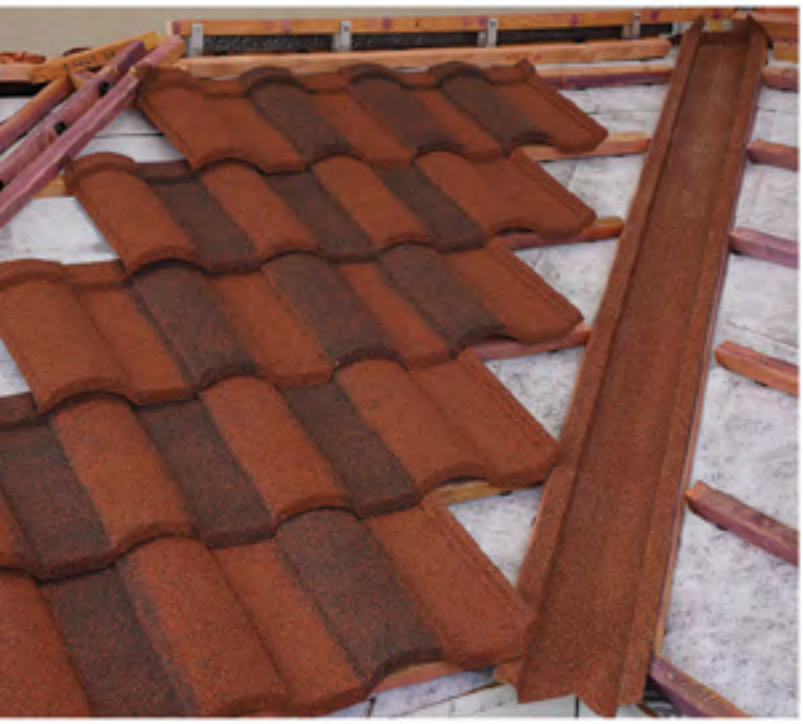
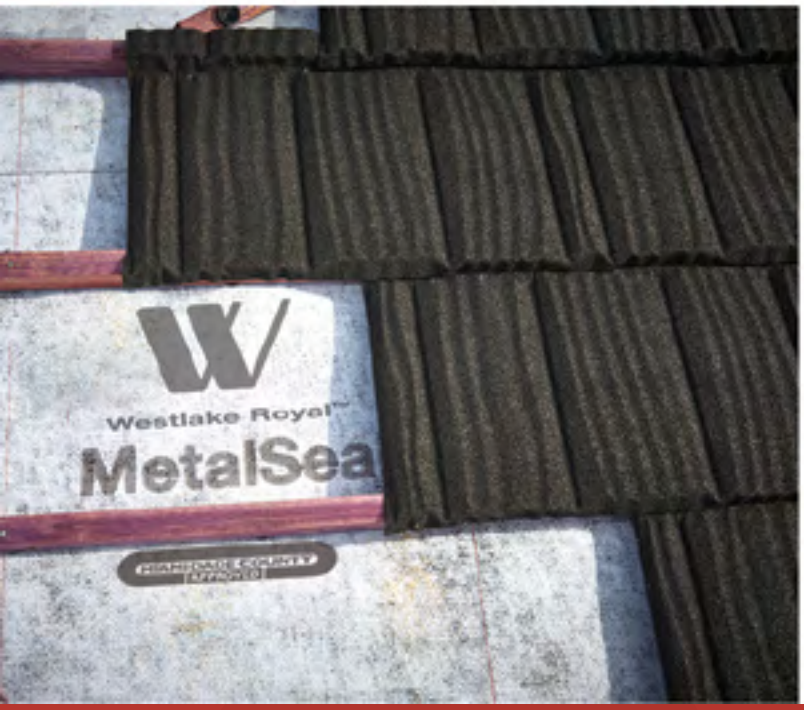
BEST BUY METALS
Roofing That Lasts

Unified Steel Batten Install Guide

BARREL-VAULT Tile | PINE-CREST Shake | PACIFIC Tile





800-728-4010
bestbuymetals.com

NOTICE

These installation guidelines demonstrate optional installation techniques for Unified Steel™ stone coated roof panels and accessories. Options are dependent upon chosen design, install method, and performance requirements of a given project.

INSTALLATION WARNING

The details and information in this document reflect current roofing practices used in the United States. Installers of Unified Steel™ roof panels and accessories should have knowledge of roof structures, an understanding of how to work with stone coated steel panels and accessories, and experience working with sloped roofs.

We recommend that installers of Unified Steel™ roof products use a Unified Steel™ Cutter* and Bender, and have completed an *Installer Orientation Training Program* for each profile installed (contact your Territory Manager for details at **WestlakeRoyalRoofing.com/Territory Manager**). Unified Steel™ does not consider its products to be “do-it-yourself” (D.I.Y.) mainly due to specialized cutting and bending tools used during installation.

Panels are susceptible to scuffing from foot traffic when subjected to prolonged periods of water saturation, do not install wet. **See "Installing Panels When Wet" Technical Bulletin for details.**

Note: Circular saw or grinder wheel to cut panels is not acceptable.

Indicates critical areas of installation.

BATTEN Installation Guidelines

Unified STEEL
STONE COATED ROOFING

TABLE OF CONTENTS

BATTEN Installation Guidelines

INSTALLATION TOOLS

UNIFIED STEEL™ INSTALLATION KIT

- CUTTER
- BENDER
- BATTEN SPACERS

HAND TOOLS

- IMPACT DRIVER
- RED & GREEN SNIPS
- 3” HAND SEAMERS
- NAIL GUN
- HAMMER
- CAULKING GUN
- STANDARD SLOT SCREWDRIVER

OTHER TOOLS

- TAPE MEASURE
- STRING-LINE
- SOAP STONE (used to mark panels)

GENERAL INSTALLATION STEPS

These install details are designed to be used in conjunction with *Unified Steel’s Installer Orientation Training Program.*

Unified Steel™ Roof Products - 11 Basic Steps to a Great Job:

1. Install code-compliant **UNDERLAYMENT**
2. Install **BATTENS**
3. Install **PERIMETER** metals, except BirdStop for BARREL-VAULT Tile
4. Install **VALLEY** metals
5. Install field **PANELS** from the top and work down the roof. Lay field panels with the correct offset/stagger
6. Measure, mark, cut, bend and install - **HIP, VALLEY, RIDGE & RAKE panel sections**
7. Install **BIRDSTOP for BARREL-VAULT Tile**
8. Install **CHIMNEY / skylight** flashings panel sections
9. Install **PIPE FLASHINGS:** EZ-Vents, Pipe-Jacks, Sleeves
10. Install **TRIM CAPS** on Hip & Ridge and Rake
11. **TOUCH-UP** any areas that may be required

SAFETY NOTES

The safety tips provided here are for general awareness of the user. Unified Steel™ assumes no liability or responsibility for incorrect use of the products or any personal injury that may be caused as a result of use.

- *Select an open area and establish a safe working perimeter to set up tools. Instruct anyone near the safe working area.*
- *Inspect each tool before use. Do not use a tool that is not in good working condition. Regularly maintain tools for best performance.*
- *Wear personal protective equipment.*
- *Be aware of “pinch points” and keep hands and clothing away from such areas.*

BATTEN Installation Guidelines

GENERAL INFORMATION

These guidelines use a batten installation method for Unified Steel™ stone coated panels, at valleys, rakes and roof-to-wall areas. Hip & Ridges are mitered, cut and panels bent up and capped with the appropriate trim. The result is a roof you can count on to weather the elements.

FASTENERS
PINE-CREST Shake, PACIFIC Tile and BARREL-VAULT Tile panels are Exposed fastened. Panels are installed on battens, the panel fasteners are positioned out of the panel water channels, through the nose at an angle into the front face of the batten.

All fasteners (Screws or Ring Shank Nails) used on a Unified Steel™ system shall meet or exceed the corrosion resistant standard as defined in ASTM B-117, (1,000 hour minimum Salt Spray Corrosion. Panel fasteners are to be a minimum 2" length. Batten fasteners are to be of sufficient length to penetrate the structural member by a minimum of 1".

For HVHZ (High Velocity Hurricane Zone) areas **refer to Pages 37-39 for specific details.**

MATERIALS
The panels are produced from AZ-50, Aluminum-zinc alloy coated steel complying with ASTM A792.

PACKING AND STORAGE
A pallet of panels contains approximately 20 squares (186 sqM). Panels should be stored under a weather-proof cover or inside in an area free from moisture.

ROOF PITCH
The three Unified Steel™ profiles covered in these guidelines must be installed on a minimum roof pitch of 3:12 (12 degrees) or above. Roof slopes below 3:12 mean the panels act as a decorative roof covering only.

ROOFING UNDERLAYMENT
Minimum one layer ASTM D226 Type-II (No. 30 Felt), head lapped 2” and end lapped 6”, or approved equal to or better per code.

BATTENS
2x2 Elevated Batten System (EBS) or Standard 2x2 lumber #2 Grade or better Spruce Pine Fir are acceptable. This also apples to 1x4 and 1x2 used as packers on some ridge or hip build-outs.

STEEL Battens (‘Channels') can be used. They shall be a minimum of 22 AWG gauge (0.64 mm) corrosion resistant material and are formed in either a 'Hat', 'C', 'U', 'J' or 'Z' shaped section. All shapes require as close to 90-degree angles as possible. Minimum batten size is’ 1-1/2” high x 1” wide (38 x 25 mm) steel battens shall be designed to resist the design loads of the building.

ROOF DECK SHEATHING
The panels must be installed on a minimum 15/32” thick (11.9 mm) plywood, close fitted sheathing or spaced sheathing that complies with the applicable code.

SEALANT/CAULKING
Only exterior grade urethane or (non-acidic) silicone caulking should be used for sealant.

TESTING
The panels have been tested and evaluated to industry standards and are covered Code Evaluation Report (QAI CERus-1008), International Code Council (ICC-ESR), National Research Council Canada (CCMC), State of Florida (FBC), Miami-Dade (NOA), and Texas Department of Insurance (TDI) evaluation reports. Testing has been conducted to evaluate fire, wind, impact resistance, water infiltration, and durability resistance. Information regarding specific tests and approvals can be obtained from Unified Steel™ .

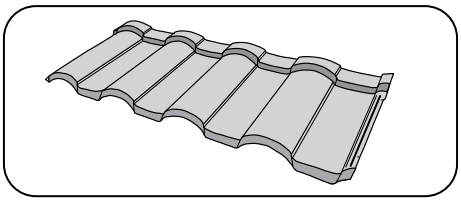
VENTILATION
Ensure proper attic ventilation as prescribed per local codes. Either Unified Steel™ EZ-Vents or Continuous Ridge venting can be installed to help achieve adequate ventilation.

WARRANTY
The panels carry a limited warranty for fifty years. This limited warranty is transferable and does not cover damage due to improper handling or installation. Complete warranty details available at WestlakeRoyalRoofing.com.

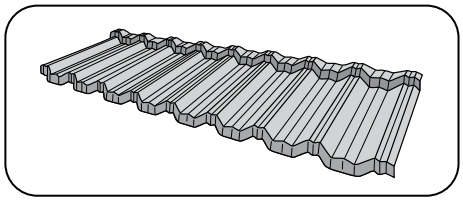
DISSIMILAR METALS
To avoid adverse corrosion effects caused by dissimilar metals, COPPER and LEAD flashings should not be used with Unified Steel™ panels and accessories.

FINISH COATING
Minor scuffing of the stone coated finish can be repaired with a Touch-Up Kit. Use the basecoat acrylic supplied in the kit (not caulking) for repairs. Unfinished flashing material can be painted with durable acrylic aerosol paints. Note: Colored aerosol paints should never be sprayed on stone coated panels & accessories.

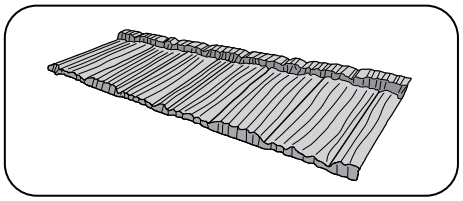
STONE COATED ACCESSORIES



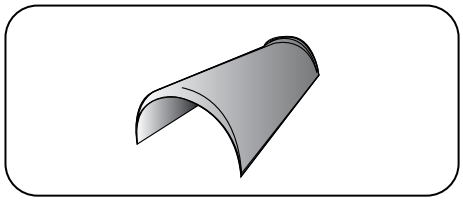
BARREL-VAULT Tile Panel
Coverage: 14" x 43.625" (356 x 1108 mm)
5.5 lbs (2.5 Kgs) 24 pcs/sq



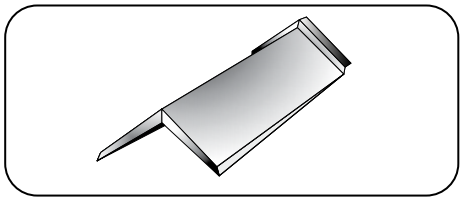
PACIFIC TILE Panel
Coverage: 14.5" x 49.5" (368 x 1257 mm)
6.3 lbs (2.86 Kgs) 20 pcs/sq



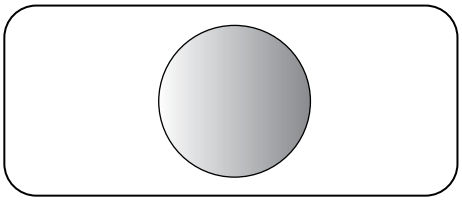
PINE-CREST Shake Panel
Coverage: 14.5" x 49.5" (368 x 1257 mm)
6.4 lbs (2.91 Kgs) 20 pcs/sq



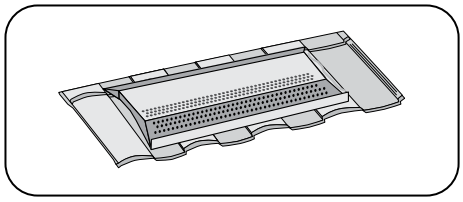
Cap Mission (Hip & Ridge)
6” x 14.5” (152 x 368 mm)



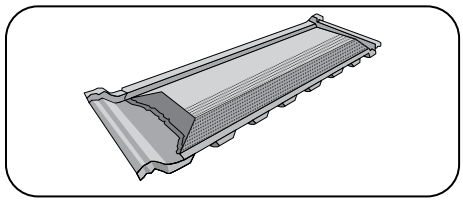
Cap Shake (Hip & Ridge)
6” x 14.5” (152 x 368 mm)



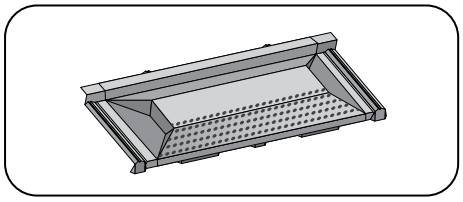
End Disc
6” Dia. (152 mm) 0.18 lbs/EA (0.08 Kgs)



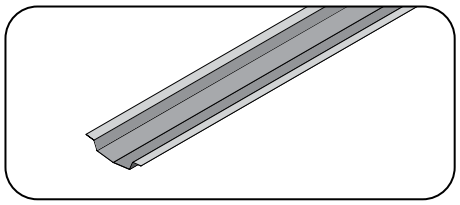
EZ-Vent BARREL-VAULT Tile
Coverage: 14" x 43.625" (356 x 1108 mm)
9.5 lbs (4.31 Kgs) NFVA 59.50 Sq In.



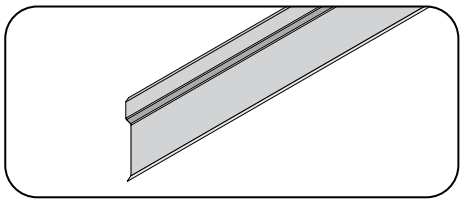
EZ-Vent PACIFIC Tile
Coverage: 14.5" x 49.5" (368 x 1257 mm)
10.5 lbs (4.8 Kgs), NFVA 62.50 Sq In.



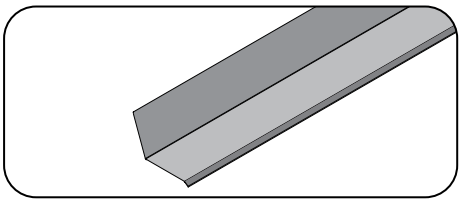
EZ-Vent PINE-CREST Shake
Coverage: 14.5" x 49.5" (368 x 1257 mm)
10.5 lbs (4.8 Kgs), NFVA 62.50 Sq In.



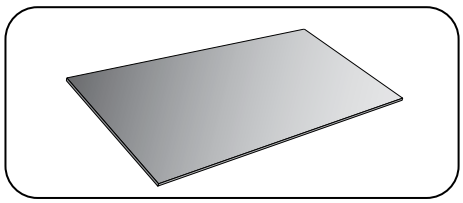
Valley Open 6"
1.5" x 6" x 79" (38 x 150 x 2006 mm)



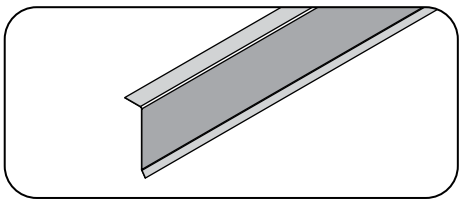
Z-Bar
Used at side wall areas and headwall.
4.875" x 0.375" x 79" (124 x 10 x 2006 mm)
2.7 lbs (1.2 Kgs)



Head-Side-Wall
3" x 3.75" x 79" (76 x 95 x 2006 mm)
4.21 lbs (2.22 Kgs)

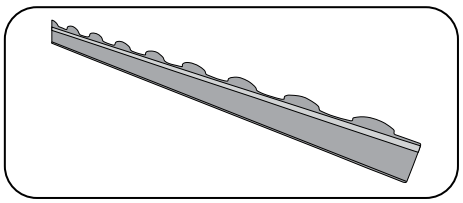


Flat Sheet
18” x 54” (457 x 1372 mm)
8.0 lbs (3.7 Kgs)



Fascia 3.5”
3.5" x 1" x 79" (89 x 25 x 2006 mm)
2.24 lbs (1 Kg)

Fascia 5”
5” x 79” (127 x 2006 mm)
3 lbs (1.7 Kgs)



BARREL-VAULT BirdStop 3.75”
Used at the eave.
3.75" x 1" x 79" (95 x 25 x 2006 mm)
5.90 lbs (2.68 Kgs)

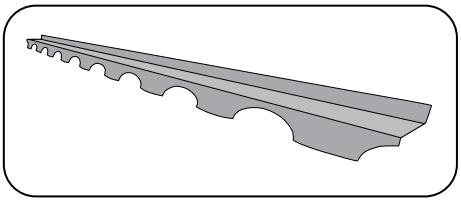
Weights are approximate.

Continued on Next Page

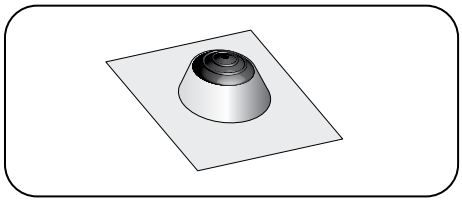
BATTEN Installation Guidelines

UnifiedSTEEL
STONE COATED ROOFING

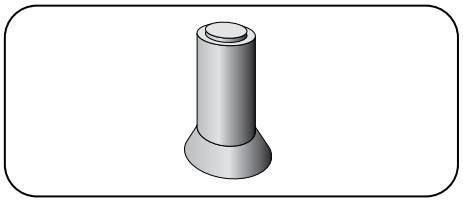
STONE COATED ACCESSORIES



BARREL-VAULT Top Row
Used at the ridge.
1.75" x 3.75" x 79" (45 x 95 x 2006 mm)
5.64 lbs (2.56 Kgs)



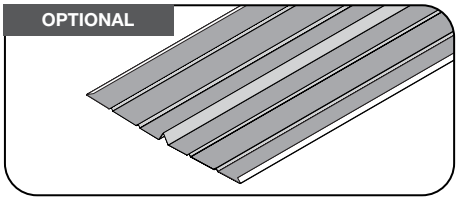
Pipe-Jack 4-N-1
Base 18" x 18" (457-457 mm)
Fits 1.25" to 4" pipes (32-100 mm)
1.86 lbs (0.85 Kg)



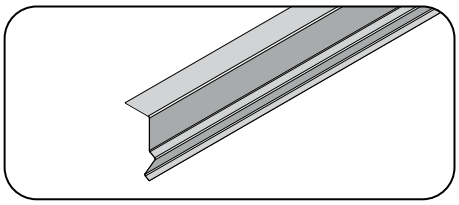
Pipe Sleeve
3/4" – 4" Dia. Pipes (19 – 100 mm)
1.72 lbs (0.78 Kg)

PAINTED OR BARE ACCESSORIES

OPTIONAL

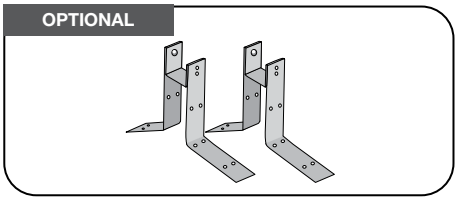


Valley Five 'V'
1" x 22" x 120" (25 x 559 x 3048 mm)
16.8 lbs (7.6 Kgs) Painted Black, Brown or Bare inside.

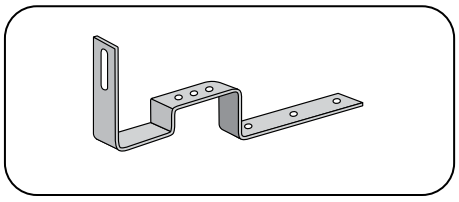


Trim Cap Rake
3.75" x 2.125" x 120" (95 x 54 x 3048 mm)
4 lbs (1.8 Kgs)

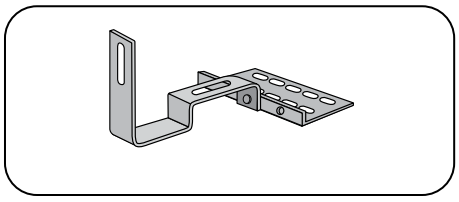
OPTIONAL



Ridge Riser® Brackets
16 gauge Galvanized Steel

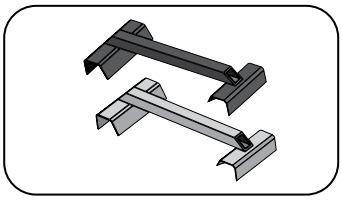


Solar Roof Mount (Batten) - Fixed
Stainless Steel Side Mount 90˚
1-3/8" (35 mm) fixed batten bridge height
3" (76 mm) wide batten bridge.
Screws Included: 5.16" HWH x 3"



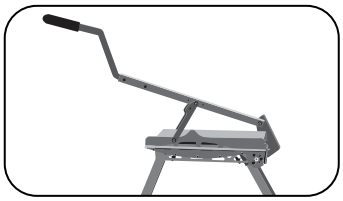
Solar Roof Mount - Adjustable
Stainless Steel Side Mount 90˚
3 leverage points of adjustment: adjustable wide base for fastening to the rafter.
Screws Included: 5/16" HWH x 3"

TOOLS

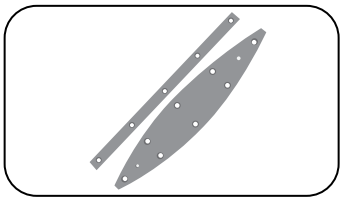


Batten Spacers
BARREL-VAULT Tile: 14" (365 mm)
2.7 lbs/Set (1.22 Kgs), Black color

PINE-CREST Shake and PACIFIC Tile: 14.5" (368 mm), 2.7 lbs/Set (1.22 Kgs), Green Color



Cutter
39 lbs (17.7 Kgs)

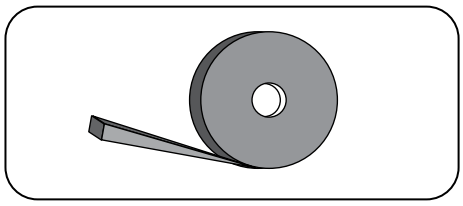


Cutter Blades
(Top and Bottom)
54" x 43" x 35.25"
(1372 x 1092 x 895 mm)
8 lbs/Set (3.63 Kgs)

Bender
54" x 43" x 35.25"
(1372 x 1092 x 895 mm),
150 lbs (68.1 Kgs),

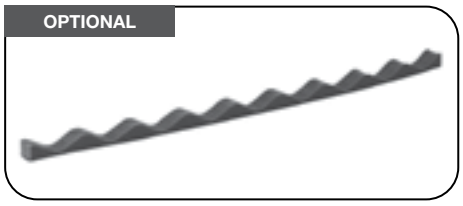
Weights are approximate.

