Westlake
Royal Roofing Solutions™

Unified STEEL
STONE COATED ROOFING

GRANITE-RIDGE Shingle

DIRECT-TO-DECK INSTALLATION GUIDELINES – (CONCEALED FASTENED)

NOTICE

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

INSTALLATION WARNING

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

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

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

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

Indicates critical areas of installation.

Typographical errors, dimensions, details and measurements subject to change without notice.

GRANITE-RIDGE Shingle Installation Guidelines

Unified STEEL
STONE COATED ROOFING

TABLE OF CONTENTS

GENERAL INSTALLATION STEPS 2
SAFETY NOTES 2
GENERAL INFORMATION 3
GRANITE-RIDGE PANEL AND STONE COATED ACCESSORIES 4
PAINTED OR BARE ACCESSORIES 5
OTHER ACCESSORIES & ROOF SYSTEM COMPONENTS 5-6
TOOLS 6
WALKING ON YOUR ROOF 7
UNDERLAYMENT 8
STARTER STRIP 8
RAKE/ROOF-TO-WALL & RAKE COVER 9
VALLEY FIVE 'V' WITH EXIT TRAY 9
WAKAFLEX® UNIVERSAL FLASHING 10
VALLEY 2-PC CLOSED WITH EXIT TRAY 11
PANEL LAYOUT AND FASTENING 12
RAKE PANEL SECTIONS 13
HIP PANEL SECTIONS - BARRIER FOAM METHOD / OVERLAP METHOD 14
VALLEY PANEL SECTIONS WITH VALLEY FIVE 'V' 15
VALLEY CENTER COVER INSTALLATION 15
DORMER VALLEY EXIT - FLAT SHEET METHOD/ WAKAFLEX® FLASHING 16
PIPE FLASHING - SANDWICH METHOD 17
CHIMNEY / SKYLIGHT DETAIL 18-19
SHORT COURSE DETAIL 20
RIDGE CUT SECTIONS - BARRIER FOAM METHOD / OVERLAP METHOD / CONTINUOUS RIDGE VENT 21
HIP STARTER DETAIL 22
HIP TRIM CAPS & HIP/RIDGE INTERSECTION - BARRIER FOAM METHOD 23
RIDGE TRIM CAPS SHINGLE - BARRIER FOAM METHOD / CONTINUOUS RIDGE VENT 24
RIDGE TRIM CAPS COTTAGE - RIDGEMASTER® PLUS CONTINUOUS RIDGE VENT 25
FINISHING TOUCHES 25
HIGH VELOCITY HURRICANE ZONE (HVHZ) FASTENING GUIDELINES 26

INSTALLATION TOOLS

UNIFIED STEEL™ INSTALLATION KIT

- CUTTER
- BENDER

HAND TOOLS

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

OTHER TOOLS

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

GENERAL INSTALLATION STEPS

GRANITE-RIDGE Shingles are installed on new or existing roofs pitched **3:12 and above.** These install details are designed to be used in conjunction with Unified Steel's *Installer Orientation Training Program.*

UNIFIED STEEL™ ROOF PRODUCTS - 12 BASIC STEPS TO A GREAT JOB:

1. Install eave metal **STARTER STRIP.**
2. Install code-compliant **UNDERLAYMENT** (minimum ASTM 1970 self-adhering membrane) ensuring that the underlayment finishes on top of the eave metals. In extreme weather areas, high rain or snow fall, the underlayment may run below and then be striped in over the top to sandwich the Starter.
3. Install **RAKE-ROOF-TO-WALL** at rakes and walls.
4. Install **RAKE COVER** onto the Rake-Roof-to-Wall.
5. Install **VALLEY** Metals.
6. Install field **PANELS** from the bottom left and work to the right and up the roof. Lay field panels with the correct offset/ stagger.
7. Measure, mark and cut - **RAKE, HIP, VALLEY and RIDGE** panel sections.
8. Install **CHAR FOAM FILTER** and **VALLEY CENTER COVER** metal.
9. Install **PIPE** Flashings - Pipe-Jacks, Sleeves, etc.
10. Install **CHIMNEY FLASHINGS** panel sections.
11. Install **TRIM CAPS** on hip and ridge.
12. **TOUCH-UP** any areas that may be required.

SAFETY NOTES

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

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

GENERAL INFORMATION

CONCEALED FASTENED:

GRANITE-RIDGE Shingle panels are CONCEALED fastened. When installed as described in these guidelines, they use vertically positioned fasteners across the back flange spaced approximately 6" o/c.

Overall Length Range:	**46.0625” (11170 mm)**
Exposure:	**13.6875" (348 mm)**
Side-Lap:	**2” (50 mm)**
Fastening Flange:	**0.75” (19 mm)**
Panel Weight:	**5.40 lbs (2.45 Kg)**

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 16 squares. Care should be taken to store panels in an area free from moisture. Refer to pallet storage warning information for more details.

ROOF DECK SHEATHING

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

ROOF PITCH

GRANITE-RIDGE Shingle panels must be installed on a minimum roof pitch of 3:12 (14.04 degrees) or above. Roof slopes below 3:12 mean the panels act as a decorative roof covering only.

ROOFING UNDERLAYMENT

Minimum one-layer ASTM D1970 fully adhered membrane, minimum head lapped 2” (50 mm) and end lapped 6” (152 mm) or approved equal per code.

SEALANT/CAULKING

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

FASTENERS

All fasteners (Screws or Nails) 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 0.75” (19 mm).

For High Velocity Hurricane Zone (HVHZ) areas **refer to Page 26** for specific details.

TESTING

The panels have been tested and evaluated and are covered by Code Evaluation Report (QAI CERus-1008), the International Code Council Evaluation Service Report ICC-ESR-1188, Florida Building Code Report FL 27408 and Canadian Construction Materials Centre CCMC Evaluation Report 14113R. Testing has been conducted to evaluate fire, wind, impact, 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. Ridge venting can be installed to help achieve adequate attic 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

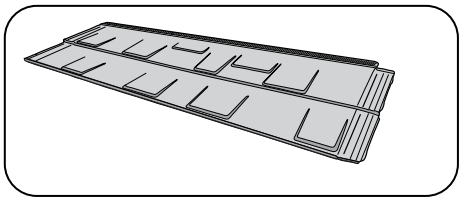
To avoid adverse corrosion effects caused by dissimilar metals, COPPER and LEAD flashings should not be used with Unified Steel™ panels and accessories.

FINISH COATING

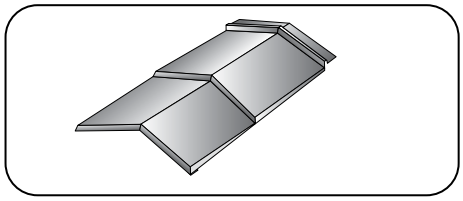
Minor scuffing of the stone coated finish can be repaired with a Touch-Up Kit. Use the Unified Steel™ Touch-Up Kit for repairs. Colored aerosol paints should never be used as "touch-up" on stone coated products.

Colored aerosol paints should never be sprayed on stone coated panels and accessories.

GRANITE-RIDGE PANEL AND STONE COATED ACCESSORIES

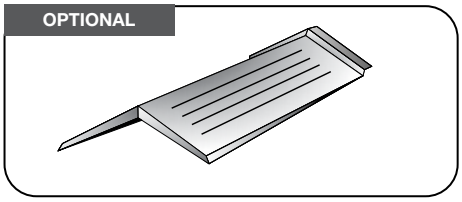


GRANITE-RIDGE Shingle Panel
Cover: 13.6875” x 44" (348 x 1117 mm)
5.4 lbs (2.45 Kg), 24 pcs/sq

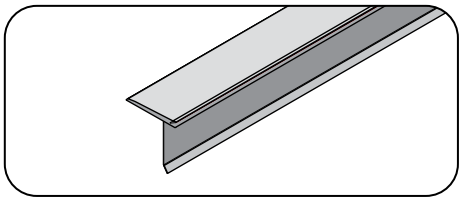


Cap Shingle (Hip and Ridge) 2-Course
8” x 14” (203 x 356 mm)

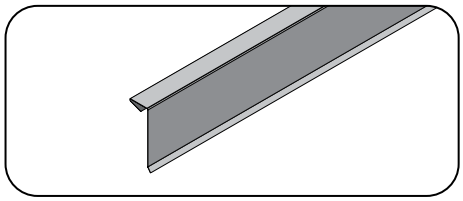
OPTIONAL



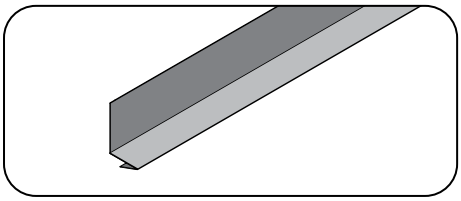
Cap Cottage (Hip and Ridge)
12” x 12” (305 x 305 mm)



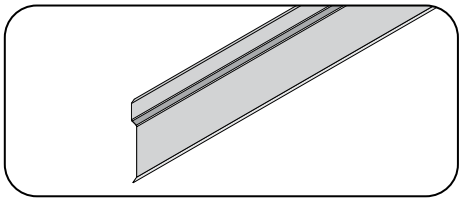
Starter Strip
Used at the eave.
2.8125" x 2.25" x 79" (71 x 57 x 2006 mm)



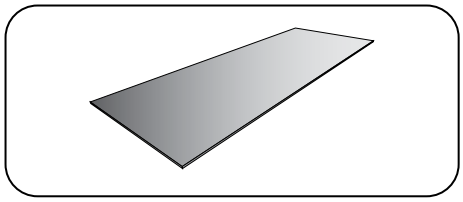
Rake Cover
Used at rake edges in conjunction with Rake-Roof-to-Wall.
1.5"x 4.25" x 79" (38 x 108 x 2006 mm)



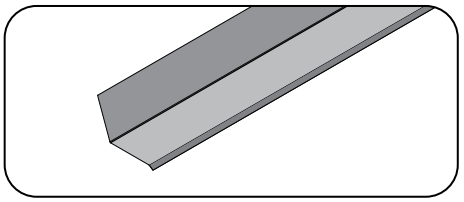
Z-Bar Attachment
Used at side wall in conjunction with Rake-Roof-to-Wall.
1.5" x 2.5" x 79" (38 x 64 x 2006 mm)



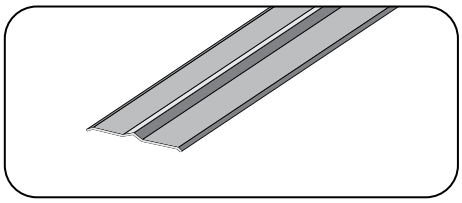
Z-Bar
Used at headwall and sidewall.
5” x 79” (127 x 2006 mm), 4.8 lbs (2.18 Kg)



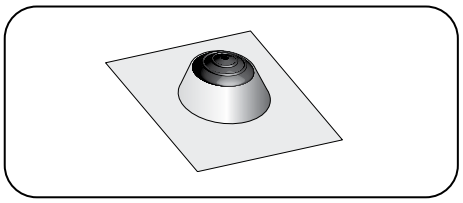
Flat Sheet
Used at Valley Exits and Chimney/Skylight.
18” x 54” (457 x 1372 mm) 8 lbs (3.7 Kg)



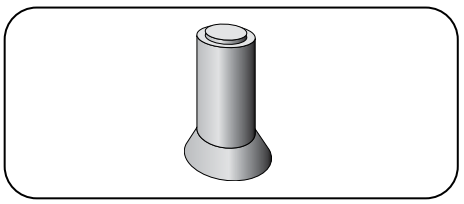
Head-Side-Wall 110°
Used as counter flashing at head and sidewalls.
3" x 3.5" x 79" (76 x 89 x 2006 mm)



Valley Center Cover
Used at valley in conjunction with Valley 5 “V” and Char-Filter Foam.
4.5” x 79” (108 x 2006 mm) 2.2 lbs (1.90 Kg)



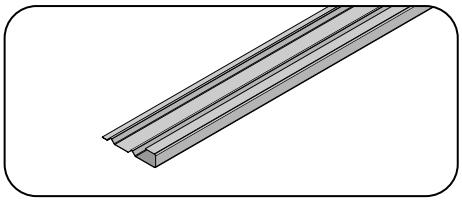
Pipe-Jack 4-N-1
Base 18" x 18" (457 x 457 mm)
Fits 1.25" to 4" pipes (32-100 mm)
1.86 lbs (0.85 Kg)



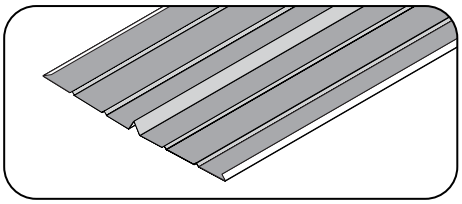
Pipe Sleeve
3/4” – 4” Dia. Pipes (19 – 100 mm)
1.72 lbs (0.78 Kg)

Weights are approximate.

PAINTED OR BARE ACCESSORIES

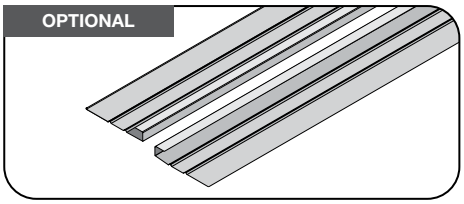


Rake-Roof-To Wall
Used at rake and sloped sidewall areas.
0.875" x 3.375" x 120" (22 x 86 x 3048 mm)

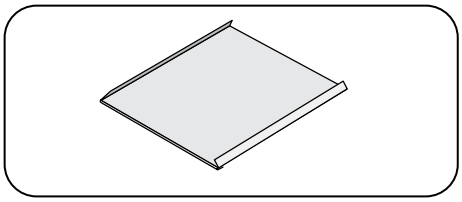


Valley Five 'V'
22" x 120" (559 x 3048 mm), 16.8 lbs (7.60 Kg)
Painted Black, Brown or Bare.

OPTIONAL

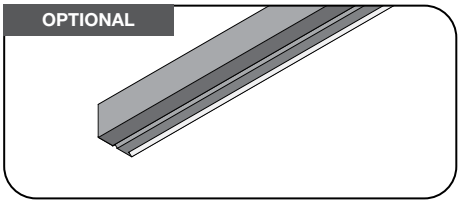


Valley 2-Pc
Requires EmSeal Foam Tape.
9" x 120" (229 x 3048 mm) 7.35 lbs (3.33 Kg)
Painted Black inside.

