BEST BUY METALS
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Unified Steel Battenless Install Guide

Direct to Deck Bend Up Installation

PACIFIC Tile

800-728-4010
bestbuymetals.com

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INSTALLATION NOTES

These installation guidelines demonstrate Direct-to-Deck Bend Up installation techniques for PACIFIC Tile 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.*

GENERAL INFORMATION

FASTENERS

PACIFIC Tile 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

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

ROOFING UNDERLAYMENT

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

ROOF DECK SHEATHING

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

BATTENS

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

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

SEALANT/CAULKING

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

TESTING

The panels have been tested and evaluated to industry standards and are covered by 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

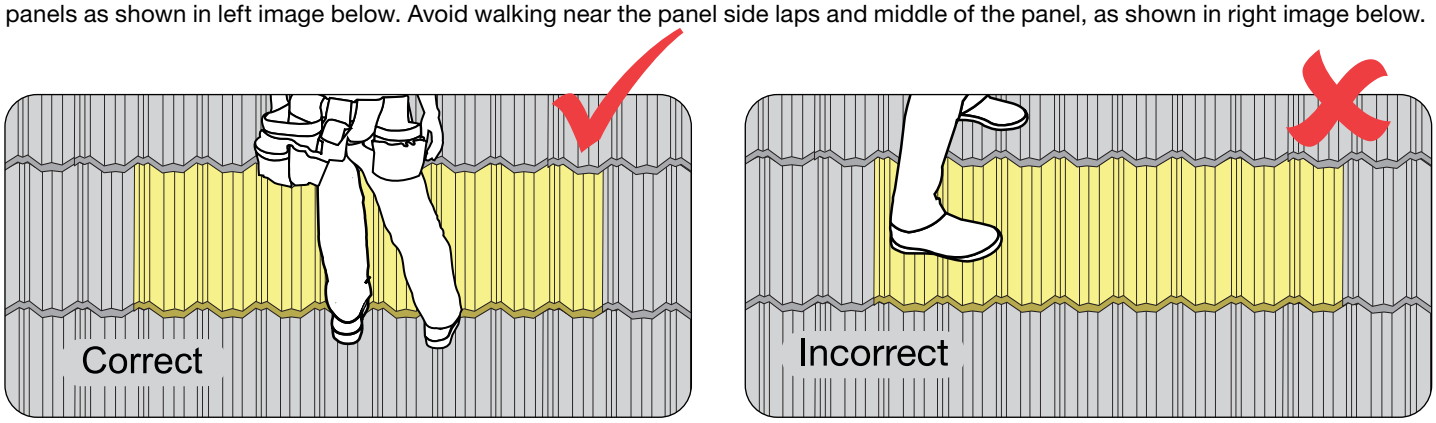
Minor scuffing of the stone coated finish can be repaired with a Touch-Up Kit. Use the basecoat acrylic supplied in the kit (not caulking) for repairs. Unfinished flashing material can be painted with durable acrylic aerosol paints. Colored aerosol paints should never be used as "touch-up" on stone coated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



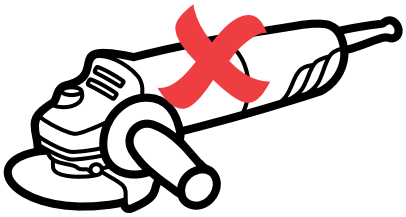
SUGGESTED TOOLS

Cutter

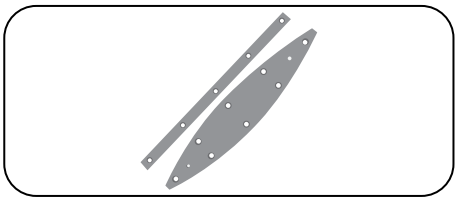
39 lbs (17.7 Kg)

Bender

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



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

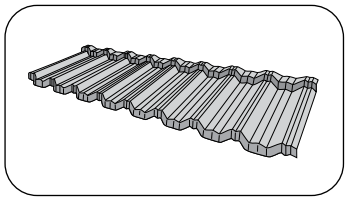


Cutter Blades (Top and Bottom)
54" x 43" x 35.25" (1372 x 1092 x 895 mm)
8 lbs/Set (3.63 Kg)

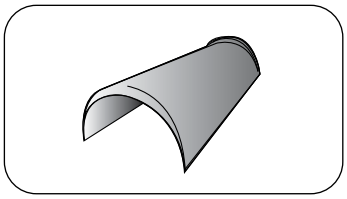
VIDEO ONLINE

WALKING ON THE ROOF

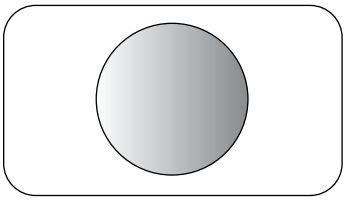
PARTS & PIECES



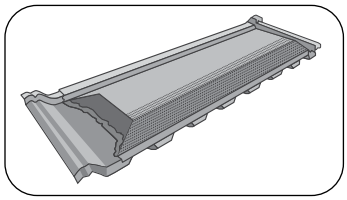
PACIFIC TILE Panel
Coverage: 14.5" x 49.5" (368 x 1257 mm) 6.3 lbs (2.86 Kgs) 20 pcs/sq



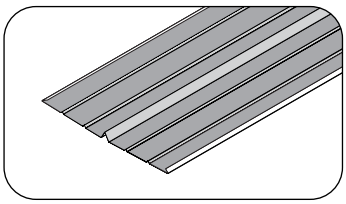
Cap Mission (Hip & Ridge)
6” x 14.5” (152 x 368 mm)



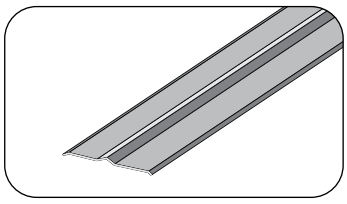
End Disc
6” Dia. (152 mm) 0.18 lbs/EA (0.08 Kgs)



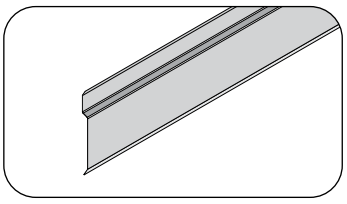
EZ-Vent PACIFIC Tile
Coverage: 14.5" x 49.5" (368 x 1257 mm)
10.5 lbs (4.8 Kgs), NFVA 62.50 Sq In.



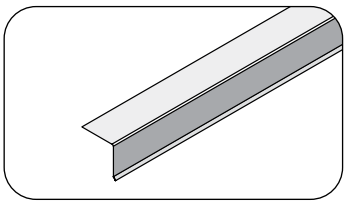
Valley Five ‘V’
22" x 120" (559 x 3048 mm), 16.8 lbs (7.6 Kgs)
Painted Black, Brown or Bare inside



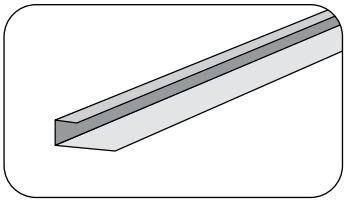
Valley Center Cover
4.5” x 79” (114 x 2006 mm), 2.2 lbs (1 Kg)



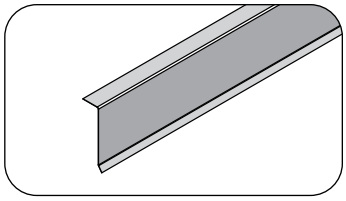
Z-Bar
5” x 79” (127 x 2006 mm) 2.7 lbs (1.2 Kgs)



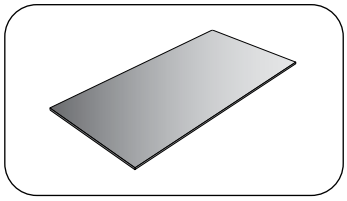
Drip Edge
1.5" x 120" (38 x 3048 mm)
1.6 lbs (0.72 Kg)
Painted Black, Brown or White outside



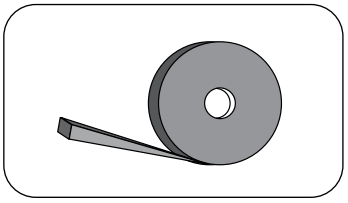
Gutter Riser
0.625” x 120” (16 x 3048 mm), 1.9 lbs (0.86 Kg)
Painted Black outside



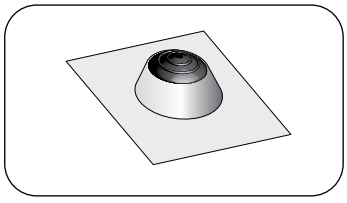
Fascia 3.5”
3.5” x 79” (89 x 2006 mm), 2.2 lbs (1 Kg)



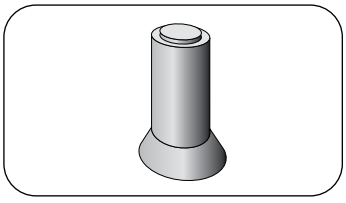
Flat Sheet
18” x 54” (457 x 1372 mm), 8 lbs (3.7 Kgs)



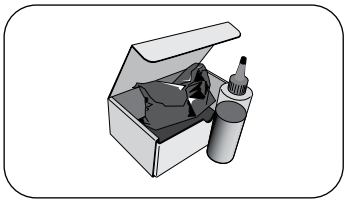
EmSeal Foam Tape Rolls
0.75” x 1” x 19.68'
(19 x 25 x 6000 mm)
1 lbs (0.45 Kg)



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)



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

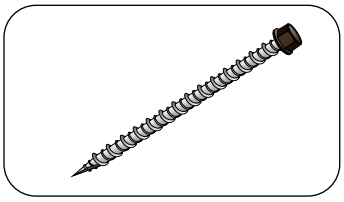
Basecoat 12-Pack (Adhesive)
12 Tubes/Case

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

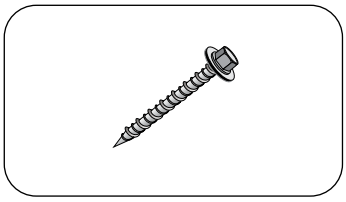
Bulk Stone Chips
1 Bucket of stone chips - 25 lbs (11.3 Kg)

Weights are approximate.

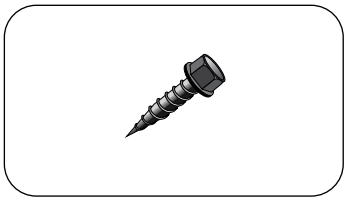
SCREWS & NAILS



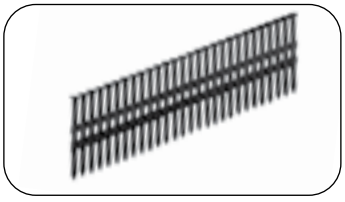
Panel Screws Carbon Steel or 410 Stainless Steel
2.5" L x 0.25" HWH
(63 mm L x 6 mm HWH)
Available in Black, Brown, Gray, Gold, Red, White.



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

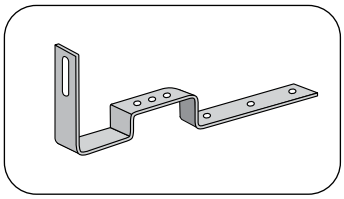


Stitch Screws
Carbon Steel
0.75" L x 0.25" HWH
(19 mm L x 6 mm HWH)
Available in Black, Brown, Gray, Gold, Red, White.

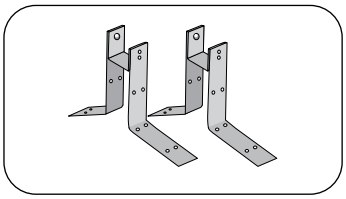


Batten Nails
0.131" Dia x 3.25"
(3 mm Dia x 83 mm)
53 lbs/Box (24.06 Kgs)

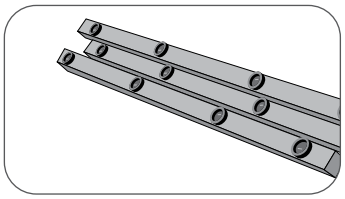
AVAILABLE COMPONENTS / ACCESSORIES



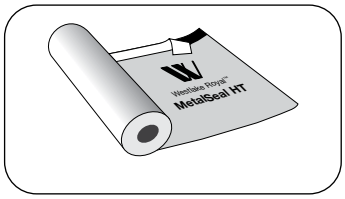
Solar Roof Mount
Stainless Steel Side Mount 90˚
3/4" (19.05 mm) fixed bridge height
3" (76.2 mm) wide bridge
Screws Included: 5.16" HWH x 3"



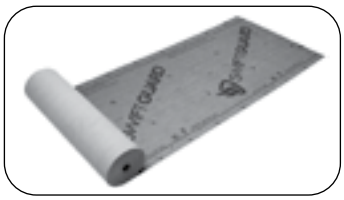
Ridge Riser® Brackets
16 gauge Galvanized Steel



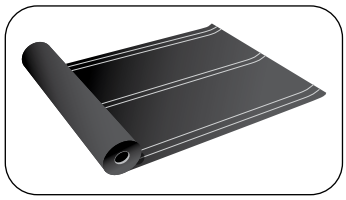
2x2 Elevated Batten System® (EBS)
2" x 2" x 96" (50 x 50 x 2438 mm)
12 pcs/Bundle, 1 Bundle = 96 L/ft (29.28 L/M)



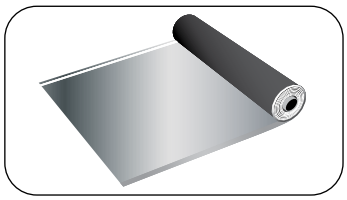
MetalSeal HT
Self-adhered, High Temperature Underlayment
36" x 72' (200 sq. ft.) (915 mm x 2.96 M) 70 lbs/Roll (31.7 Kgs)



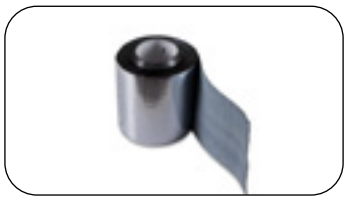
SwiftGuard®
High-Performance Synthetic Roof Underlayment
40" x 300' (1000 sq ft)
(1016 mm x 91.44 M)
35.5 lbs/Roll (16 Kgs)



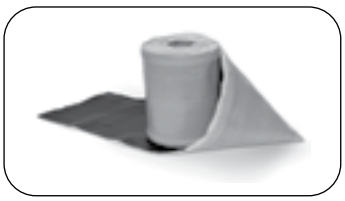
Westlake Royal ORG-Ply 40™
Underlayment/Base Sheet
39-3/8" x 65'-10" (216 sq ft.)
(1M x 20.37 M), 81 lbs/Roll
(36.7 Kg)



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



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



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

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

Weights are approximate.

