Westlake Royal Building Products™ | ROOFING SOLUTIONS

Unified STEEL™
STONE COATED ROOFING

COTTAGE Shingle

DIRECT-TO-DECK - CUT & TUCK INSTALLATION METHOD

Shown in Ironwood

MANUFACTURED IN THE USA

WestlakeRoyalRoofing.com/Unified-Steel

TABLE OF CONTENTS

*High Velocity Hurricane Zone

INSTALLATION NOTES

These installation guidelines demonstrate Direct-to-Deck Cut & Tuck installation techniques for COTTAGE Shingle roof panels and accessories. Options are dependent upon chosen design and performance requirements of a given project. Local building codes might create alternative methods.

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.

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

COTTAGE Shingle panels are fastened through the nose in a Direct-to-Deck fashion. They use vertically positioned fasteners across the back flange and angled fasteners across the nose down-turn.

All fasteners used on a Unified Steel® system shall meet or exceed the corrosion resistant standard as defined in ASTM B-117, (1,000-hr minimum Salt Spray Corrosion Resistance).

Panel fasteners shall be of sufficient length to penetrate into the roof deck a minimum of 3/4".

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

COTTAGE Shingle 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 to structural sheathing, that may be solid or closely fitted minimum 15/32-inch (112 mm) thick plywood, equivalent thickness 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 fastening locations.

BATTENS

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

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 vents or 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

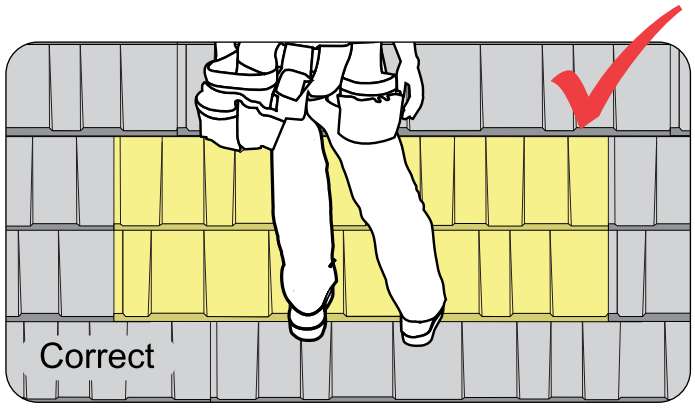
Minor scuffing of the stone coated finish can be repaired with a Touch-Up Kit. Use the basecoat acrylic supplied in the kit (not caulking) for repairs. Unfinished flashing material can be painted with durable acrylic aerosol paints. Colored aerosol paints should never be used as "touch-up" on stone coated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

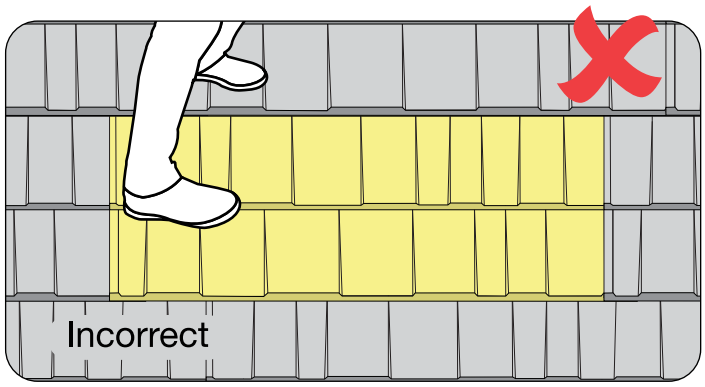
Refer to Unified Steel Technical Bulletin ***"Repairing Marked or Scratched Panels"*** for more details.

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

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 panels, as shown in right image below.

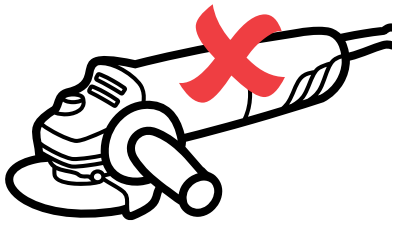




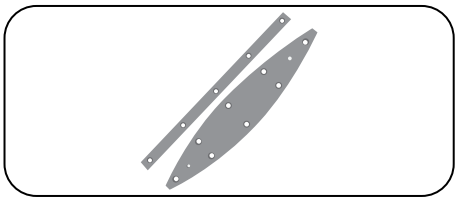
SUGGESTED TOOLS

Cutter

39 lbs (17.7 Kg)



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

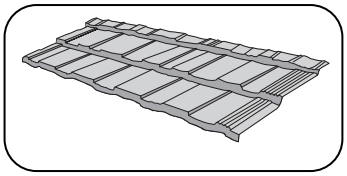


Cutter Blades (Top and Bottom)
54" x 43" x 35.25" (1372 x 1092 x 895 mm)
8 lbs/Set (3.63 Kg)

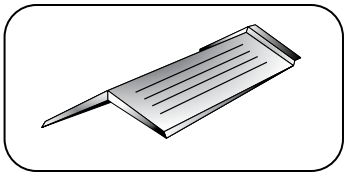
VIDEO ONLINE

WALKING ON THE ROOF

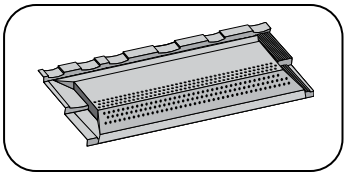
PARTS & PIECES



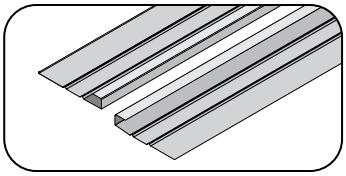
COTTAGE Shingle Panel
Coverage: 14.5" x 49.5"
(368 x 1257 mm)
6.4 lbs (2.91 Kgs), 20 pcs/sq



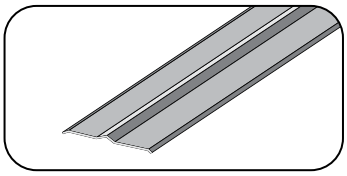
Cap Cottage (Hip & Ridge)
12" x 12" (305 x 305 mm)



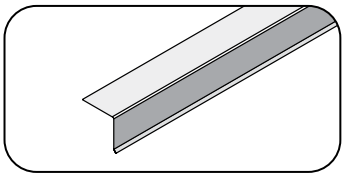
EZ-Vent COTTAGE Shingle
Coverage: 14.5" x 49.5"
(368 x 1257 mm) 10.5 lbs (4.8 Kgs)
NFVA 62.50 Sq In.



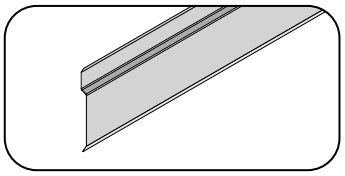
Valley 2-Pc
9" x 120" (229 x 3048 mm)
7.35 lbs (3.33 Kg)
Painted Black inside.



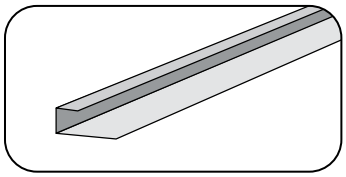
Valley Center Cover
4.5" x 79" (114 x 2006 mm), 2.2 lbs
(1 Kg)



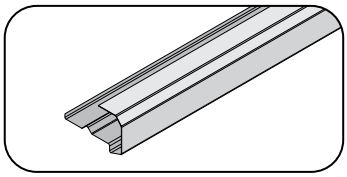
Drip Edge
1.5" x 120" (38 x 3048 mm)
1.6 lbs (0.72 Kg), Painted Black,
Brown or White outside.



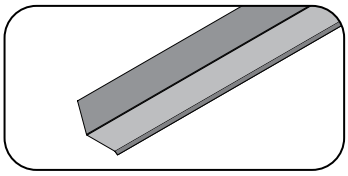
Z-Bar
5" x 79" (127 x 2006 mm)
2.7 lbs (1.2 Kgs)



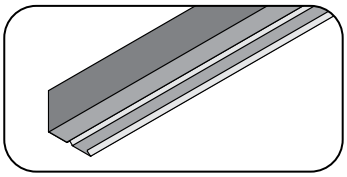
Gutter Riser
0.625" x 120" (16 x 3048 mm),
1.9 lbs (0.86 Kg)
Painted Black outside



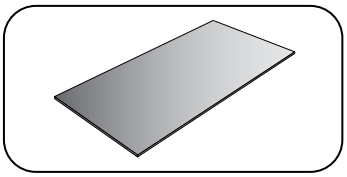
Rake Channel
2" x 3.25" x 79" (50 x 83 x 2006)
3.6 lbs (1.6 Kgs)



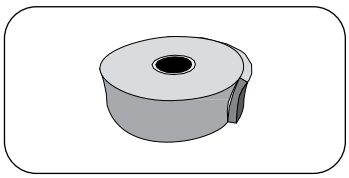
Head-Side-Wall Metal
3" x 3.5" x 79"
(76 x 89 x 2006 mm)
3.7 lbs (1.7 Kgs)



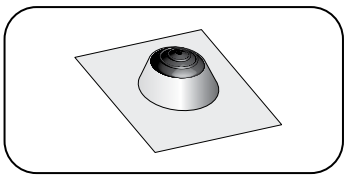
Side-Wall Under-Pan
4" x 3 x 120" (100 x 76 x 3048 mm)
5 lbs (2.3 Kg), Painted Brown inside.



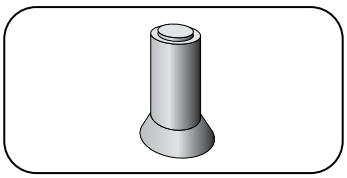
Flat Sheet
18" x 54" (457 x 1372 mm), 8 lbs
(3.7 Kgs)



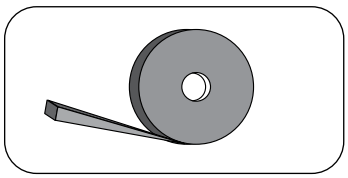
Barrier Foam Rolls
6" x 1" x 20' (150 x 25 x 6096 mm)
3.5 lbs (1.6 Kg)



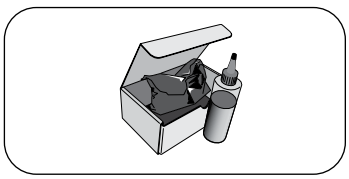
Pipe-Jack 4-N-1
Base 18" x 18" (457-457 mm)
Fits 1.25" to 4" pipes (32-100 mm)
1.86 lbs (0.85 Kg)



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)

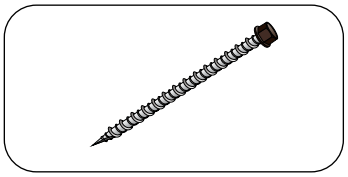
Basecoat 12-Pack (Adhesive)
12 Tubes/Case, 9.37 lbs/Box

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

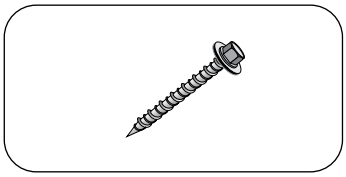
Bulk Stone Chips
1 Bucket of stone chips - 25 lbs
(11.3 Kg)

Weights are approximate.

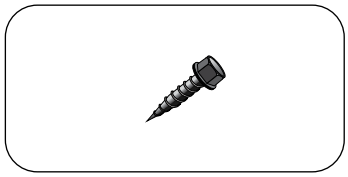
SCREWS



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

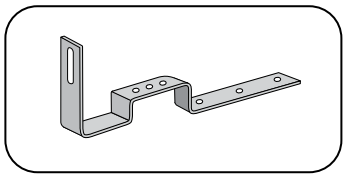


Valley Screws Carbon Steel
(Dome Cap over rubber washer)
1.5" L x 0.25" HWH
(38 mm L x 6 mm HWH)

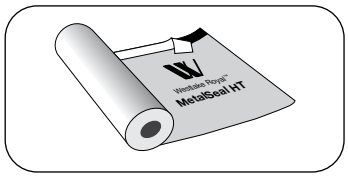


Stitch Screws Carbon Steel
0.75" L x 0.25" HWH
(19 mm L x 6 mm HWH)
Available in Black, Brown, Gray, Gold, Red, White.

AVAILABLE COMPONENTS / ACCESSORIES

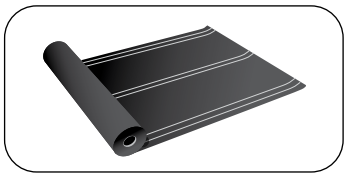


Solar Roof Mount
Stainless Steel Side Mount 90˚
3/4" (19.05 mm) fixed bridge height
3" (76.2 mm) wide bridge
Screws Included: 5.16" HWH x 3"

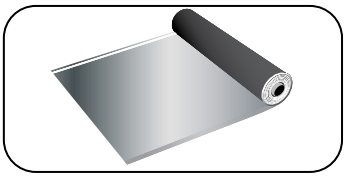


MetalSeal HT Self-adhered, High Temperature Underlayment
36" x 72' (200 sq. ft.)
(915 mm x 2.96 M), 70 lbs/Roll (31.7 Kgs)

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

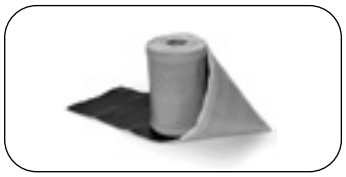


Westlake Royal ORG-Ply 40™
Underlayment/Base Sheet
39-3/8" x 65'-10" (216 sq ft.)
(1M x 20.37 M), 81 lbs/Roll (36.7 Kg)

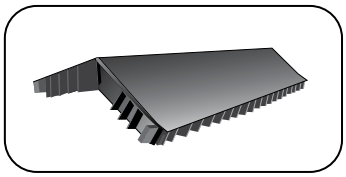


Sol-R-Skin™ BLUE
Fire Resistant, Thermal Insulating Underlayment
54" x 100' (450 sq. ft.)
(1372 mm x 30.48 M), 45 lbs/Roll (20.4 Kg)

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



RidgeMaster® Plus
Continuous ridge vent
(used with Cap Cottage Only)
1" x 11" x 48"
(25 x 280 x 1219 mm)

Quarrix StormStop 11.25"
Continuous ridge vent
(used with Cottage Cap Only)
0.625" x 11.25" x 20'
(16 x 286 x 6096 mm)
8 lbs/Roll (3.6 Kgs)

Weights are approximate.

