Westlake Royal Building Products™ | ROOFING SOLUTIONS

Unified STEEL
STONE COATED ROOFING

PINE-CREST Shake

BATTEN INSTALLATION METHOD

Shown in Ironwood

MANUFACTURED IN THE USA

WestlakeRoyalRoofing.com/Unified-Steel

TABLE OF CONTENTS

Installation Notes 2
Safety Notes 2
Useful Links 2
General Information 3
Walking On The Roof 4
Suggested Tools 4
Parts & Pieces 5
Screws & Nails 6
Available Components / Accessories 6
Batten Install 7-8
Counter Batten 8
Fastening Patterns per Design Pressure 9
Field Panels Layout & Fastening Methods 10
Eave Prep & Install 11
Rake Prep & Install 11
Rake Panels Install 12
Valley Prep & Install 13
Valley Panels Install 13
Hip Panels Install 14
Ridge Vent Install 16
Shake Cap Install on Rake / Ridge 17
Shake Caps Install on Hip / Ridge 18
Shake Cap Install on Ridge 18
Chimney / Skylight / Headwall / Sidewall Detail 19-20
EZ Vent Install 21
Pipe Vent Install - Sandwich Method 22
Pipe Vent Install - Split Course Method 23
Short Course Detail 24
Special Transition Details 25
Solar Mount Install 26
Dormer Valley Exit 27
Valley Exit with Wakaflex® Flashing 27
Finishing Touches 28

INSTALLATION NOTES

These installation guidelines demonstrate Batten installation techniques for PINE-CREST Shake roof panels and accessories. Options are dependent upon chosen design and performance requirements of a given project. **Local building codes might create alternative options.**

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. 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.

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

*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.*

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.*

USEFUL LINKS

RESOURCE LIBRARY: westlakeroyalroofing.com/resources/steel/

CODE APPROVALS: westlakeroyalroofing.com/resources/steel/code-approvals/

MATERIAL LIST GENERATOR: westlakeroyalroofing.com/mlg

TECHNICAL BULLETINS: westlakeroyalroofing.com/resources/steel/technical/

ROOF SYSTEM COMPONENTS: westlakeroyalroofing.com/components/

YOUTUBE VIDEO: Full Install Video

GENERAL INFORMATION

FASTENERS

PINE-CREST Shake 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 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" (50 mm) length.

Batten fasteners (Ring Shank Nails or Exterior Grade Screws) are to be of sufficient length to penetrate the structural member by a minimum of 1" (25 mm).

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

PINE-CREST Shake panels are designed to be installed on a minimum roof pitch of 3:12 (12 degrees) or above. Roof slopes below 3:12 are deemed decorative coverings. See your local jurisdiction's prescribed treatment for decorative coverings.

ROOFING UNDERLAYMENT

Minimum one layer ASTM D226 Type-II, ASTM D8257, or ASTM D1970, as needed to meet local building code requirements, installed per manufacturer's instructions.

ROOF DECK SHEATHING

The panels must be installed directly on solid or closely fitted minimum 15/32-inch (112 mm) thickness plywood, on solid or closely fitted wood structural panel sheathing, equivalent thickness spaced or closely fitted solid wood planking, or on spaced structural sheathing boards complying with the applicable code. Where spaced boards are used, additional structural sheathing boards must be attached to the roof framing as required to accommodate all panel and batten fastening locations.

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 stackers 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 and fastened to resist the design loads of the building.

SEALANT/CAULKING

Only exterior grade urethane, polyurethane, or non-acidic silicone, tested to ASTM D412 should be used with the system.

TESTING

The panels have been tested and evaluated to industry standards and are listed in Code Evaluation Report (QAI CER), 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. 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

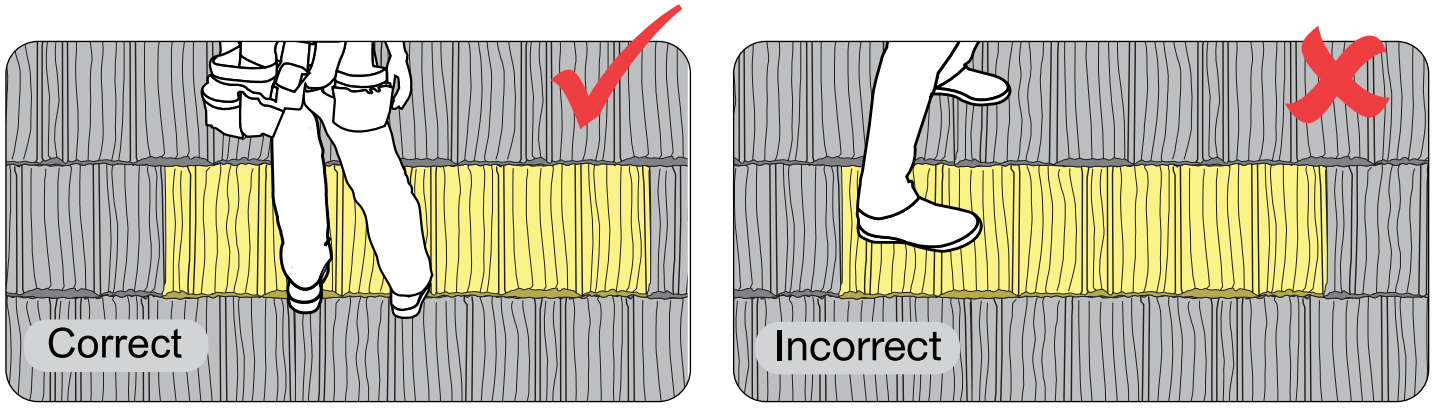
Minor scuffing of the stone coated finish can be repaired with a Touch-Up Kit. Use the basecoat acrylic supplied in the kit (not caulking) for repairs. Unfinished flashing material can be painted with durable acrylic aerosol paints. Colored aerosol paints should never be used as "touch-up" on stone coated products.

Refer to Unified Steel Technical Bulletin **"Repairing Marked or Scratched Panels"** for more details.

Colored aerosol paints should NEVER be sprayed on stone coated panels & access

WALKING ON THE ROOF

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



SUGGESTED TOOLS

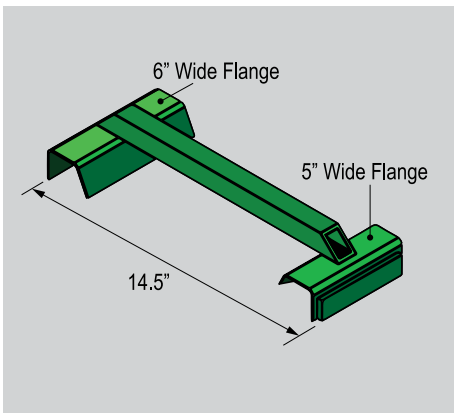
Cutter

39 lbs (17.7 Kg)

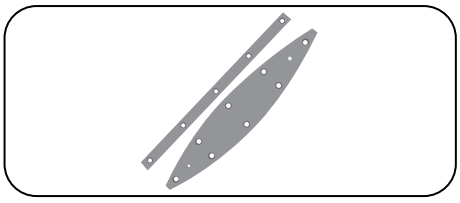
Bender

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

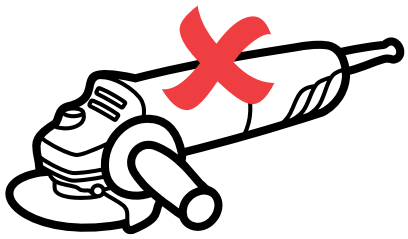
PINE-CREST Shake Batten Spacer



14,5" (365 mm) 2.7 lbs/Set (1.22 Kgs)
Green color



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

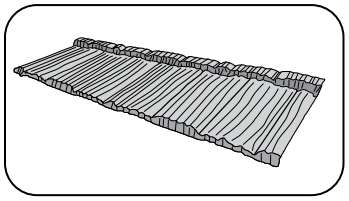


Circular saw or grinder wheel to cut panels is NOT acceptable.

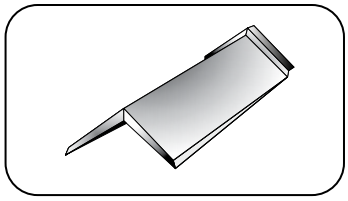
VIDEO ONLINE

WALKING ON THE ROOF

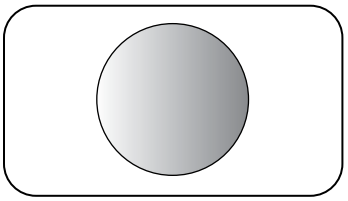
PARTS & PIECES



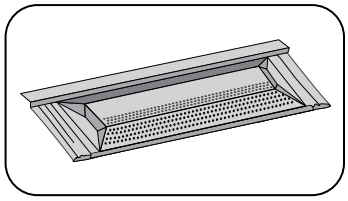
PINE-CREST Shake Panel
Coverage: 14.5" x 49.5" (368 x 1257 mm)
6.4 lbs (2.91 Kgs) 20 pcs/sq



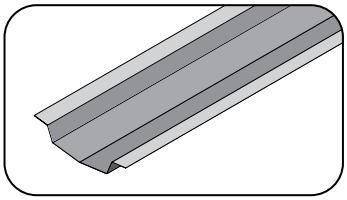
Cap Shake (Hip & Ridge)
6” x 14.5” (152 x 368 mm)



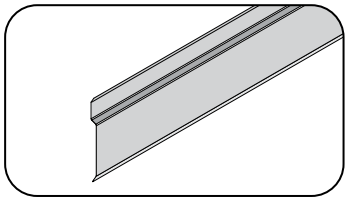
End Disc
6” Dia. (152 mm) 0.18 lbs/EA (0.08 Kgs)



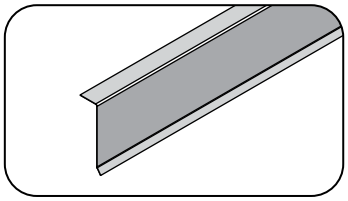
EZ-Vent PINE-CREST Shake
Coverage: 14.5" x 49.5" (368 x 1257 mm), 10.5 lbs (4.8 Kgs), NFVA 62.50 Sq In.



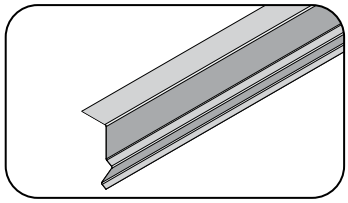
Valley Open 6"
1.5" x 6" x 79"
(38 x 150 x 2006 mm)



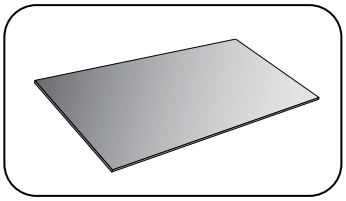
Z-Bar
4.875" x 0.375" x 79"
(124 x 10 x 2006 mm)
2.7 lbs (1.2 Kgs)



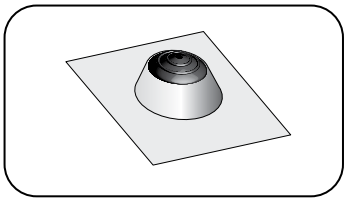
Fascia 3.5”
3.5" x 1" x 79" (89 x 25 x 2006 mm)
2.24 lbs (1 Kg)



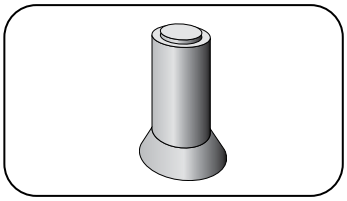
Trim Cap Rake
3.75" x 2.125" x 120"
(95 x 54 x 3048 mm) 4 lbs (1.8 Kgs)



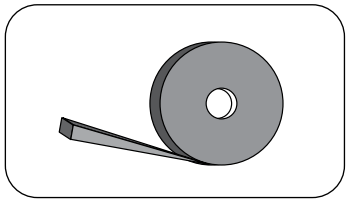
Flat Sheet
18” x 54” (457 x 1372 mm)
8.0 lbs (3.7 Kgs)



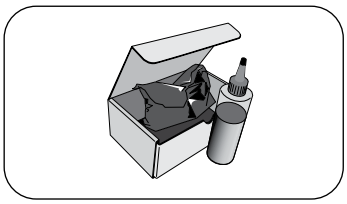
Pipe-Jack 4-N-1
Base 18" x 18" (457-457 mm)
Fits 1.25" to 4" pipes (32-100 mm)
1.86 lbs (0.85 Kg)



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



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



Touch-up Kit
1 Tube of Basecoat/Adhesive,
1 Bag of Stone Chips, Brush.
3.9 lbs/Box (1.76 Kg)

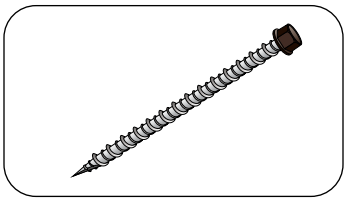
Basecoat 12-Pack (Adhesive)
12 Tubes/Case, 9.37 lbs/Box

Sealant Tube Non-corrosive, single-component, silicone Sealant. 1 Tube, 12/Case
Available in Black, Brown, Red.

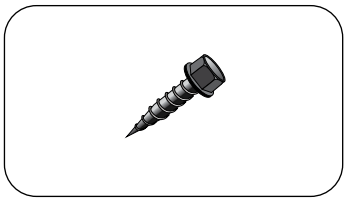
Bulk Stone Chips
1 Bucket of stone chips - 25 lbs (11.3 Kg)

Weights are approximate.