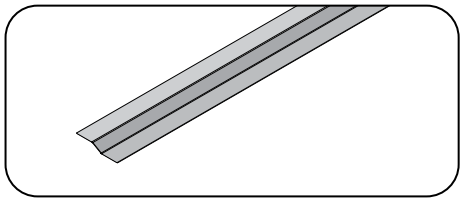


Pipe Jack Tray
Used as base flashing around pipe-jacks.
14.5" x 15.5"

OPTIONAL

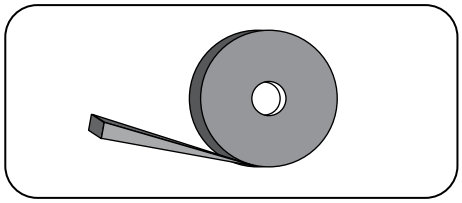


Sidewall Underpan
Used at sloped sidewall areas.
4" x 3" x 120" (100 x 76 x 3048 mm)
5 lbs (2.3 Kg) Painted Brown inside.

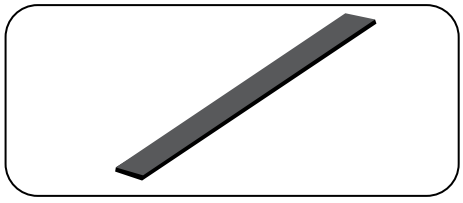


Short Course Cleat
Used to fasten short courses.
2" x 120" (50 x 3048 mm)

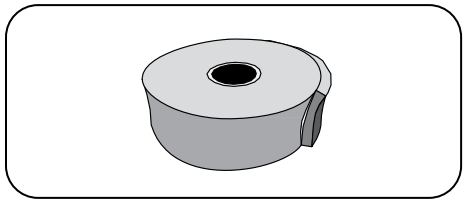
OTHER ACCESSORIES & ROOF SYSTEM COMPONENTS



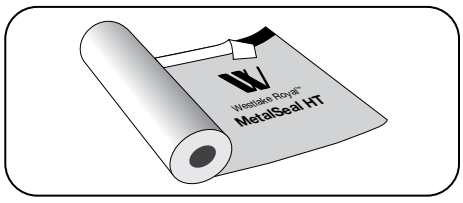
EmSeal Foam Tape Roll
Used as a universal weather block.
1" x 0.75" x 19.68' (25 x 19 x 6000 mm)
1 lb (0.45 Kg)



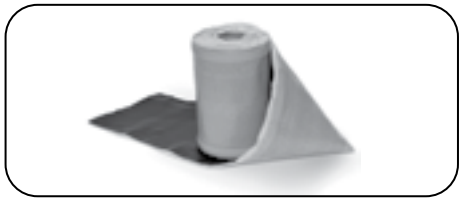
Char Foam Filter
Used under Valley Center Cover.
3" x 76" (76 x 1930 mm)



Barrier Foam Roll
Used under hip and ridge caps.
1" x 6" x 20' (25 x 150 x 6096 mm)
3.5 lbs (1.6 Kg)

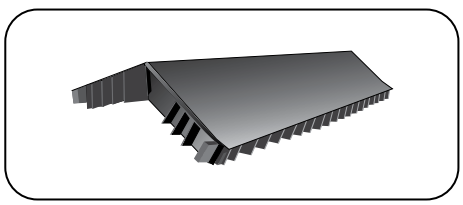


Westlake Royal™ MetalSeal HT
Ice and water shield, self-adhered,
high-temperature Underlayment
36" x 72' (200 sq. ft.) (915 mm x 2.96 M)
70 lbs/Roll (31.7 Kgs)

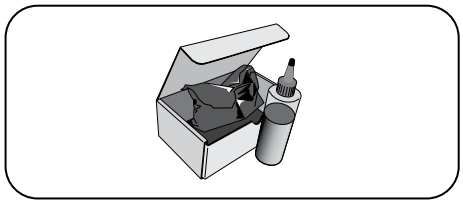


Wakaflex® Universal Flashing
11" x 33' (290 mm x 10.07 M)
Black, Brown, Terracotta

Quarrix Rigid Roll® Continuous ridge vent
(used with Cap Shingle Only)
0.625" x 7" x 20' (16 x 178 x 6096 mm)



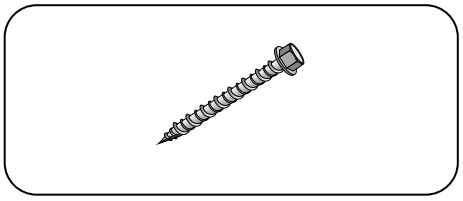
RidgeMaster® Plus Continuous ridge vent
(used with Cap Cottage Only)
1" x 11" x 48" (25 x 280 x 1219 mm)



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

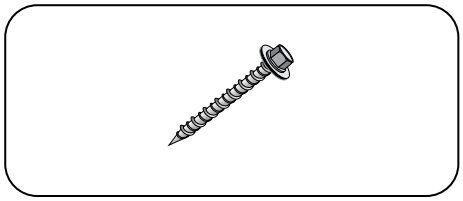
Bulk Stone Chips
1 Bucket of stone chips - 25 lbs (11.3 Kg)

FASTENERS

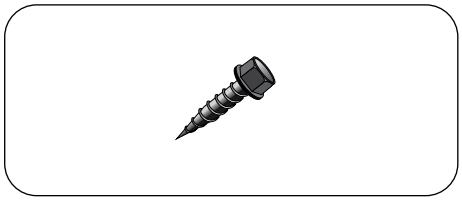


Shingle Panel Screws
Carbon Steel
1.5" L x 0.25" HWH (38 mm L x 6 mm)
No color

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



Valley Screws Carbon Steel
(Dome Cap over rubber washer)
1.5" L x 0.25" HWH (38 mm L x 6 mm)
No color

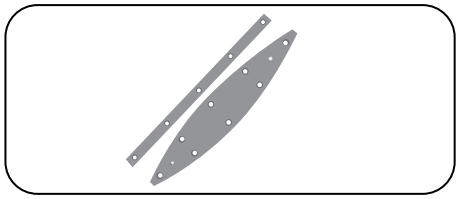


Stitch Screws Carbon Steel
0.75" L x 0.25" HWH (19 mm L x 6 mm)
Available in Black, Red, Brown, Gold, White.

TOOLS

Cutter
80 lbs (36.2 Kg)

Bender
54" x 43" x 35.25" (1372 x 1092 x 895 mm)
162 lbs (73.4 Kg)



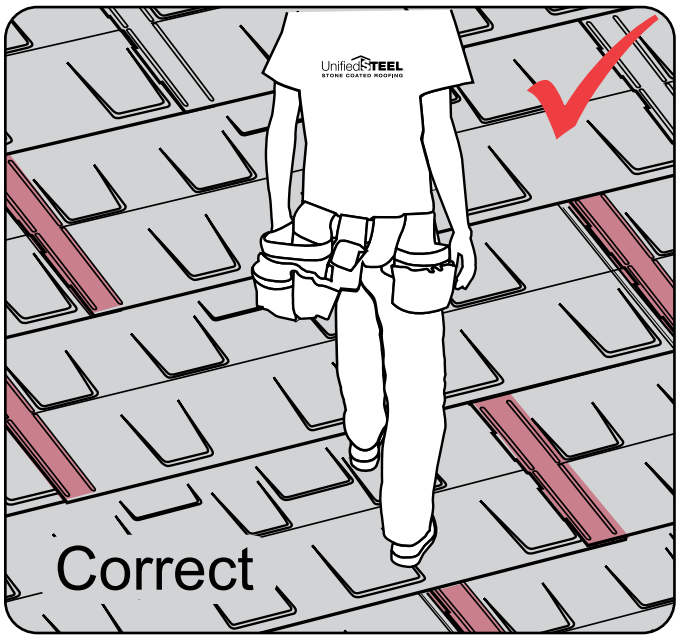
Cutter Blades (Top and Bottom)
54" x 43" x 35.25" (1372 x 1092 x 895 mm)
8 lbs/Set (3.63 Kg)

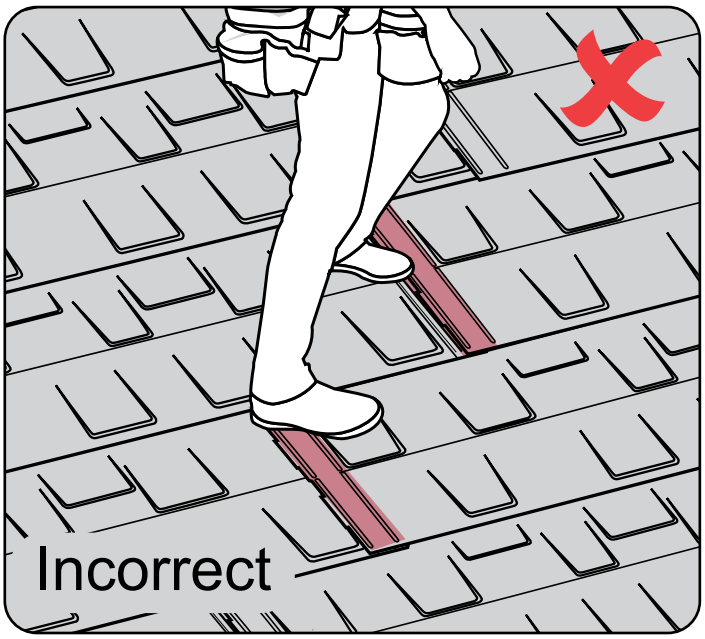
Weights are approximate.

WALKING ON YOUR ROOF

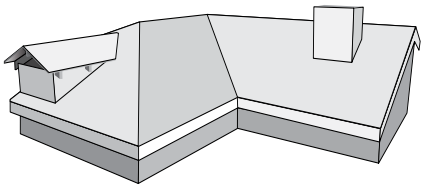
PANEL WALKING

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





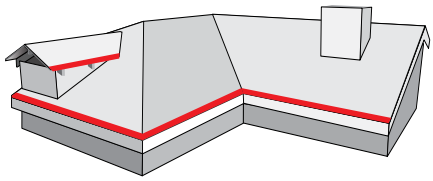
UNDERLAYMENT



The GRANITE-RIDGE shingle is to be installed on new or existing roofs with a pitch of 3:12 or greater. The installation begins with roof edge metal flashings followed by the installation of roofing underlayment. For GRANITE-RIDGE, the minimum requirement is an ASTM D1970 fully adhered membrane, like Westlake Royal™ MetalSeal HT, covering the entire roof plane, installed per manufacturer's requirements and local building code regulations.

	UNDERLAY	DESCRIPTION	EXPOSURE	WARRANTY
SELF-ADHERED	Westlake Royal™ MetalSeal HT	**Modified Asphalt Self-adhered** High strength, non-woven polyester surface remains intact under high foot traffic, stable in low and high temperatures for all climates.	6 months	30 years

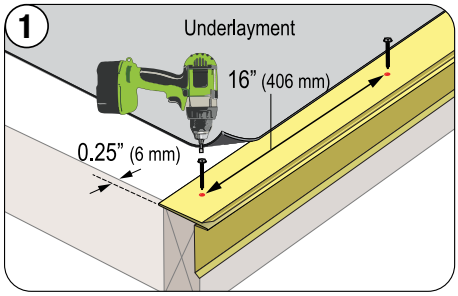
STARTER STRIP



Starter Strip creates a 0.75" (19 mm) overhang at the eave.

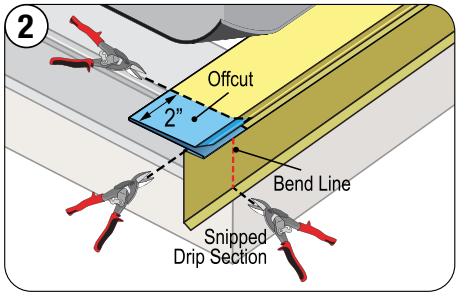
For perimeter flashings including Rake-Roof-to-Wall flashing, refer to local code requirements for correct size.

RAKE INTERSECTION

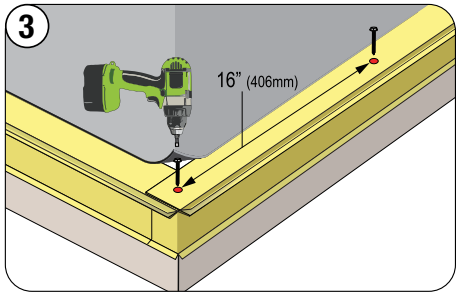


At the rake intersection install Starter Strip under the underlayment and extend 0.25" (6 mm) minimum beyond the facia. Fasten every 16" (406 mm) o.c.

HIP AREA DETAIL

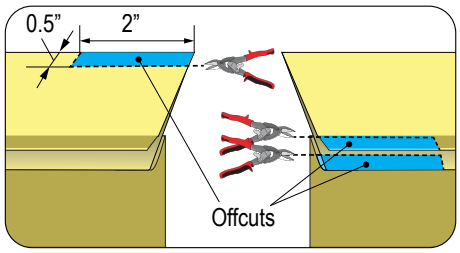


At the hip area, place right Starter Strip on top of the left Starter Strip and extend it 2" (50 mm) beyond the eave. Mark cut and bend lines. Cut off top overhang area and bend over the corner.

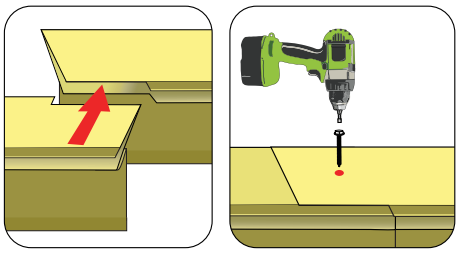


Continue fastening every 16" (406 mm).

OVERLAP DETAIL

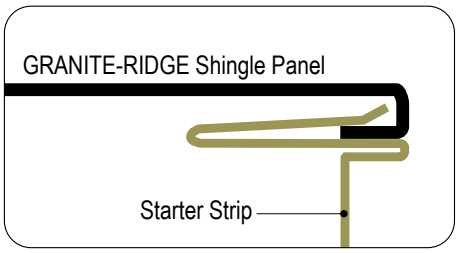


Cut a 0.5" x 2" (13 x 50 mm) in the back of the left Starter Strip. Cut both top and bottom front overhang of the right Starter Strip the same size.



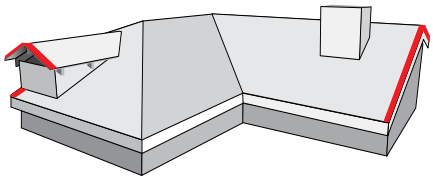
Insert the left Starter Strip into the right, as shown, and fasten.