FASTENERS

Unified Steel® panels can be installed with Screws as listed below:

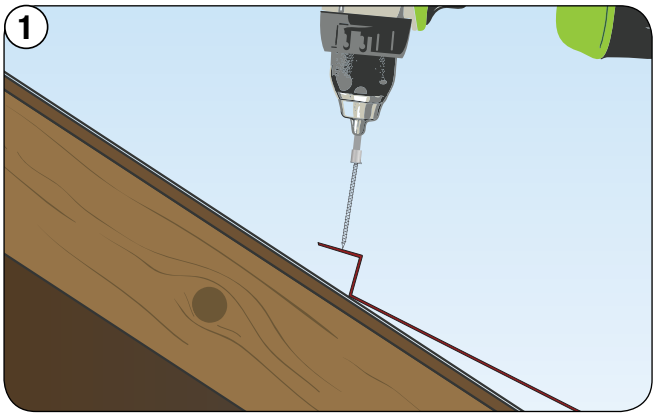
- **PANEL SCREWS**
  #10 x 2.5” long x 0.25” HWH (64 mm x 6 mm)
- **STITCH SCREWS** - #8 x .75" long x 0.25" HWH (19 mm L x 6 mm)
- **VALLEY PAN SCREWS** - #10 x 1.5” long x 0.25” HWH w/Rubber washer (38 mm x 6 mm)

Panel Screw must achieve 3/4” penetration of the deck.

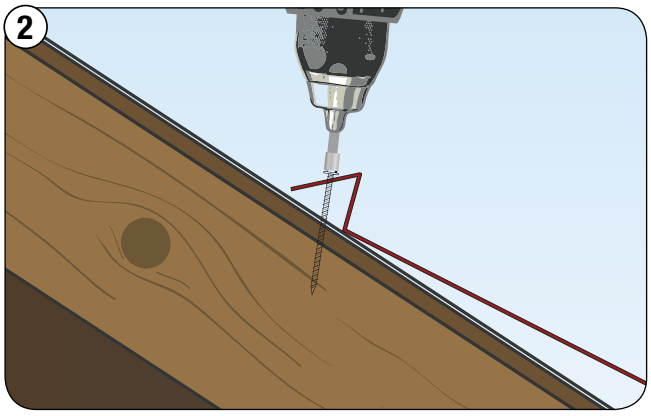
All fasteners used on a Unified Steel roof shall meet or exceed the corrosion resistant standard as defined in ASTM B-117, (1,000 hr minimum Salt Spray Corrosion Resistance).

Stainless Steel fasteners are to be used within 1 mile of non-fresh water in coastal areas.

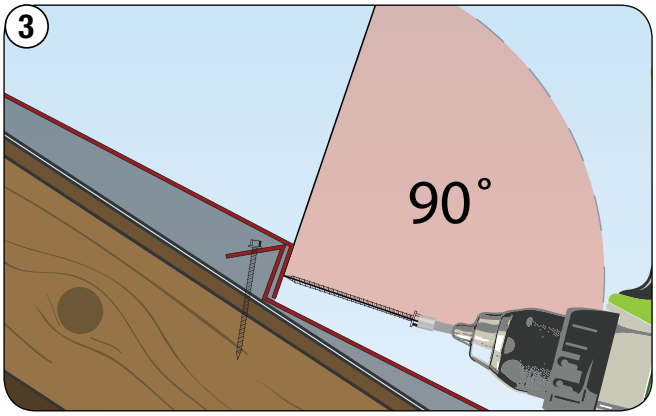
FASTENING DIRECT-TO-DECK PANELS



Panel Back Flange is fastened vertically into roof deck

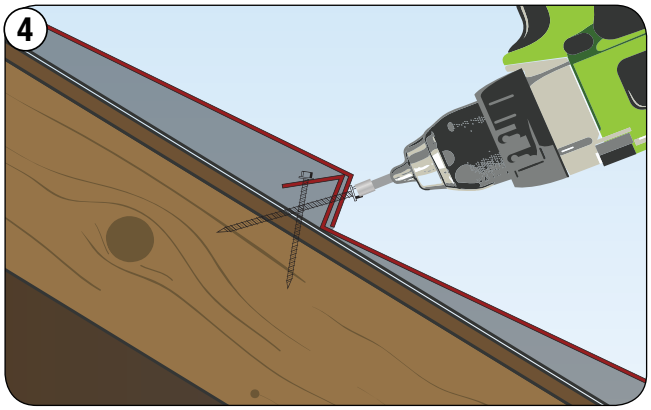


Panel Back Flange is ‘seated’ just short of the roof deck.



Start fastener at a 90° angle to the panel as shown.

Step 1 and 2 above:
Do Not crush/flatten the Back Flange.

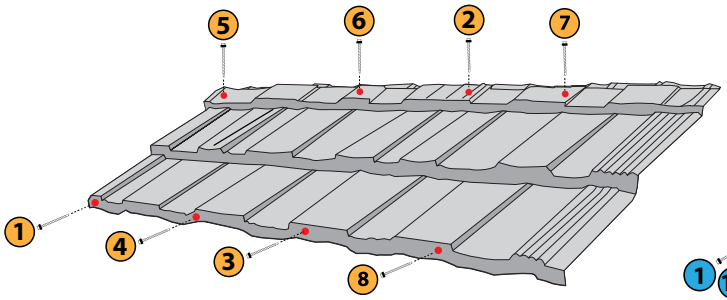


Once fastener has penetrated the nose, angle the screw to penetrate the Back Up-Turn of the panel beneath and into the deck. Due to the Back Flange and Nose Down-Turn fastener angles, the “X” pattern provides exceptional uplift resistance.

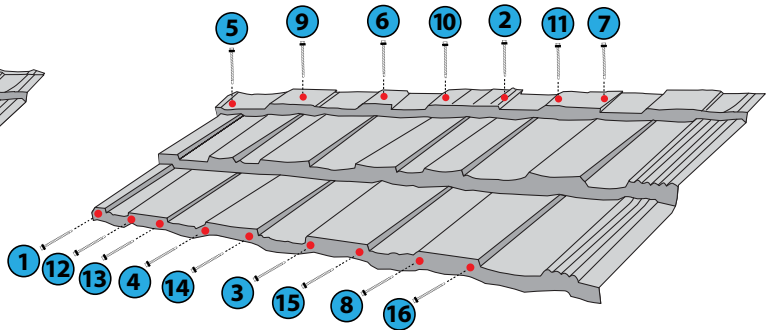
FASTENING PATTERNS PER DESIGN PRESSURE*

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

PATTERN 1



PATTERN 2



8 **PATTERN 1:** Four (4) fasteners across nose down-turn and four (4) across back top-flange.

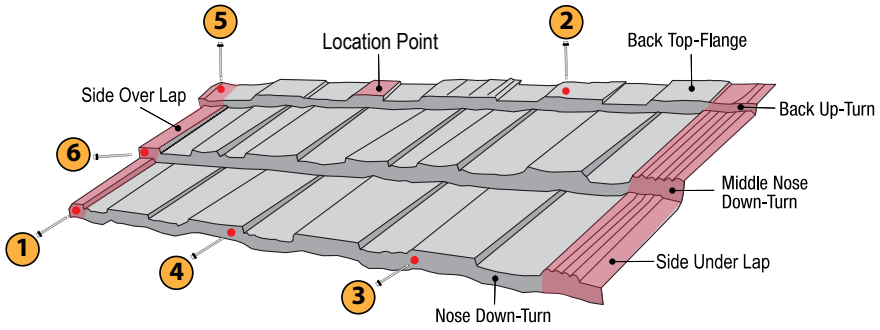
16 **PATTERN 2:** Eight (8) fasteners across nose down-turn and eight (8) across the back top-flange.

PATTERN 1**	**SLOPE 3:12 OR GREATER**
ROOF DECK:	The panels must be installed directly to structural sheathing, that may be solid or closely fitted minimum 15/32-inch (112 mm) thick plywood, equivalent thickness 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 fastening locations.
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.
ATTACHMENT:	26 ga. Metal Panel with four (4) #10-16 x 2-1/2 in. HWH corrosion resistant wood screws through the vertical leg at the headlap beginning at the center of the side lap and four (4) #10-16 x 2-1/12 in. HWH corrosion resistant panel screws through the horizontal leg at the back of panel beginning at the side lap. Fasteners shall penetrate through the deck a minimum 3/4”
MAXIMUM DESIGN PRESSURES:	**-52.5 psf** Pressure calculated using 2:1 margin of safety
PATTERN 2***	**SLOPE 3:12 OR GREATER**
ROOF DECK:	The panels must be installed directly to structural sheathing, that may be solid or closely fitted minimum 15/32-inch (112 mm) thick plywood, equivalent thickness 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 fastening locations.
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.
ATTACHMENT:	26 ga. Metal Panel installed with eight (8) #10-16 x 2-1/2 in. HWH corrosion resistant wood screws through the vertical leg at the headlap beginning at the center of the side lap and eight (8) #10-16 x 2-1/2 in. HWH corrosion resistant wood screws through the horizontal leg at the back of panel beginning at the side lap. Fasteners shall penetrate through the deck a minimum 3/4”.
MAXIMUM DESIGN PRESSURES:	**-127.5 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**

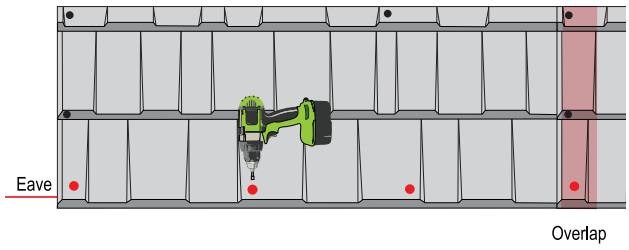
FASTENING PATTERN FOR NON-HVHZ* REGIONS



Fastening sequence shown is for the Left to Right layout direction; applicable to any location on the roof and ensures the panels stay correctly aligned. Check **Page 8 for Design Pressure requirements.**

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

6 NON-HVHZ PATTERN: Three (3) across Nose Down-Turn, Two (2) across Back Top-Flange and 0ne (1) at the Middle Nose Down-Turn.



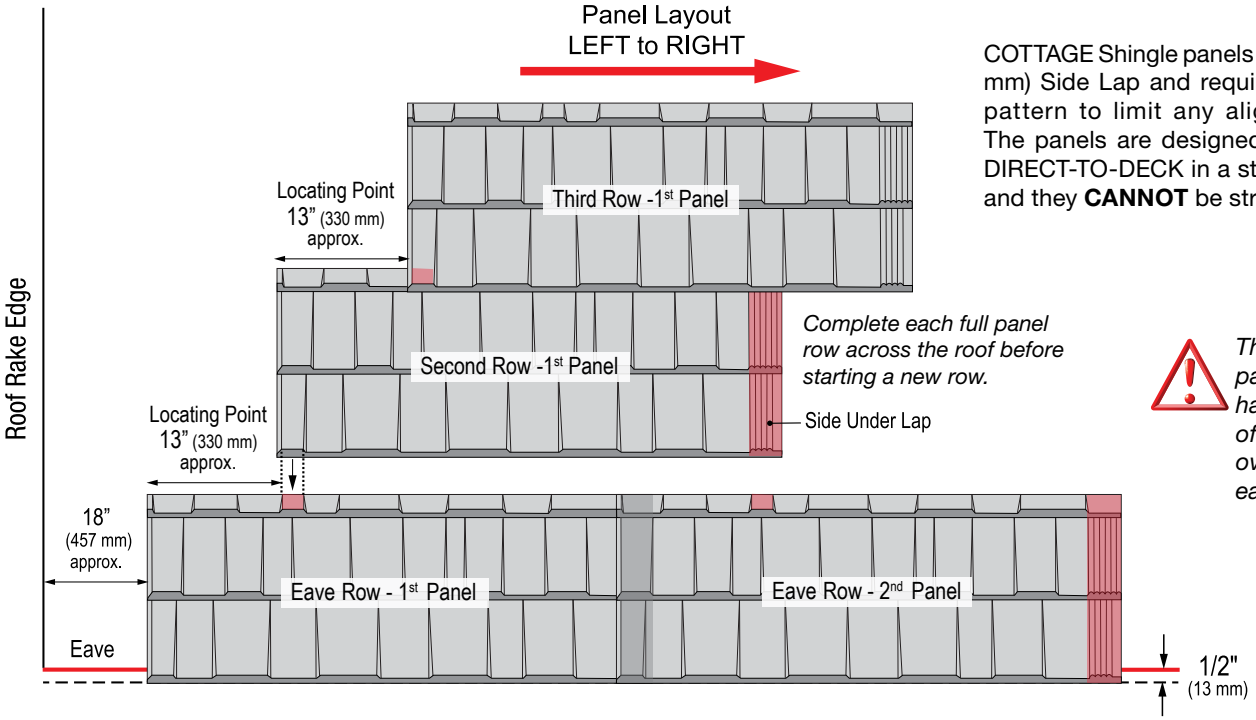
Fasten 1st row panels through the top of the panel as shown, out of the main water channel of the panel.

NOTE: Top of the panel fastening is acceptable behind EZ-Vents and Sidewall/Chimney/Skylight details, as necessary.

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

*High Velocity Hurricane Zone

FIELD PANELS LAYOUT - OPTION 1



COTTAGE Shingle panels have a 3-1/2" (89 mm) Side Lap and require a set stagger pattern to limit any alignment issues. The panels are designed to be installed DIRECT-TO-DECK in a staggered pattern and they **CANNOT** be straight laid.