FASTENERS

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

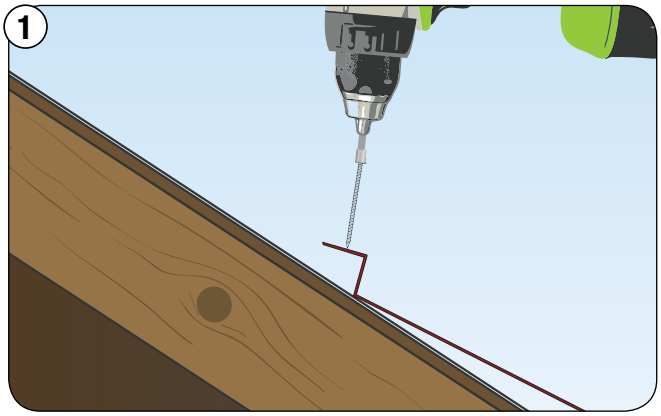
- **PANEL SCREWS**
  #10 x 2.5” long x 0.25” HWH (64 mm x 6 mm)
- **STITCH SCREWS** - #8 x .75" long x 0.25" HWH (19 mm L x 6 mm)
- **VALLEY PAN SCREWS** - #10 x 1.5” long x 0.25” HWH w/Rubber washer (38 mm x 6 mm)

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

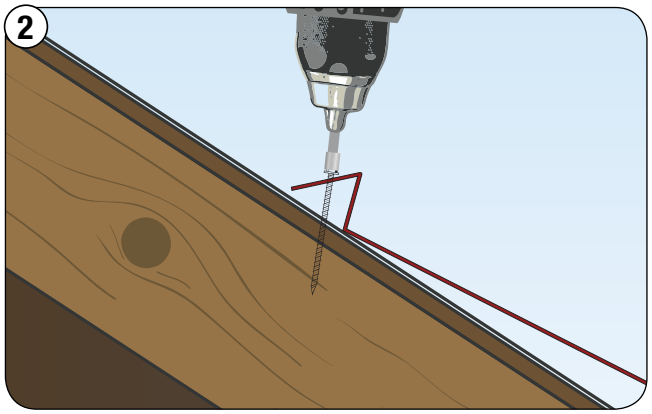
Stainless Steel fasteners are to be used within 1 mile of non-fresh water in coastal area.

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).

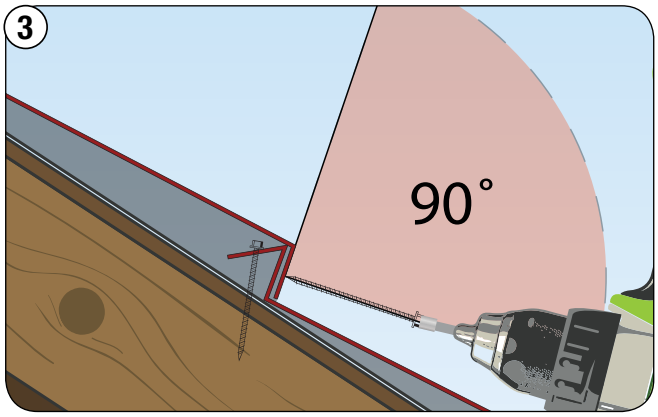
FASTENING DIRECT-TO-DECK PANELS



Panel Back Flange is fastened vertically into roof deck

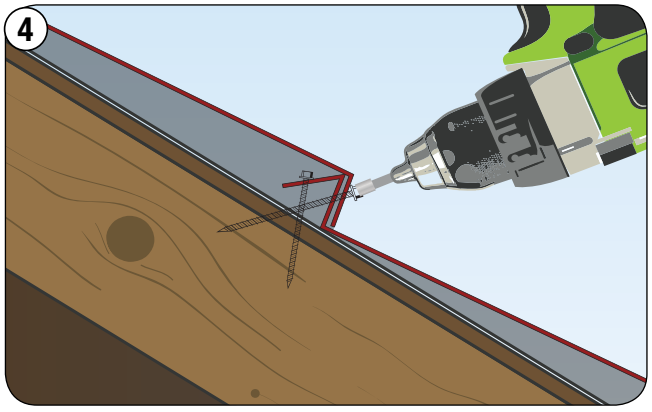


Panel Back Flange is ‘seated’ down onto roof deck.



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

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

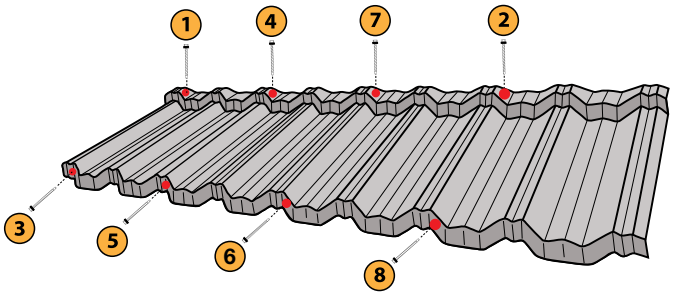


Once fastener has penetrated the nose, angle the screw to penetrate the Back Up-Turn of the panel beneath and into the deck. Due to the Back Flange and Nose Down-Turn fastener angles, the “X” pattern provides exceptional uplift resistance.

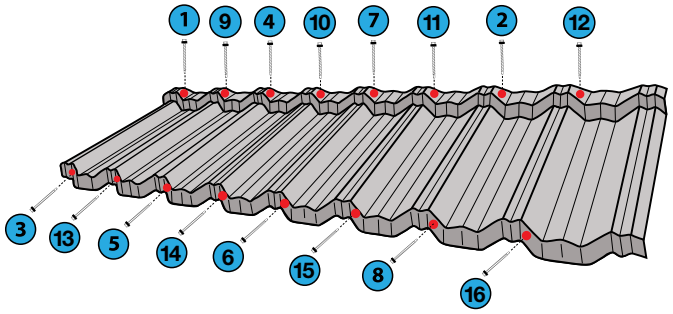
FASTENING PATTERNS PER DESIGN PRESSURE*

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 on solid or closely fitted minimum 15/32-inch (112 mm) thickness plywood, on solid or closely fitted wood structural panel sheathing, equivalent thickness spaced or closely fitted solid wood planking, or on spaced structural sheathing boards complying with the applicable building code. Where spaced boards are used, additional structural sheathing boards must be attached to the roof framing as required to accommodate all panel and batten fastening locations.
UNDERLAYMENT:	Minimum one layer ASTM D226 Type-II, ASTM D8257, or ASTM D1970, or as needed to meet local building code requirements, installed per manufacturer's instructions.
ATTACHMENT:	26 ga. Metal Panel installed with four (4) #10-16 x 2-1/2 in. HWH corrosion resistant panel 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 on solid or closely fitted minimum 15/32-inch (112 mm) thickness plywood, on solid or closely fitted wood structural panel sheathing, equivalent thickness spaced or closely fitted solid wood planking, or on spaced structural sheathing boards complying with the applicable building code. Where spaced boards are used, additional structural sheathing boards must be attached to the roof framing as required to accommodate all panel and batten fastening locations.
UNDERLAYMENT:	Minimum one layer ASTM D226 Type-II, ASTM D8257, or ASTM D1970, or as needed to meet local building code requirements, installed per manufacturer's instructions.
ATTACHMENT:	26 ga. Metal Panel installed with eight (8) #10-16 x 2-1/2 in. HWH corrosion resistant panel 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 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:	**-127.5 PSF** Pressure calculated using 2:1 margin of safety

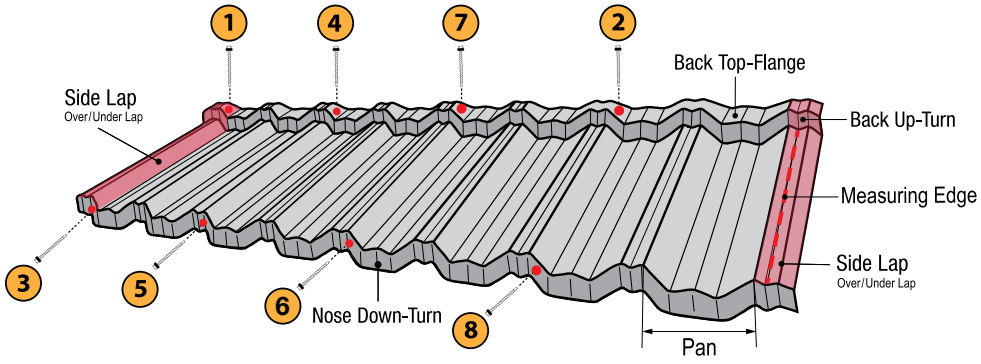
*See QAI CER or Texas Department of Insurances for design requirements for areas outside of Florida.

**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.

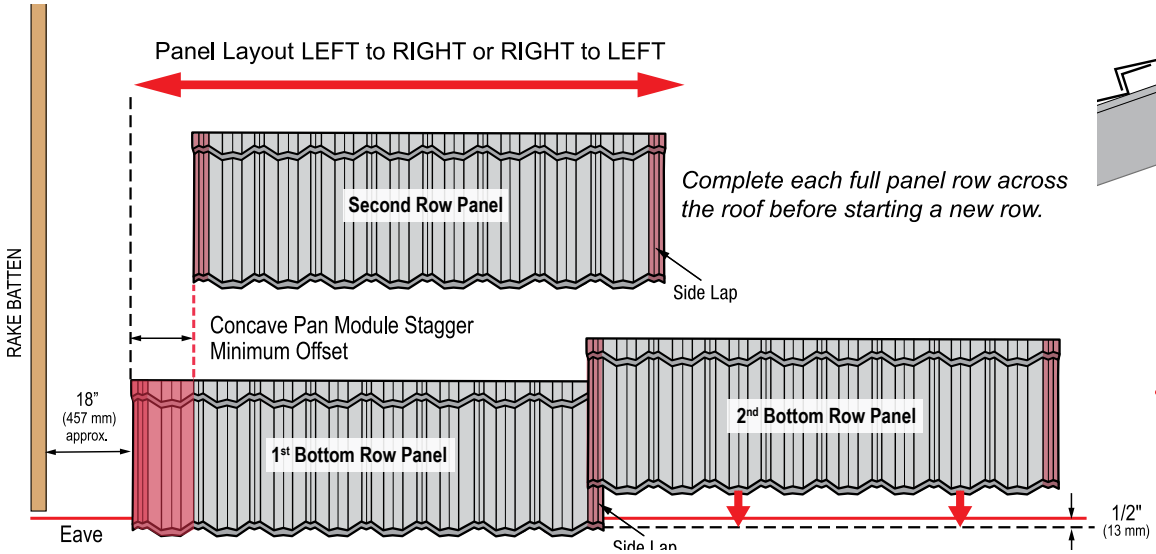
▶ See Unified Steel GENERAL Code Approvals

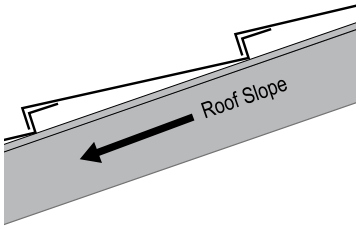
FIELD PANEL LAYOUT & FASTENING METHODS



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.

PACIFIC Tile panels have a 2” (50 mm) Side Lap and can be staggered by one or multiple concave modules across the back of the panel as needed. The panels can be installed in a staggered pattern and **CANNOT** be straight laid.

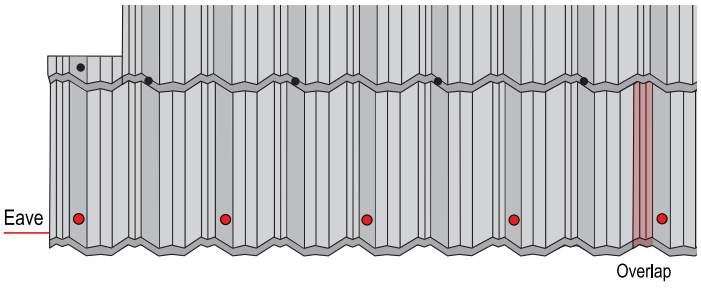




Complete each full panel row across the roof before starting a new row.

