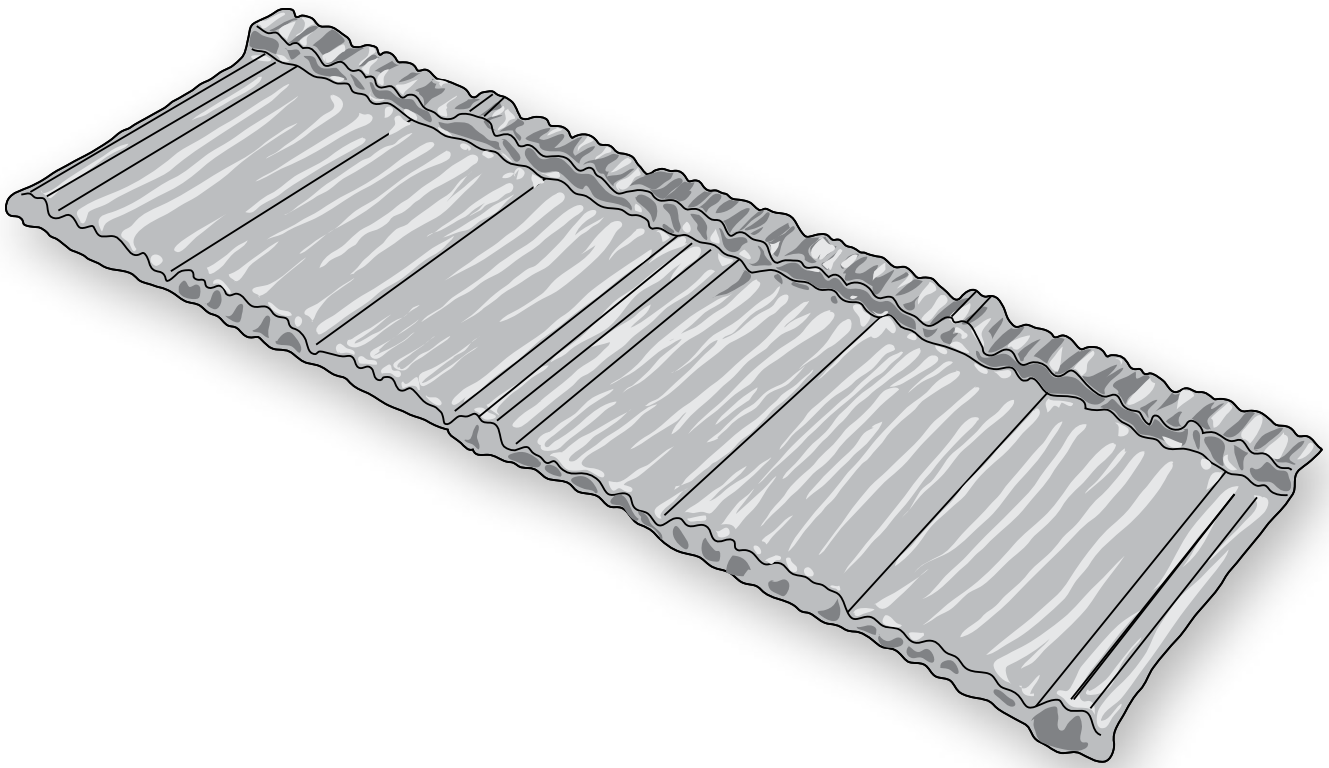
MetroSHAKE®
Batten-less Installation Details



Issued December 29, 2005 | Revised July 5th, 2013

INSTALLATION WARNING!

These install details are provided to demonstrate a recommended installation method for Metro Roof panels and accessories.

The Details and information in this document reflect current roofing practices used in the United States. Installers of Metro Roof panels and accessories should have knowledge of roof structures, an understanding of how to work with stone-coated steel panels and accessories, and be experienced at working on sloped roofs.

Metro recommends installers of MetroSHAKE products use a Metro Cutter, and have completed a 'SMART-Start On Site installer Training Orientation Program' (located at http://www.metroroofs.com/SmartStartTraining.cfm) for each profile installed. Metro does not consider its products to be "do-it-yourself" (D.I.Y.) mainly due to specialized cutting & bending tools used during installation.

INTRODUCTION

Installation Tools:

- Metro Installation Kit - 150lbs (68.1kg)
  - CUTTER - 40lbs (18.16kg)
  - FULL PANEL BENDER attachment - 62lbs (28.1kg)
  - FOOT BENDER - 48lbs (21.8kg)
- Hand Tools
  - Impact Driver
  - Red & Green Snips
  - 3” Hand Seamers

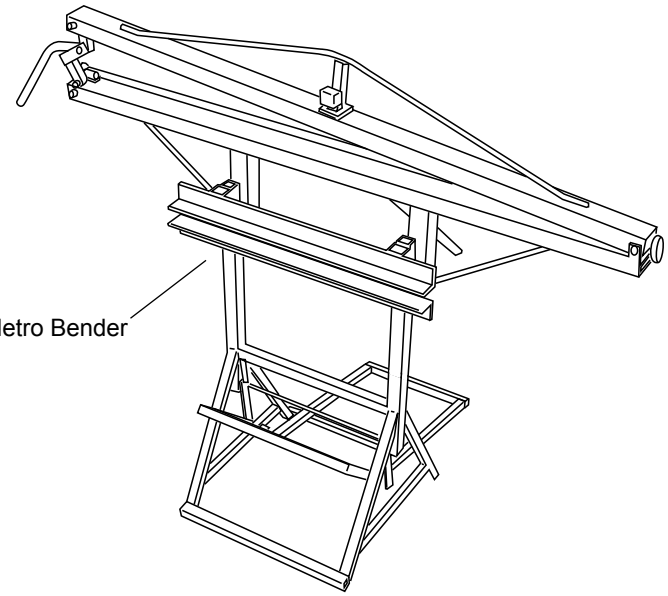
Other Tools:

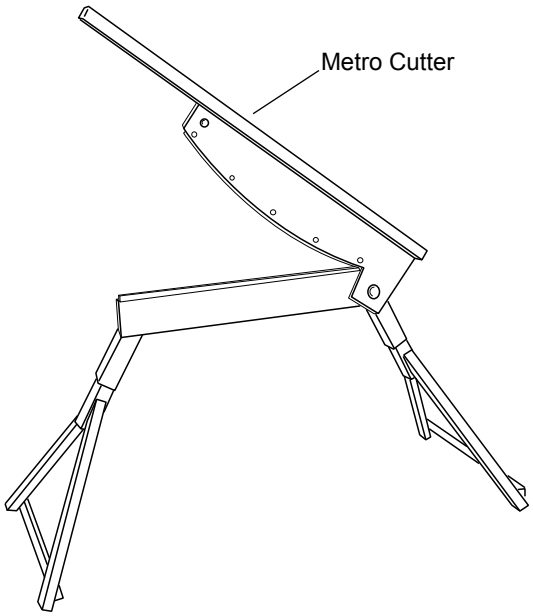
- Nail Gun
- Hammer
- Tape Measure
- Caulking Gun
- String-Line
- Soap Stone (used to mark panels)

General:

These install details are designed to be used in conjunction with Metro’s SMART-Start On-Site Installer Training Program. A certificate of completion is given to installers that complete the Metro SMART-Start On-Site Training Program for each Metro profile.

Metro Batten-Less install methods ensure the simplest application. Starting with the perimeter, flashing metals are installed, followed by the field panels, fitted from right to left, across the roof and up towards the ridge. Panels are measured and cut to fit areas around the perimeter of the roof; i.e. ridges, hips and valleys. Trim caps are then installed, followed by an overall quality reveiw of the entire roof.





In cold climate zones with Cathedral Ceilings a Counter-Batten and Batten grid system is suggested to help prevent ice-damming.

MetroSHAKE®
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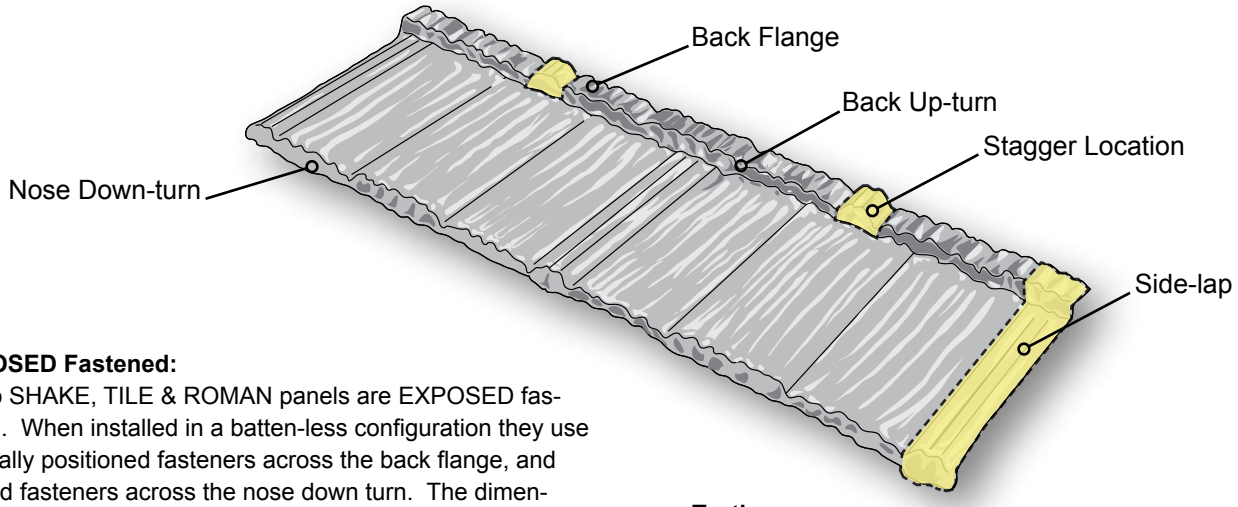


EXPOSED Fastened:
Metro SHAKE, TILE & ROMAN panels are EXPOSED fastened. When installed in a batten-less configuration they use vertically positioned fasteners across the back flange, and angled fasteners across the nose down turn. The dimensions are as follows:

Overall Length Range: 52" (1321mm)
Pitch (Course Cover): 14-1/2" (368mm)
Side-Lap: 2" (50mm)
Back Flange: 1" (25mm)
Back Upturn: 1" (25mm)
Front Nose Downturn: 1" (25mm)
Panel Cover: 50" (1270mm)
Panels Per Sq. (100-sq-ft): 20-pcs (0.465 panels per Sq M)
Panels per pallet: 400pcs

Materials:
Metro panels are produced from AZ-50, Aluminum-zinc alloy coated steel complying with ASTM A792.

Packing and Storage:
A pallet of Metro panels contains approximately 20 squares. (186sq mm) Care should be taken to store panels under a weather-proof cover or inside in an area free from moisture.

Roofing felt
Unless local conditions require otherwise, either one layer of type 30, or two layers of Type 15 lb. roofing felt or equivalent should be used with Metro panels.

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

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

For HVHZ (High Velocity Hurricane Zone) areas refer to local code requirements and/or Metro website (www.metroroofs.com) for details.

Testing:
Metro panels have been tested in accordance with local, national & international building codes. Testing has been conducted to evaluate fire, wind, penetration, water infiltration, and durability resistance. Information regarding specific tests and approvals can be obtained from Metro Roof Products.

Ventilation:
Ensure proper attic ventilation as prescribed per local codes. Either Smart Vents or Ridge venting can be installed to achieve adequate ventilation.

Warranty:
Metro panels carry a limited warranty for fifty years. This limited warranty is transferable and does not cover damage due to improper handling or installation.

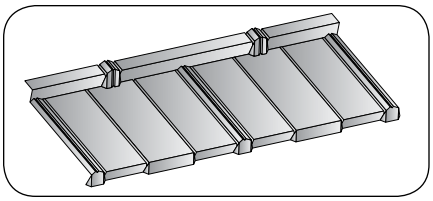
Dissimilar Metals:
To avoid adverse corrosion effects caused by dissimilar metals, COPPER and LEAD flashings should not be used with Metro roof products and accessories. (refer to Metro SMARTbrief #02004)

Finish coating
Minor scuffing of the Metro stone-coated finish can be repaired with a Metro Touch-Up Kit. Use the Metro base-coat 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.

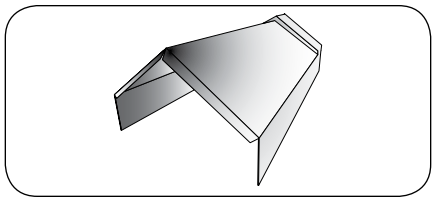
Colored areosol paints should never be sprayed on stone-coated panels & accessories

Indicates critical areas of installation

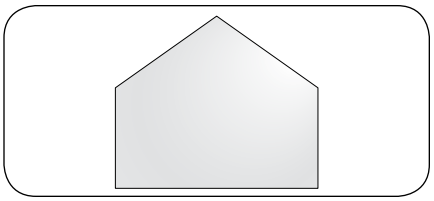
STONE-COATED ITEMS



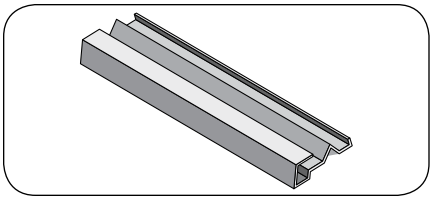
MetroSHAKE
52” x 14” (1321 X 368mm)
5.5-lbs (2.5 Kg)



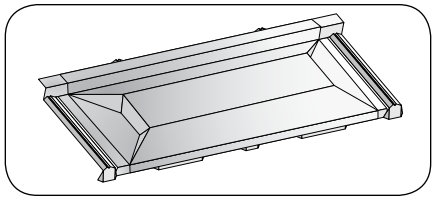
V Trim
14.5” x 6” (368 X 150mm)
1-lbs (0.45 Kg)



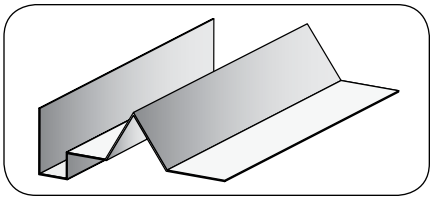
Trim End Disc
6” x 4” (150 X 100mm)
0.15 lbs (0.06 Kg)



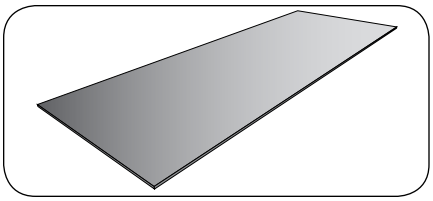
Rake Channel Shake
79” X 2” X 1” (2006 X 50 X 25mm)
3-lbs (1.36 Kg)