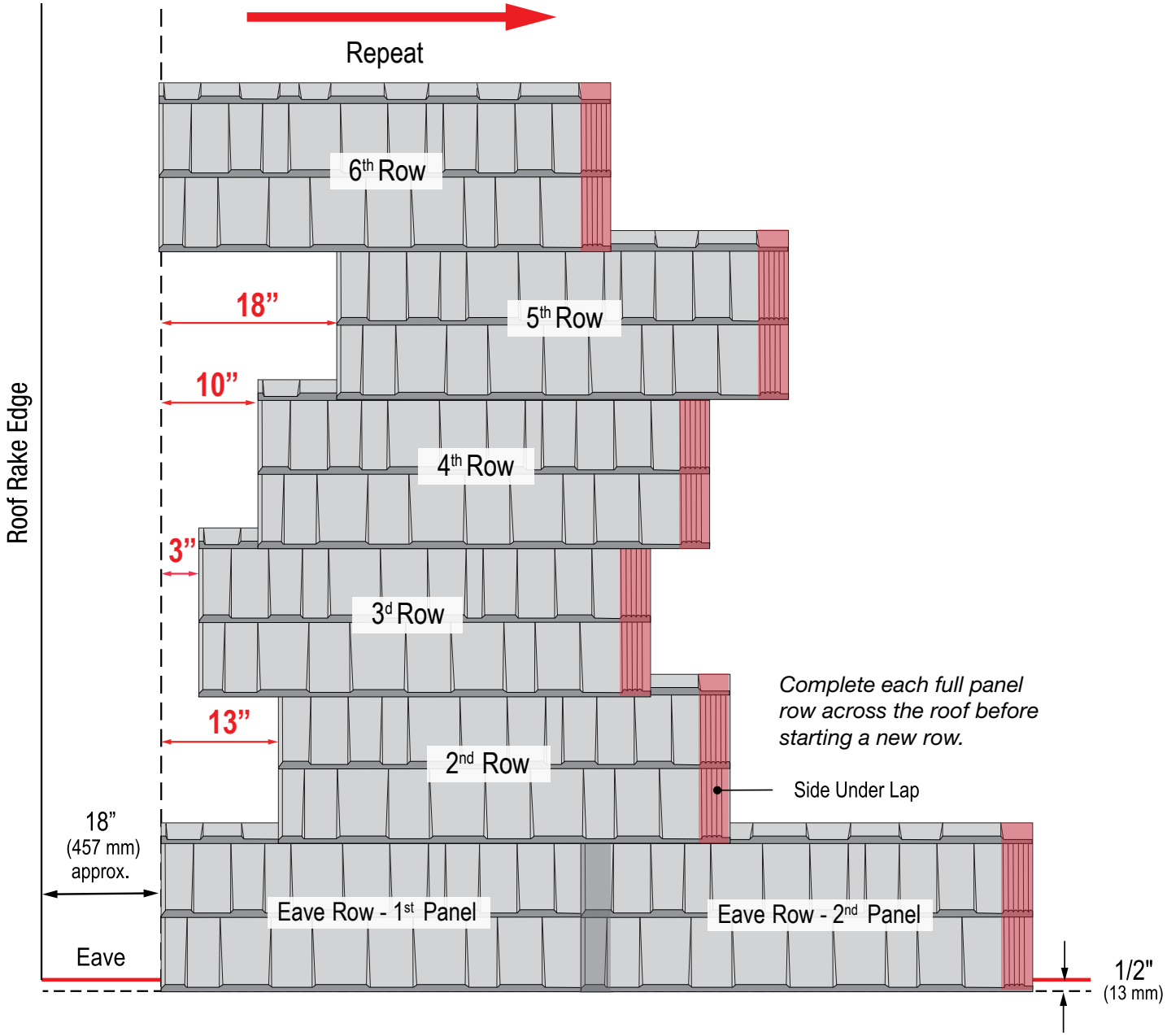
Complete each full panel row across the roof before starting a new row.

The bottom panels need to have a minimum of 1/2" (13 mm) overhang at the eave.

VIDEO ONLINE

FIELD PANELS LAYOUT & FASTENING

FIELD PANELS STAGGERED LAYOUT - OPTION 2

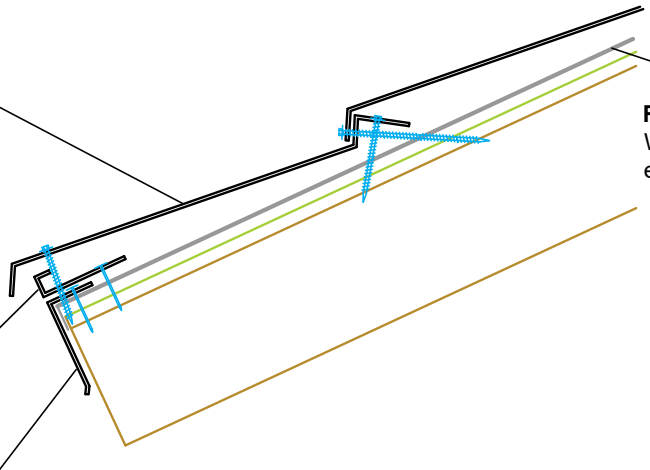


VIDEO ONLINE

FIELD PANELS STAGGERED LAYOUT

EAVE AND RAKE PREP & INSTALL

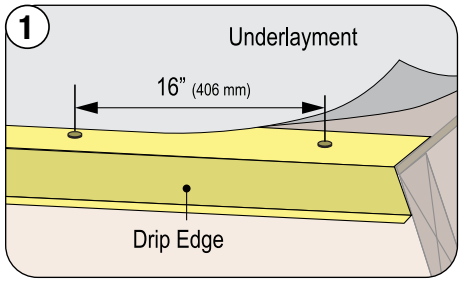
Panels: Install bottom panel to extend past fascia 1/2". Seal and chip screws at top surface of panel. Nose and hidden fastener must penetrate the decking a minimum of 3/4". Fasteners through the nose of the panels do not require sealant.



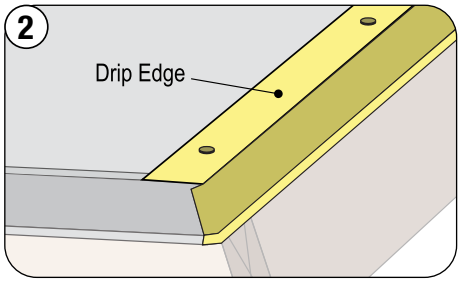
Roofing Underlayment: Wrap minimum 1" over finish edges.

Gutter Riser: Fasten 16" o.c. with corrosion resistant nails or screws with enough length to penetrate decking a minimum of 3/4".

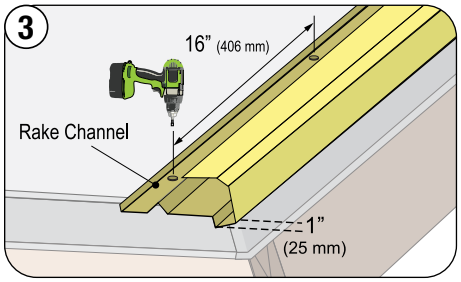
Drip Edge Metal: Install tight to structure.



Install Drip Edge across fascia **under** the Underlayment. Fasten every 16" (406 mm) o.c.

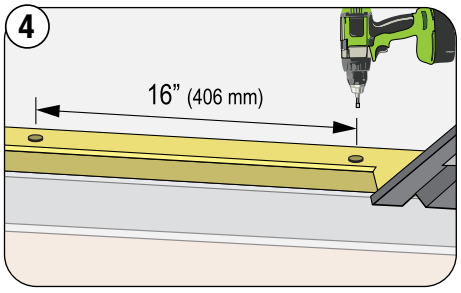


Install Drip Edge up the rake **on top** of the Underlayment, as shown. Overlap Drip Edge seams 2" (50 mm).

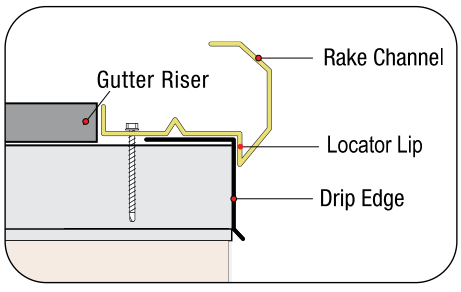


Install Rake Channel up the rake extending it past the eave Drip Edge by 1" (25 mm). Make sure the 'Locator-Lip' is snug against the rake Drip Edge. Fasten with washer & grommet screws every 16" (406 mm) o.c. If fasteners do not have a sealing washer, apply a bead of Sealant around each one.

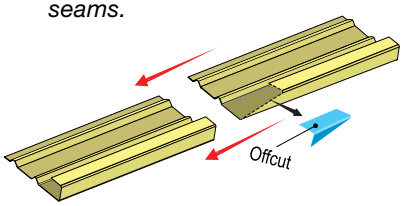
Check local code for fastener pattern and Drip Edge placement, as some regions require additional fastening and different placement.



Install Gutter Riser on top of the Drip Edge across the fascia and flush with the fascia board. Butt up against the Rake Channel. Fasten 16" (406 mm) o.c.



Rake Channel metal is notched to lap a minimum of 2" (50 mm) to prevent leakage through seams.

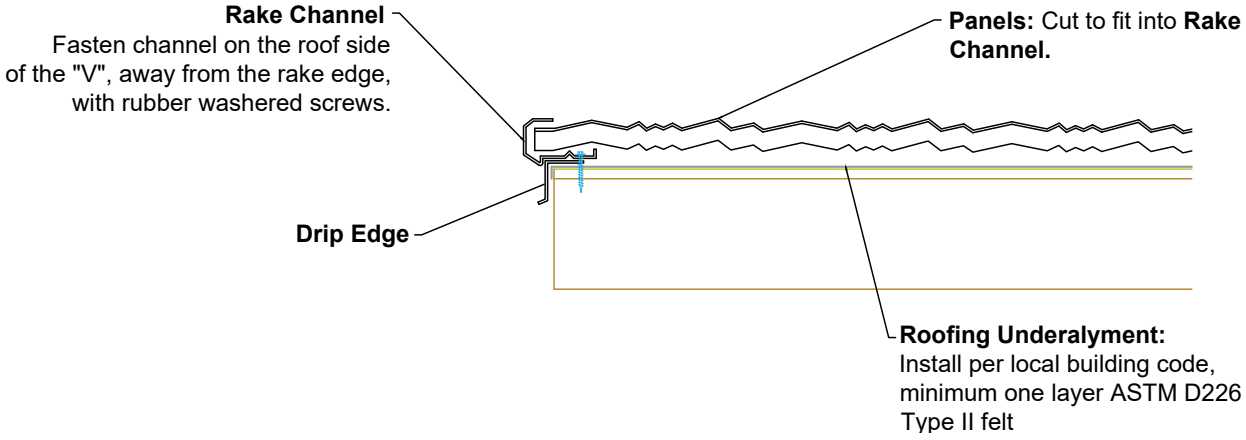


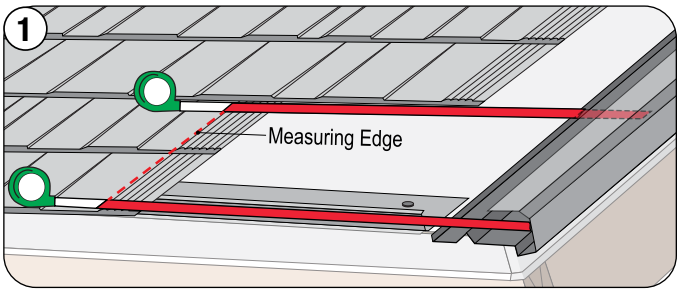
VIDEO ONLINE

EAVE AND RAKE PREP & INSTALL

▶ See Technical Bulletin for additional options.

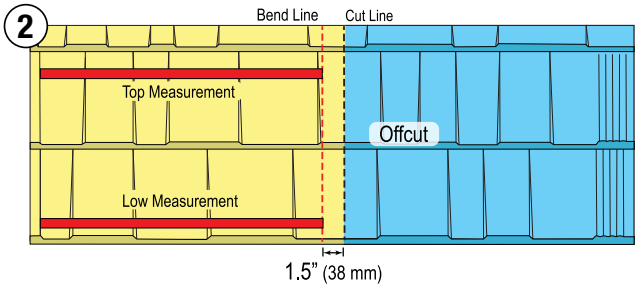
RAKE PANELS INSTALL



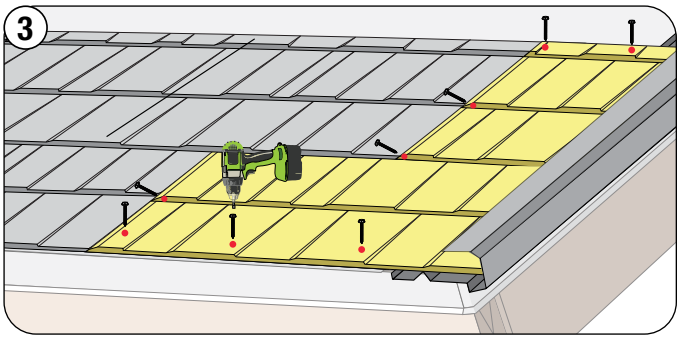


Measure from the full panel across to the rake edge on each course. Refer to Panel Layout pages for correct panel lap and stagger layout. Record top and bottom measurements.

When measuring the rake 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.



Apply measurements to the full panels and mark the Cut Line.



Install rake panels into Rake Channel and fasten as a regular field panels. Continue installation up the roof.

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

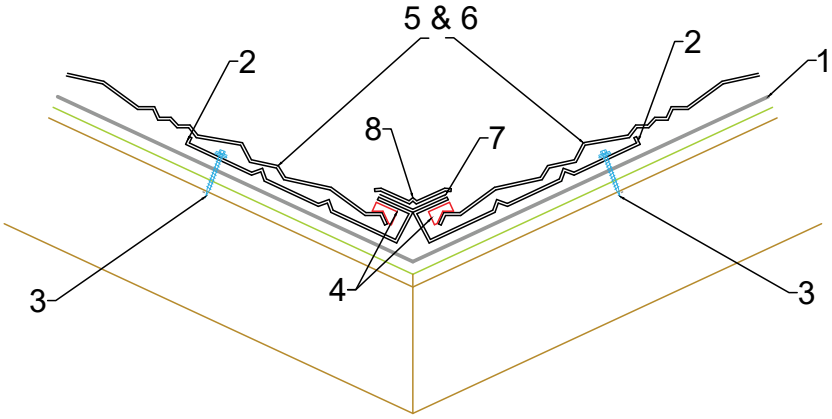
VIDEO ONLINE

RAKE PANELS INSTALL

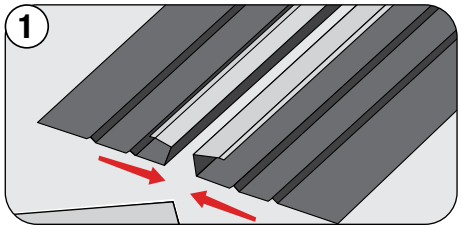
VALLEY PREP & INSTALL

VALLEY 2-Pc:

1. Install underlayment, per prevailing building code.
2. Install two (2) pieces of valley flashing (one each side of valley)
3. Fasten both sides at 24" o.c. minimum, with neoprene washered screws
4. Install EmSeal expandable tape into valley channel
5. Cut panel to valley angle, allow 1/4" to 1/2" from inner edge
6. Install Unified Steel Panels into valley trough
7. Cover center joint with self-adhered waterproofing strip
8. Install Valley Center Cover

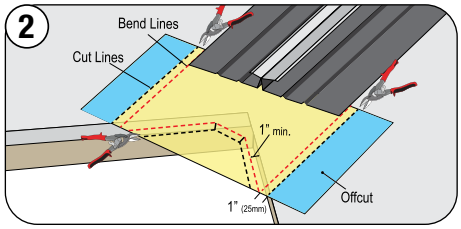


An Exit Tray helps provide a finished appearance to the exit area of the valley especially if the valley is exiting onto another roof section such as from a Dormer roof.

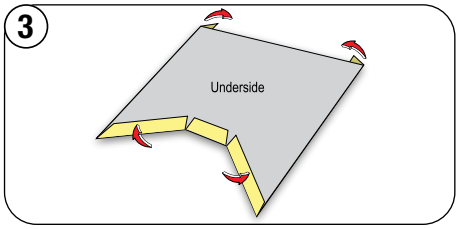


Position Valley 2-Pc at the center of the valley.

