TEFUTE®
ROOFING TILE

Tefute Stone Coated Roofing

Installation Manual

(Batten System)

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website: www.tefuteusa.com
phone: 909-673-1399

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Stormetal ® Stone Coated Steel Roofing

INSTALLATION MANUAL

Introduction

This installation manual serves as a guide for properly installing Tefute Stone Coated Steel roofing systems for Wood-Shake, Roman, Bond, Classic, Roman II, Shingle and EverTile Profiles. The materials and methods outlined are designed to preserve the roofing system's integrity and longevity. Adhering closely to these instructions and following the manufacturer's specifications is crucial to maintain the coverage of the manufacturer's limited warranty. While this manual does not cover every aspect of roofing installation, the quality of the installation largely depends on the workmanship of the roofing contractor. Despite the variability in roof shapes and individual installations, the general steps and processes described here are universal.

Required Tools:

- **Safety Equipment:** Full body fall-protection harness, roofing helmet, work gloves, and protective eyewear are mandatory for installer safety. Wear soft-soled shoes or boots to avoid scuffing panels and improve grip.
- **Cuter and Bender:** Line cutters and specialized bender tools can be used to make precise cuts along panel ribs or ridges and to accurately form or hem metal edges for flashings and custom fits.
- **Cutting Tools:** Tin snips for cutting panels, and a metal-cutting shear or circular saw with a metal-cutting blade for long cuts. Avoid using high-speed abrasive grinders or carborundum blades, as these can overheat and damage the zinc-aluminum coating on the steel, leading to premature corrosion at cut edges.
- **Drill/Driver:** A cordless electric drill or impact driver with adjustable torque. Use a 1/4” hex drive bit to drive the roofing screws (#9 hex head screws are used for Stormetal Shingles/Shakes).
- **Hand Tools:** Claw hammer (for nails or to adjust flashings), tape measure, chalk line (for aligning courses), straightedge, carpenters pencil or chalk (do not use a lead pencil on panels), utility knife or shears for cutting underlayment, and a hand seamer or hand bender for bending/hemming trims as needed.
- **Other:** Caulking gun for applying roofing sealant/adhesive, and a clean cloth or brush for cleaning metal shavings and debris off panels. A magnetic sweeper is useful to pick up loose screws or nail fragments from the roof and ground.

Minimum 3/12 roof pitch or 14 degree slope
Not compatible with COPPER or LEAD

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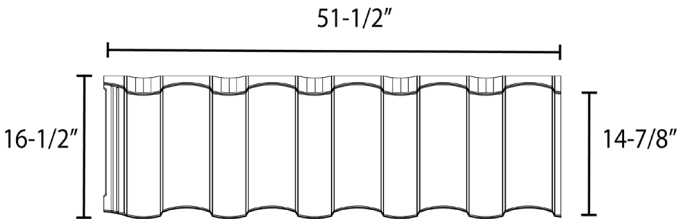
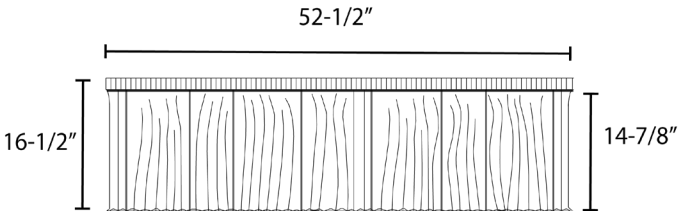
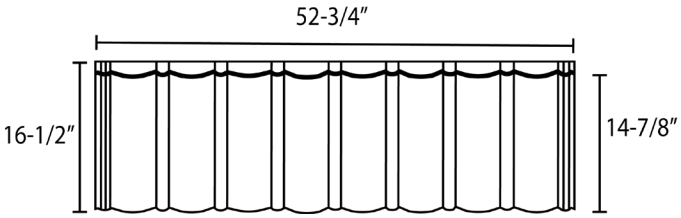
Tefute Roofing System Profile:



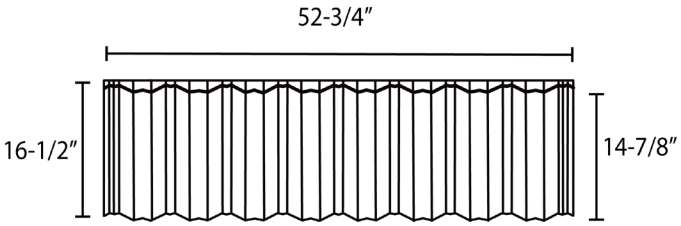
Roman Tile



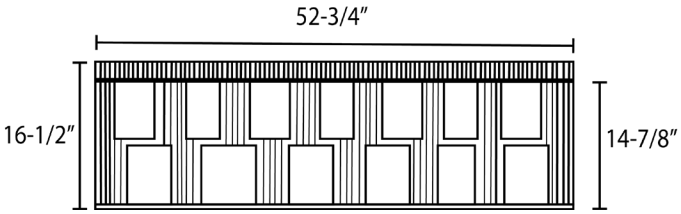
Wood Shake Tile



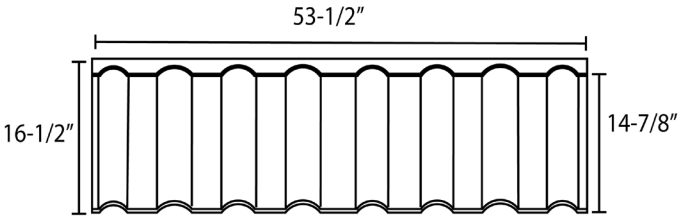
Bond Tile



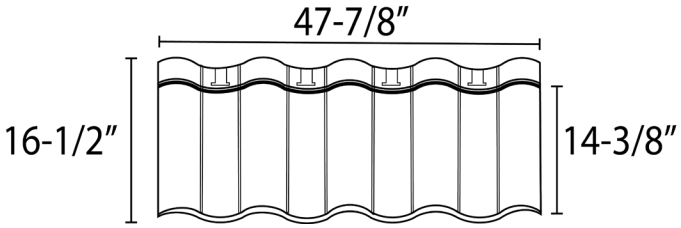
Classical Tile



Shingle Tile



Roman II Tile



EverTile

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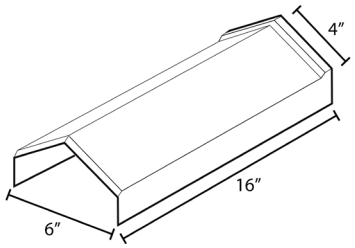
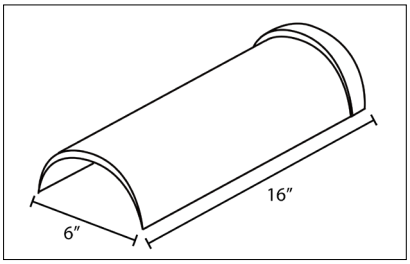
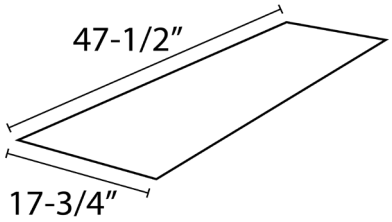
Tefute Profile and Accessories