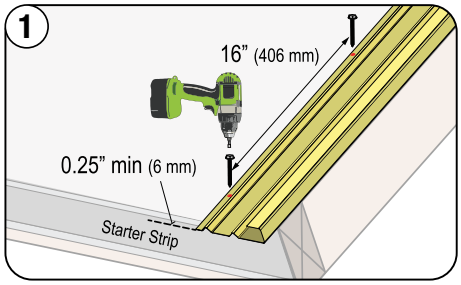
PANEL INTERLOCK DETAIL



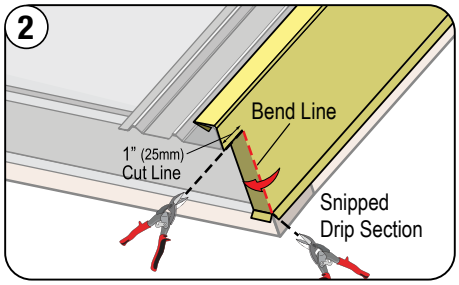
Insert nose interlock of the GRANITE-RIDGE Shingle panel into the Starter Strip.

RAKE/ROOF-TO-WALL & RAKE COVER

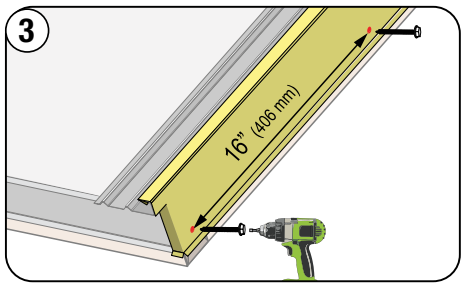




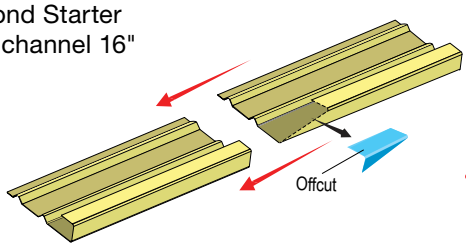
Install Rake/Roof-to-Wall metal along the rake. Extend Rake/Roof-to-Wall 0.25" (6 mm) minimum beyond Starter Strip. Fasten in the outside channel 16" (406 mm) o.c., as shown.



Place Rake Cover on Rake/Roof-to-Wall and mark cut and bend lines, as shown.

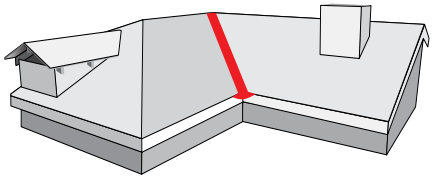


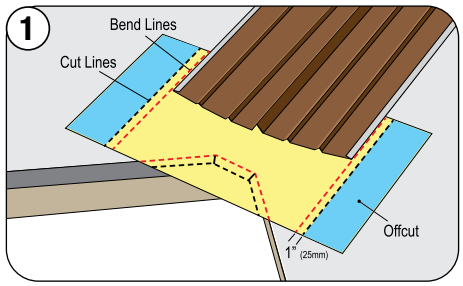
Fit Rake Cover onto Rake/Roof-to-Wall and fasten 16" (406 mm) o.c. into the rake rafter board.



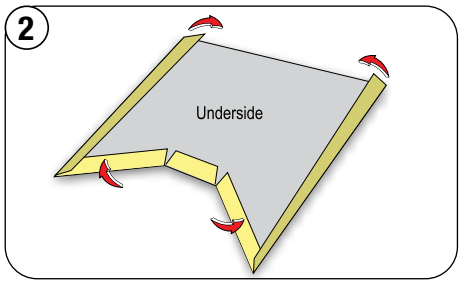
Lap Rake/Roof-to-Wall 2" (50 mm) minimum to prevent leakage through seams.

VALLEY FIVE 'V' WITH EXIT TRAY

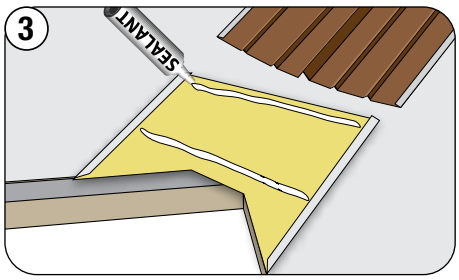




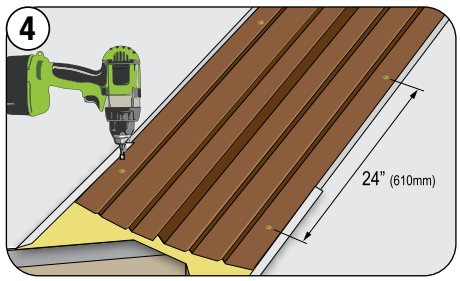
Position Valley Five 'V' at the center of the valley. Place half a Flat Sheet under the Valley. Mark, cut and bend, as shown.



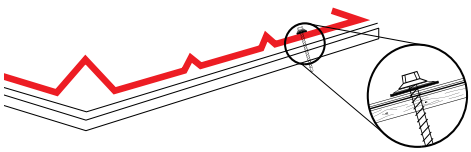
Hem both sides of the folded Flat Sheet to fit around outside edges of valley.



Fit the Exit Tray onto the Starter Strip corner and apply sealant.

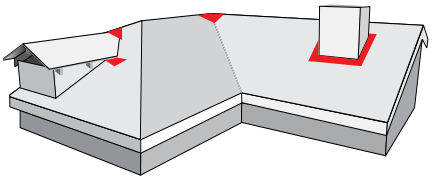


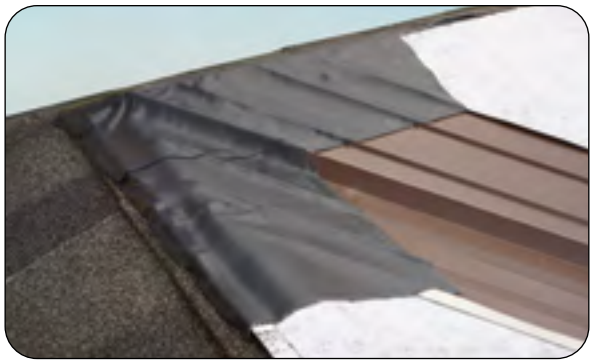
Insert Valley Five 'V' into the Valley Exit. Fasten Valley with washer and grommet screws in the outside locations a minimum of 24" o.c. (610 mm) up both sides.



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

WAKAFLEX® UNIVERSAL FLASHING — OPTIONAL





VALLEY INTERSECTING RIDGES:

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

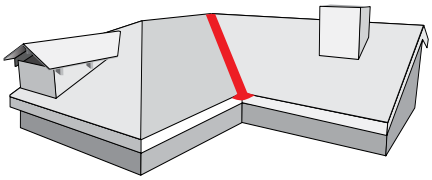
The following necessary steps are provided to prevent water migration under the roof tile.

1. Cut Wakaflex® of equal width to form on top of the 2 pieces of valley metal extended minimum 6” (153 mm) on both sides.
2. Remove the protective film exposing the butyl strip and form on top both sides of valley metal.
3. Ensure that the top upper side of the Wakaflex® is integrated into underlayment installed to prevent moisture from penetrating roof deck.

Wakaflex® can also be used for:

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

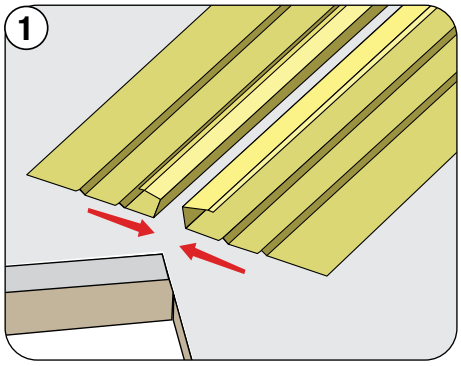
VALLEY 2-PC CLOSED WITH EXIT TRAY — OPTIONAL



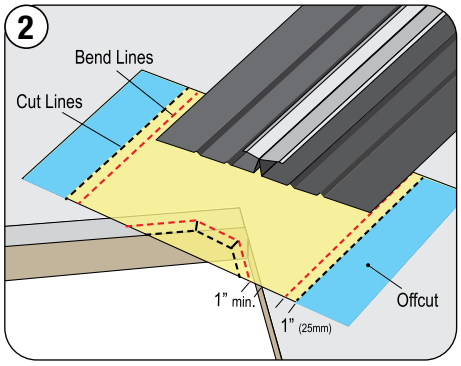
Unified Steel™ Valley 2-Pc uses two (2) pieces per each 10 foot (3048 mm) length of valley.

Estimating formula:
Lin-ft of Valley divided by 9.75 x 2 = # of Valley 2-Pc required.

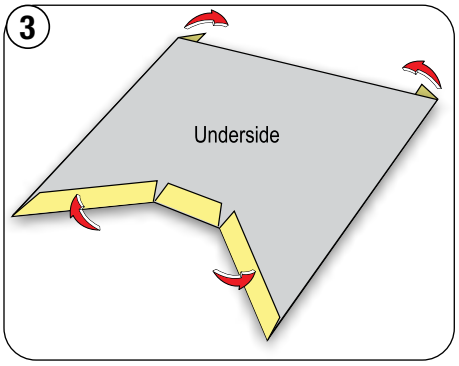
An Exit Tray helps provide a finished appearance to the exit area of the valley especially if the valley is exiting onto another roof section such as from a Dormer roof.



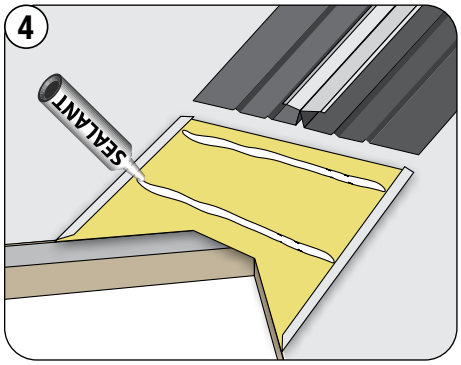
Position Valley 2-Pc at the center of the valley.



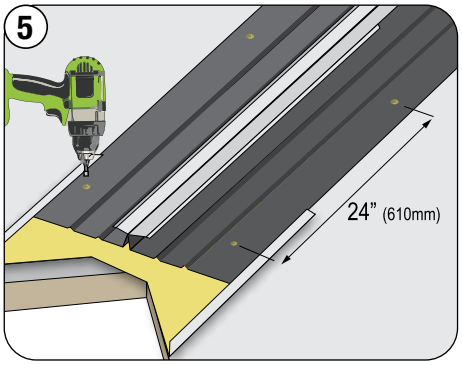
Place half a Flat Sheet under the Valley. Extend Flat Sheet a minimum of 1" (25 mm) past eave. Mark, cut and bend, as shown.



Hem both sides of the folded Flat Sheet to fit around outside edges of valley.

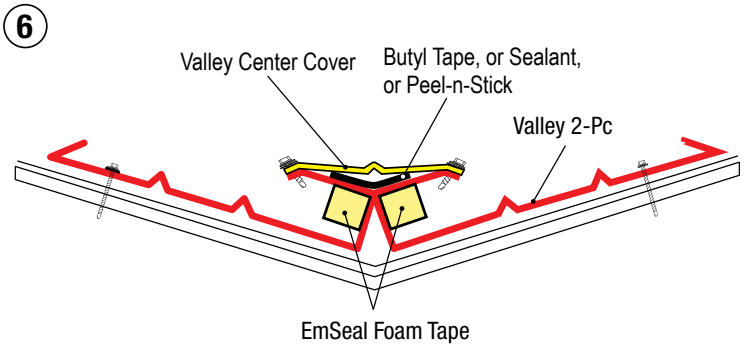


Fit the Exit Tray at the eave. Apply sealant, as shown.



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

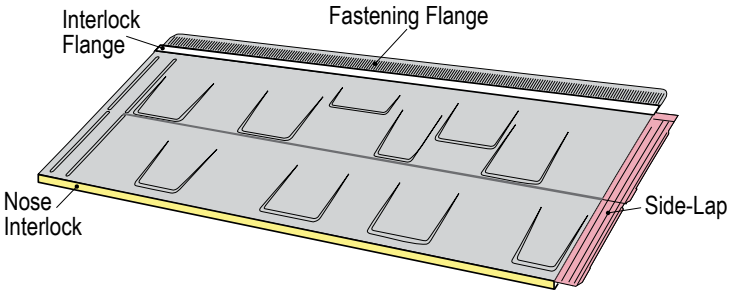
Unified Steel™ Valley 2-Pc requires Butyl Tape, or Sealant, or Peel-n-Stick down valley center, then Valley Center Cover screwed down with Stitch screws. **See Page 15 for details.**

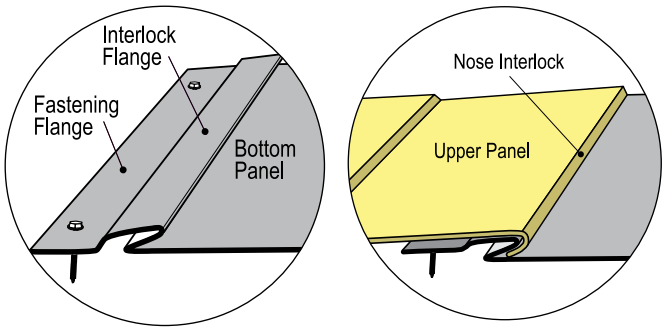


When installing in wooded areas or where trees overhang the valley, use EmSeal Tape in the Valley 2-PC to prevent debris from obstructing the Valley Tray. Install a strip of EmSeal Tape on each section on the inside vertical leg.

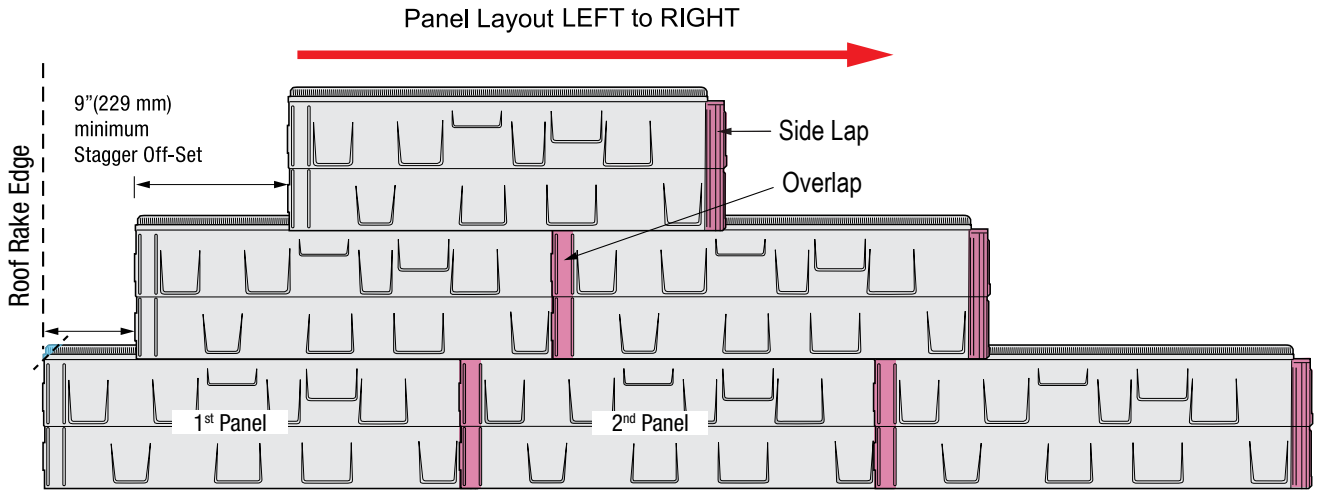
PANEL LAYOUT AND FASTENING

GRANITE-RIDGE Shingle panels have a 2.0625” (52 mm) side-lap and must be staggered greater than 9” (229 mm). The panels incorporate a “Pittsburgh" interlock across the Fastening Flange of each panel that allows the nose of the panel above to fit into it and form a concealed fastened design. The panels are installed batten-less (Direct-to-deck) and CANNOT be straight laid.