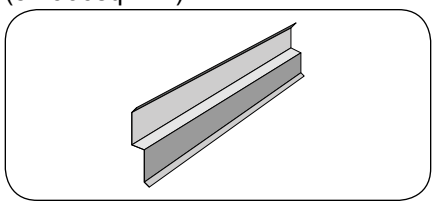
MetroSHAKE®SMART-Vent
52” X 14-1/2” X 3” (1321 X 368 X 76mm) 11 lbs (5Kg) NFVA-82sq in. (52.906sq mm)



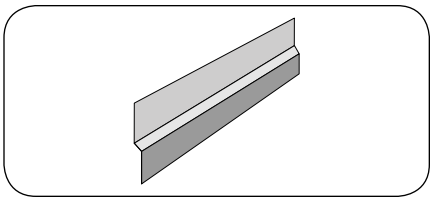
Shake-Tile V-Bat Riser
79” X 2-3/4” (2006 X 68mm)
3.75 lbs (1.7 Kg)



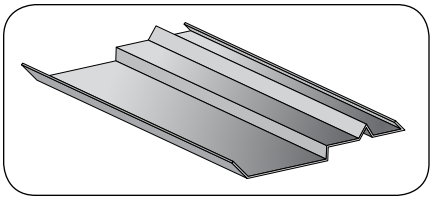
Flat-Stock Sheets
52” X 18” (1321 X 457mm) 5.7 lbs (2.59 Kg)



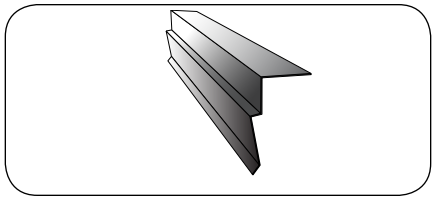
Z-Bar (Small)
79” X1-3/8” X 1/2 X 1-3/8” (2006 X 35 X 13 X 35mm) 2 lbs (.90Kg)



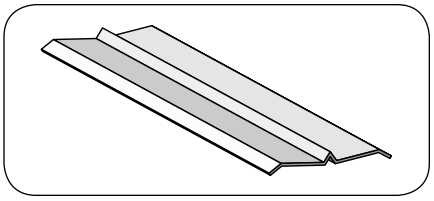
Z-Bar (Large)
79” X 2-1/4” X 1” X 2-1/4” (2006 X 57 X 25 X 57mm) 2.5 lbs (1.14 Kg)



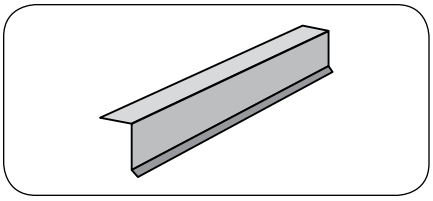
TIE-IN Metal
79” X 4” X 2-1/2” X 3/8” (2006 X 100 X 64 X 10mm) 4 lbs (1.81 Kg)



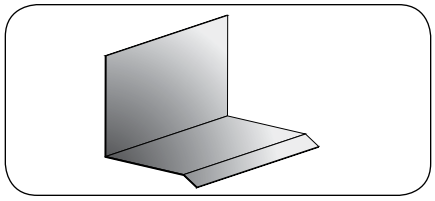
TRIM CAP Rake Metal
79” X 2” X 1-3/4” X 3/8” (2006 X 50 X 45 X 10mm) 3.5 lbs (1.60 Kg)



Valley Center Cover
79” X 4” (2006 X 100mm) 3.5 lbs (1.60 Kg)

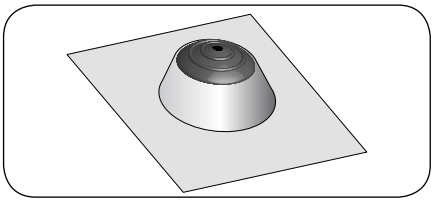


FL Drip Edge
79” X 2” X 3-1/4” (2006 X 50 X 83mm) 3.3lbs. (1.50Kg)



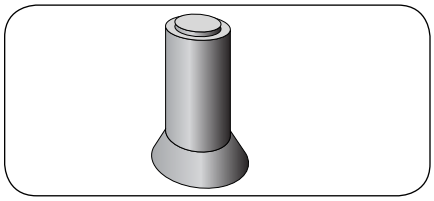
2.5” Head-wall
79” x 2.5” (2006 X 64mm) 3.3 lbs. (1.50Kg)

STONE-COATED ITEMS

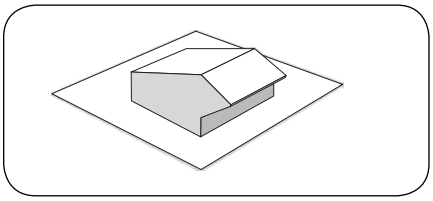


SMART-jack (2-Pipe-sizes SMALL base)
3-N-1 for 3-Inch Pipes (75mm)
12” X 16” (300 X 407mm) 1 lbs (0.45Kg)
3-N-4 for 4-Inch Pipes (100mm)
12” X 16” (300 X 407mm) 1 lbs (0.45Kg)

SMART-Jack (2-Pipe Sizes - LARGE Base
3-N-1 for 3-Inch Pipes (75mm)
18” X 18” (457 X 457mm) 1.4 lbs (0.64Kg)
3-N-4 for 4-Inch Pipes (100mm)
18” X 18” (457 X 457mm) 1.4 lbs (0.64Kg)

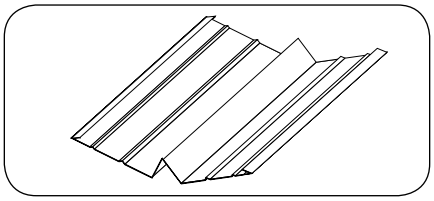


SMART-Sleeve (Pipe Cover)
16” X 4” (407 X 100mm) 1.65 lbs (0.75 Kg)

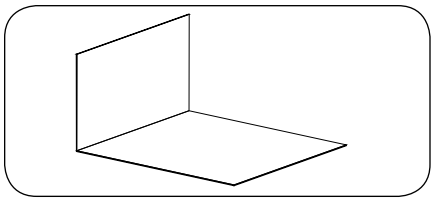


SMART-Box Vent (2-Sizes)
Small 3-4-Inch (75-100mm) 2 lbs (0.95Kg)
Large 8-10-Inch (200-254mm) 5 lbs (2.27Kg)

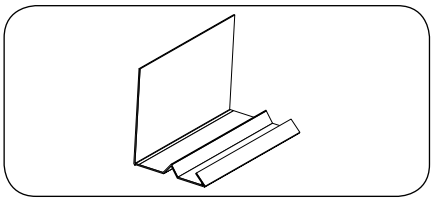
PAINTED OR BARE METAL ACCESSORIES



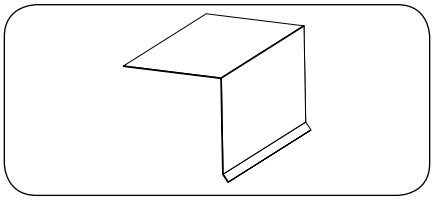
DOUBLE V-VALLEY
120” X 20” (3048 X 508mm) 12.5 lbs (5.68 Kg)



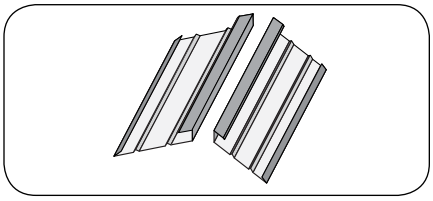
CHIMNEY SADDLE (Two Sizes)
120” or 60” X 18” X 4” (3048 or 1524 X 457 X 100mm) 13.5 or 6.75 lbs (6.13 or 3 Kg)



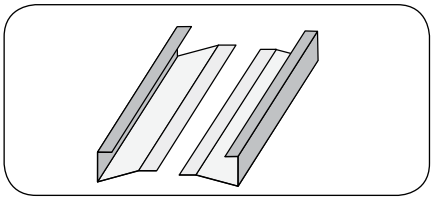
SIDE-WALL UNDER-PAN
120” X 3-1/2” X 4” (3048 X 89 X 100mm) 5 lbs (2.27 Kg)



DRIP EDGE
120” X 1-1/2” X 1-1/2” (3048 X 38 X 38mm) 1.6 lbs (0.72 Kg)

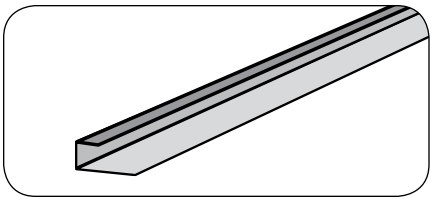


SMART-Valley (2 Pcs Reqd.)
120” X 9-1/4” X 1-1/2” X 1-1/2” (3048 X 235 X 38 X 38mm) 7.35 lbs (3.3 Kg)
** Requires Valley Center Cover & sealant tape.*

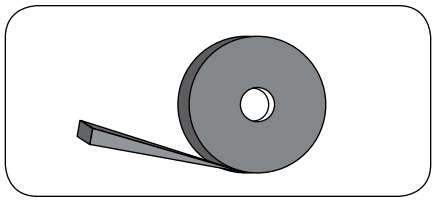


SMART-Batten
120” X 1” X 2-3/8” (3048 X 25.4 X 60mm) 3.55 lbs (1.6 Kg)
** Requires 2-pcs per 10-ft of Hip & Ridge*
** Requires panels to be cut as tight as possible (Mitered on hips) and Metro SMART-XP-Foam Tape installed on each flat leg of SMART-Batten prior to SMART-Batten installation.*

PAINTED OR BARE METAL ACCESSORIES

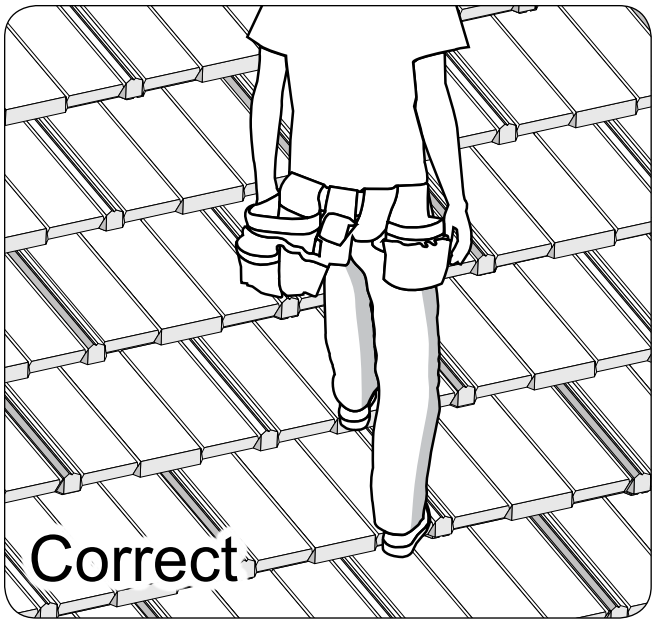


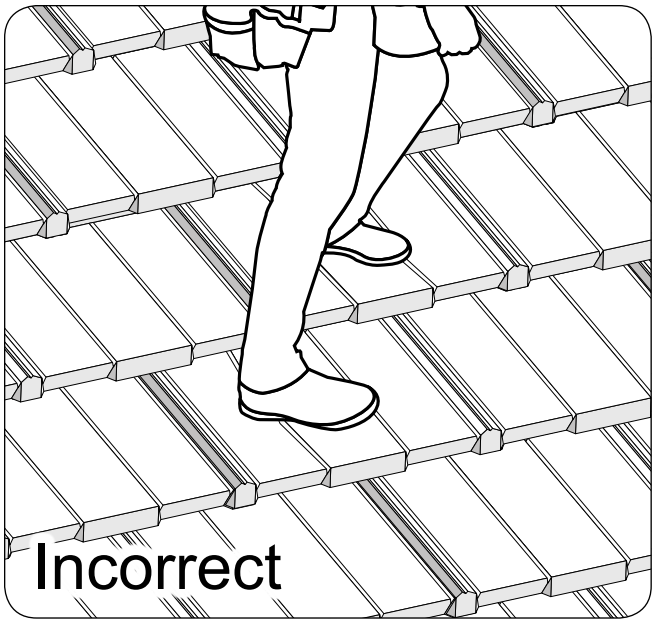
SMART-Gutter -Riser Metal
120” X 3/4” X2-1/2”
(3048X19X63mm) 1.9lbs.
Painted Black, Brown or White



SMART-XP-Foam Tape Roll
1” X 1-1/4” Exp X 19.68-ft
(25X32X6000mm) 1.0lb 24-Rolls / Box

WALKING ON YOUR METRO SHAKE ROOF





General Information

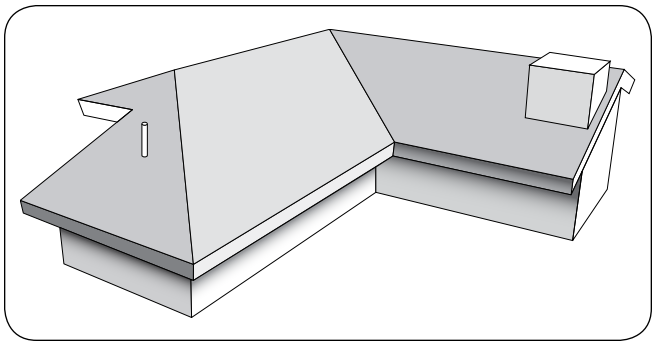
These install details are provided to demonstrate a recommended installation method for Metro Roof panels and accessories.The Details and information in this document reflect current roofing practices used in the United States. Installers of Metro Roof panels and accessories should have knowledge of roof structures, an understanding of how to work with stone-coated steel panels and accessories, and be experienced at working on sloped roofs. Metro recommends installers of MetroSHAKE products use a Metro Cutter, and have completed a 'SMART-Start On Site installer Training Orientation Program' for each profile installed. Metro does not consider its products to be "do-it-yourself" (D.I.Y.) mainly due to specialized cutting & bending tools used during installation.

MetroSHAKE®

When walking on MetroSHAKE® your feet should be positioned over the nose or front downturn of the panels. Light weight, soft-soled shoes are recommended fro good grip and feel.

