



STORMETAL Shingle and Shake Installation Manual (Hidden Fastners Direct to Deck)

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Introduction

Stormetal Shingle/Shake by Tefute USA is a premium stone-coated steel roofing profile featuring a fully concealed fastening system and robust interlocking design. These shingles/shakes combine the strength of metal with an attractive stone-coated finish, offering superior durability and storm resistance. This installation guide is intended as a best-practice reference for professional roofing installers. Always adhere to local building codes and standards; if local code requirements differ from these instructions, local codes take precedence. When in doubt about a specific installation scenario not covered here, contact Tefute USA's Technical Department for guidance. A quality installation ensures maximum performance, longevity, and compliance with warranty conditions.

Required Tools:

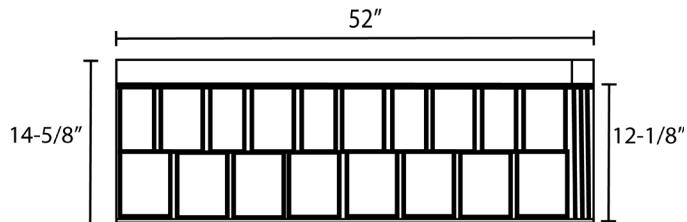
- **Safety Equipment:** Full body fall-protection harness, roofing helmet, work gloves, and protective eyewear are mandatory for installer safety. Wear soft-soled shoes or boots to avoid scuffing panels and improve grip.
- **Cutting Tools:** Tin snips or aviation shears for cutting panels, and a metal-cutting shear or circular saw with a metal-cutting blade (often called a “cool cut” 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). Ensure you have spare batteries charged.
- **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

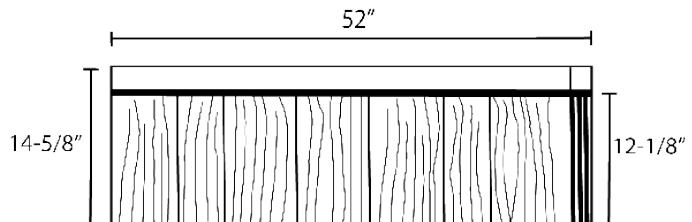
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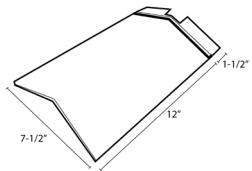
Stormetal Profile and Accessories