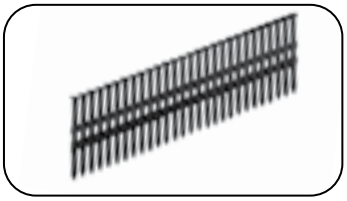
SCREWS & NAILS



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

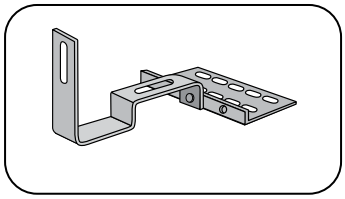


Stitch Screws Carbon Steel
0.75" L x 0.25" HWH
(19 mm L x 6 mm HWH)
Available in Black, Brown, Gray, Gold, Red, White.

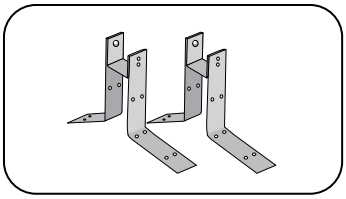


Batten Nails
0.131" Dia x 3.25"
(3 mm Dia x 83 mm)
53 lbs/Box (24.06 Kgs)

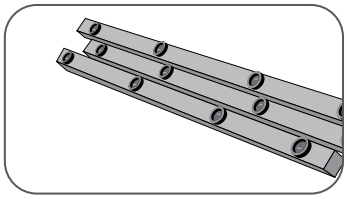
AVAILABLE COMPONENTS / ACCESSORIES



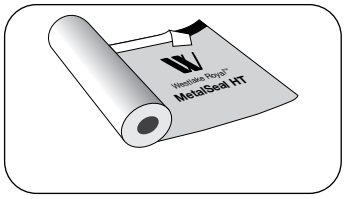
Solar Roof Mount - Adjustable
Stainless Steel Side Mount 90˚
3 leverage points of adjustment: adjustable wide base for fastening to the rafter.
Screws Included: 5/16" HWH x 3"



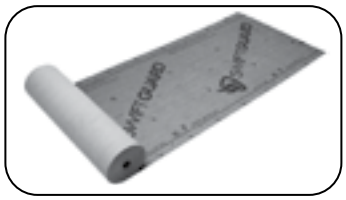
Ridge Riser® Brackets
16 gauge Galvanized Steel



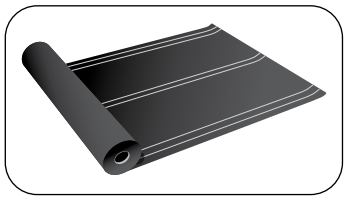
2x2 Elevated Batten System® (EBS)
2" x 2" x 96" (50 x 50 x 2438 mm)
12 pcs/Bundle, 1 Bundle = 96 L/ft (29.28 L/M)



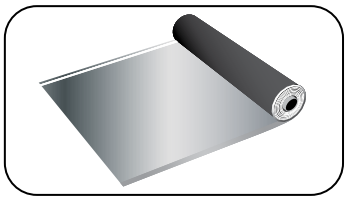
MetalSeal HT
Self-adhered, High Temperature Underlayment
36" x 72' (200 sq. ft.) (915 mm x 2.96 M) 70 lbs/Roll (31.7 Kgs)



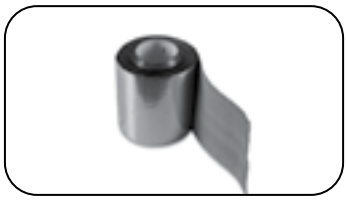
SwiftGuard® High-Performance Synthetic Roof Underlayment
40" x 300' (1000 sq ft)
(1016 mm x 91.44 M)
35.5 lbs/Roll (16 Kgs)



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)



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)



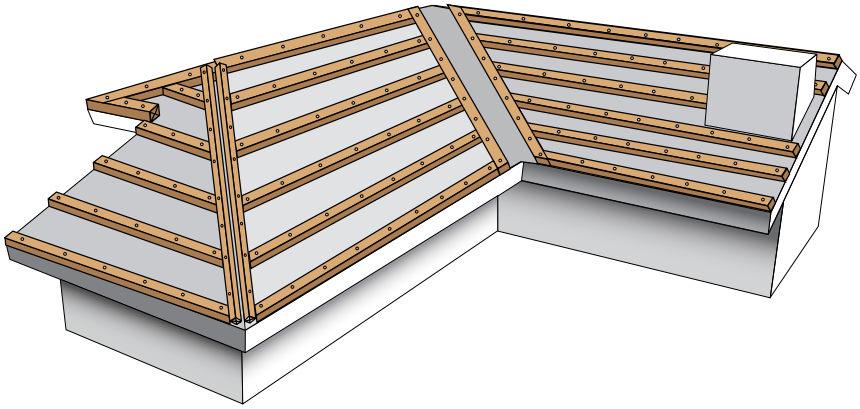
Aluminum Foil Tape Roll
Used with Sol-R-Skin™ BLUE
6" wide x 192" x 16-ft L
6 Rolls/Box

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

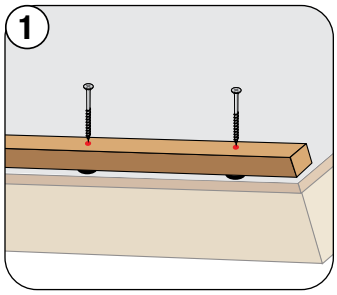
Unified Steel® Ridge Vent
17 sq.in (NFVA)/Lft.
2.5" x 1" x 20'
(64 x 25 x 6096 mm)

Weights are approximate.

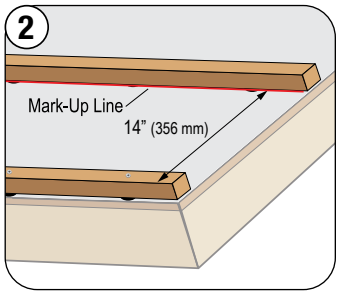
BATTEN INSTALL



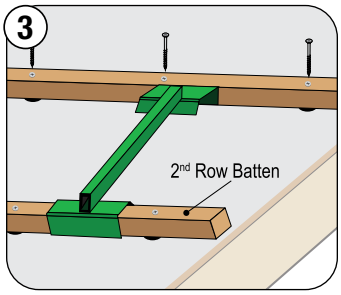
FIELD BATTENS



Position the first Eave Batten so the top corner of the batten is in line with the fascia. Fasten through the batten and plastic pad into the wood deck.

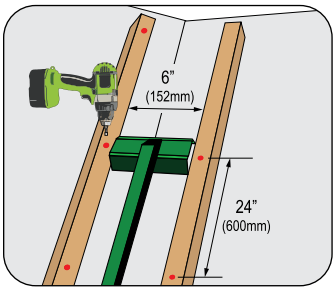


Measure 14" (356 mm) from the front eave /fascia batten to the batten above. Use a string line to position the second batten to allow adequate overhang at the fascia for gutter/water shed from the roof.



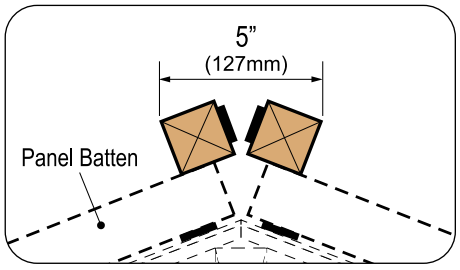
Working across and up the roof, position the Batten Spacer over the second row batten. Position the next batten firmly against the top face of the Batten Spacer and fasten. Pay careful attention to positioning the batten spacer the correct way.

VALLEY BATTENS

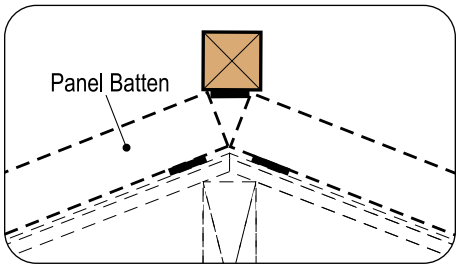


Valley Battens are spaced 6" apart to accommodate the Valley metal. Use Batten Spacer's 6" (152 mm) wide end to space the valley battens correctly and fasten at 24" o.c. (600 mm).

HIP BATTENS SIDE BY SIDE

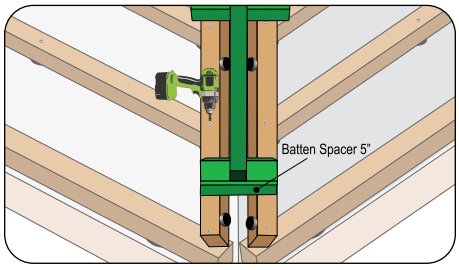


HIP BATTENS VERTICAL STACK



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

HIP BATTENS INSTALL



Install hip battens 5" (125 mm) apart. Use the PINE-CREST Shake Batten Spacer's small flange for this spacing. Rotate EBS batten so the plastic pads are facing towards the hip center line. Fasten at each batten intersection.

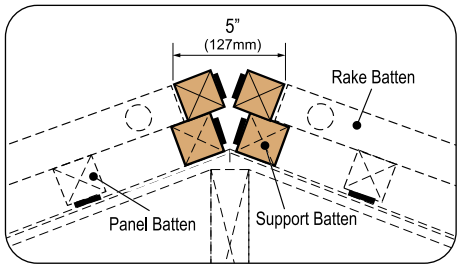
VIDEO ONLINE

FIELD BATTENS INSTALL

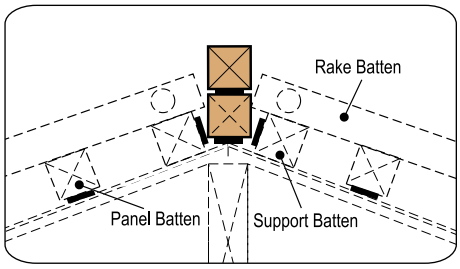
HIP/VALLEY BATTENS INSTALL

BATTEN INSTALL (cont.)

RIDGE BATTENS SIDE BY SIDE



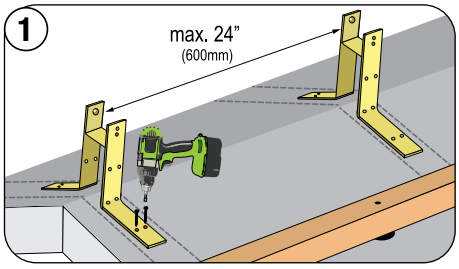
RIDGE BATTENS VERTICAL



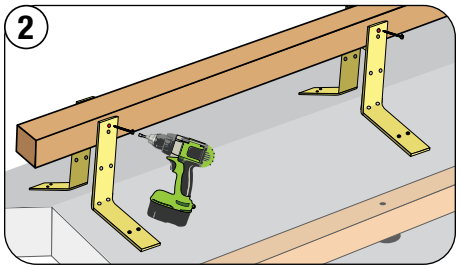
Ridge battens can be positioned side by side, or vertically stacked as shown, using 2x2 EBS battens or 2x2 battens.

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

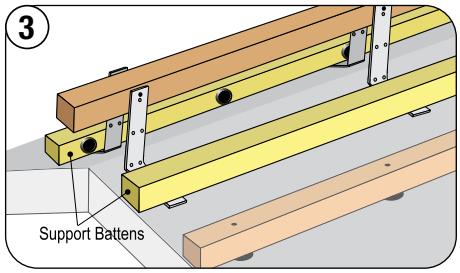
RIDGE RISER BRACKETS



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.

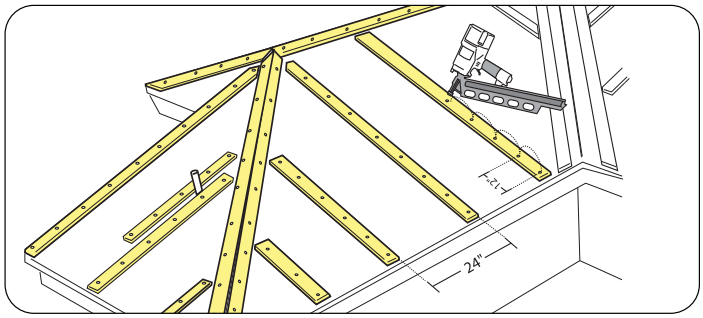


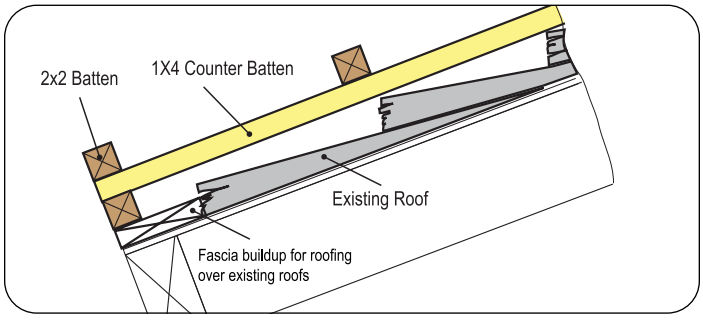
Place support battens (shown in yellow) across the ridge. Support battens allow the ridge cut bent panel to be seated in the same roof plane as the rest of the field.

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.

COUNTER BATTEN

When reroofing over irregular roof surfaces, 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.

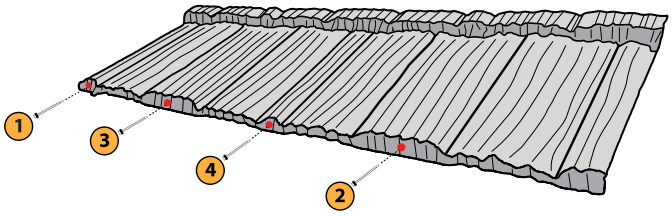
VIDEO ONLINE

RIDGE BATTENS INSTALL

FASTENING PATTERNS PER DESIGN PRESSURE*

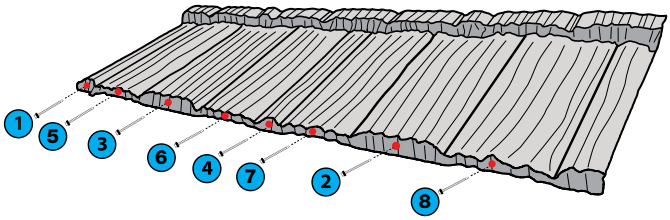
Check with municipality prior to establishing method. Will need to determine: • **Local Building Codes** • **Exposure Rating** • **Wind Uplift Requirements.**

PATTERN 1



4 **PATTERN 1:** Four (4) fasteners across nose down-turn.