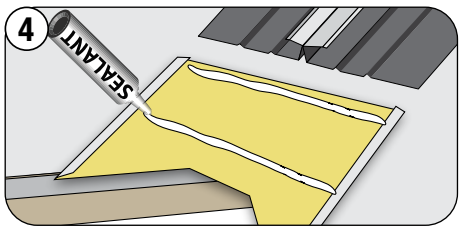
If installing Valley 2-Pc without the Exit Tray, overhang Valley 1" (25 mm) beyond Drip Edge.



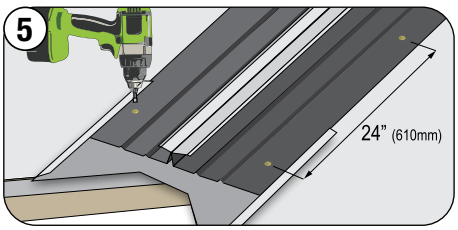
Place half a Flat Sheet under the Valley. Extend Flat Sheet a minimum of 1" (25 mm) past fascia. Mark, cut and bend, as shown.



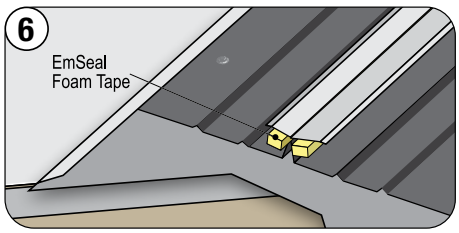
Hem both sides of the folded Flat Sheet to fit around outside edges of Valley 2-Pc.



Fit the Exit Tray at the fascia. Apply Sealant, as shown.

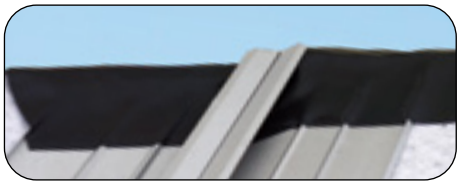


Insert Valley 2-Pc into the Exit Tray. Fasten Valley with washer and grommet screws in the outside locations a minimum of 24" o.c. (610 mm) up both sides.



Insert EmSeal foam tape into Valley channels on both sides.

WAKEFLEX® ON VALLEY



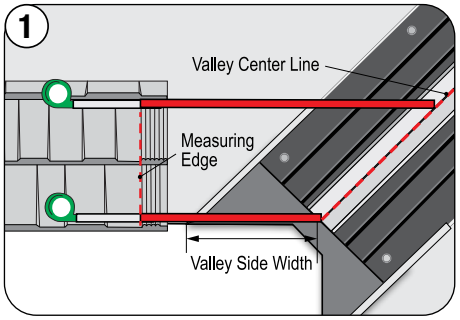
Where two valleys meet at the ridge line, Wakaflex universal flashing can be used to seal the intersecting pieces of Valley.

1. Cut Wakaflex of equal width to form on top of the 2 pieces of valley metal extended min. 6" 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.

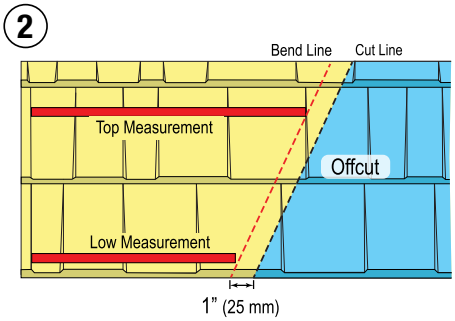
VIDEO ONLINE

VALLEY PREP & INSTALL

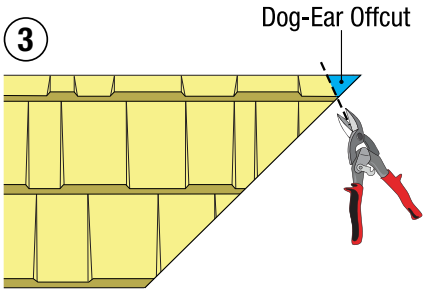
VALLEY PANELS INSTALL



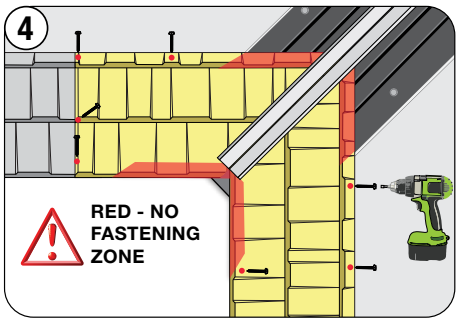
Measure from the Side Lap reference point to the center of the Valley 2-Pc. Allow 1/4" to 1/2" (6 mm to 13 mm) from inner edge.



Apply measurements to the full panel from the Side Lap reference point, mark & cut panels to fit into the Valley 2-Pc.

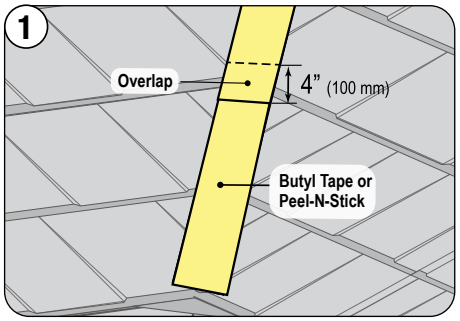


Cut off the top corner ("dog-ear") of the panel in 45 degree angle of ***each panel that is inserted into*** Valley 2-Pc.

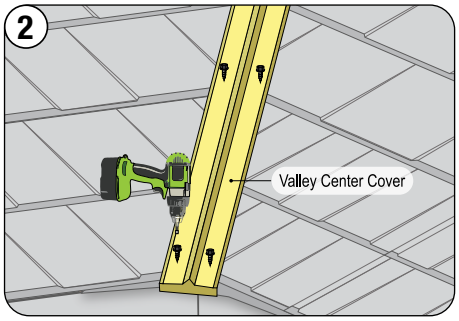


Insert valley panel cuts into the Valley 2-Pc, as shown. When fastening, do not penetrate valley area.

VALLEY CENTER COVER INSTALL



After all valley panel cuts are installed, install a Butyl Tape (min. 4" (100 mm) wide) or Peel-N-Stick type material over the center seam, as shown. Vertical laps must be 4" (100 mm) minimum.



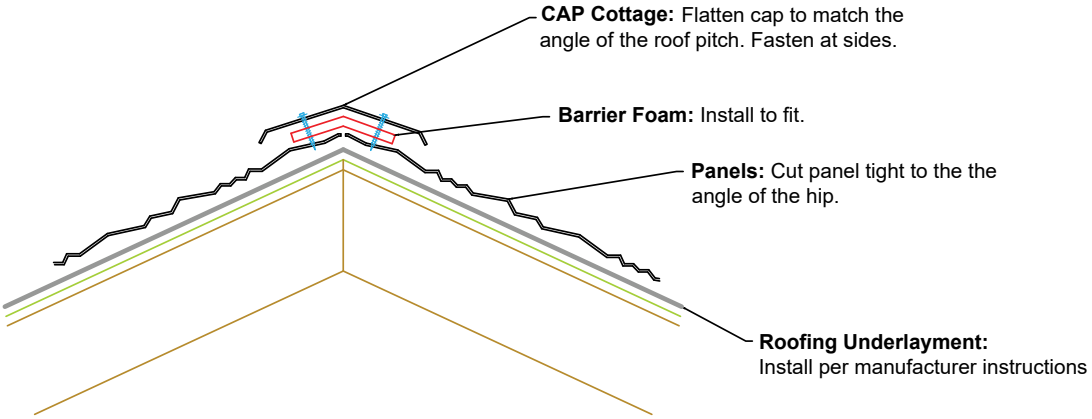
Place Valley Center Cover over the center seam extending 1" (25 mm) over the eave and mark a bend line. Bend the nose at 90 degrees and install, making certain to not block the water flow from exiting the valley. Fasten Valley Center Cover with the Stitch Screws to each panel course, where it intersects the valley.

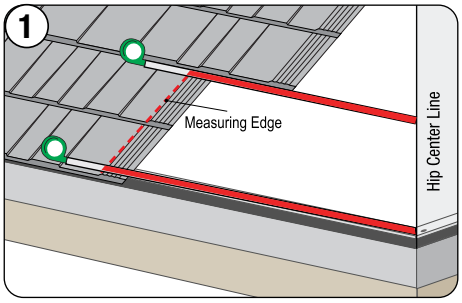
Do not penetrate the Valley Metal, *use Stitch Screws to secure the Valley Cover.*

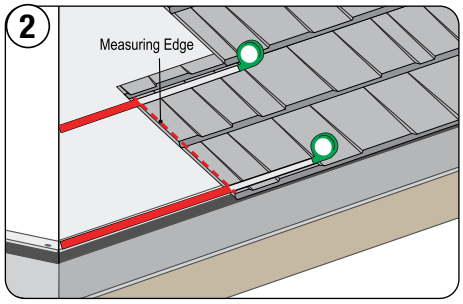
VIDEO ONLINE

VALLEY PANELS INSTALL

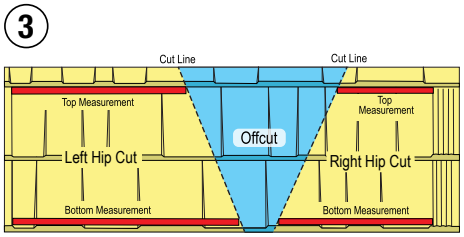
HIP PANELS INSTALL



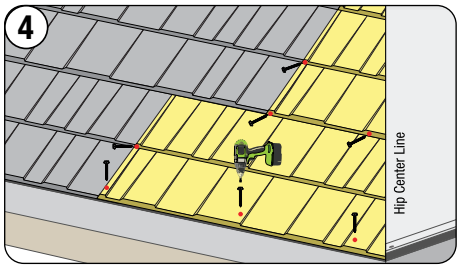




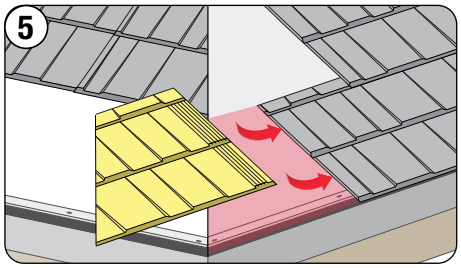
Measure and record the top and bottom of each hip cut (do this for the entire hip length on both the right & left side of the hip center line).



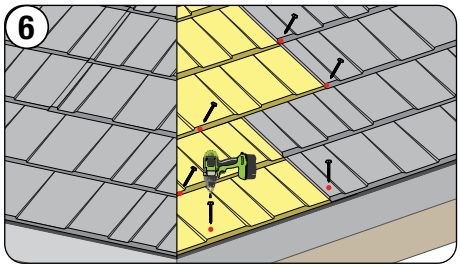
Apply measurements to the full panels, mark and cut.



Fit hip panel cuts to the hip center line and fasten as a regular field panel.



Continue hip panel cuts installation on the right side of the hip.



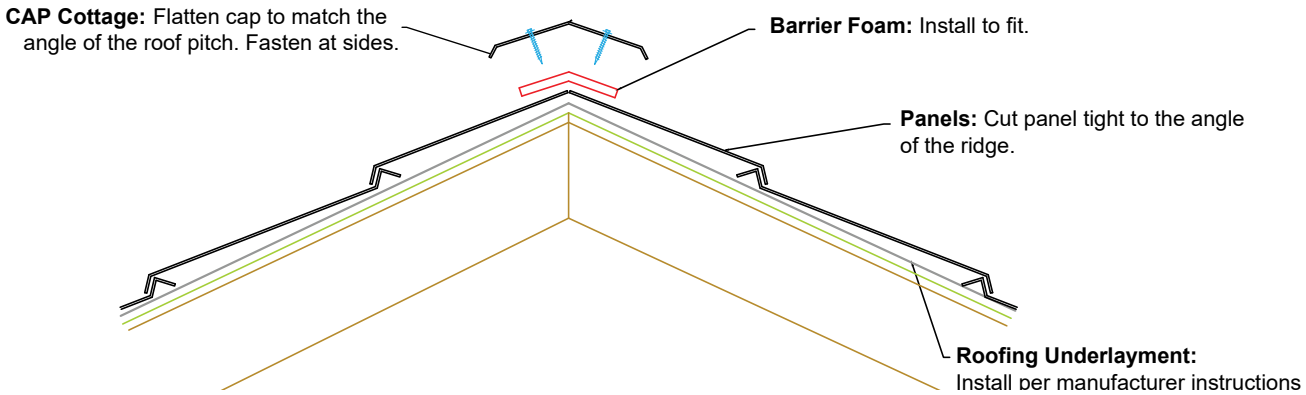
Finish installation and fasten as regular field panels.

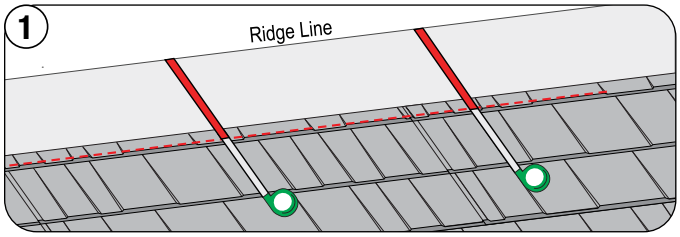
Any fasteners that penetrate through the top of the panel must be sealed and stone-chipped.

VIDEO ONLINE

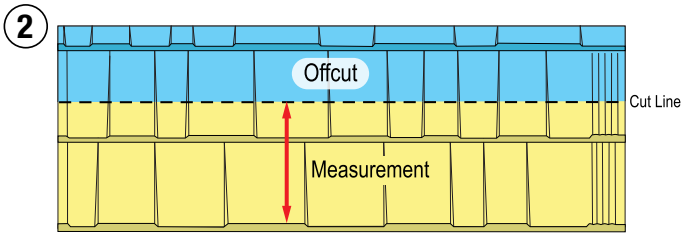
HIP PANELS INSTALL

RIDGE PANELS INSTALL

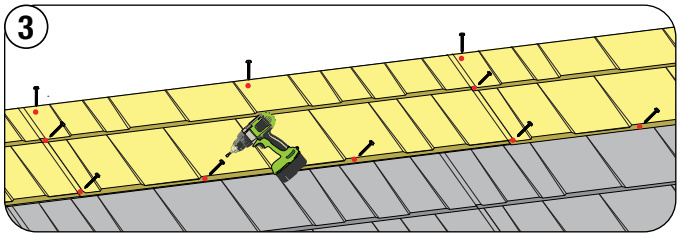




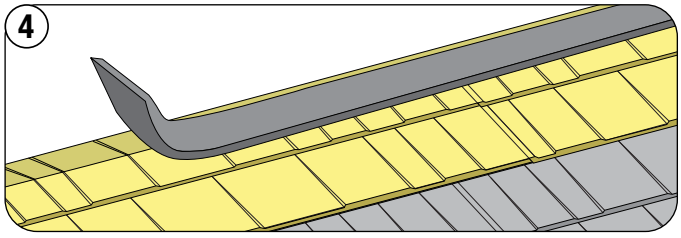
Measure from the Back up turn to the ridge center line.