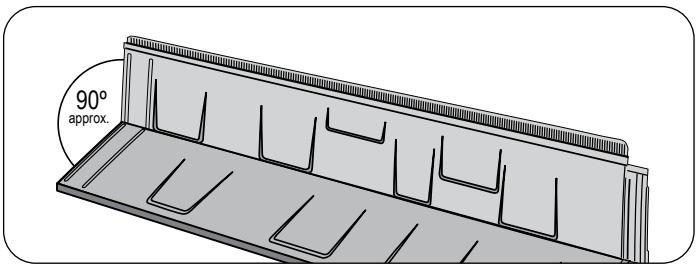


CONCEALED FASTENED DESIGN
It is critical the Nose Interlock of the panel above locks into the Fastening Flange of the panel below creating a tight fit.

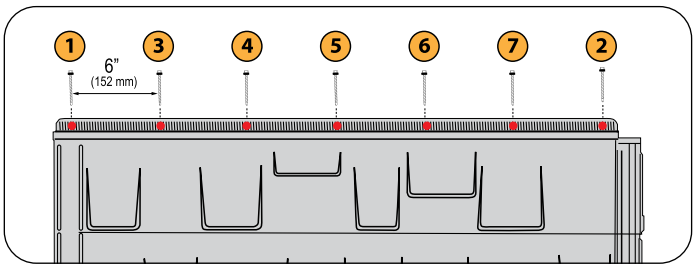


GRANITE-RIDGE Shingle panels must be randomly staggered greater than 9” (229 mm) minimum to prevent pattering on the roof and CANNOT be straight laid.

GRANITE-RIDGE Shingle panels can only be laid LEFT to RIGHT

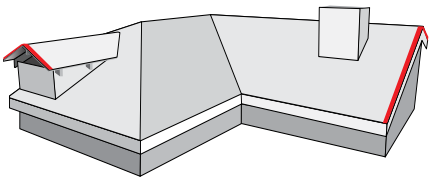


*When installing any panel except the first one of each course, it is VERY important to **bend the shingle** at the horizontal step feature to approximately 90 degrees. This is to insure a better fitting joint and to prevent “fish-mouthing” of the side lip.*



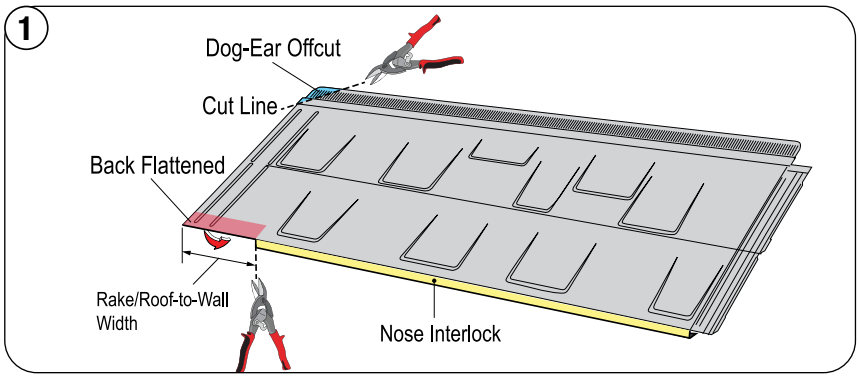
Fasten the panel using seven (7) fasteners into the fastener strip, 6" (152 mm) apart. Fasteners must penetrate the roof decking a minimum of 0.75” (19 mm).

RAKE PANEL SECTIONS

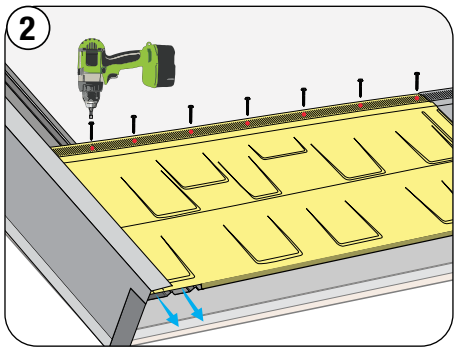


Each Panel that is inserted into Rake/Roof-to-Wall:
Cut the top corner ("dog-ear") of the panel in 45-degree angle. After cutting the "dog-ear" make sure the back hem is open and will allow the panel above to fit tight.

LEFT SIDE RAKE PANELS

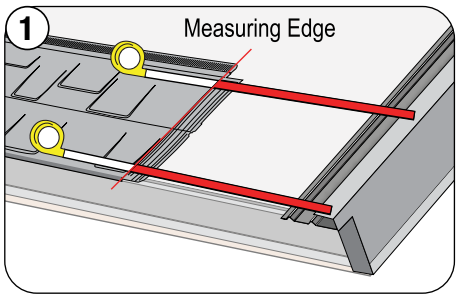


First course panel Only: Cut the panel's Nose Interlock and flatten the nose section the width of the Rake/Roof-to-Wall, to allow drainage of the rake detail.

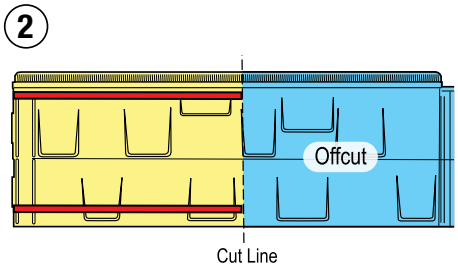


Insert first course panel into Rake/ Roof-to-Wall and interlock with the Starter Strip. Fasten panel and continue installation across the roof.

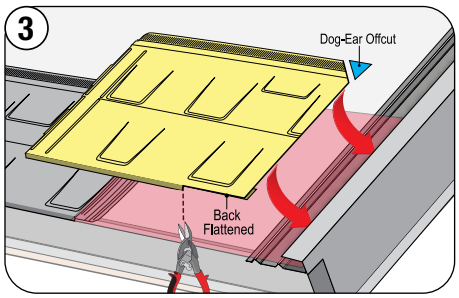
RIGHT SIDE RAKE PANELS



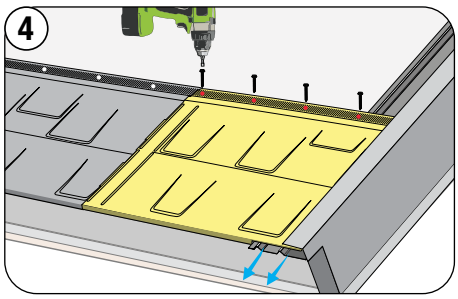
Measure Rake panel cut from the panel overlap to the edge of the Roof/Rake-to-Wall.



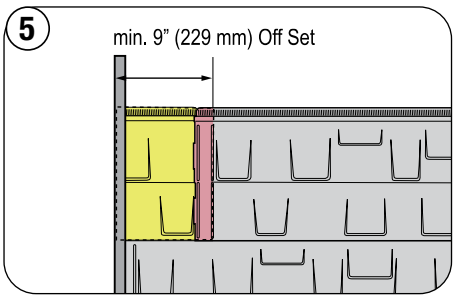
Apply measurements to the full panel, mark and cut.



Cut the panel's nose interlock and back-flatten the nose section the width of the Rake/Roof-to-Wall. Insert rake panel cut into Rake/Roof-to-Wall and interlock with the Starter Strip.



Fasten rake panel cuts, as shown.



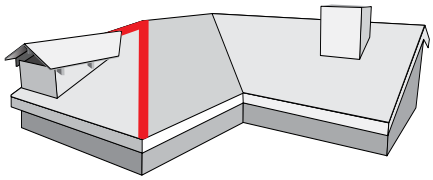
Subsequent courses of panels hook onto the rear of the panel beneath.

A stagger pattern can be created by using the offcut from the previous row to begin the next row.

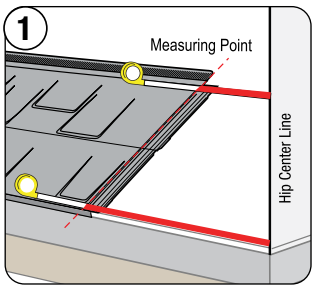
*When installing any panel except the first one of each course, it is VERY important to **bend the shingle** at the horizontal step feature to approximately 90 degrees. This is to insure a better fitting joint and to prevent "fish-mouthing" of the side lap.*

HIP PANEL SECTIONS - BARRIER FOAM METHOD

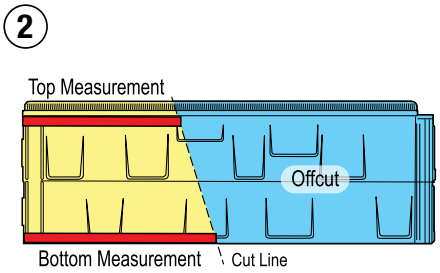
▶ See page 24 for Barrier Foam installation



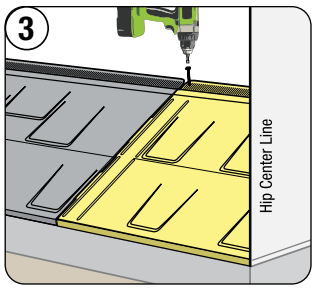
LEFT SIDE HIP PANELS



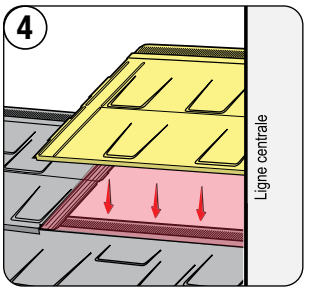
Measure hip panels from the panel's side lap to the hip center line, as shown.



Apply measurements to the full panel, mark and cut.

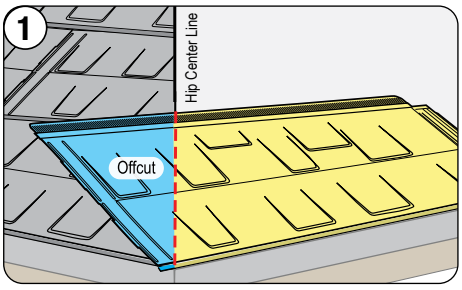


Fit panels to the hip center line and fasten.

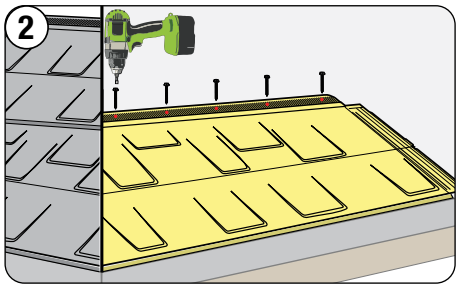


Continue hip panels installation.

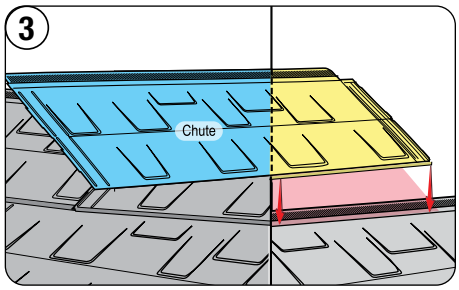
RIGHT SIDE HIP PANELS



Place full panel aligning with the eave, mark the center line on the panel and cut.



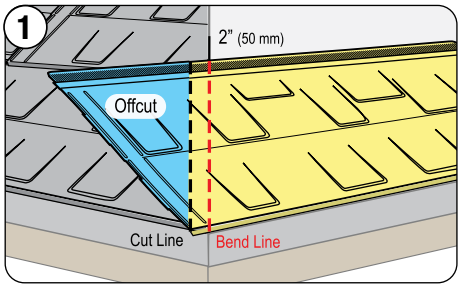
Fit panels to the hip center line and fasten.



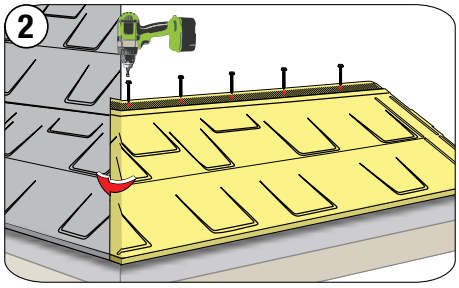
Complete first row before starting second row hip section. Continue hip panels installation.

HIP PANEL SECTIONS - OVERLAP METHOD — OPTIONAL

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

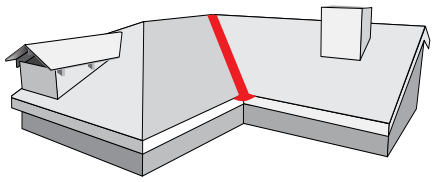


Position full panel, aligning with the eave. Mark the hip center line on the panel as bend line. Add 2" (50 mm) and mark as cut line.

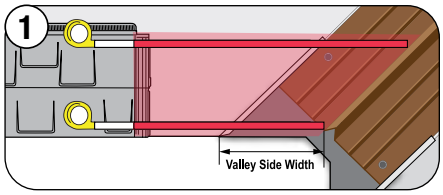


Cut, bend and install hip panel, as shown.

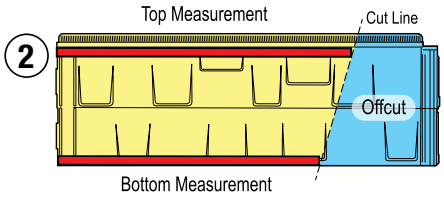
VALLEY PANEL SECTIONS WITH VALLEY FIVE 'V'



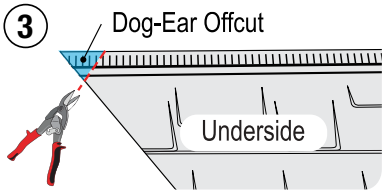
LEFT SIDE VALLEY PANELS



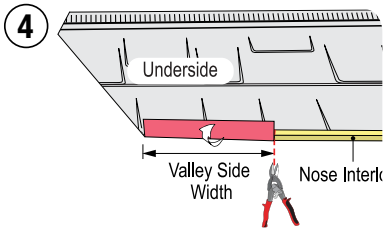
Measure from the side-lap reference point to the center rib of the Valley Five "V".



