INSTALLATION DETAILS

INSTALLATION WARNING!
These installation 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 & 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 roof environments.

Metro recommends installers of its products use a Metro Installation Kit (1-Cutter, 1-Foot Bender & 1-Foot Bender Attachment) and to have completed a ‘SMART-Start On-Site Installer Training Orientation Program’ (http://metroroofs.com/SmartStartTraining.cfm) for each profile they attempt to install. Metro does not consider its products to be a “Do-it-Yourself” (D.I.Y) product, mainly due to the need for specialized cutting & bending tools used during installation.

SPECIAL NOTICE:
These instructions shall serve as acceptable install details for all Metro panels installed using a batten system.

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INSTALLATION DETAILS
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These Installation Details are provided to demonstrate the recommended installation method for Metro Roof Products and accessories.

The details and information shown in this document reflect current roofing practices used in the United States. Consult Metro Roof Products for additional information.
MetroTile

Underlay/Preparation

MetroTile panels are installed on new or existing roofs pitched a minimum of 2-1/2:12 (12 degrees). An underlayment is to be installed as per local code and manufacturers instructions. Ice and Water Shield should be installed per product application instructions in areas where icing may occur.

Panel Battens only

Panel battens are installed parallel to the ridge/fascia spaced 14 1/2" o/c. Position the first batten flush with the fascia or batten Buildup. The second batten is positioned 14" to allow adequate overhang at the fascia for gutter/water shed from the roof.

Valley battens are spaced to accommodate the valley metal.

Use 2"x2" ridge battens or double stack 1"x4" pcs. to provide 1-1/2" fold-up height for hip and ridge pcs. Hip battens are installed directly on top of each intersecting panel batten, so panel hip cuts can be fitted against hip battens. Space 5" apart.

Ridge Battens

Panel batten spacing is critical because the rear of each Metro panel must fit snugly against the batten.

Wood panel battens can be 2"x2", 1"x3" or 1"x4". Consult Metro regarding approved steel purlin sections.

⚠️ Panel batten spacing is critical 14 1/2" o/c to allow panels to fit properly on each course.

1"x4" or 1"x3" panel battens are recommended at the roof edge. Fasten into supporting framing members as per code and Metro ‘High Wind’ instructions.
Counter Battens

Counter battens (1"x4") are used when roofing over uneven surfaces or where a cold roof installation is desired.

When reroofing over wood shingles or shakes, the existing roof is cut back around the perimeter to allow a buildup of 1"x4", 2"x2" or a combination of both, to provide a solid nailing foundation. The wood buildup conforms to the underside of 1"x4" counter battens on top of the existing roof. Consult local codes for other specific requirements.

Position 1"x4" counter battens approximately 24" o/c directly over the rafter. Fasteners must penetrate 1" into or through the roof framing members and be placed 12" o/c.

Fascia Metal

Fascia metal is available in either 3 1/2" or 5" face widths to cover the build-up of new lumber at the fascia and to act as a metal drip edge.
Valley Metal

Position the valley metal between the battens and scribe the valley profile onto the fascia metal. Cut the fascia out to allow the valley to exit the fascia. Valley metal should extend a min of 1" past the fascia.

Tile Rake Metal

Install MetroTile Rake metal along the rake edges as shown. This metal edging aids in positioning Metro Trim caps neatly. Adjust the position of the tile Rake metal so it rests on the wood buildup. The Metro trim Caps should cover the buildup and the folded down Metro panel as shown.

Panel Layout

Interlock each panel using the pre-set 2" side-lap (see ill). Lay full panels from the top (1st full course from the ridge) down to the fascia. Tile panels may be laid either left to right or right to left.

Always stagger MetroTile panels 1-2 "pan" modules to eliminate the negative visual effect of continuous side-laps.
Nailing

Each Metro panel is fastened with a minimum of 4 fasteners as shown (see ill). They are positioned along the nose of the panel, 1” away from the water groove and angled to gain good penetration into the panel batten.

Valley Panels

After full panels are laid out, remaining areas are filled in by measuring, cutting, and bending panels to conform with roof geometry. Metro panels can be shaped to create either an open or closed valley detail.

Record the top and bottom measurement of each valley panel as shown, and sequentially record the measurements for each course of panels. Apply these dimensions to full or cut panel sections and scribe a line to form the diagonal cut and bend lines as shown. Allow for an approximate 2” bend down as shown. Metro Panels are cut and bent as shown to finish valley detail.

Hip Panels

Hip cuts are measured, cut and bent in a similar way to valleys. Each hip panel is bent up 2”, installed, and nailed against the hip board.

⚠️ When recording hip cuts always deduct 1/4” from actual measurement.
Rake

Bend Panels over, onto the previously installed Tile Rake Metal as shown.

Ventilation

Metro SMARTvents are fully integrated into all Metro panel profiles. They provide a full 82 sq inches of net free vent area (NFVA) per panel and are easy to install into a field of panels.

Building codes require that the NFVA be no less than 1 to 150 of the area of the space to be ventilated (attic). Proper ventilation includes sharing the open vented space between the eaves and ridgelines of the building.

Position SMARTvent panel and cut a hole in the underlay and sheeting to provide ventilation.

Fit new Metro SMARTvent into roof field, lapping and installing like Metro panels.
Side-head Wall/Chimney/Skylight

The following details apply to any square cornered protrusions through a roof.

