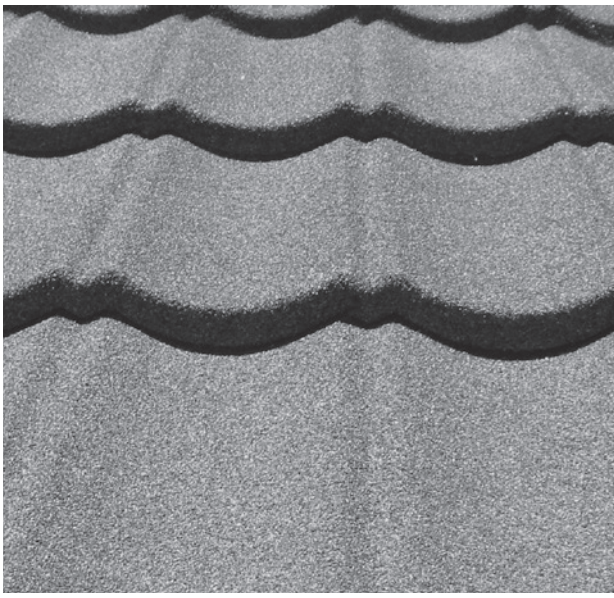
Cleaning & Repairs

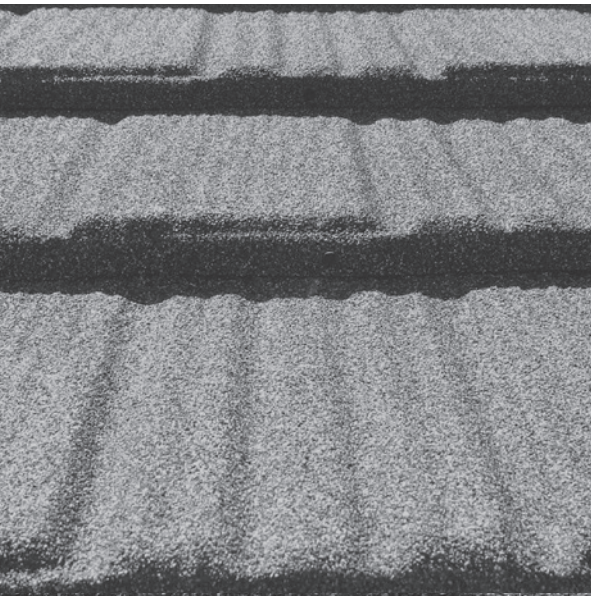
After installation is complete, be sure to clean all debris off of the roof, especially any metal shavings.

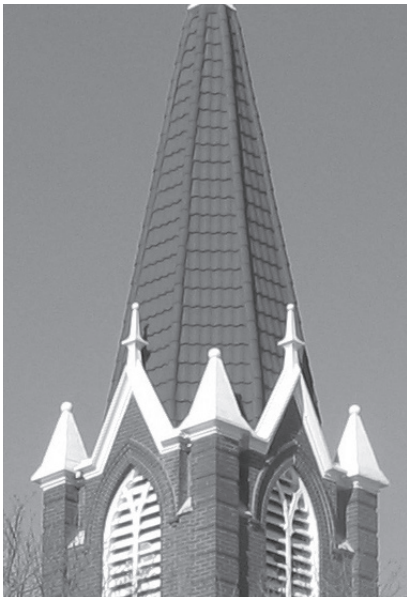
In cases where it is necessary to touch up or repair a panel, DECRA Touch-Up Kits are available in all of the colors matching the stone coated panel finishes.

For answers to questions not covered in this guide, call **(877) 463-3272** or go to **DECRA.com**. Architectural Details and Product Specs are available online at **DECRA.com**.











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