PATTERN 2



8 **PATTERN 2:** Eight (8) fasteners across nose down-turn.

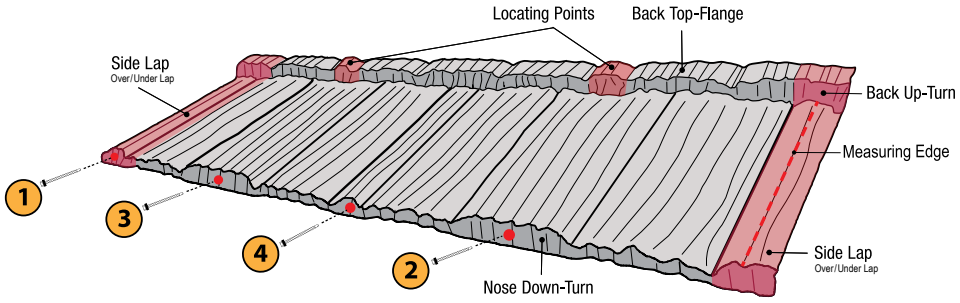
PATTERN 1**	**SLOPE 3:12 OR GREATER**
ROOF DECK:	The panels must be installed directly on solid or closely fitted minimum 15/32-inch (112 mm) thickness plywood, on solid or closely fitted wood structural panel sheathing, equivalent thickness spaced or closely fitted solid wood planking, or on spaced structural sheathing boards complying with the applicable building code. Where spaced boards are used, additional structural sheathing boards must be attached to the roof framing as required to accommodate all panel and batten fastening locations.
UNDERLAYMENT:	Minimum one layer ASTM D226 Type-II, ASTM D8257, or ASTM D1970, or as needed to meet local building code requirements, installed per manufacturer's instructions.
BATTENS:	Nominal No. 2 2x2 SYP wood battens spaced 14-1/2 in o.c. and oriented perpendicular to the wood joists. Battens secured with one (1) #8-11 x 3 in. bugle head wood screw at each rafter/truss intersection.
ATTACHMENT:	26 ga. Metal Panel installed with four (4) #10-16 x 2 in. HWH corrosion resistant panel screws through the vertical leg at the headlap beginning at the center of the side lap. Fasteners shall penetrate into the batten through the deck a minimum 3/8".
MAXIMUM DESIGN PRESSURES:	**-82.5 psf** Pressure calculated using 2:1 margin of safety

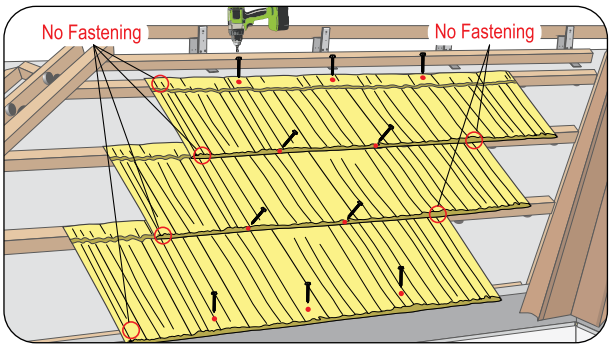
PATTERN 2***	**SLOPE 3:12 OR GREATER**
ROOF DECK:	The panels must be installed directly on solid or closely fitted minimum 15/32-inch (112 mm) thickness plywood, on solid or closely fitted wood structural panel sheathing, equivalent thickness spaced or closely fitted solid wood planking, or on spaced structural sheathing boards complying with the applicable building code. Where spaced boards are used, additional structural sheathing boards must be attached to the roof framing as required to accommodate all panel and batten fastening locations.
UNDERLAYMENT:	Minimum one layer ASTM D226 Type-II, ASTM D8257, or ASTM D1970, or as needed to meet local building code requirements, installed per manufacturer's instructions.
BATTENS:	Nominal No. 2 2x2 SYP wood battens spaced 14-1/2 in o.c. and oriented perpendicular to the wood joists. Battens secured with one (1) #8-11 x 3 in. bugle head wood screw at each rafter/truss intersection.
ATTACHMENT:	26 ga. Metal Panel installed with eight (8) #10-16 x 2 in. HWH corrosion resistant panel screws through the vertical leg at the headlap beginning at the center of the side lap. Fasteners shall penetrate into the batten through the deck a minimum 3/8".
MAXIMUM DESIGN PRESSURES:	**-150 psf** Pressure calculated using 2:1 margin of safety

*See QAI CER or Texas Department of Insurances for design requirements for areas outside of Florida.
**See current Creek Lab Report for FBC design requirements to Florida Non-HVHZ and HVHZ (High Velocity Hurricane Zone) regions.
***See Miami-Dade NOA for HVHZ requirements.

▶ See Unified Steel GENERAL Code Approvals

FIELD PANELS LAYOUT & FASTENING METHODS



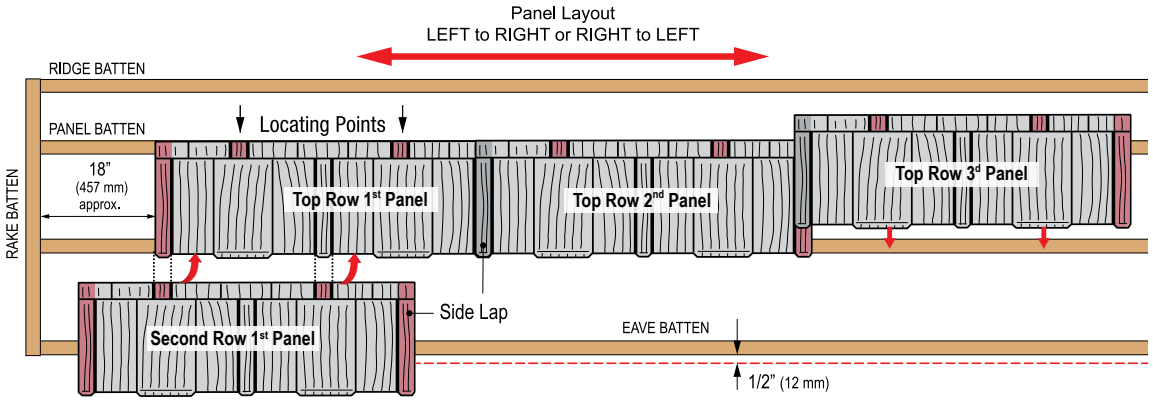


Panel layout starts at the top full course of panels in any roof section. Panels are laid from the **ridge down to the fascia.** Position first full panel on the top panel batten 24" (600 mm) maximum from the rake batten, as shown.

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

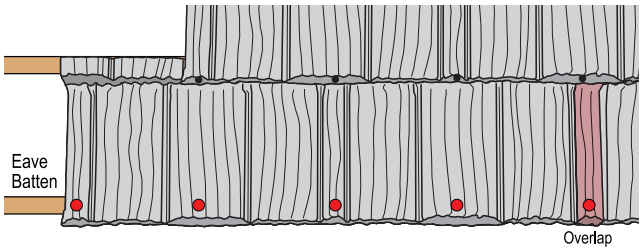
Do not fasten the left end of the first panel in a row, to allow rake cut sections to be installed later.

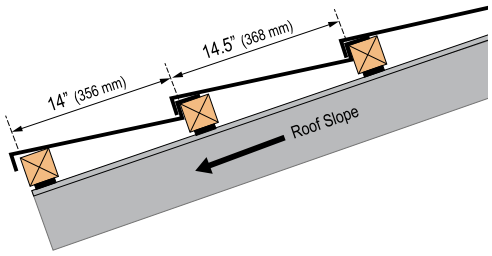
Complete full panel row across the roof section then work down laying one or two rows, as needed.



Panels must be set in the location points to fit correctly.

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





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 EZ-Vents and Chimney/Skylight details, as necessary.

Any fasteners that penetrate through the top of the panel must be sealed and stone-chipped.

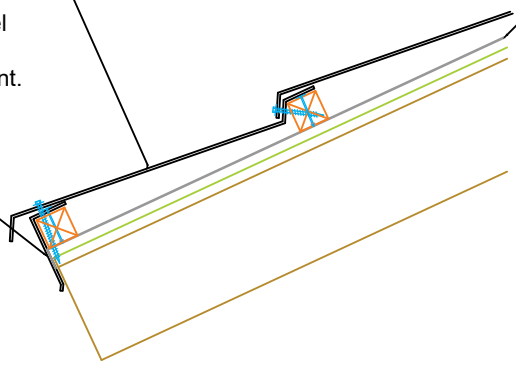
VIDEO ONLINE

FIELD PANELS LAYOUT & FASTENING

EAVE PREP & INSTALL

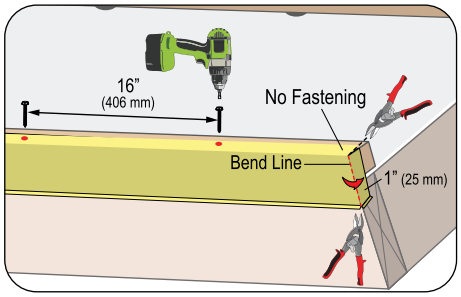
Panels: Install bottom panel to extend past fascia 1/2". Seal and chip screws at top surface of panel. Use minimum 2" panel screws at nose. Fasteners through the nose of the panels do not require sealant.

Fascia: Fasten 16" o.c. with 1-1/2″ corrosion resistant nails or screws.



Roofing Underlayment: Wrap minimum 1" over finish edges.

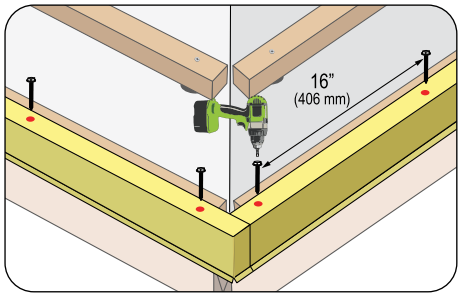
EAVE/RAKE DETAIL



Place Fascia 3.5" metal at the eave and extend 1" (25 mm) over the rake/gable edge. Cut and bend to fit around the corner, as shown. Fasten through the top flange 16" (406 mm) o.c. DO NOT fasten at the intersection with rake.

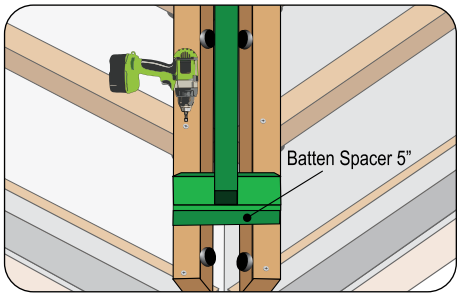
Overlap Fascia approximately 2" (50 mm).

EAVE/HIP CORNER DETAIL



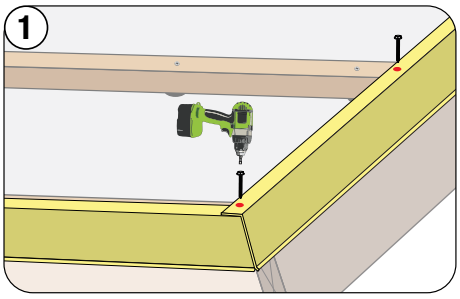
Fold Fascia around hip corner, as shown.

HIP BATTENS

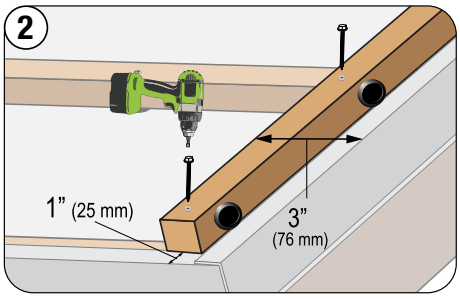


Install hip battens 5" (125 mm) apart. Use the Batten Spacer's small flange for this spacing. Rotate EBS batten so the plastic pads are facing towards the hip center line. Fasten at each batten intersection.

RAKE PREP & INSTALL



Install Fascia 3.5" metal up the rake. Fasten into each field batten



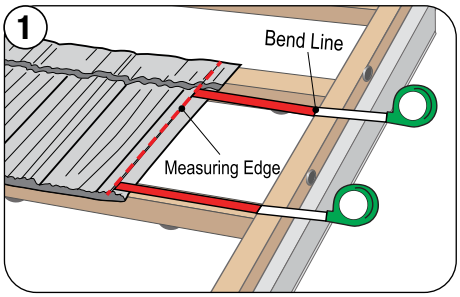
Install 2x2 EBS Batten 3" (76 mm) from the rake edge and 1" (25 mm) from the eave and fasten into each field batten.

VIDEO ONLINE

EAVE PREP & INSTALL

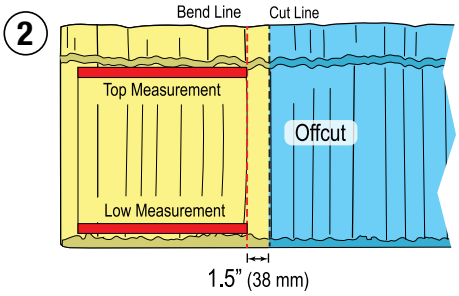
RAKE PREP & INSTALL

RAKE PANELS INSTALL

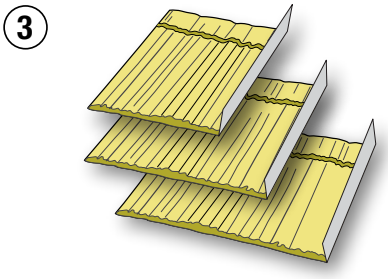


Measure and record the top and bottom of each panel cut.