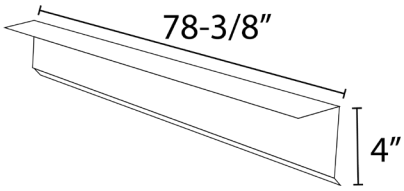
Angel Ridge & Hip



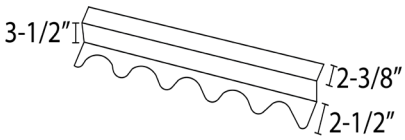
Circular Ridge & Hip



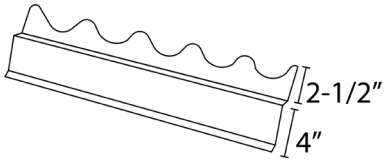
Flat Stock Sheet



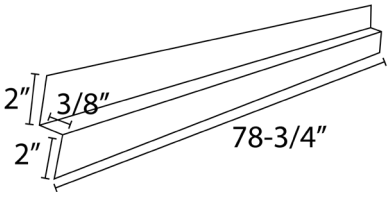
Fascia / Eave Flashing



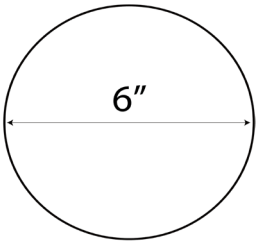
Bird Stop Top



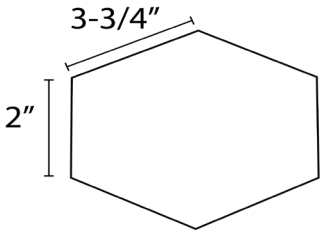
Bird Stop



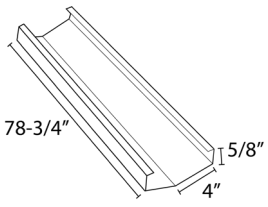
Side Flashing



Pentagon Seal

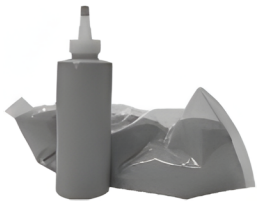


Pentagon Seal



Valley

Screws



Touch Up Kit

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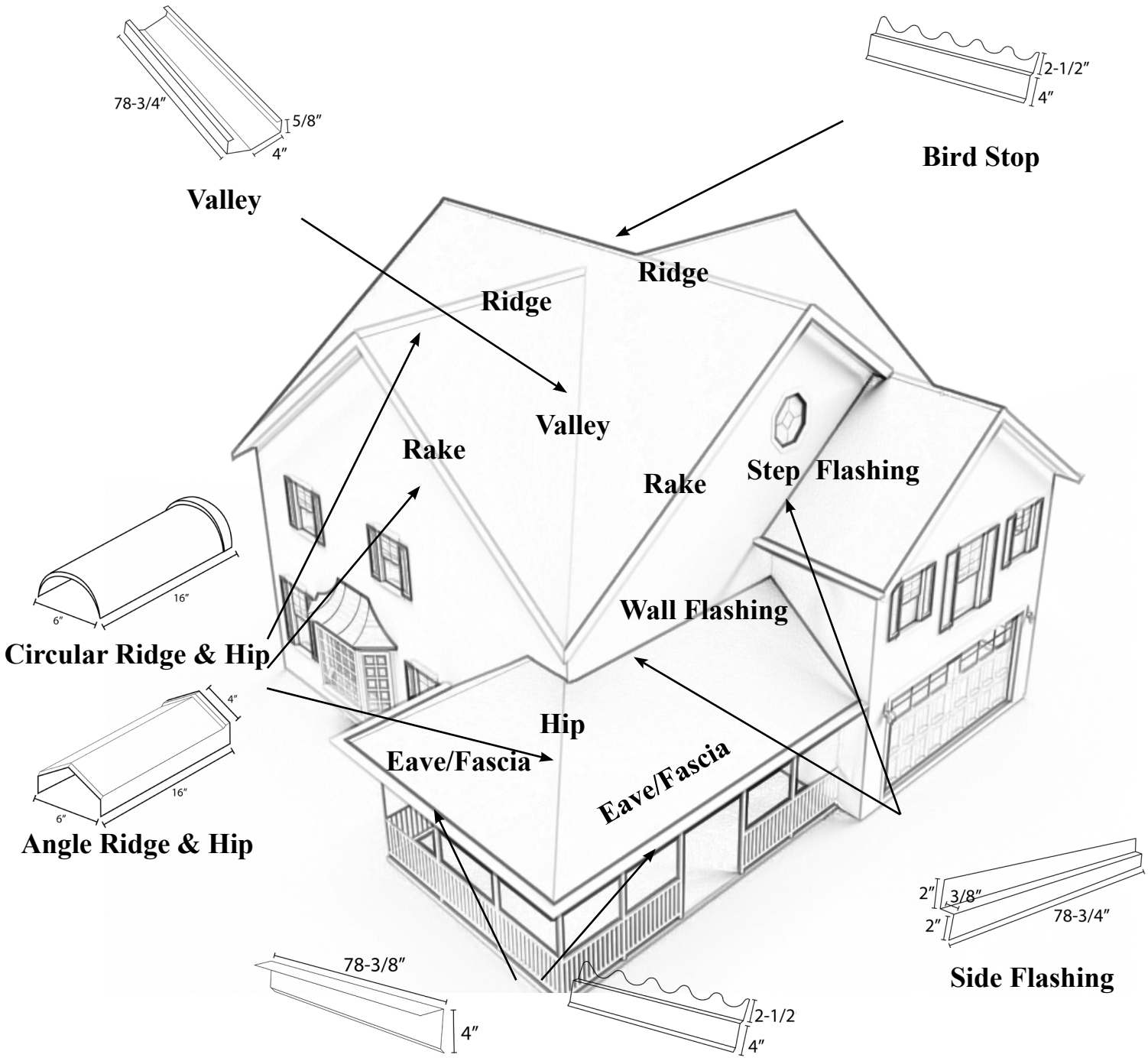
House Diagram for Accessories



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Safety Precautions

Roof installation can be dangerous. Always prioritize safety and follow these precautions throughout the project:

- **Personal Safety Gear:** Wear appropriate clothing and safety gear at all times. This includes a helmet, gloves, and eye protection when cutting or drilling. Soft, rubber-soled footwear is recommended to ensure good traction and to avoid damaging the roof panels. Use hearing protection when operating power saws.
- **Fall Protection:** Whenever working on a roof, especially one with a steep slope, use proper fall protection. Secure a certified roof safety harness to an anchored lifeline. Ensure guardrails or safety nets are in place as required by OSHA standards. Never work alone; have a spotter or partner on site in case of emergency.
- **Roof Conditions:** Do not install roofing during unsafe conditions. High winds, rain, snow, or ice can make the roof extremely slippery. Schedule work for clear, dry weather whenever possible. If the roof is damp or dew-covered, use extra caution or wait until it dries.
- **Ladder and Access:** Ensure your ladder is in good condition and securely positioned. The ladder should extend at least 3 feet above the roof edge and be tied off or held by an assistant. Always face the ladder and maintain three points of contact when climbing. Never carry heavy or bulky materials up a ladder in your hands – use a hoist or rope.
- **Power Tool Use:** Unplug power tools when not in use and when changing blades or bits. Keep cords and ropes organized so they do not tangle or cause tripping hazards on the roof. When cutting metal panels, secure the panel to prevent unexpected movement and keep your body clear of the blade path. The metal cutting blades for circular saws produce sharp off-cuts; handle cut pieces with gloves and clean up metal filings promptly (they are sharp and can also rust and stain the roof if left). Always cut panels on the ground or on sawhorses, never on top of the installed roof to avoid metal shavings causing rust on finished panels.
- **Material Handling:** Metal panels can have sharp edges – carry panels with thick gloves and be mindful of others around you when moving large panels on a roof (especially in wind). Do not attempt to lift heavy bundles alone; get help or break the load into smaller parts. Avoid storing heavy tools or stacks of panels on the roof; distribute materials to prevent overloading one area.
- **Environment and Cleanup:** Keep the work area clean as you go. Keep the roof clear of debris (old nails, scrap pieces, tools not in use) to avoid tripping or damaging the panels. Secure or remove any loose items if wind picks up. At the end of each day, use a blower or soft broom to gently clear the roof of dust and metal shavings, and use a ground magnet to collect fallen nails/screws from the property.

By following these safety guidelines and using common sense, you can greatly reduce the risk of accidents and ensure a safe, efficient installation process. Safety is the installer's responsibility – never sacrifice safety for speed.

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Roof Deck Preparation:

- **Inspect Deck:** Ensure the roof decking (plywood or OSB sheathing) is in good condition, fully nailed to the rafters, and free of rot, holes, or weak areas. Replace any damaged sheathing. The Tefute Roofing system is a **batten installation**, so a solid, continuous deck is required (skip sheathing or open batten systems are not used for this profile). Verify the roof slope is 3:12 or greater; slopes below 3:12 are considered decorative and not recommended for standard installation (under 3:12 would require a fully waterproof membrane beneath, and will not be covered by warranty as a primary roof).
- **Tear-off vs. Overlay:** If this is a re-roof over an existing asphalt shingle roof, check local code for allowances. Generally, you may install stone-coated steel roofing system **over one layer** of asphalt shingles if the surface is flat and sound and no more than two total roofing layers are present. Remove all old wood shake, tile, or any roofing other than a single layer of asphalt. If overlaying, level any uneven areas and remove or pound flat any raised nails. Whether tearing off or overlaying, all old flashings (valley metal, wall flashings, vent flashings, etc.) should be removed to make way for new Stormetal system flashings (unless they are in perfect condition and designed to integrate). Also remove existing ridge vents or ridge caps; you will install new ridge components as part of this system.
- **Deck Cleanup:** Sweep the deck clean of any debris, old fasteners, and dust. The surface should be smooth to avoid puncturing the underlayment. Also, ensure **eave edges** and **rake edges** (gable edges) are straight and properly flashed with drip edge in the next step.

Underlayment Installation:

- **Underlayment Choice:** Before shingles go on, cover the entire roof deck with roofing underlayment for a secondary water barrier. Use 30 lb felt or a synthetic underlayment with equal or greater performance (follow manufacturer's instructions for the underlayment installation). In regions with severe winter weather, apply **self-adhering ice & water shield** along the eaves (from the roof edge up to at least 24" inside the interior wall line) and in valleys for added protection.
- **Apply Underlayment:** Begin at the **low point** (eave) of the roof and roll out the underlayment horizontally (parallel to the eave). Overhang the underlayment ~1/4" to 1/2" past the eave to ensure it overlaps the drip edge that will be installed. Use **galvanized staples or roofing nails** with plastic caps to fasten the underlayment to the deck, as per underlayment instructions (typically every 8-10" along seams and 12-18" in the field, or per code). Make sure the underlayment lies flat without wrinkles.