OTHER ACCESSORIES & ROOF SYSTEM COMPONENTS

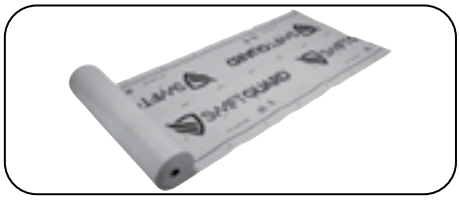


EmSeal Foam Tape Rolls
0.75” x 1” x 19.68' (19 x 25 x 6000 mm)
1 lbs (0.45 Kg)

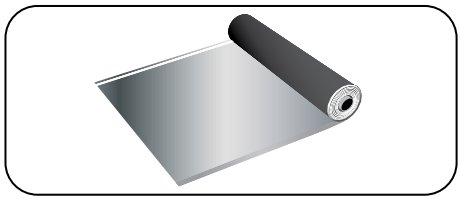
OPTIONAL



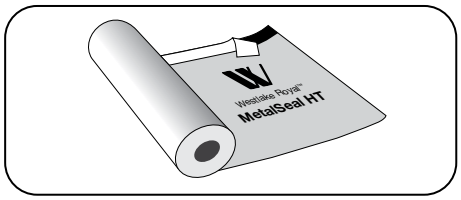
Foam Closure Strip
(BARREL-VAULT Tile only)
1" x 1-7/8" x 43" (25 x 48 x 1245 mm)



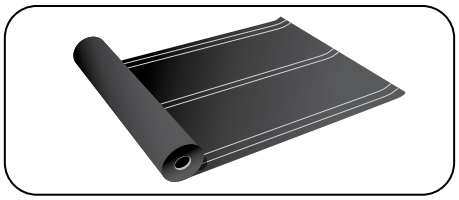
SwiftGuard™ High-Performance Synthetic Roof Underlayment
40” x 300’ (1000 sq ft) (1016 mm x 91.44 M)
35.5 lbs/Roll (16 Kgs)



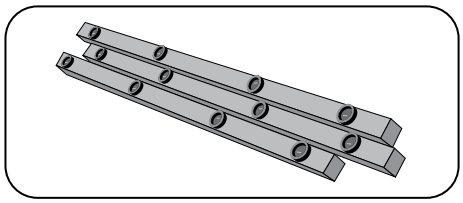
Sol-R-Skin™ BLUE Fire Resistant, Thermal Insulating Underlayment
54” x 100’ (450 sq. ft.) (1372 mm x 30.48 M)
45 lbs/Roll (20.4 Kg)



Westlake Royal™ MetalSeal HT
Ice and water shield, self-adhered, high-temperature Underlayment
36" x 72' (200 sq. ft.) (915 mm x 2.96 M)
70 lbs/Roll (31.7 Kgs)



Westlake Royal ORG-Ply 40™
Underlayment/Base Sheet
39-3/8" x 65'-10" (216 sq ft.) (1M x 20.37 M)
81 lbs/Roll (36.7 Kg)

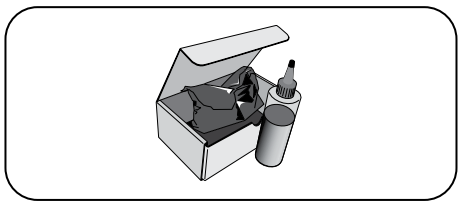


2x2 Elevated Batten System® (EBS)
2" x 2" x 96” (50 x 50 x 2438 mm)
12 pcs/Bundle, 1 Bundle = 96 L/ft (29.28 L/M)

OPTIONAL

Wakaflex® Universal Flashing
11” x 33' (290 mm x 10.07 M)
Black, Brown, Terracotta

Unified Steel™ Ridge Vent
Continuous ridge vent
2.5" x 1" x 20' (64 x 25 x 6096 mm)
17 sq.in (NFVA)/Lft.

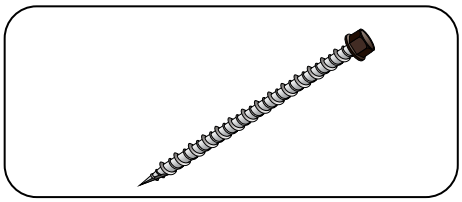


Touch-up Kit
1 Tube of adhesive, 1 Bag of stone chips, brush. 2 lbs (0.9 Kg)

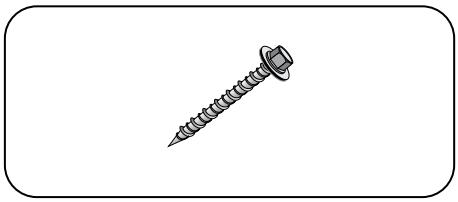
Bulk Stone Chips
1 Bucket of stone chips - 25 lbs (11.3 Kg)

Weights are approximate.

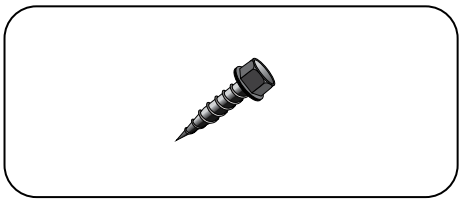
FASTENERS



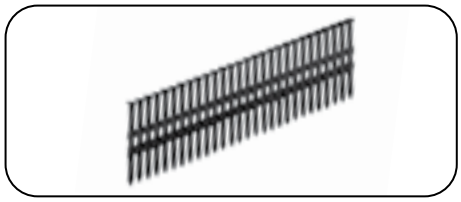
Panel Screws
Carbon Steel or 410 Stainless Steel
2.0" L x 0.25" HWH (50 mm L x 6 mm HWH)
2.5" L x 0.25" HWH (63 mm L x 6 mm HWH)
Available in Black, Red, Brown, Gold, White Colors



Valley Screws Carbon Steel (Dome Cap over rubber washer)
1.5" L x 0.25" HWH (38 mm L x 6 mm HWH)

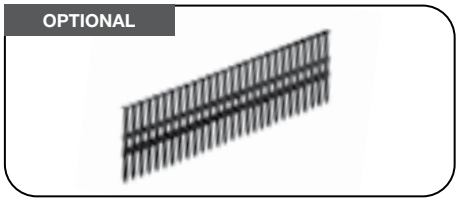


Stitch Screws Carbon Steel
0.75" L x 0.25" HWH (19 mm L x 6 mm HWH)
Available in Black, Red, Brown, Gold, White Colors



Batten Nails
0.131" Dia x 3.25" (3 mm Dia x 83 mm)
53 lbs/Box (24.06 Kgs)

OPTIONAL

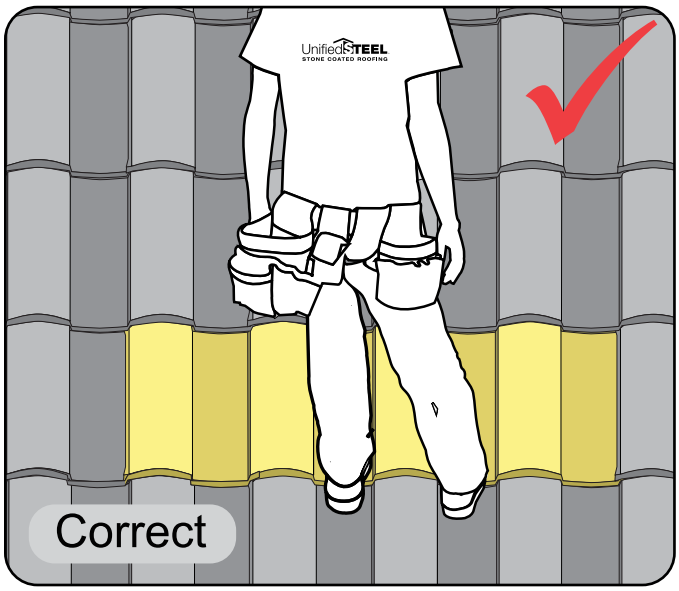


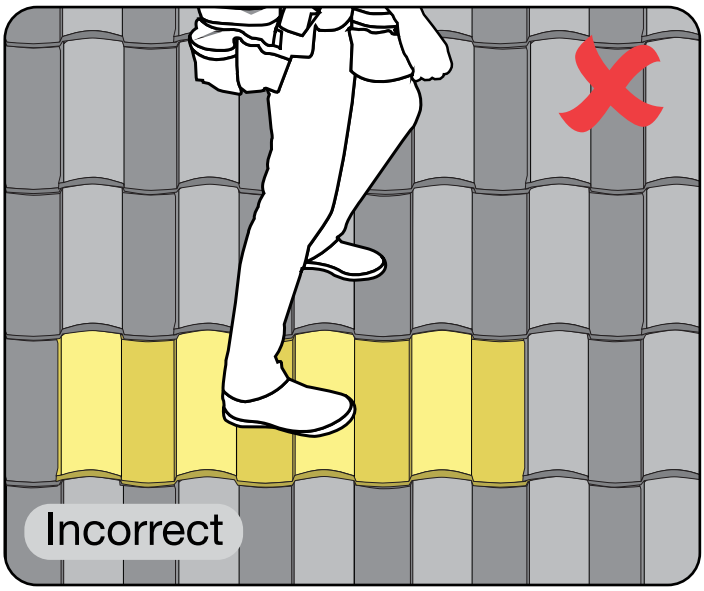
Panel Ring Shank Nails
0.131" Dia x 2.375" (3 mm Dia x 60 mm)
41 lbs/Box (18.61 Kgs), Black

WALKING ON YOUR ROOF (BARREL VAULT Tile shown)

PANEL WALKING

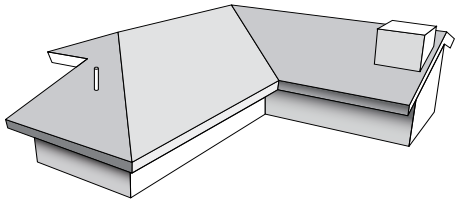
Appropriate OSHA approved fall protection must be used when walking on roofs panels. Place your feet over the front lip of the panels. Avoid walking near the panel side-laps as shown in right image below.





BATTEN Installation Guidelines

UNDERLAYMENT

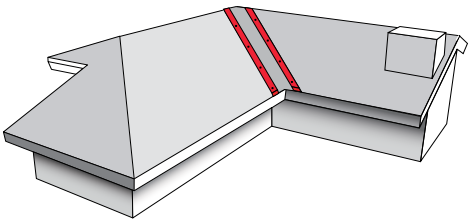


Unified Steel™ panels are installed on new or existing roofs with a minimum pitch of 3:12 (12 degrees). All underlayments shall be installed as per local code and manufacturer's instructions.

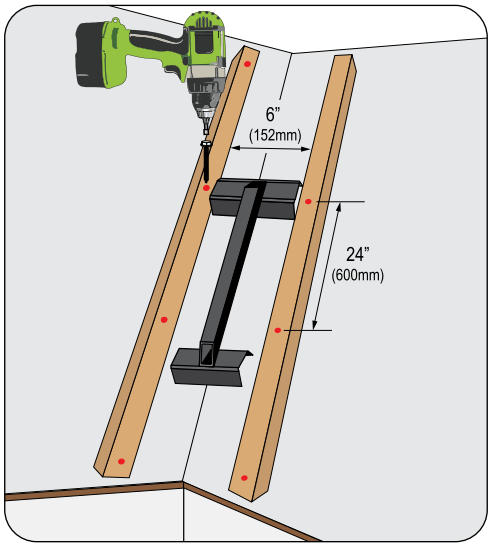
We offer a wide range of options for Underlayment. For specifications **refer to Page 6** and explore **Components** section of our website for more information.

	UNDERLAYMENT	DESCRIPTION	EXPOSURE	WARRANTY
MECHANICALLY FASTENED	SwiftGuard™	**High-Performance, Synthetic** Innovative, patented nail gasketing technology for superior moisture resistance. A high grip backing and non-woven, thermally embossed facer provide increased deck grab and superior walkability.	6 months	30 years
MECHANICALLY FASTENED	Sol-R-Skin™ BLUE	**Fire Resistant, Thermal Insulating & Reflective** Class A fire rated with one layer under stone coated steel. Aluminum foil facer and fiberglass insulation provide R 5.5 insulation. Cool blue surface helps to reduce sun glare during installation, use in any climate at any temperature.	6 months	30 years
MECHANICALLY FASTENED	Westlake Royal ORG-Ply 40™	**SBS Modified Organic Reinforced** SBS modified asphalt minimizes wrinkling & buckling associated with non-modified membranes.	6 months	10 years for 1 layer 20 years for 2 layers
SELF-ADHERED	Westlake Royal™ MetalSeal HT	**Modified Asphalt Self-adhered** High strength, non-woven polyester surface remains intact under high foot traffic, stable in low and high temperatures for all climates.	6 months	30 years

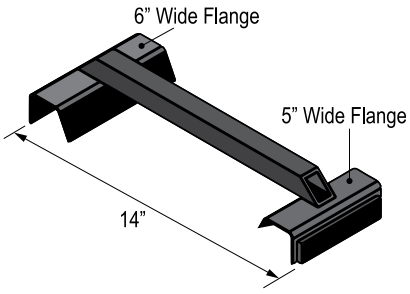
VALLEY BATTENS FOR VALLEY OPEN 6" All 3 Profiles



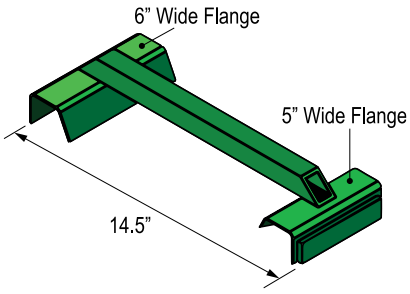
Valley battens are spaced 6" apart to accommodate the Valley metal. Use Batten Spacer 6" (152 mm) wide end to space the valley battens correctly and fasten at 24" o.c. (600 mm).



BARREL-VAULT Tile Spacer



PINE-CREST Shake and PACIFIC Tile

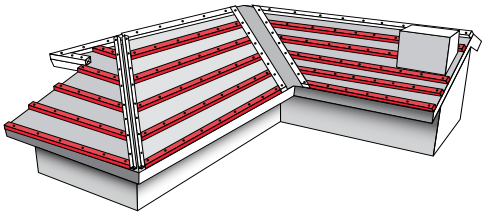


Unified Steel™ offers two different Batten Spacers.
PINE-CREST Shake and PACIFIC Tile use 14.5" (368 mm) *Batten Spacer.*
BARREL-VAULT Tile use 14" (356 mm) *Batten Spacer.*

BATTEN Installation Guidelines

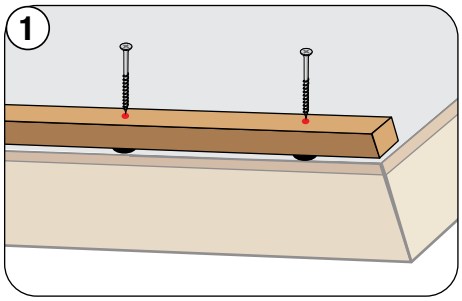
PANEL BATTENS All 3 Profiles

▶ See 2x2 Elevated Batten System Brochure

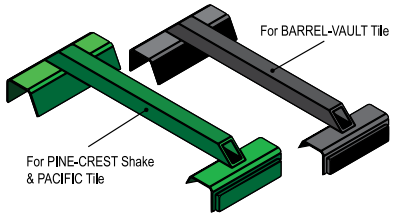


Panel batten spacing is critical as each panel fits snuggly against the front (downward facing side) of the batten. 2x2 (50 x 50 mm) Elevated Batten System® (EBS) battens are 8-ft (2.44 M) long and have 0.375” (9.5 mm) thick plastic pads spaced 12” (304 mm) apart and are pre-attached to each batten strip.

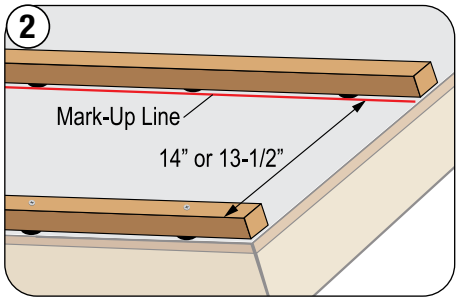
Panel battens may be 2x2 wood (Douglas-Fir / Larch #2 or better) or Steel Hat Sections with a minimum height of 0.75", and 0.017" thick (0.43 mm) galvanized steel.



Position the first batten flush with the fascia. Fasten through the batten and plastic pad into the wood deck.



Make sure you are using the correct Batten Spacer tool for the profile you are installing: ***14.5" for PINE-CREST Shake & PACIFIC Tile; 14" for BARREL-VAULT Tile.***

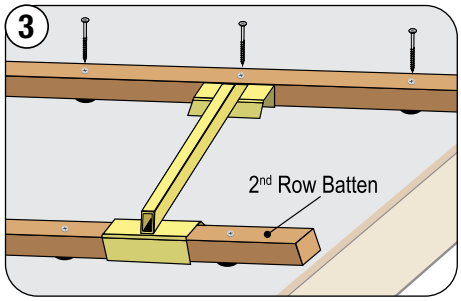


FOR THE SECOND BATTEN ONLY:

For **PINE-CREST Shake** and **PACIFIC Tile** mark 14" (356 mm) up from the perimeter batten on either side of the roof section.

For **BARREL- VAULT Tile** measure 13.5" (343 mm) from the front eave /fascia batten to the batten above. The panels pan sections needs to extend past the BirdStop flashing, so water exits the roof beyond the BirdStop flashing face.

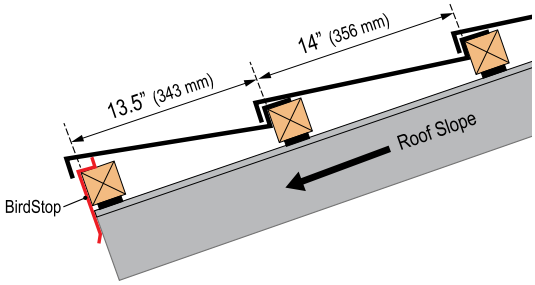
Use a string line to position the second batten to allow adequate overhang at the fascia for gutter/water shed from the roof.



Working across and up the roof, position the Batten Spacer (green for PINE-CREST Shake and PACIFIC Tile; black for BARREL-VAULT Tile) over the second row batten.

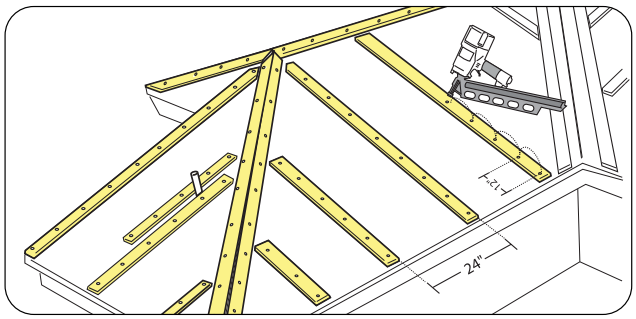
Position the next batten firmly against the top face of the Batten Spacer and fasten. Pay careful attention to positioning the batten spacer the correct way.

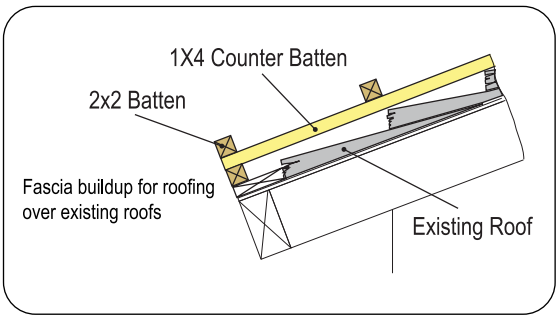
BARREL-VAULT TILE WITH BIRDSTOP



COUNTER BATTENS All 3 Profiles

When reroofing over irregular roof surfaces (wood shake), 1x4 Counter battens are used.

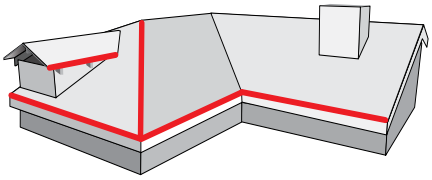




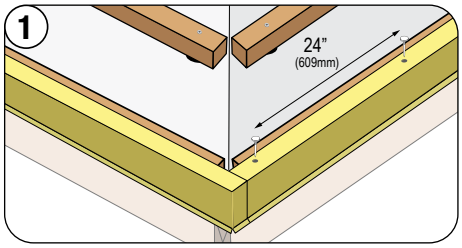
Position 1x4 Counter Batten over rafter, maximum 24" o.c. Fasteners must penetrate 1” (25 mm) into or through the roof framing members and be placed 12” (305 mm) o.c. Consult local codes for all re-roofing requirements.

BATTEN Installation Guidelines

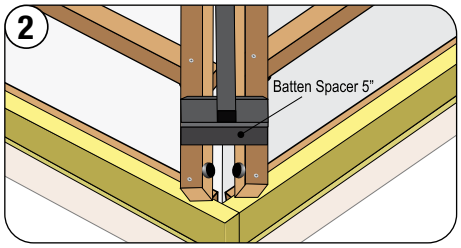
FASCIA & HIP BATTENS INSTALL For PINE-CREST Shake or PACIFIC Tile



Fascia metal is available in either 3.5” (89 mm) or 5” (127 mm) face widths to cover the battens (EBS battens shown) across the eave and to act as a metal drip edge.



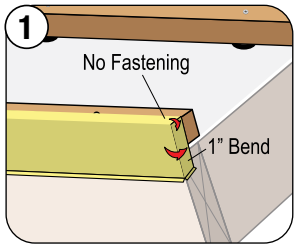
Fascia & Hip Corner: Fit the Fascia on the perimeter battens and fasten at 24” o.c. (600 mm). Lapping approximately 2” (50 mm). Fold Fascia around hip corner, as shown.



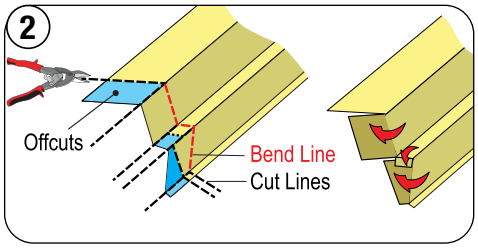
Hip Battens: Install hip battens 5” (125 mm) apart. Use the Batten Spacer small flange for this spacing. Rotate EBS batten so the plastic pads are facing towards the hip center line. Fasten at each batten intersection.

Batten Spacer 6” *wide flange can be used to position the valley battens 6" apart inside.*

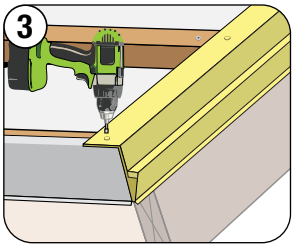
Batten Spacer 5" *can be used to position the hip and ridge battens 5” apart.* ***See Page 8 for details.***



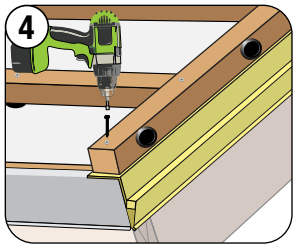
Fascia & Rake Detail: Fit the Fascia flush with the outside rake edge. Bend 1" (25 mm) around the corner. Do not fasten at the intersection with rake.



Fascia & Trim Cap Rake Detail: Notch and fold Trim Cap Rake metal, as shown.

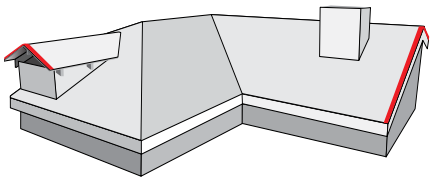


Overlap Trim Cap Rake metal with the Fascia to close off the triangular slot on the front. Fasten into each panel batten.

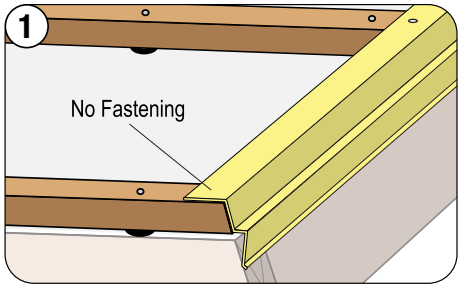


Rake Batten Detail: Place 2x2 EBS batten on top of Trim Cap Rake, flush with the outside edge and fasten into each panel batten.

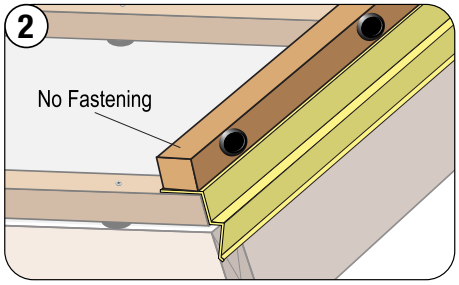
TRIM CAP RAKE AND BIRDSTOP INSTALL For BARREL VAULT Tile Only



For BARREL-VAULT Tile installs using BirdStop, the Trim Cap Rake metal is left unfastened at the fascia / rake intersection to allow for easy install of the BirdStop after the panels have been laid. This allows for easy alignment of the BirdStop to the panel profile. **See Page 21 for BirdStop detail.**



Install Trim Cap Rake metal up the rake. Do not fasten the Trim Cap Rake at the fascia and rake corner.