Apply measurements to the full panel, mark and cut.



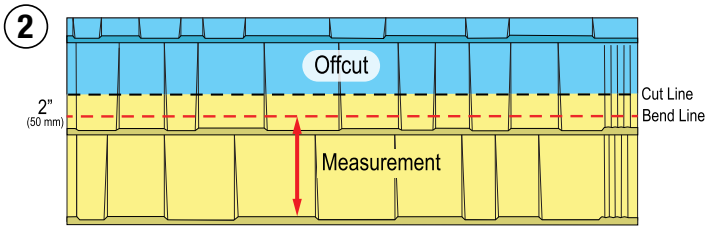
Install ridge panel cut across the ridge aligning with the panel below. Fasten at each end through the nose down-turn, then fasten at the ridge line on top at each end and center, as shown.



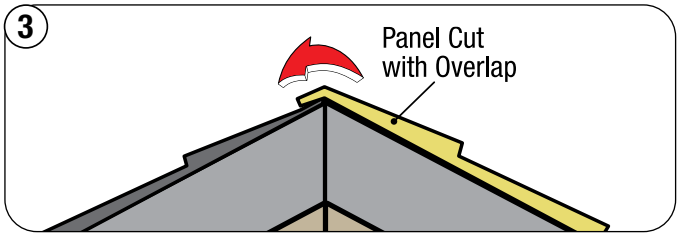
Finish installation on both sides of the roof. Install Barrier Foam over center line of the ridge.

RIDGE PANELS - OVERLAP METHOD — OPTIONAL

The overlap method requires a 2" (50 mm) lap on **only one side** of the ridge. One panel is cut along the ridge center line, the other panel uses an overlap.



Measure ridge panels, as shown in Step 1. Apply measurements to the full panel and mark as Bend Line. Add 2" (50 mm) and mark as Cut Line. Bend and cut the ridge panel.



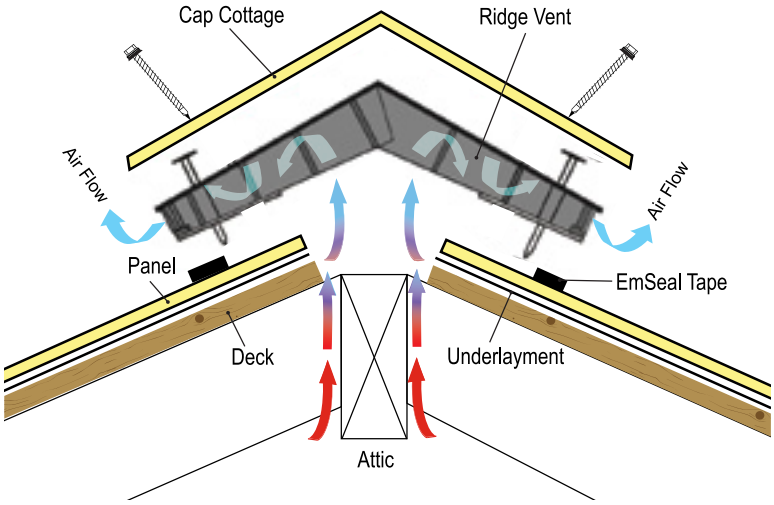
Install ridge panels overlapping, as shown.

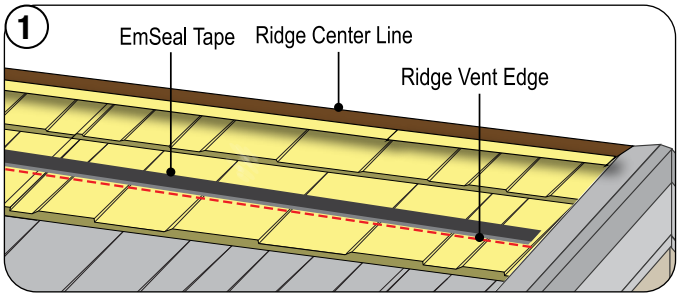
***Always bend the ridge panels before cutting**, as they deform slightly in the bender.*

VIDEO ONLINE

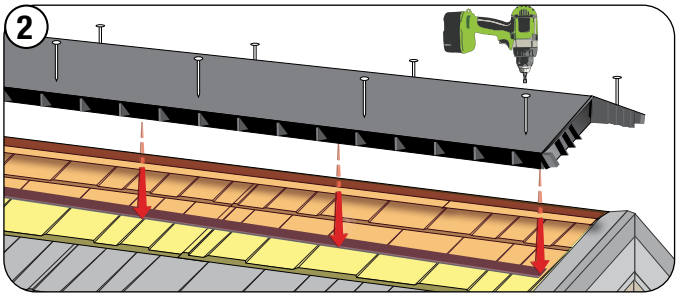
RIDGE PANELS INSTALL

RIDGE VENT INSTALL (RidgeMaster® Plus shown)

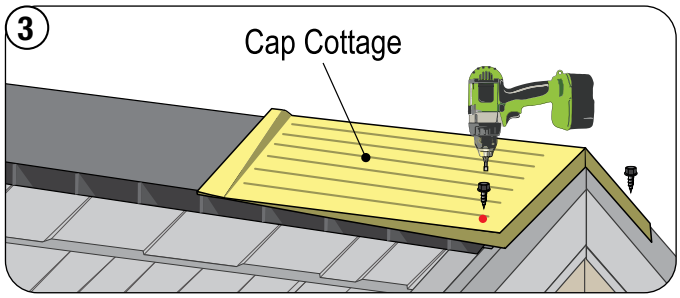




Install ridge panels. Apply EmSeal Tape (shown) or a bead of Sealant along the edge of the Ridge Vent.

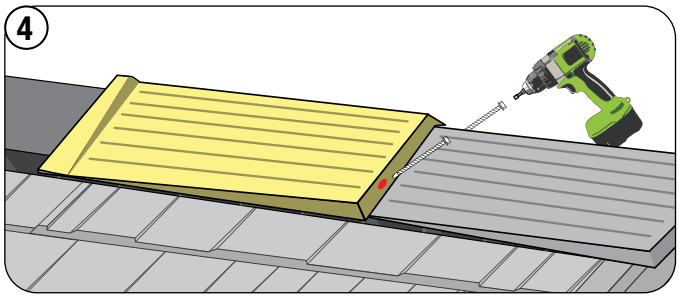


Install Ridge Vent.



At the rake and ridge intersection, install Cap Cottage over the Rake Channel and fasten with Stitch Screws, as shown.

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



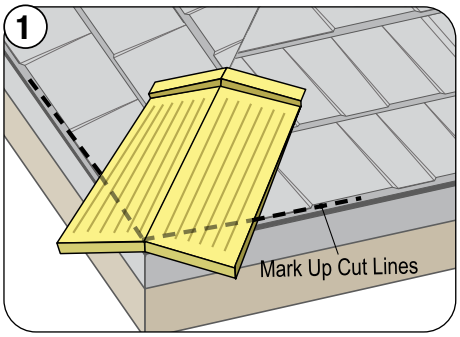
Install next Cottage Cap. Fasten each cap through the nose in an angel into the decking. Place fasteners 1.5" (38 mm) from the edge of the cap on each side. Continue Cottage Caps installation.

Trim Cap Screws should be of sufficient length to penetrate a minimum of 0.75" (19 mm) into the roof decking.

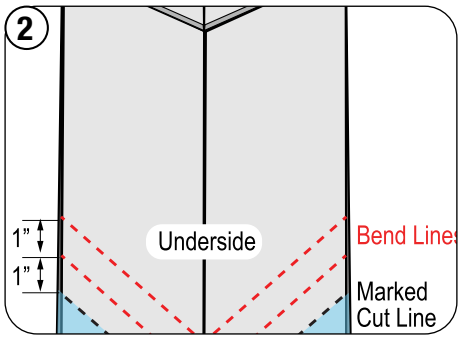
VIDEO ONLINE

RIDGE VENT INSTALL

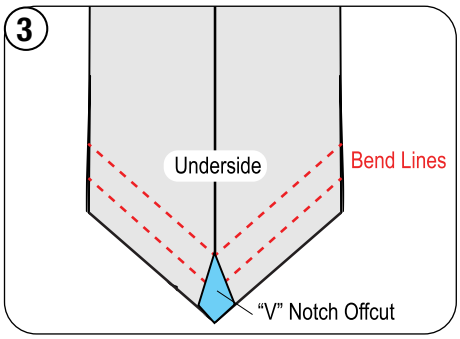
COTTAGE CAPS INSTALL ON HIP



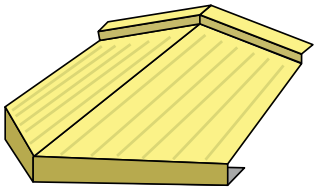
Position full Cottage Cap on the roof so the hip center line is covered by the nose of the cap. Mark the panel line on the underside of the cap.



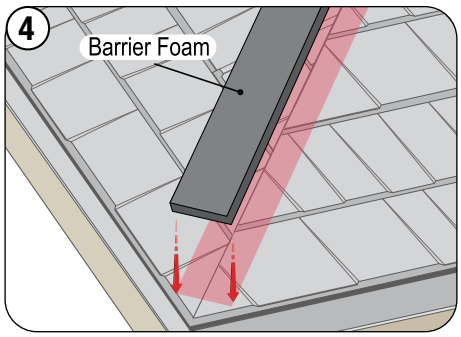
From the scribed panel line, add two more lines 1" (25 mm) minimum apart so the cap now has three lines marked on the underside.



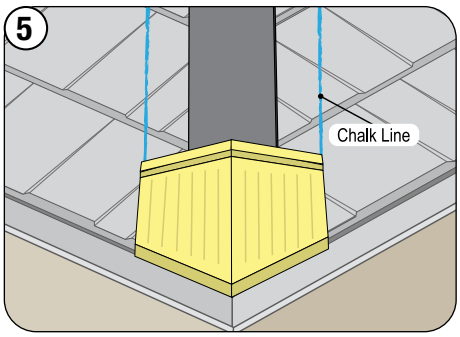
Cut a 'V' notch out of the cap. Using hand seamers, bend the cap to create a 3-D nose section that will hook onto the front edge of the panel around the hip corner.



The finished Hip Starter Cap piece will have a 3-D look and a nose that is approximately 1" (25 mm).

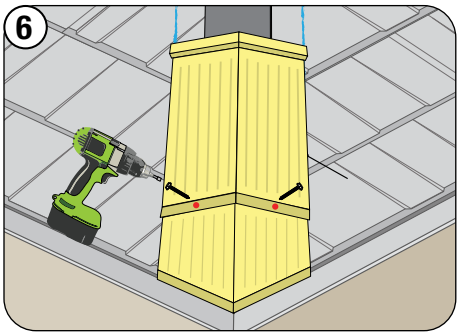


Install a strip of Barrier Foam over the center line of the hip.



Install the Hip Starter Cap previously formed, interlocked over the nose of the panels, at the hip corner.

Use a Chalk Line aligned with the Hip Starter Cap edge to ensure the following caps installed straight.



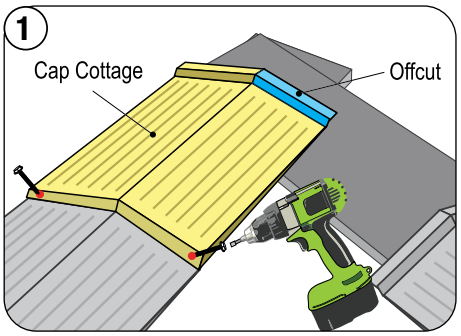
Fit each Cottage Cap, making sure the nose down-turn is secure. Fasten each cap using two screws located approximately 1.5" (38 mm) from the edge of the cap.

Do Not not over or under tighten the fasteners.

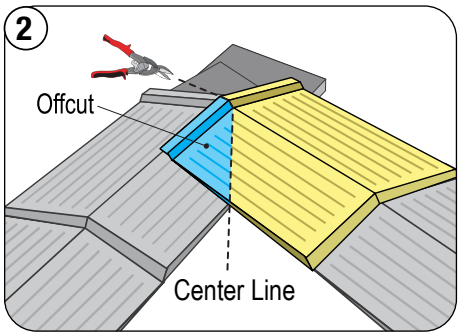
VIDEO ONLINE

COTTAGE CAP INSTALL ON HIP

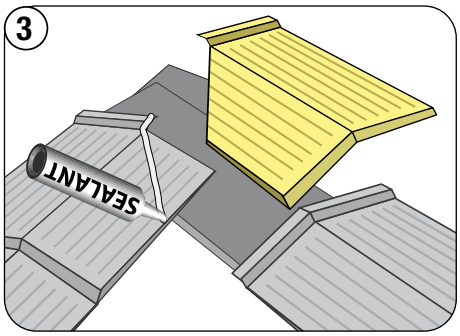
COTTAGE CAPS INSTALL ON HIP / RIDGE INTERSECTION



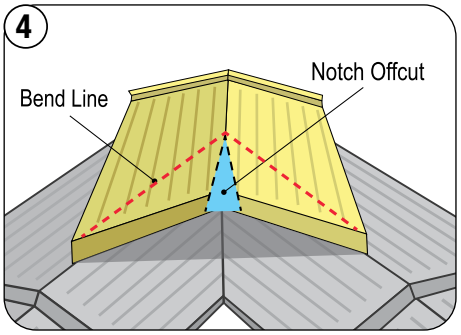
Cut off back flange of the cap, as shown, and install.



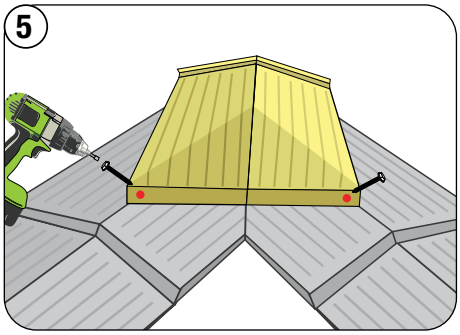
Overlap hip caps at hip/ridge intersection and mark the center line.



Trim top hip cap. Apply a bead of Sealant along the center line, as shown, and install hip cap.