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Underlayment Installation (continue):

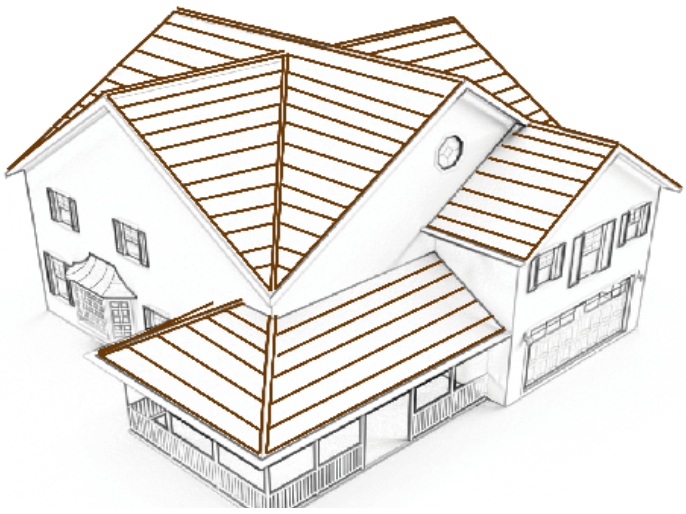
- **Overlap and Sealing:** For each successive course of underlayment, overlap the lower course by at least **2-4 inches** (follow underlayment spec; synthetic underlayments often have guide lines for the proper overlap). **End laps** (where one roll ends and the next begins) should overlap by at least 6". Stagger end laps so they don't all line up on the same rafter lines. In valleys, run underlayment a good distance past the center line of the valley on each side or use a full sheet of ice & water in the valley. At ridges and hips, extend underlayment over the peak; the opposite side's underlayment should overlap by at least 6".
- **Penetrations:** At roof penetrations (vents, chimneys), run underlayment up to and a few inches onto the penetration, then cut it neatly and continue on the other side. You can temporarily seal around penetrations with underlayment or flashing tape to keep dry until flashing is installed.

Batten Installation:

- Begin by positioning the top front edge of the first batten flush with the fascia board, ensuring it aligns parallel to the ridge. Install 2x2 nominal-sized battens using standard-grade lumber, securing them to rafters with 16d common nails (or equivalent fasteners) spaced no more than 24 inches apart (on center). Additional 2x2 battens must also be installed at hip rafters. Batten spaced for 14 -1/2" apart.

Batten Installation (High Velocity Hurricane Zone):

- Begin by positioning the top front edge of the first batten flush with the fascia board, ensuring it aligns parallel to the ridge. Install 2x2 nominal-sized battens using standard-grade lumber, securing them to rafters with **one** #10-8 x 3-1/2 SQ Bugle Head screws spaced 24" apart (on center) and centered between the supports and **two** #10-8 x 3-1/2 SQ Bugle Head screw space 24" o.c attached throught the deck into wood supports. Additional 2x2 battens must also be installed at hip rafters. Batten spaced for 14 -1/2" apart (on center).



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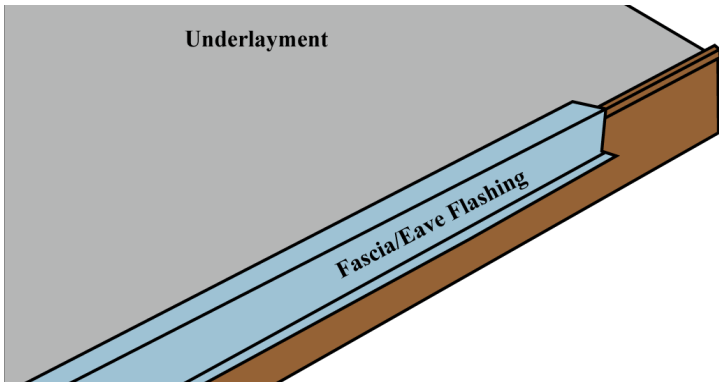
Fascia/Eave Flashing Installation:

- Install flashing along the fascia to conceal the buildup created by the first batten. Stone-coated metal fascia panels are available in 3.5-inch exposure widths and all standard colors. Ensure the flashing is properly aligned and secured to maintain weather resistance and a clean finish.



Panels Placements:

Begin by installing full panels starting with the first full course at the fascia/Eave, securing this course along the fascia. When laying subsequent panels.

- Stagger panels sideways by at least one pan width.
- Panels may be installed from right to left or left to right, depending on the preferred visual appearance from ground level.
- Ensure overlapping panels fully cover the overlap channel.

After installing three courses, begin fastening through the nose of each panel and continue upward. For detailed instructions on fastening, refer to the Fastening Panels section below.

Fastening Panels:

Fastener Requirements:

- 8d corrosion-resistant common nails OR four #9 Hex screws (1/4” diameter with integral metal washer, 1-1/2” long, corrosion-resistant, color-coordinated).
- Screws are mandatory in freeze/thaw climates.

Installation Guidelines:

- First Course (Eave Perimeter): Use **five** fasteners evenly spaced along the panel nose for enhanced wind uplift resistance.
- Remaining Courses: Use **four or five** fasteners per panel, evenly spaced.
- Position one fastener near the bottom of the downturn, 1” from the overlapped edge.
- Distribute remaining fasteners evenly across the panel.