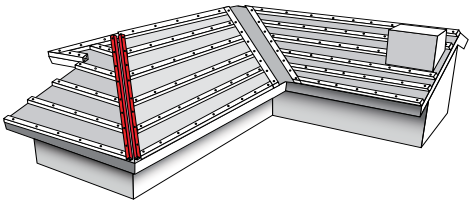


Place 2x2 EBS batten on top of Trim Cap Rake, flush with the outside edge and fasten into each panel batten, except the eave batten.

DO NOT FASTEN *the Trim Cap Rake metal and Rake Batten at the rake/eave corner, until you have installed the BirdStop flashing correctly and just prior to panel laying/fastening.* ***See Page 21 for details.***

BATTEN Installation Guidelines

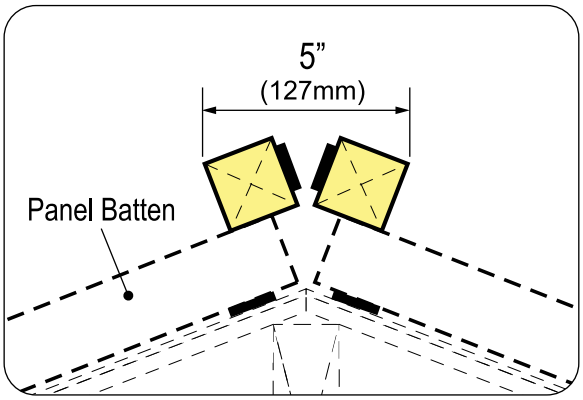
HIP BATTENS All 3 Profiles



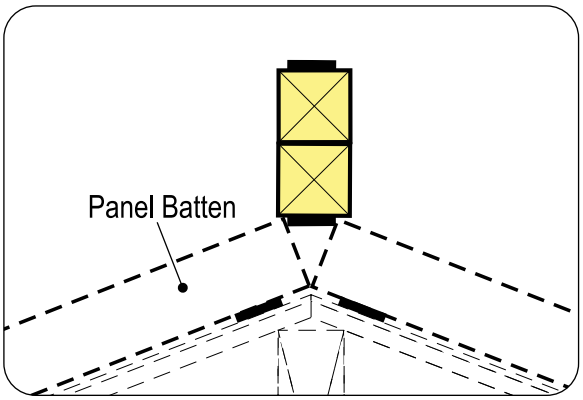
Hip battens can be positioned side by side, or vertically stacked as shown, using 2x2 EBS battens or 2x2 battens.

NOTE: Third batten may be need, depending upon roof pitch and panel layout.

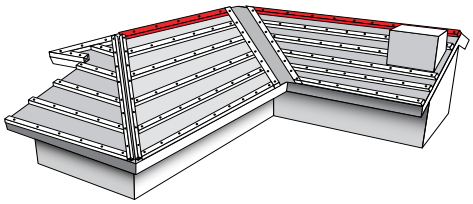
SIDE BY SIDE STACK



VERTICAL STACK

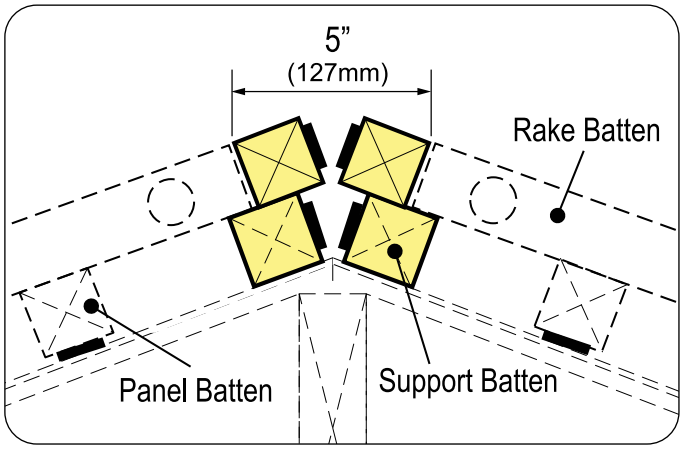


RIDGE BATTENS All 3 Profiles

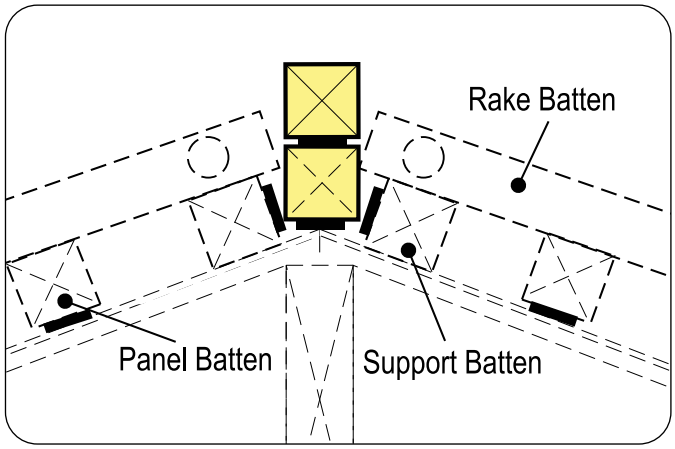


Ridge battens can be positioned side by side, or vertically stacked as shown, using 2x2 EBS battens or 2x2 battens.

SIDE BY SIDE STACK



VERTICAL STACK



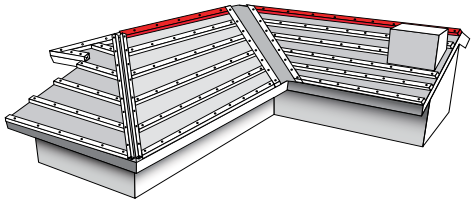
NOTE: Third batten may be need, depending upon roof pitch and panel layout.

BATTEN Installation Guidelines

UnifiedSTEEL STONE COATED ROOFING

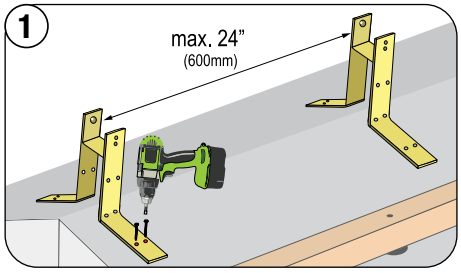
RIDGE RISER® BRACKETS All 3 Profiles

▶ See Ridge Riser Brackets Installation Guidelines **OPTIONAL**

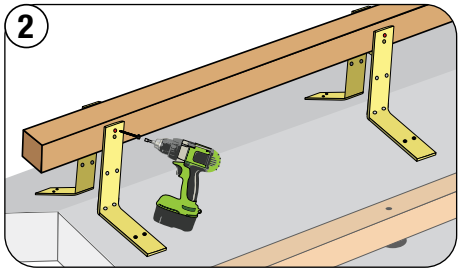


Ridge Riser Brackets may be used instead of battens to position a single 2x2 (50 x 50 mm) batten to secure the ridge to.

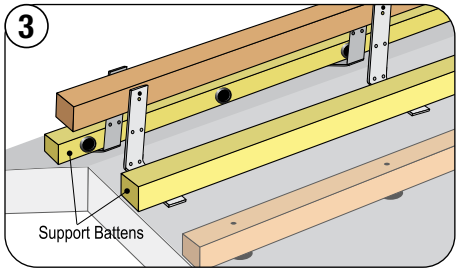
High Velocity Hurricane Zone (HVHZ) areas (Florida) require Ridge Riser Brackets to be spaced no greater than 18" (457 mm) apart and fastened to the roof deck and 2x2 wood nailer with screws only.



Install Ridge Riser Brackets no greater than 24" (600 mm) apart for non-High Velocity Hurricane Zone (HVHZ) areas.

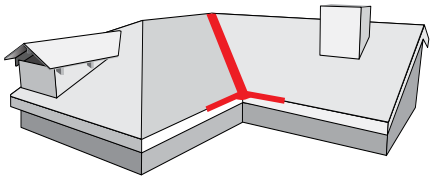


Place a 2x2 wood nailer board into Ridge Riser Brackets. Fasten wood nailer to Ridge Riser Brackets with a #8 min. 0.75" (19 mm) screw or roofing nail.

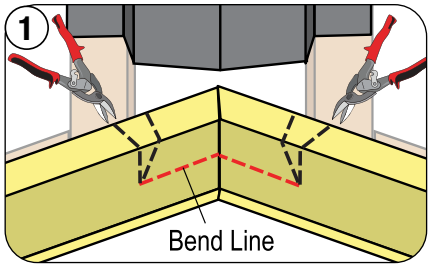


Place support battens (shown in yellow) across the ridge. Support battens allow the ridge cut bent panel to be seated in the same roof plane as the rest of the field.

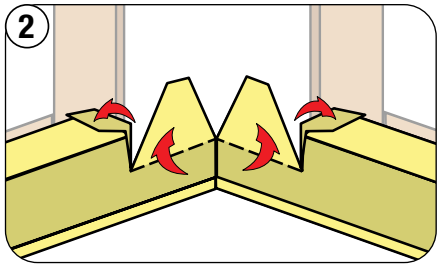
VALLEY OPEN 6" / FASCIA INTERSECTION For PINE-CREST Shake and PACIFIC Tile



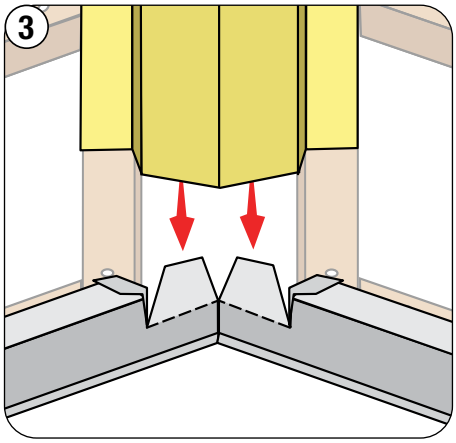
For BARREL-VAULT Tile detail refer to Page 21.



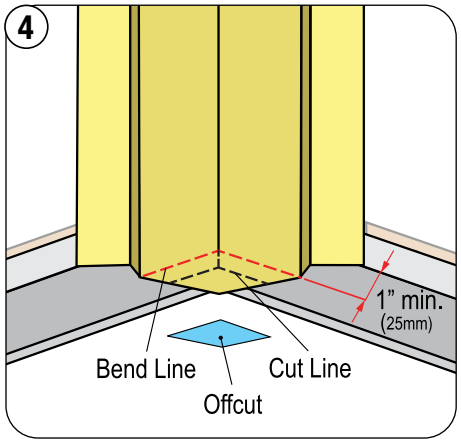
Position the Valley between the battens and scribe the valley profile onto the inside of the Fascia metal.



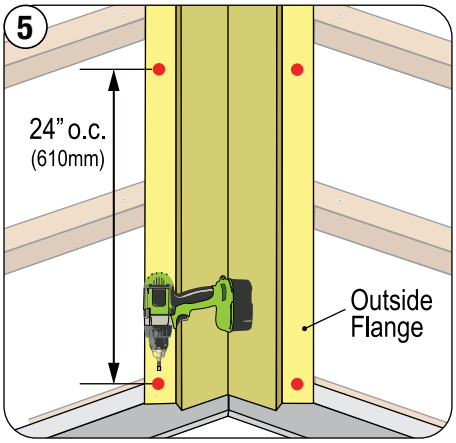
Cut and bend the sections, as shown



Slide the Valley Open 6” into position. Extend Valley a minimum of 1" (25 mm) past the Fascia.



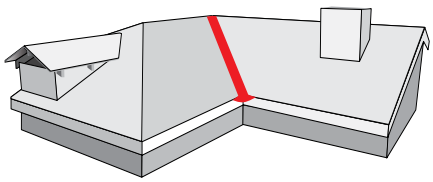
Cut the valley exit point and bend to form an internal corner.



Fasten Valley Open "6" with regular panel fasteners on both outside flanges at 24" o.c. (610 mm).

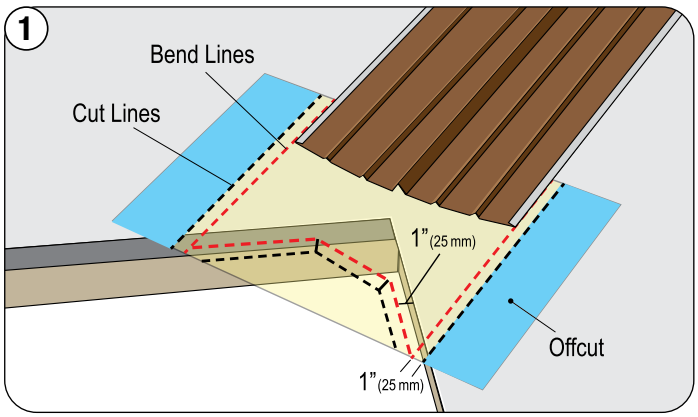
When installing in wooded areas or where trees overhang the valley, an ‘Open Valley’ detail is recommended. In other areas a ‘Closed Valley’ detail is acceptable. For ‘Closed’ valley details (Valley Five 'V' or Valley Open 6”), the panels are cut and bent to meet in the center of the valley material. Overlap Valley sections a minimum of 4” (100 mm).

VALLEY FIVE 'V' EXIT TRAY - FASCIA All 3 Profiles

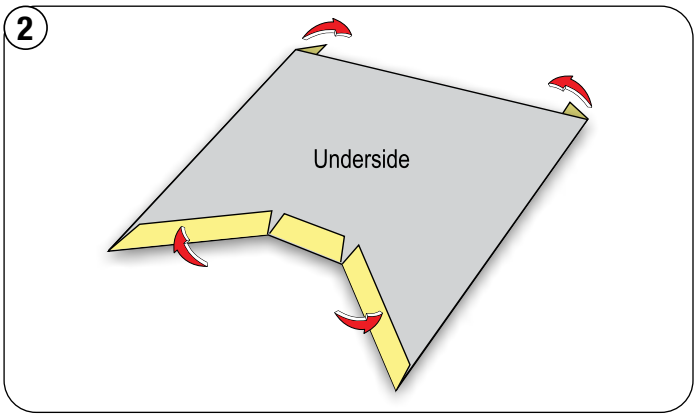


Depending on valley metal used (Valley Five 'V' or Valley 6" Open), Unified Steel™ panels can be installed to form either a 'Closed' or 'Open' valley. When using Valley Five 'V' metal, an exit tray helps provide a finished appearance to the exit area of the valley especially if the valley is exiting onto another roof section such as from a Dormer roof.

Valley Five 'V' should only be used in conjunction with the Unified Steel™ 2x2 Elevated Batten System® (EBS).

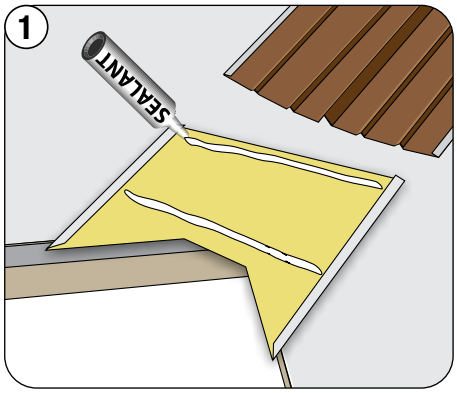


Position Valley Five 'V' at the center of the valley. Place half a Flat Sheet under the Valley. Extend Flat Sheet a minimum of 1" (25 mm) past fascia. Mark, cut and bend, as shown.

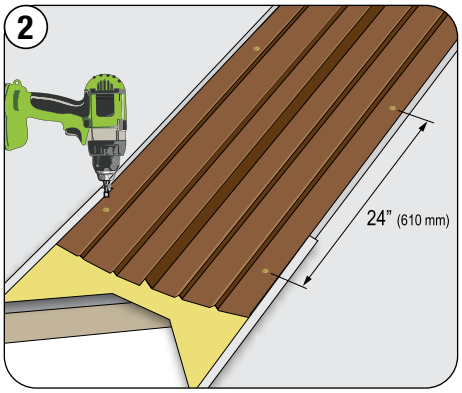


Hem both sides of the folded Flat Sheet to fit around outside edges of valley. Hem the valley water flow exit area as shown by the dark grey area.

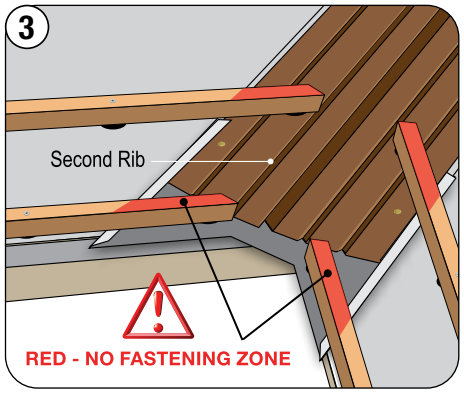
VALLEY FIVE 'V' INSTALLATION All 3 Profiles



Fit the Exit Tray at the fascia, before installing the panel battens across the fascia. Apply sealant, as shown.

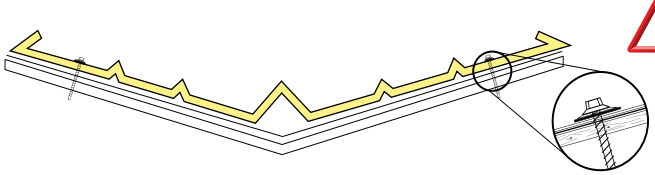


Insert Valley Five 'V' into the valley exit. Fasten Valley with washer and grommet screws in the outside locations a minimum of 24" o.c. (610 mm) up both sides.



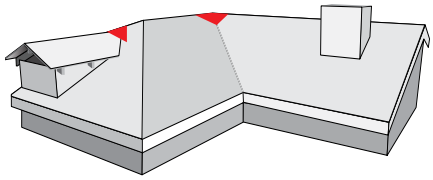
Place EBS battens into the Valley's Five 'V' second rib. **When fastening, DO NOT penetrate Valley area.**

Overlap Valley sections a minimum of 4" (100 mm).



When fastening through the valley metal, fasteners must have a rubber washer covered by metal cap to ensure a seal around the fastener location.

VALLEY/RIDGE INTERSECTION - WAKAFLEX® METHOD All 3 Profiles — OPTIONAL



Where two valleys meet at the ridge line, Wakaflex® universal flashing can be used to seal the intersecting pieces of valley.

The following necessary steps are provided to prevent water migration under the roof tile.

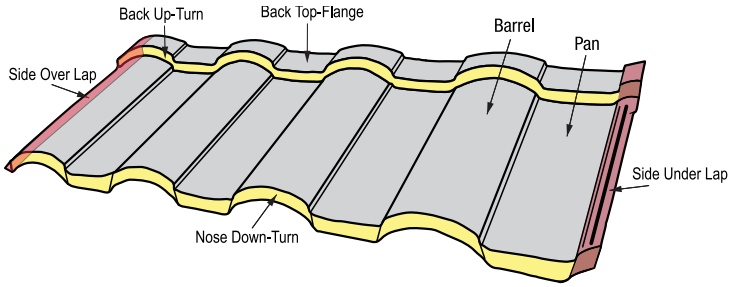
1. Cut Wakaflex of equal width to form on top of the 2 pieces of valley metal extended minimum 6” (150 mm) on both sides.
2. Remove the protective film exposing the butyl strip and form on top both sides of valley metal.
3. Ensure that the top upper side of the Wakaflex is integrated into underlayment installed to prevent moisture from penetrating roof deck.

Wakaflex can also be used for:

- *Sidewalls*
- *Splayed Gables*
- *Hip & Ridge Junctures*
- *Solar Panels*
- *Chimneys*
- *Tricky details that require weather protection*
- *Variety of repair applications*

BARREL-VAULT TILE - FULL PANEL LAYOUT

For batten installs panels must be installed from the **ridge down** due to their unique interlocking design. BARREL-VAULT Tile panels have a 9/16" (14 mm) side lap and can be staggered by one or multiple barrel/pan modules across the panel, as needed. The panels are designed to be installed in a staggered pattern and they **cannot** be straight laid.

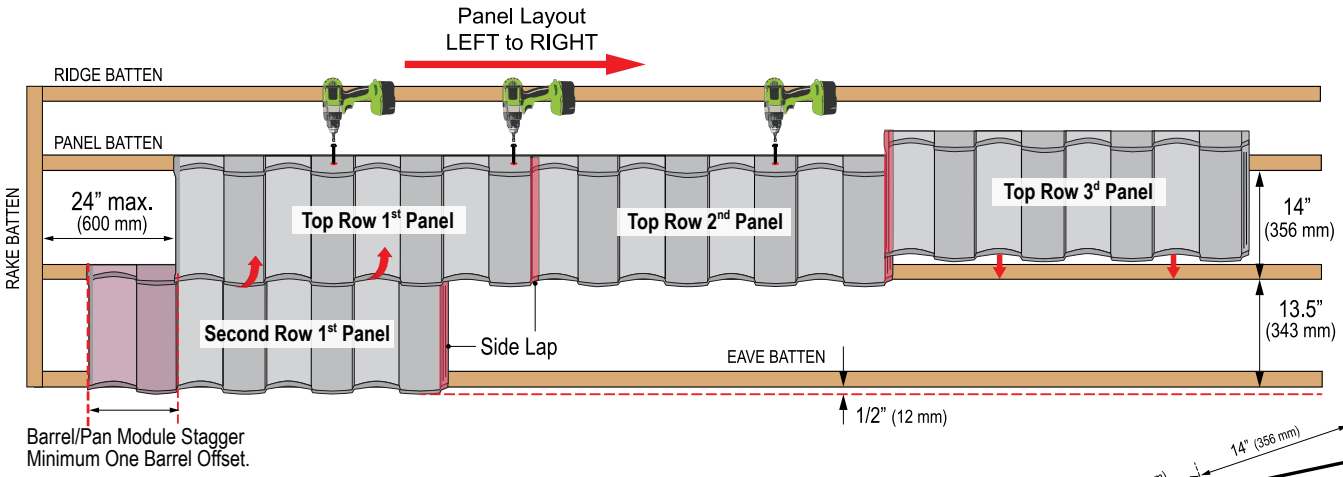


Position first full panel on the top panel batten 24" (600 mm) maximum from the rake batten, as shown.

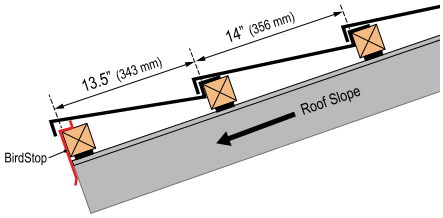
Fix top row panels in place by fastening through the back top-flange, to prevent panels from slipping down, as shown.

Do not fasten the left end of the first panel in a row, to allow rake cut sections to be installed later.

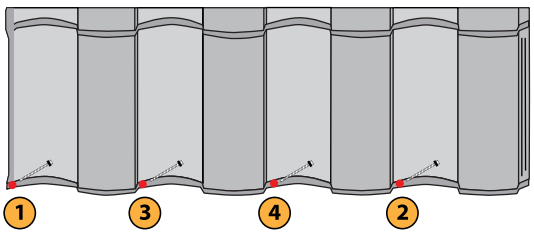
Complete full panel row across the roof section then work down laying one or two rows, as needed.



The bottom panels need to have a minimum of 1/2" (12 mm) overhang at the eave.



BARREL-VAULT TILE - FASTENING SEQUENCE

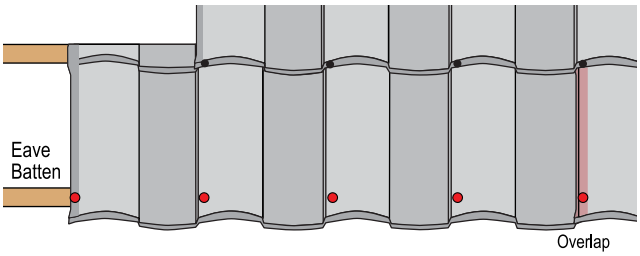


4 STANDARD panels fastening pattern for a total of Four (4) across Nose Down-Turn.

Fastener **#1** is fastened after placing the next panel of the same course, and goes through both panels.

FASTENING SEQUENCE shown is applicable to any location and ensures the panels stay correctly aligned.