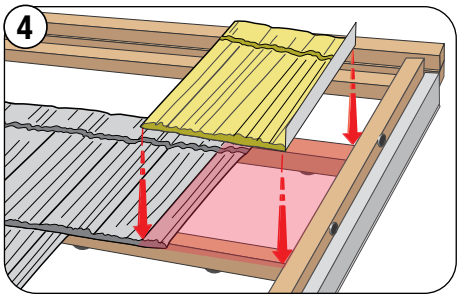
*Always **DEDUCT 1/2"** (13 mm) from actual measurements to ensure an easy fit of Rake cuts.*



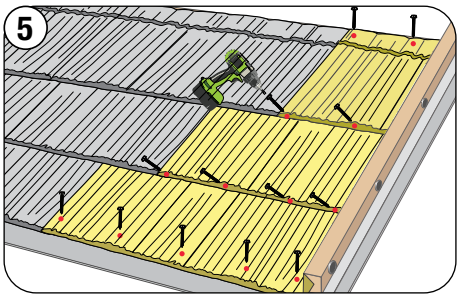
Apply measurements to the full panel and mark the Bend Line. Add 1.5" (38 mm) or use 2x2 batten and mark the Cut line.



After cutting and 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 eave.



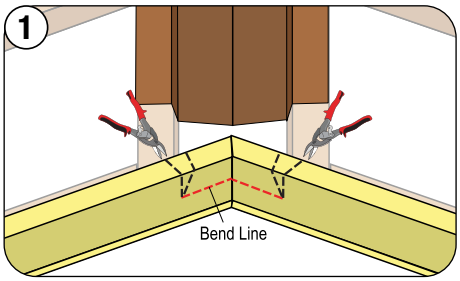
Fasten first rake cut through the back top-flange. Fasten the following rake cuts in the same manner as full panels through the nose **out of the main water channel** and into the batten. Fasten rake cuts at the eave through the top into the eave batten.

Any fasteners that penetrate through the top of the panel must be sealed and stone-chipped.

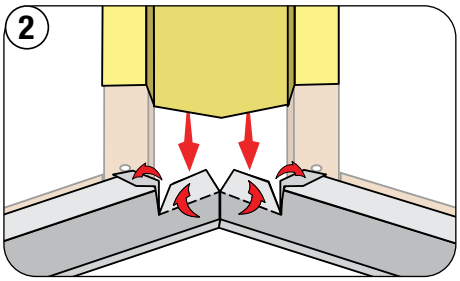
VIDEO ONLINE

RAKE PANELS INSTALL

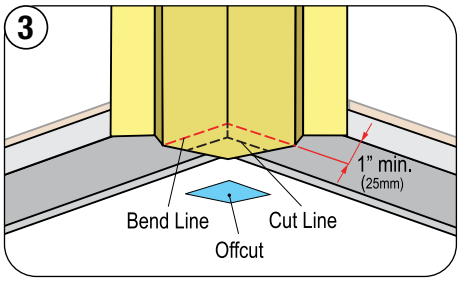
VALLEY PREP & INSTALL



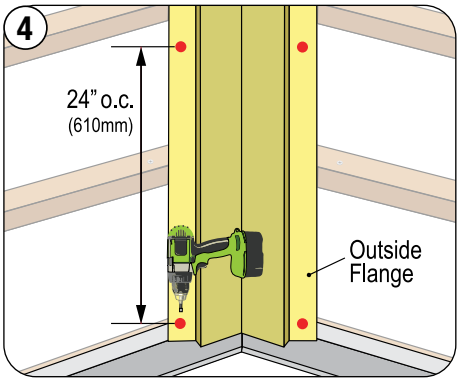
Notch the Fascia 3.5", as shown, to allow the valley pan to exit. Extend Valley 1" (25 mm) minimum past fascia.



Cut and bend Fascia 3.5, as shown. Slide the Valley Open 6" into position. Extend Valley a minimum of 1" (25 mm) past the bend section of the Fascia 3.5".

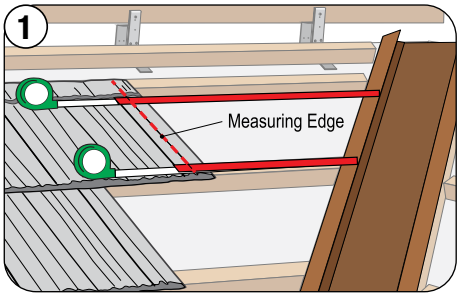


Cut the valley exit point and bend to form an internal corner.

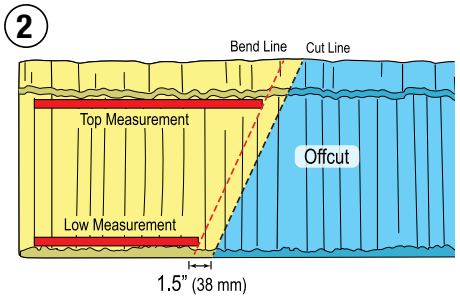


Fasten Valley Open "6" with regular panel fasteners on both outside flanges at 24" o.c. (610 mm).

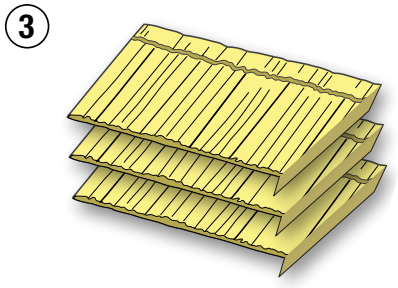
VALLEY PANELS INSTALL (Left Side shown)



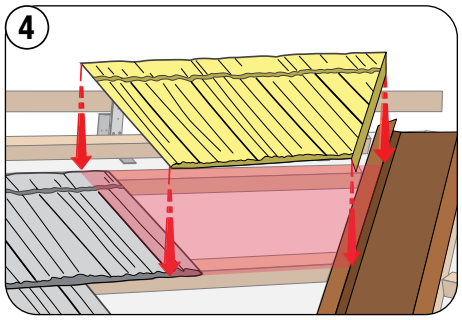
Measure and record the top and bottom of each panel cut, as shown. Keep the tape measure in the same "plane" as the panels and parallel to the panel nose or back up-turn.



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

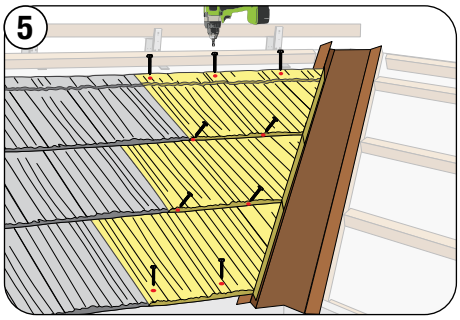


Cut and bend panels. Stack each valley cut section in correct order, so they are easily accessible for installing in the correct spot on the roof.



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

Any fasteners that penetrate through the top of the panel must be sealed and stone-chipped.



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. Fasten hip cuts at the eave through the top into the eave batten.

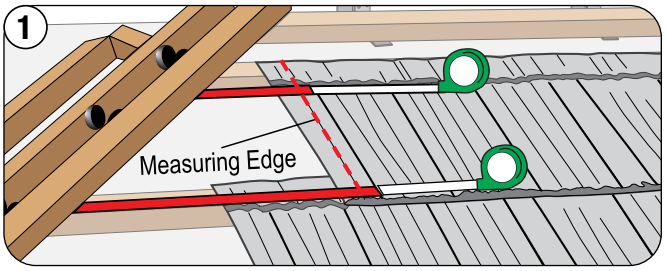
VIDEO ONLINE

VALLEY PREP & INSTALL

VALLEY PANELS INSTALL

HIP PANELS INSTALL (Right Side shown)

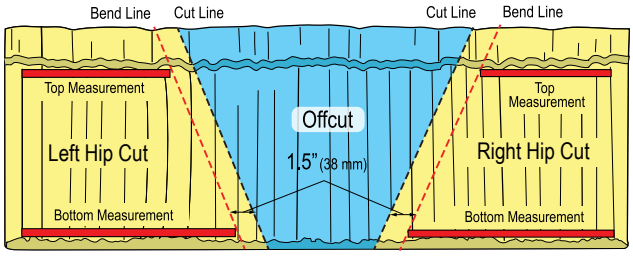
1



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). 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.

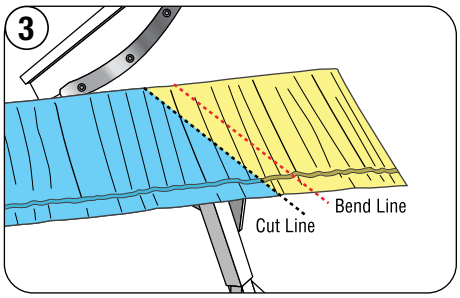
*Always **DEDUCT 1/2”** (13 mm) from actual measurements to ensure an easy fit of Hip cuts.*

2



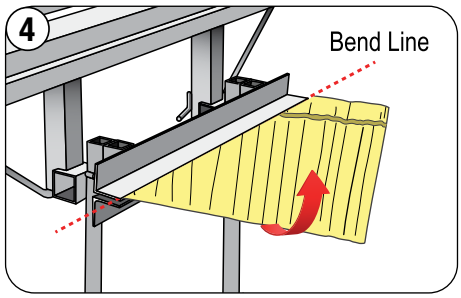
Apply measurements to the full panel and mark as Bend Line. Add 1.5" (38 mm) or use 2x2 batten and mark the Cut Line on the other side.

3



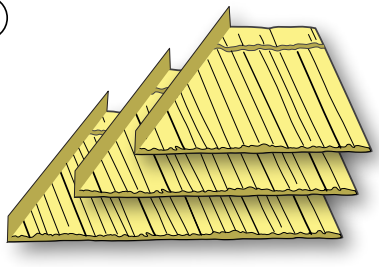
Cut the panel using the Unified Steel® Cutter.

4



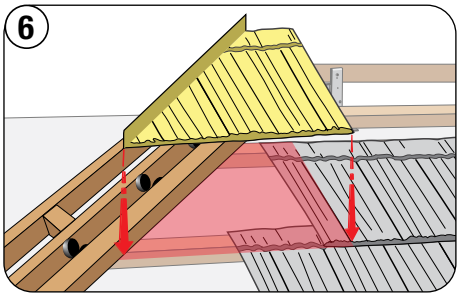
Using the Unified Steel® Bender, insert the hip cut into the bender jaws, clamping the hip cut section and bend the hip section up to create an approximate 1.5" to 2” (38 to 50 mm) bend up on the panel section.

5



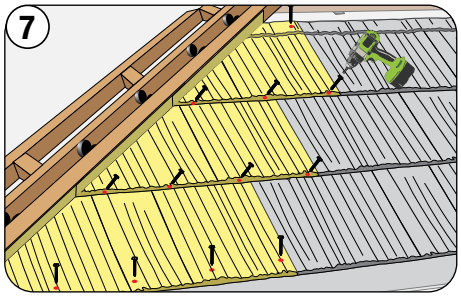
After bending the cut section, start stacking each one, as shown. Be sure to keep them in the correct order so they are easily accessible for installing in the correct spot on the roof.

6



Install hip cuts starting from the ridge and work down to the eave.

7



Fasten first hip cut through the back top-flange. Fasten the following hip cuts in the same manner as full panels through the nose **out of the main water channel** and into the batten. Fasten hip cuts at the eave through the top into the eave batten.

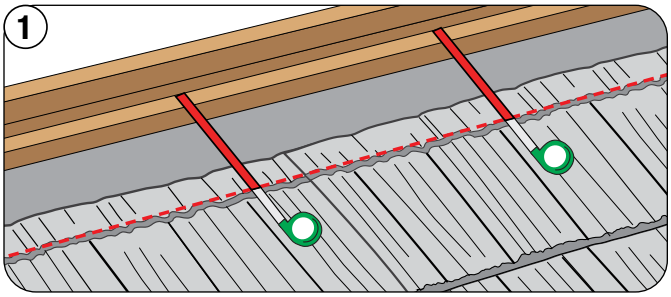
Any fasteners that penetrate through the top of the panel must be sealed and stone-chipped.

VIDEO ONLINE

HIP PANELS INSTALL

RIDGE PANELS INSTALL

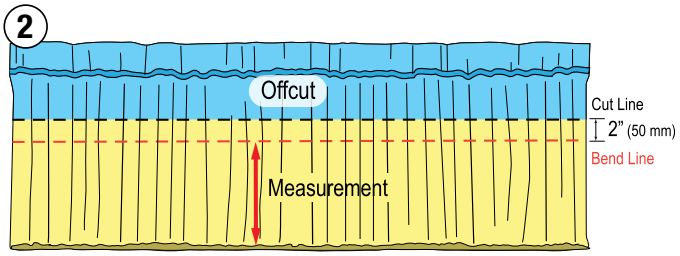
1



Measure ridge panel, as shown.

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

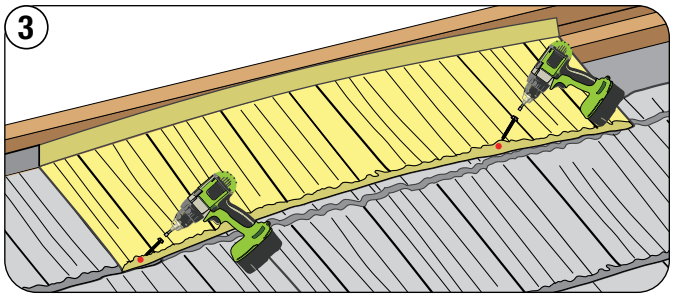
2



Apply measurements to the full panel. Mark Bend Line, add 2" (50 mm) and mark a Cut Line. Bend up and cut ridge panel.