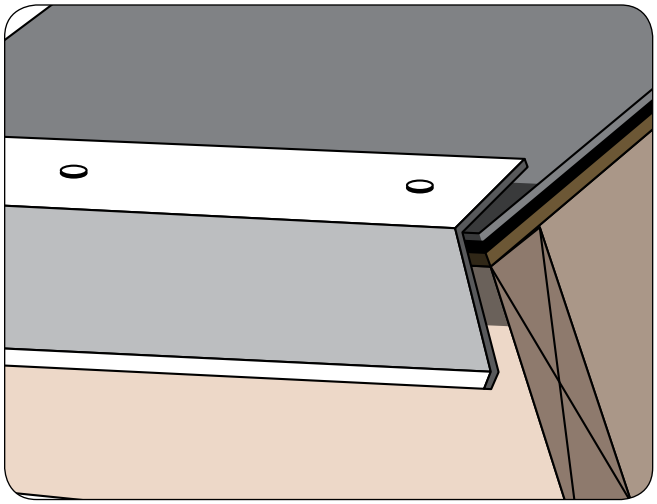
MetroSHAKE®
Batten-less Installation Details

GENERAL

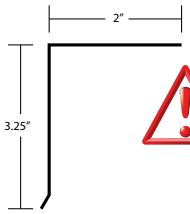


Metro Batten-less Shake panels are installed on new or existing roofs pitched a minimum of 2-1/2:12 (12-degrees). Underlay is to be installed as per local code and manufacturer's instructions.

DRIP EDGE



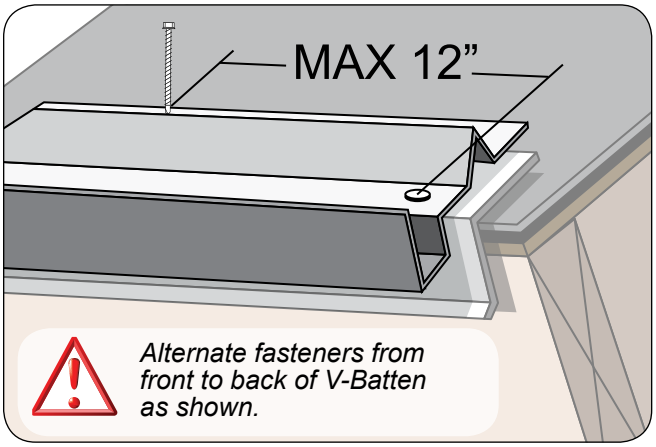
Install Drip Edge Metal across fascia. Drip Edge Metal may also be installed up rakes when using Metro Rake Channel. If using Trim Caps on the Rake edges, first install Metro Trim-Cap Rake Metal edging on rakes.



Florida and other high wind areas, use the Metro FL-FASCIA Stone-Coated metal.

For HVHZ (High Velocity Hurricane Zone) areas, perimeter flashings are fastened per local code.

RISER METAL



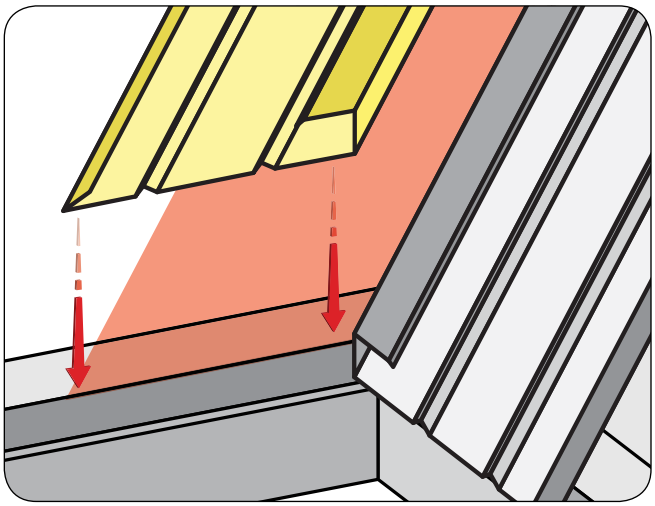
Alternate fasteners from front to back of V-Batten as shown.

The V-Bat Riser metal incorporates a reverse "V" batten, to support panels at the fascia. The V-Bat Riser metal creates a 3/4" off-set from the fascia edge. The use of this Riser metal requires standard Drip Edge, or Metro FL-Fascia metal to first be installed. When the V-Bat Riser metal intersects a Rake Channel or Valley, it must be notched and bent to allow water to exit the roof.

Alternative first row 3/4-inch riser options can be; 1X4 wood or plastic battens, Metro Gutter Riser, or Cobra mesh material.

Indicates critical areas of installation

SMART-VALLEY



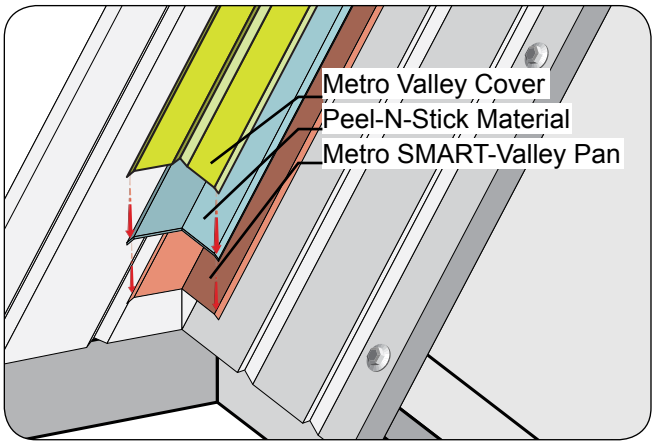
Depending on the valley metal used Metro panels can be installed to form either a 'Closed' or 'Open' valley. this page shows the Metro SMART-Valley metal which is used to create a 'Closed' valley.

Metro SMART-Valley consists of,
a) 1-pc SMART-Valley (Use on left side)
b) 1-pc SMART-Valley (Use on right side)
c) 1-pc Valley Cover

Metro SMART-Valley uses 2-pieces per each 10-foot (3.05m) length of valley.

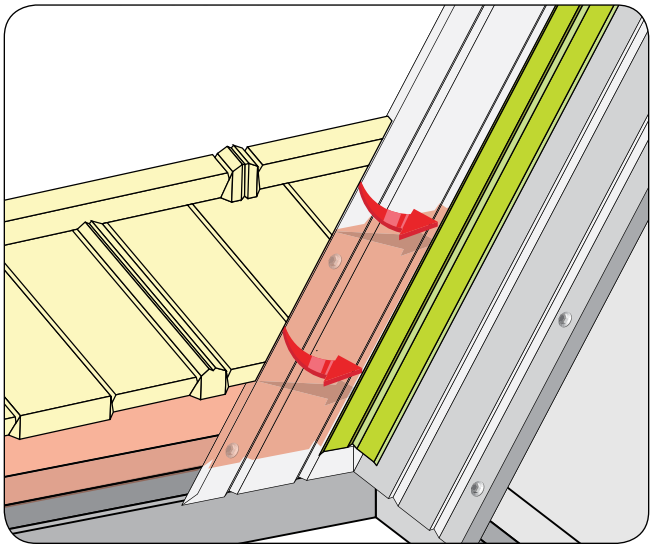
Estimating formula: Lin-ft of Valley divided by 9.75 X 2 = # of SMART-Valley required.

Install each side of the SMART-Valley as shown, fastening as normal for a valley pan. Tightly butt each SMART-Valley section together.

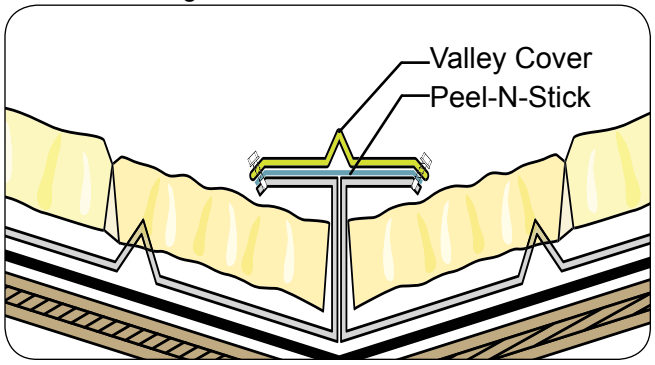


Install a strip (Min 4-in (100mm) wide) of Peel-N-Stick type material over the center seam as shown. Install Metro Valley Cover over the center seam with stitch screws. Vertical laps for both the Peel-N-Stick and the valley Cover are a min of 4-in (100mm)."

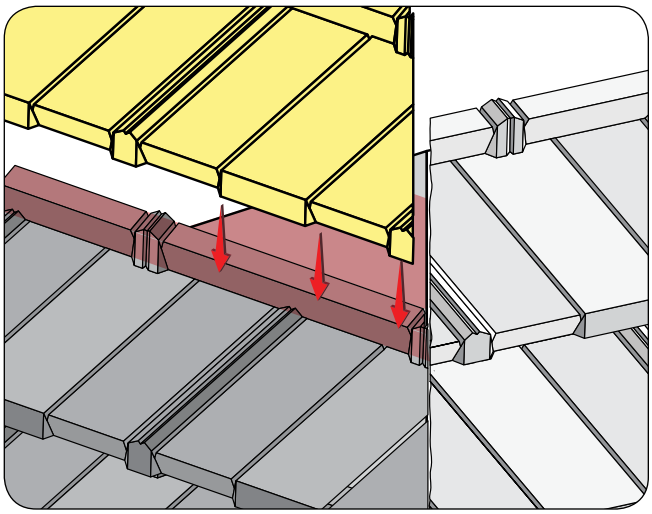
Miter cut, and install the Metro panels beneath the overlapping Valley Cover to match the angle of the valley.



IMPORTANT NOTE:
When using the SMART-Valley with Metro Roman Tile it may be necessary to paint the inside of each valley pan section to prevent the inside surface from shining when viewing the roof from certain angles.

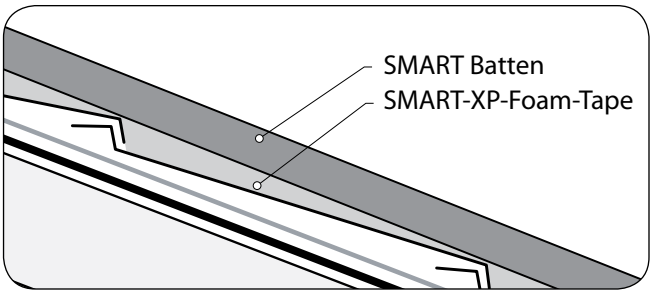


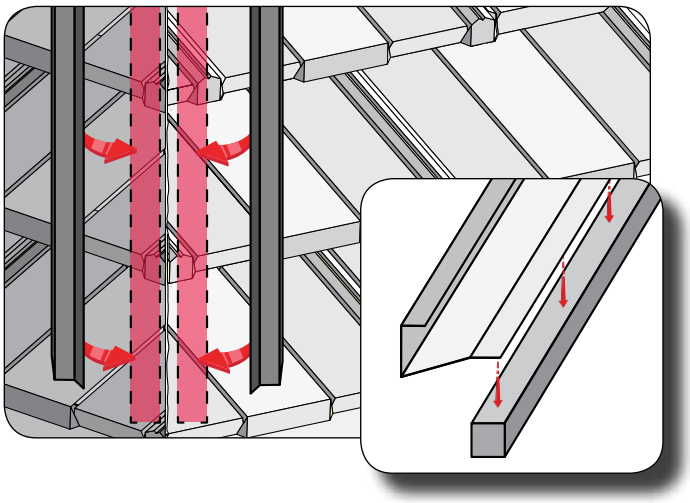
SMART ACCESSORY BATTEN



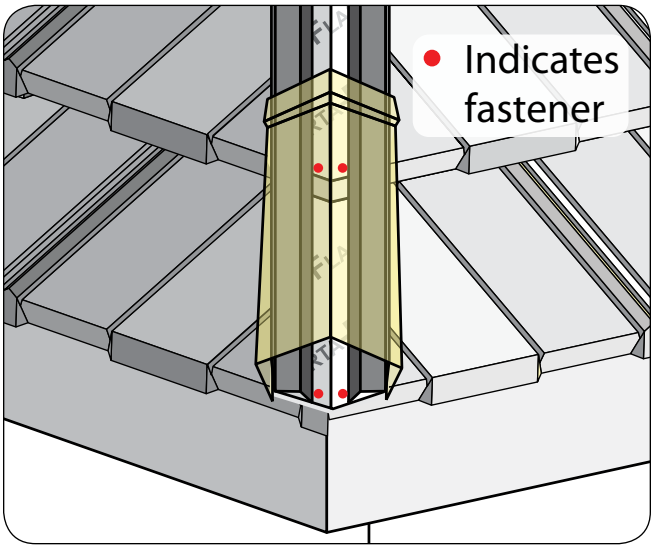
Metro SMART-Battens require 2-pieces per each 10-foot length of Hip or Ridge.

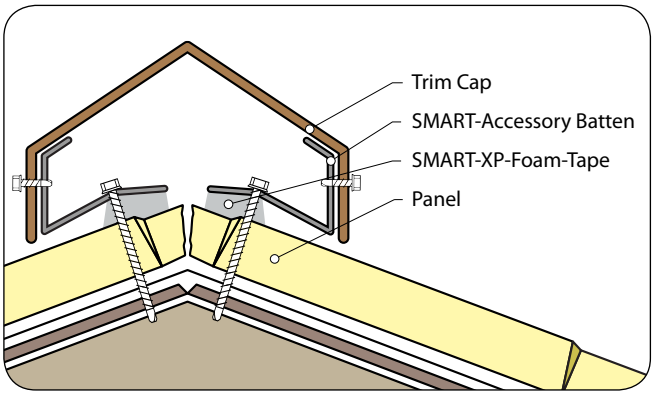
Miter cut and install Metro panels at the center-line of the Hip or Ridge as shown..





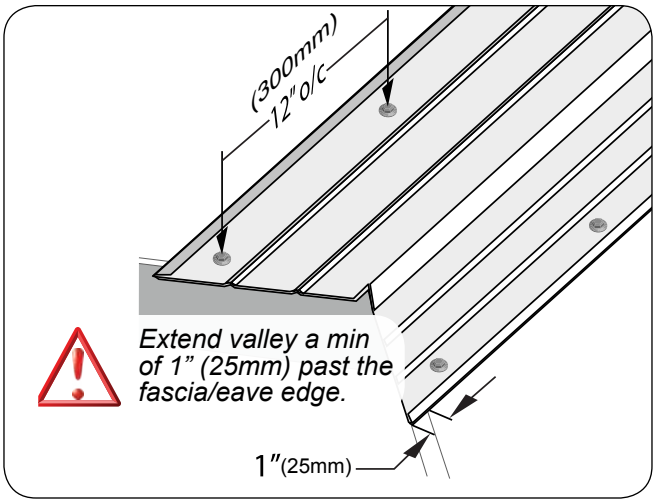
After Mitering & installing panels to Hip center-line, apply Metro SMART-XP-Foam Tape onto flat section of the Metro SMART-Batten and position SMART-Batten using the Metro Trim cap as a guide (6-inches apart) so center of trim cap is aligned with center of hip. Screw SMART-Batten on one side of hip through flat section, XP-Foam Tape, Metro panel and into the roof deck. The XP-Foam expands to 1-1/4" thick and will fill the saw tooth void created by the Metro courses. Use the Metro trim cap to correctly position the other SMART-Batten and then install the trim caps up the hip.