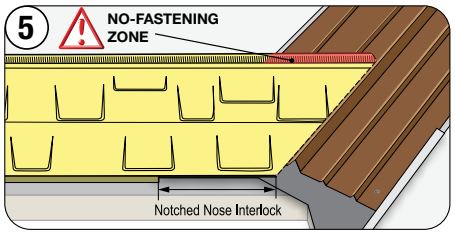
Apply Measurements to the full panel and cut.



Each valley panel: Cut the top corner ("dog-ear") of the panel in 45-degree angle, as shown. This helps deflect water into the valley drainage channels. Make sure the back hem is open and will allow the panel above to fit tight.

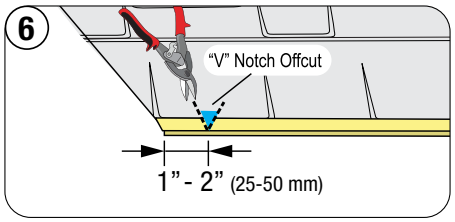


First valley panel row only: Cut and notch the nose interlock the width of the side of the Valley Five "V", to allow free water flow to exit the valley.



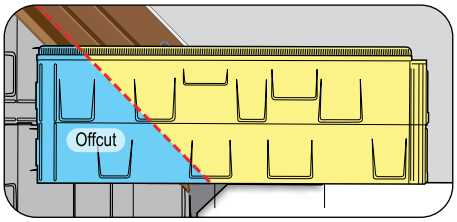
Install first row valley panel onto the Valley Five "V" and fasten, keeping away from the no-fastening zone.

Complete first row across the roof before starting second row valley section.



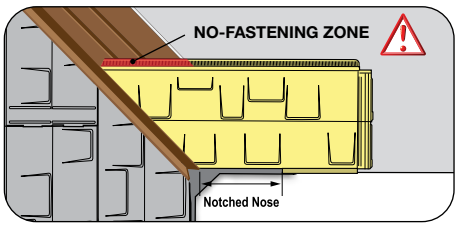
Second and following valley panel rows: At the nose interlock on the underside of the panel cut the V-notch approx. 1"-2" (25-50 mm) from the edge of the valley cut. This prevents water migration under the panel and across the roof.

RIGHT SIDE VALLEY PANELS



Place full panel aligning with the eave, mark the line along the center rib of the Valley Five "V" and cut.

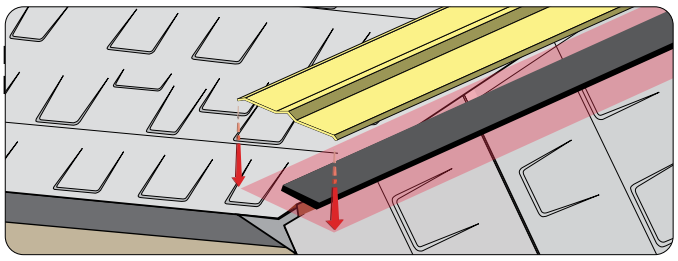
Repeat Step 3-4 for the right side valley panels.



Install right side valley panel onto the Valley Five "V" and fasten, keeping away from the no-fastening zone.

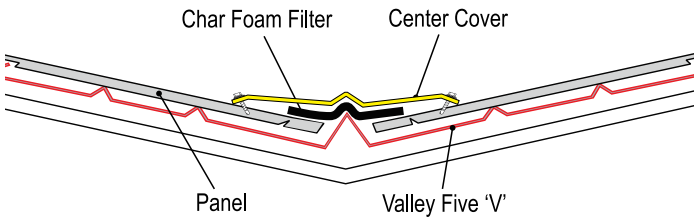
Repeat Step 6 for the second and following valley panel rows.

VALLEY CENTER COVER INSTALLATION



After all valley cut sections are installed, place Char Foam Filter (debris guard) along the center of the Valley Five 'V'. Install Valley Center Cover.

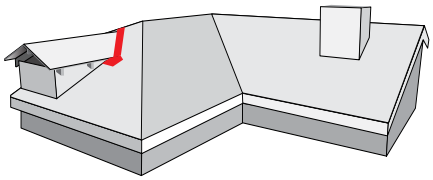
Lap Valley Center Cover a minimum of 2" (50 mm).



Valley Center Cover is fastened with corrosion resistant stitch screws to each course of panels.

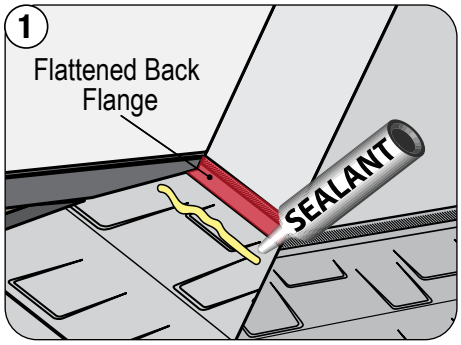
Do not penetrate the Valley Metal, *use Stitch screws to secure the Valley Center Cover.*

DORMER VALLEY EXIT - FLAT SHEET METHOD

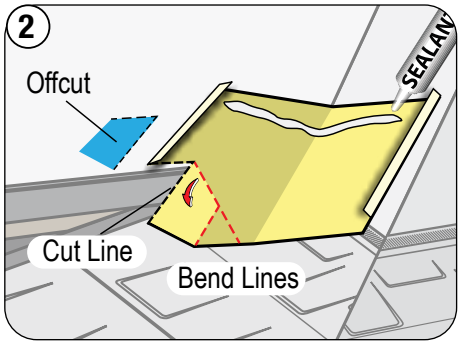


This is a critical roof area and requires special attention to ensure good weather protection. When the main roof intersects with a dormer roof, the panel's back-lip, where the valley exits onto the main roof, must be flattened and the panels bent-up against the dormer roof (see steps below).

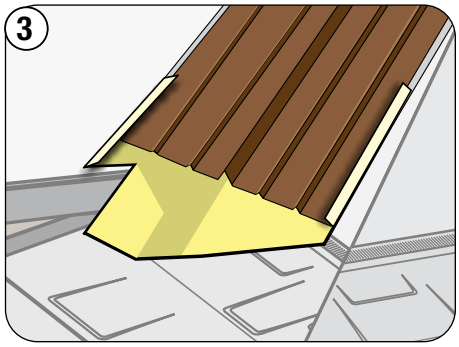
Use either Unified Steel™ stone coated Flat Sheet or Wakaflex® universal flashing to create a valley exit piece.



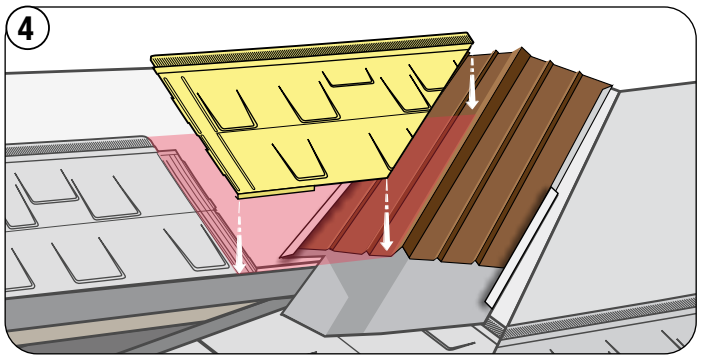
Flatten back flange against the roof deck. Apply sealant.



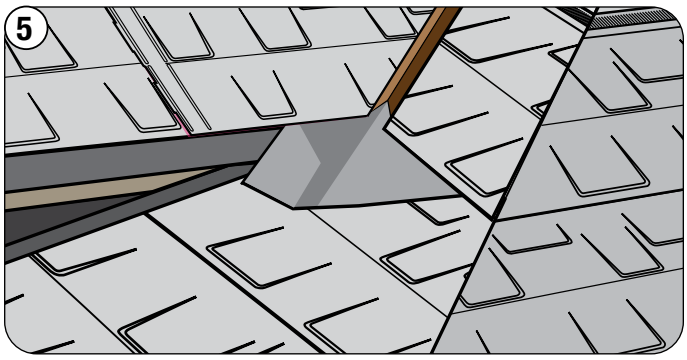
Form the stone coated Flat Sheet as an extension and exit tray with hemmed edges, as shown. Apply a bead of sealant.



Fit Valley metal over and onto the formed exit tray and embed the Valley into the sealant.



Install valley panel cut onto the Valley. Note that the nose interlock hook of the panel must be notched to allow drainage of the valley. **See page 14, Step 3 for details.**



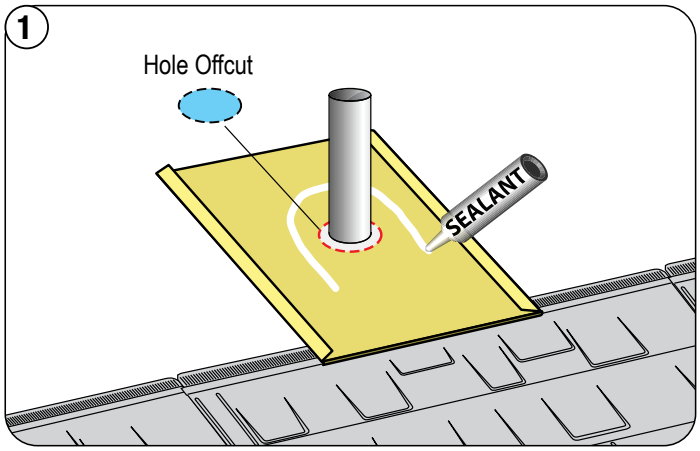
Complete Dormer Valley Exit.

DORMER VALLEY EXIT - WAKAFLEX® FLASHING — OPTIONAL

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

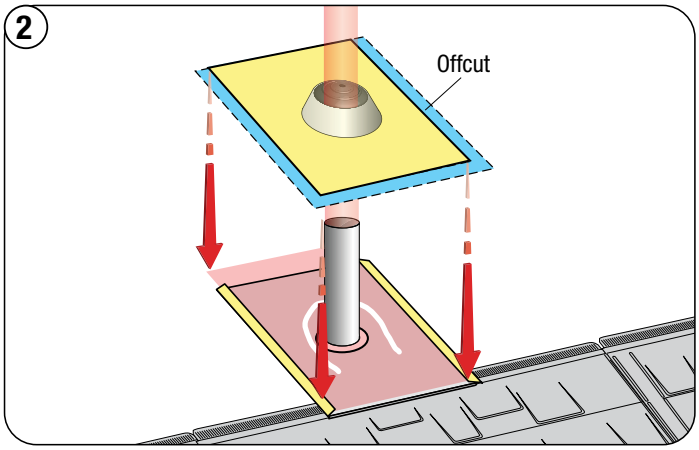
1. Cut Wakaflex® 2" (50 mm) wider than the valley metal.
2. Peel off protective film and fit the Wakaflex® cut piece under the valley exit.
3. Form the Wakaflex® to the contours of the panels below, ensuring a complete bond of the butyl strip onto the stone coated surface.
4. Wakaflex® should be painted or stone coated to match the panel color.

PIPE FLASHING - SANDWICH METHOD



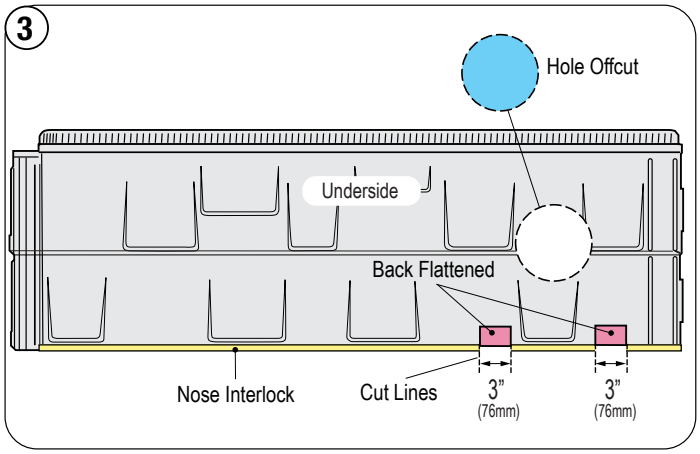
Cut a hole in the Pipe-Jack Tray to fit over the pipe and interlock into the back flange of the panel below.

Apply a bead of sealant in an upside “U” shape to allow for drainage.



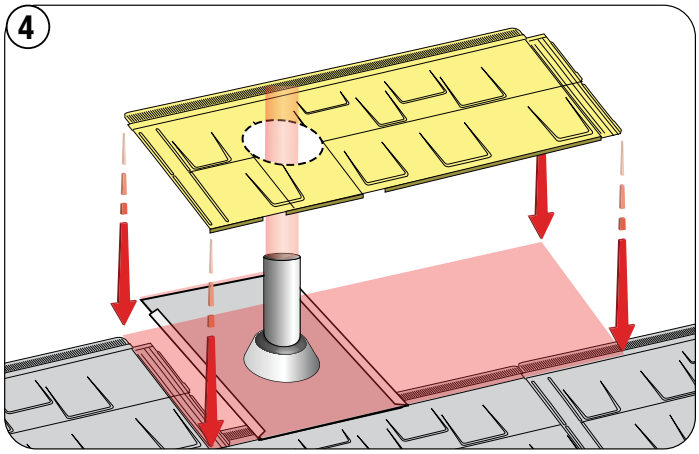
Trim the Pipe-Jack flashing as needed to fit between the hemmed sides of the Pipe-Jack Tray.

Install new Unified Steel™ 4-N-1 Pipe-Jacks designed to fit pipes from 1.25" to 4" (32-100 mm) in diameter onto the pipe.

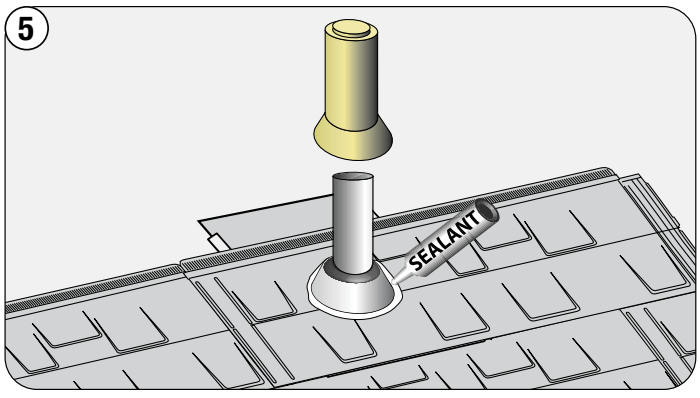


Cut a hole in the cover panel tight to the Pipe-Jack cone.

Cut and fold the nose interlock approximately 3” (76 mm) on either side of the pipe hole to allow for drainage.