BARREL-VAULT TILE - BOTTOM ROW FASTENING



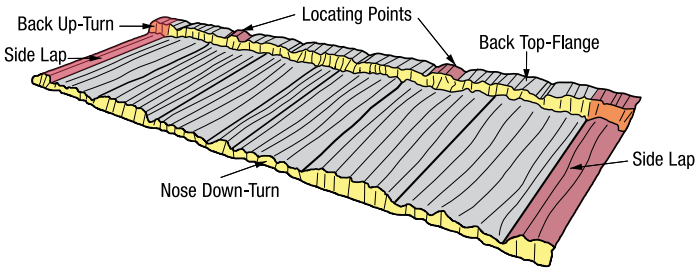
Fasten the bottom row panels through the top of the panel on the left or the right side of each concave section, out of the main water channel of the panel. **NOTE:** Top panel fastening is also acceptable behind Unified Steel™ EZ-Vents and chimney/skylight details, as necessary.

Use the Touch-Up kit to seal and cover each top fastener.

BATTEN Installation Guidelines

PINE-CREST SHAKE - FULL PANEL LAYOUT

For batten installs panels must be installed from the **ridge down** due to their unique interlocking design. PINE-CREST Shake panels have a 2" (50 mm) side lap and two staggered locating points along the back flange of the panel. The panels are designed to be installed in a staggered pattern and they **cannot** be straight laid.

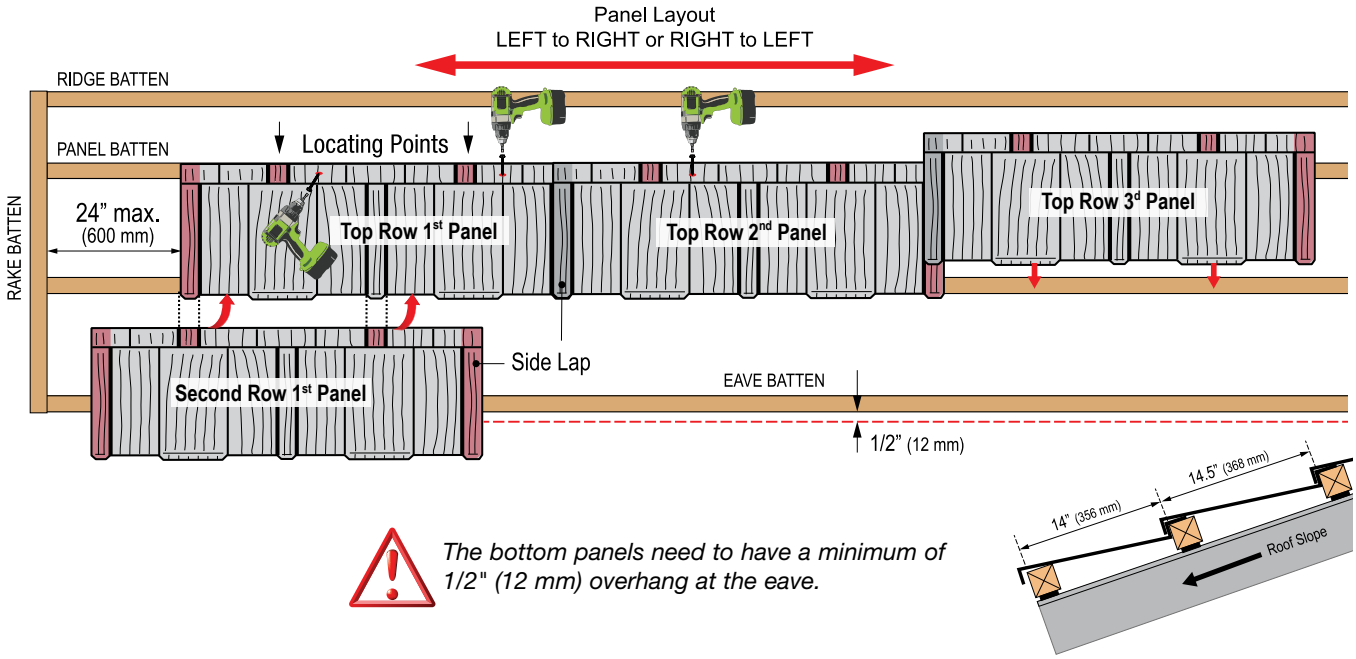


Position first full panel on the top panel batten 24" (600 mm) maximum from the rake batten, as shown.

Fix top row panels in place by fastening through the back top-flange, to prevent panels from slipping down, as shown.

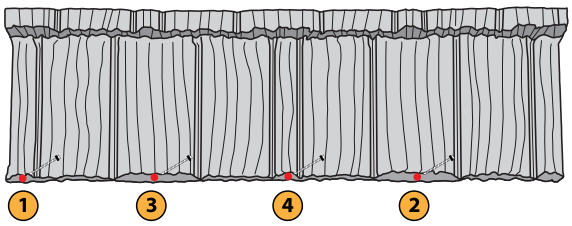
Do not fasten the left end of the first panel in a row, to allow rake cut sections to be installed later.

Complete full panel row across the roof section then work down laying one or two rows, as needed.



The bottom panels need to have a minimum of 1/2" (12 mm) overhang at the eave.

PINE-CREST SHAKE - FASTENING SEQUENCE

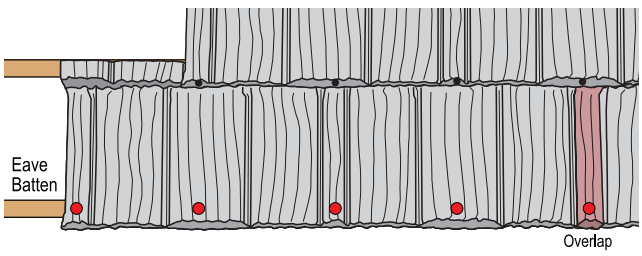


4 STANDARD panels fastening pattern for a total of Four (4) across Nose Down-Turn.

Fastener **#1** is fastened after placing next PINE-CREST Shake panel of the same course, and goes through both panels.

FASTENING SEQUENCE shown is for the Left to Right layout direction; applicable to any location and ensures the panels stay correctly aligned.

PINE-CREST SHAKE - BOTTOM ROW FASTENING



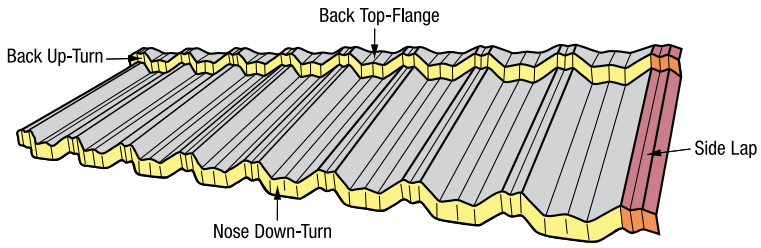
Fasten the bottom row panels through the top of the panel as shown, out of the main water channel of the panel. **NOTE:** Top panel fastening is acceptable behind Unified Steel™ EZ-Vents and chimney/ skylight details, as necessary.

Use the Touch-Up kit to seal and cover each top fastener.

BATTEN Installation Guidelines

PACIFIC TILE - PANEL LAYOUT

For batten installs panels must be installed from the **ridge down** due to their unique interlocking design. PACIFIC Tile panels have a 2" (50 mm) side-lap and can be staggered by one or more concave modules across the back flange of the panel as needed. The panels are designed to be installed in a staggered pattern and they **cannot** be straight laid.

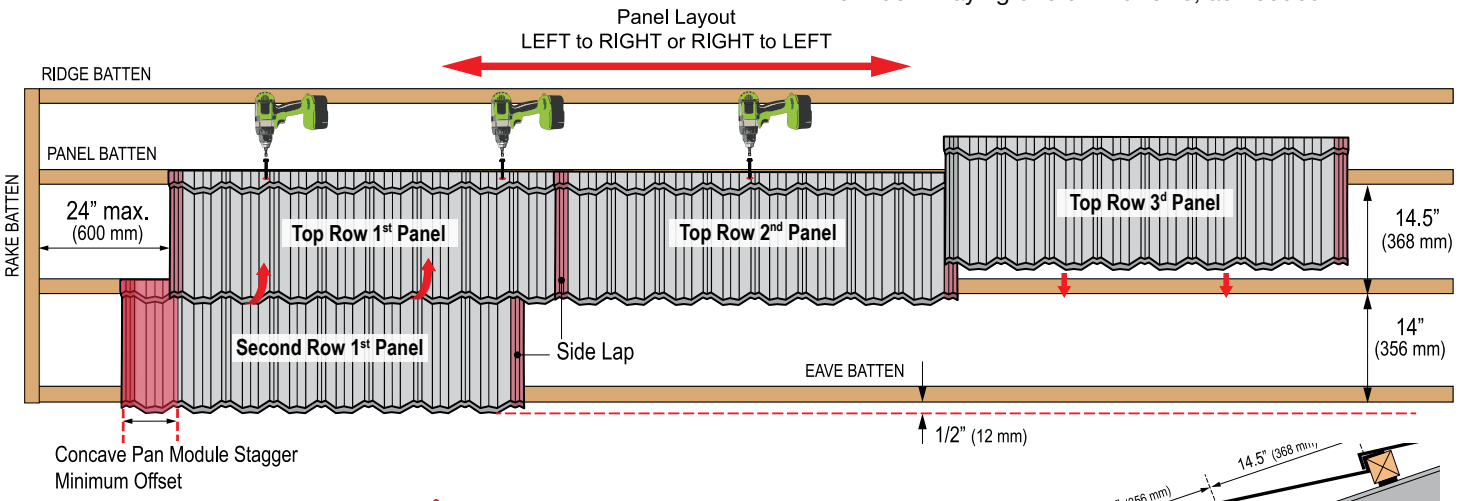


Position first full panel on the top panel batten 24" (600 mm) maximum from the rake batten, as shown.

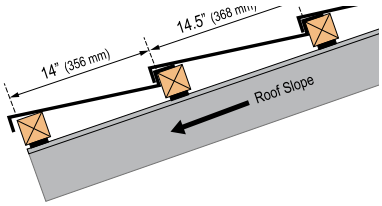
Fix top row panels in place by fastening through the back top-flange, to prevent panels from slipping down, as shown.

Do not fasten the left end of the first panel in a row, to allow rake cut sections to be installed later.

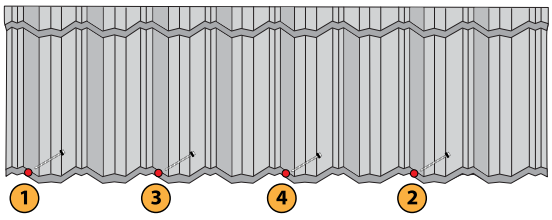
Complete full panel row across the roof section then work down laying one or two rows, as needed.



The bottom panels need to have a minimum of 1/2" (12 mm) overhang at the eave.



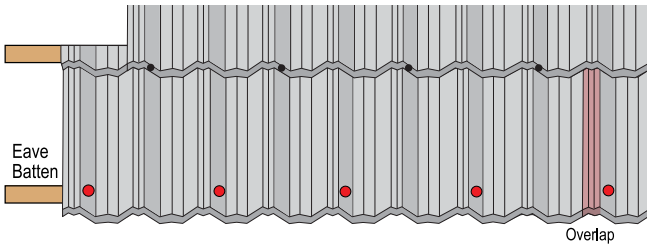
PACIFIC TILE - FASTENING SEQUENCE



4 STANDARD panels fastening pattern for a total of Four (4) across Nose Down-Turn. Fastener #1 is fastened after placing next PACIFIC Tile panel of the same course, and goes through both panels.

FASTENING SEQUENCE shown is for the LEFT to RIGHT layout direction; applicable to any location and ensures the panels stay correctly aligned.

PACIFIC TILE - BOTTOM ROW FASTENING

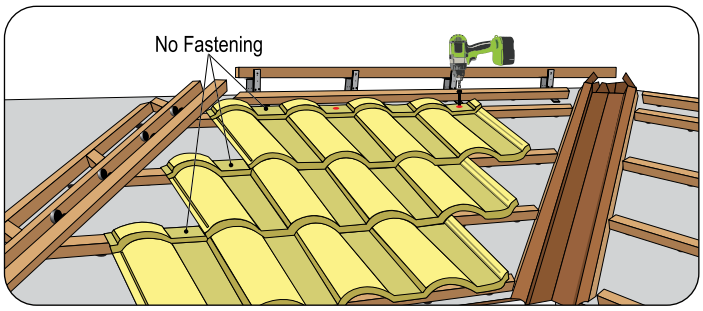


Fasten the bottom row panels through the top of the panel as shown, out of the main water channel of the panel. **NOTE:** Top panel fastening is acceptable behind Unified Steel™ EZ-Vents and chimney/ skylight details, as necessary.

Use the Touch-Up kit to seal and cover each top fastener.

BATTEN Installation Guidelines

FULL PANELS LAYOUT All 3 Profiles (BARREL-VAULT Tile shown)



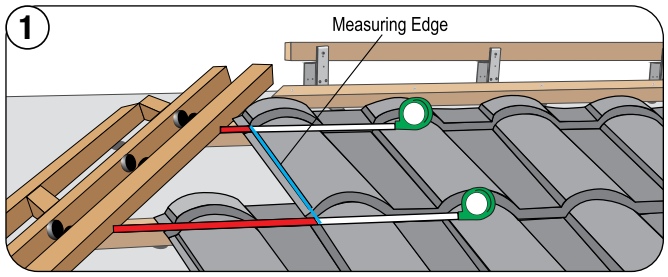
Panel layout starts at the top full course of panels in any roof section. Panels are laid from the **ridge down to the fascia.**

The top row is fastened in position by placing the fastener through the back-top-flange as shown by the red dots. This ensures the panel is positioned securely against the batten and helps align panels down the roof to fit to the batten correctly.

Once the full panels are laid on a roof section and fastened, the triangular sections for hips and valleys need to be measured, marked, cut and bent for these areas.

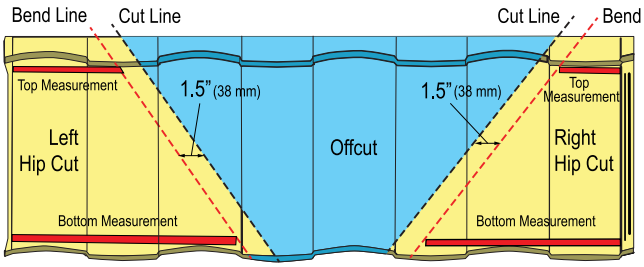
HIP PANEL CUTS DETAIL All 3 Profiles (BARREL-VAULT Tile shown)

1



Hip panel cuts are always smaller across the top than the bottom due to the pitch of the roof and angle of the hip cut. When measuring the Hip panel cut, make sure to keep the tape measure in the same “plane” as the panels and parallel to the panel nose or back up-turn.

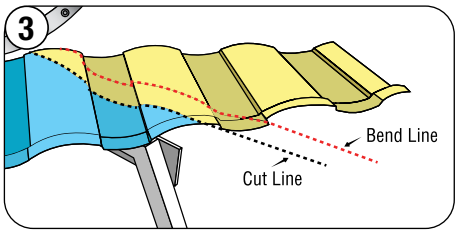
2



Measure and record the top and bottom of each hip cut (do this for the entire hip length on both the right & left side of the hip centerline). Measurement indicates the Bend Line. Add 1.5" (38 mm) or use 2x2 batten and mark the Cut Line on the other side.

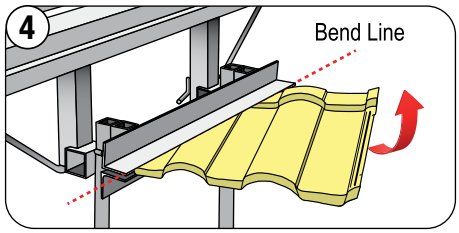
*Always **DEDUCT 1/2”** (13 mm) from actual measurements to ensure an easy fit of Hip cuts.*

3



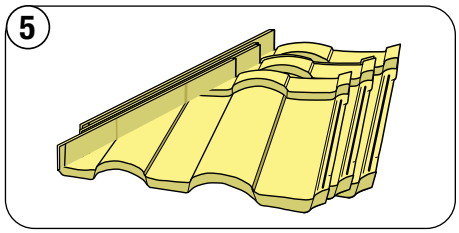
Using the Unified Steel™ Cutter, start the cut from the nose edge of the panel to the back up-turn.

4



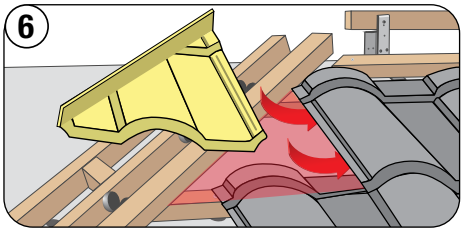
Using the Unified Steel™ Bender, insert the hip cut into the bender jaws, clamping the hip cut section and bend the hip section up to create an approximate 1.5" to 2” (38 to 50 mm) bend up on the panel section.

5



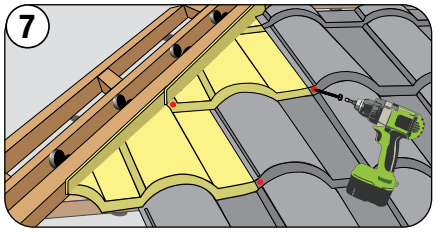
After bending the cut section, start stacking each one, as shown. Be sure to keep them in the correct order so they are easily accessible for installing in the correct spot on the roof.

6



Install hip cuts starting from the top under the full panel.

7

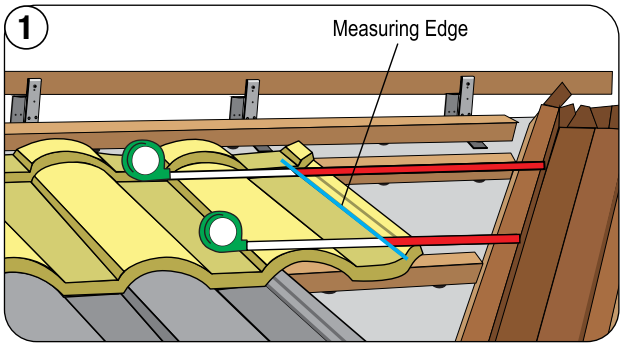


Fasten, as shown. Note, that if installing BARREL-VAULT Tile, hip cut at the eave will be installed after BirdStop.

*For **PINE-CREST Shake** and **PACIFIC Tile** the Fascia metal across the eave is already installed, so the hip cut sections can be completed from top to bottom.*

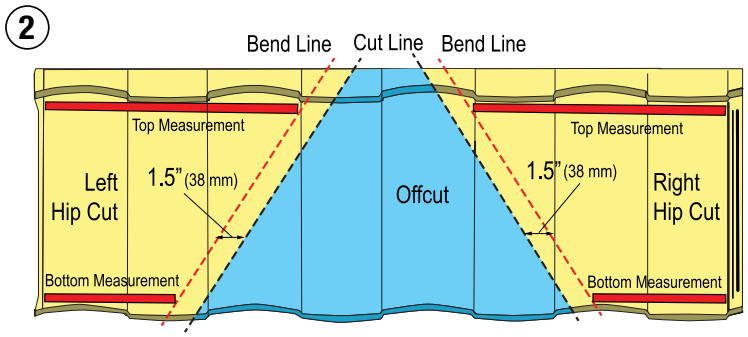
*Final **BARREL-VAULT Tile** Hip Panel Cut will be installed after BirdStop installation is complete.*

OPEN VALLEY PANEL CUTS DETAIL All 3 Profiles (BARREL-VAULT Tile shown)

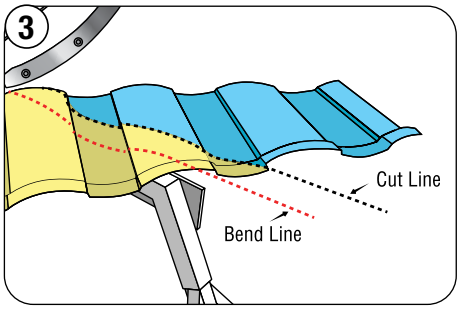


Valley panel cuts are always longer across the top than the bottom due to the pitch of the roof and angle of the valley cut.

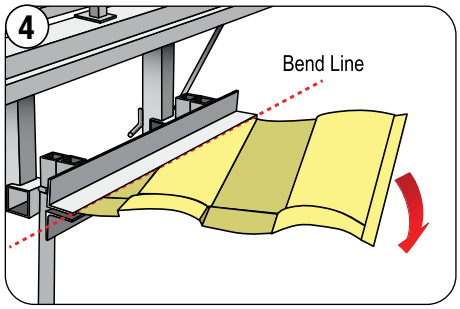
When measuring the valley cut, make sure to keep the tape measure in the same “plane” as the panels and parallel to the panel nose or back up-turn.



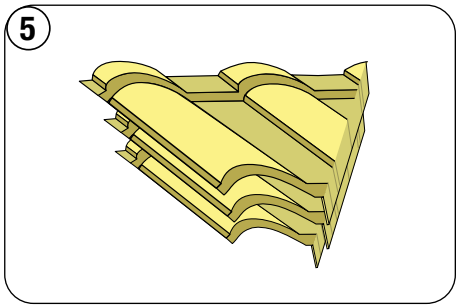
The top & bottom of each valley cut is measured and recorded (do this for the entire valley length on both the right & left side of the valley centerline). Apply the measurements to a stack of panels next to your cutter and bender tools to form the valley cut sections. The measured and marked line is the Bend Line. Add 1.5" (38 mm) or use 2x2 batten to mark the Cut Line on the other side.



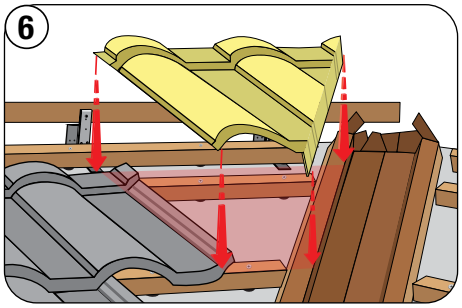
Use the Unified Steel™ Cutter, start the cut from the nose edge of the panel to the back up-turn.



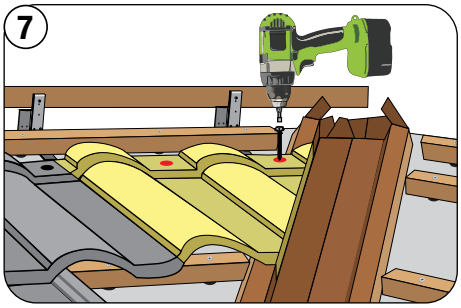
Using the Unified Steel™ Bender, insert the valley cut into the bender jaws, clamping the valley cut section and bend the valley section down.



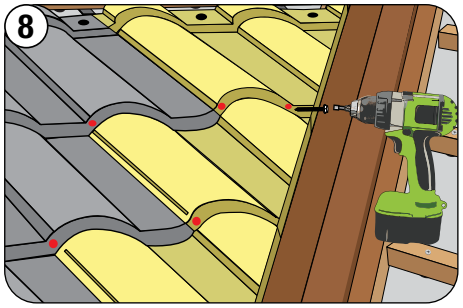
After bending the cut section, start stacking each one as shown. Be sure to keep them in the correct order so they are easily accessible for installing in the correct spot on the roof.



Install the valley cut sections in the same manner as full panels. Start at the top and work down to the fascia.



Fasten first valley cut through the back top-flange.

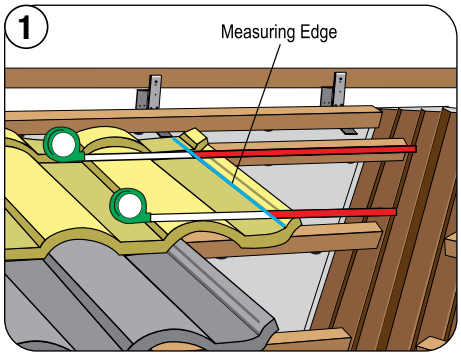


Fasten the following valley cuts in the same manner as full panels through the nose **out of the main water channel** and into the batten.

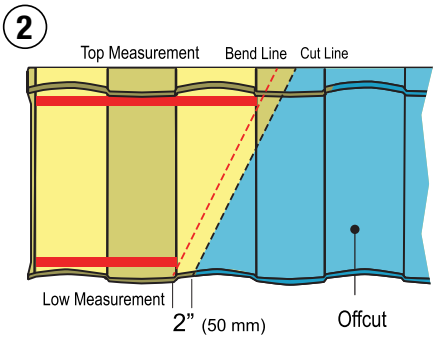
Depending on valley metal used (Valley Five ‘V’ or Valley 6” Open), Unified Steel™ panels can be installed to form either a ‘Closed’ or ‘Open’ valley.