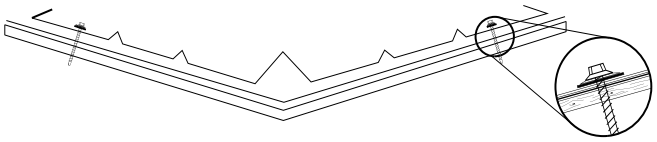
Continuos Ridge Venting is possible with Metro SMART-Battens, refer to Metro web-site for details.

20” DOUBLE ‘V’ VALLEY (OPTIONAL ALTERNATIVE)

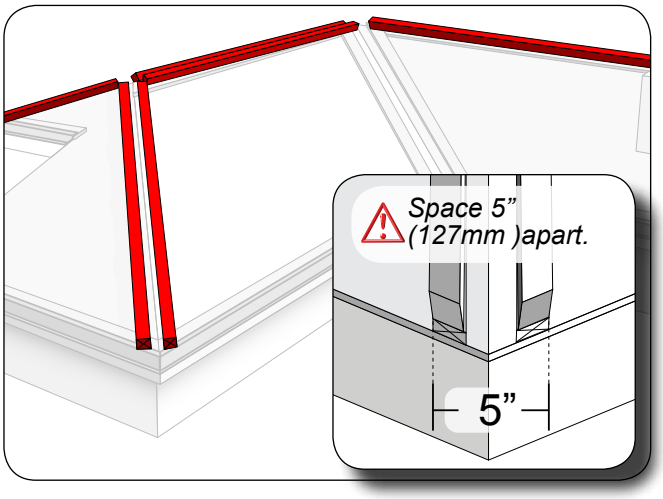


Install new 20” (508mm) Double V-Valley metal overlapping a minimum of 4” (100mm). Valleys are attached with washer & grommet screws in the outside locations as shown. Site fabricated clips may also be used to secure valley metal.

This valley metal allows for either an ‘Open’ or ‘Closed’ valley detail.



HIP & RIDGE BATTENS (OPTIONAL ALTERNATIVE)

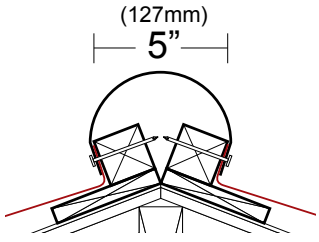


Metro panels are measured, marked, cut & bent-up approximately 2-inches (50mm) against the hip boards and fastened as field panels. The trim caps are then positioned over the upturned hip panel sections and fastened through each side of the hip caps into the hip boards.

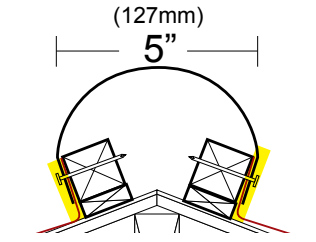
RIDGE Support Battens
Install 1X4 (25X100mm) support battens to the required height as shown. The 1X4 creates a ledge beneath the 2X2 (50X50mm) Ridge batten for the Ridge panel to be bent up against.

HIP Support Battens
Install 1X2 (25X50mm) support battens to the required height as shown. The 1X2 is installed flush with the 2X2 (50X50mm) Hip battens to provide height for the Hip cut panels to be bent up against.

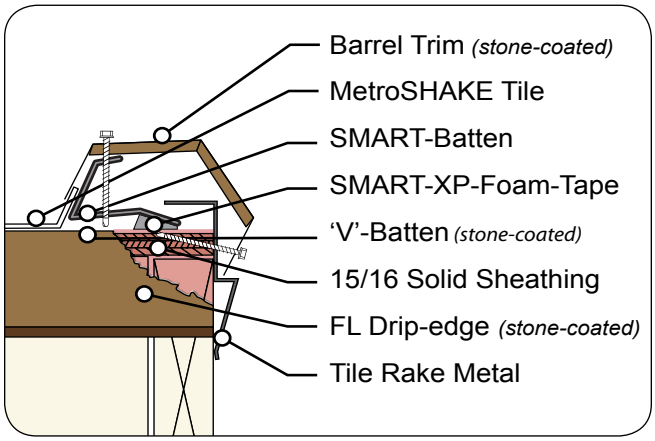
RIDGE

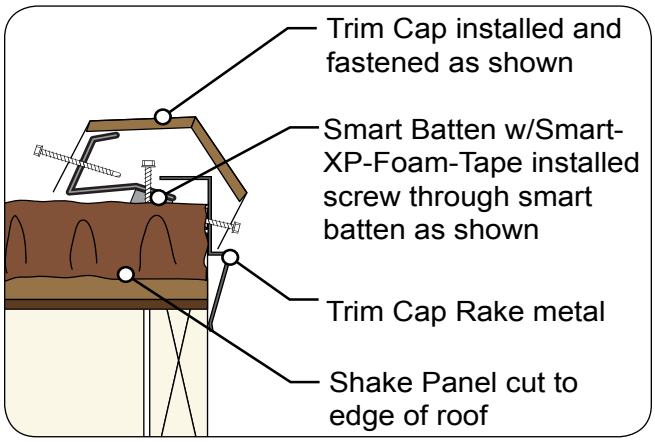


HIP

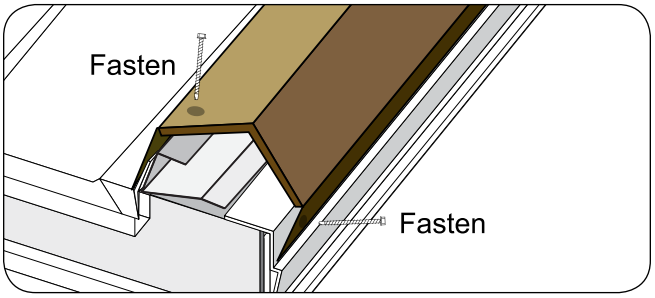


TILE RAKE METAL - TRIM CAPS ON RAKE



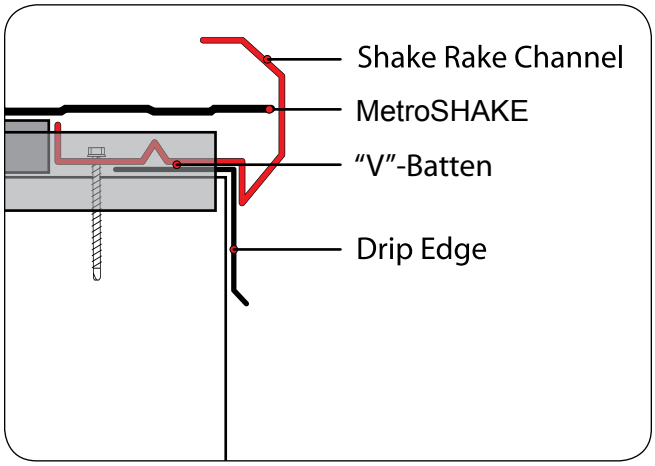


Metro Tile Rake Metal is installed along rake edges as shown. This rake edge metal aids in the alignment of Metro Trim Caps. The Metro Trim Caps install over the rake build-up and folded-up Metro panels.

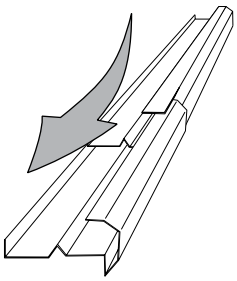


Metro SMART-Batten can be used as an alernitive

RAKE CHANNEL



Install Metro panels over Rake Channel using fasteners placed in the outside channel as shown. If fasteners do not have a sealing washer, apply a bead of sealant around each one. Rake Channel metal is notched to lap at joints a minimum of 2" (50mm)

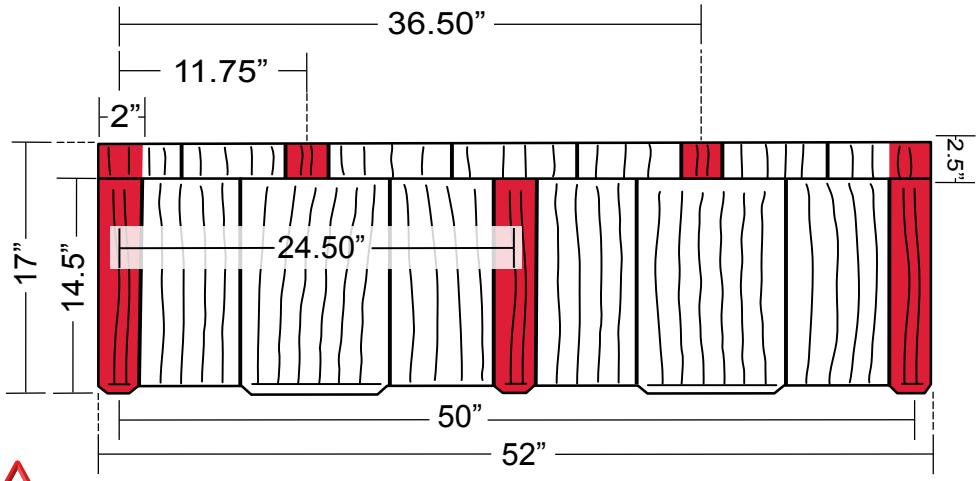


Lap 2" (50mm) minimum to prevent leakage through seams.

PANEL LAYOUT

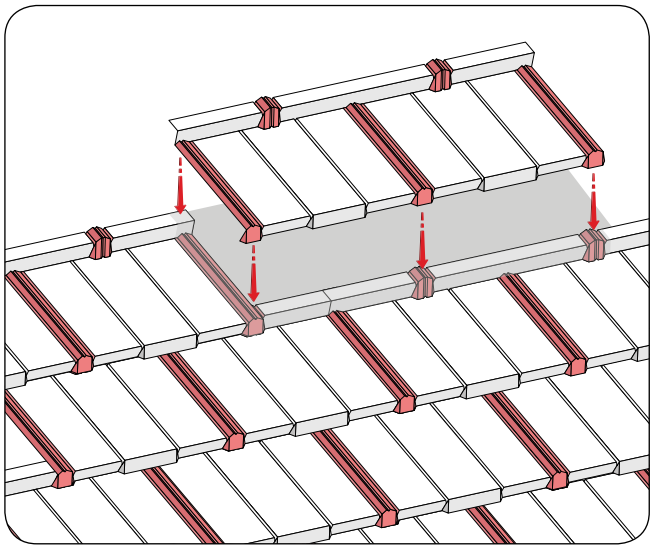
Metro Shake panels have a 2” (50mm) side-lap and two staggered locating points along the back of each panel as shown.

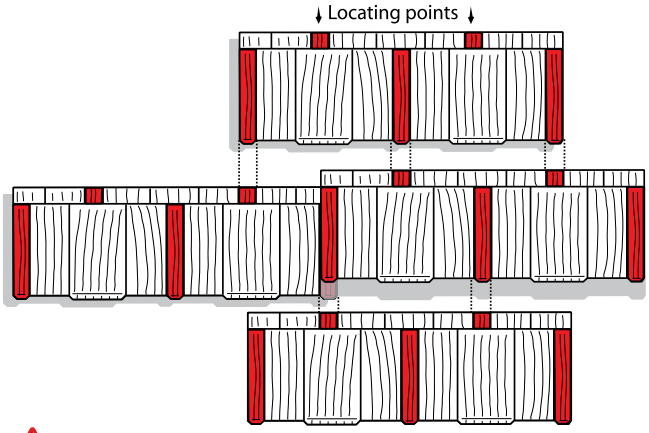
Shake panels are staggered and placed according to their locating points.



Measured from LEFT to RIGHT

MetroSHAKE® panels can be laid left to right or right to left.





Metro Shake panels cannot be straight laid

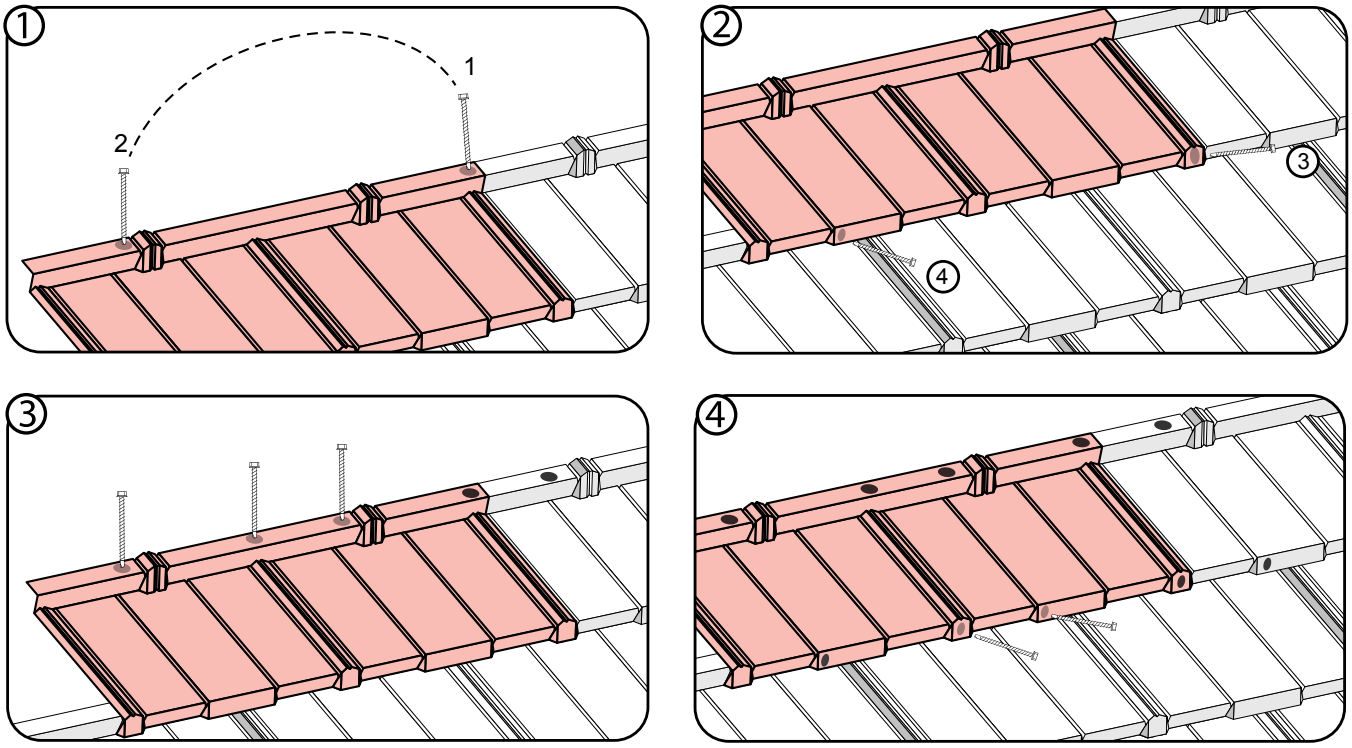
FASTENERS:

Metro panels can be installed with either Screws or Nails as listed below.