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

Stagger may be any of the Pans (second to seven).



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 Chimney/Skylight details, as necessary.

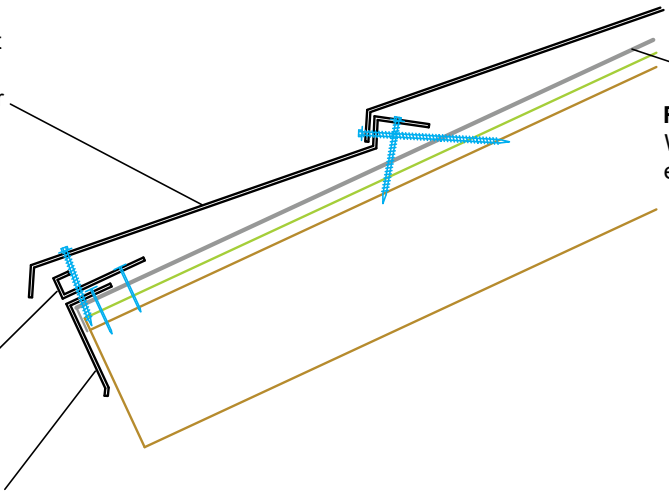
Any fasteners that penetrate through the top of the panel must be sealed and stone-chipped.

VIDEO ONLINE

FIELD PANELS LAYOUT & FASTENING

EAVE / RAKE PREP & INSTALL

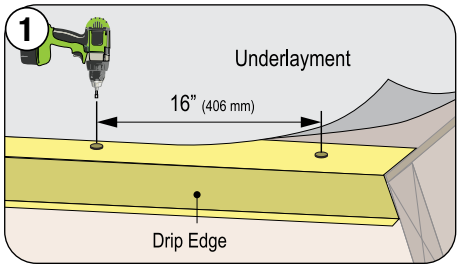
Panels: Install bottom panel to extend past fascia 1/2". Seal and chip screws at top surface of panel. Nose and hidden fastener must penetrate the decking a minimum of 3/4". Fasteners through the nose of the panels do not require sealant.



Roofing Underlayment: Wrap minimum 1" over finish edges.

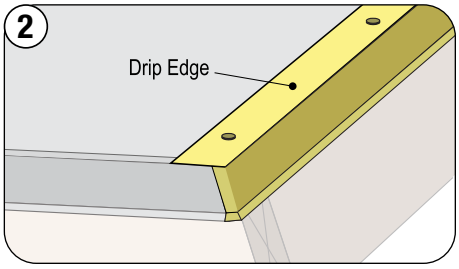
Gutter Riser: Fasten 16" o.c. with corrosion resistant nails or screws with enough length to penetrate decking a minimum of 3/4".

Drip Edge Metal: Install tight to structure.

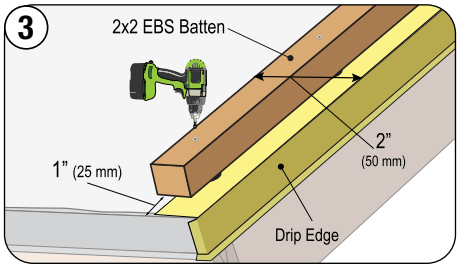


Install Drip Edge across the eave **under** the Underlayment. Fasten 16" (406 mm) o.c. Overlap Drip Edge seams 2" (50 mm).

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

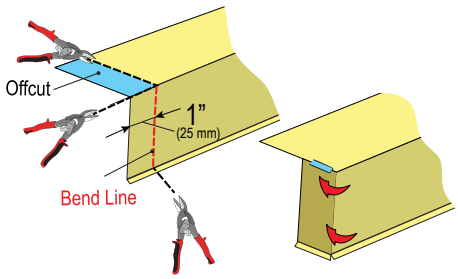


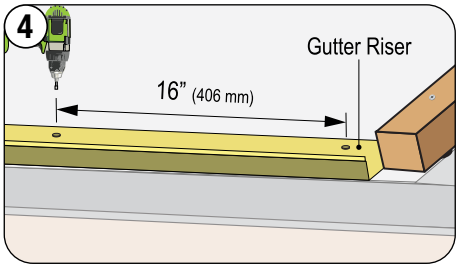
Install Drip Edge up the rake **on top** of the Underlayment, as shown. Overlap Drip Edge seams 2" (50 mm).



Install 2x2 EBS Batten 2" (50 mm) from the rake edge and 1" (25 mm) from the eave and fasten through the battens and plastic pads.

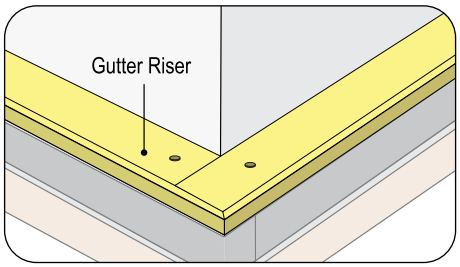
DRIP EDGE ENDLAP DETAIL





Install Gutter Riser on top of the Drip Edge across the eave and flush with the fascia board. Butt up against the 2x2 EBS batten at the rake. Fasten 16" (406 mm) o.c.

HIP INTERSECTION



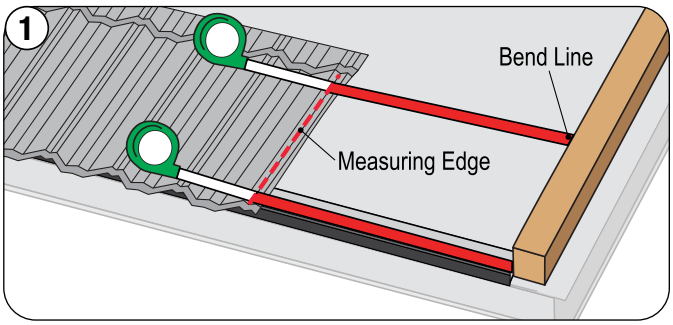
Intersect Gutter Riser at the hip area, as shown.

VIDEO ONLINE

EAVE / RAKE PREP & INSTALL

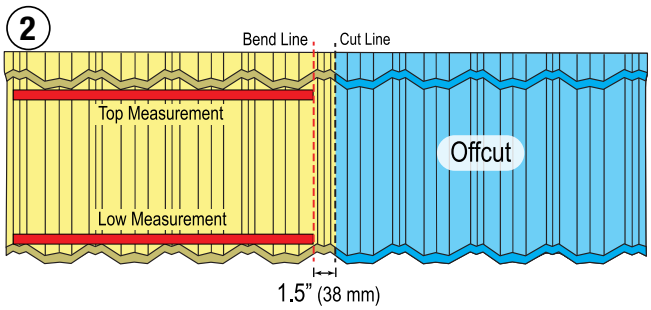
▶ See Technical Bulletin for additional options.

RAKE PANELS INSTALL

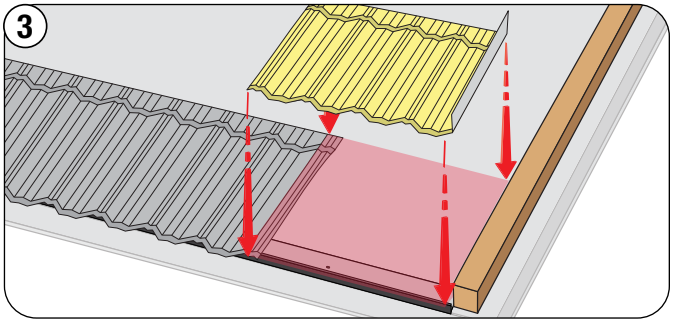


Measure from the full panel across to the rake batten on each course, as shown.

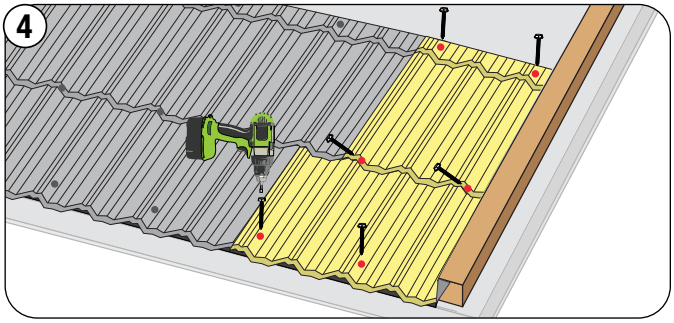
*Always **DEDUCT 1/2"** (13 mm) from actual measurements to ensure an easy fit of Rake cuts.*



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



Mark, cut and bend up rake panels and install starting from the eave up to the ridge.



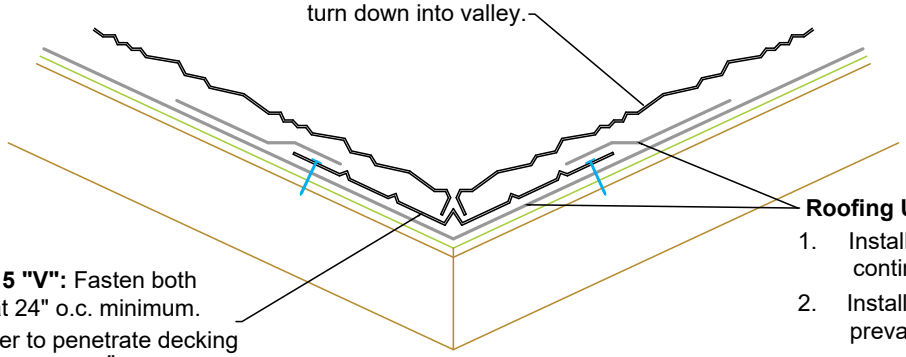
Fasten as a regular field panels, as shown.

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

VIDEO ONLINE

RAKE PANEL INSTALL

VALLEY PREP & INSTALL



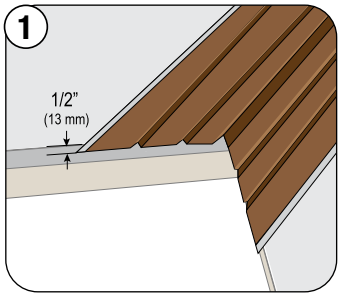
Panels: Cut and bend panel on angle and turn down into valley.

Valley 5 "V": Fasten both sides at 24" o.c. minimum.
Fastener to penetrate decking a minimum of 3/4".
Extend valley 1/2" minimum beyond fascia.

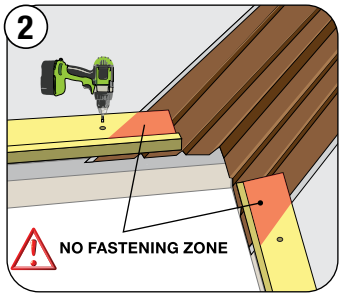
Roofing Underlayment:

1. Install one layer continuous down valley
2. Install field material to prevailing building code
3. Strip in valley with self-adhering underlayment a minimum 3" into valley and minimum 3" onto underlayment

VALLEY WITHOUT TRAY

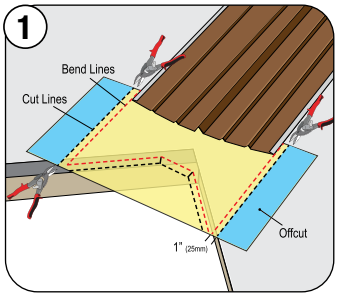


To install Valley Five 'V' without Exit Tray, overhang it 1/2" (13 mm) minimum at the eave.

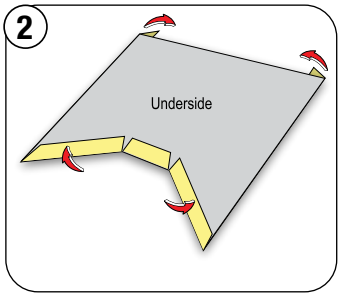


Install Gutter Riser on top of the Valley to the second rib from the edge on both sides. Fasten 16" (406 mm) o.c. **When fastening, do not penetrate valley area.**

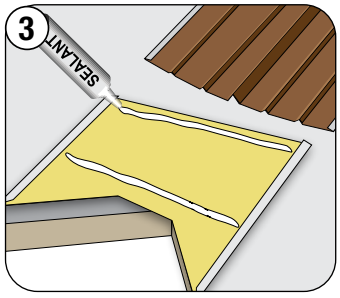
VALLEY WITH EXIT TRAY



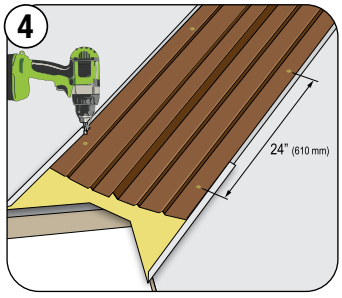
Position Valley Five 'V' at the center of the valley. Place half a Flat Sheet under the Valley. Extend Flat Sheet a minimum of 1" (25 mm) past fascia. Mark, cut and bend, as shown.



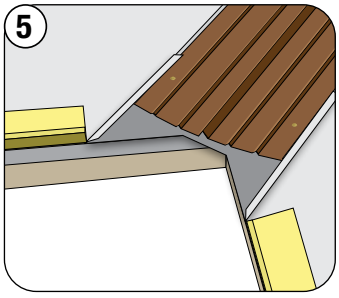
Hem both sides of the folded Flat Sheet to fit around outside edges of the Valley.