Precautions:

- Avoid striking finished panel surfaces during fastening.
- Repair damaged areas using a Tefute Touch-Up Kit: Apply roofing-grade sealant to the affected area and embed matching stone granules. Kits are available through Tefute Roofing Systems.

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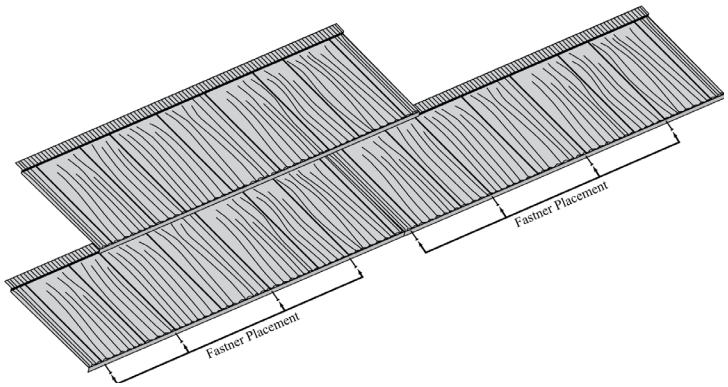
Fastening Panel (Continues):



Fastening Patten

Valley Installation:

Install valley with a minimum width of 7". Place one layer of 36"-wide Type 30 felt underlayment or ice and water shield beneath the valley flashing, as required by local building codes. Overlap valley metal pieces by at least 6" and secure them to the top of the batten by notching the return at the valley's peak, folding the tab onto the batten, and fastening it securely. Ensure the valley extends at least 1" beyond the fascia or onto a lower roof surface; Paint any exposed valley surfaces before installing panels to prevent corrosion.

Open Valley - To create an open valley, begin by snapping chalk lines along the valley to mark the desired width of the exposed channel. Work on one side of the valley at a time, starting at the bottom and progressing upward. Measure, cut, and bend the panels to align with the valley's slope, ensuring the trimmed edge of each panel is folded downward against the vertical up-stand of the valley metal

Close Valley - Begin by locating and marking the centerline of the valley using a snapped chalk line or aligning with the existing center rib (if applicable). Once the valley flashing is properly fitted and secured, focus on one side of the valley first. Measure, cut, and bend panels precisely to align with the valley's centerline, working from the bottom upward. Ensure each panel is trimmed and folded to create a clean, straight edge along the valley's center. After completing one side, repeat the process for the opposite side of the valley. Measure, cut, and bend panels to mirror the first side, ensuring they meet the centerline seamlessly. The panels from both sides should fit tightly against each other, forming a straight, continuous line running the entire length of the valley. Verify alignment visually and adjust as needed to eliminate gaps or misalignment. This ensures proper water runoff and a uniform appearance.

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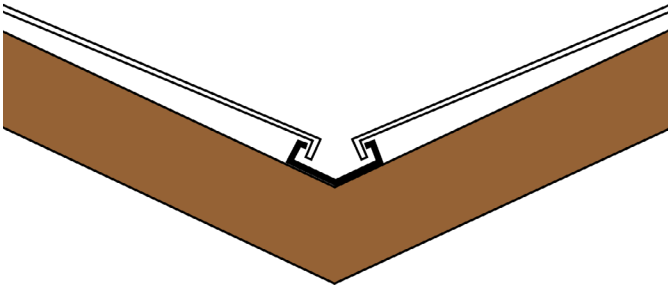
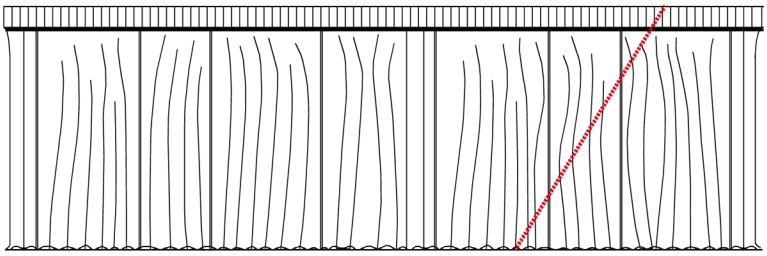
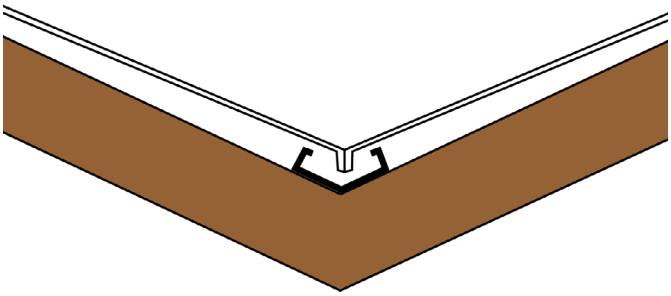
Valley Installation (Continues):