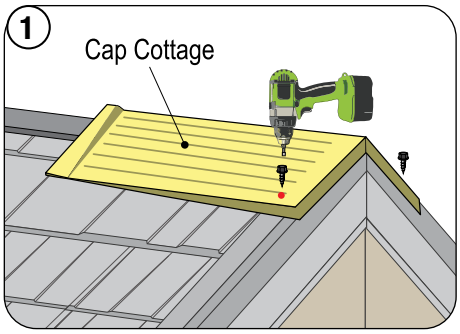


Place the ridge cap over both hip caps. Cut off notch and mark bend lines.

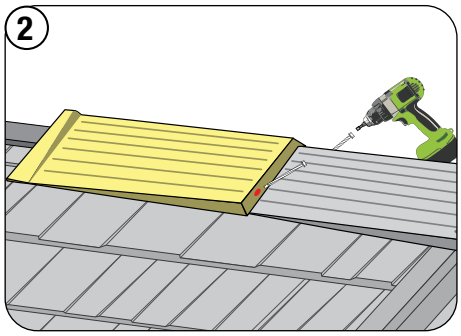


Bend the ridge cap to close the gap and create 3-D look. Fasten, as shown.

COTTAGE CAPS INSTALL ON RAKE / RIDGE INTERSECTION



Install Cottage Cap over the Rake Cover and fasten on top with Stitch Screws over the Rake Channel, as shown.



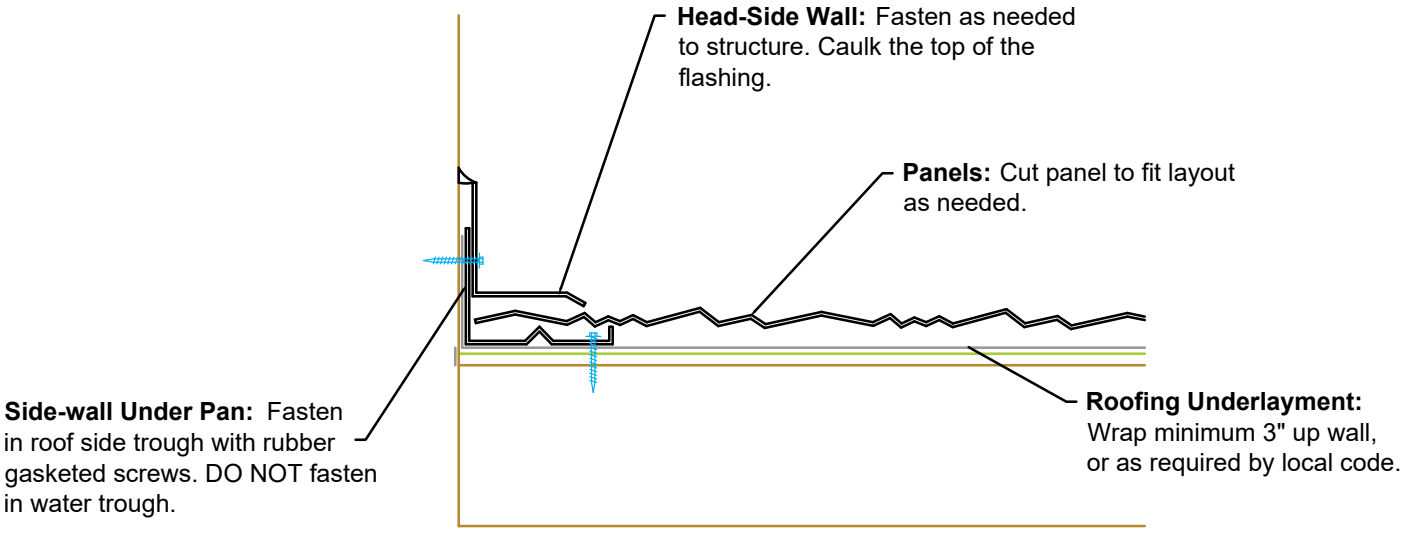
Fit next Cottage Cap. Fasten each cap through the nose in an angel into the decking. Place screws 1.5" (38 mm) from the edge of the cap on each side.

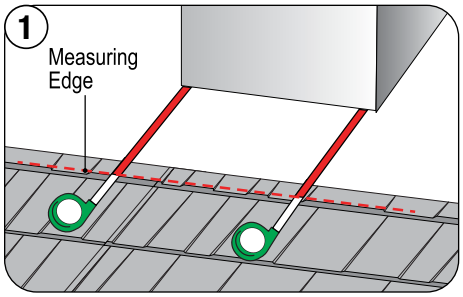
Any fasteners that penetrate through the top of the Cottage Caps must be sealed and stone-chipped.

VIDEO ONLINE

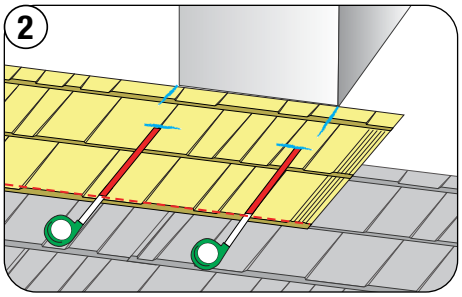
COTTAGE CAP INSTALL ON HIP/RIDGE

CHIMNEY / SKYLIGHT / HEADWALL / SIDEWALL DETAIL

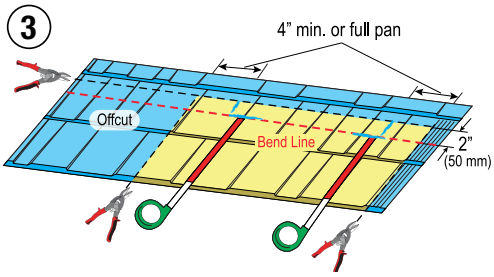




Measure panel from the back-nose down-turn of the panel to the front of Chimney/ Skylight.

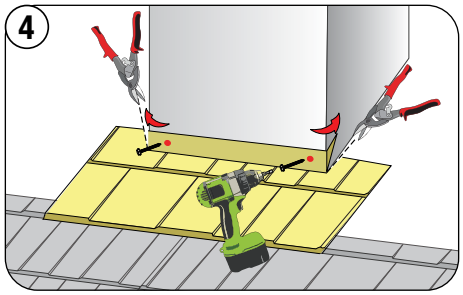


Align the front panel with the course below and the correct layout pattern for the profile. Mark the sides of the chimney and mark the measurements from Step 1.

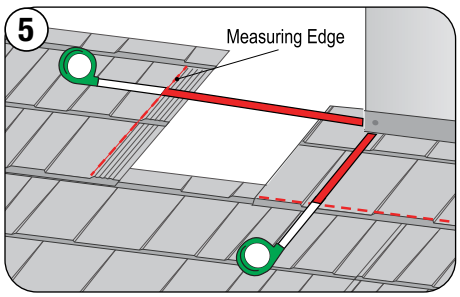


Apply the measurements to a full panel. Bend the entire length then cut off the excess.

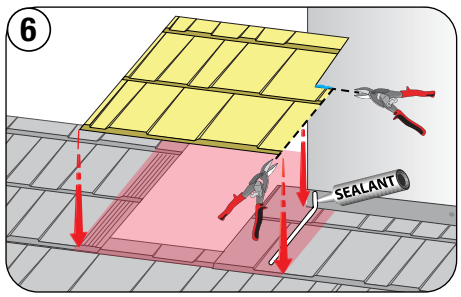
Make sure panel is cut a minimum of 4" (100 mm) past the width of the Chimney/Skylight.



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



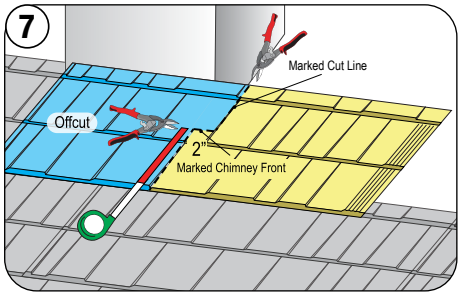
Measure the distance from the panel overlap to the Chimney/Skylight and mark. Add 2" (50 mm) and mark as a Cut Line. Measure the distance from the panel nose to the front of the Chimney/Skylight and mark another Cut Line.



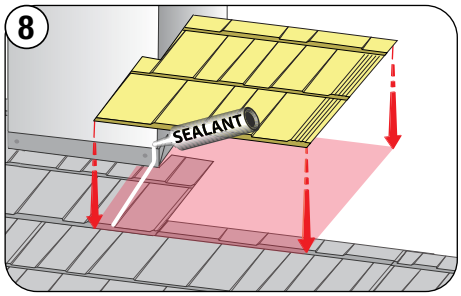
Cut the panel, as shown. Apply Sealant and fit the left-side panel.

Continue on Next Page

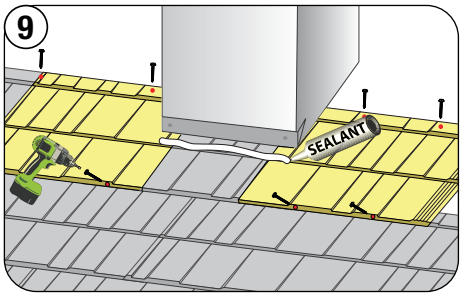
CHIMNEY / SKYLIGHT / HEADWALL / SIDEWALL DETAIL (cont.)



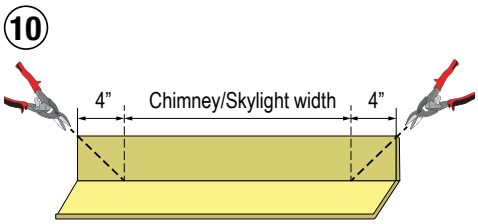
Align the right-side panel with the Chimney/Skylight and panel below keeping correct layout pattern. Mark the Bend Line. Add 2" (50 mm) to the Bend Line and mark the Cut Line. Mark the distance from the panel nose to the front of the Chimney/Skylight.



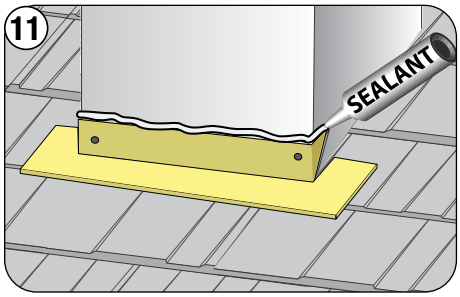
Apply Sealant and fit the side panel aligning it with the field panels already installed.



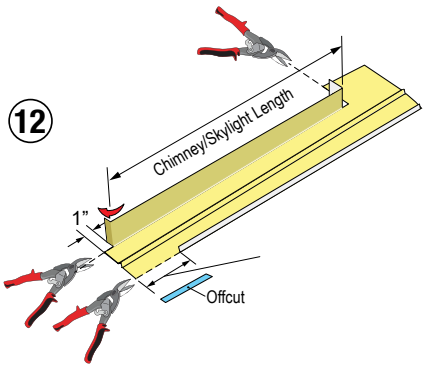
Fasten panels as field panels. Apply Sealant across top of front panel section as a weather block.



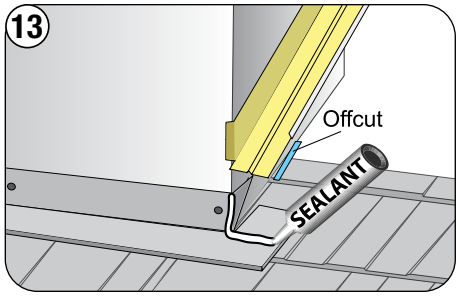
Measure the width of the Chimney/Skylight, and mark the Head-Side-Wall metal. Add 4" on each side. Cut the corners in 45 degree angle.



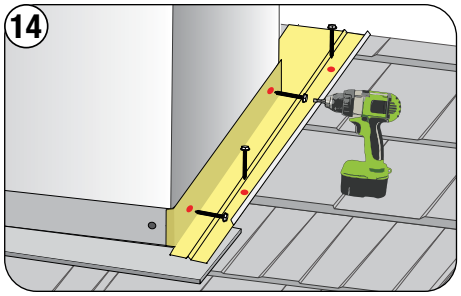
Install Head-Side-Wall piece to fit around the front of the Chimney/Skylight. Apply Sealant across the top edge, as shown.



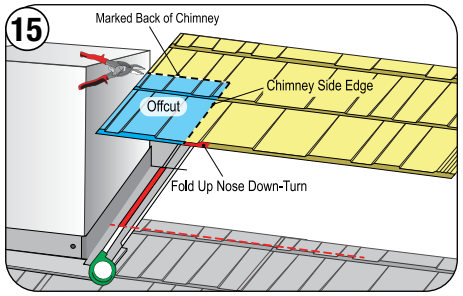
Place Side-Wall Underpan metal to fit to the side of the wall extending it 1" minimum over the front edge. Measure, cut and bend Side-Wall Underpan metal, as shown. Snip the return flange off the Side-Wall Underpan so the covering panel can be fastened as regular panels.



Apply Sealant, as shown. Place Side-Wall Underpan on both sides of the Chimney/Skylight.



Fasten Side-Wall Underpan metal, as shown.

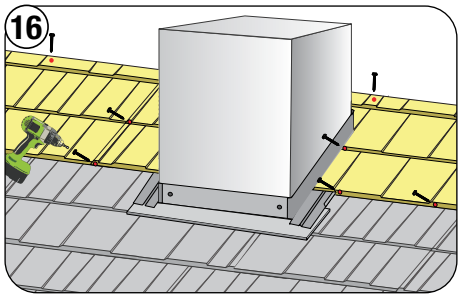


Align the top panel to the course below. Measure the distance from the back flange to the back of the Chimney/Skylight and mark Cut Line. Mark the side edge of the Chimney/Skylight as another Cut Line. Install panel section and apply Sealant across top edge of the bend-up.

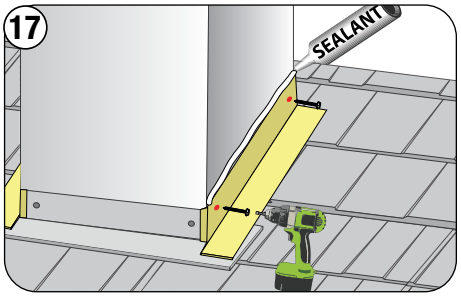
Cut out or fold-up nose of the side panel where Underpan exits onto lower panels to allow water to exit.

Continue on Next Page

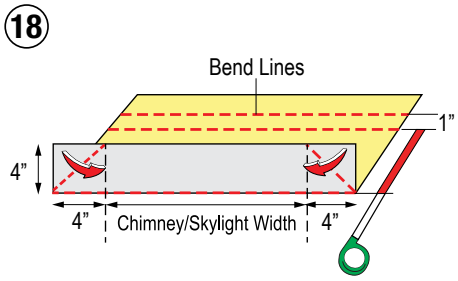
CHIMNEY / SKYLIGHT / HEADWALL / SIDEWALL DETAIL (cont.)