- PANEL SCREWS - Tile or Shake Panels #10 X 2-inch long X 1/4-inch HWH (50mm X 6mm)
  Roman Panels #10 X 2-1/2-inch long X 1/4-inch HWH (64mm X 6mm)
- TRIM SCREWS - #10 X 1-inch long X 1/4-inch HWH (25mm X 6mm)
- VALLEY PAN SCREWS - #10 X 1-1/2-inch long X 1/4-inch HWH w/Rubber washer (38mm X 6mm)
- PANEL & TRIM NAILS - .131-inch Dia X 2-3/8-inch long Round Head, Ring Shank Nails(60mm X 2mm)

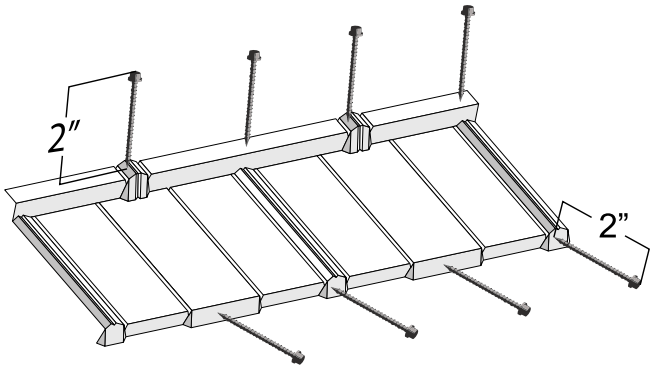
MetroSHAKE®
Batten-less Installation Details

FASTENING SEQUENCE



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

FASTENING LOCATIONS



Refer to Metro's High Velocity Hurricane Zone (HVHZ) fastening details found in Metro's Florida Building Code HVHZ Approval FL-6710 for details.

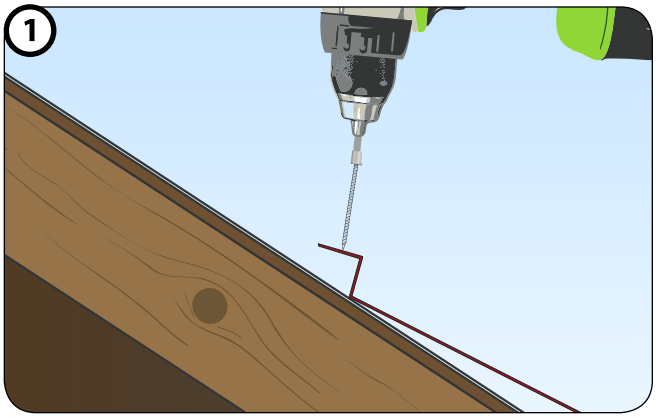
The "Standard" fastening pattern for Metro Batten-Less panels uses fasteners located near each end of the panel across the back flange and four (4) across the front nose down-turn.

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

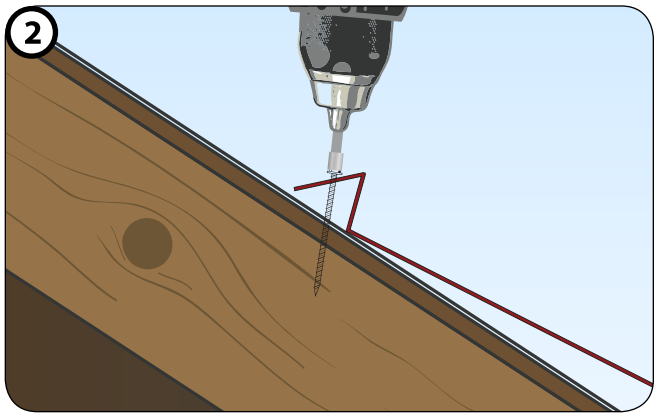
Indicates critical areas of installation

MetroSHAKE®
Batten-less Installation Details

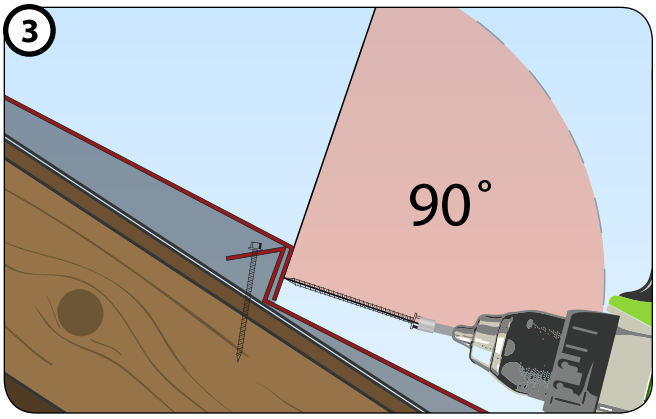
FASTENING BATTEN-LESS SHAKE PANELS - *SCREWS*



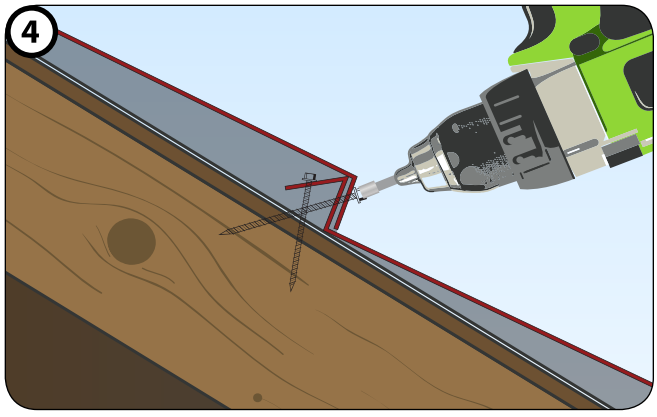
Panel back flange is fastened vertically into roof deck.



Panel back flange is ‘seated’ down onto roof deck.

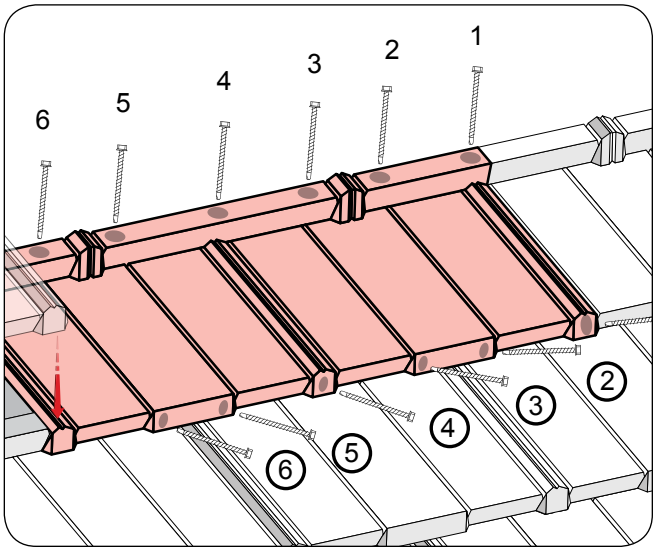


Start fastener at a 90° angle to the panel as shown.



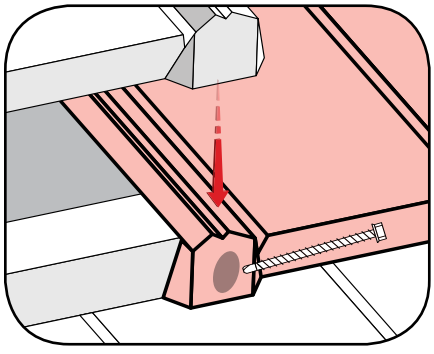
Once fastener has penetrated the nose, angle the screw to penetrate the back up-stand of the panel beneath and into the deck.

FASTENING LOCATIONS



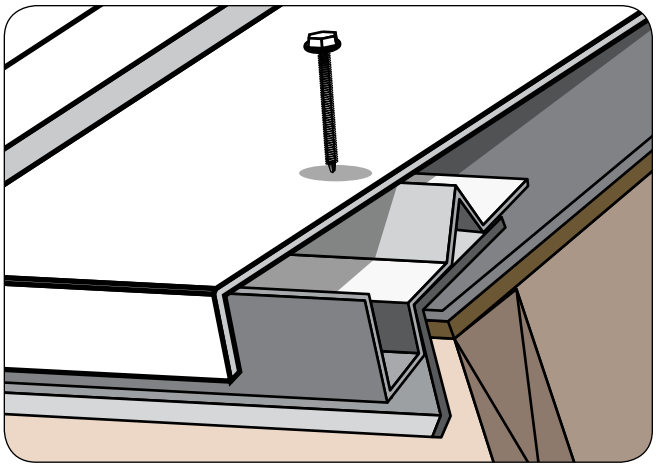
Refer to Metro’s High Velocity Hurricane Zone (HVHZ) fastening details found in Metro’s Florida Building Code HVHZ Approval FL-6710 for details.

panels are laid Right to Left.



Indicates critical areas of installation

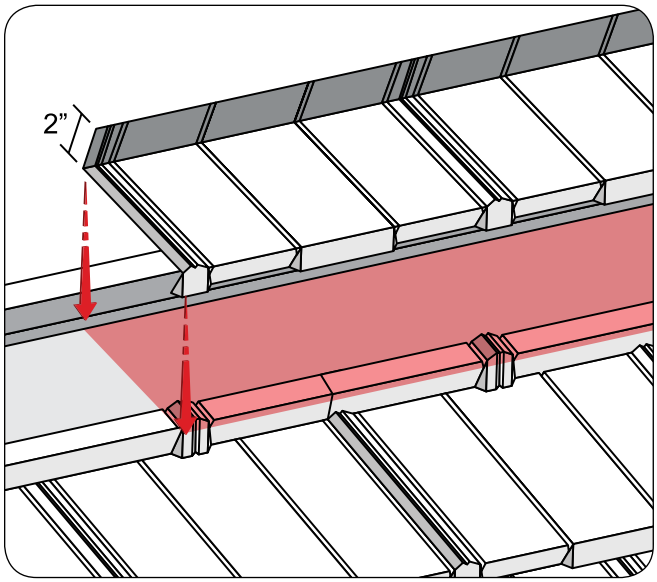
1ST ROW FASTENING

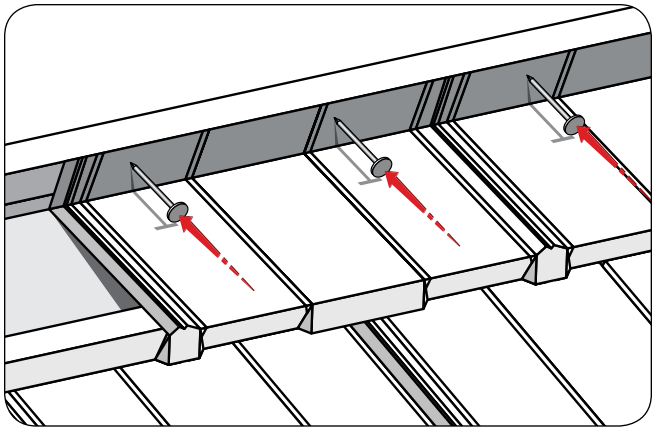


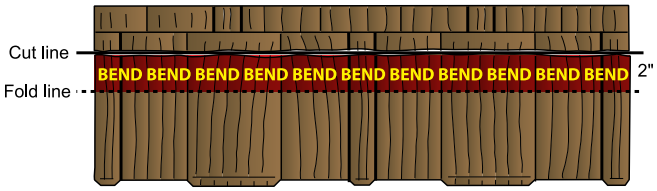
Fasten the First panel course up from the fascia through the top as shown. Top panel fastening is also acceptable behind Metro SMART-vents and chimney/ skylight details as nessesary.

Use the Metro "Touch-up" kit to cover each top fastener.

RIDGE PANELS - BEND UP METHOD (OPTIONAL ALTERNATIVE)





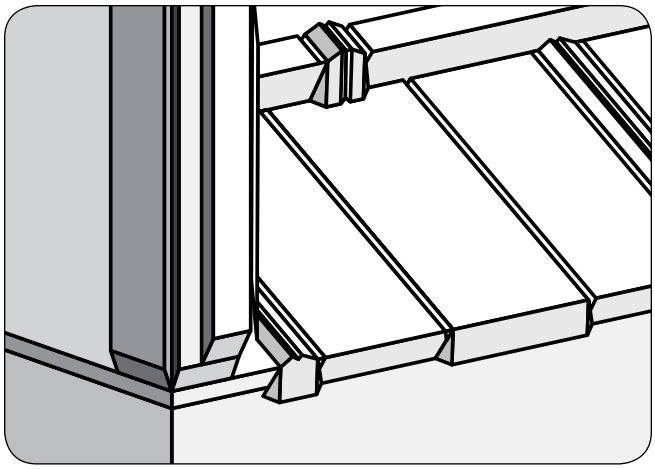


Deduct 1/4" (12mm) from actual measurement to ensure a tight fit.

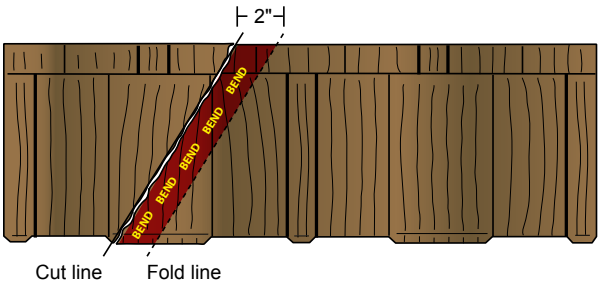
Measure, cut and fold up panels 2" (50mm) beyond ridge line. Install ridge section panels placing additional fasteners through the up turned flange into ridge board as shown.

The cut & bent ridge panels may need to be bowed in the center prior to fastening each end of the panel.