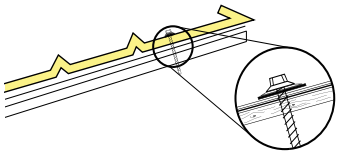
Fit the Exit Tray at the fascia. Apply Sealant, as shown.



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



If using Exit Tray, install Gutter Riser to the edge of the Exit Tray on both sides.



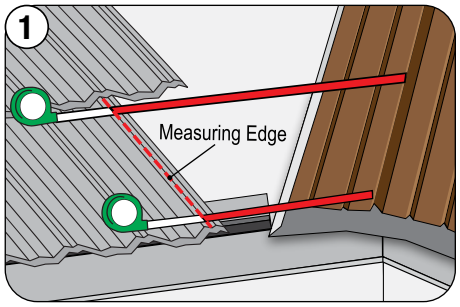
When fastening through the valley metal, fasteners must have a rubber washer covered by metal cap to ensure a seal around the fastener location.

VIDEO ONLINE

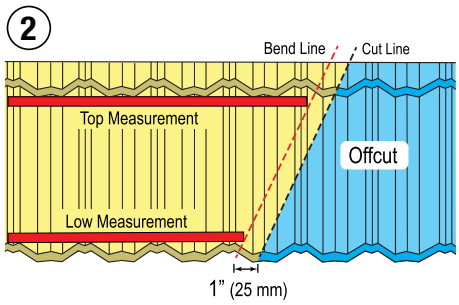
VALLEY PREP & INSTALL

VALLEY PANELS INSTALL (Closed)

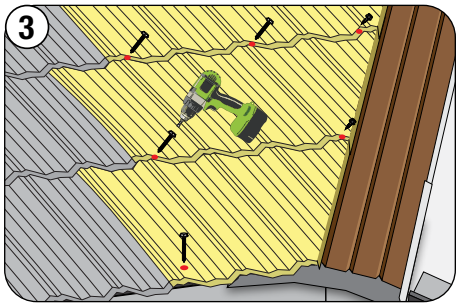
LEFT SIDE



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

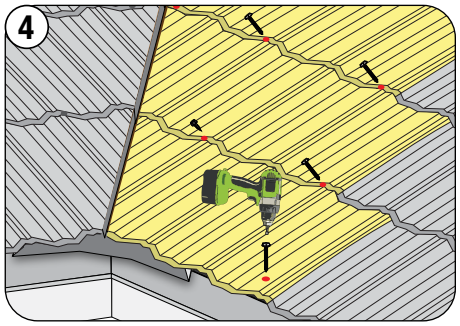


Apply Measurements to the full panel and mark as a Bend Line. Add 1" (25 mm) and mark as a Cut Line.



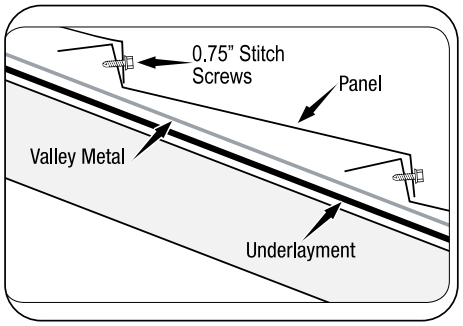
Cut and bend down valley cuts and install starting from the eave to ridge. Fasten as field panels.

RIGHT SIDE



Finish valley panels installation on the right side of the Valley. Fasten, as shown.

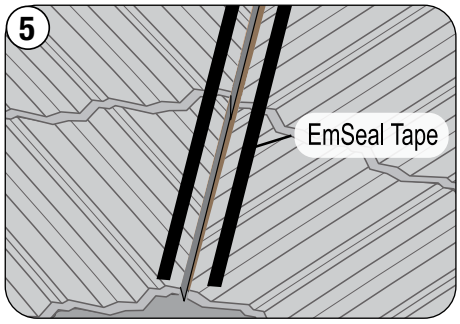
PANEL FASTENERS OVER VALLEY



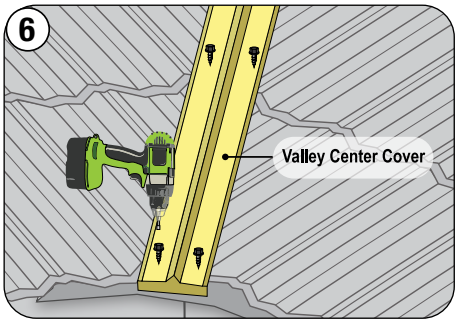
*Do not penetrate Valley metal with panel fasteners. Use **0.75" Stitch Screws** over the Valley metal.*

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

VALLEY CENTER COVER - OPTIONAL



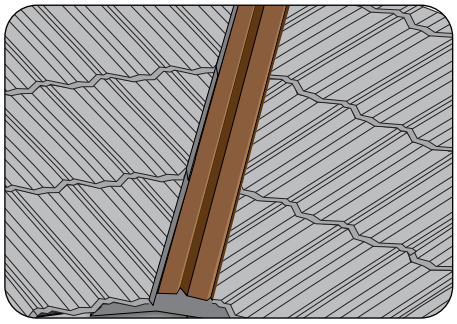
When installing in wooded areas or where trees overhang the valley, use EmSeal Tape installed on both sides of the valley to prevent debris damming the Valley Pan.



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.

Vertical laps are 4" (100 mm) minimum.

OPENED VALLEY OPTION

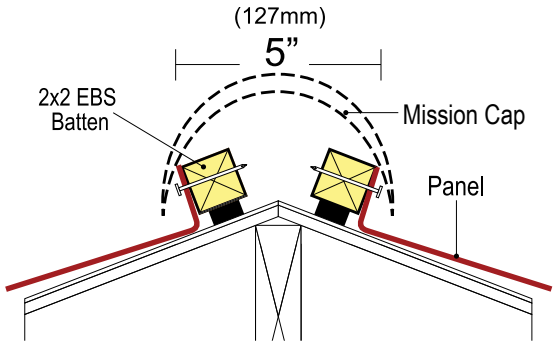


For the Opened Valley, measure each panel row across the top and bottom of the panel to the **second rib** of the Valley metal.

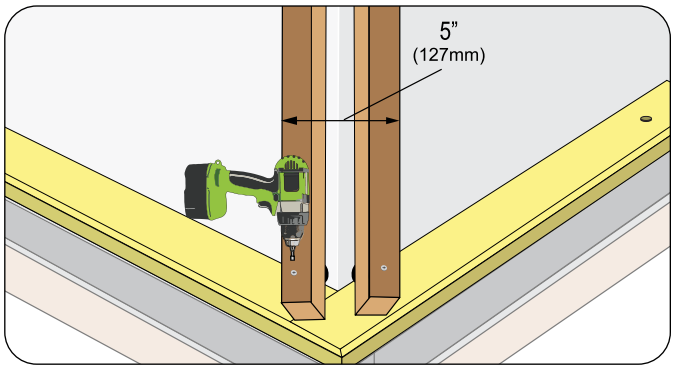
VIDEO ONLINE

VALLEY PANELS INSTALL

HIP PREP & INSTALL

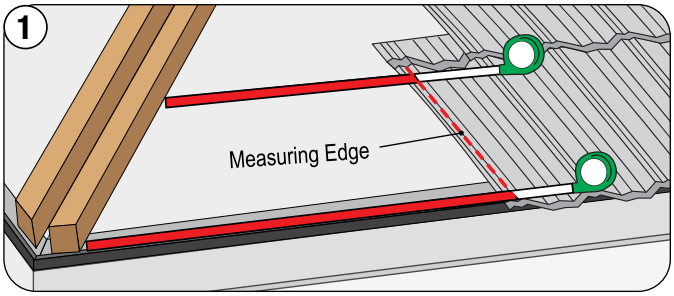


Install 2x2 EBS battens 5” (125 mm) apart.



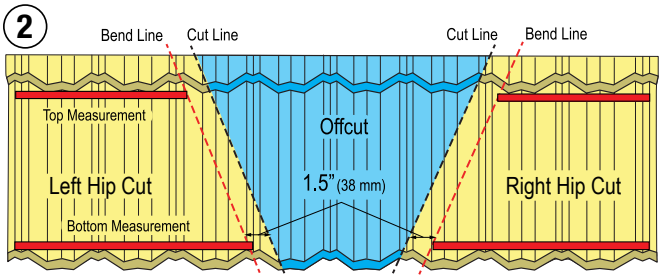
Fasten each batten through the plastic pad into the deck.

HIP PANELS INSTALL (Right Side Shown)



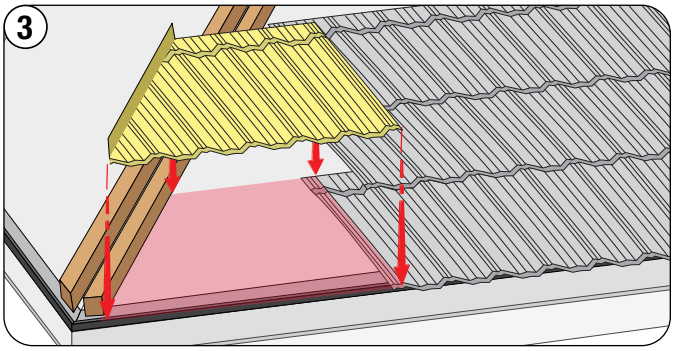
Measure and record the top and bottom of each hip cut (do this for the entire hip length on both the right & left side of the hip center line).

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

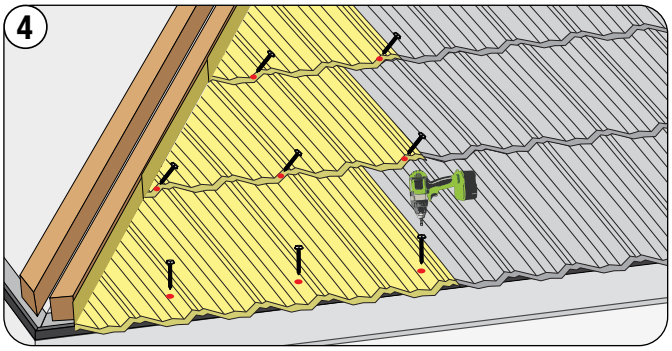


Apply measurements to the full panel and mark the Bend Line. Add 1.5" (38 mm) and mark the Cut Line on the other side.

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



Install hip cuts.



Fasten, as regular field panels.

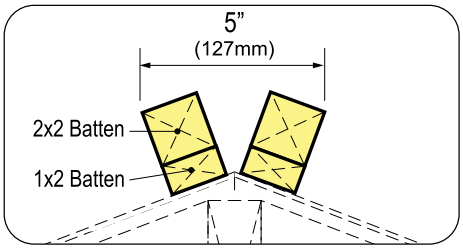
Any fasteners that penetrate through the top of the panel must be sealed and stone-chipped.

VIDEO ONLINE

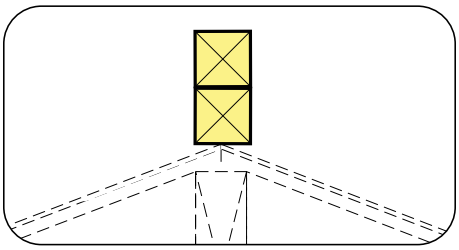
HIP PREP & PANELS INSTALL

RIDGE PREP & INSTALL

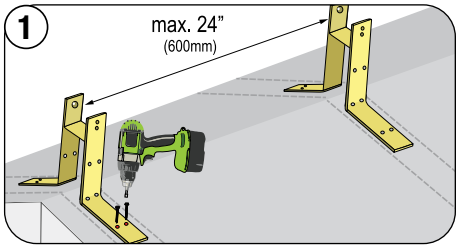
OPTION 1: SIDE BY SIDE STACK



OPTION 2: STACK

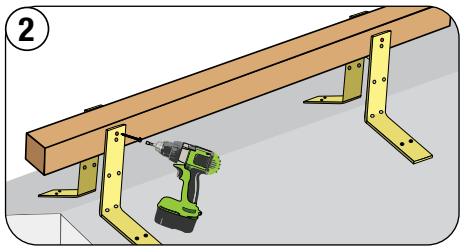


OPTION 3: RIDGE RISER



Ridge battens can be positioned side by side, or vertically stacked as shown, using 2x2 battens. **Note:** For Vertical Stack third batten may be needed, depending upon roof pitch and panel layout.

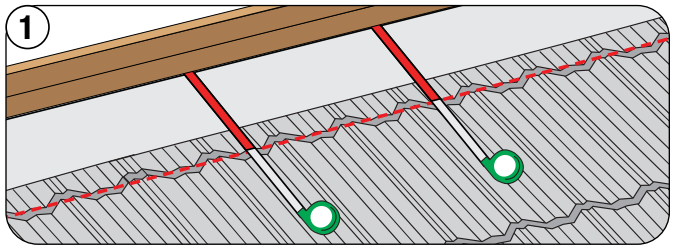
Install Ridge Riser Brackets no greater than 24" (600 mm) apart for non-High Velocity Hurricane Zone (HVHZ) areas.