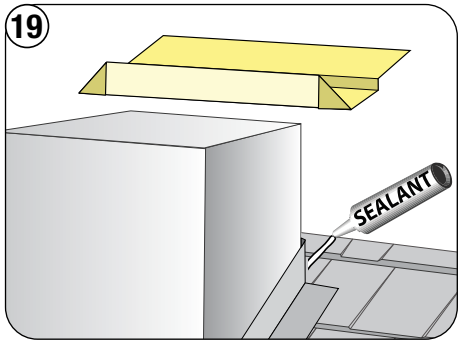
Install side panels on both sides of the Chimney/Skylight and fasten as field panels.



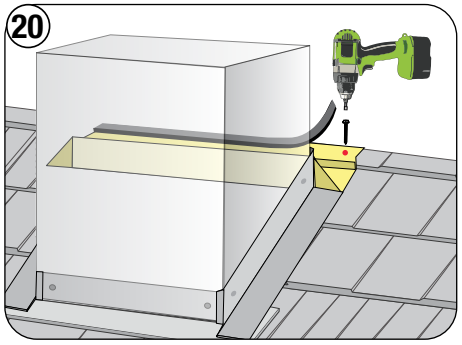
Install Head-Side-Wall metal pieces to fit around the sides of the Chimney/Skylight. Apply Sealant across the top edge on both sides, as shown.



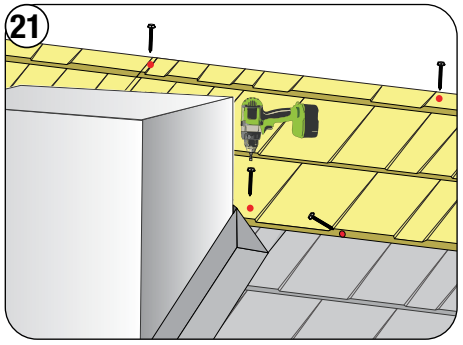
Measure the width of the Chimney/Skylight. Using the section of the Flat Sheet, add 4” (100 mm) to the measurement on each side. Bend it up 4" minimum, forming a saddle flashing. Bend 4"x 4" triangles over, as shown. Measure and mark the distance from the back of the Chimney/Skylight to the back up-turn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



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



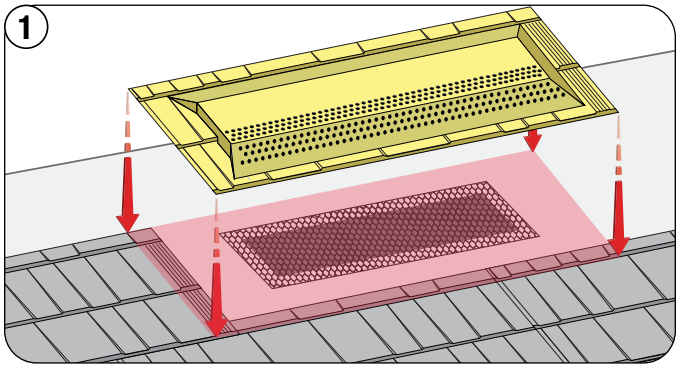
Fasten panel section behind Chimney/ Skylight through the top, then continue fastening as field panels.

VIDEO ONLINE

CHIMNEY / SKYLIGHT DETAIL

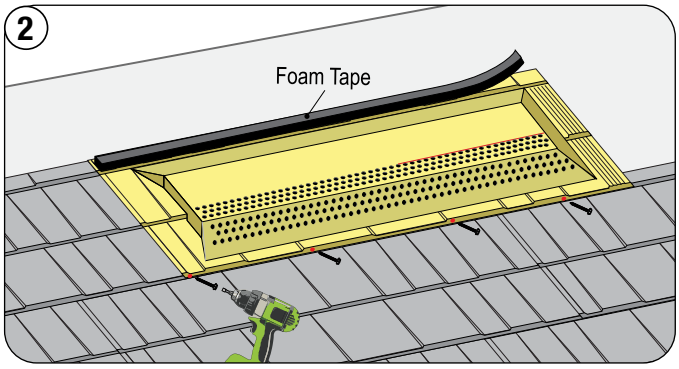
EZ VENT INSTALLATION (Off Ridge Ventilation)

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.

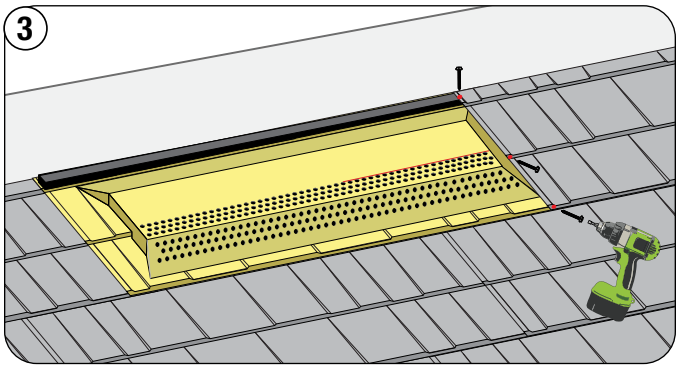


Cut a hole in the decking, approximately 5" x 30" (127 x 762 mm). Cover the hole with metal mesh (0.125" (3 mm) square) to prevent pests/insects from entering the attic.

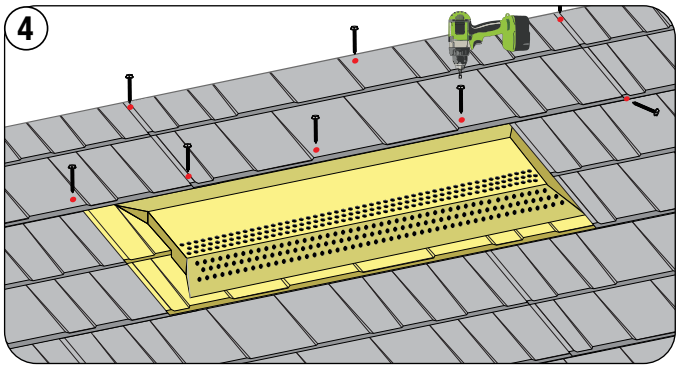
Install the EZ-Vent unit overlapping as field panels.



Install 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 through the nose, as field panels.



Continue installation of the panels in the row.



Fasten the ridge panel course above the EZ-Vent through the top of the panel into EmSeal foam tape.

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

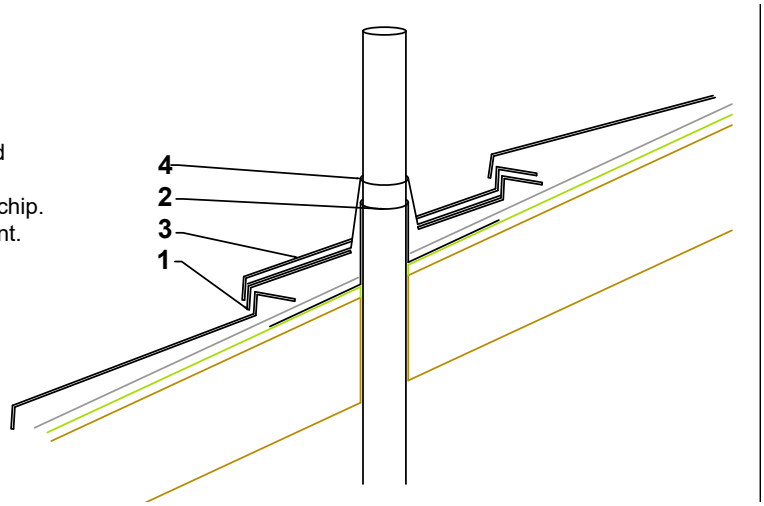
VIDEO ONLINE

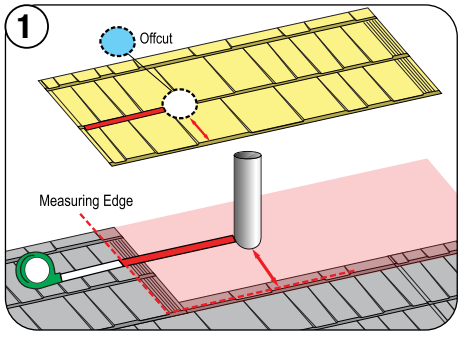
EZ VENT INSTALL

PIPE VENT INSTALL - Sandwich Method

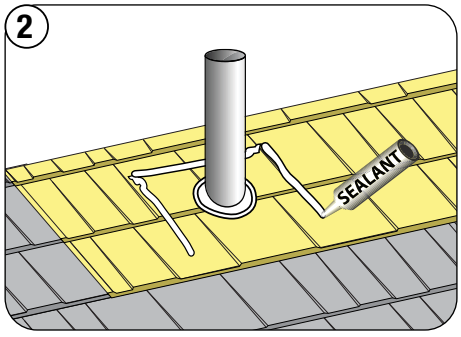
Double Pan/Sandwich Method:

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)

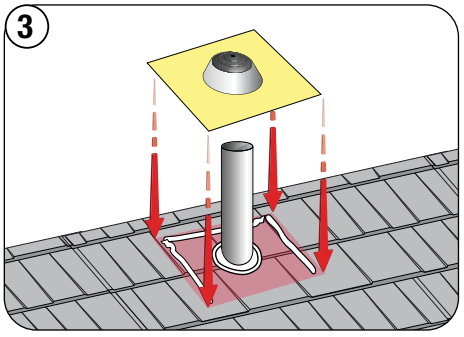




Measure, mark and cut a pipe sized hole in the base panel.

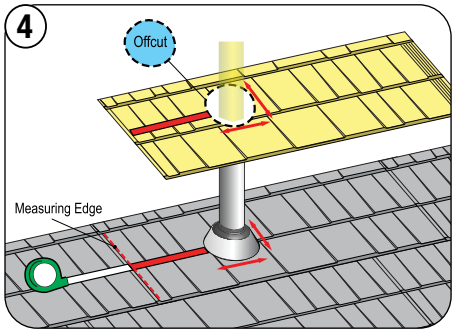


Install base panel to fit around the vent pipe. Apply a bead of Sealant on each side and around the hole of the pipe, as shown.

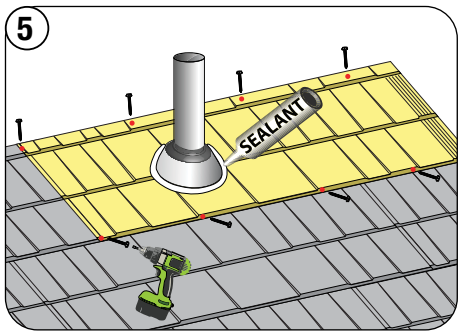


Slide the Pipe-Jack flashing over the pipe and seat it into the Sealant. Press firmly.

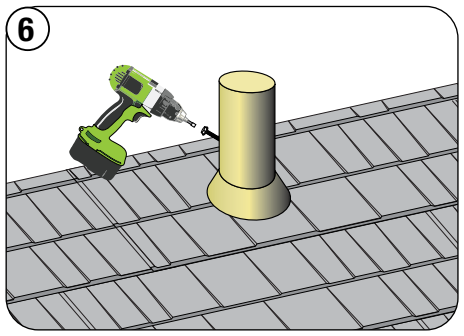
Trim Pipe Jack base, as needed, to fit panel course.



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 around the Pipe-Jack.

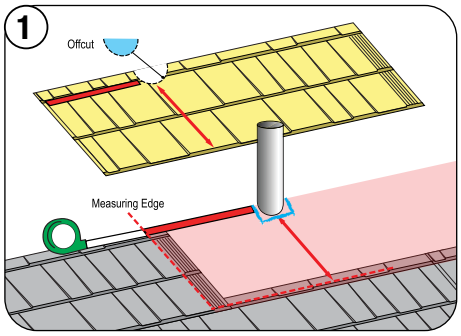


Install and fasten the Pipe-Sleeve through the back of the sleeve into the pipe. Make sure to fasten at least 2" (50 mm) above the Pipe-Jack cone.

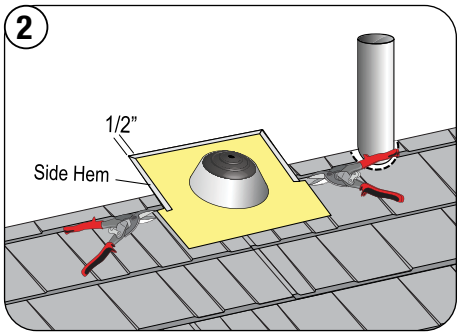
VIDEO ONLINE

PIPE VENT INSTALL - SANDWICH

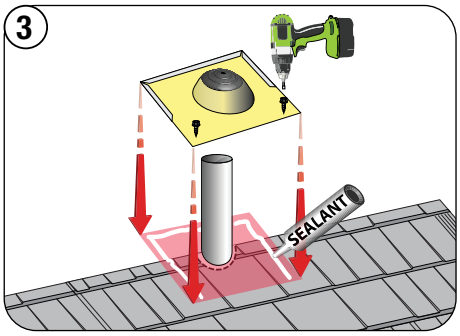
PIPE VENT INSTALL - Split Course Method



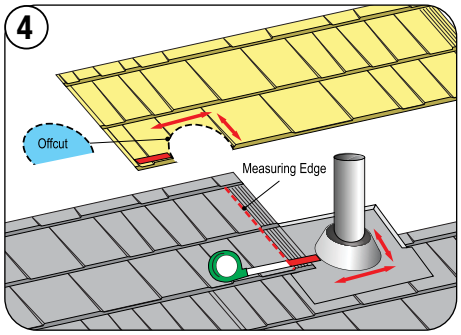
Measure and cut lower panel to fit around the vent pipe. Install panel and fasten.



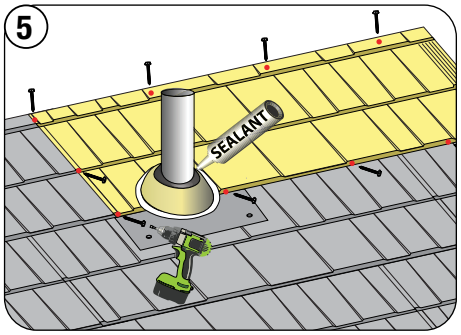
Place Pipe Jack on the panel to the side of the pipe and make 1/2" (13 mm) cuts in line with the back up-turn of the panel. Hem the edges, as shown.