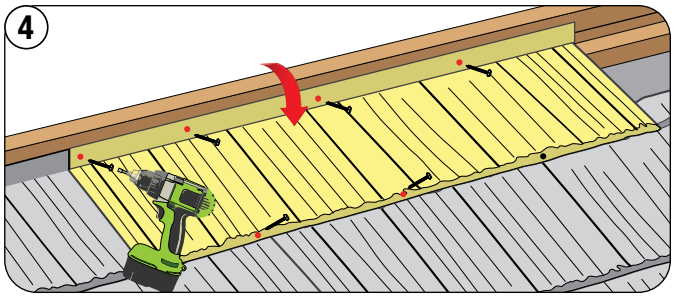
Always bend the ridge panels before cutting, as they deform slightly in the bender.

3



Install ridge cut panel across the ridge, aligning with the panel below. Fasten left end, then right end of the panel.

4

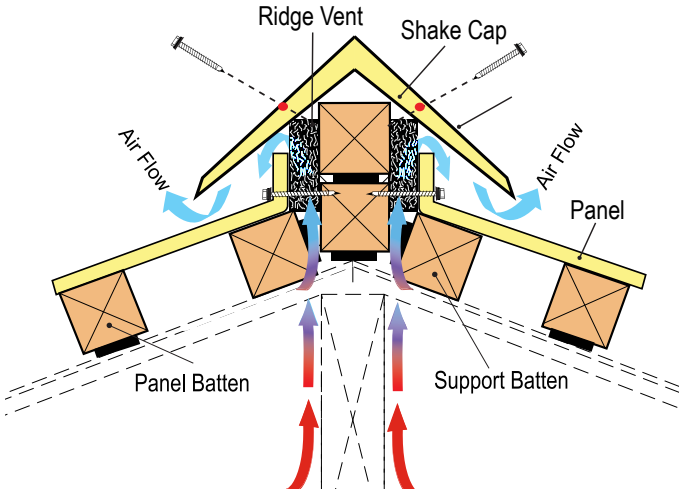


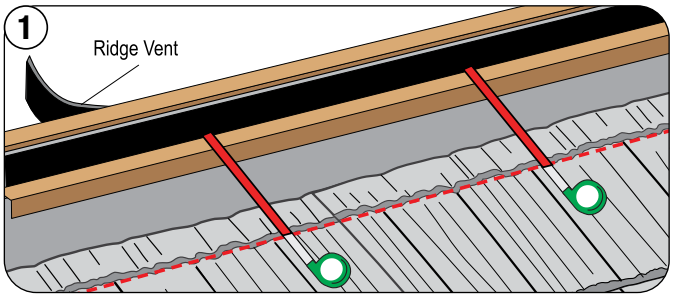
Push panel down to fit coursing properly. Force back of panel into position against ridge batten. Continue fastening ridge cut panel across the nose. Next, fasten panel through bend-up into ridge batten.

VIDEO ONLINE

RIDGE PANELS INSTALL

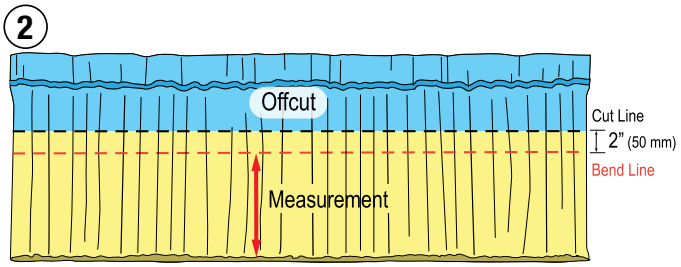
RIDGE VENT INSTALL





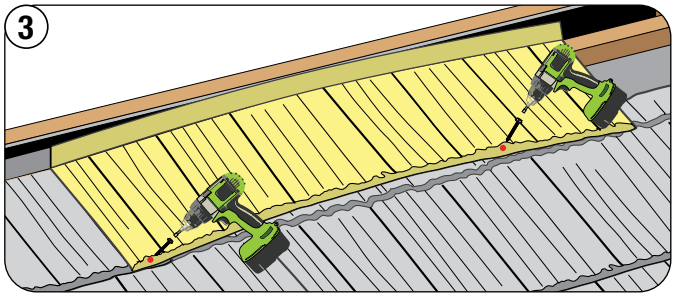
Position Ridge Vent on both sides of ridge batten. Measure the top row from the back-flange upstand to the Ridge Vent material.

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

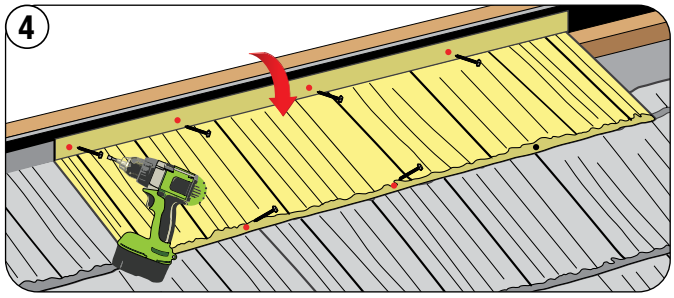


Apply measurements to the full panel. Mark Bend Line, add 2" (50 mm) and mark a Cut Line. Bend up and cut ridge panel.

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



Align ridge panel with the panel below. Fasten left end of the panel first, then right end.



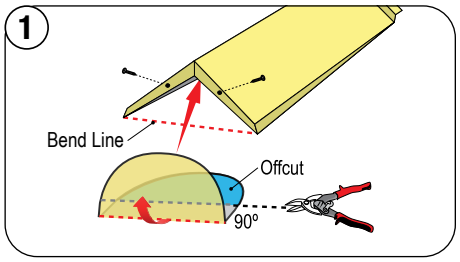
Push ridge panel down to fit coursing properly. Continue fastening ridge panel, as shown.

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.*

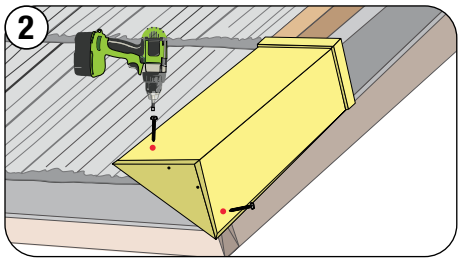
VIDEO ONLINE

RIDGE VENT INSTALL

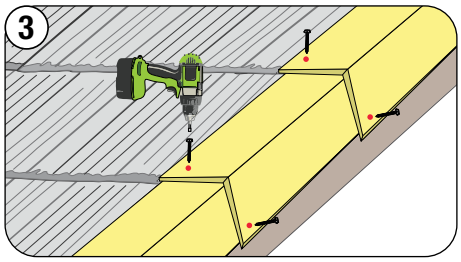
SHAKE CAP INSTALL ON RAKE



Insert the End Disk into Trim Cap and fasten with Stitch Screws. Bend End Disk at 90 degrees. Add 1/2" (13 mm) to the Bend Line. Mark and cut to fit around the nose of the panel at the rake edge.

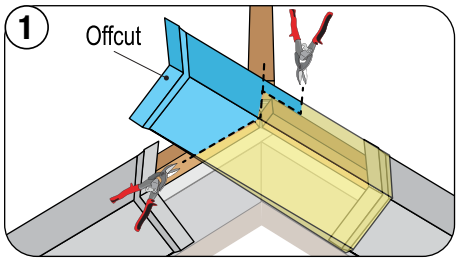


Position the rake Starter Cap at the fascia at 90 degree. Fasten into the rake batten and into the side of the Shake Cap, as shown.

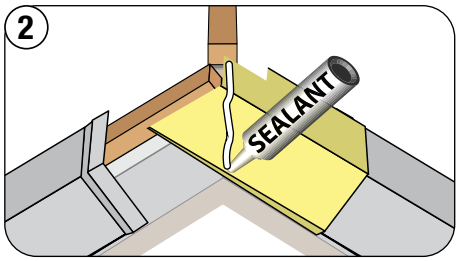


Fit each Shake Cap up the rake. Fasten each cap with 2 fasteners, as shown.

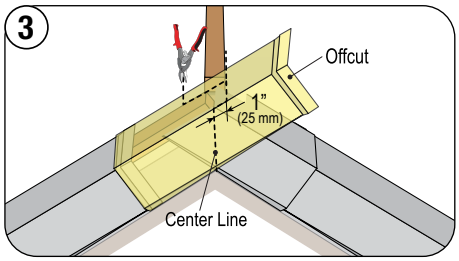
SHAKE CAP INSTALL AT RAKE / RIDGE INTERSECTION



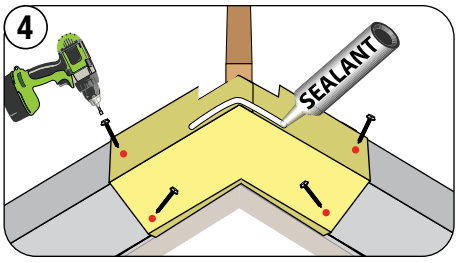
At the ridge intersection, place right Shake Cap and mark Cut Lines, as shown.



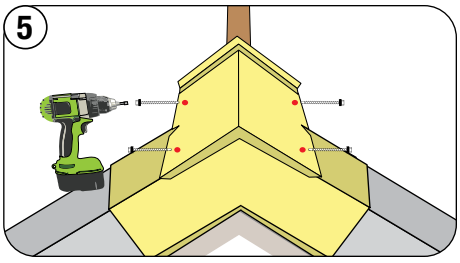
Fit the Shake cap and apply Sealant to the center line.



Place the left Shake Cap on top and mark the Cut Lines along the center line.
Add 1" (25 mm) at the top for overlap.



Fit the left Shake Cap. Overlap at the top and fasten, as shown.



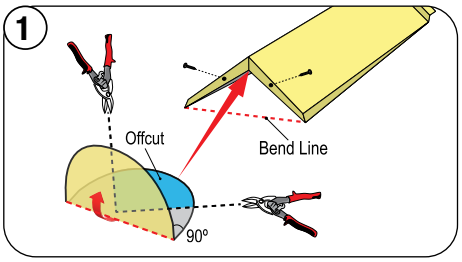
Install first ridge cap, aligning starting edge with rake caps. Fasten into ridge battens.

Any fasteners that penetrate through the top of the Shake Caps must be sealed and stone-chipped.

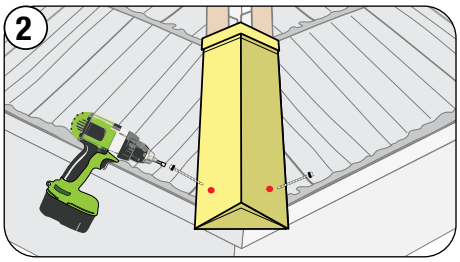
VIDEO ONLINE

SHAKE CAP INSTALL ON RAKE/RIDGE

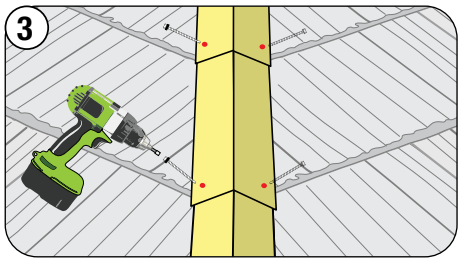
SHAKE CAPS INSTALL ON HIP



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

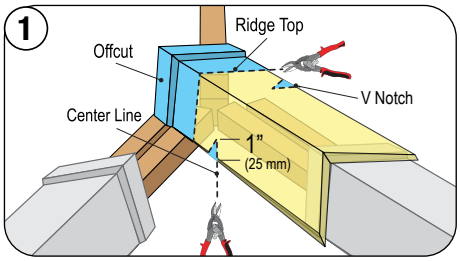


Fit Starter Shake Cap and fasten through the sides into the hip battens.

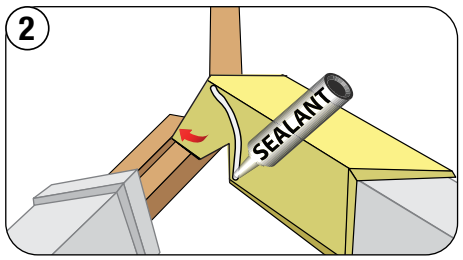


Fit each Shake Cap up the hip, making sure to keep the caps straight. Fasten through the sides into the batten.

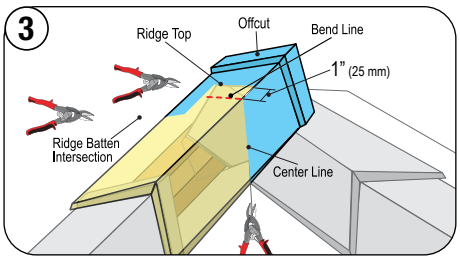
SHAKE CAP INSTALL AT HIP / RIDGE INTERSECTION



Place the Shake Cap at the ridge intersection. Mark the Cut Line at the ridge top and V-notch the right side at the point of the ridge battens, and left side at the center line. Cut, as shown

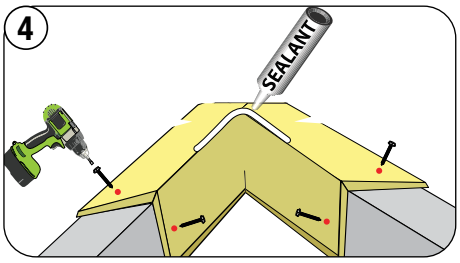


Cut and fit the Shake Cap section. Bend the left end slightly. Apply Sealant along the center line.

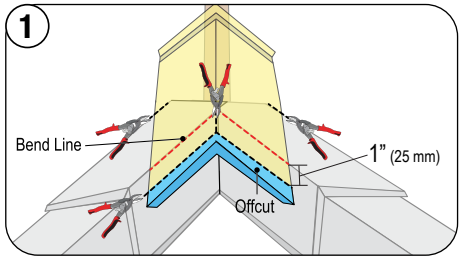


Place other Shake Cap on top. Mark the Bend Line at the ridge top and Cut Line along the center line. Add 1" (25 mm) to the Bend Line and mark as Cut Line. Notch the back side up the ridge batten.