Install the cover panel, ensuring the nose interlock and side lap are fully engaged.

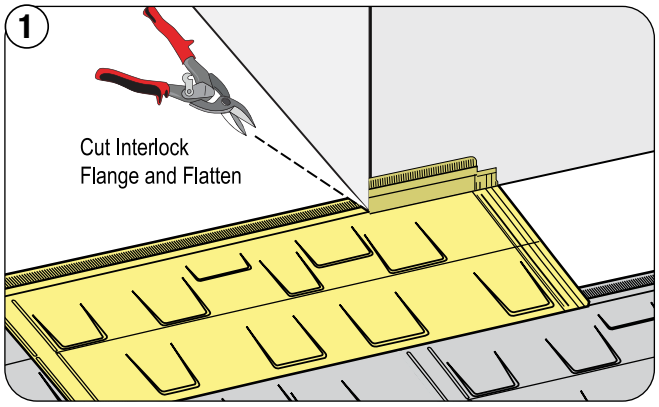


Apply sealant and stone chips using Unified Steel™ Touch-Up Kit as needed. Install a Pipe Sleeve to finish the detail.

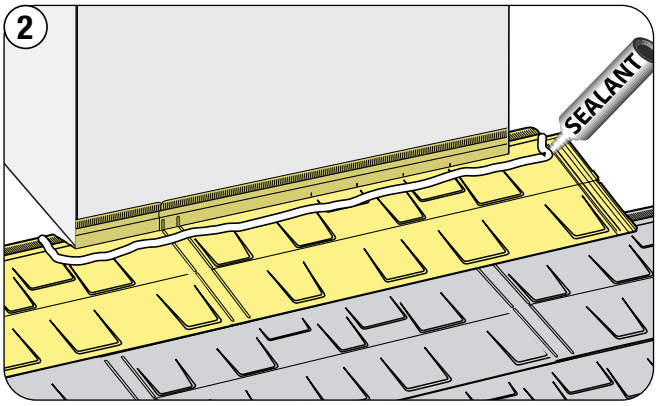
SOLAR SYSTEM FLASHING MOUNT:

As round pipe is often used to support solar systems, the details above can be used to flash the supporting solar members.

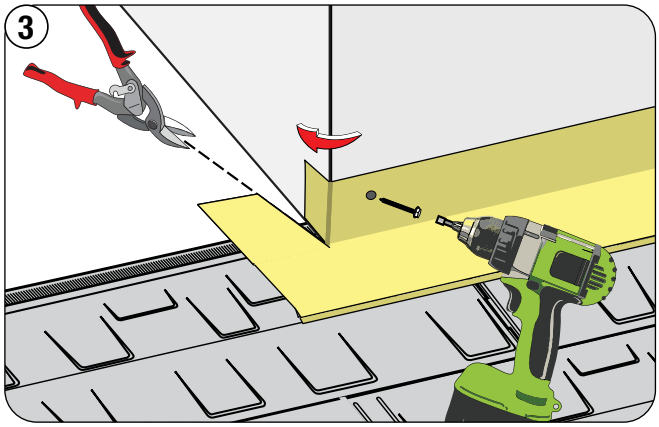
CHIMNEY / SKYLIGHT DETAIL



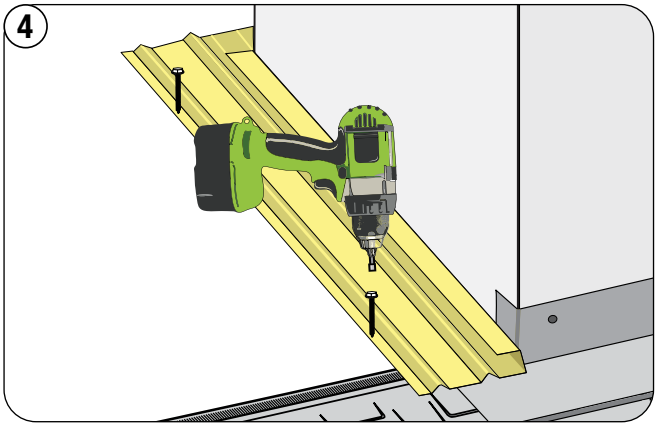
Measure, cut and fold up panel 2” (50 mm) minimum.



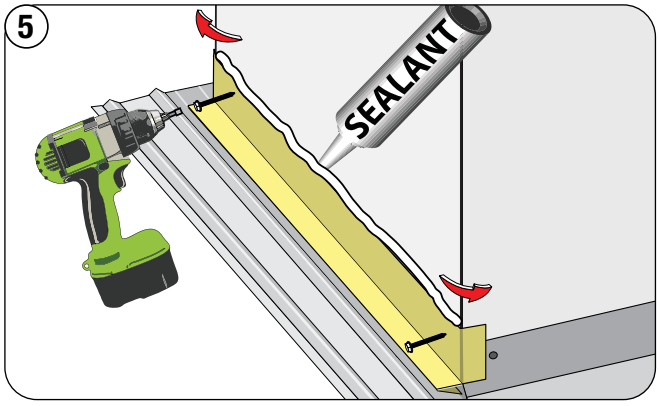
Complete this step across the front of the headwall. Apply a bead of sealant across the panel.



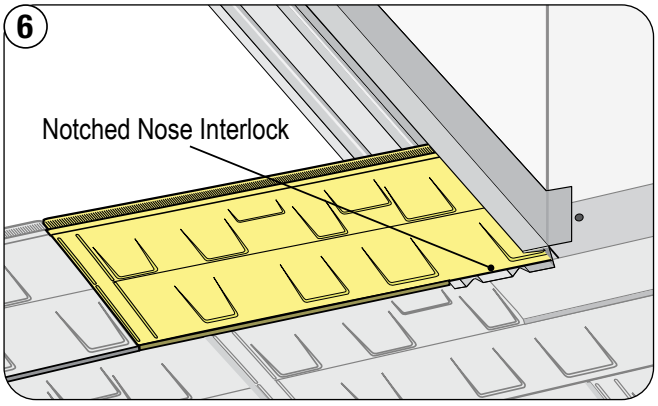
Measure, cut and fold up Head-Side-Wall flashing. Install and fasten, as shown, on both sides.



Measure, cut, fit and fasten Rake/Roof-to-Wall flashing.



Fasten Z-Bar Attachment at 16" (406 mm) o.c. as shown. Apply a bead of sealant along top of Z-Bar Attachment & wall or Chimney/Skylight.



Fit the next course panel up from the bottom of the headwall and insert it into the Rake/Roof-to-Wall flashing. Note that the nose interlock of the panel must be notched to the width of the Rake/Roof-to-Wall.

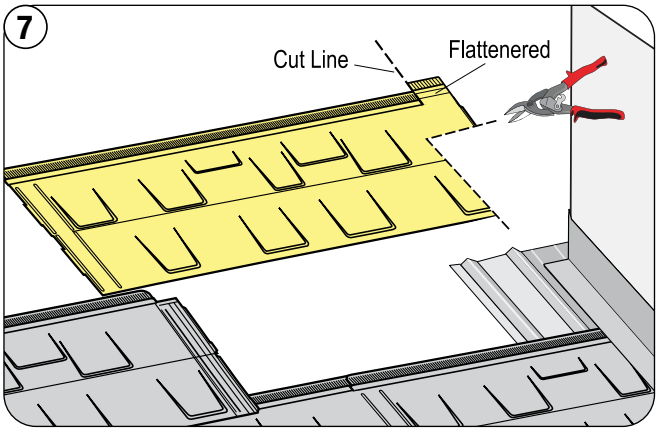
Continue this detail on both sides of the item being flashed.

On sloped side-wall areas lap Rake/Roof-to-Wall metal a minimum of 2” (50 mm).

We recommend in mountainous regions, with heavy snow loads and roof pitches below 6:12, apply a bead of sealant across each Rake/Roof-to-Wall lap joint.

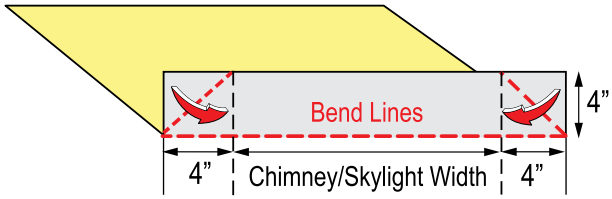
CHIMNEY / SKYLIGHT DETAIL (cont.)

7



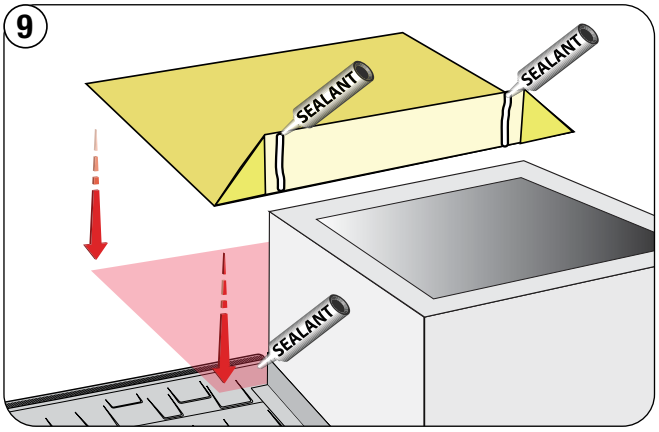
Measure and cut the top left and right panel on either side of the item being flashed.

8



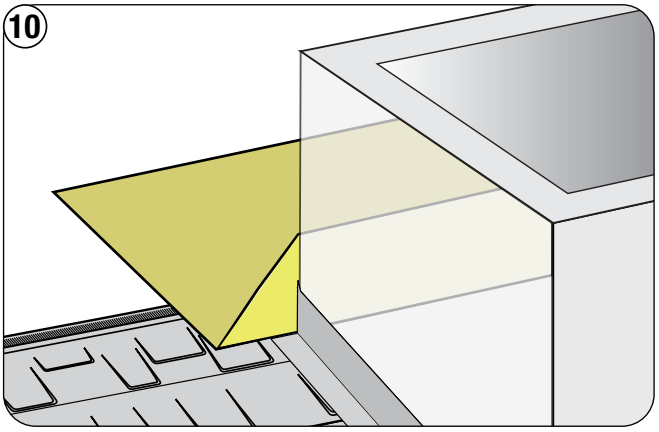
Measure the width of the Chimney/Skylight. Using the Flat Sheet, add 4” (100 mm) to the measurement on each side and cut the section. Bend it up 4" minimum, forming a saddle flashing. Bend 4"x 4" triangles over, as shown.

9



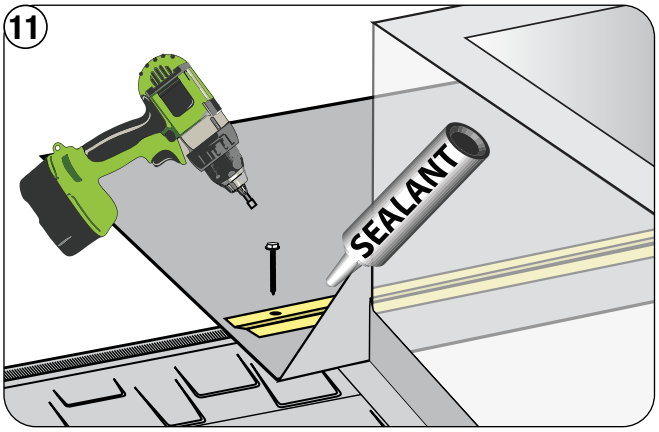
Apply sealant along the back of the panel behind the Chimney/Skylight and down the corners of the saddle, as shown, and set saddle onto the sealant.

10



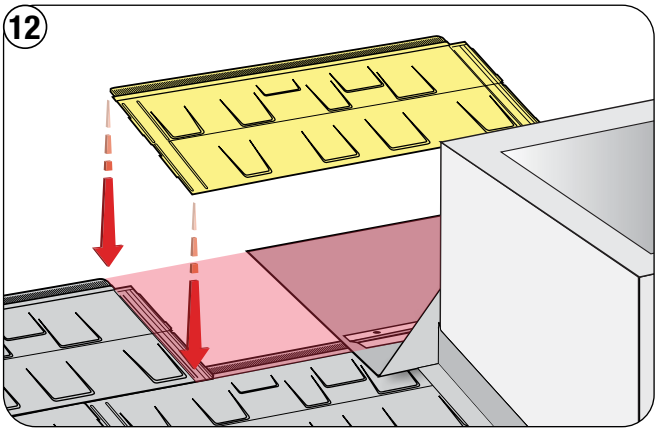
The saddle fits down onto the previously installed top panel sections and the corners ensure drainage away from the top corners.

11



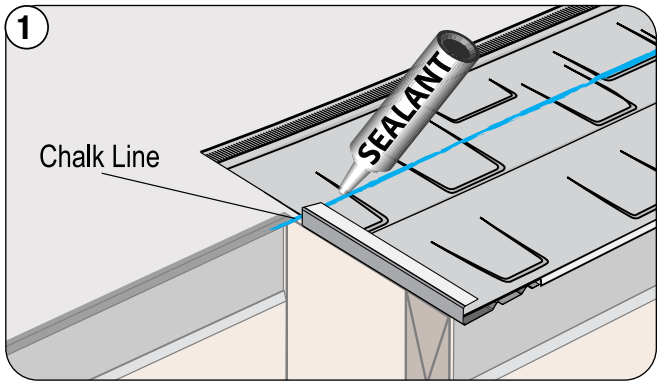
Cut and fit a section of Short Course Cleat across the back of the saddle, aligned with the fastening flange of the panels on either side of the item being flashed. Embed the Short Course Cleat in a bead of sealant. Fasten the Short Course Cleat every 6" (152 mm).

12



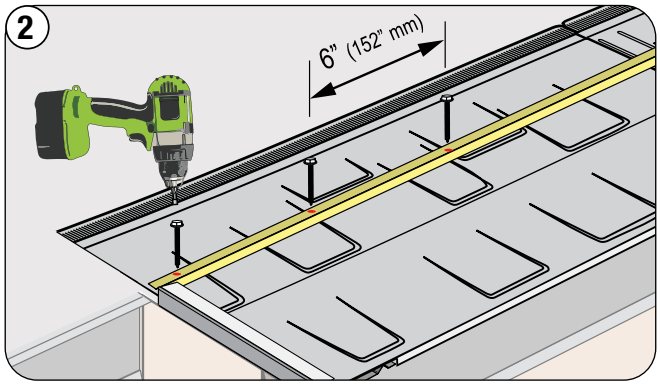
Install a full panel, lapped and interlocked correctly, to the adjacent panels and interlocked with the Short Course Cleat.