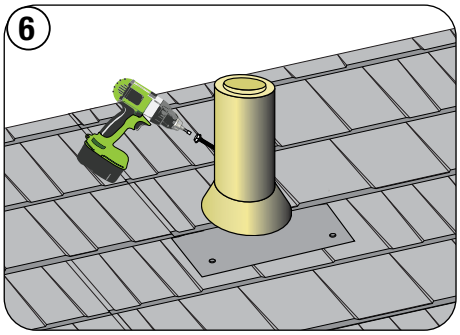
Slide the Pipe-Jack flashing over the pipe and seat it into the Sealant. Press firmly. Fasten the front side of the Pipe-Jack flashing with Stitch Screws, as shown.



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.

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

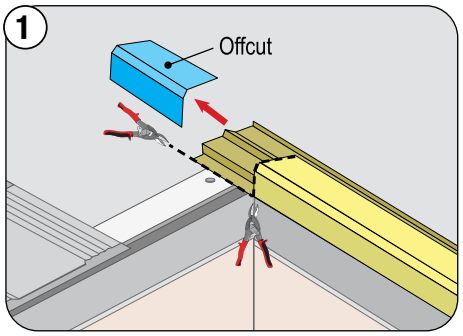
VIDEO ONLINE

PIPE VENT INSTALL - SPLIT COURSE

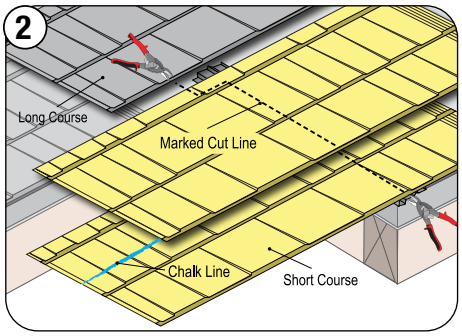
SHORT COURSE DETAIL

Short Course panels shall be applied to the lowest eave. 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.

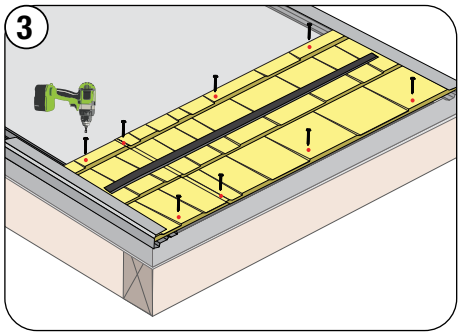
For best results, have Short Courses at the eave line.



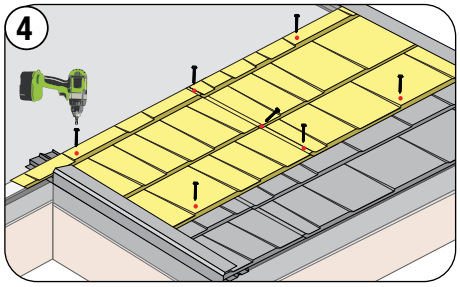
Install section of the Rake Channel on the short course, as shown. Cut out upper section of the Rake Channel along the short course intersection.



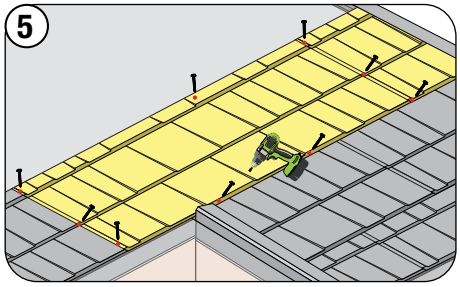
Place Long Course panel. Do not fasten. Properly align panels underneath to follow correct panel layout. Extend Short Course panel 1/2" (13 mm) past the eave. Mark the Cut Lines, where panel is inserted into Rake Channel, as shown. Mark the horizontal Chalk Line on the Short Course panel aligned with the nose down-turn of the panel above.



Install Short Course rake panel cut into Rake Channel. Complete first row installation and fasten. Apply EmSeal foam tape above the marked Chalk Line.



Install panel cut above the Short Course eave panel. Finish panels installation in the row. Fasten through the top into EmSeal foam tape.



Install Long Course panel and fasten as regular field panels.

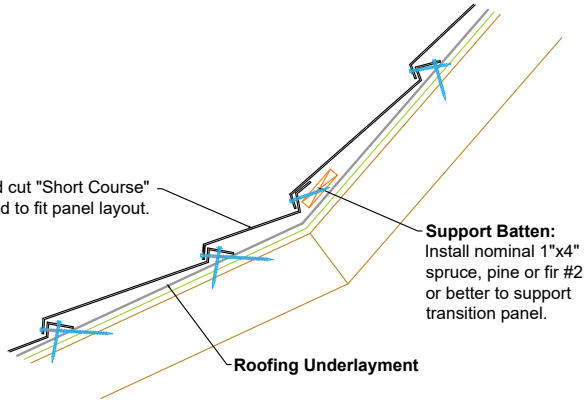
Any fasteners that penetrate through the top of the panel must be sealed and stone-chipped.

VIDEO ONLINE

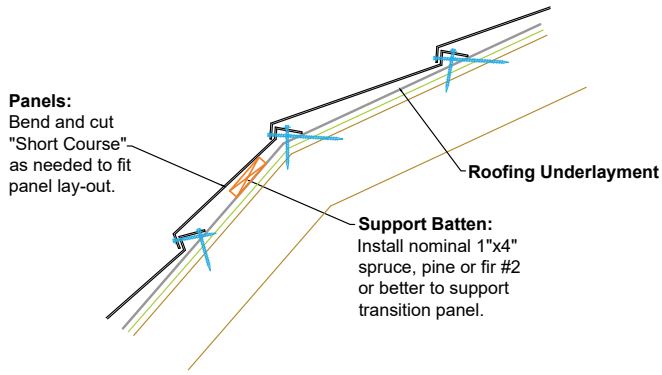
SHORT COURSE DETAIL

SPECIAL TRANSITION DETAILS

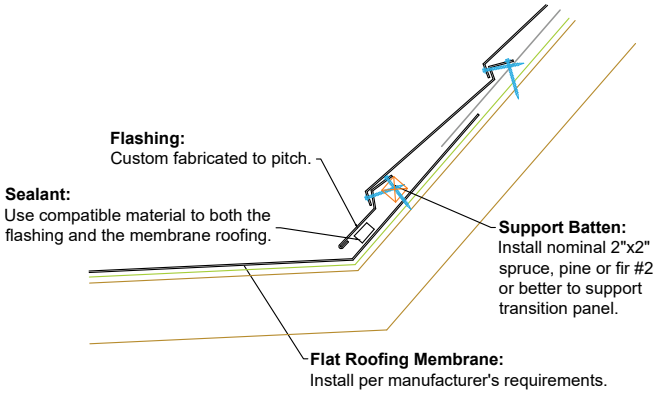
LOW TO HIGH



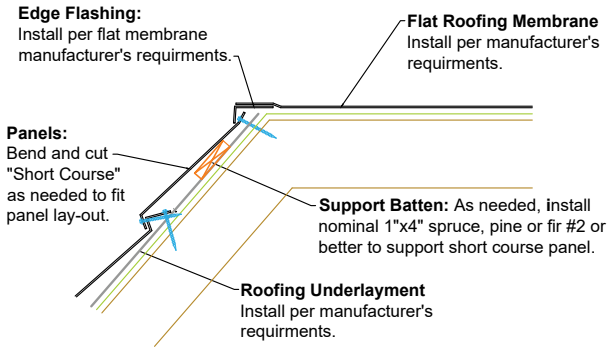
HIGH TO LOW



FLAT TO STEEP



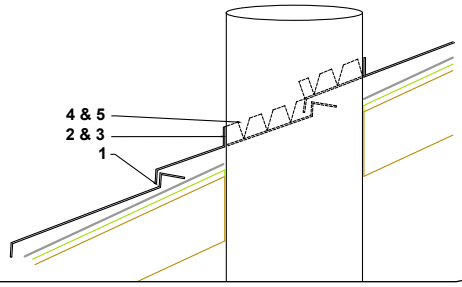
STEEP TO FLAT



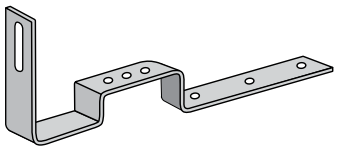
LARGE ROUND ROOF PENETRATION

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

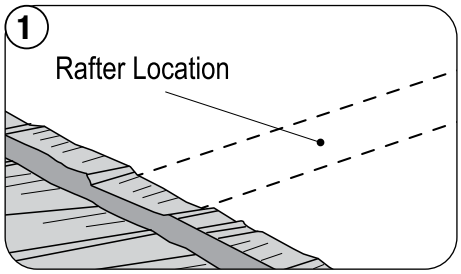
1. Cut panels with minimum,1" added for turn-up.
2. Bend extra material up.
3. Press tabs tightly to the penetration,
4. Apply caulking at all cut edges to seal to penetration.
5. Apply granules into caulking.
6. Fasten panels as normal. (fasteners omitted for clarity)



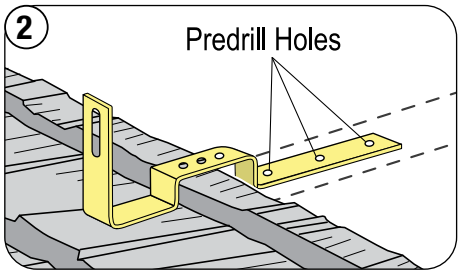
SOLAR MOUNT INSTALL



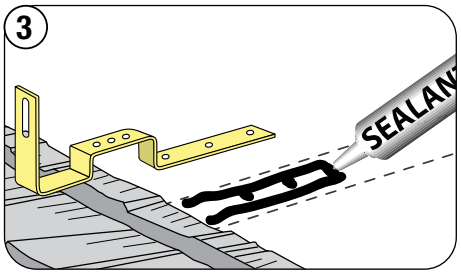
Solar Roof Mounts are installed without making any penetration through the Unified Steel® panels. This is achieved by bending the nose of the upper cover panel directly above the Solar Roof Mounts so the bracket easily exits between the panel courses and when the cover panel is fastened the system does not require any flashing to provide a weather seal around the bracket.



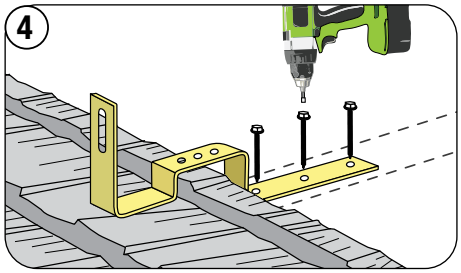
Find and mark the location of the rafter beneath the roof deck.



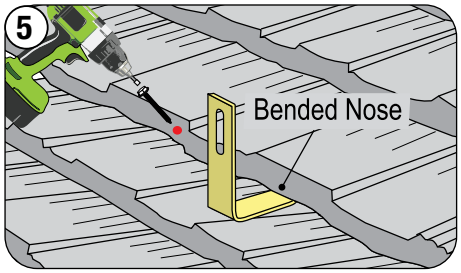
Place the Solar Roof Mount and predrill holes using 3/16" Drill Bit.



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.

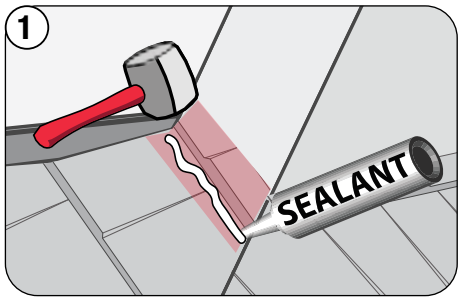
Depending on rafter location it may be necessary to place a pad of peel-n-stick material or Wakaflex® strip beneath each Solar Roof Mount where it canter levers out onto the panel beneath to prevent abrasion.

VIDEO ONLINE

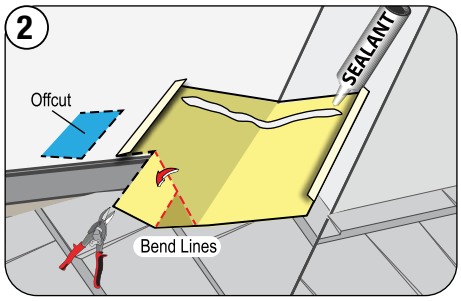
SOLAR MOUNT INSTALL

DORMER VALLEY EXIT DETAIL

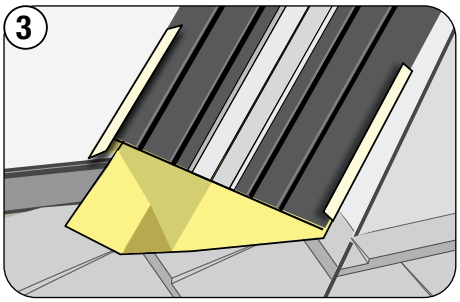
Use either Unified Steel stone coated Flat Sheet or Wakaflex® flashing to create a valley exit piece with hemmed edges for the valley to exit onto.



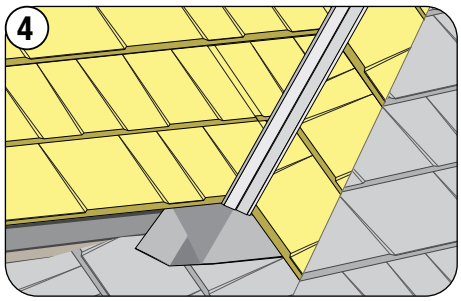
Flatten back flange against the roof deck and apply Sealant, as shown.



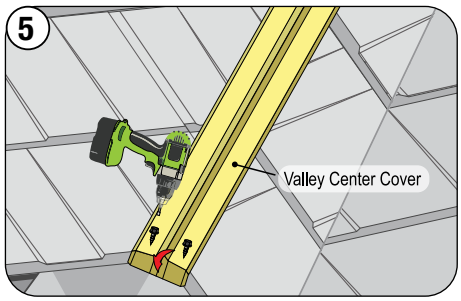
Form the stone coated Flat Sheet as an extension and exit tray for the upcoming valley. Apply Sealant, as shown.



Install Valley metal over and onto the stone coated Flat Sheet and embed the Valley into the Sealant.



Insert valley panel cuts onto the Valley 2-Pc to complete the dormer roof section.



Install Valley Center Cover as described on **Page 14, Steps 10-11** to complete Dormer Valley Exit.

VALLEY EXIT WITH WAKAFLEX® FLASHING

Where a typical standard metal valley flashing transitions onto an adjoining roof plane, a Wakaflex® flexible extension must 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

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

SIDING & ACCESSORIES TRIM & MOULDINGS ROOFING STONE WINDOWS OUTDOOR LIVING

BE BOUNDLESS™

THE PRODUCTS TO DO EVERYTHING. THE POWER TO DO EVEN MORE.

There are no limits to how far we innovate, how deeply we express, how strongly we commit, how boldly we go.

Westlake Royal Building Products™

Unified Steel® Stone Coated Roofing
WestlakeRoyalRoo ing.com | 800.658.8004
Part# WR724 04/25 | UNS204800