*For **PINE-CREST Shake** and **PACIFIC Tile** the Fascia metal across the eave is already installed, so the valley panel cut sections can be completed from top to bottom.*

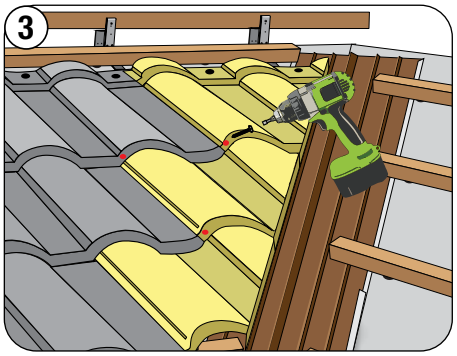
VALLEY FIVE 'V' PANEL CUTS All 3 Profiles (BARREL-VAULT Tile shown) OPTIONAL



Measure each panel row across the top and bottom of the valley cut to the second rib of the Valley Five 'V' to ensure the angle is correct and straight.



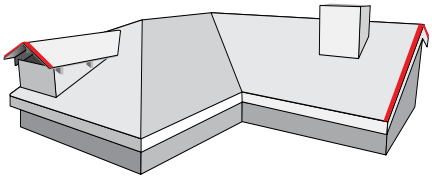
Apply measurements to the panel and mark as Bend Line. Add 2" (50 mm) and mark as Cut Line. Cut and bend panels down, as shown on **Page 19, Step 3-5.**

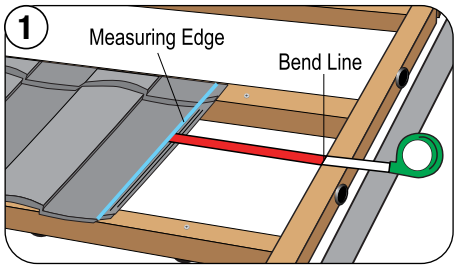


Install valley cuts from the ridge to fascia. If installing BARREL-VAULT Tile, bottom valley cut will be fastened after BirdStop installation.

Do not penetrate Valley metal with fasteners.

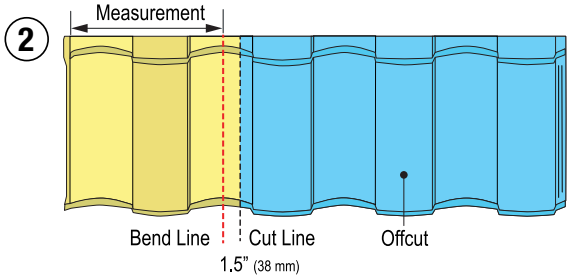
RAKE PANEL CUTS DETAIL All 3 Profiles (BARREL-VAULT Tile shown)



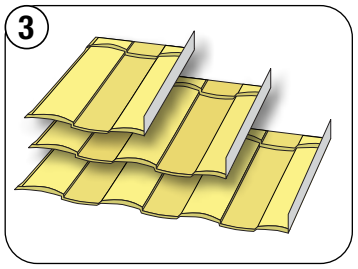


Measure from the full panel across to the rake edge on each course down the rake edge.

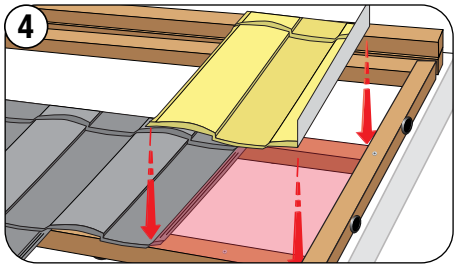
*Always **DEDUCT 1/2"** (13 mm) from actual measurements to ensure an easy fit of Rake cuts.*



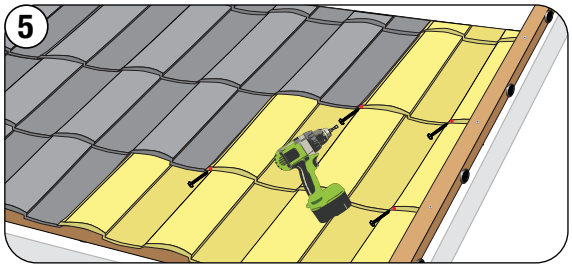
Apply measurements to the full panel and mark the Bend Line. Add 1.5" (38 mm) and mark the Cut line.



After bending, stack each piece in the correct order so they are easily accessible for easy installation on the roof.



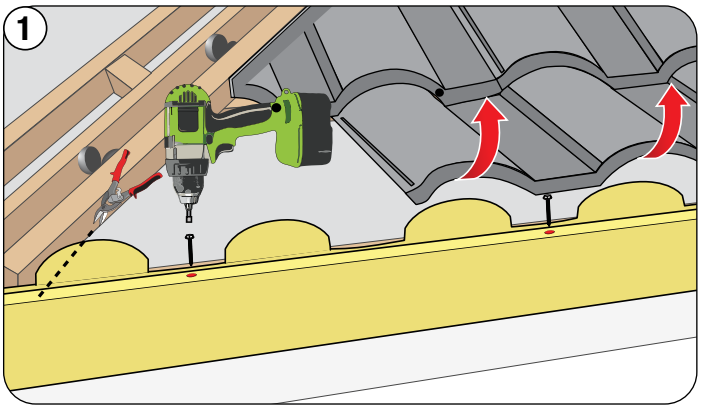
Install rake cut panels from the ridge down to the fascia.



Fasten as a regular field panel.

If using BARREL-VAULT Tile, install BirdStop before fastening bottom row.

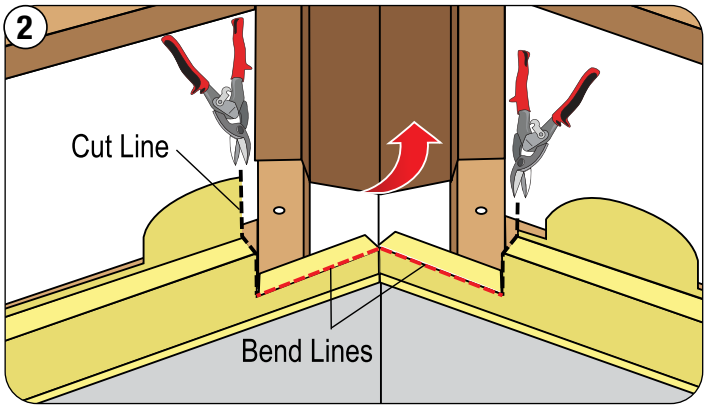
BIRDSTOP INSTALL For BARREL-VAULT Tile Only



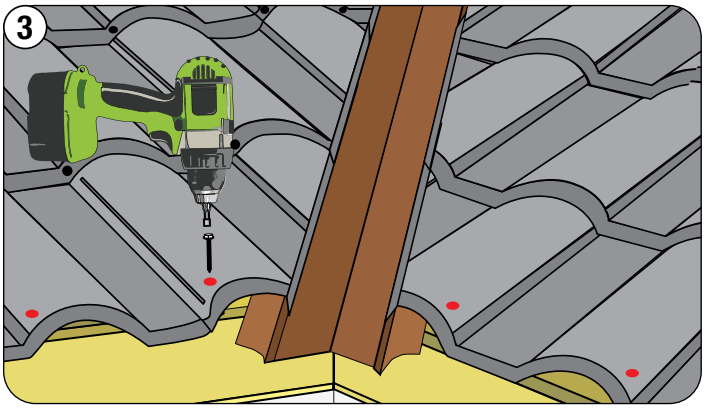
Install the BirdStop across the fascia aligned with the profile of the BARREL-VAULT Tile panel. Fasten through the top flange, as shown.

*BirdStop fastener locations shall be evenly spaced across the BirdStop at **each or every second, low-scalloped section** so the panel overhangs and hides the fastener.*

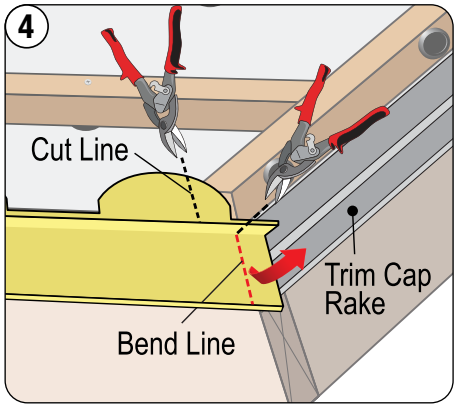
NOTE: For PINE-CREST Shake and PACIFIC Tile the Fascia metal is installed before laying panels.



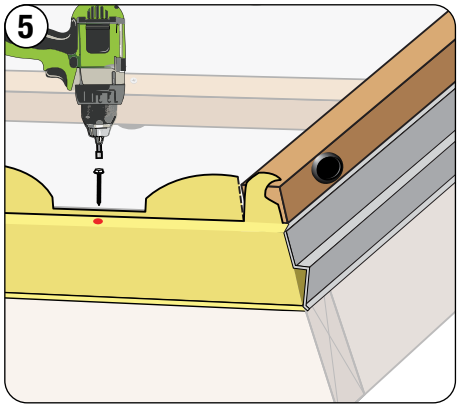
Notch the BirdStop, as shown, to allow the valley pan to exit. Extend Valley metal with a minimum 1" (25 mm) past fascia.



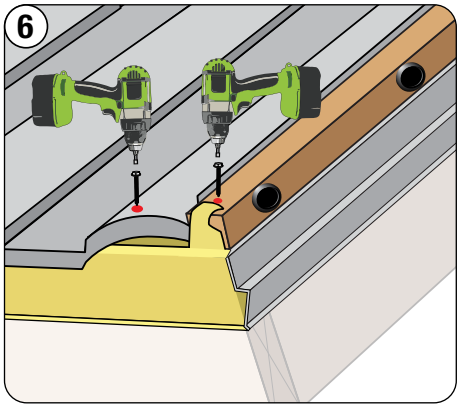
After installing the BirdStop, the last course across the fascia is fastened through the top of the panel out of the main water channel, behind the BirdStop upturn. **Refer to Page 12 for Valley Exit details.**



At the fascia and rake intersection, the BirdStop is cut & folded **under** the Trim Cap Rake metal.



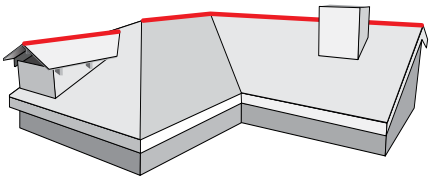
Align the BirdStop with the Trim Cap Rake metal, as shown above and fasten, as shown.



Place panel on top of the BirdStop and fasten.

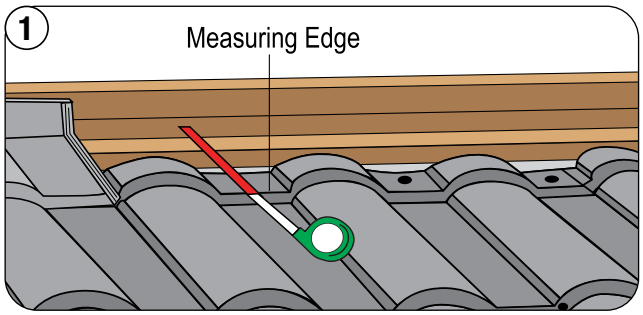
Fasten Trim Cap Rake metal and rake batten at the fascia/rake corner AFTER you have aligned the Birdstop flashing with the panel profile.

RIDGE PANELS - BENT UP METHOD All 3 Profiles (BARREL-VAULT Tile shown)



The top course of panels requires a cut and bent panel to complete the ridge line. The following steps should be followed to ensure a weather tight installation along the ridge.

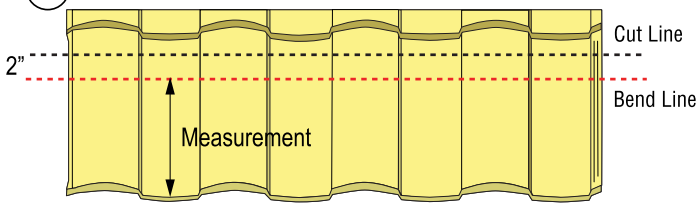
1



Measure the top row from the back-flange upstand to the ridge batten.

DEDUCT 1/2" *(13 mm) from actual measurements to ensure an easy fit of Ridge cuts.*

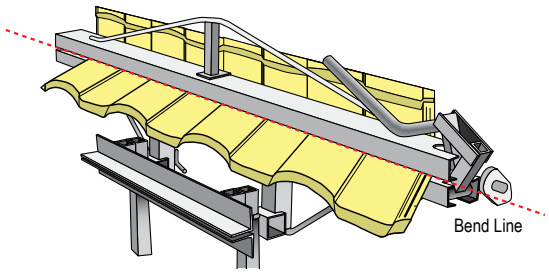
2



Apply measurements to each full panel and mark the Bend Line and Cut Line. Cut Line is 2" (50 mm) above and parallel to Bend Line.

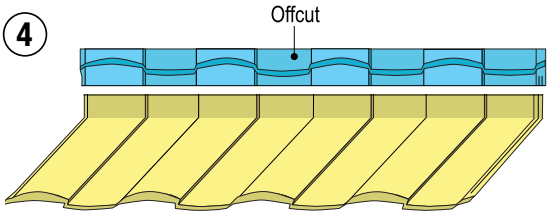
Always bend the ridge panels before cutting, as they deform slightly in the bender.

3



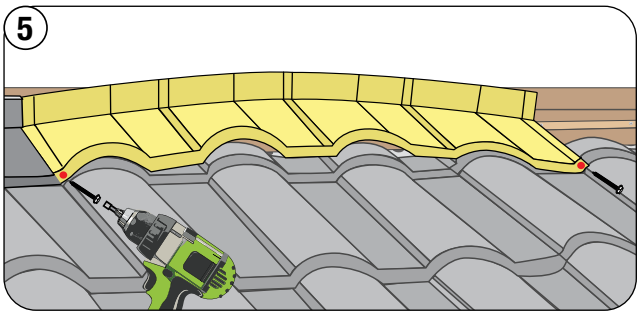
Bend all ridge panels using Unified Steel™ Top Bender. Indentations created through ridge panel bending process should be 'popped out' by using a rubber mallet on the under side of the panel.

4



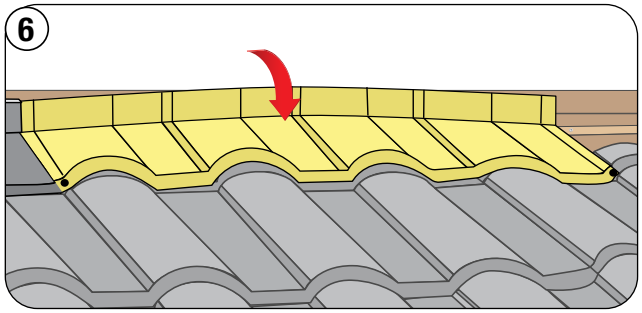
Cut ridge panels at pre-drawn Cut Line.

5



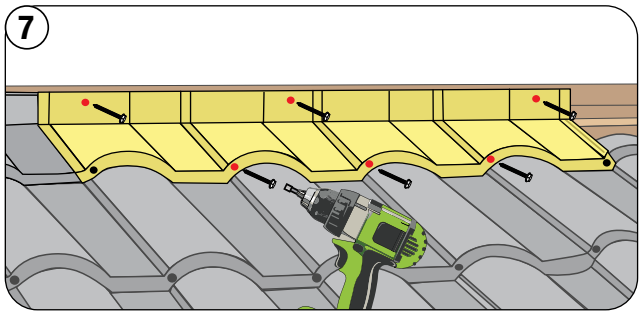
Fasten left end of the panel first, then right end.

6



Push panel down to fit coursing properly. Force back of panel into position against ridge batten.

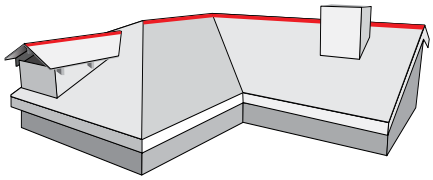
7



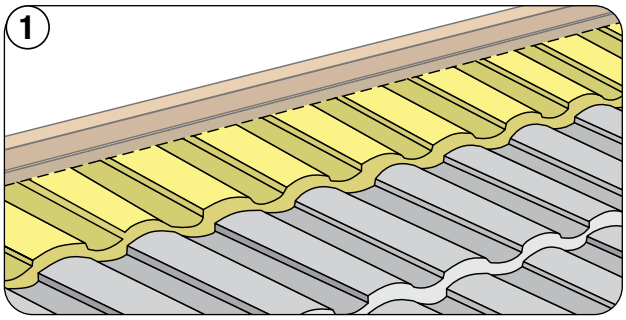
Continue fastening ridge panel across the nose. **Refer to Fastening Sequence on the Panel Layout pages.**

Next, fasten panel through bend-up into ridge batten.

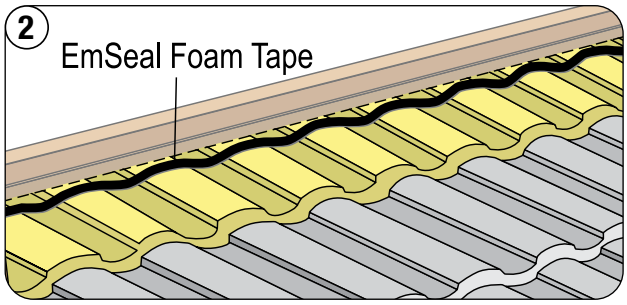
RIDGE PANELS - TOP ROW METAL METHOD - For BARREL-VAULT Tile Only — OPTIONAL



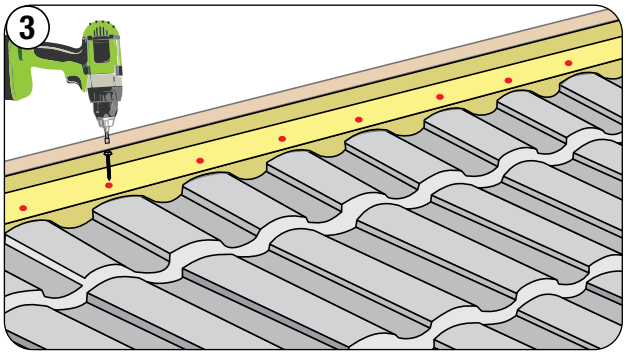
This detail can be used for head-wall flashing at chimney and skylight areas.



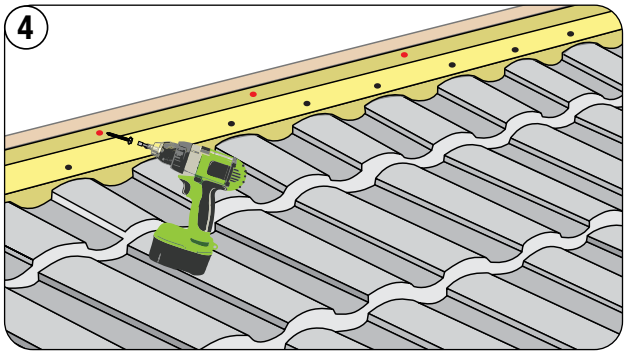
Top Row metal may be used to avoid bending of the full BARREL-VAULT Tile panels at the ridge.



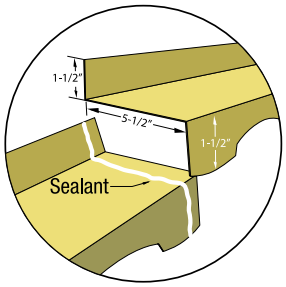
Apply Foam Closure Strip, EmSeal Foam Tape (shown) or Barrier Foam in a bead of sealant on top of the ridge cut panel under the Top Row metal for wind driven rain protection.



Install Top Row metal and fasten trough the top flange.



Fasten Top Row to the ridge batten every 16 - 24” (406 - 610 mm).

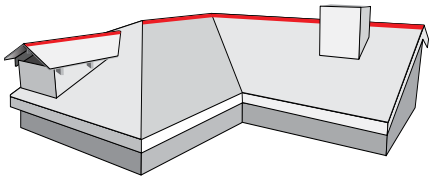


Apply a bead of Sealant between two overlapping Top Row pieces.

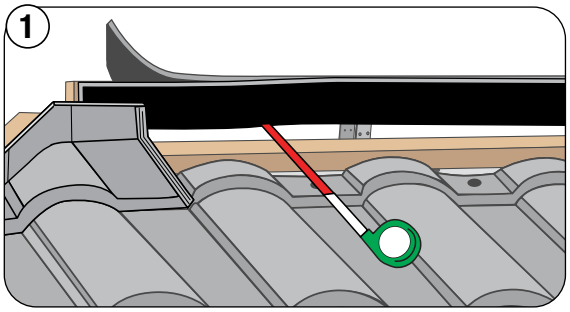
Fasten the Top Row metal in the same pattern as the full panels. Fastening through the top is acceptable but will require sealing and chip of each fastener.

BATTEN Installation Guidelines

CONTINUOUS RIDGE VENT INSTALLATION All 3 Profiles

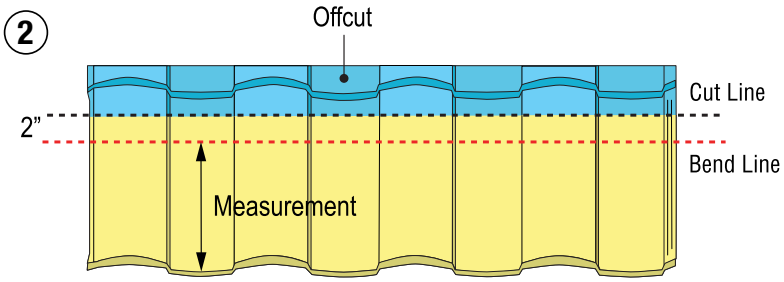


Continuous *Unified Steel™ Ridge Vent* is installed on the both sides of the ridge batten.



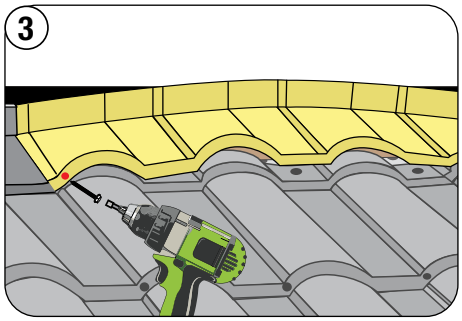
Measure the top row from the back-flange upstand to the Ridge Vent material.

DEDUCT 1/2" *(13 mm) from actual measurements to ensure an easy fit of Ridge cuts.*

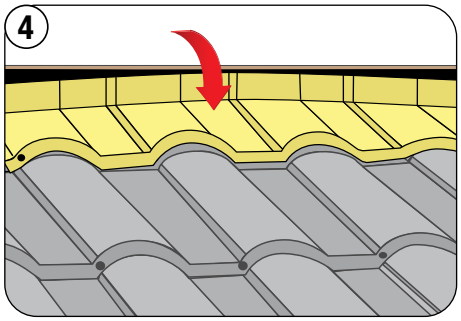


Apply measurements to each full panel. Ridge Cut Line is 2" (50 mm) above and parallel to Bend Line to allow for bend-up on ridge battens. **Refer to page 26 for bending and cutting details.**

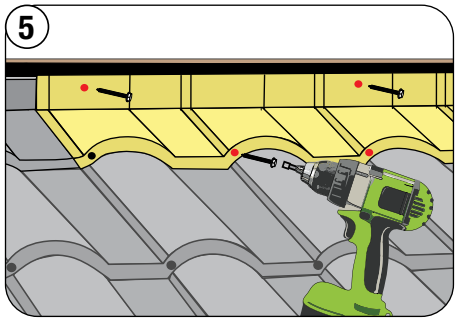
Always bend the ridge panels before cutting, as they deform slightly in the bender.



Fasten left end of the panel first, then right end. **Refer to page 26, detail 5.**

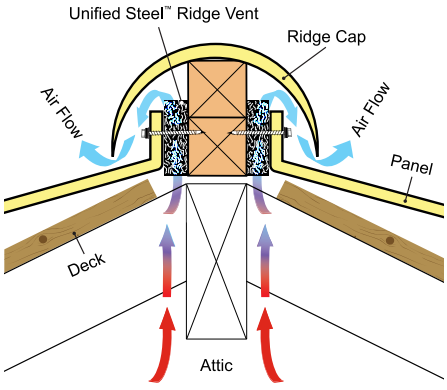


Push panel down to fit coursing properly.



Continue fastening ridge panel across the nose. **Refer to Fastening Sequence on the Panel Layout pages.**

Next, fasten panel through bend-up into continuous Ridge Vent and ridge batten.



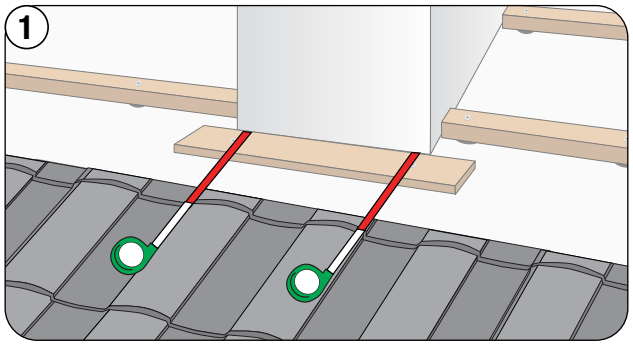
DO NOT *compress the Ridge Vent when fastening panels into the ridge batten. Make sure the air-flow path from the attic space is not restricted.*

Refer to vent manufacturer's specifications for the correct slot-width to be cut on either side of the ridge.