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

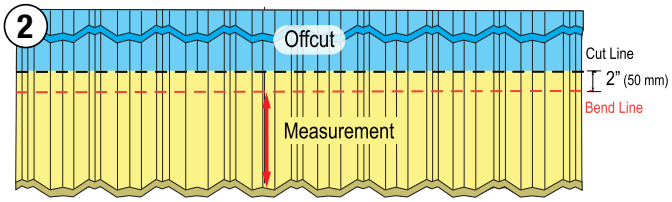
▶ See Ridge Riser Brackets Installation Guide.

RIDGE PANELS INSTALL (Vertical stack shown)



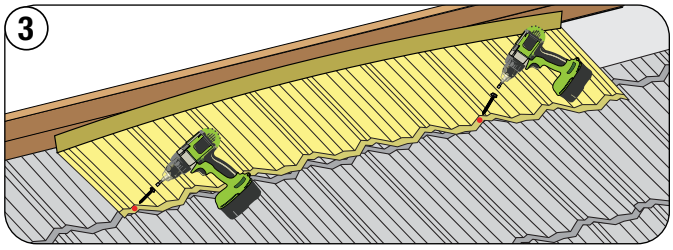
Measure ridge panel, as shown.

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

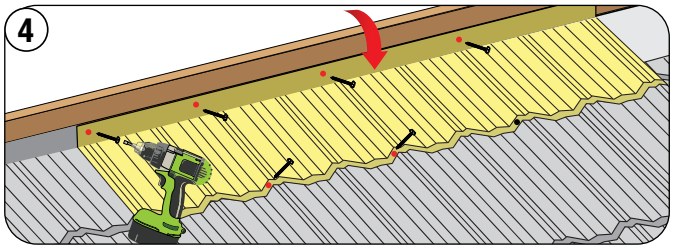


Apply measurements to the full panel. Mark Bend Line, add 2" (50 mm) and mark a Cut Line. Bend up and cut ridge panel.

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



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



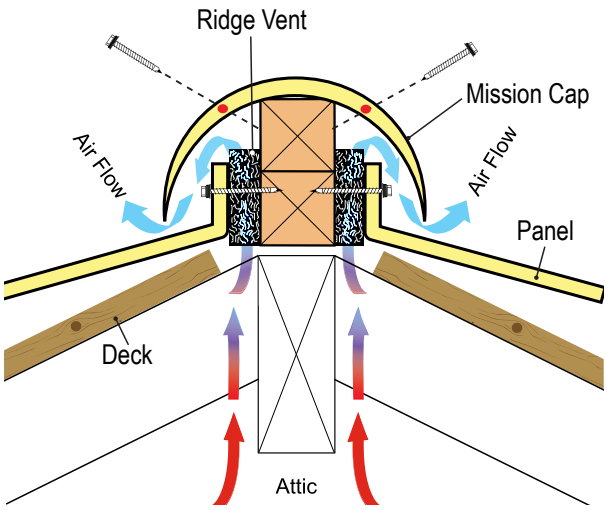
Push panel down to fit coursing properly. Force back of panel into position against ridge batten. Continue fastening ridge cut panel across the nose. Next, fasten panel through bend-up into ridge batten.

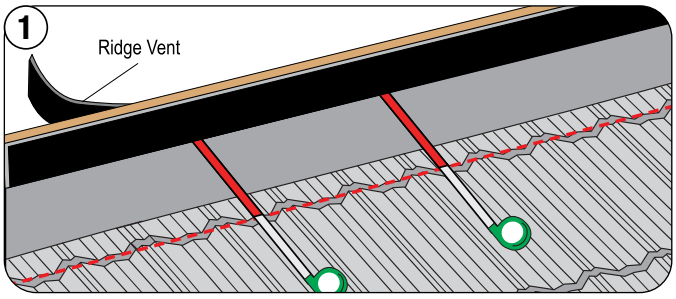
VIDEO ONLINE

RIDGE PREP & PANELS INSTALL

RIDGE VENT INSTALL

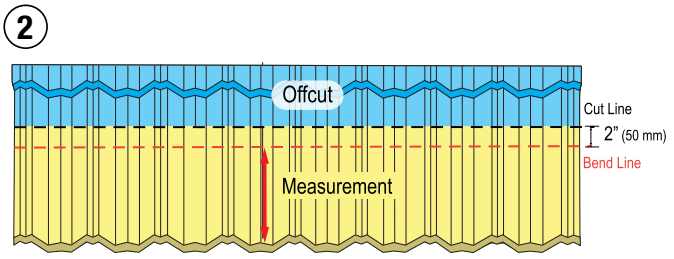
At the ridge 1/2" (13 mm) space required between caps and panels for air flow.





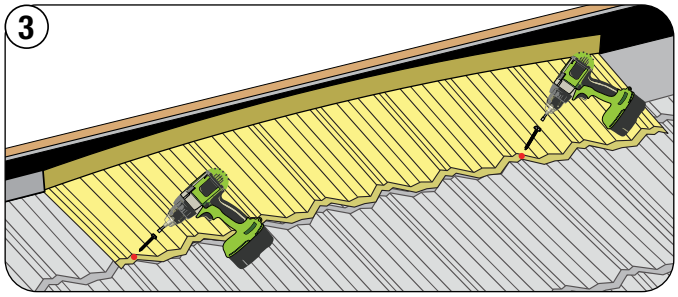
Position Ridge Vent on both sides of ridge batten. Measure the top row from the back-flange upstand to the Ridge Vent material.

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

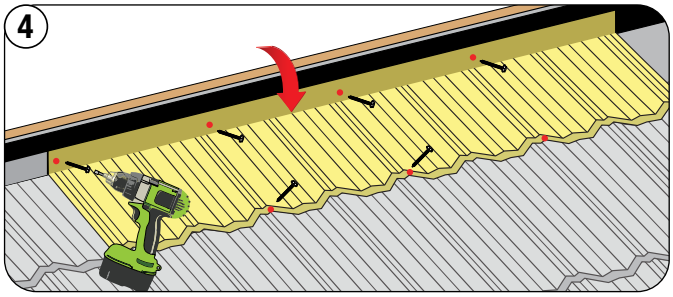


Apply measurements to the full panel. Mark Bend Line, add 2" (50 mm) and mark a Cut Line. Bend up and cut ridge panel.

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



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



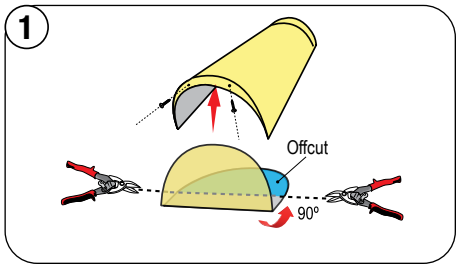
Push ridge panel down to fit coursing properly. Continue fastening ridge panel, as shown.

Do Not crush venting material when fastening.

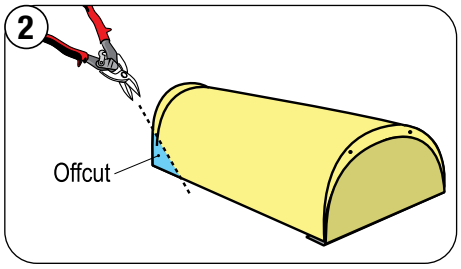
VIDEO ONLINE

RIDGE VENT INSTALL

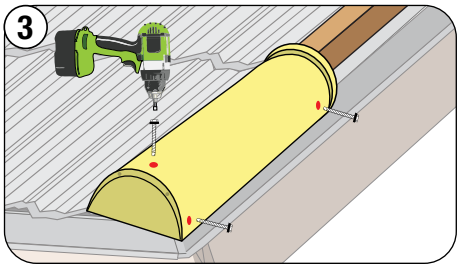
MISSION CAP INSTALL ON RAKE



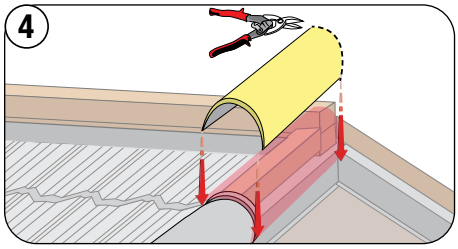
Insert the End Disk into Mission Cap and fasten with stitch screws. Bend End Disk at 90 degrees. Mark and cut to fit around the nose of the panel at the rake edge.



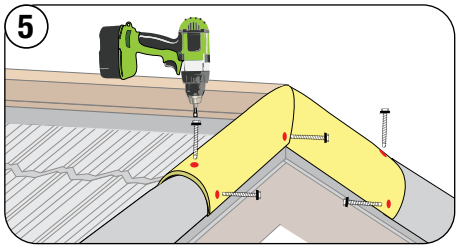
Notch inside corner of the first Starter Cap, as shown, to allow it to fit on the bottom panel course.



Fit the rake Starter Cap at the eave and fasten into the rake batten and into the side of the Drip Edge metal.

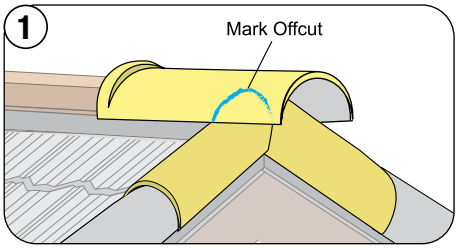


Fit each cap up the rake until it intersects with the ridge. Mark, cut and fit the final rake cap at the ridge.

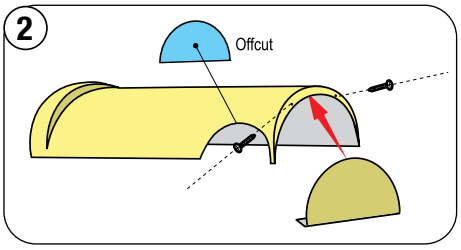


Fasten at the top and sides , as shown.

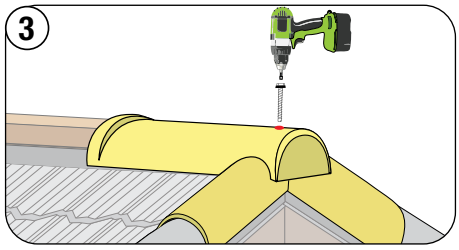
MISSION CAP INSTALL AT RAKE / RIDGE INTERSECTION



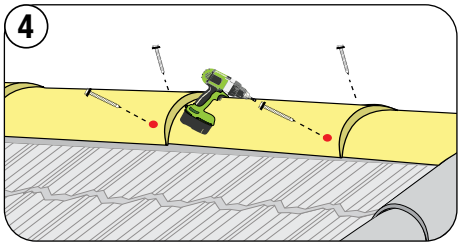
Position the Ridge Starter Cap as shown and scribe the profile of the rake caps on either side.



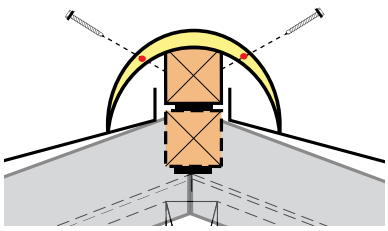
Cut out the rake cap profiles on each side and fit an end disc into the Ridge Starter Cap.



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



Install ridge Mission Caps and fasten on both sides into the ridge batten, as shown.



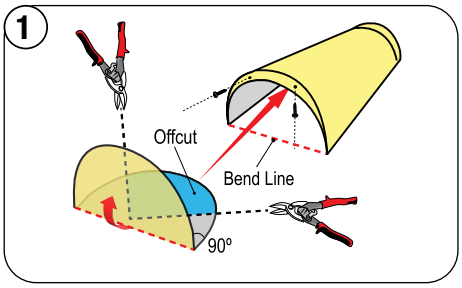
MISSION CAP FASTENING

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

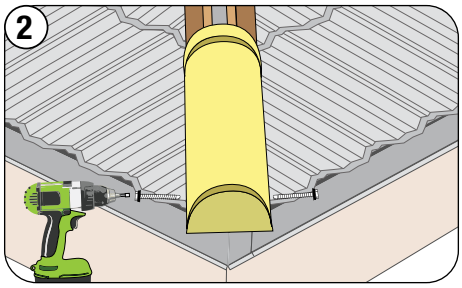
VIDEO ONLINE

MISSION CAP INSTALL ON RAKE / RIDGE

MISSION CAP INSTALL ON HIP

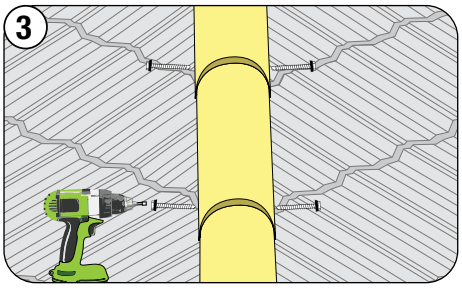


Insert the End Disk into Mission Cap and fasten with stitch screws. Bend End Disk at 90 degrees. Mark and cut at 45 degrees to fit around hip corner.



Fasten the starter cap through the sides.

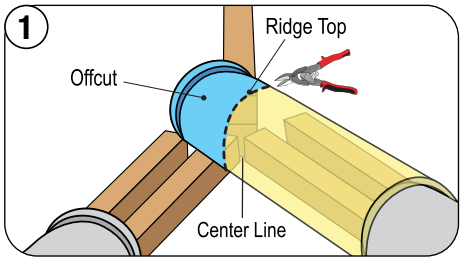
Starter Cap End Disks should always be bent at a 90 degree angle to form 3-D effect.