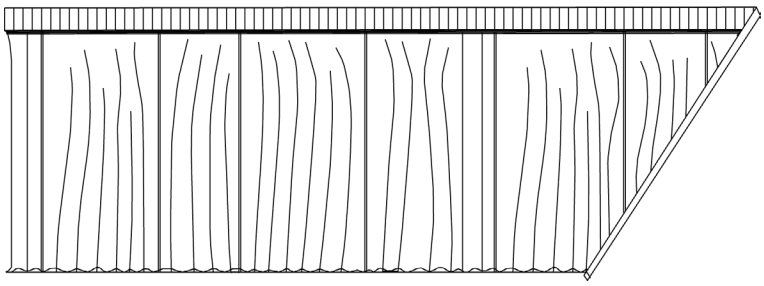
Open Valley



Bend Line



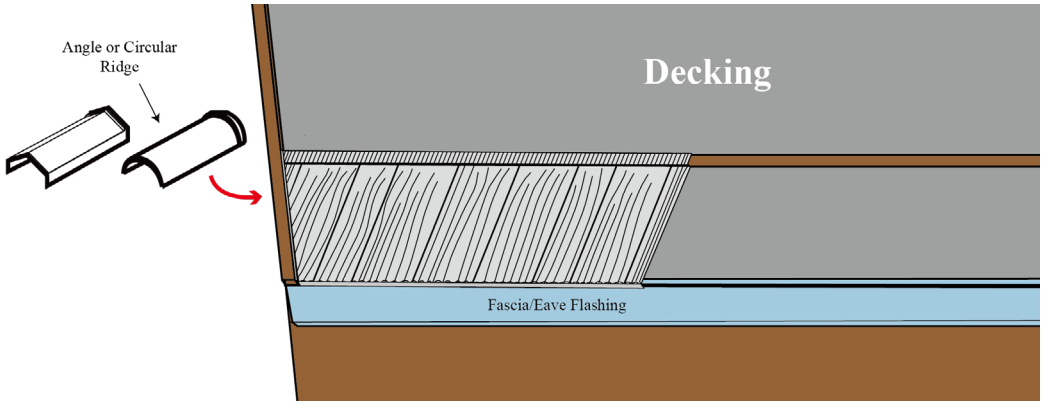
Close Valley



After Bend Panel

Rake (Gable) Installation:

For installations along the rake/gable edge, secure a vertical 2x2 board just behind the rake's edge to ensure proper alignment and support for the Hip & Ridge pieces. Position the 2x2 directly atop the battens. Bring the panel up to the 2x2 and bend its edge upward by 1½" to create a clean transition. At the fascia, seal the exposed end of the Hip & Ridge with the End Cap to prevent moisture ingress and ensure a polished finish. Maintain consistent spacing and alignment throughout to achieve a cohesive, weather-resistant design.



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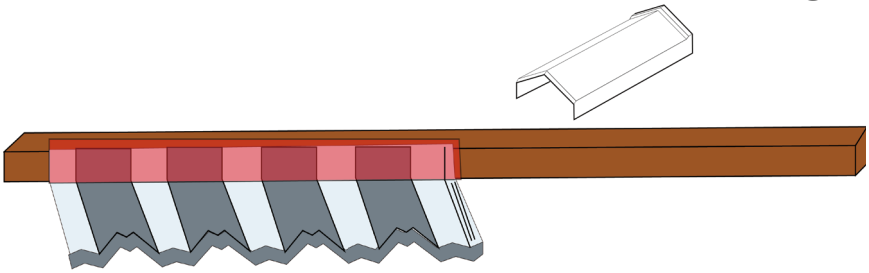
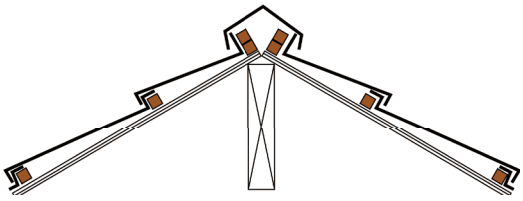
Ridge and Hip Installation:

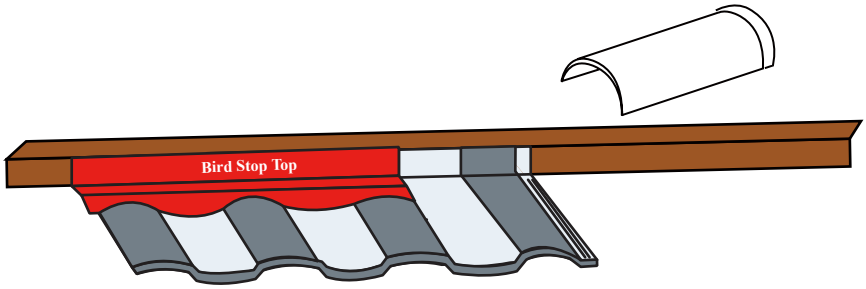
Tefute Roman and Wood Shake panels follow the same installation procedure. Begin by measuring from the front of the back flange to the front of the 2×2 at the ridge. This measurement marks the bend line. Bend the panel at that line, then add 2 inches to the measurement and cut the panel. Install the panels along the ridge, one side at a time, ensuring each panel conforms to the ridge before fastening. Repeat on the opposite side of the ridge, keeping each panel straight and level. This alignment is crucial for creating a proper foundation for the Hip & Ridge pieces.

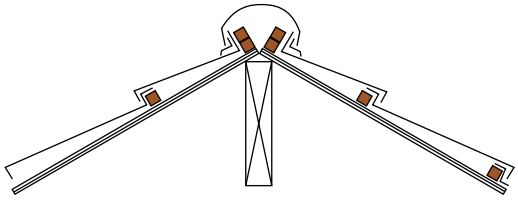
For Wood Shake, Bond, Classical, Shingle Roman II Profile





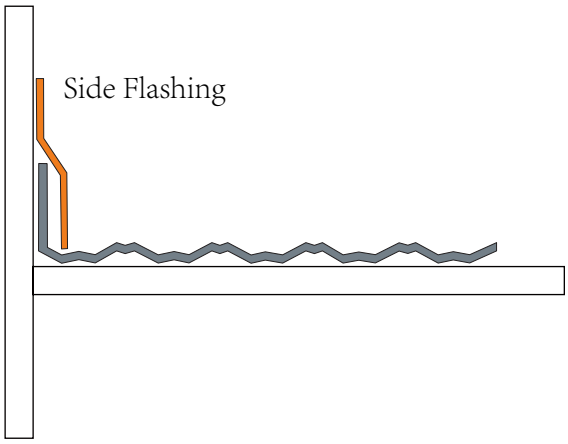
For Roman and EverTile Profile





Side Flash Installation:

Use side flashing to seal roof-to-wall junctions. Tile panels should connect to the wall and be bent up 1-1/2” using a bender, with the folded edge flattened and pressed tight to the wall. Seal the top and bottom edges with polyurethane sealant. Cover the bent part of the tile panel with the side flashing as shown. Use polyurethane sealant to seal the top and bottom edges of the side flashing, and fasten it to the wall with fasteners spaced every 12”.



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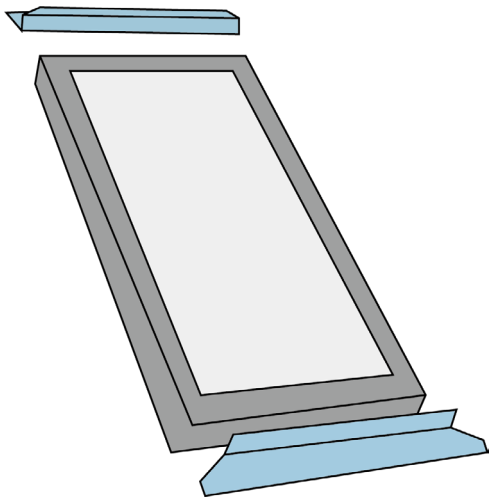
Tefute ® Stone Coated Steel Roofing

INSTALLATION MANUAL

Chimneys or Skylights Installation:



Use side flashing to seal around the chimney. Each side of the tile panels should connect to the chimney and be bent up 1-1/2” using a bender, with the folded edge flattened and pressed tight to the chimney wall. Seal the top and bottom edges with polyurethane sealant. Place side flashing on the front and back sides of the chimney. Cover the bent part of the tile panel with the side flashing as shown. Use polyurethane sealant to seal the top and bottom edges of the side flashing, and fasten it to the chimney with fasteners spaced every 12”.

Walk Instructions:

Always step on the headcheck or at the intersection of two tiles, never on a single tile alone. Make sure each footstep is placed where both tiles meet to ensure proper support.

Touch Up:

Remove metal shavings daily during installation, and if you need to touch up the finish—either during or after installation—use Touch-Up Kit that matches the stone-coated panel finish.

High Wind Area:

In regions susceptible to hurricanes and high-velocity winds, installation must comply with local standards and building codes. Full panels on the top three courses and bottom three courses should be fastened with ten fasteners at evenly spaced locations. Additionally, panels along the perimeter and adjacent to the hips and gables must be secured at ten evenly spaced locations on each tile.

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