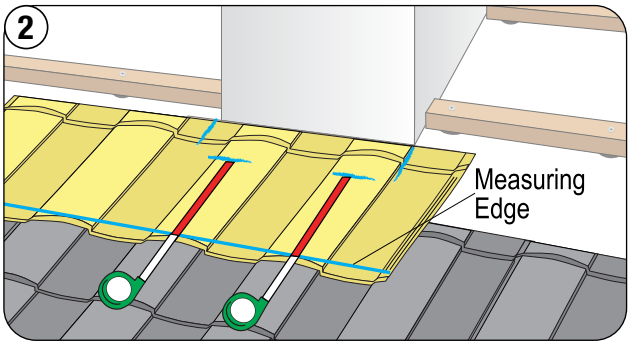
NOTE: Third batten may be need, depending upon roof pitch and panel layout.

CHIMNEY / SKYLIGHT DETAIL All 3 Profiles (BARREL-VAULT Tile shown) **OPTIONAL**

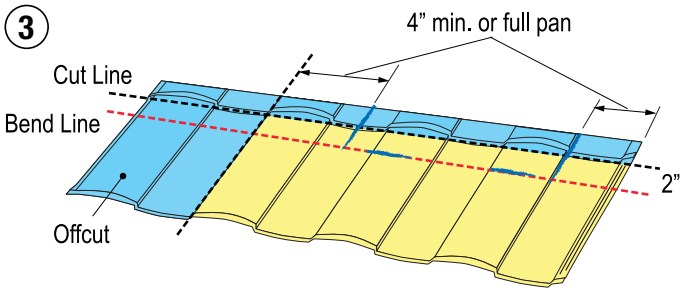
The following details apply to any square cornered protrusion through a roof.



Install a support batten across the front and back of the Chimney/Skylight. Measure the front panel section as if it was a ridge cut panel. Deduct 1/2” (13 mm) from actual measurement to ensure an easy fit.

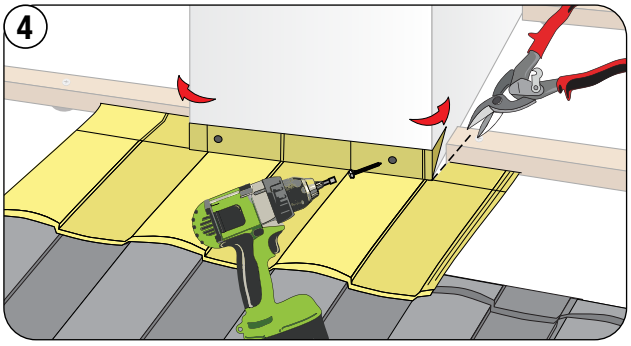


Align the front panel with the course below and the correct layout pattern for the profile, mark the sides of the chimney and mark the measurements from step 1.

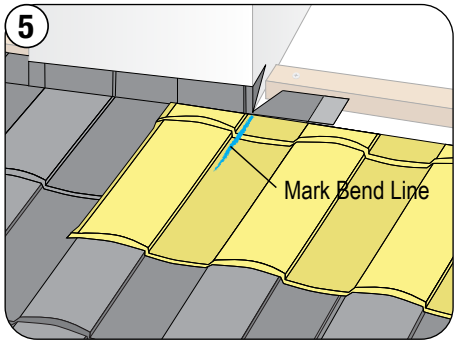


Apply the measurements to a full panel and bend the entire length then cut off the excess.

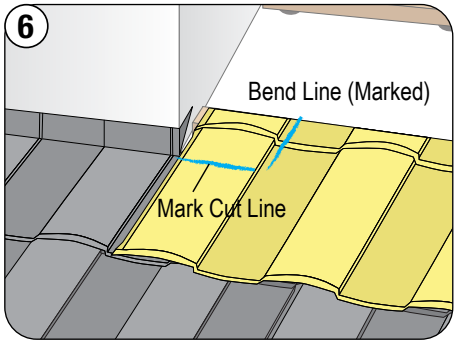
Make sure panel is cut a minimum of 4" (100 mm) past the width of the Chimney/Skylight, or past the pan on BARREL-VAULT Tile.



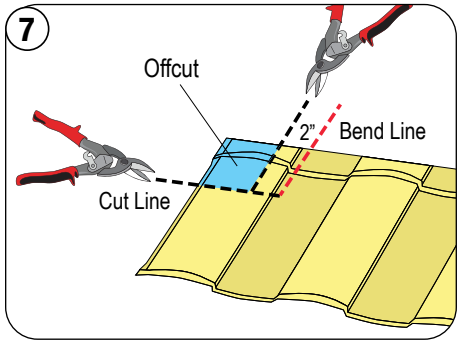
Fit the front bottom flashing section as shown and cut at a 45 degree angle from each side, bend the corners around the Chimney/Skylight.



Align side panel with the course below and the correct layout pattern for the profile and mark the Bend line aligned with the Chimney/Skylight side edge.

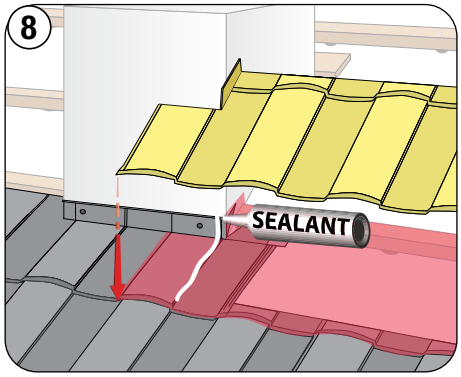


Place marked panel to the side of the chimney, align with the front panel and mark Cut line, aligned with the chimney front edge.

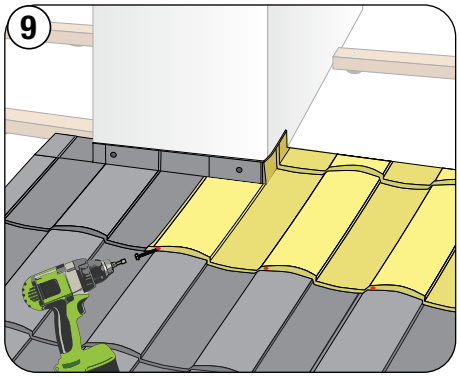


Add 2" to the left of Bend line and mark as Cut line. Cut and bend panel according to marked lines.

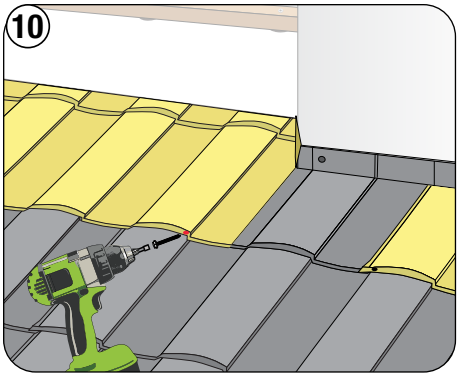
CHIMNEY / SKYLIGHT DETAIL (cont.)



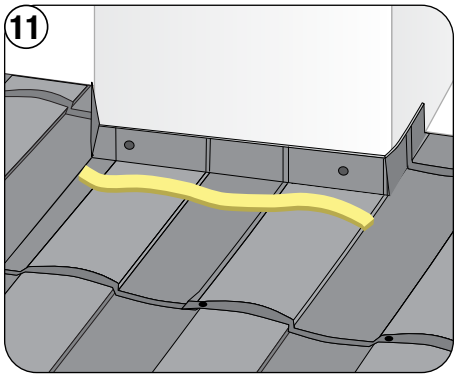
Apply sealant and fit the side panel aligning it with the field panels already installed.



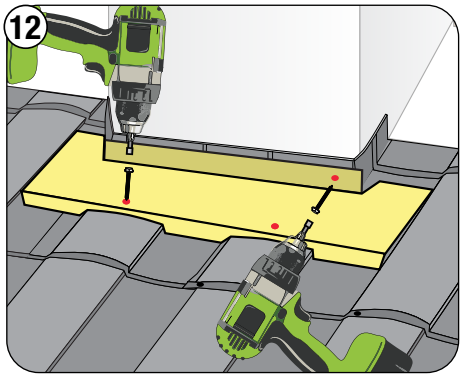
Fasten panels the same way as field panels.



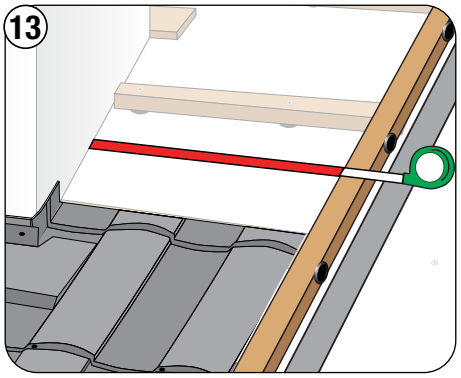
Repeat the procedure on the left side of the Chimney/Skylight.



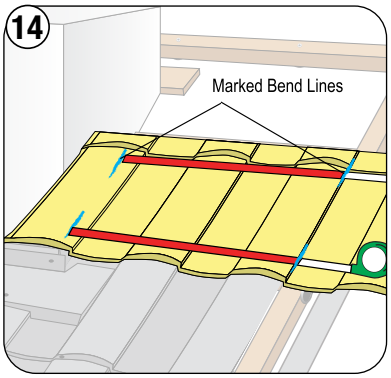
Place EmSeal Foam, Barrier Foam or Foam Closure Strip (for BARREL-VAULT Tile Only) across top of front panel section as a weather block.



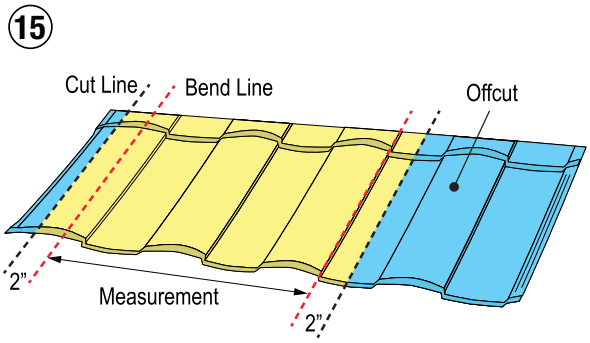
Install Top Row metal with BARREL-VAULT Tile ONLY. All other profiles use Z-Bar or Fascia to act as a counter-flashing over the bent-up panel sections.



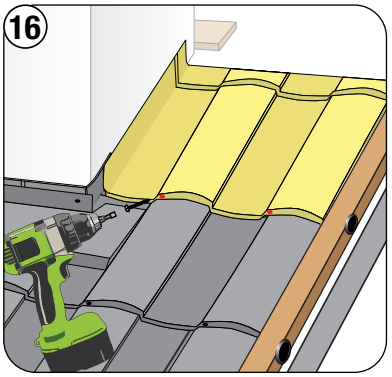
Measure the distance from the side of the Chimney to the rake batten.



Align a full panel or panel section to the panel profile and mark the measurements.



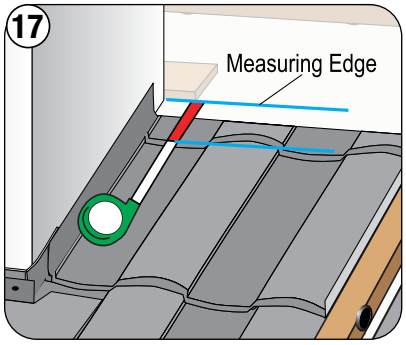
Apply Bend Line measurements to the panel. Add 2" to mark Cut Line.



Install the side sections on both sides of the chimney and fasten as regular panels.

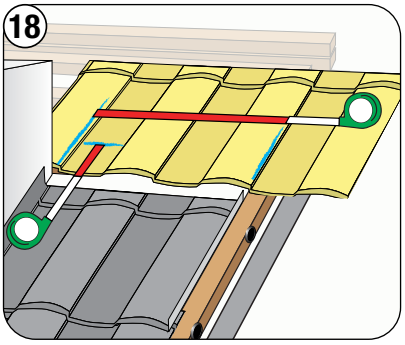
CHIMNEY / SKYLIGHT DETAIL (cont.)

17



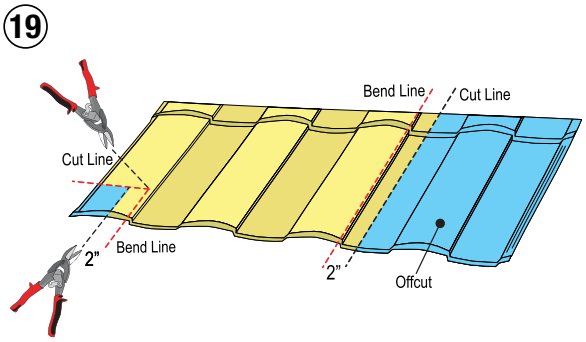
Measure from the Back-up Turn to the back of the chimney.

18



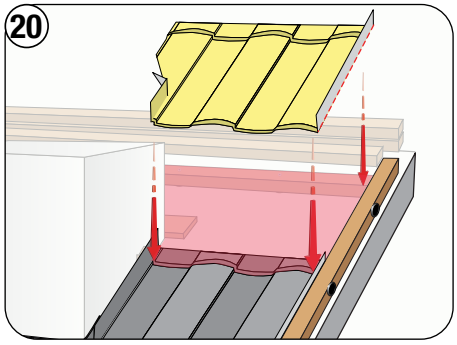
Align a full panel or panel section to the panel profile and mark the measurements.

19



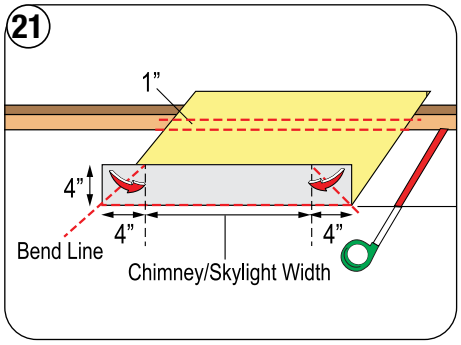
Cut and bend the panel.

20



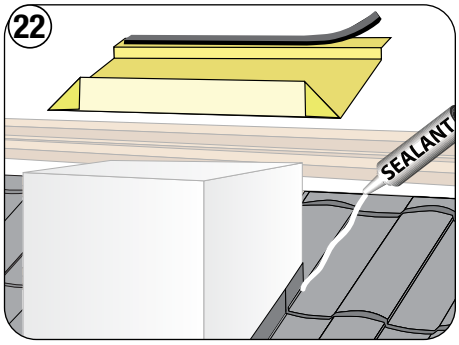
Install side panels on both sides, insuring they are sitting firmly on the back support batten.

21



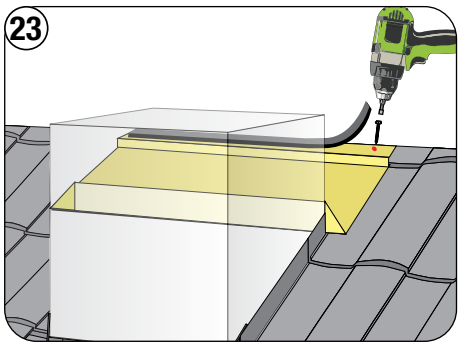
Using a section of Flat Sheet, mark and bend it up 4" (100 mm) minimum, forming a saddle flashing for the back of the item being flashed. Make sure it is 4" (100 mm) wider on each side of Chimney/Skylight.

22



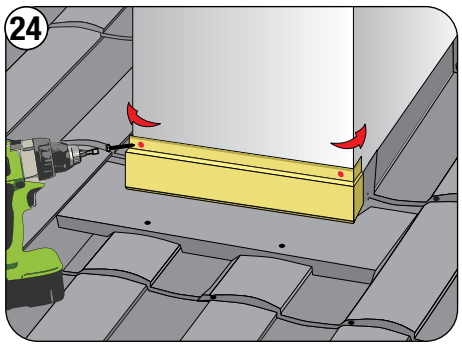
Apply sealant down both sides of the panel in line with the chimney width. Apply an EmSeal tape to the back-flange of the Saddle.

23



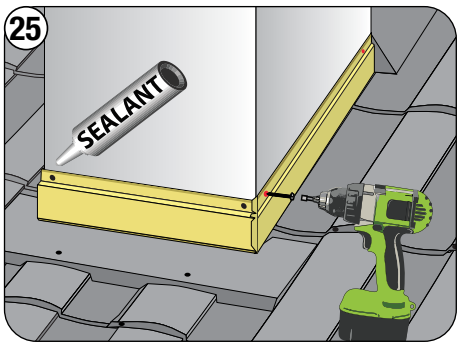
Fasten each end of the Saddle through the back-flange under EmSeal tape.

24



Measure, cut and bend Z-Bar metal, starting across the front.

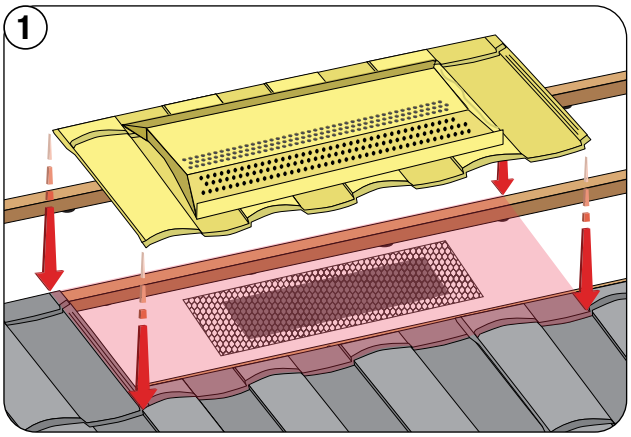
25



Complete Z-Bar installation up both sides, scribed to the Chimney saddle. Apply sealant along the top edge of the Z-Bar.

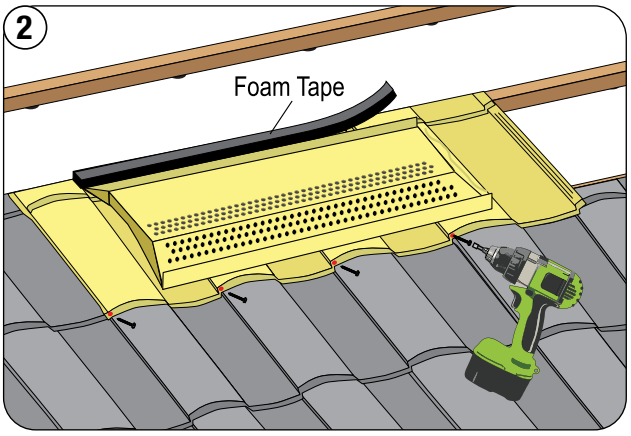
EZ-VENT All 3 Profiles (BARREL-VAULT Tile shown)

Unified Steel™ EZ-Vents are used in place of regular panels on the first full course down from the ridge where exhaust ventilation is required. Care should be taken to adequately ventilate the building. Check with the local codes for correct Net Free Vent Area required for attic ventilation.

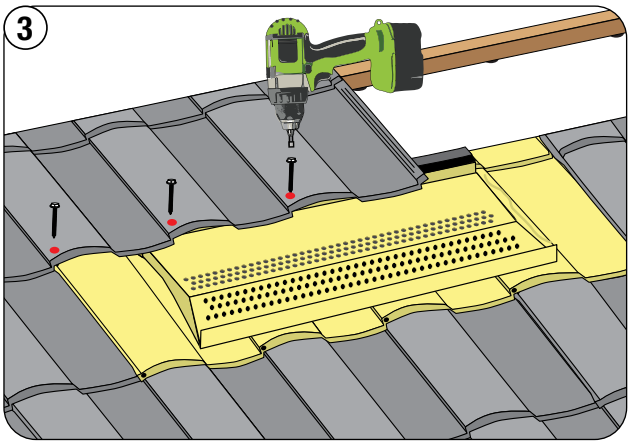


Cut a hole in the decking, approximately 5" x 30" (127 x 762 mm). Cover the hole with metal mesh (0.25" (6.5 mm) square) to prevent rodents from entering the attic.

Install the EZ-Vent unit interlocking and overlapping as field panels.



Install a section of EmSeal tape or Barrier Foam across the back edge where the ridge panel will overlap across the EZ-Vent. This provides additional weather protection across the back of the EZ-Vent. Fasten, as field panels.

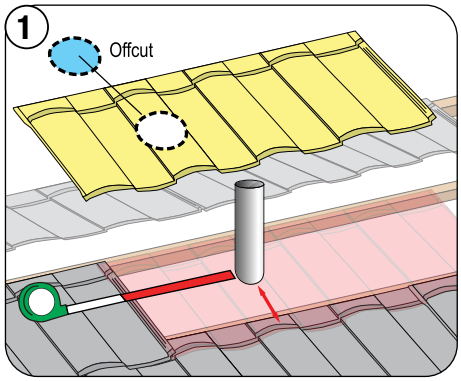


Make sure the back-fastening flange is in the correct alignment to allow the top course to be installed across the ridge.

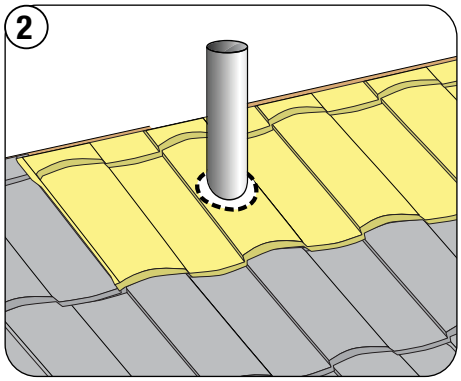
The top course above the EZ-Vent can be fastened like the bottom row (through the top of the panel). Make sure to locate these fasteners out of the main panel water channel and use the Touch-Up kit to seal each top row fastener.

PIPE FLASHING - SANDWICH METHOD All 3 Profiles (BARREL-VAULT Tile shown)

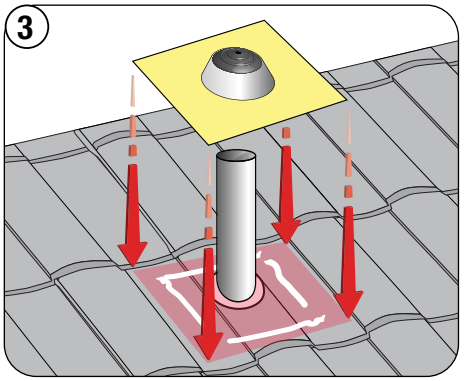
New Unified Steel™ 4-N-1 Pipe-Jacks designed to fit pipes from 1.25" to 4" (32-100 mm) in diameter are installed at roof penetrations. Panels are neatly cut around protrusions as required and installed over vent flashings.



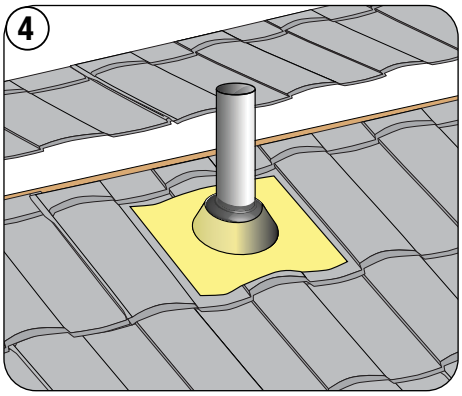
Measure, mark and cut the lower panel to fit around the vent pipe.



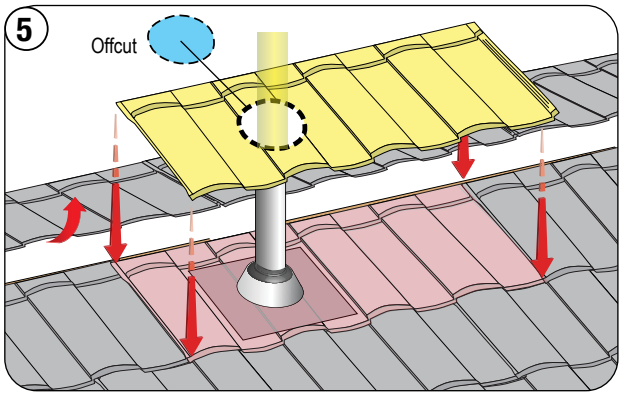
Install lower panel to fit around the vent pipe.



Apply bead of sealant to the panel. Position Pipe-Jack flashing over the pipe.