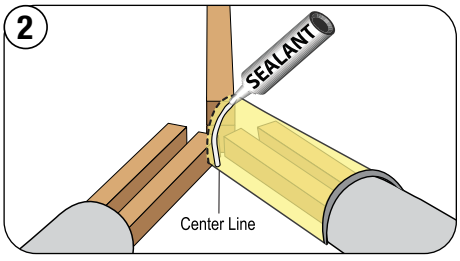
Fit each cap up the hip, making sure to keep the caps straight. Fasten through the sides.

MISSION CAP INSTALL AT HIP / RIDGE INTERSECTION

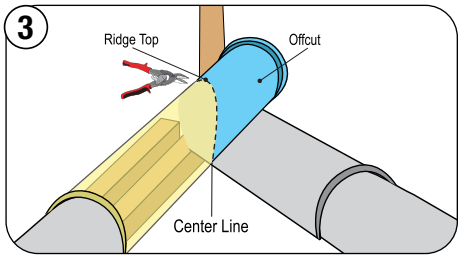
When two hips intersect, its necessary to mark and cut them so they intersect tightly and allow the ridge caps to cover over the two hip caps, providing a finished detail at this Mission Cap intersection.



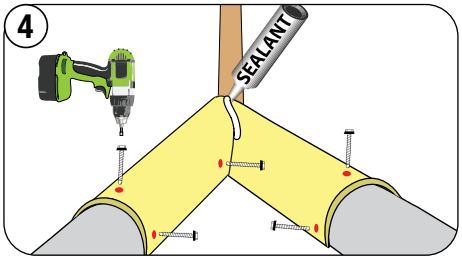
Place the Mission Cap at the ridge intersection. Mark the Cut Line at the ridge top and V-notch the right side at the point of the ridge battens, and left side at the center line. Cut, as shown



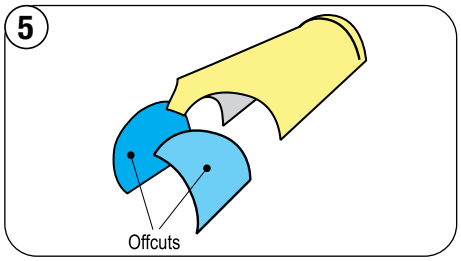
Cut and fit the Mission Cap section. Bend the left end slightly. Apply Sealant along the center line.



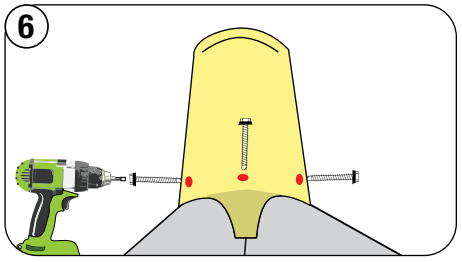
Place other Mission Cap on top. Mark the Bend Line at the ridge top and Cut Line along the center line. Add 1" (25 mm) to the Bend Line and mark as Cut Line. Notch the back side up the ridge batten.



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



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



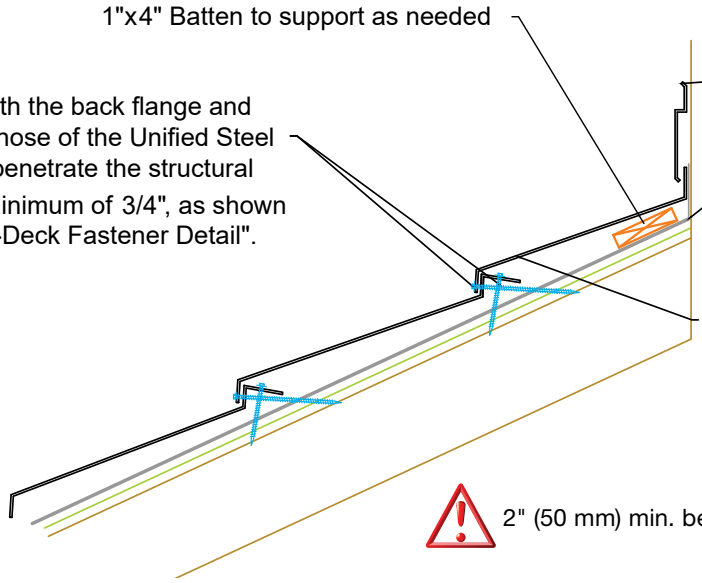
Form the ridge Starter Mission Cap, fit and fasten, as shown. Continue installing caps at the ridge, fastening with 2 screws to the ridge batten on both sides.

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

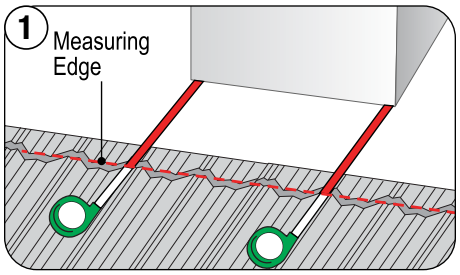
VIDEO ONLINE

MISSION CAP INSTALL ON HIP / RIDGE

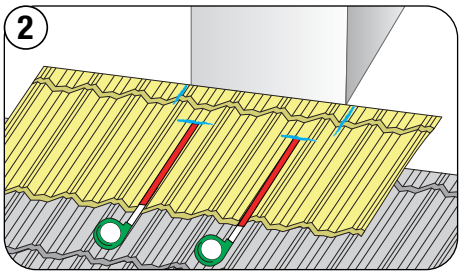
CHIMNEY / SKYLIGHT / HEADWALL / SIDEWALL DETAIL



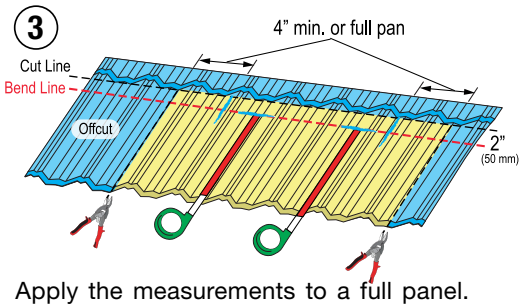
2" (50 mm) min. bend up is required on all Sidewalls and Headwalls.



Measure panel from the Back-Nose Down-Turn of the panel to the front of Chimney/ Skylight.

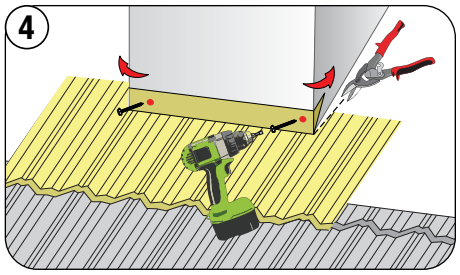


Align the front panel with the course below and the correct layout pattern for the profile. Mark the sides of the chimney and mark the measurements from Step 1.

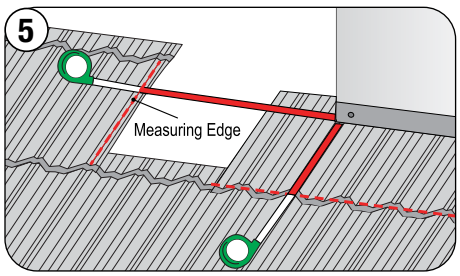


Apply the measurements to a full panel. Bend the entire length then cut off the excess.

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

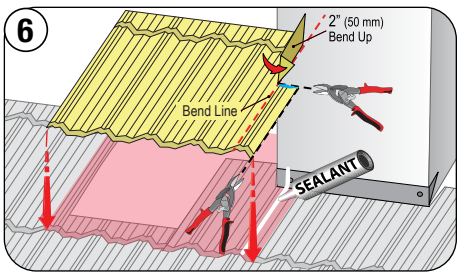


Fit the front panel flashing section as shown and cut at a 45 degree angle from each side. Bend the corners around the Chimney/Skylight.



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

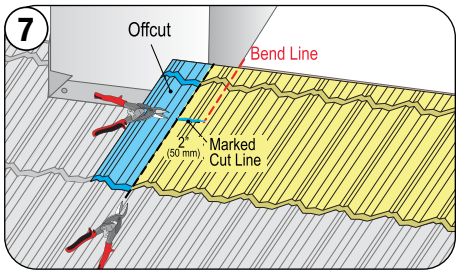
Measure the distance from the panel nose to the front of the Chimney/Skylight and mark another Cut Line.



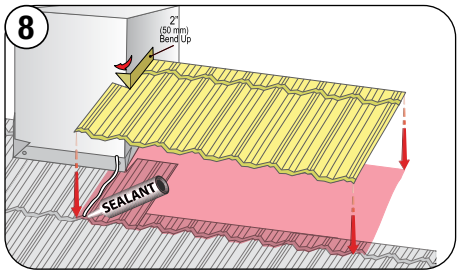
Apply the measurements to the full panel. Cut and bend up the panel, as shown. Bend the corner around Chimney/Skylight. Apply Sealant and fit the left-side panel aligning it with the field panels already installed.

Continue on Next Page

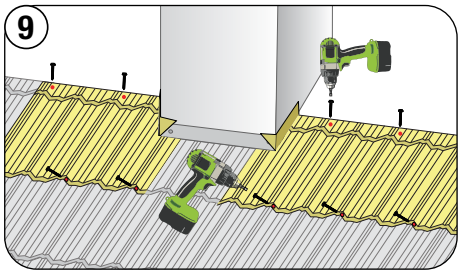
CHIMNEY / SKYLIGHT / HEADWALL / SIDEWALL DETAIL (cont.)



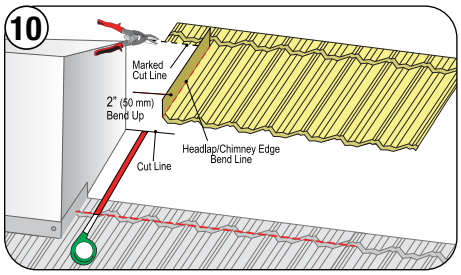
Align the right-side panel with the Chimney/Skylight and panel below keeping correct layout pattern. Mark the Bend Line. Add 2" (50 mm) to the Bend Line and mark the Cut Line. Mark the distance from the panel nose to the front of the Chimney/Skylight.



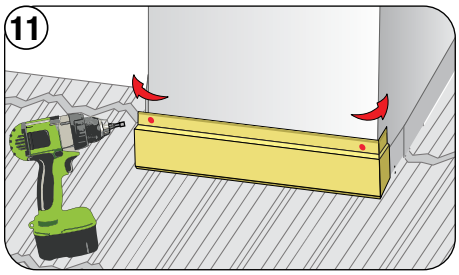
Cut and bend up right-side panel. Apply Sealant to the corner and down the panel. Bend the corner of the bend-up and fit the panel.



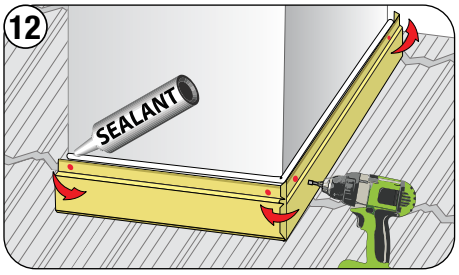
Fasten panels as regular field panels.



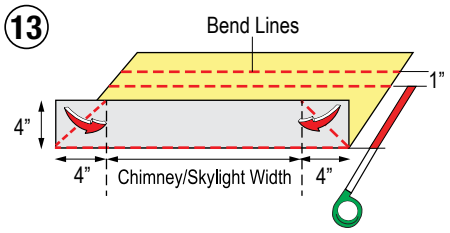
Align the top panel to the course below. Measure the distance from the back flange to the back of the Chimney/Skylight and mark Cut Line, as shown. Install panel section and apply Sealant across top edge of the bend-up.



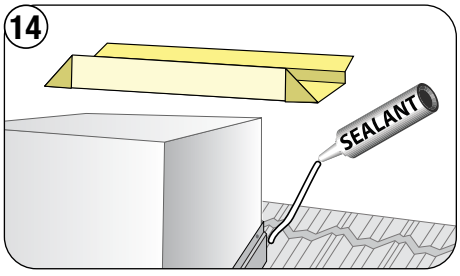
Measure, cut and bend Z-Bar metal, starting across the front. Fasten, as shown.



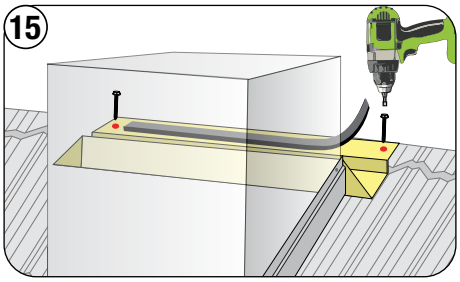
Complete Z-Bar installation up both sides bending at the corners. Apply Sealant along the top edge of the Z-Bar.



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



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



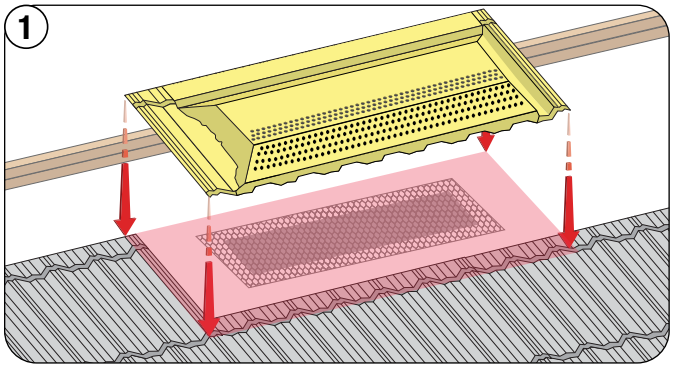
Fasten each end of the Saddle through the back-top flange. Apply an EmSeal tape on the Saddle aligned with the back-top flange of the panels.