SHORT COURSE DETAIL

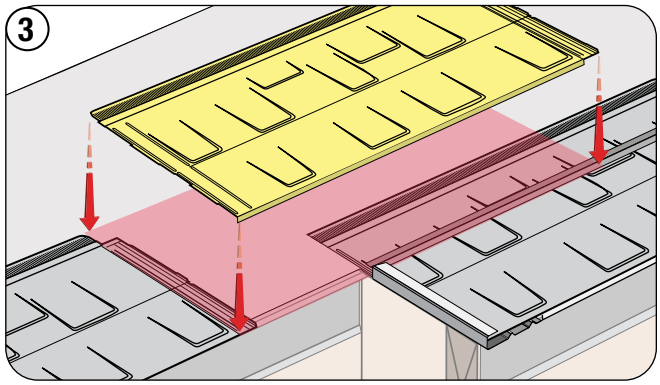


Short Course panels shall be applied to the lowest eave.

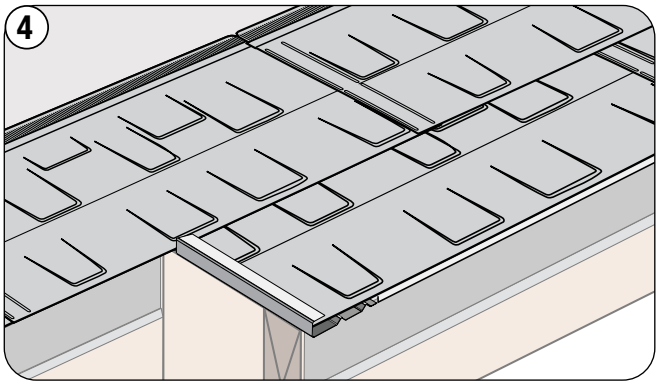
Mark a line onto the short course panels, aligning with the longest section of Starter Strip. Apply a bead of sealant across the chalk line.



Set Short Course Cleat in sealant and fasten every 6" (152 mm).



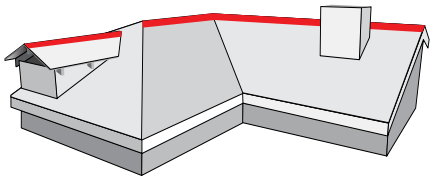
Fit the full panel from the longer roof section and ensure its interlocked into the Short Course Cleat.

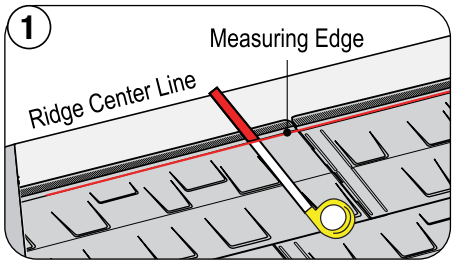


The completed Short Course detail should look almost seamless from the rest of the field.

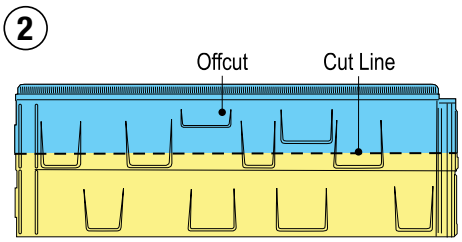
RIDGE CUT SECTIONS - BARRIER FOAM METHOD

▶ See page 24 for Barrier Foam installation

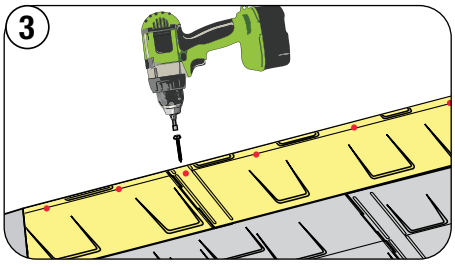




Measure ridge panels, as shown.



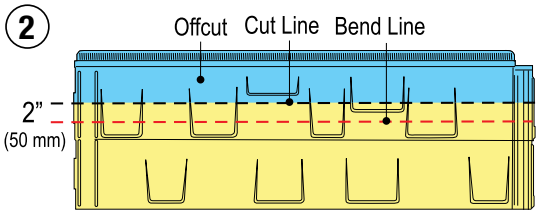
Apply measurements to the full panel and cut.



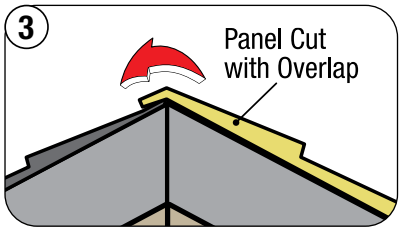
Install panels across ridge. Secure each end and the center of the ridge panel with fasteners.

RIDGE CUT SECTIONS - 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.

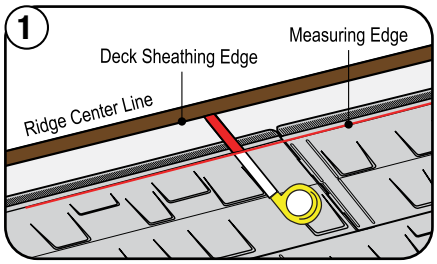


Measure ridge panels, as shown in Step 1. Apply measurements to the full panel and mark as Bend Line. Add 2" (50 mm) and mark as Cut Line. Cut and bend the ridge cut panel.

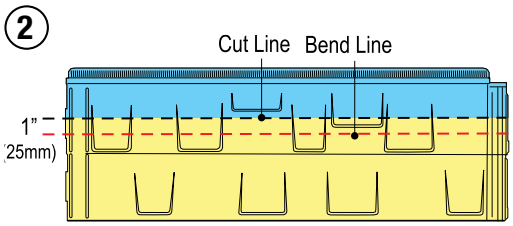


Install ridge panels overlapping, as shown.

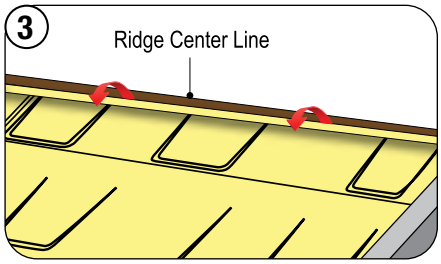
RIDGE CUT SECTIONS - IF INSTALLING CONTINUOUS RIDGE VENT



Measure ridge panels from the interlock flange to the edge of the roof deck.



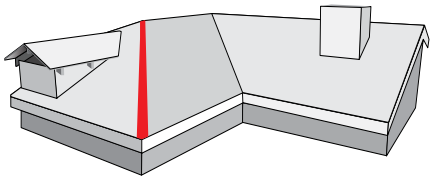
Apply the measurements and mark the Bend Line. Add 1" (25 mm) for the Cut Line.

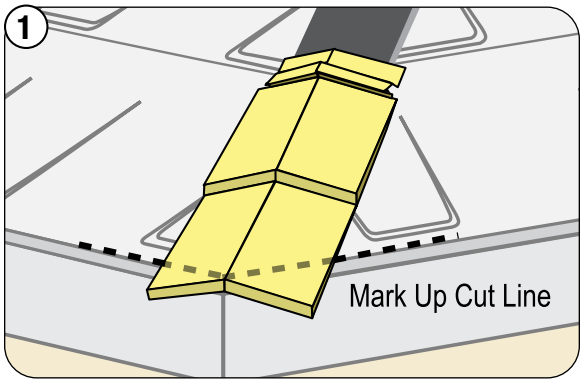


Create the Hem across each ridge panel. Install ridge panels, as shown.

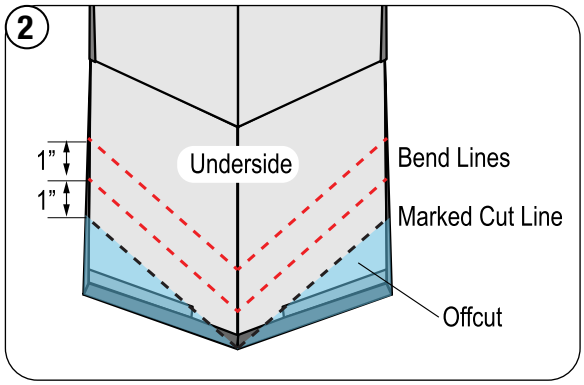
See Pages 24-25 for Continuous Ridge Vent Details.

HIP STARTER DETAIL

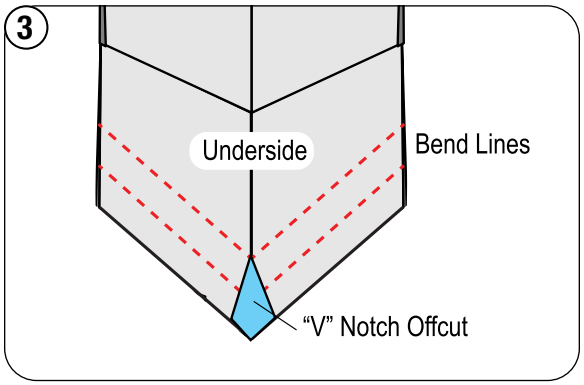




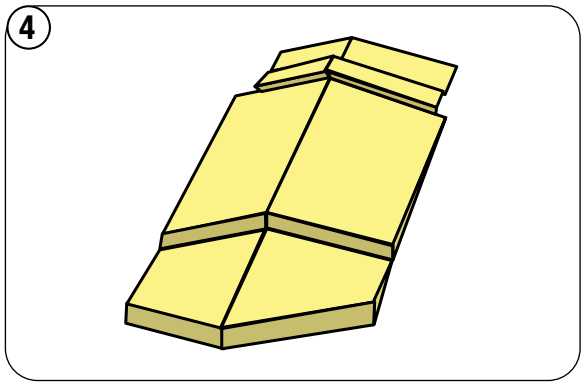
Position Shingle Cap on the roof so the hip center line is covered by the nose of the cap. Mark the panel line on the underside of the cap.



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

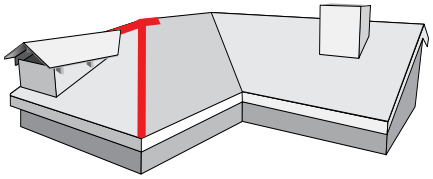


Cut a 'V' notch out of the cap. Using hand seamers, bend the cap to create a 3-D nose section that will hook onto the front edge of the shingle around the hip corner.

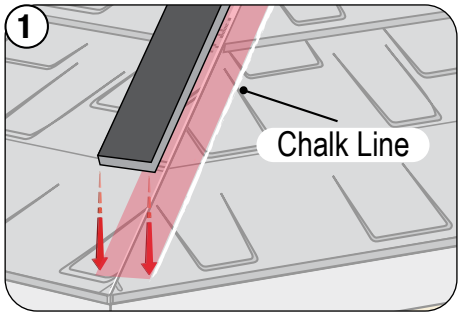


The finished Hip Cap Starter piece will have a 3-D look and a nose that is approximately 1" (25 mm).

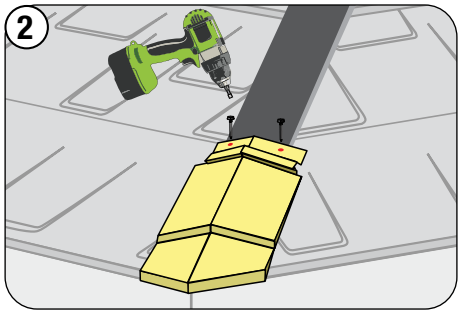
HIP TRIM CAPS & HIP/RIDGE INTERSECTION - BARRIER FOAM METHOD (Cap Shingle Shown)



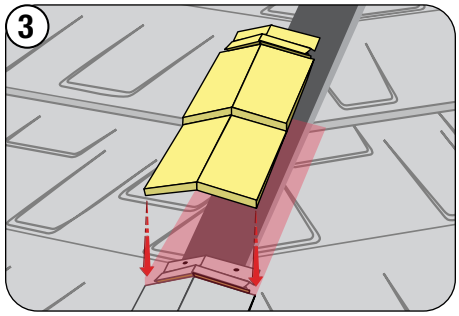
Barrier Foam roll is designed for use on both the hip and ridge to provide a weather barrier between the panel and the trim caps being used.



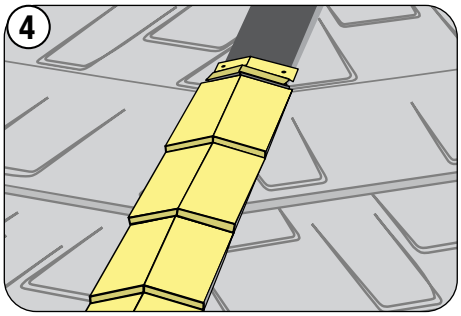
Install a strip of Barrier Foam or approved weather block over the center line of the hip. Use a chalk line to create a straight edge to align Barrier Foam and caps.



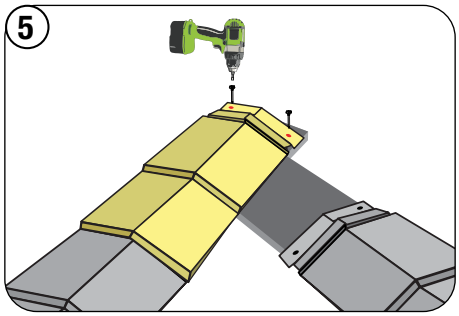
Install the Hip Starter Cap previously formed, interlocked over the nose of the panels, at the hip corner. Fasten through cap and Barrier Foam into the roof decking.



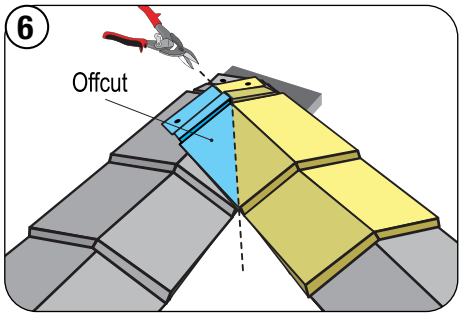
Fit each cap similar to panels, making sure the nose interlock is secure. Fasten each cap using two screws.



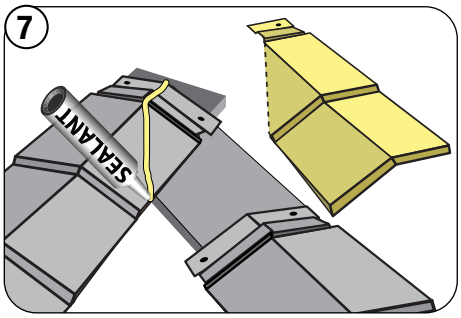
Continue this procedure with each cap up the hip to the ridge intersection.



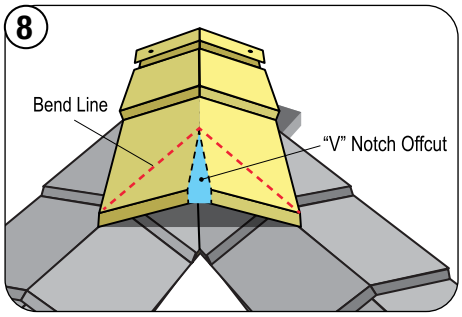
At the ridge intersection, where two hips meet, install final hip cap and fasten.