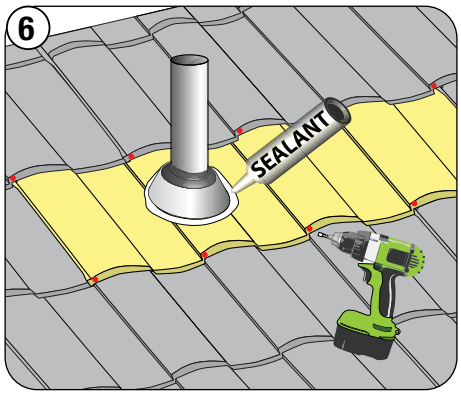


Press the Pipe-Jack flashing firmly over the contours of the panel.

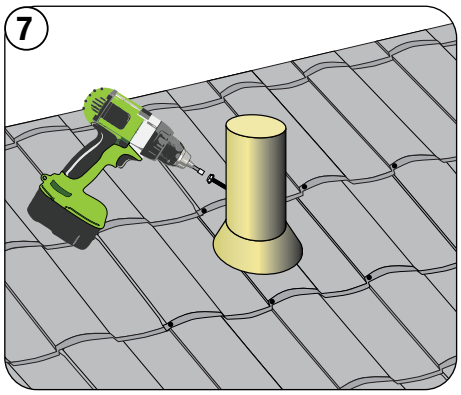


Measure, mark and cut the top cover panel around the cone base to fit around the flashing cone.

Trim Pipe Jack base, as needed, to fit panel course.



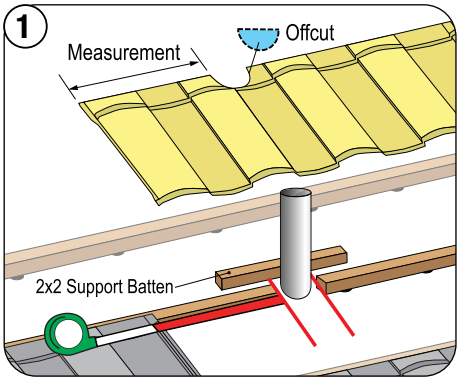
Install top panel and fasten as field panel. Apply sealant around the Pipe-Jack.



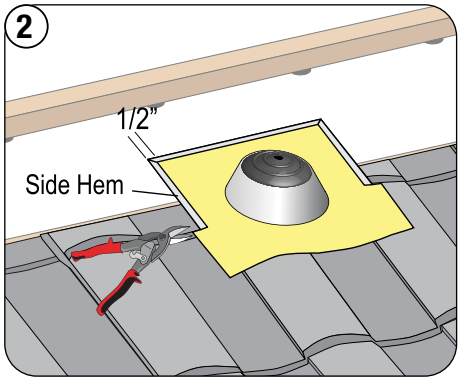
Install and fasten Pipe Sleeve from the back into the PVC pipe to finish the detail.

Dissimilar Metals:
To avoid adverse corrosion effects caused by dissimilar metals, ***COPPER and LEAD flashings should not be used*** *with Unified Steel™ panels and accessories.*

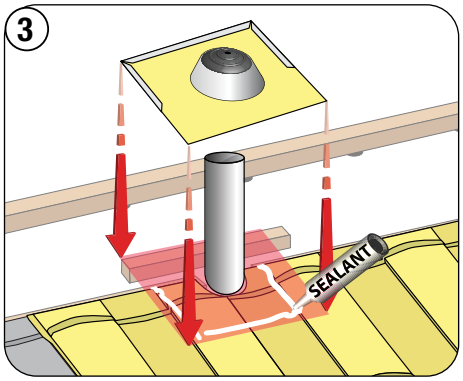
PIPE FLASHING - STANDARD METHOD All 3 Profiles (BARREL-VAULT Tile shown)



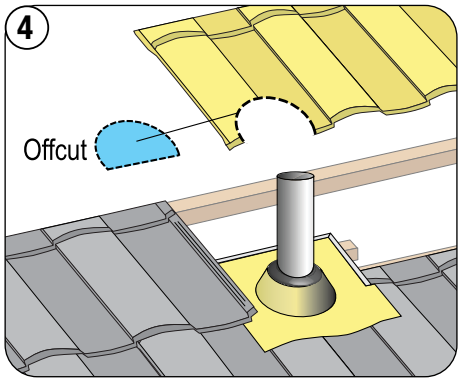
Install 2x2 support batten at the back of the pipe, minimum 12" (300 mm) long. Measure and cut lower panel to fit around the vent pipe. Install panel.



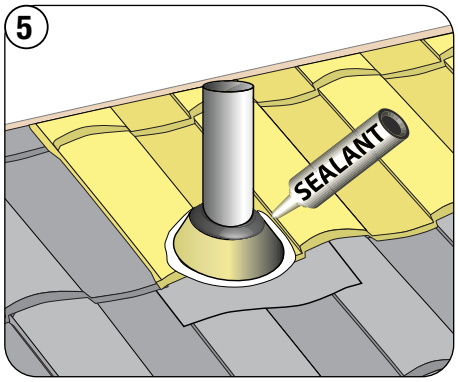
Place Pipe Jack on the panel to the side of the pipe and make 0.5" (13 mm) cuts in line with the back up-turn of the panel. Hem the edges, as shown.



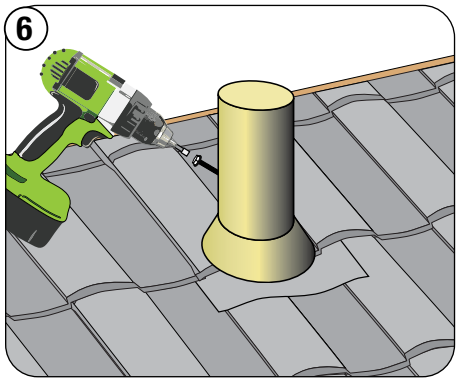
Apply sealant to the area where the Pipe-Jack will be installed.



Install full panel to the side of the pipe. Mark the top panel to where the flashing cone base will align, cut out this piece to allow the panel to fit around the flashing cone.



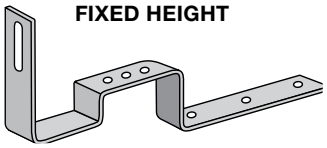
Apply sealant around the cone.



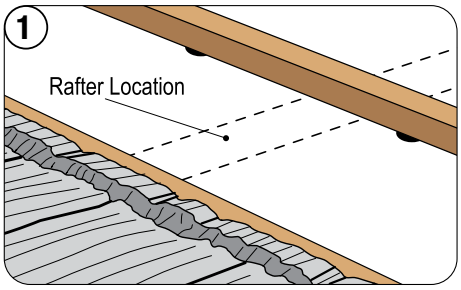
Install and fasten Pipe Sleeve from the back into the PVC pipe to finish the detail.

Dissimilar Metals:
To avoid adverse corrosion effects caused by dissimilar metals, ***COPPER and LEAD flashings should not be used*** *with Unified Steel™ panels and accessories.*

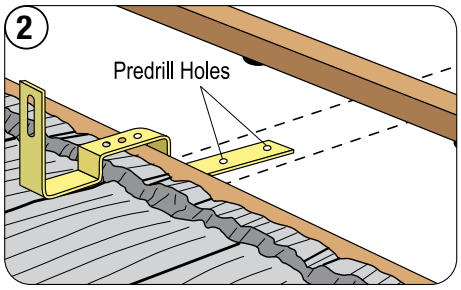
SOLAR ROOF MOUNT (BATTEN) INSTALL For PINE-CREST Shake & PACIFIC Tile



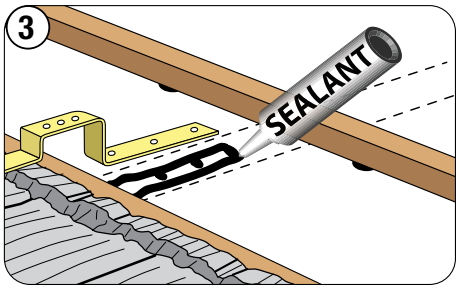
Solar Roof Mounts with fixed height for Batten installation are designed to be used with the following two profiles: PINE-CREST Shake, PACIFIC Tile. Solar Roof Mounts are installed without making any penetration through the Unified Steel™ panels. This is achieved by bending the nose of the upper cover panel directly above the Solar Roof Mounts so the bracket easily exits between the panel courses and when the cover panel is fastened the system does not require any flashing to provide a weather seal around the bracket.



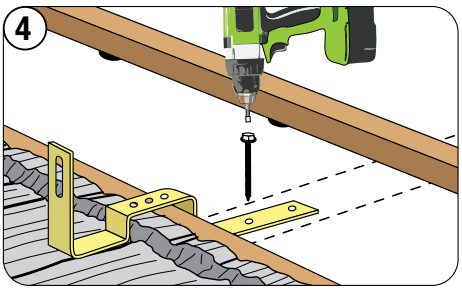
Find and mark the location of the rafter beneath the roof deck.



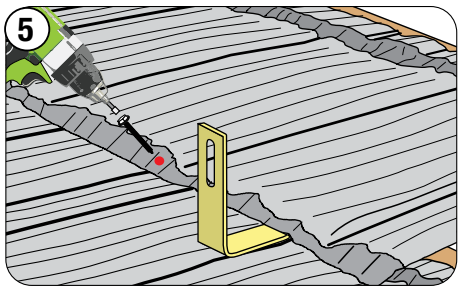
Place the Solar Roof Mount and predrill holes using 3/16" Drill Bit.



Apply a bead of sealant beneath Solar Roof Mount mounting foot and in each hole.



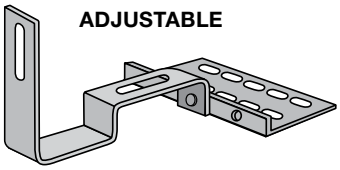
Install Solar Roof Mount with mounting foot embedded in sealant and fasten with lag bolt screws, per local code.



Install the panel above the Solar Roof Mount. Bend the panel nose where it intersects with the Solar Roof Mount to ensure a tight fit. Fasten the panel through the nose, as regular field panels.

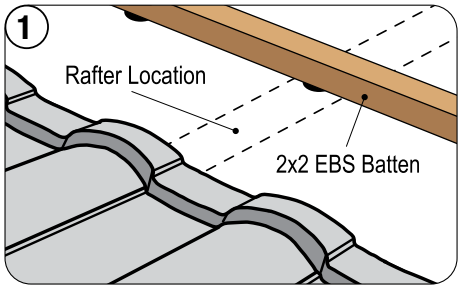
Depending on rafter location it may necessary to place a pad of peel-n-stick material or Wakaflex® strip beneath each Solar Roof Mount where it canter levers out onto the panel beneath to prevent abrasion.

ADJUSTABLE SOLAR ROOF MOUNT INSTALL All 3 Profiles (BARREL-VAULT Tile Shown)

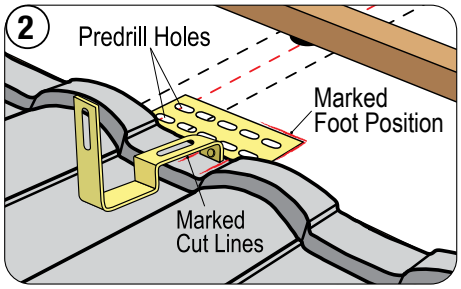


Adjustable Solar Roof Mount used for 2x2 EBS Batten Install (BARREL-VAULT Tile, PACIFIC Tile, PINE-CREST Shake) or 2x2 Batten Install (BARREL-VAULT Tile Only). It has 3 leverage points of adjustment of the wide base for fastening to the rafter.

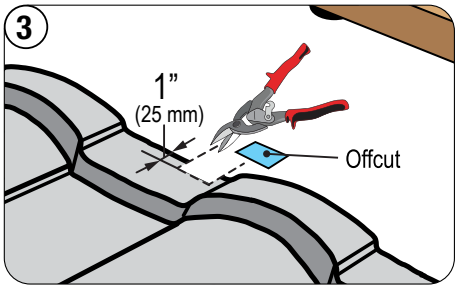
For BARREL-VAULT Tile Adjustable Solar Roof Mount is placed only over the pan (lower) section of the panel.



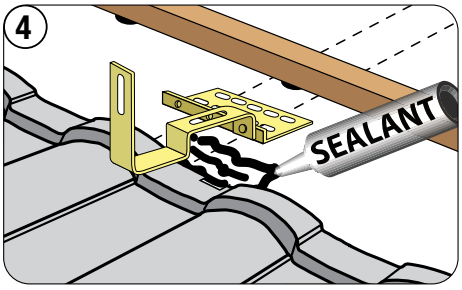
Lift up upper Unified Steel roof panel. Find and mark the location of the rafter beneath the roof deck.



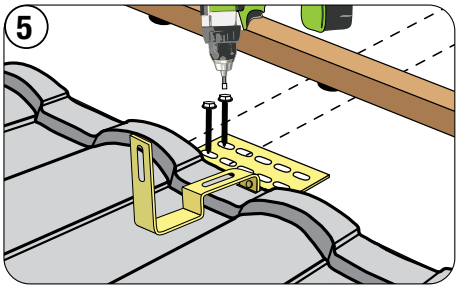
Place the mount over the pan section of the back top-flange. Adjust the foot of the mount so the holes of the foot are aligned with the center of the rafter. Predrill the holes and mark the width of the bridge touching the panel and projected foot location.



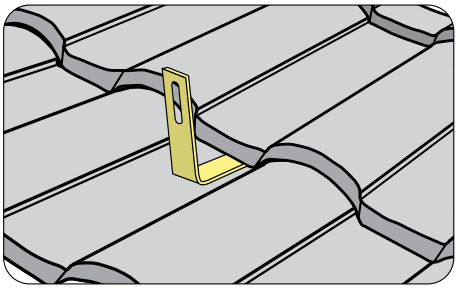
Notch the back top-flange of the panel 1" (25 mm) deep following the marked cut lines for the mount to fit over the panel.



Apply a bead of sealant beneath Solar Roof Mount foot and in each predrilled hole before placing it into position.



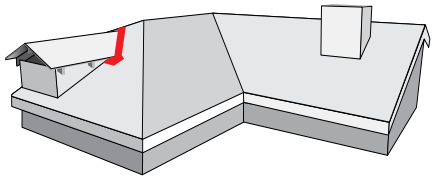
Install Solar Roof Mount with foot embedded in sealant and fasten with lag bolt screws, per local code.



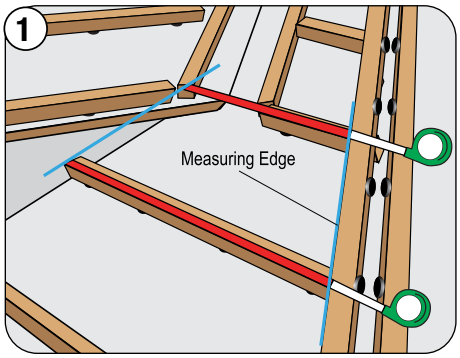
Install the panel above the Solar Roof Mount. Bend the panel nose where it intersects with the Solar Roof Mount to ensure a tight fit. Fasten the panel through the nose, as regular field panels.

Depending on rafter location it may necessary to place a pad of peel-n-stick material or Wakaflex® strip beneath each Solar Roof Mount where it canter levers out onto the panel beneath to prevent abrasion.

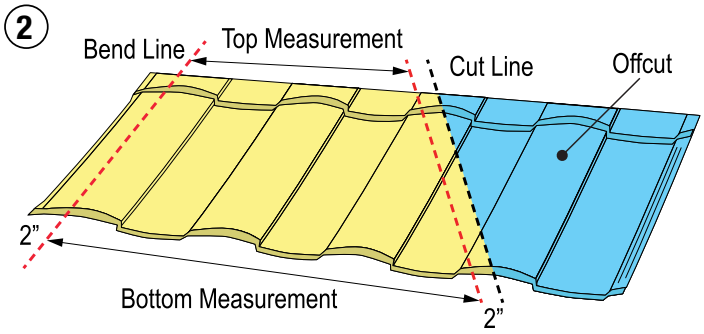
DORMER VALLEY EXIT All 3 Profiles (BARREL-VAULT Tile shown)



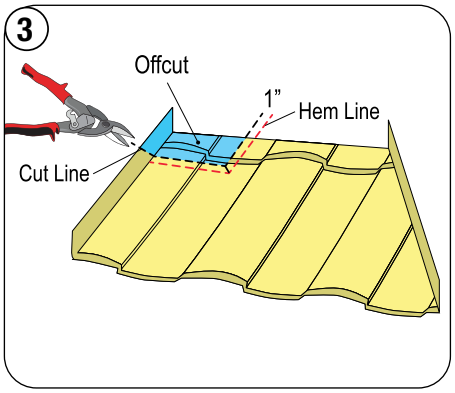
Valley exit onto a roof section is a critical roof area and requires special attention to ensure good weather protection.



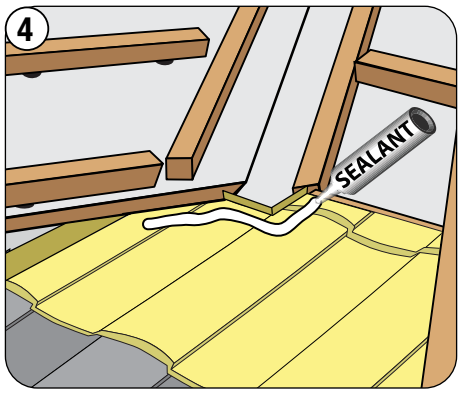
Measure the top and bottom of the panel section from the side wall to the hip batten.



Apply top and bottom measurement to a full panel. Add 2" (38 mm) to allow bend-up.

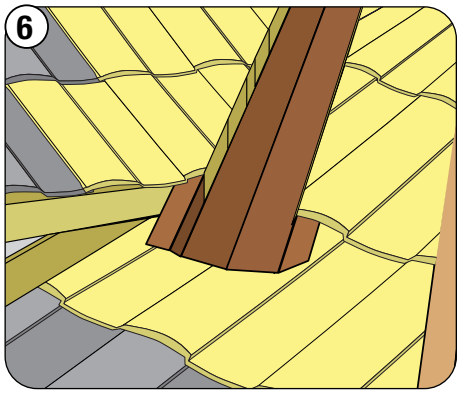


The top left corner needs to be cut out, hemmed to fit under the valley exit area.



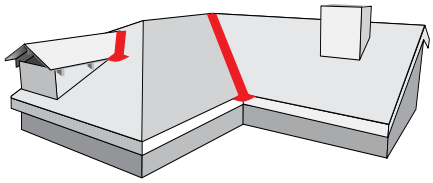
Install the valley exit panel to fit under the dormer eave overhang and valley exit. Apply sealant to the valley exit area.

Install the Valley Open 6" metal seating it down into the sealant.



The rest of the panels above are measured, marked, cut and bent and fitted as regular hip or valley panels cut sections.

DORMER VALLEY EXIT - WAKAFLEX® METHOD — OPTIONAL



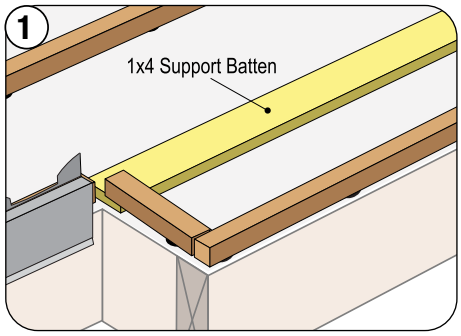
WAKAFLEX® FLASHING USE INSTEAD OF VALLEY EXIT TRAY

Where a typical standard metal valley flashing transitions onto an adjoining roof plane, a Wakaflex® flexible extension may be added to make certain that moisture flows from the valley and onto the courses of roof tiles below. The following necessary steps are provided to prevent water migration under the roof panels.

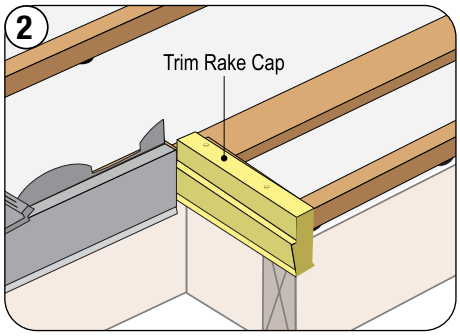
1. Cut Wakaflex of equal width of the valley metal plus additional amount to allow Wakaflex to cover 1” (25 mm) minimum past the high barrel portion (crown) of the profiled panel on both sides.
2. With top surface facing up fold forward completely 6” (152 mm) one end of the Wakaflex (butyl strip side is now facing upwards) place under the lower end of the valley metal.
3. Remove the 5-1/2” strip protective release film to expose butyl, press butyl strip firmly onto the bottom side of valley metal. This will prevent any windblown moisture under the valley metal.
4. Form the other portion of Wakaflex on top of the panel, remove the protective release film and form Wakaflex to top side of profile panel ensuring a complete bond.

Wakaflex can be stone coated to color match:

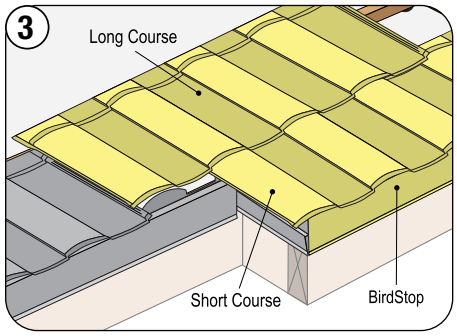
SHORT COURSE DETAIL All 3 Profiles (BARREL-VAULT Tile shown)



Install 1x4 (25 x 100 mm) support batten where the short course intersects with the first full panel course on the longest fascia length.

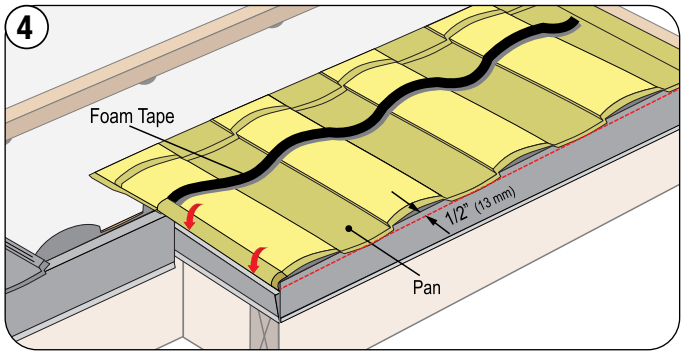


Install Trim Cap Rake metal on the short course rake edge.



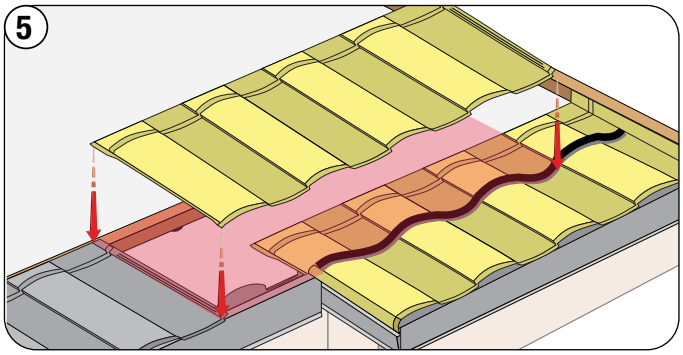
For BARREL-VAULT Tile install the BirdStop(shown).

Place the full long course panel lapped to the previous panel on the bottom row. Align the short course panel to the long panel.

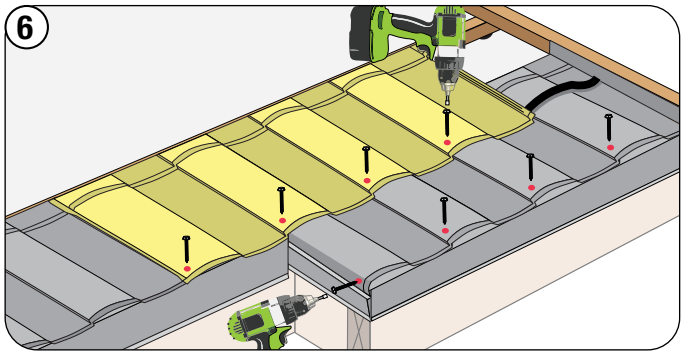


Install the short course panel to sit on the 1x4 support batten. Mark, bend and fit the short course panel left edge onto the Trim Cap Rake metal. Apply EmSeal or Barrier Foam embedded in a bead of sealant aligned with the nose of the long course.

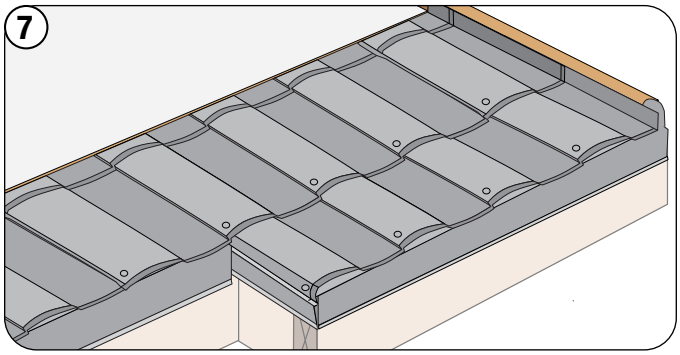
BARREL-VAULT -Tile panel to be positioned so the Pan section of the panel is 1/2" past the fascia line.