1. Measure, cut, and fold up panel 2" from the back of the panel to the front of chimney.

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

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

4. Cut and fold up panels 2" at sides of protrusion as shown.

5. Seal around perimeter of folded panels prior to attaching them to chimney.

6. An alternate flashing method is to use side-wall Underpan metal as shown. This can then be counter flashed using the Metro Counter flashing metal or standard 'Z'-bar metal weather-proofed over the up stand of the side-wall underpan metal.

7. Seal under the saddle metal where it overlaps the panels.

8. Install and seal 'Z'-bar flashing metal over folded sections as shown.

For severe weather conditions, the 'Z'-bar can be scribed into the chimney.

Fold up nose of panel where underpan metal exits on top of field panels below.
Ridge Panels

1. Fasten one end of the cut ridge panel nose as shown.

2. “Bow” the panel at the center, and align the panel with correct interlock location at the other end of the panel and fasten.

3. Push the ridge panel down against the lapped panel and and fasten.

The top course of panels requires a cut and bent panel to complete the ridge line.

Bend all ridge panels using Metro’s top bender.

The following steps should be followed to ensure a weather tight installation along the ridge.

Never cut the ridge panels before bending as they deform slightly in the bending process and are difficult to install. Deduct 1/2” from these measurements and apply to full panels. Mark both bend and cut lines for each panel.
The Metro 3-in-1 SMARTjack is a moldable stone-coated roof flashing that can be used on most roof vent pipes, 1” to 3” in. dia. Apply sealant under 3-in-1 SMARTjack to keep it secured to panel beneath.

⚠️ If vent location prevents SMARTjack 3-in-1 from being able to fold up and over the panels back flange, use the Metro ‘Sandwhich’ method.

Pipe Flashings - Sandwhich Method

1.

Cut ‘Under-Pan’ flashing around Vent Pipe as shown. Bend front edge of ‘Under-Pan’ over rear of under lapped panel.

2.

Install pipe flashing over ‘Under-Pan’.

3.

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

4.

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

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.
Short Course

When a step or jog in the fascia is encountered, usually a "short course" of panels is required.

Install short course panels following a similar process to ridge cuts.

Measure from the fascia to the short course batten and apply to a full panel. Bend up panel creating the std. 1" upturn.

Install as regular panel.

Install remaining panels of the full course.

Seal the seams.

Always select the shortest length of "short course" to create your cut and bend process sections.
TRIM CAP DETAILS

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 where cap pieces arrive from different directions.

RIDGE 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 and install balance of trim caps up the hip. Nail each cap on either side of hip boards.

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

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

Metrotile Installation
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Materials & Accessories:

- **MetroTile**
  - 52" x 16.5"  
  - 5.5 lbs.  
  - 20 per square

- **Barrel Cap Trim**
  - 14.5" x 6"  
  - 1 lbs.

- **Trim End Disc**
  - 6" x 4"  
  - .15 lbs.

- **MetroTile SMARTvent**
  - 52" x 14.5" x 3.5"  
  - 10.5 lbs.  
  - Net Free Vent Area 82.5"

- **5" Fascia Metal**
  - 79" x 5"  
  - 3.75 lbs.  
  - Stone Coated

- **'Z'-bar Metal**
  - 79" x 2.5"  
  - 3.5 lbs.  
  - Stone Coated

- **3.5" Fascia Metal**
  - 79" x 3.5"  
  - 2.5 lbs.  
  - Stone Coated

- **7" WV Valley 120°**
  - 120" x 7"

- **Tile Rake Metal 120°**
  - 120" x 2" x 1.75"  
  - 2.1 lbs.

- **2.5" Counter Flashing**
  - 79" x 2.5"  
  - 3.3 lbs.  
  - Stone Coated

- **Chimney Saddle**
  - 60" x 16"  
  - 6.75 lbs.

- **Side-Wall Underpan metal**
  - 120" x 4"  
  - 5 lbs.

Other Items Needed:

- Caulk (sealant)
- Drill
- Metal snips
- Screw Gun
- Metro Cutter (optional)
- Nail gun
- Roofing nails (ring shank)
- Roofing felt
- Hammer
- Hand benders
- Tape measure
- Caulking gun

General:

- MetroTile panels are produced from Aluminum-zinc alloy coated steel complying with ASTM A792.

Testing:

- MetroTile panels have been tested according to the toughest Building Code Standards. 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.

Warranty:

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

Packing and Storage:

- A pallet of MetroTile panels contains 20 squares. Care should be taken to store MetroTile panels and accessories. They should be placed under a tarp, or placed in an area free from moisture and debris.

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)

Ventilation:

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

Finish coating:

- Minor scuffing of MetroTile panels can be repaired with a Touch-Up kit from Metro Roof Products. Use the Metro adhesive (not caulkign).
- Unfinished flashing materials can be painted with durable acrylic aerosol paints. Colored aerosol paints should never be sprayed on panels or accessories made by Metro Roof Products.

Roofing felt:

- Unless local conditions require otherwise, either one layer of Type 30, or two layers of Type 15 lb.
- roofing felt or equal should be used with MetroTile panels.

Roofing nails:

- Corrosion resistant .131" dia. x 2" long ring shank roofing nails are used to attach Metro roof products and accessories.

Sealant/Caulking:

- Only exterior grade urethane or (non-acidic) sealant should be used. Only use Metro Repair-kit (basecoat) to apply stone chips.

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? Indicates critical areas of installation

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