VIDEO ONLINE

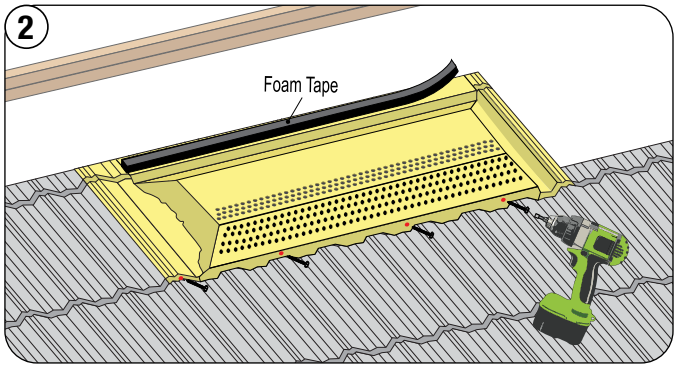
CHIMNEY / SKYLIGHT DETAIL

EZ VENT INSTALL (Off Ridge Ventilation)

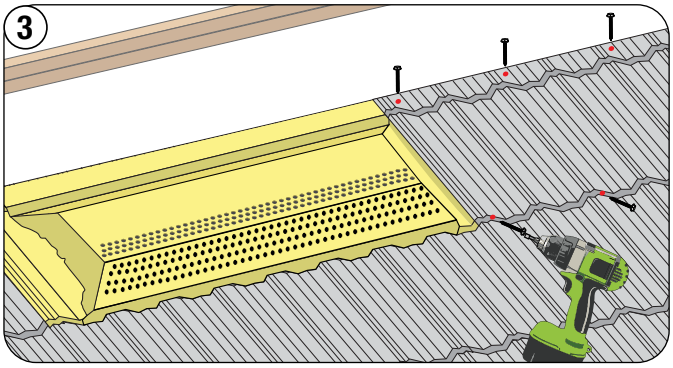
Unified Steel® EZ-Vents are used in place of regular panels on the first full course down from the ridge where exhaust ventilation is required. Care should be taken to adequately ventilate the building. Check with the local codes for correct Net Free Vent Area required for attic ventilation.



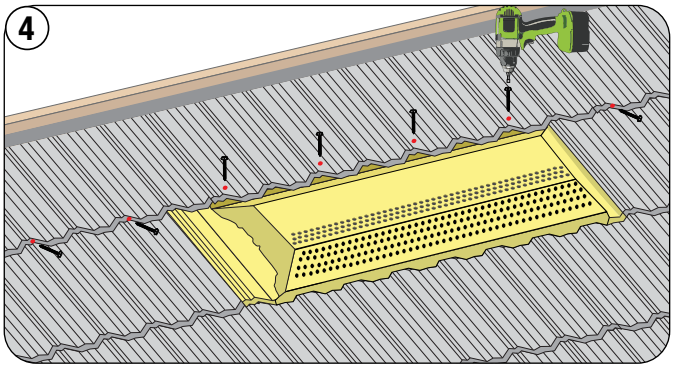
Cut a hole in the decking, approximately 5" x 30" (127 x 762 mm). Cover the hole with metal mesh (0.125" (3 mm) square) to prevent pests/insects from entering the attic. Install the EZ-Vent unit overlapping as field panels.



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 as regular field panels.



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

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

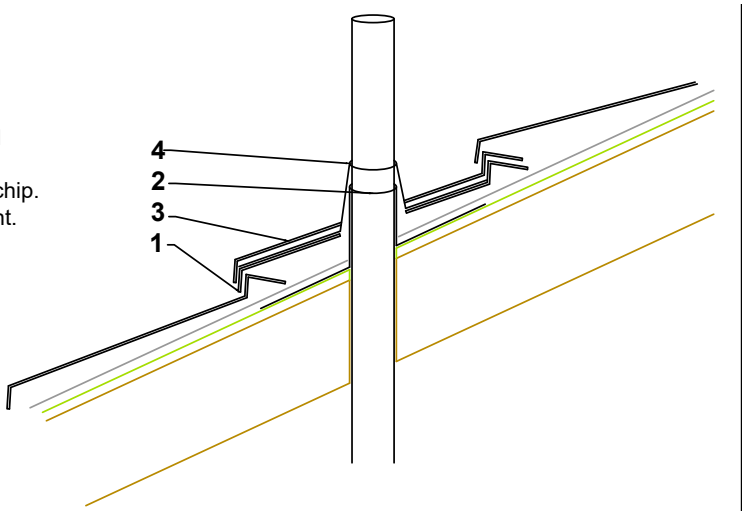
VIDEO ONLINE

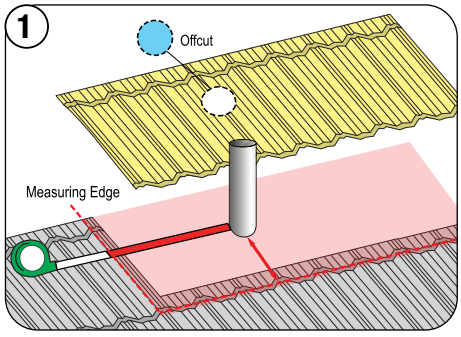
EZ VENT INSTALL

PIPE VENT INSTALL - SANDWICH METHOD

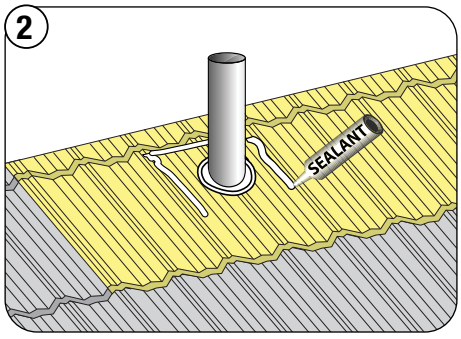
Double Pan/Sandwich Method:

1. Bottom pan, lose 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)

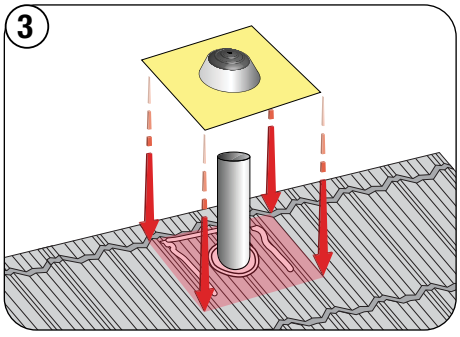




Measure, mark and cut a pipe sized hole in the base panel.

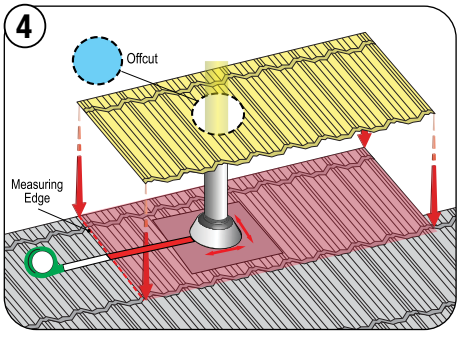


Install base panel to fit around the vent pipe. Apply a bead of Sealant at the back, on each side and around the hole of the pipe, as shown.

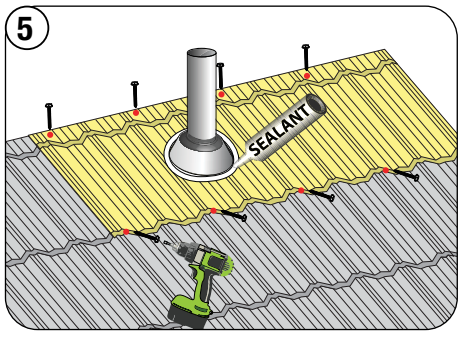


Slide the Pipe-Jack flashing over the pipe and seat it into the Sealant. Press firmly.

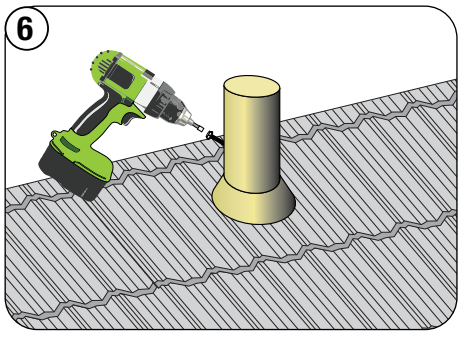
Trim Pipe Jack base, as needed, to fit panel course.



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



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

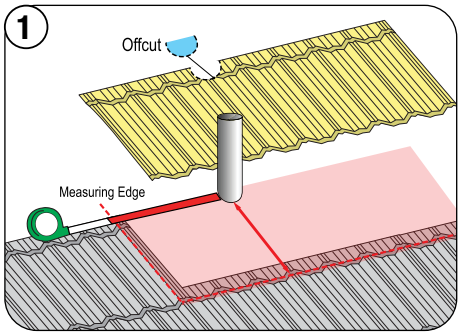


Install and fasten the Pipe-Sleeve through the back of the sleeve into the pipe. Make sure to fasten at least 2" (50 mm) above the Pipe-Jack cone.

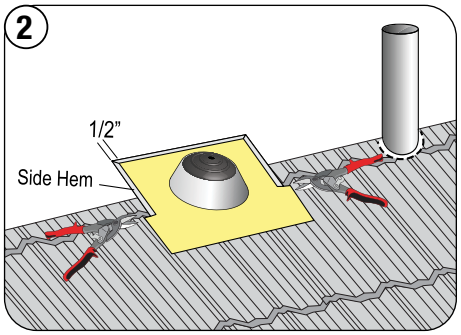
VIDEO ONLINE

PIPE INSTALL - SANDWICH

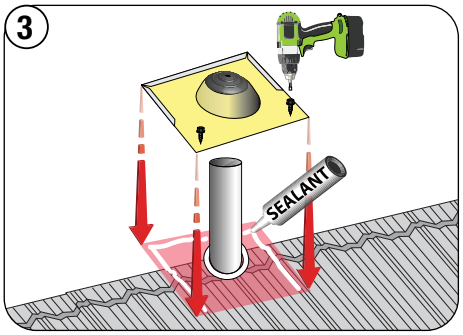
PIPE VENT INSTALL - SPLIT COURSE METHOD



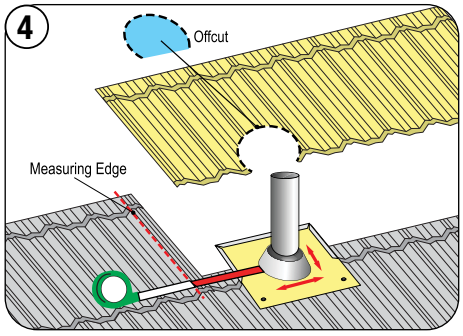
Measure and cut lower panel to fit around the vent pipe. Install panel.



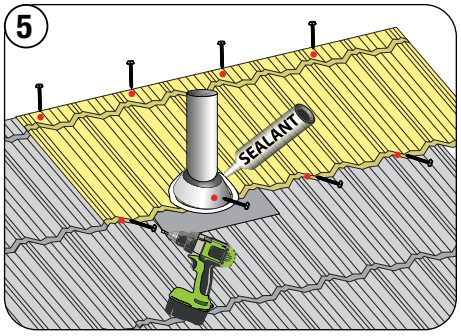
Place Pipe Jack on the panel to the side of the pipe and make 1/2" (13 mm) cuts in line with the back up-turn of the panel. Hem the edges, as shown.



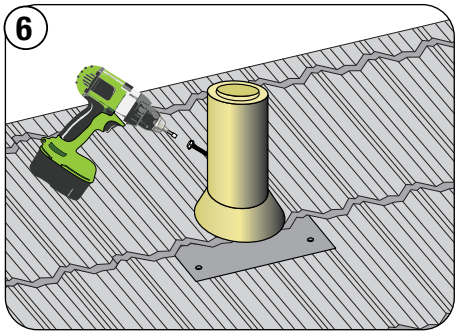
Slide the Pipe-Jack flashing over the pipe and seat it into the Sealant. Press firmly. Fasten the front side of the Pipe-Jack flashing with Stitch Screws, as shown.



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



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



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

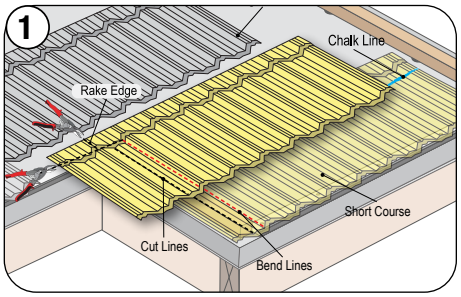
VIDEO ONLINE

PIPE INSTALL - SPLIT COURSE

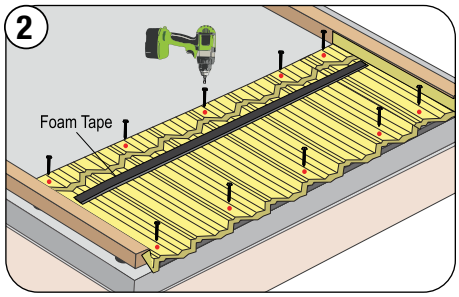
SHORT COURSE DETAIL

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

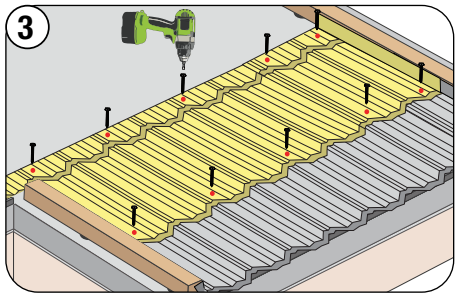
For best results, have Short Courses at the eave line.