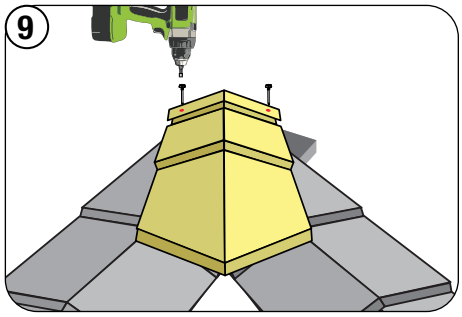
Overlap hip caps. Mark and cut top hip cap along the center line to create a clean finish.



Apply a bead of Sealant along the center line before installing trimmed top cap to insure weather block.



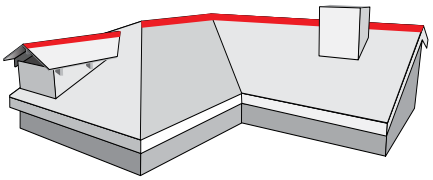
Fit ridge cap to overlap hip caps, as shown. Mark bend lines, V-notch and bend to create 3-D look.



Fasten through the cap, barrier foam, panel and into the roof deck, with two fasteners per cap.

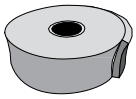
Trim Cap Screws should be of sufficient length to penetrate a minimum of 0.75" (19 mm) into the roof decking.

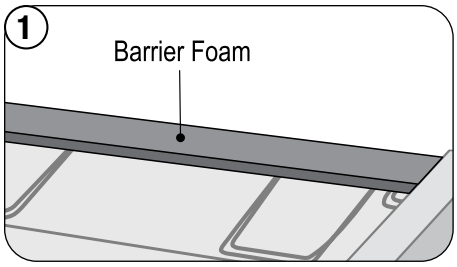
RIDGE TRIM CAPS SHINGLE - BARRIER FOAM METHOD (No continuous ridge venting)



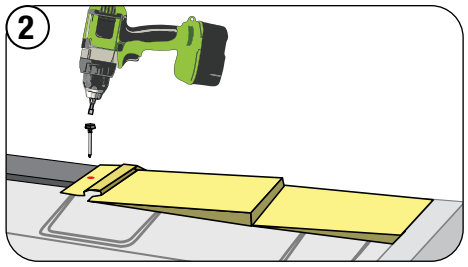
Caps Shingle or Cap Cottage can be installed with Barrier Foam.

If the ridge is long, start cap installation from both ends and create a custom cap at the center of the ridge.

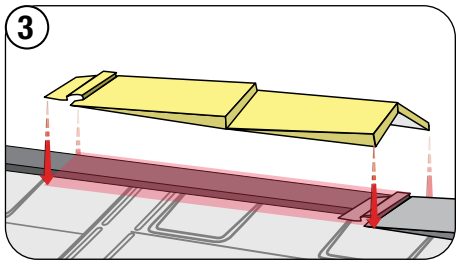




Install Barrier Foam roll across the ridge.



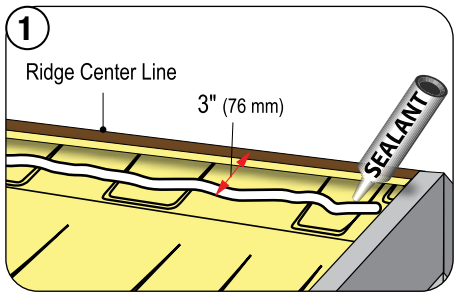
At the rake and ridge intersection, cut and fit Cap Shingle into the Rake Cover. Fasten through the cap, barrier foam, panel and into the roof deck, with two fasteners per cap.



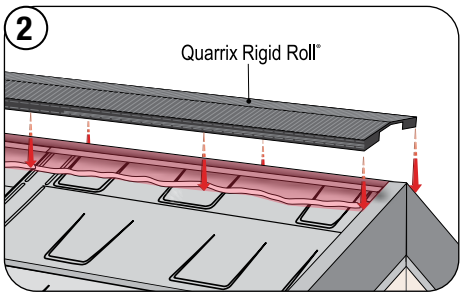
Continue Caps Shingle installation across the ridge.

RIDGE TRIM CAPS SHINGLE - CONTINUOUS RIDGE VENT

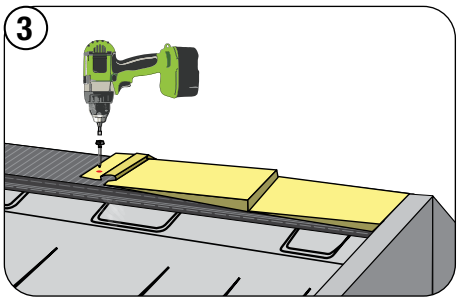
Quarrix® Rigid Roll® 7" wide continuous ridge vent installed under Caps Shingle.



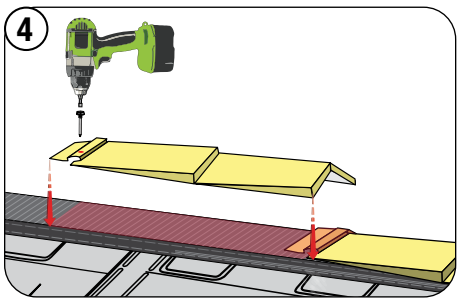
After installing ridge panel cuts for continuous ridge vent, apply a bead of Sealant (shown) or EmSeal tape 3" (76 mm) apart from the ridge center line.



Install Quarrix® Rigid Roll® ridge vent across the ridge and fasten.

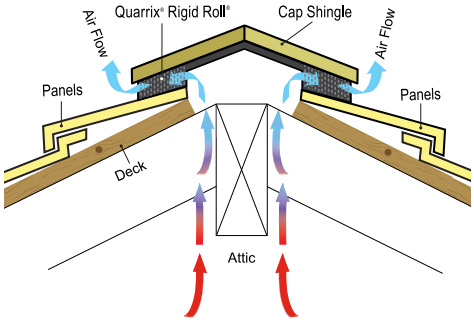


At the rake and ridge intersection, cut and fit Cap Shingle into the Rake Cover. Fasten through the cap, Quarrix® Rigid Roll, panel and into the roof deck, with two fasteners per cap.

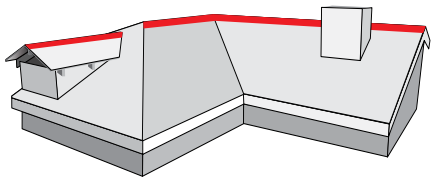


Continue Caps Shingle installation across the ridge.

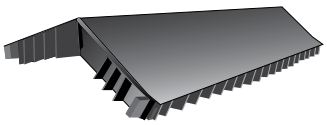
Trim Cap Screws should be of sufficient length to penetrate a minimum of 0.75" (19 mm) into the roof decking.

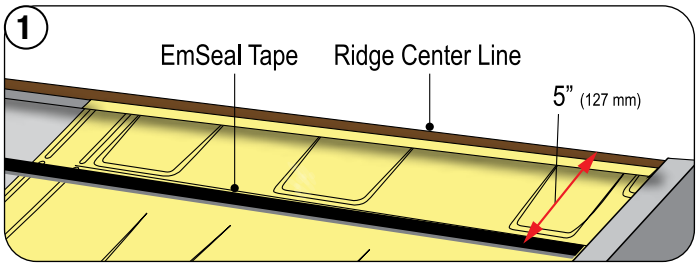


RIDGE TRIM CAPS COTTAGE - CONTINUOUS RIDGE VENT

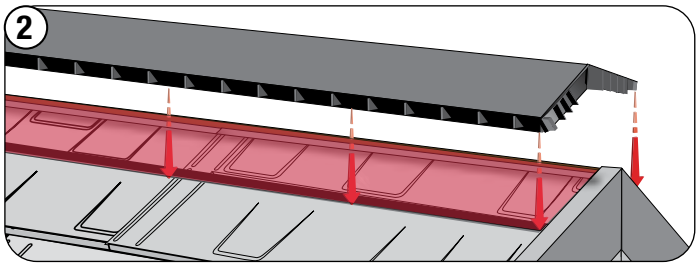


RidgeMaster® Plus 11" wide continuous ridge vent installed under Caps Cottage.

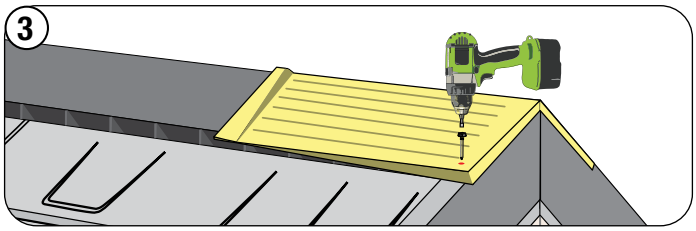




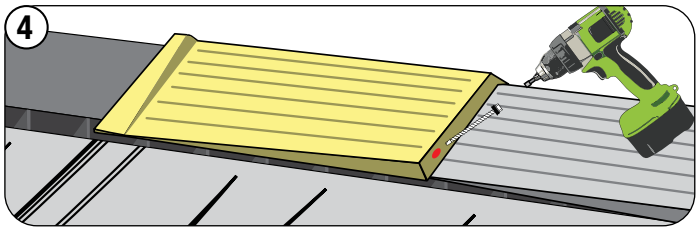
Install ridge panels. **See Page 21 for details with Continuous Ridge Vent.** Apply EmSeal Tape (shown) or a bead of Sealant 5" (127 mm) apart from the ridge center line.



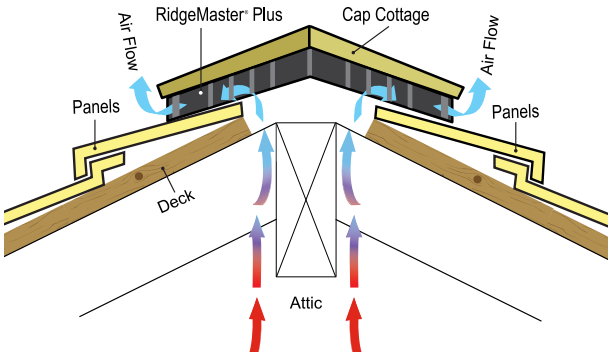
Install RidgeMaster® Plus ridge vent.



At the rake and ridge intersection, install Cap Cottage over the Rake Cover and fasten, as shown.



Continue installation of the Caps Cottage out across the ridge. Fasten each cap through the nose at an angel on each side of the center line through the ridge vent and into the decking, with two fasteners per cap.



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

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.

HIGH VELOCITY HURRICANE ZONE (HVHZ) FASTENING GUIDELINES

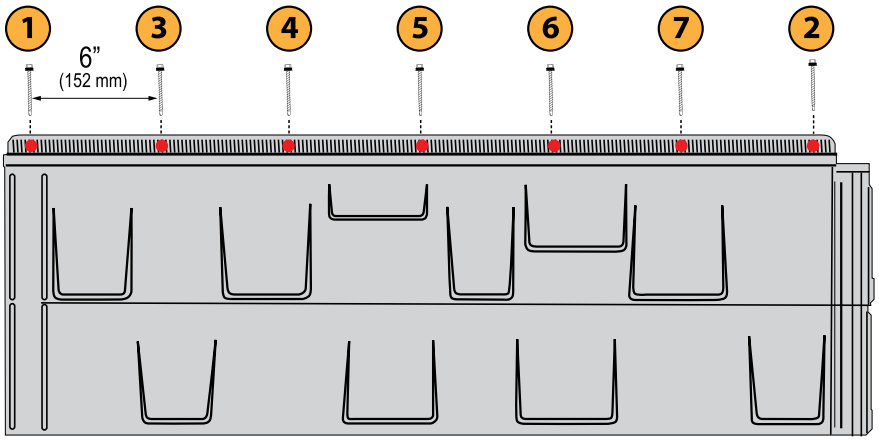
We have simplified the ASCE 7 roof areas for high wind and HVHZ steep slope roofs (3:12 and greater) into three main areas; (1) FIELD, (2) PERIMETER & (3) CORNERS. Refer to the specific Evaluation Report or Product Approvals (i.e., Miami-Dade County Notice of Acceptance (NOA), Florida Product Approvals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

ROOF SLOPE: **3:12 Minimum**

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

UPLIFT DESIGN PRESSURE: **110 PSF**

FIELD PANELS & PERIMETER AND CORNER PANELS HVHZ FASTENING PATTERN



Fasten the panels with seven (7) #9-15 x 1.5" (38 mm) HWH shingle panel screws across the Fastening Flange of each panel. Fasteners are spaced 6-inches (152 mm) o.c. maximum. Fasteners shall penetrate the roof deck 0.75" (19 mm) minimum.

FASTENING SEQUENCE shown is for the Left to Right layout direction; applicable to all panels and ensures the panels stay correctly aligned. Check local code for wind uplift requirements.

NOTES

Unified STEEL™
STONE COATED ROOFING

GRANITE-RIDGE Shingle | Barclay

UNIFIED STEEL™ CUSTOMER SERVICE: 800.658.8004

ABOUT WESTLAKE ROYAL ROOFING SOLUTIONS

Westlake Royal Roofing Solutions™ is the combination of DaVinci® Roofscapes and the former Boral North America roofing product lines. The company is a recognized, national leader in durable and sustainable clay, composite, concrete, and steel roof systems and components. The company's offerings include US Tile® products, a legacy line of premium, stunning clay tile solutions manufactured to the highest standard of sustainability and craftsmanship: DaVinci® Roofscapes, beautiful and durable composite slate and shake roofing tiles; Newpoint™ Concrete Tile Roofing, the enduring line of concrete tile known for its superior strength, Class A fire rating and long-lasting beauty: Unified Steel™ Stone Coated Roofing, the ultra-lightweight roofing system which benefits from the structural strength of steel; and Westlake Royal™ Roofing Components, a full line of integrated roof components designed to deliver a higher standard of roof installation and performance.

ABOUT WESTLAKE ROYAL BUILDING PRODUCTS

Westlake Royal Building Products USA Inc., a Westlake company (NYSE:WLK), is a leader throughout North America in the innovation, design, and production of a broad and diverse range of exterior and interior building products, including Siding and Accessories, Trim and Mouldings, Roofing, Stone, Windows and Outdoor Living. For more than 50 years, Westlake Royal Building Products has manufactured high quality, low maintenance products to meet the specifications and needs of building professionals, homeowners, architects, engineers and distributors, while providing stunning curb appeal with an unmatched array of colors, styles, and accessories.

For more information, please visit WestlakeRoyalBuildingProducts.com. Follow us on LinkedIn and Instagram and "Like" us on Facebook.

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