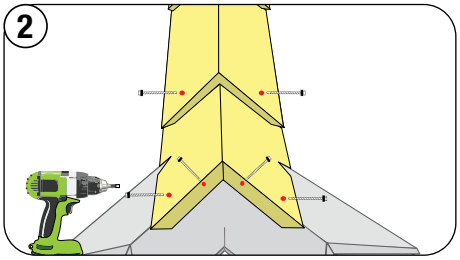
SHAKE CAP INSTALL ON RIDGE



Fasten Shake Caps on both sides and apply Sealant at the top of intersected Shake Caps.



Place top Shake Cap on the ridge 2" (50 mm) beyond the edge. Mark the Bend Line along the edge. Add 1" (25 mm) and mark the Cut Line. Notch at the intersection with the hip caps below.



Form the ridge Starter Shake Cap, fit and fasten, as shown. Continue installing caps at the ridge, fastening with 2 screws to the ridge batten on both sides.

Any fasteners that penetrate through the top of Shake Caps must be sealed and stone-chipped.

VIDEO ONLINE

SHAKE CAP INSTALL ON HIP/RIDGE

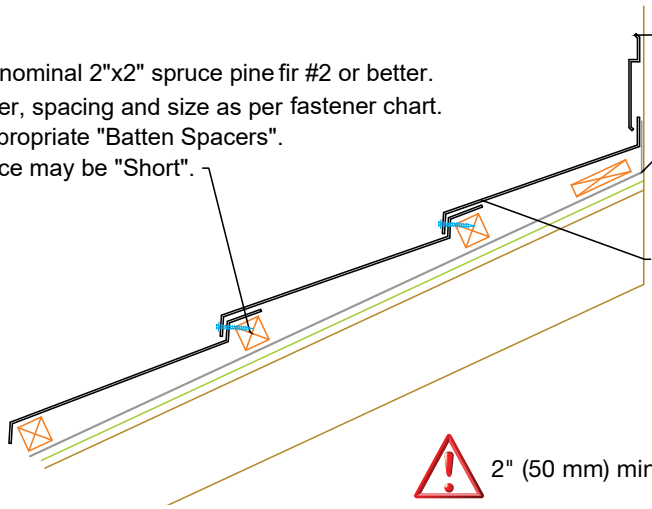
Chimney / Skylight / Headwall / Sidewall Detail

Battens: to be nominal 2"x2" spruce pine fir #2 or better.
Fastener number, spacing and size as per fastener chart.
Install using appropriate "Batten Spacers".
Top batten space may be "Short".

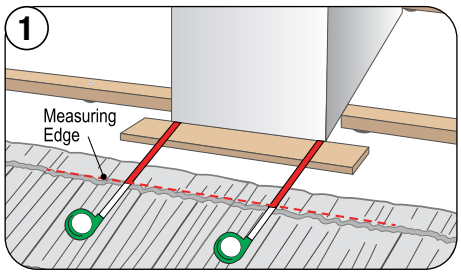
"Z" Bar: Fasten with appropriate fastener 12" o.c. max. Seal top with approved sealant

Roofing Underlayment: Turn up 2" minimum at headwall.

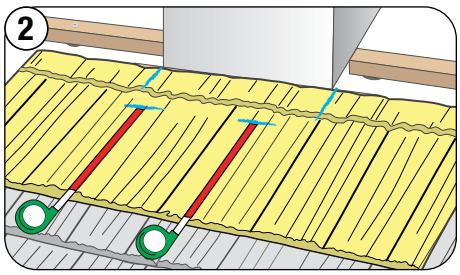
Panels: Bend and cut "Short Course" as needed to fit panel and batten lay-out. Use 1"x4" spruce pine fir #2 or better to support cut panel.



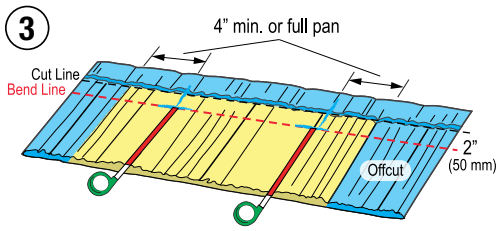
2" (50 mm) min. bend up is required on all sidewalls and headwalls.



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.

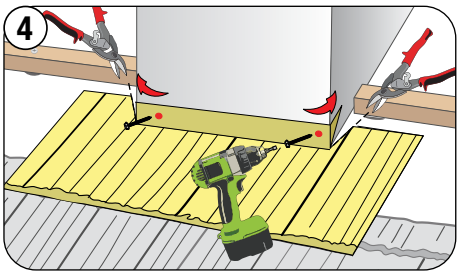


Align the front panel with the course below and the correct layout pattern for the profile, mark the sides of the chimney and mark the measurements from step 1.

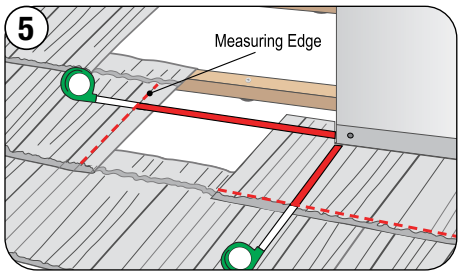


Apply the measurements to a full panel and bend the entire length then cut off the excess.

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

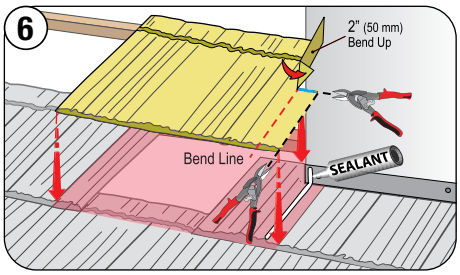


Fit the front bottom flashing section and cut at a 45 degree angle from each side. Bend the corners around the Chimney/Skylight. Fasten with 2 screws, as shown.



Measure the distance from the panel overlap to the Chimney/Skylight and mark on the left-side panel as a Bend Line. Add 2" (50 mm) and mark as a Cut Line.

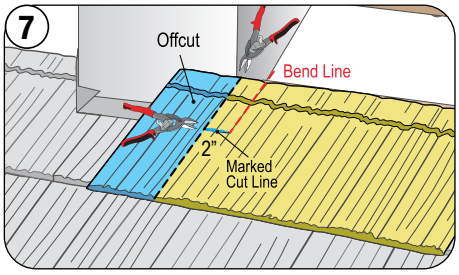
Measure the distance from the panel nose to the front of the Chimney/Skylight and mark another Cut Line.



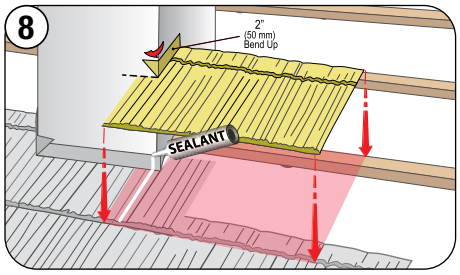
Cut and bend up the panel, as shown. Bend the corner around Chimney/Skylight. Apply Sealant and fit the left-side panel aligning it with the field panels already installed.

Continue on Next Page

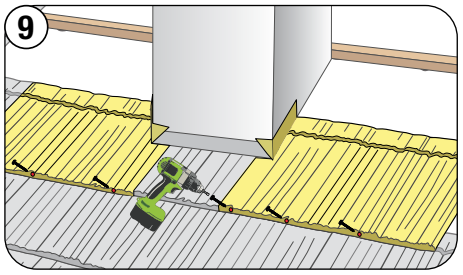
CHIMNEY / SKYLIGHT / HEADWALL / SIDEWALL DETAIL (cont.)



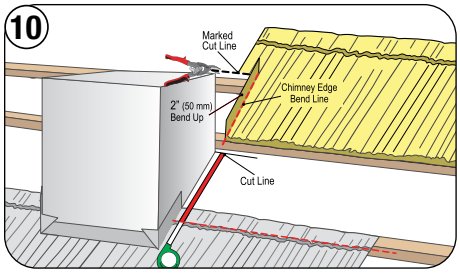
Align the right-side panel with the Chimney/ Skylight and panel below keeping correct layout pattern. Mark the Bend Line. Add 2" (50 mm) to the Bend Line and mark the Cut Line. Mark the distance from the panel nose to the front of the Chimney/ Skylight and mark horizontal cut.



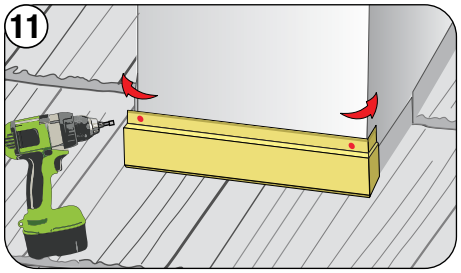
Cut and bend up panel. Apply Sealant to the corner and down the panel. Bend the corner of the bend-up and fit the panel.



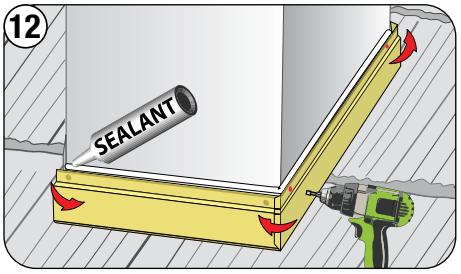
Fasten panels as regular field panels.



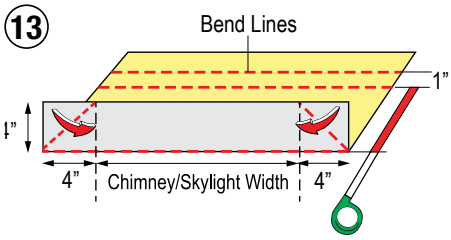
Align the top panel to the course below. Measure the distance from the back flange to the back of the Chimney/Skylight and mark Cut Line, as shown. Install panel section and apply Sealant across top edge of the bend-up.



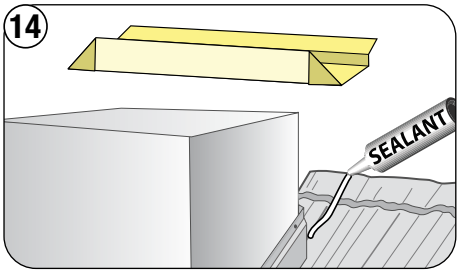
Measure, cut and bend Z-Bar metal, starting across the front. Fasten, as shown



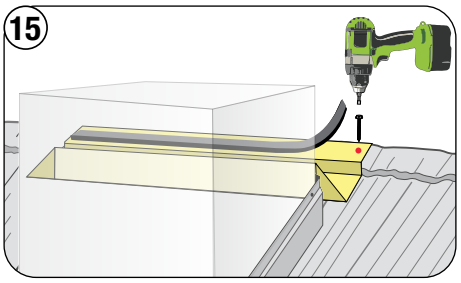
Complete Z-Bar installation up both sides bending at the corners. Apply Sealant along the top edge of the Z-Bar.



Measure the width of the Chimney/ Skylight. Using the section of the Flat Sheet, add 4" (100 mm) to the measurement on each side. Bend it up 4" minimum, forming a saddle flashing. Bend 4"x 4" triangles over, as shown. Measure and mark the distance from the back of the Chimney/Skylight to the back up-turn of the panel behind the Chimney/Skylight. Add 1" (25 mm), mark and bend to finish the Saddle.



Apply Sealant down both sides of the panel in line with the Chimney/Skylight width.



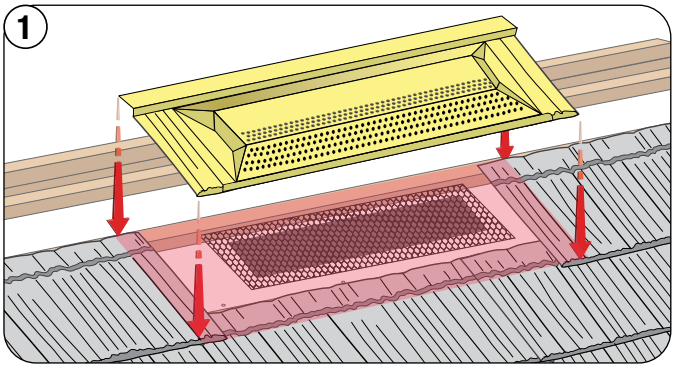
Fasten each end of the Saddle through the back-top flange. Apply an EmSeal tape on the Saddle aligned with the back-top flange of the panels.

VIDEO ONLINE

CHIMNEY / SKYLIGHT DETAIL

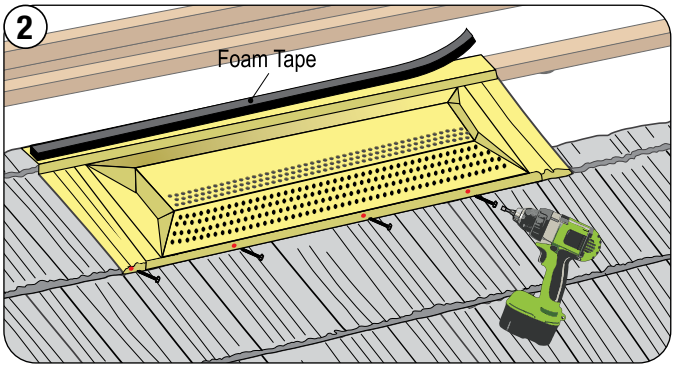
EZ VENT INSTALL (Off Ridge Ventilation)

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.