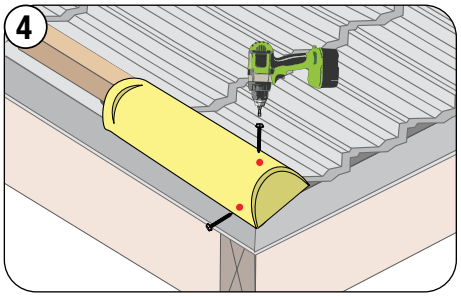
Place Long Course panel. Do not fasten. Properly align panels underneath to follow correct panel layout. Extend Short Course panel 1/2" (13 mm) past the eave. Mark the Bend Lines at the rake batten inner edge, and Cut Line, as shown. Mark the horizontal line on the Short Course panel aligned with the nose down-turn of the panel above. Add 1.5" (38 mm) to the marked Bend Lines and mark as Cut Lines.



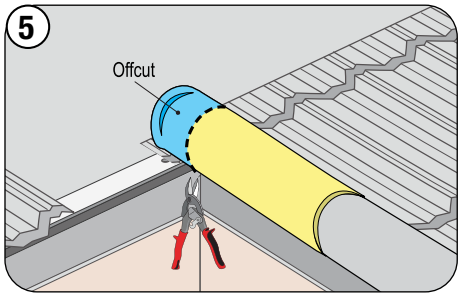
Cut and bend panels. Install the Short Course panel cut and extend it 1/2" (13 mm) past the eave. Finish the row. Fasten as regular eave panels. Apply EmSeal foam tape above the marked chalk line.



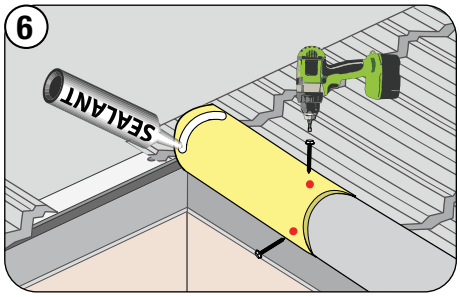
Install panel above the Short Course eave panel. Fasten through the top into EmSeal foam tape.



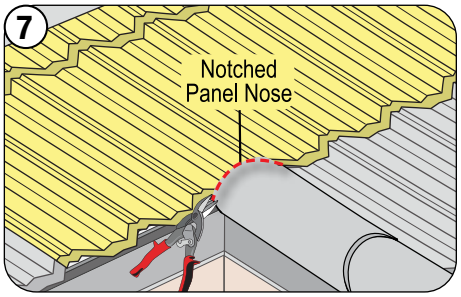
Form and install Mission Cap Starter (End Cap) and fasten through the top into the rake batten and on the side, as shown.



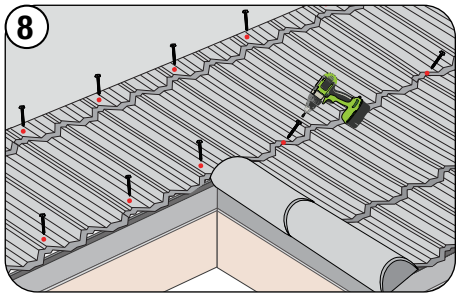
Place next Mission Cap on top of the Starter Cap at the corner intersection. Mark and cut, as shown.



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



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



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

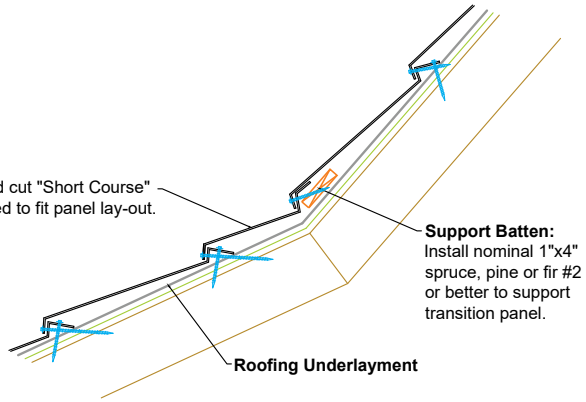
Any fasteners that penetrate through the top of the panel must be sealed and stone-chipped.

VIDEO ONLINE

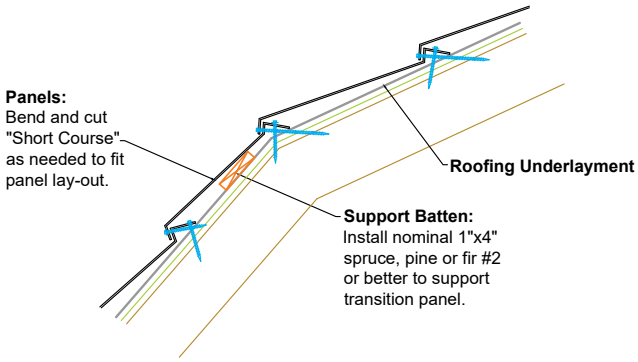
SHORT COURSE DETAIL

SPECIAL TRANSITION DETAILS

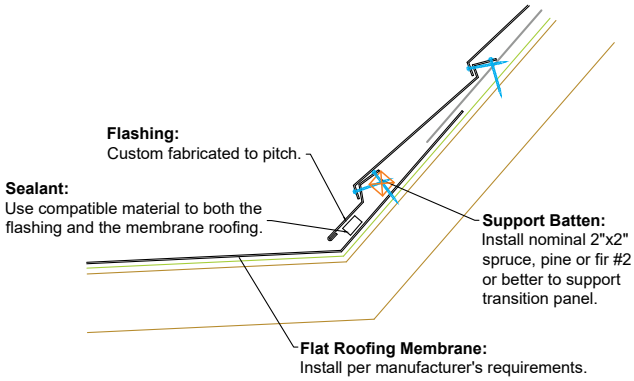
LOW TO HIGH



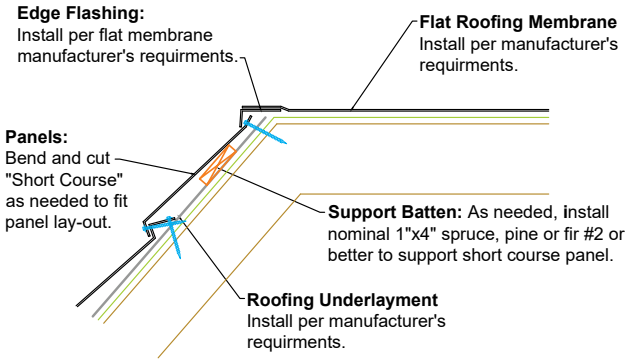
HIGH TO LOW



FLAT TO STEEP



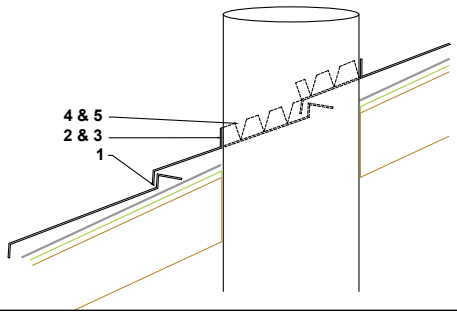
STEEP TO FLAT



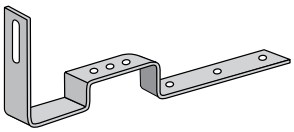
LARGE ROUND ROOF PENETRATION

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

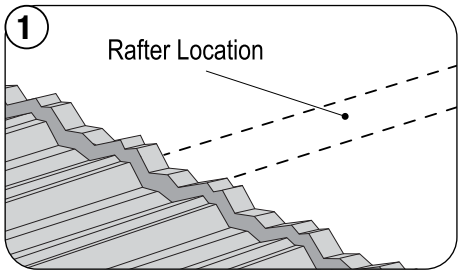
1. Cut panels with minimum,1" added for turn-up.
2. Bend extra material up.
3. Press tabs tightly to the penetration,
4. Apply caulking at all cut edges to seal to penetration.
5. Apply granules into caulking.
6. Fasten panels as normal. (fasteners omitted for clarity)



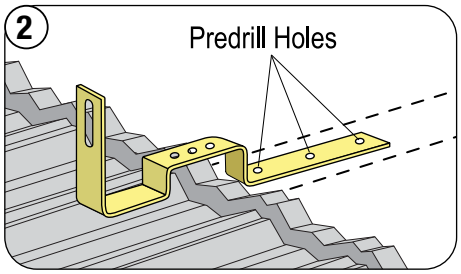
SOLAR MOUNT INSTALL



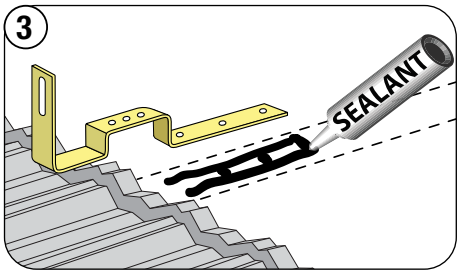
Solar Roof Mounts are installed without making any penetration through the Unified Steel® panels. This is achieved by bending the nose of the upper cover panel directly above the Solar Roof Mounts so the bracket easily exits between the panel courses and when the cover panel is fastened the system does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



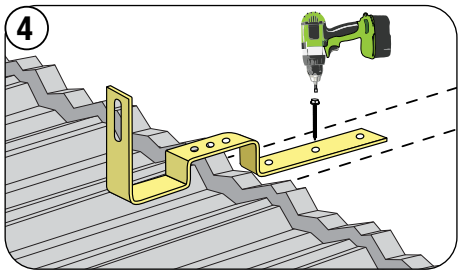
Find and mark the location of the rafter beneath the roof deck.



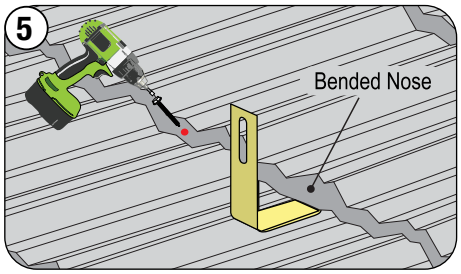
Place the Solar Roof Mount and predrill holes using 3/16" Drill Bit.



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.

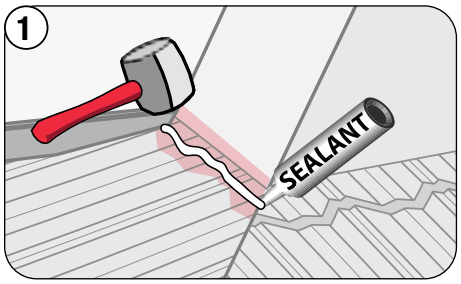
Depending on rafter location it may be necessary to place a pad of peel-n-stick material or Wakaflex® strip beneath each Solar Roof Mount where it canter levers out onto the panel beneath to prevent abrasion.

VIDEO ONLINE

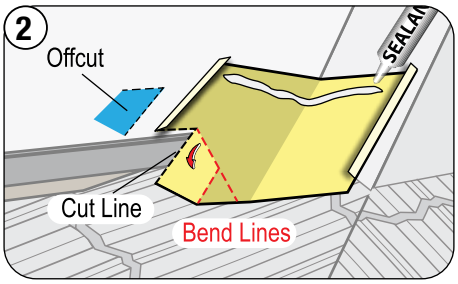
SOLAR MOUNT INSTALL

Dormer Valley Exit Detail

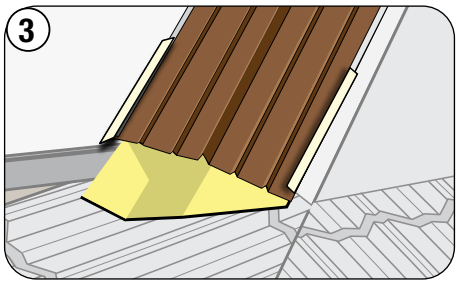
Use either Flat Sheet or Wakaflex® flashing to create a valley exit piece with hemmed edges for the valley to exit onto.



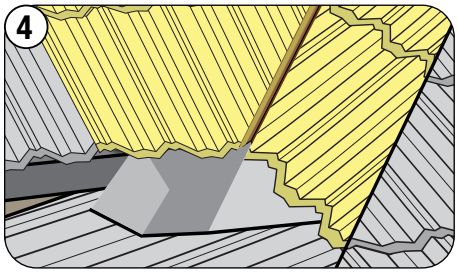
Flatten back flange against the roof deck and apply Sealant.



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.



Install valley panel cuts to complete the dormer roof section.

VALLEY EXIT WITH WAKAFLEX® FLASHING — OPTIONAL

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

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

Wakaflex should be painted or stone coated to match the panel color.

VIDEO ONLINE

DORMER VALLEY EXIT DETAIL

FINISHING TOUCHES

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

VIDEO ONLINE

FINISHING TOUCHES

NOTES:

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