HIP PANELS - BEND UP METHOD (OPTIONAL ALTERNATIVE)



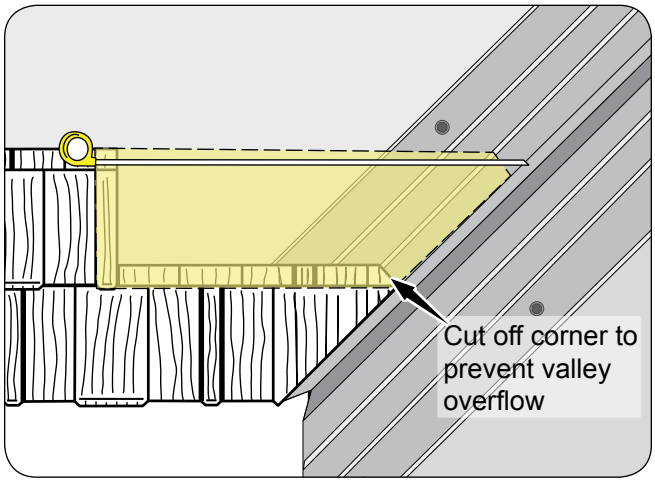
At hips, use either a full panel or a cut section long enough to obtain the hip cut.

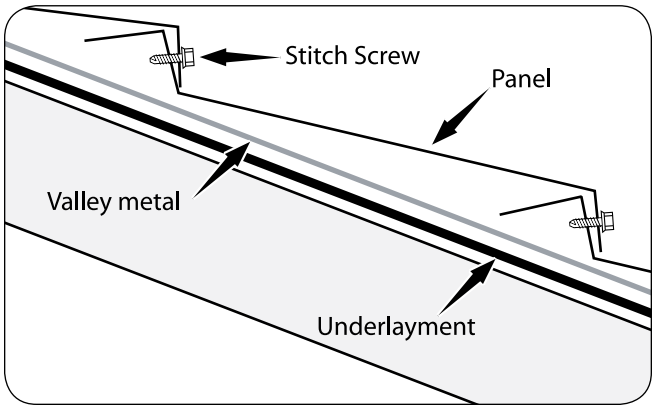


Measure, cut and fold up panels 2" (50mm) at the hip line. Install hip section panels similar to other panels placing additional fasteners through the up turned flanges as shown into hip board.

Always deduct 1/4" (6mm) from measurements for Hip & Ridge cuts to ensure a good fit

VALLEY CUTS WITH CONVENTIONAL VALLEY FLASHING





Measure, mark & cut panels to fit tightly against valley center (reverse 'V'). Fasten valley section panels to roof decking similar to the other panels without penetrating valley flashing.

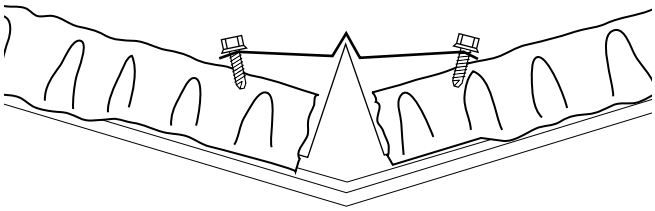
Stitch panels together that lap over valley metal with corrosion resistant screws (#10 X 1-Inch long (25mm) making sure to not penetrate valley flashing.

Valley cut sections can be turned down 3/4" (20mm) into valley pan, for extra rigidity. Better appearance and as an alternative to panel bending at the valley.

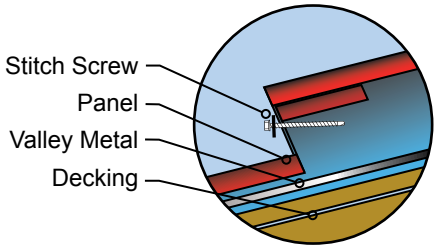
Install a Metro Valley Cover at the center of the valley, lapping each section a minimum of 4-inches (100mm). the valley cover is fastened to each panel course where it intersects the valley.

Start the 1st panel 12-inches (300mm) from the valley edge. This allows the valley cut sections to be securely fastened to the roof deck without penetrating the valley pan. Make sure you do NOT penetrate the valley pan, use small stitch screws (#8 X 1/2-inch long X 1/4-inch HWH (12mm X 6mm) to secure the valley cover.

CLOSED VALLEY



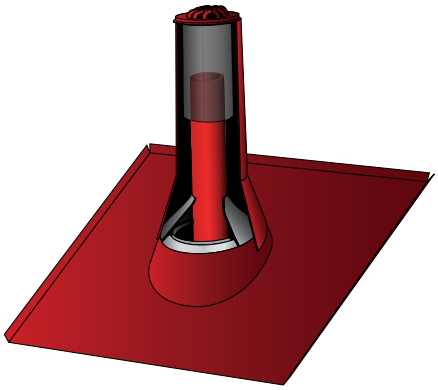
Install Metro Valley Cover metal at the center of the valley lapping each section a minimum of 4” (100mm) the valley cover is fastened to each panel course where it intersects the valley.



Do not penetrate the valley metal, use small Stitch screws to secure the valley cover

OPEN valleys (min-6-inches) between each side of the Metro panels are recommended for areas where trees or others debris may block the valley. This detail facilitates easier periodic cleaning of the valley pans.

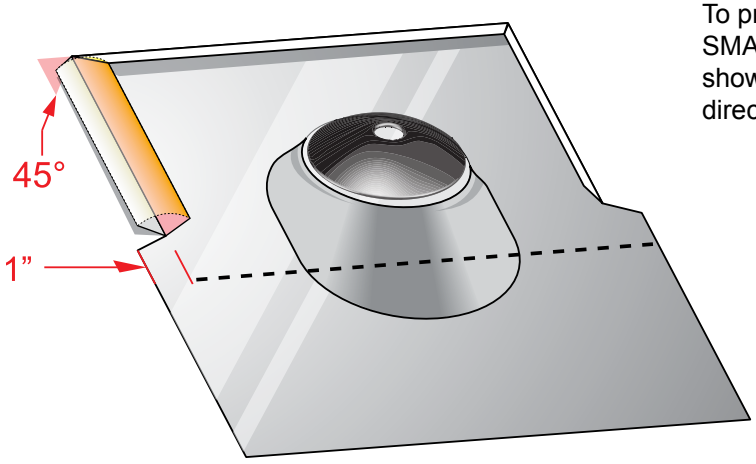
3-IN-1 SMART-JACK



The Metro 3-in-1 SMART-jack is a moldable stone-coated roof flashing that can be used with most roof vent pipes, 1” to 3” in. (25-76mm) dia. Apply sealant under 3-in-1 SMART-jack for additional weather security.

If a particular vent location prevents a rear upturned fold with a 3-N-1 SMART-Jack, the Metro “Sandwich” method should be utilized.

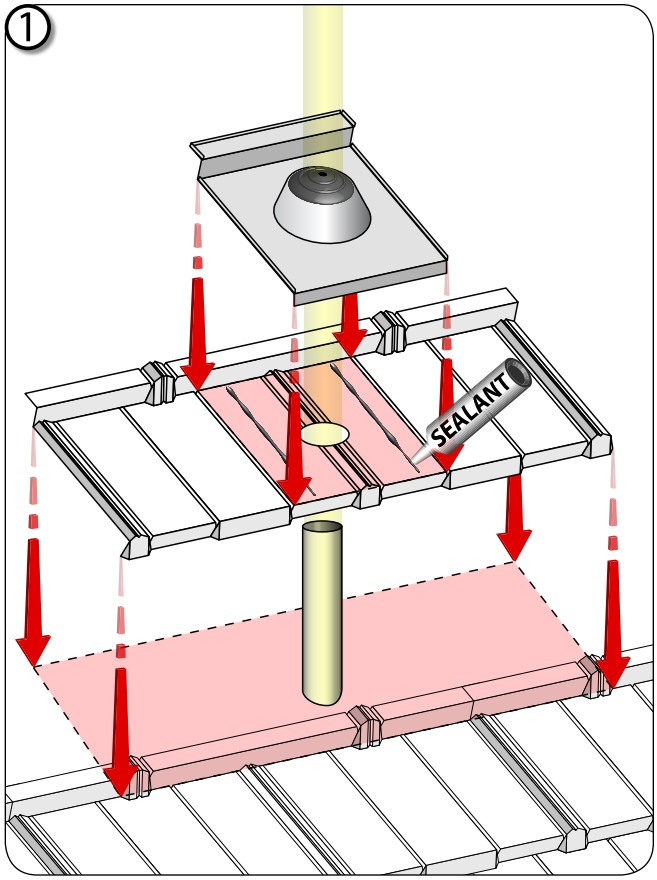
SMART-JACK PREPARATION



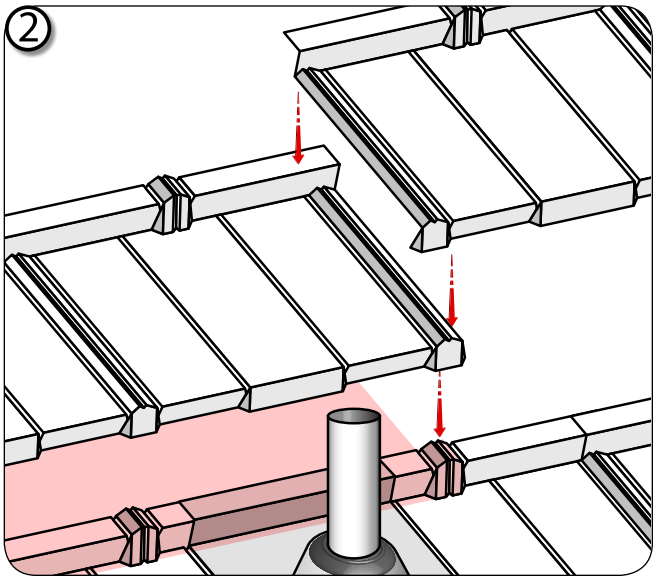
To prevent weather infiltration the edges of the SMART-Jack flashing should be folded/bent up as shown to channel any moisture onto the flashing and directed towards the lower panel.

Dotted line represents pipe penetrating through the course line, requiring SMART-Jack to be positioned between upper & lower panel courses.

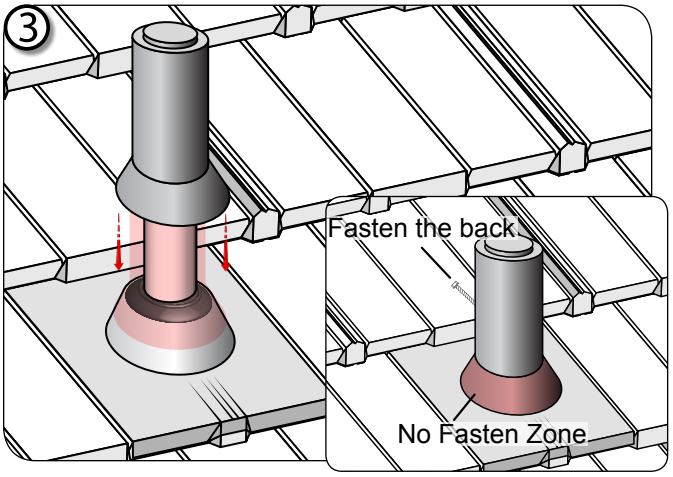
PIPE FLASHING - SMART-JACK & SMART-SLEEVE METHOD



Cut a pipe sized hole in the covering panel. Install covering panel and apply a bead of sealant on each side and around the hole of the pipe as shown. Slide the SMART-Jack flashing over the pipe and seat it into the sealant. Conform the SMART-Jack Flashing to the panel contours.



Install subsequent course above the SMART-jack flashing.

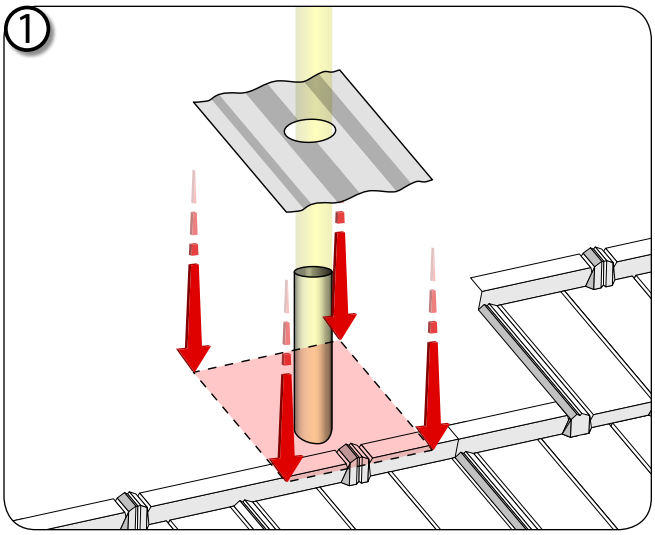


For added protection and appearance, SMART-sleeves are cut to conform to the panels and installed over pipes. SMART-sleeves are fastened with a screw through the back of the SMART-sleeve into the pipe.