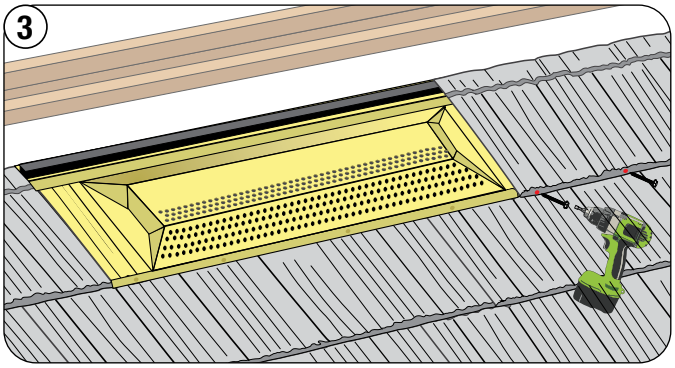


Cut a hole in the decking, approximately 5" x 30" (127 x 762 mm). Cover the hole with metal mesh (0.25" (6.5 mm) square) to prevent pests from entering the attic.

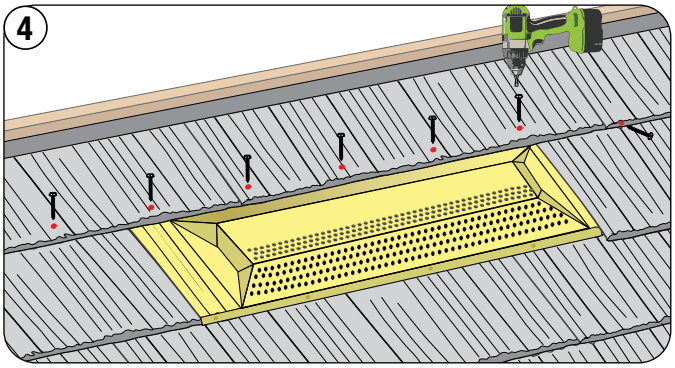
Install the EZ-Vent unit interlocking and overlapping as field panels.



Install a section of EmSeal tape 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.



Continue installation of the panels in the row.



Fasten the ridge course above the EZ-Vent through the top of the panel.

Any fasteners that penetrate through the top of the panel must be sealed and stone-chipped.

VIDEO ONLINE

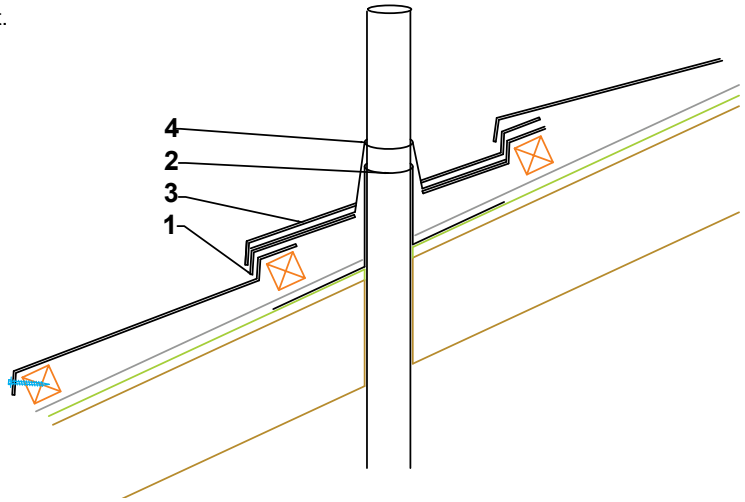
EZ VENT INSTALL

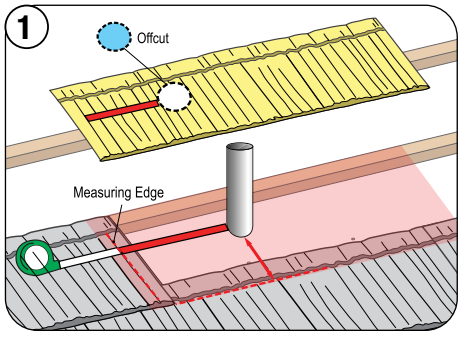
PIPE VENT INSTALL - SANDWICH METHOD

Battens: to be nominal 2"x2" spruce pine fir #2 or better. Fastener number, spacing and size as per fastener chart. Install using appropriate Unified Steel "Batten Spacers".

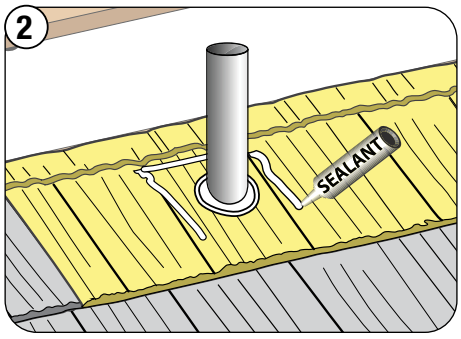
Double Pan/Sandwich Method:

1. Bottom pan, loose cut.
2. (If dry-in state is required.) Galvanized base flashing sealed with roofing underlayment.
3. Top pan, tight cut, seal with approved sealant and granule chip.
4. Granule coated pipe flashing, seal top with approved sealant.
5. Fasten panels as normal (fasteners omitted for clarity).

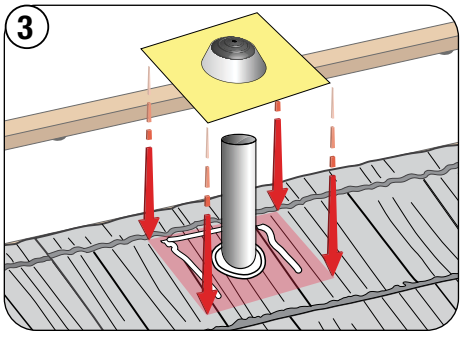




Measure, mark and cut a pipe sized hole in the base panel.

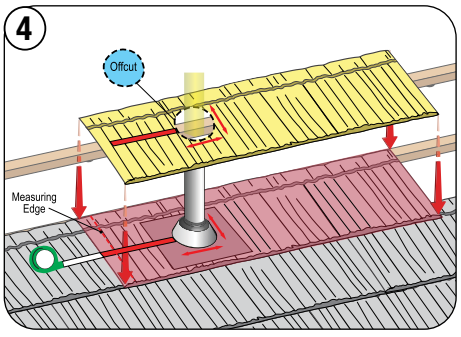


Install base panel to fit around the vent pipe. Apply a bead of Sealant on each side and around the hole of the pipe, as shown.

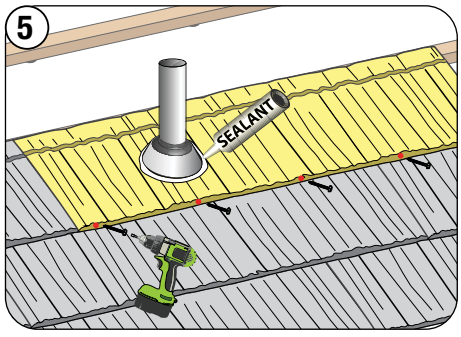


Slide the Pipe-Jack flashing over the pipe and seat it into the Sealant. Press firmly.

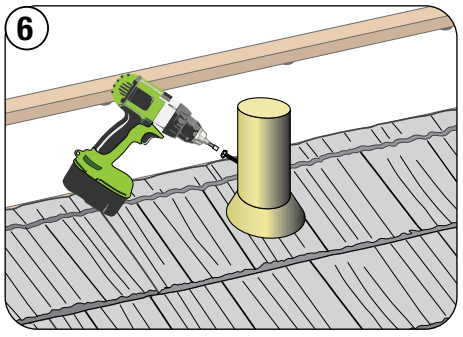
Trim Pipe Jack base, as needed, to fit panel course.



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



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

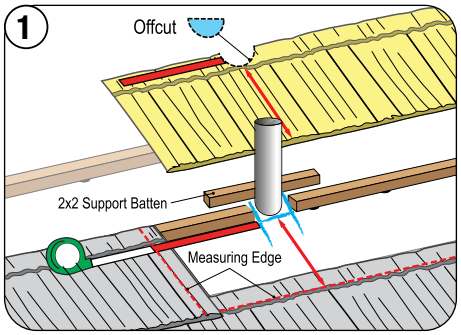


Install and fasten the Pipe-Sleeve through the back of the sleeve into the pipe. Make sure to fasten at least 2" (50 mm) above the Pipe-Jack cone.

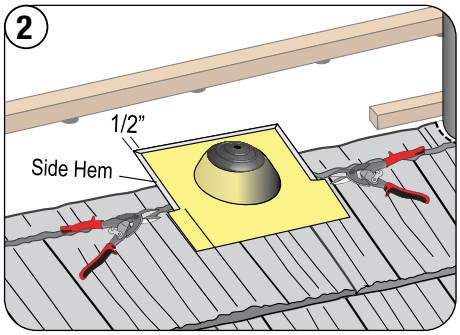
VIDEO ONLINE

PIPE VENT INSTALL - SANDWICH

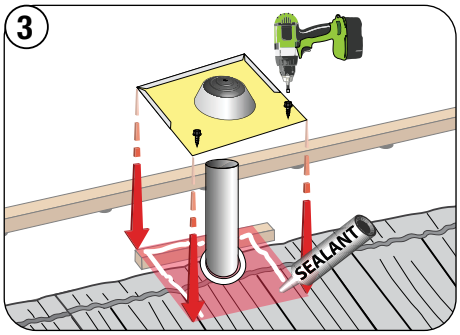
PIPE VENT INSTALL - SPLIT COURSE METHOD



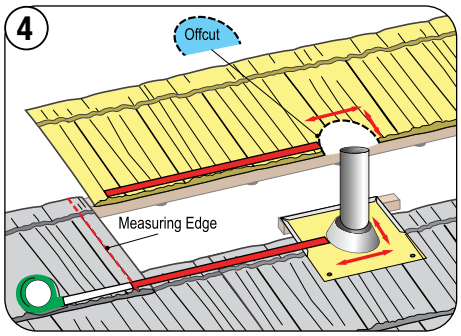
Measure and cut lower panel to fit around the vent pipe. Install panel.



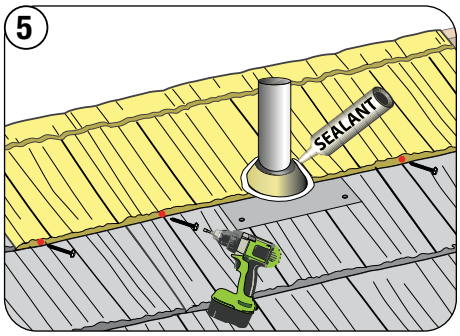
Place Pipe Jack on the panel to the side of the pipe and make 1/2" (13 mm) cuts in line with the back up-turn of the panel. Hem the edges, as shown.



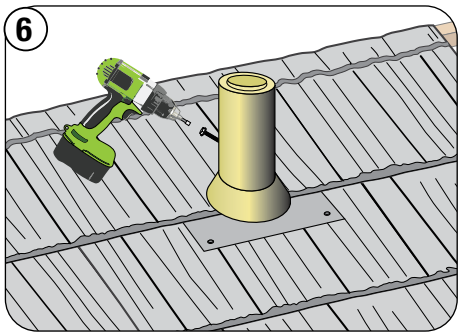
Slide the Pipe-Jack flashing over the pipe and seat it into the Sealant. Press firmly. Fasten the front side of the Pipe-Jack flashing with Stitch Screws, as shown.



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.



Fasten panel as regular field panel. Apply Sealant and stone chip around the flashing cone.



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

VIDEO ONLINE

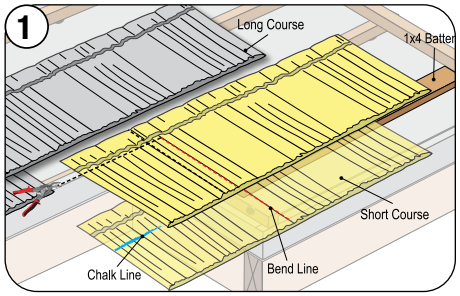
PIPE INSTALL - SPLIT COURSE

SHORT COURSE DETAIL

Always start panel laying from the longest eave length and work towards the short course area where the eave line steps down. Work down to keep panels correctly interlocked and aligned over the short course area.

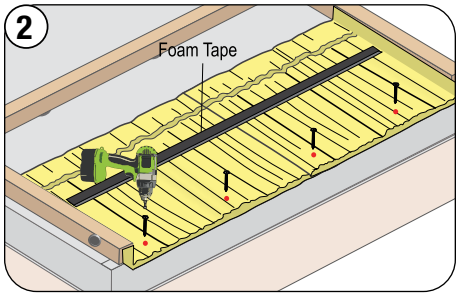
Always have Short Courses at the eave line.

1



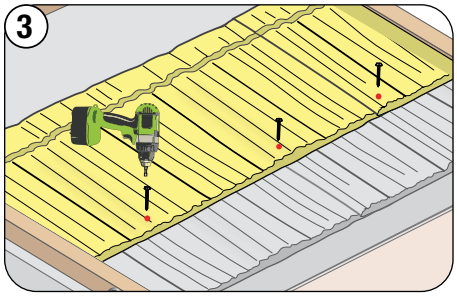
Place Long Course panel. Do not fasten. Properly align panels underneath to follow correct panel layout. Extend Short Course panel 1/2" (13 mm) past the eave. Mark the Bend Lines at the rake batten edge, and Cut Line, as shown. Mark the horizontal line on the Short Course panel aligned with the nose down-turn of the panel above. Install 1x4 Support Batten where two panel courses overlap.

2



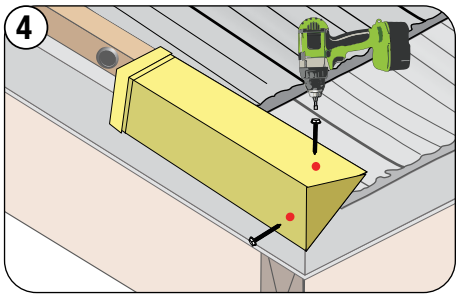
Add 1.5" (38 mm) to the marked Bend Lines and mark as Cut Lines. Cut and bend panels. Install the Short Course panel and extend it 1/2" (13 mm) past the eave. Finish the row. Fasten as regular eave panels. Apply EmSeal foam tape above the marked chalk line.