Install the long course panel over the short course panel.



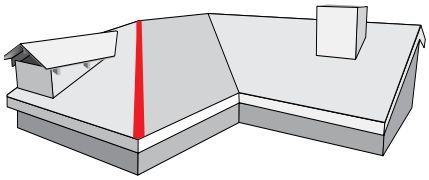
Fasten the long course panel through the top, foam tape and short course panel into the support batten.



The completed Short Course detail should look almost seamless from the rest of the field.

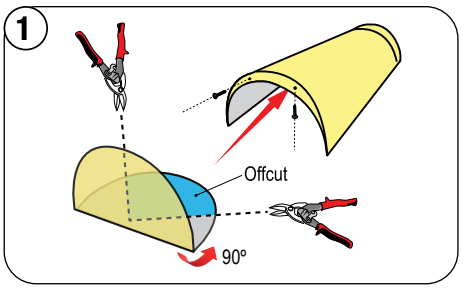
BATTEN Installation Guidelines

HIP TRIM CAPS DETAIL All 3 Profiles (Cap Mission shown)

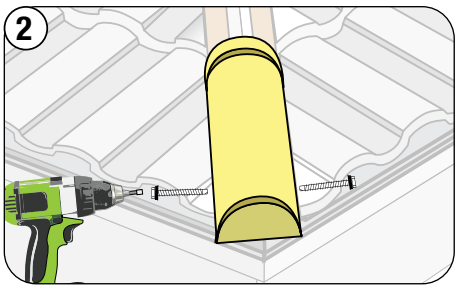


*This detail applies to both **Cap Mission and Cap Shake.***

After field panels, hip / ridge cut panels and rake cut sections are installed, the final step is to install trim caps.

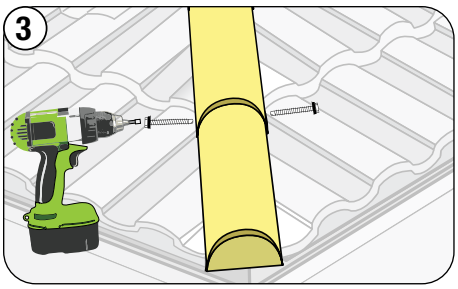


Insert the End Disk into Trim Cap and fasten with stitch screws. Bend End Disk at 90 degrees. Mark and cut at 45 degrees to fit around hip corner.



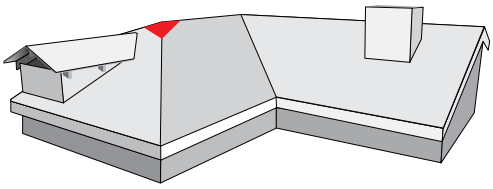
Fasten the starter cap through the sides.

Starter Cap End Disks should always be bent at a 90 degree angle to form 3-D effect.



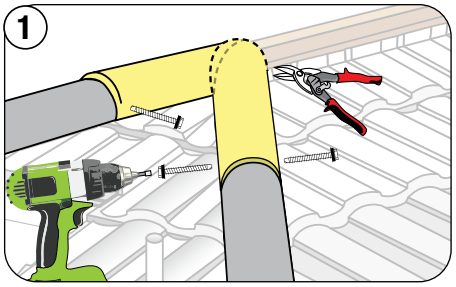
Fit each cap up the hip, making sure to keep the caps straight. Fasten through the sides.

HIP/RIDGE INTERSECTION DETAIL All 3 Profiles (Cap Mission shown)

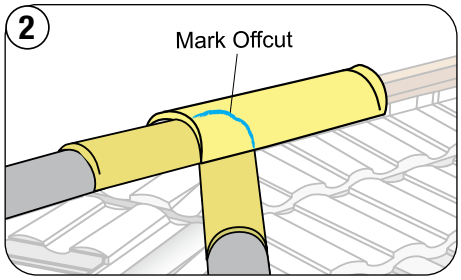


*This detail applies to both **Cap Mission and Cap Shake.***

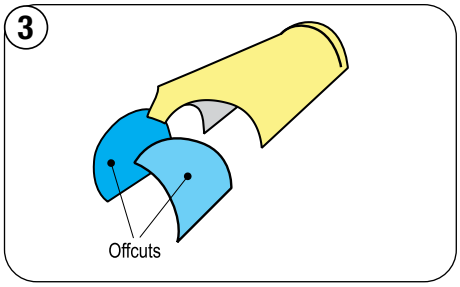
When two hips intersect, its necessary to mark and cut them so they intersect tightly and allow the ridge caps to cover over the two hip caps, providing a finished detail at this trim cap intersection.



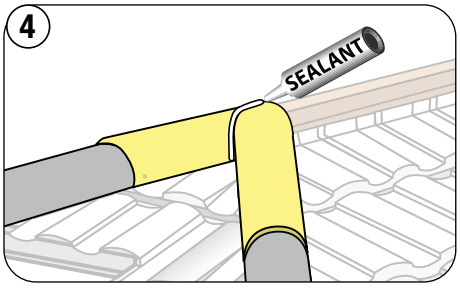
Position the two hip caps at the ridge intersection. Mark and cut them to fit by overlapping each other. Fasten, as shown.



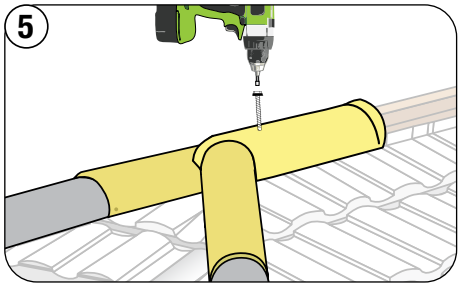
Position the ridge cap over the intersecting hip caps and scribe the hip cap profiles on both sides.



Cut out the ridge cap scribed lines to fit over the two intersecting hip caps.



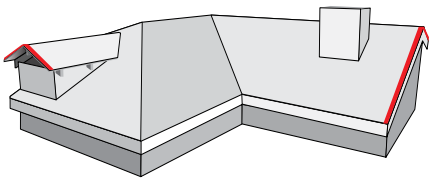
Apply a bead of sealant along the intersection.



Fit the ridge cap and fasten into the ridge batten. Use the Touch-Up kit to seal fasteners.

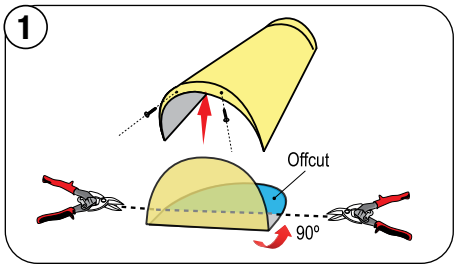
Any fasteners that penetrate through the top of Trim Caps must be sealed and chipped using the Touch-Up kit.

RAKE TRIM CAP DETAIL All 3 Profiles (Cap Mission shown)

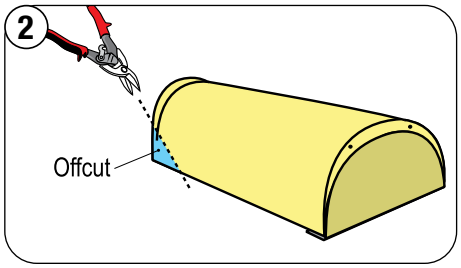


*This detail applies to both **Cap Mission and Cap Shake.***

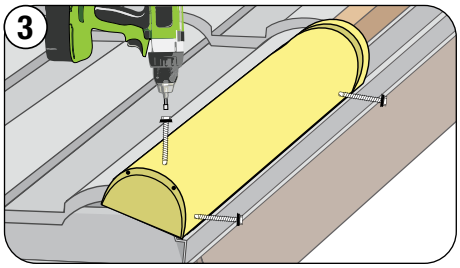
When installing Trim Caps on the rake, the Trim Cap Rake metal (painted) can be used. This creates a perfect ledge to align the Rake Trim Caps up the rake and ensure water is directed away from the rake rafter board.



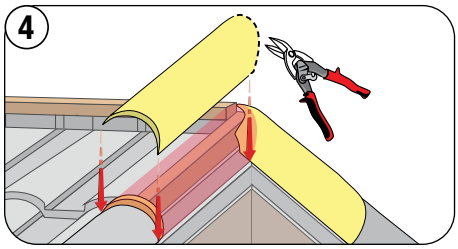
Insert the End Disk into Trim Cap and fasten with stitch screws. Bend End Disk at 90 degrees. Mark and cut to fit around the nose of the panel at the rake edge.



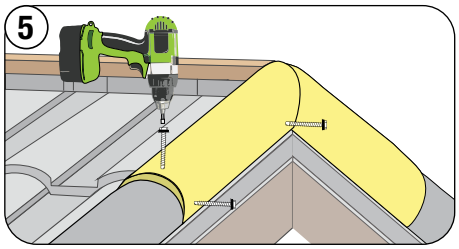
Notch Starter Cap's inside corner, as shown, to allow it to fit on the bottom panel course.



Position the rake Starter Cap at the fascia and fasten into the rake batten and into the side of the Trim Cap Rake metal.



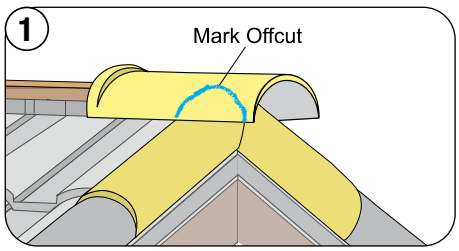
Fit each cap up the rake until it intersects with the ridge. Mark, cut and fit the final rake cap at the ridge.



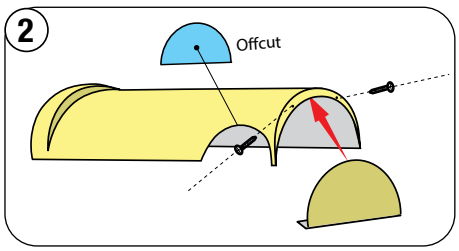
Fasten at the top and sides. Use the Touch-Up kit to finish this detail.

Any fasteners that penetrate through the top of Trim Caps must be sealed and stone chipped using the Touch-Up kit.

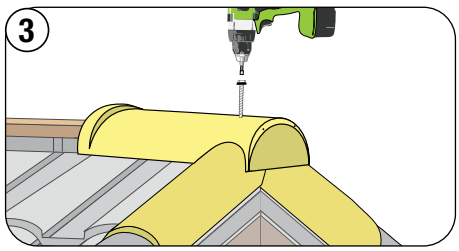
RAKE /RIDGE INTERSECTION DETAIL All 3 Profiles (Cap Mission shown)



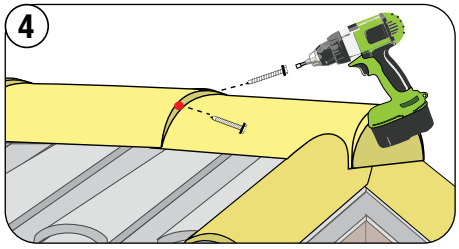
Position the Ridge / Rake Starter Cap as shown and scribe the profile of the rake caps on either side.



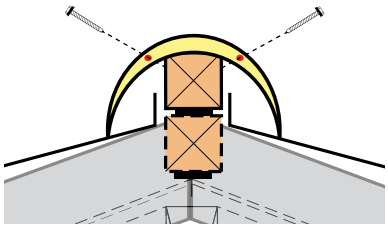
Cut out the rake cap profiles on each side and fit an end disc into the Ridge / Rake Starter Cap.



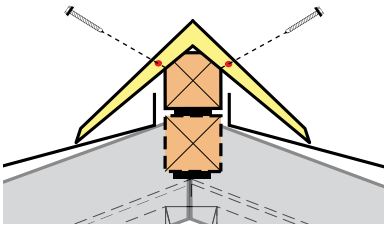
Fasten the Ridge / Rake Starter Cap through the top into the ridge batten.



Install Ridge Trim Caps across and fasten through the nose on both sides, as shown.



CAP MISSION FASTENING



CAP SHAKE FASTENING

BATTEN Installation Guidelines

HIGH VELOCITY HURRICANE ZONE (HVHZ) FASTENING GUIDELINES

We have simplified the ASCE 7 roof areas for high wind and HVHZ steep slope roofs (3:12 and greater) into three main areas; (1) FIELD, (2) PERIMETER & (3) CORNERS. Refer to the specific Evaluation Report or Product Approvals (i.e., Miami-Dade County Notice of Acceptance (NOA), Florida Product Approvals (FBC), Texas Department of Insurances (TDI) or Evaluation Report for your jurisdiction) for the selected panel profile (BARREL-VAULT Tile, PINE-CREST Shake or PACIFIC Tile) and install method (Batten) for fastener size, spacing and penetration into the batten system.

ROOF SLOPE: 3:12 Minimum

ROOF DECK: New Construction: 19/32" thick plywood or wood plank.
Re-Roof: 15/32" thick plywood or wood plank.

BARREL-VAULT TILE HVHZ BATTEN INSTALL

FEILD AREA BATTENS:

Install nominal 2x2 (50 x 50 mm) Southern Yellow Pine (SYP) wood battens per manufacturer instructions at a maximum spacing of 13.5" (343 mm) using one (1) #10 x 3.5" (89 mm) long bugle head wood screw at each batten / joist intersection 24" (609 mm) o.c., and one (1) #10 x 3.5" (89 mm) long bugle head wood screw spaced 12" (368 mm) o.c. between joists.

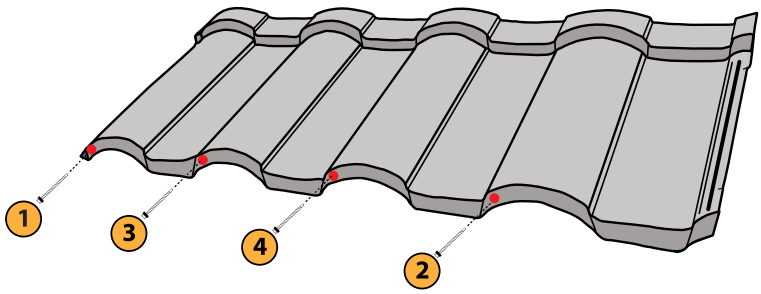
PERIMETER & CORNERS AREA BATTENS:

Install nominal 2x2 (50 x 50 mm) Southern Yellow Pine (SYP) wood battens per manufacturer instructions at a maximum spacing of 13.5" (343 mm) using one (1) #10 x 3.5" (89 mm) long bugle head wood screw at each batten / joist intersection 24" (609 mm) o.c., and two (2) #10 x 3.5" (89 mm) long bugle head wood screw spaced 8" (203 mm) o.c. between joists.

FIELD AREA PANELS - BARREL-VAULT TILE HVHZ FASTENING PATTERN

UPLIFT DESIGN PRESSURE: **82.5 PSF**

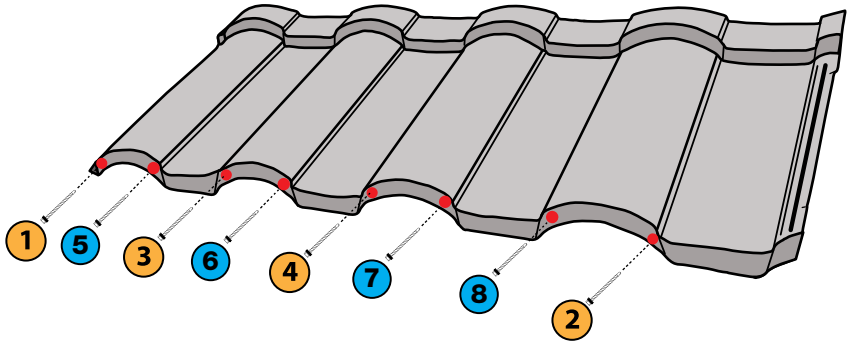
BARREL-VAULT Tile panels can only be laid LEFT to RIGHT.



4 STANDARD panels fastening pattern for a total of Four (4) across Nose Down-Turn, as shown.

PERIMETER & CORNER AREA PANELS - BARREL-VAULT TILE HVHZ FASTENING PATTERN

UPLIFT DESIGN PRESSURE: **202.5 PSF**



4 STANDARD panels fastening pattern for a total of Four (4) across Nose Down-Turn, as shown.

4 Additional Four (4) HVHZ fasteners pattern for **Perimeter & Corner area** panels, for a total of Eight (8) across Nose Down-Turn, as shown.

PINE-CREST SHAKE - HVHZ BATTEN INSTALL

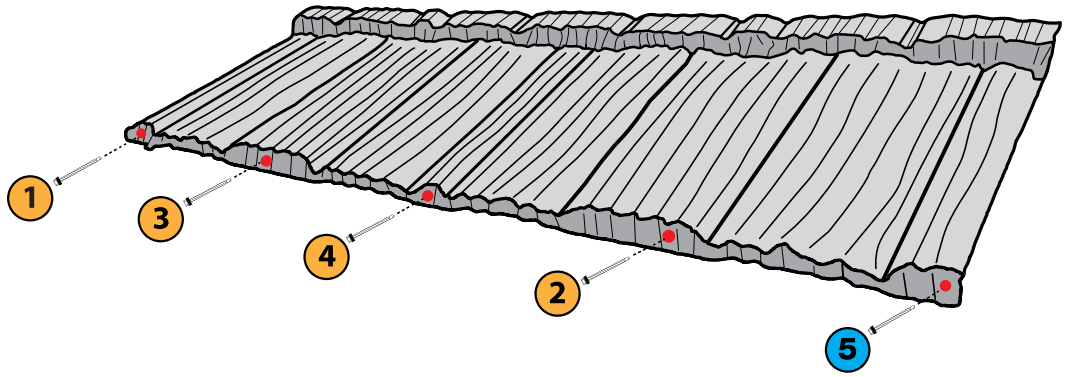
BATTENS

Install nominal 2x2 (50 x 50 mm) Southern Yellow Pine (SYP) wood battens per manufacturer instructions at a maximum spacing of 14.5" (368 mm) using one (1) #8-11 x 3" (76 mm) long bugle head wood screw at each batten / joist intersection 12" (368 mm) o.c.

FIELD AREA PANELS - PINE-CREST SHAKE HVHZ FASTENING PATTERN

UPLIFT DESIGN PRESSURE: **82.5 PSF**

Assumes a LEFT to RIGHT panel layout.

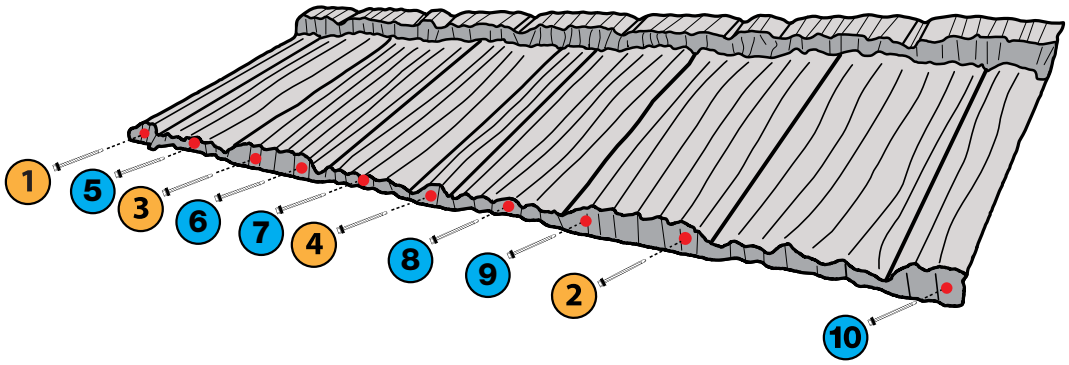


4 STANDARD fastening pattern for a total of Four (4) across Nose Down-Turn, as shown.

1 Additional One (1) HVHZ **Field area** panel fastener, for a total of Five (5) across Nose Down-Turn, as shown.

PERIMETER & CORNER AREA PANELS - PINE-CREST SHAKE HVHZ FASTENING PATTERN

UPLIFT DESIGN PRESSURE: **150.0 PSF**



4 STANDARD fastening pattern for a total of Four (4) across Nose Down-Turn, as shown.

6 Additional Six (6) HVHZ fasteners for **Perimeter & Corner** area panels, for a total of Ten (10) across Nose Down-Turn, as shown.

PACIFIC TILE - HVHZ BATTEN INSTALL

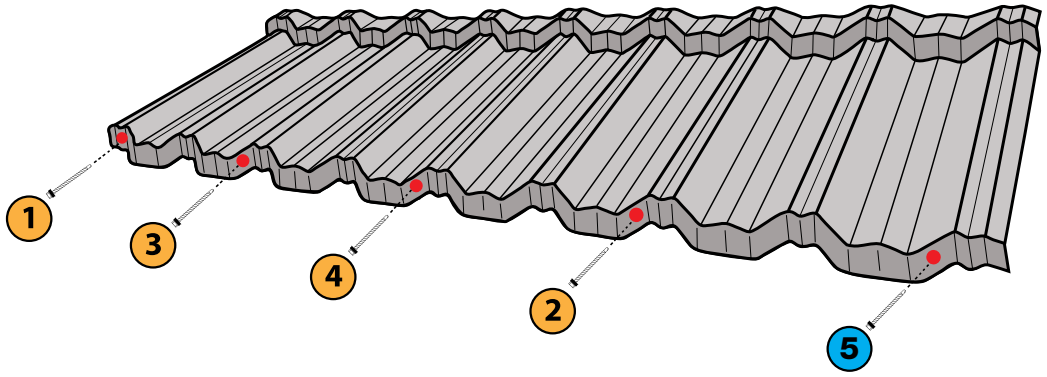
BATTENS

Install nominal 2x2 (50 x 50 mm) Southern Yellow Pine (SYP) wood battens per manufacturer instructions at a maximum spacing of 14.5" (368 mm) using one (1) #8-11 x 3" (76 mm) long bugle head wood screw at each batten / joist intersection 12" (368 mm) o.c.

FIELD PANELS - PACIFIC TILE HVHZ FASTENING PATTERN

UPLIFT DESIGN PRESSURE: **82.5 PSF**

Assumes a LEFT to RIGHT panel layout.

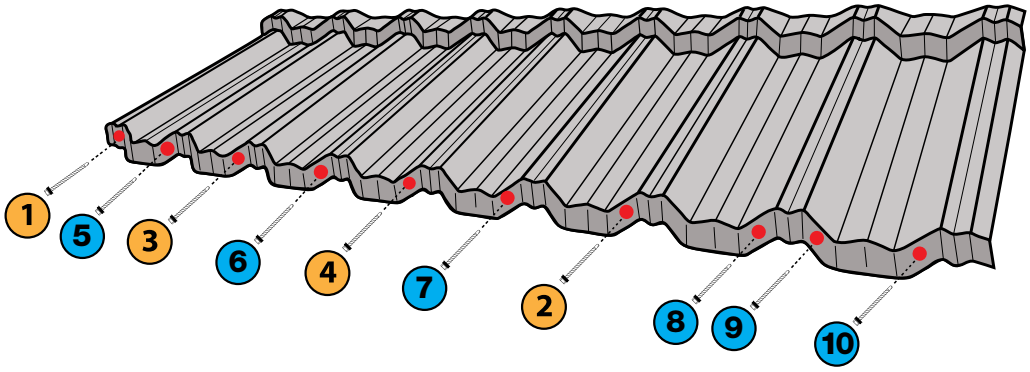


4 STANDARD fastening pattern for a total of Four (4) across Nose Down-Turn, as shown.

1 Additional One (1) HVHZ **Field area** panel fastener, for a total of Five (5) across Nose Down-Turn, as shown.

PERIMETER & CORNER PANELS - PACIFIC TILE HVHZ FASTENING PATTERN

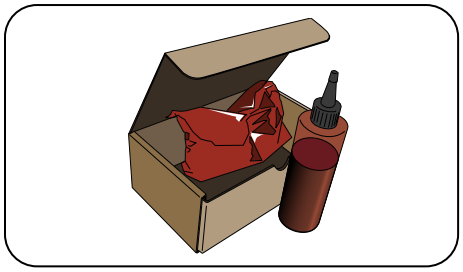
UPLIFT DESIGN PRESSURE: **150.0 PSF**



4 STANDARD fastening pattern for a total of Four (4) across Nose Down-Turn, as shown.

6 Additional Six (6) HVHZ fasteners for **Perimeter & Corner area** panels, for a total of Ten (10) across Nose Down-Turn, as shown.

FINISHING TOUCHES



After completing the roof installation, check the overall job for areas where the coating is scuffed or marked during install. Apply Unified Steel™ adhesive and stone chip to provide a complete stone coat finish.

NOTES

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