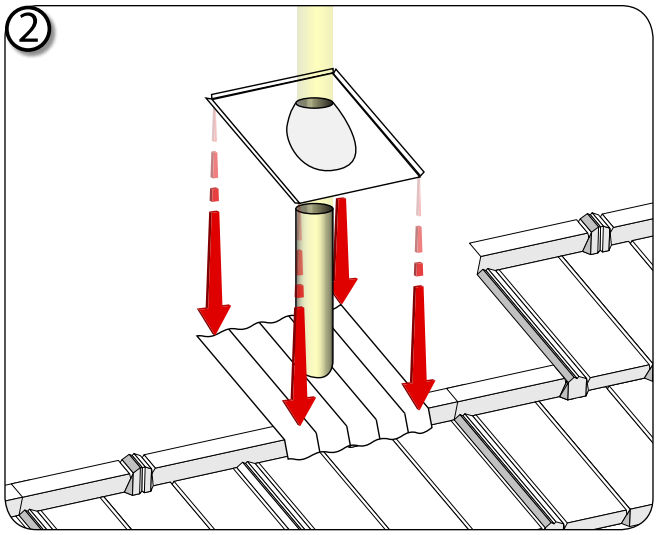
Dissimilar Metals

To avoid adverse corrosion effects caused by dissimilar metals, COPPER and LEAD flashings should not be used with Metro roof products and accessories

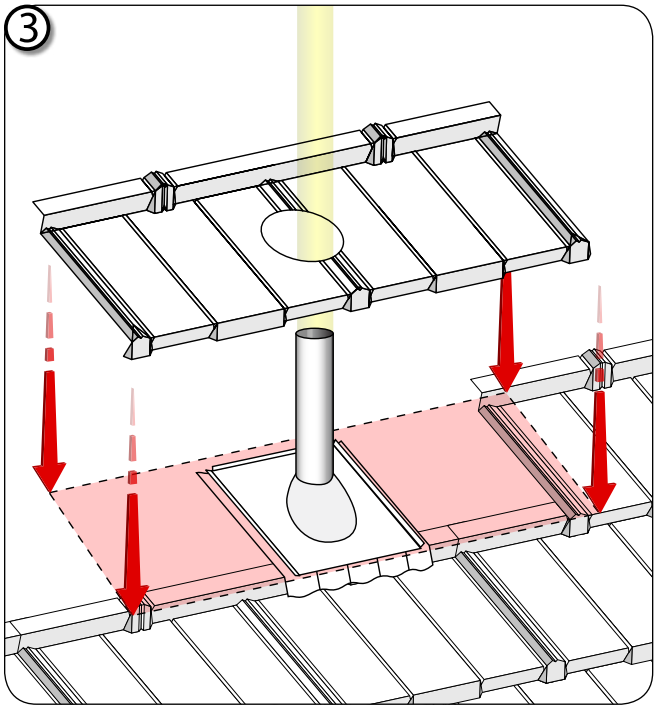
PIPE FLASHING - UNDERPAN SANDWICH METHOD - SMART-JACK



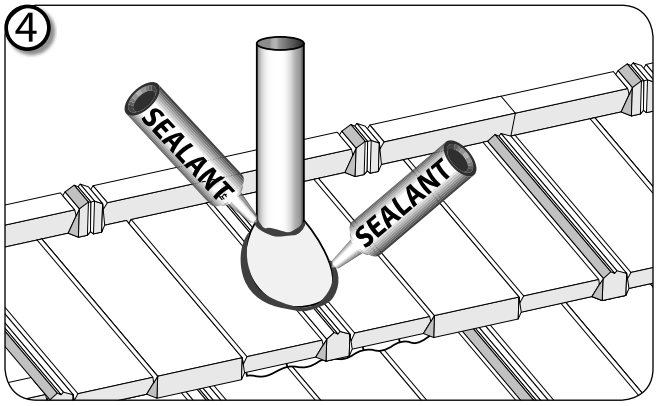
Cut 'Under-Pan' flashing around Vent Pipe as shown. Bend front edge of 'Under-Pan' over rear of under lapping panel.



Install pipe flashing over 'Under-Pan'.

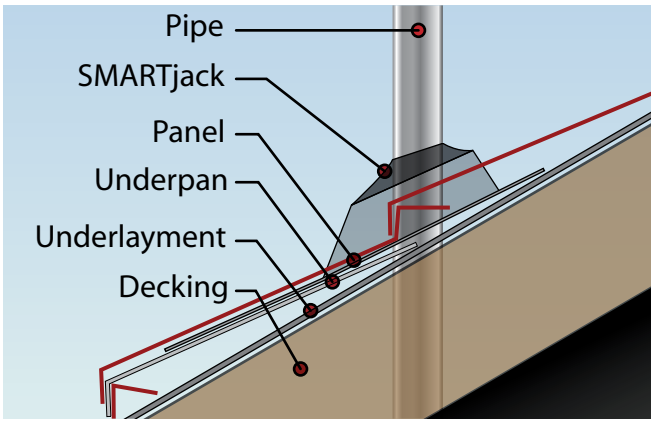


Cut a hole in the covering panel to fit the cone of the Pipe Flashing.



Seal Vent Pipe around bottom of cone and around pipe flashing as shown.

Fasten SMART-Sleeve with screws through the back of the sleeve into the pipe. DO NOT fasten into the raised SMART-Jack base.

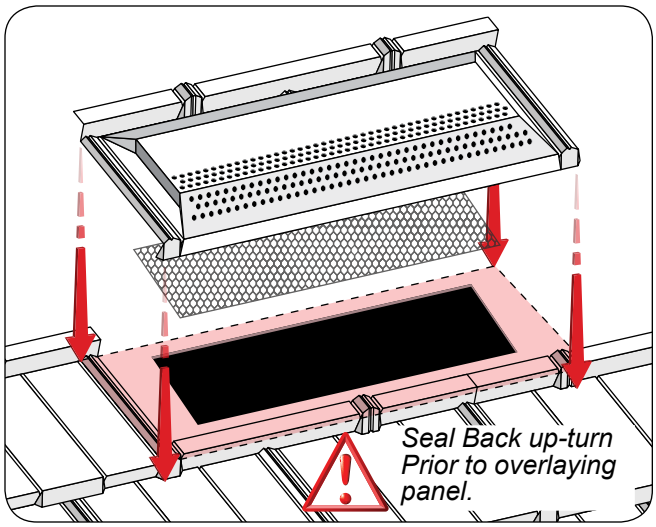


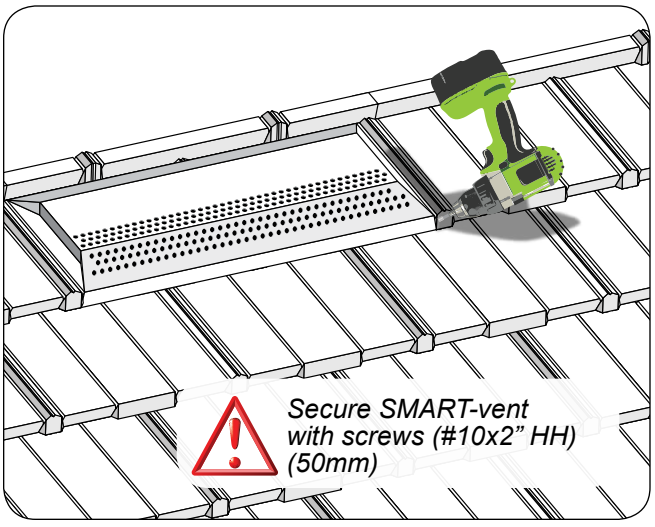
Dissimilar Metals

To avoid adverse corrosion effects caused by dissimilar metals, COPPER and LEAD flashings should not be used with Metro roof products and accessories

SMART-VENT - BATTEN-LESS SHAKE-II

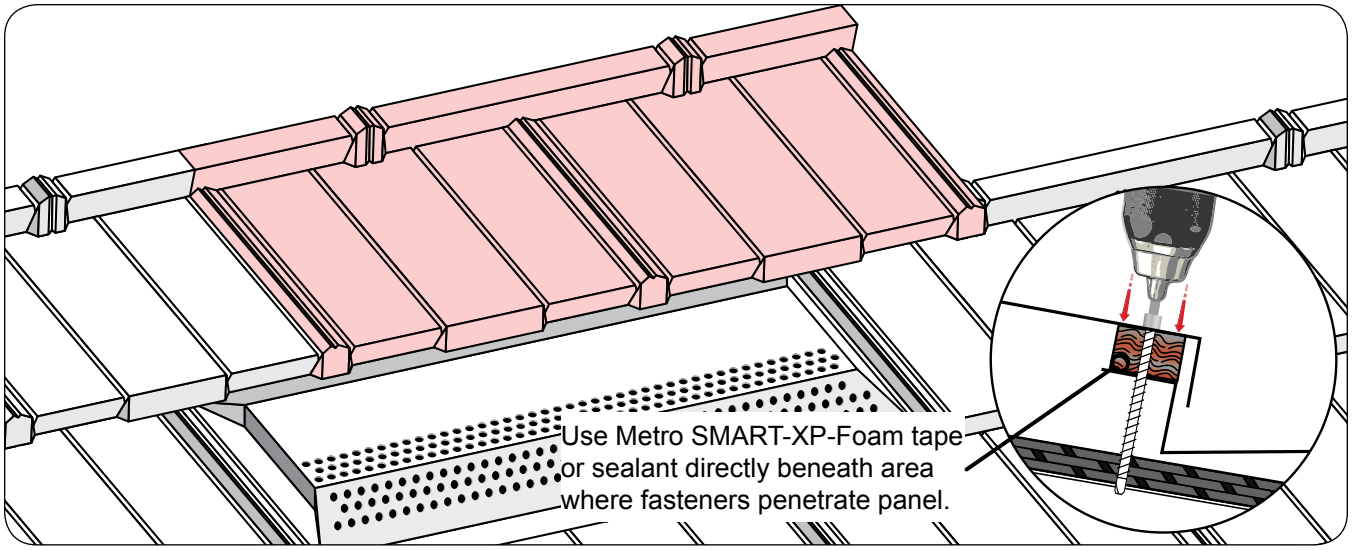
Metro SMART-vents are used in place of regular panels on the first full course down from the ridge where ventilation is required. The vents are installed similar to panels after cutting ventilation hole in decking (approximately 8" x 30"). A Metro SMART-vent provides approximately 82 sq. inches of Net Free Vent Area (NFVA). care should be taken to adequately ventilate the building. Building codes require a minimum NFVA of 1/300 the area of the space to be ventilated (attic).





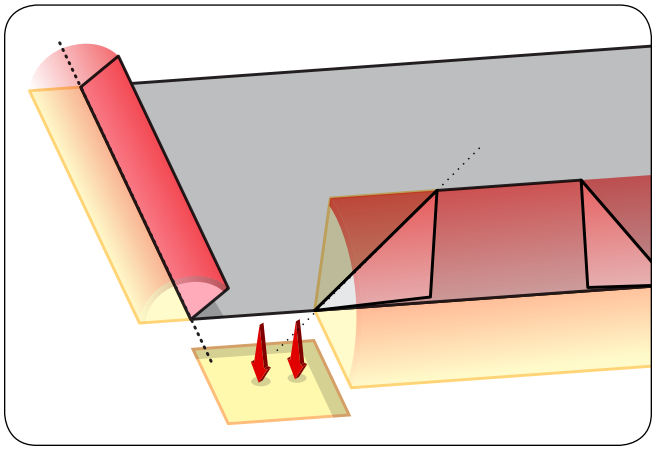
To prevent rodents and other vermin from entering attic space, the roof deck ventilation hole should be covered with 1/4" wire mesh.

Always check local codes and verify adequate intake ventilation to ensure SMART-Vents are exhausting air.



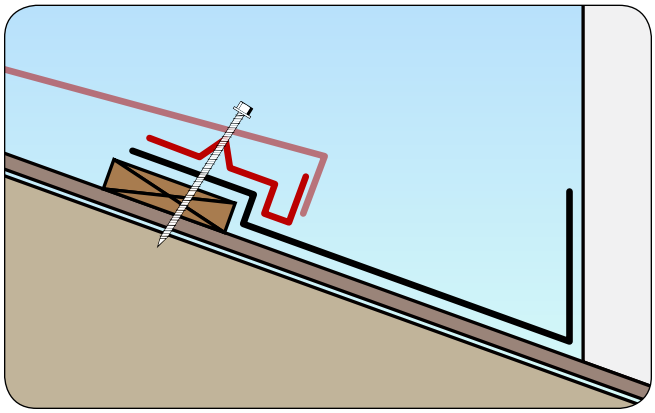
Top panel fastening is acceptable behind Metro SMART-Vents, Chimney's & Skylights as long as they are positioned out of the main water channels on the high ribs of the panel. Fasteners may be covered with material from a Metro Touch-Up Kit.

CHIMNEYSADDLE PREPARATION



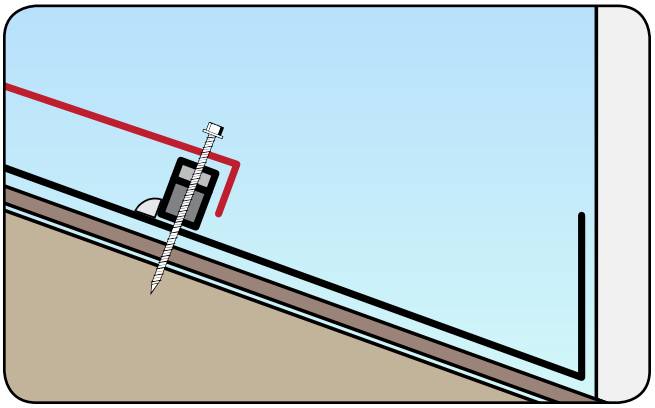
Chimney saddle is cut and folded as shown to deflect water from the chimney.

CHIMNEY FLAT-STOCK PREPARATION



Use a V-Bat Riser Metal piece as shown to elevate the panel to the correct roof plane height. Fasten as shown with the panel nose being fastened into the V-Bat Riser.

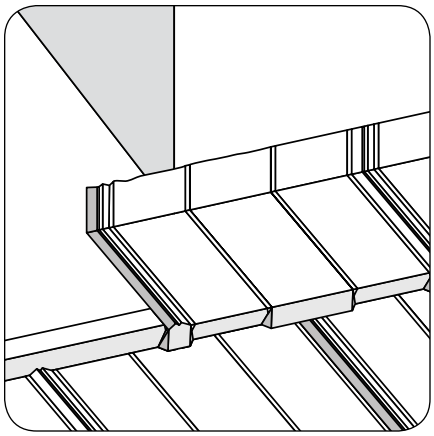
CHIMNEY FLAT-STOCK W/ FOAM CLOSURE



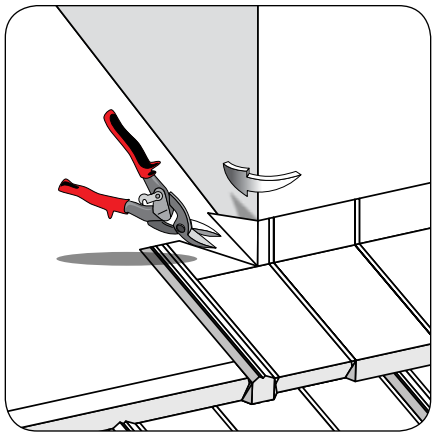
Position the Metro SMART-XP-Foam tape and fasten as shown above. NOTE: Metro Touch-Up Kits can be used to cosmetically coat the panel top fasteners, touch-up kit should not be used as the primary sealant.

CHIMNEY / SIDE-WALL / HEADWALL

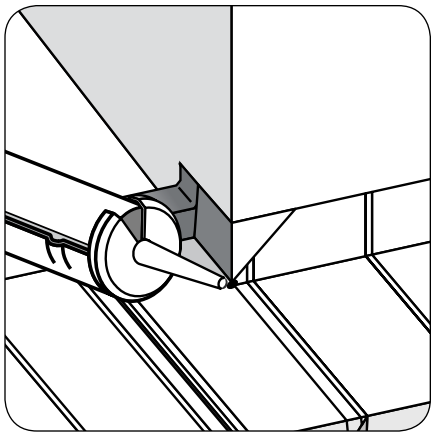
The following details apply to any square cornered protrusion through roof.