3



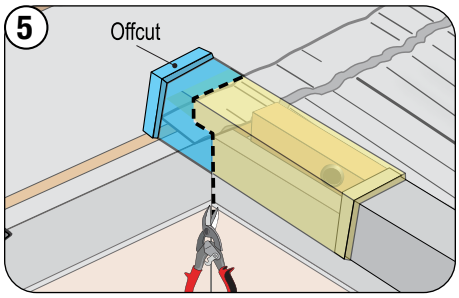
Install panel above the Short Course eave panel. Fasten through the top into EmSeal foam tape and 1x4 support batten.

4



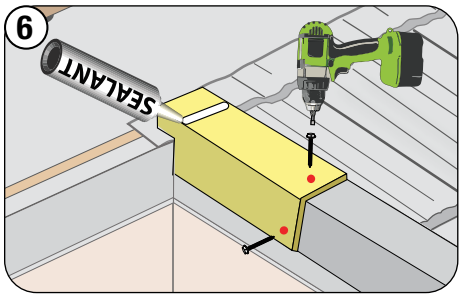
Form and install Shake Cap Starter (End Cap) and fasten through the top into the rake batten and on the side, as shown.

5



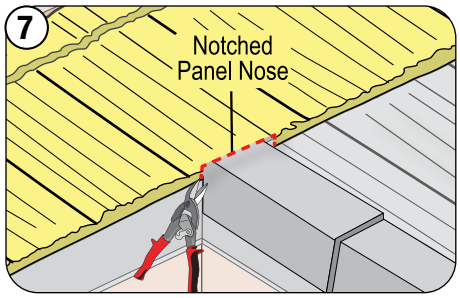
Place next Shake Cap on top of the Starter Cap at the corner intersection. Mark and cut, as shown.

6



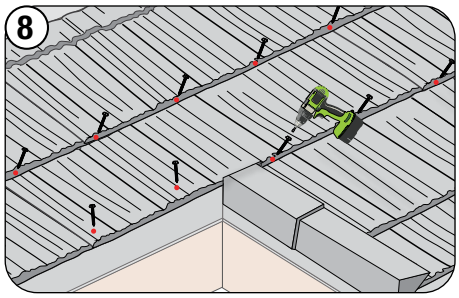
Fasten Shake Cap cut into the rake batten and on the side. Apply a bead of Sealant on top, as shown.

7



Install Long Course panel and notch the nose down-turn to fit Shake Cap.

8



Finish installation of the Long Course and fasten as regular panels. Fasten through the top at the eave.

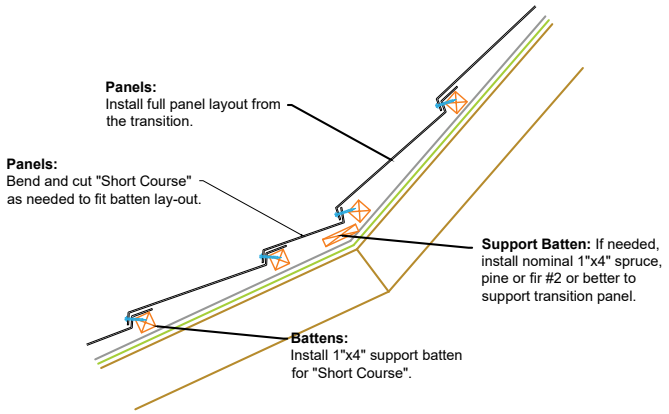
Any fasteners that penetrate through the top of the panel must be sealed and stone-chipped.

VIDEO ONLINE

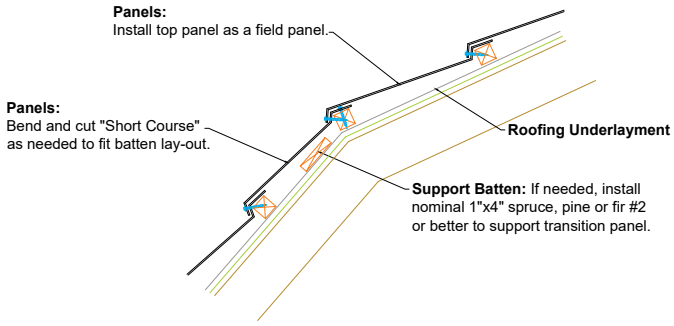
SHORT COURSE DETAIL

SPECIAL TRANSITION DETAILS

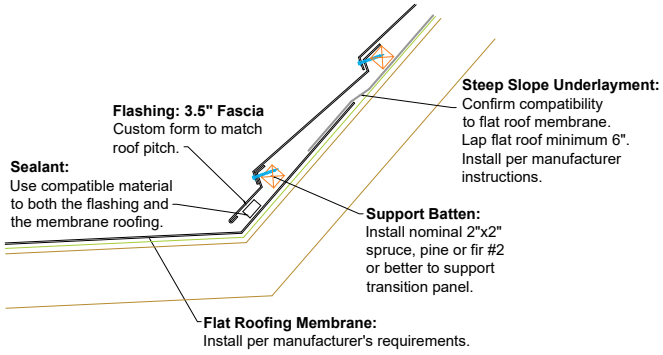
LOW TO HIGH



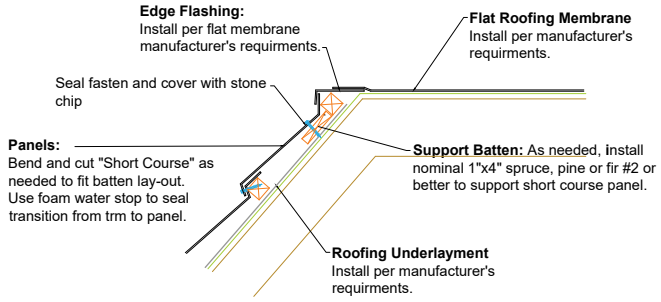
HIGH TO LOW



FLAT TO STEEP



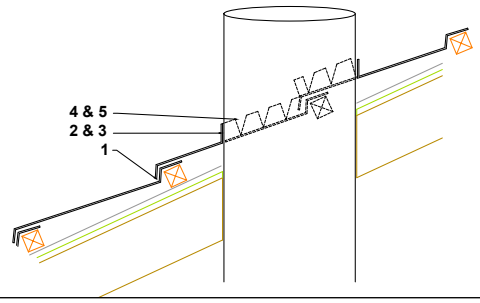
STEEP TO FLAT



LARGE ROUND ROOF PENETRATION

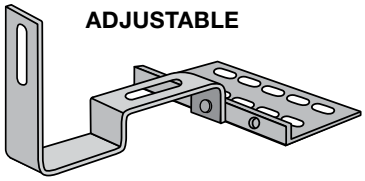
Large Round Roof Penetrations: (Similar to mid-panel penetration)

1. Cut panels with minimum,1" added for turn-up.
2. Bend extra material up.
3. Press tabs tightly to the penetration,
4. Apply caulking at all cut edges to seal to penetration.
5. Apply granules into caulking.
6. Fasten panels as normal. (fasteners omitted for clarity)

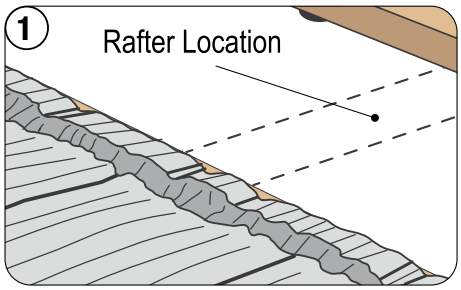


SOLAR MOUNT INSTALL

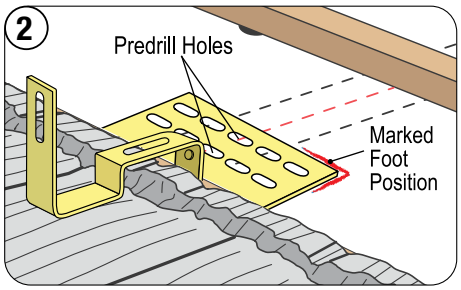
ADJUSTABLE



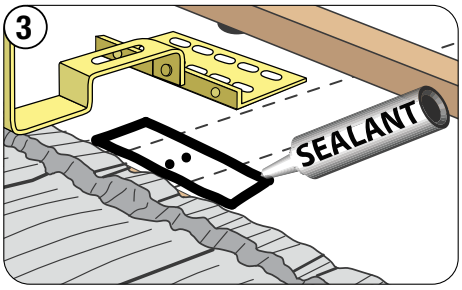
Adjustable Solar Roof Mount has 3 leverage points of adjustment of the wide base for fastening to the rafter.



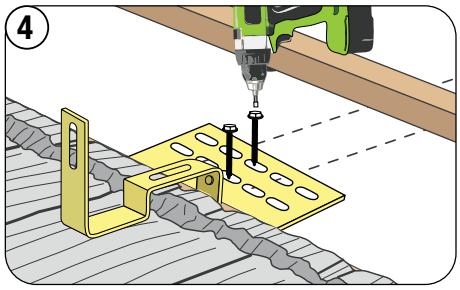
Lift up upper Unified Steel roof panel. Find and mark the location of the rafter beneath the roof deck.



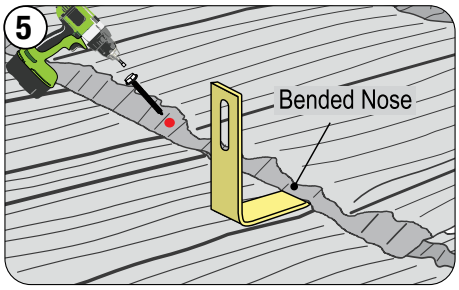
Place the mount over the back top-flange. Adjust the foot of the mount so the holes of the foot are aligned with the center of the rafter. Predrill the holes and mark the projected foot position.



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.



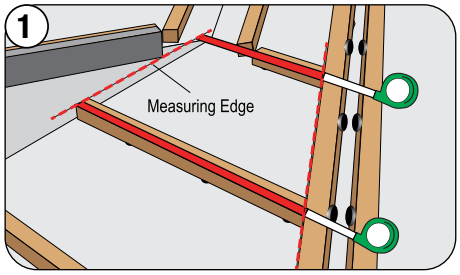
Install the panel above the Solar Roof Mount. Bend the panel nose where it intersects with the Solar Roof Mount to ensure a tight fit. Fasten the panel through the nose, as regular field panels.

Depending on rafter location it may be 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.

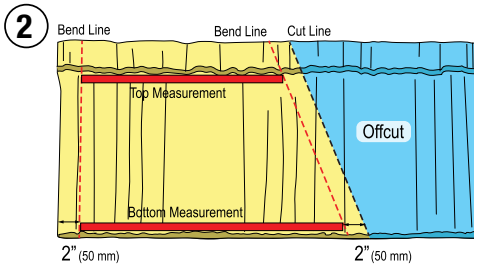
VIDEO ONLINE

SOLAR MOUNT INSTALL

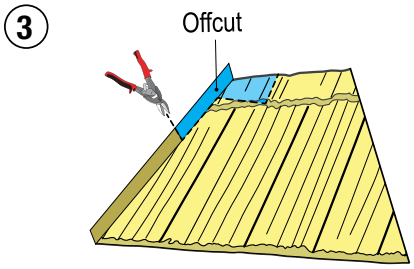
DORMER VALLEY EXIT



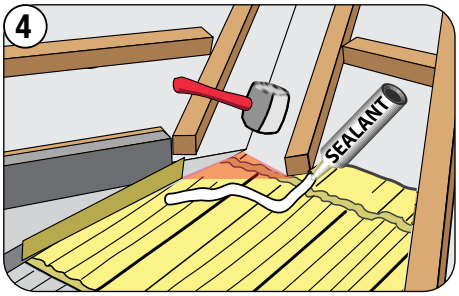
Measure the top and bottom of the panel section from the side wall to the hip batten.



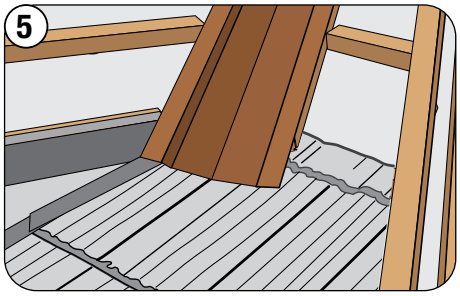
Apply measurements to a full panel. Add 2" (38 mm) to allow bend-up.



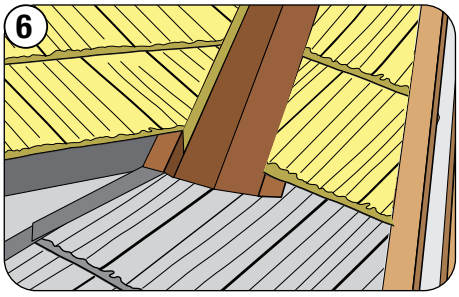
The top left corner needs to be cut out, hemmed to fit under the valley exit area.



Install the valley exit panel to fit under the dormer eave overhang and valley exit. Flatten back flange against the roof deck and apply Sealant, as shown.



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.

VALLEY EXIT WITH WAKAFLEX® FLASHING

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 highest portion of a 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” (140 mm) 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 should be painted or stone coated to match the panel color.

VIDEO ONLINE

DORMER VALLEY EXIT DETAIL

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.

VIDEO ONLINE

FINISHING TOUCHES

NOTES:

Unified STEEL
STONE COATED ROOFING

Shown in Charcoal

SIDING & ACCESSORIES TRIM & MOULDINGS ROOFING STONE WINDOWS OUTDOOR LIVING

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