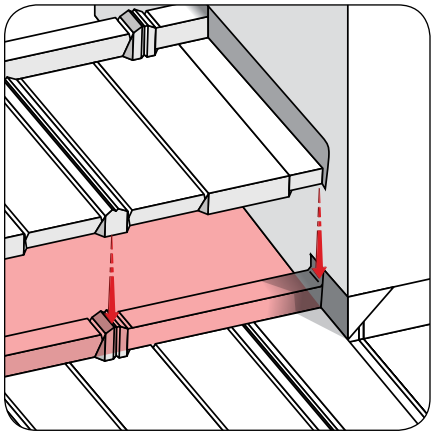
Measure, cut, and fold up panel 2” from the back of the panel to the front of protrusion.



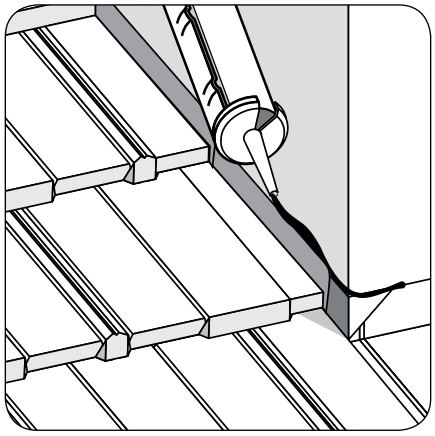
Cut a 45 degree angle as shown and fold tabs around protrusion.



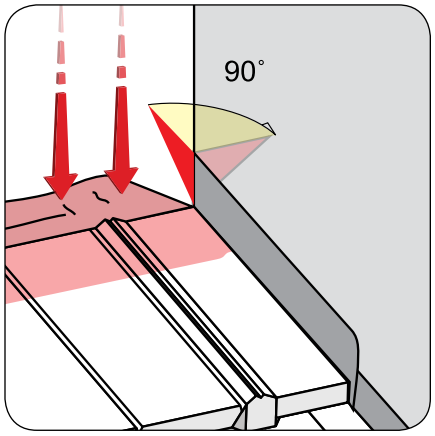
Cut and fold up panels 2” at sides of protrusion.



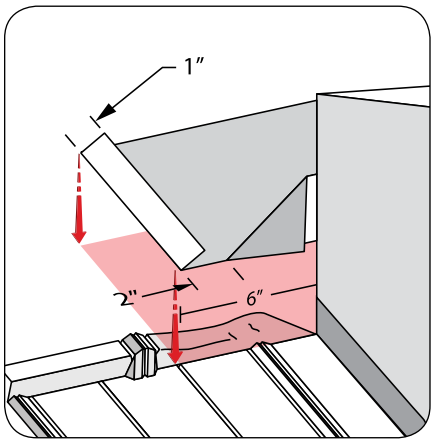
Install subsequent panels with a 2” bend up against the protrusion.



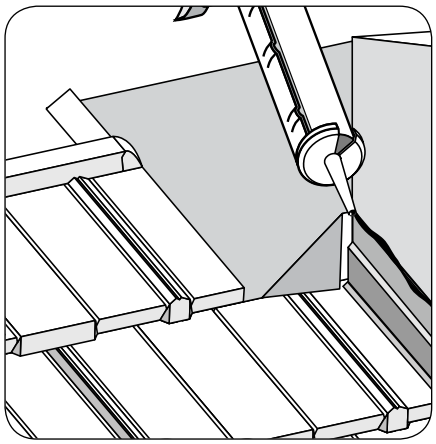
Seal around perimeter of folded panels prior to fastening to the protrusion.



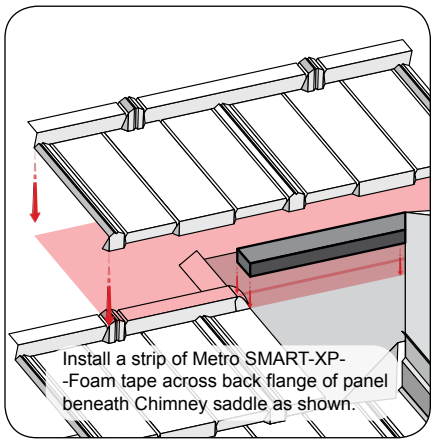
Flatten the back flange of the panel intersecting the top of the protrusion.



Install chimney saddle metal at back of chimney as shown. Extend Saddle metal a minimum of 4” past each side of protrusion.

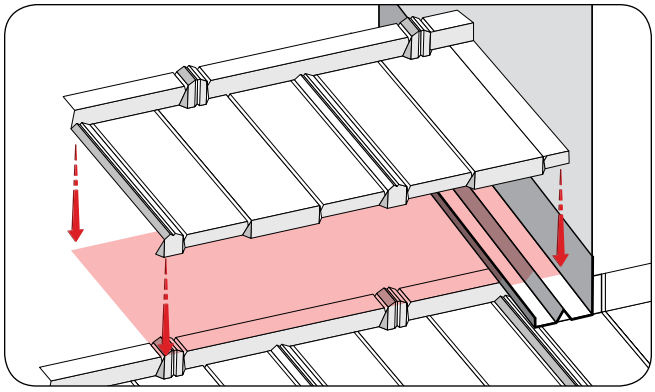


Install and seal ‘Z’-bar flashing metal over folded sections as shown.



For added protection install a foam weather block under the panel over-lapping the saddle.

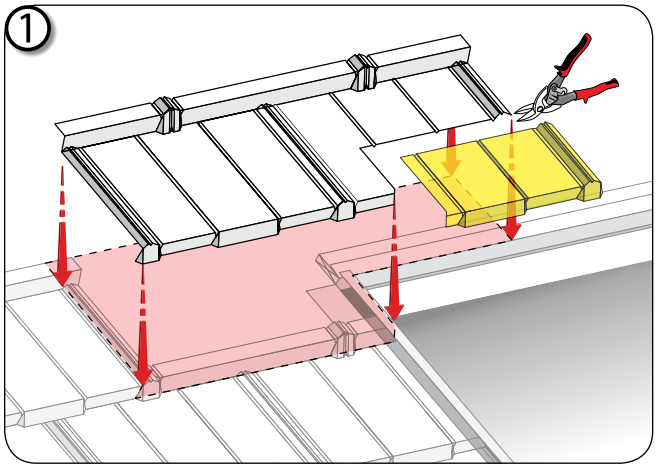
SIDE-WALL UNDER-PAN METAL



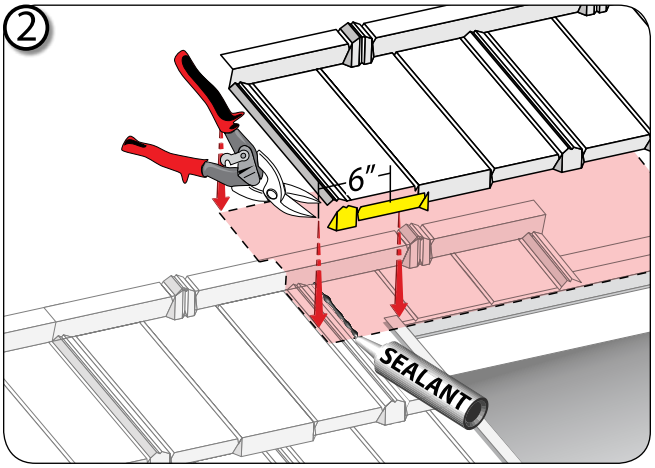
An alternative to folding panels up against walls, an “Under-Pan” metal can be installed next to the wall and behind an existing wall flashing. Metro Counter-Flashing metal or standard Z-Bar metal can be utilized to assist with weather-proofing where the wall flashing metal is needed.

Fold up nose of panel where under-pan metal exits onto lower panel.

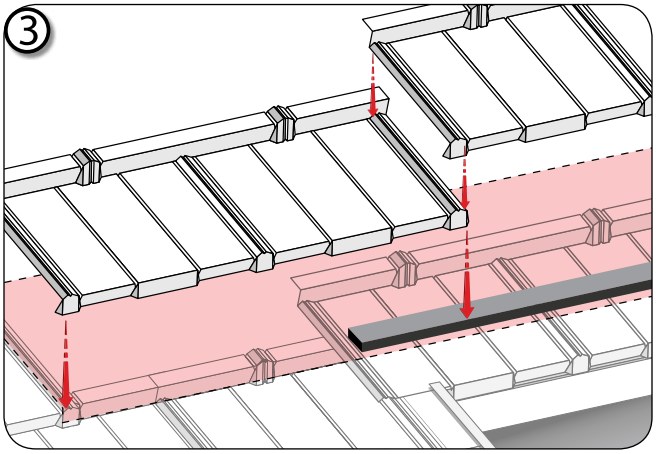
SHORT COURSE



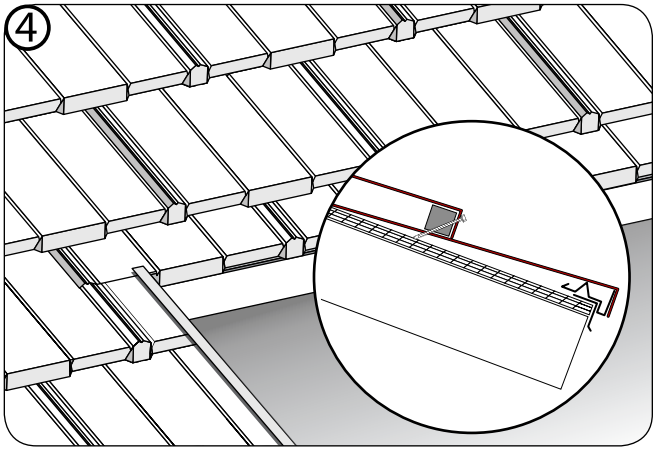
Cut the overhanging portion of the panel where it intersects with the stepped fascia as shown.



Lap over the first cut-panel with a new full panel and cut & remove the section as shown.



Apply either a bead of sealant or a strip of Metro SMART-XP-Foam tape along the top surface of the lower panel, just behind the dotted course line.

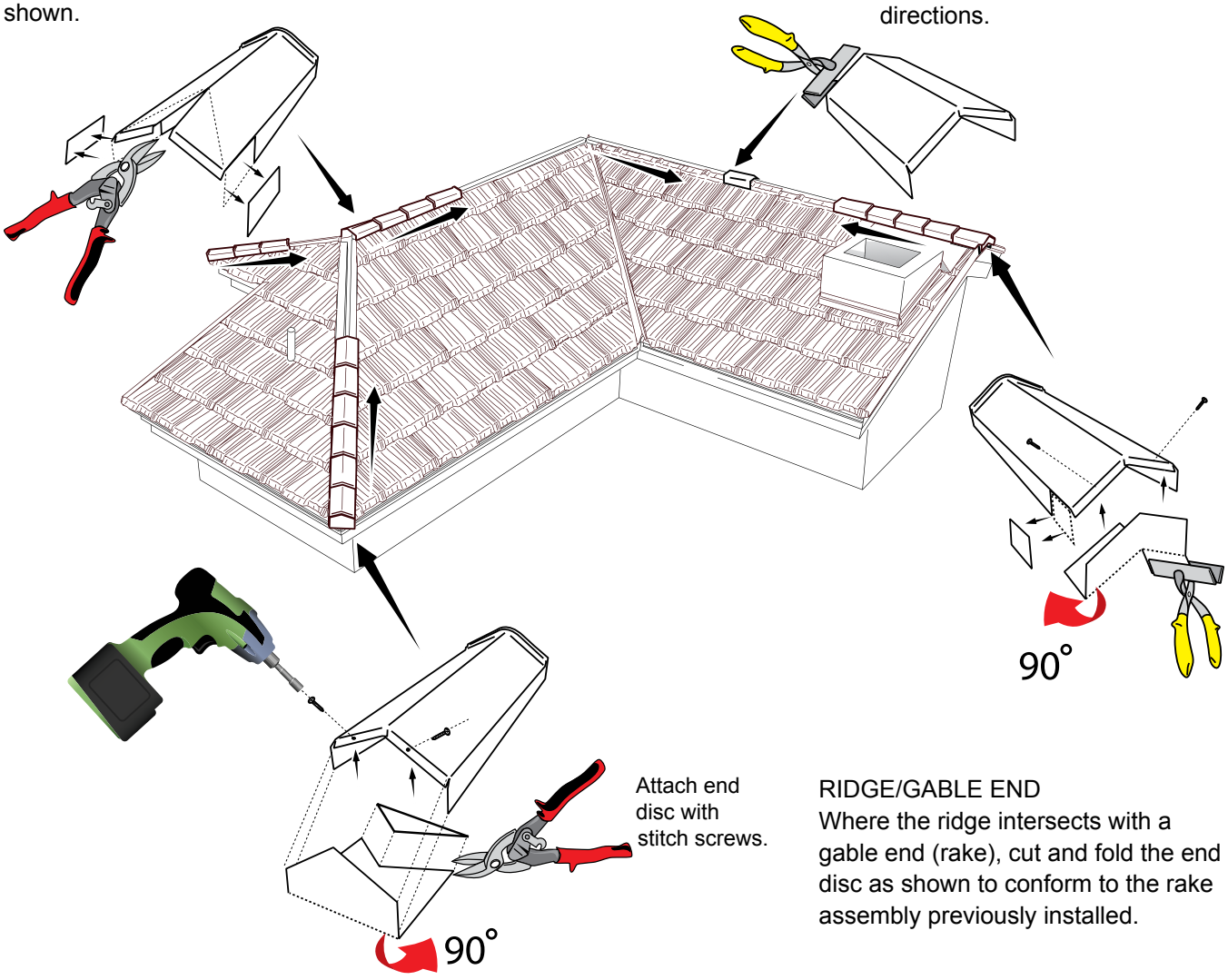


Finished slip-course detail with all parts in place

TRIM CAPS

HIP/RIDGE INTERSECTION
Install hip caps from the bottom using 2 fasteners per trim cap. Overlap trim-caps at hip/ridge intersection. Cut and fit the ridge cap over both intersecting hip caps as shown.

RIDGE CENTER CAP
At the center of a ridge line, a small/short ridge cap as shown can be made be made from a full Metro Trim Cap piece where trim pieces meet form different directions.



Attach end disc with stitch screws.

RIDGE/GABLE END
Where the ridge intersects with a gable end (rake), cut and fold the end disc as shown to conform to the rake assembly previously installed.

HIP CORNER
Notch & fold the end disc as shown to form a closed 3-dimensional end cap. Fit end disc to bottom hip corner with stitch screws. Install trim caps up the hip from the fitted hip-end piece. fasten trim caps on both sides of hip battens.

After installing trim-caps at intersections, seal cut edges and apply Metro basecoat and stone chip to provide a complete stone coat finish.