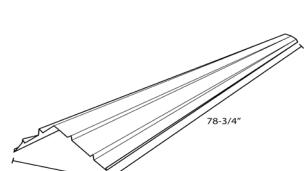
Stormetal Shingle



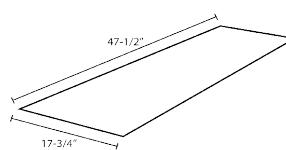
Stormetal Shake



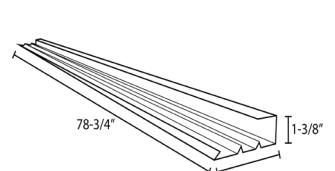
Stormetal
Ridge & Hip



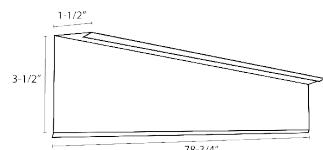
Stormetal Hip
Base



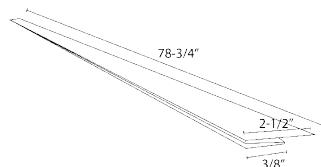
Flat Stock
Sheet



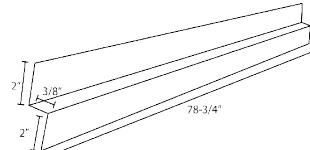
Stormetal Rake
Channel



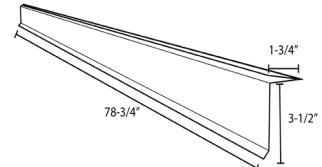
Stormetal Rake
Cover



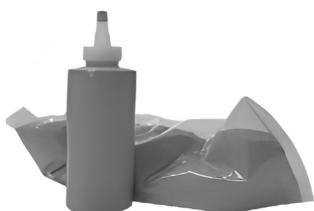
Stormetal Short
Course



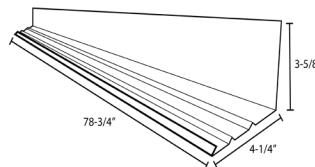
Side
Flashing



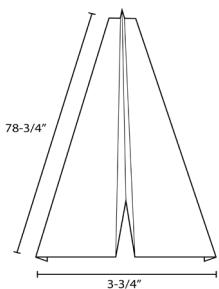
Stormetal Starter



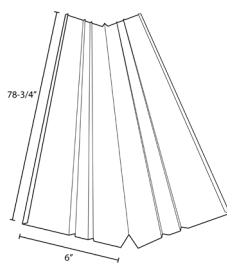
Touch Up
Kit



Universal
Channel



Valley
Cover

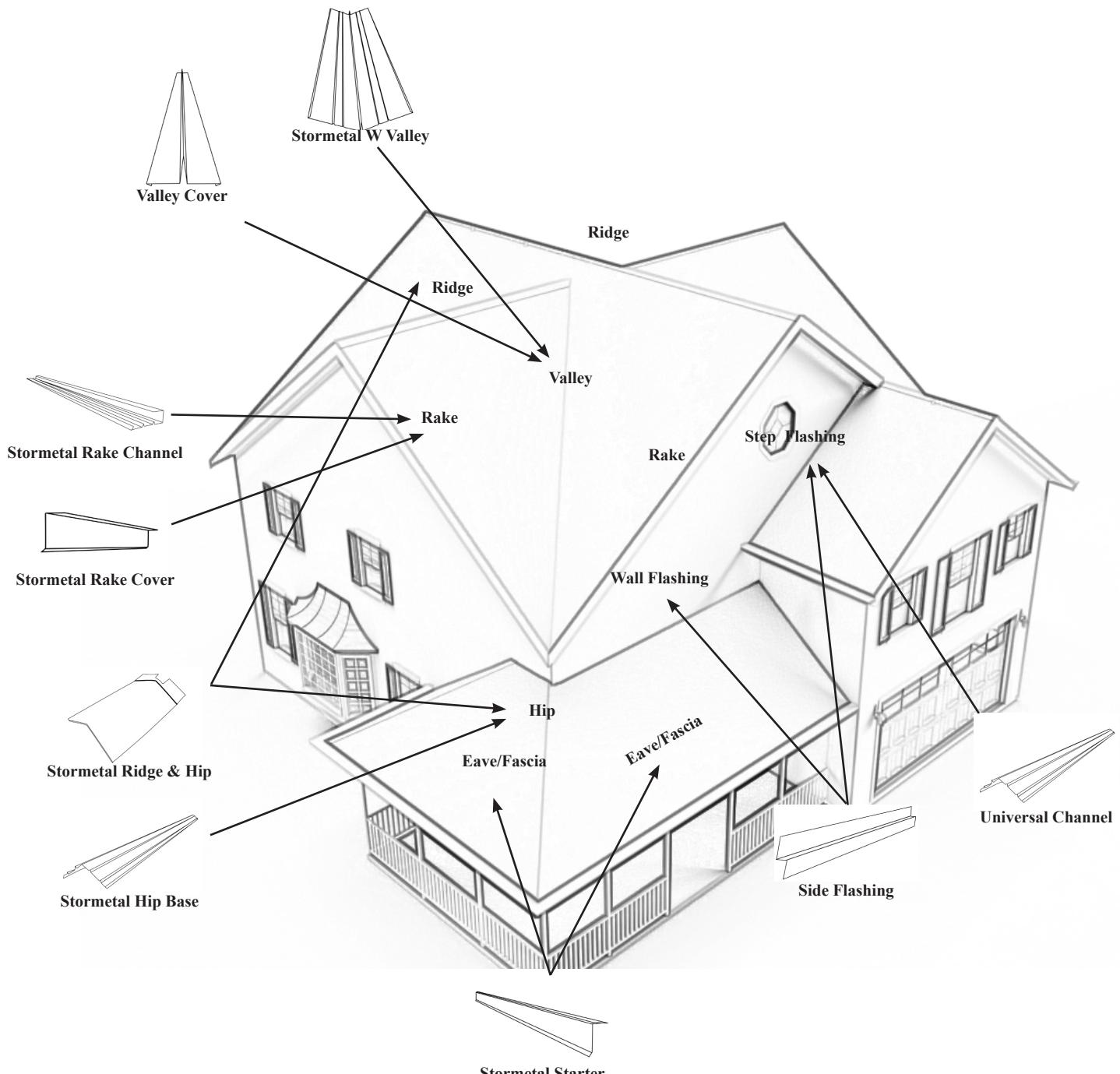


Stormetal
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House Diagram for Accessories





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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 Stormetal Shingle/Shake system is a **direct-to-deck 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 shingles/shakes **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/shake 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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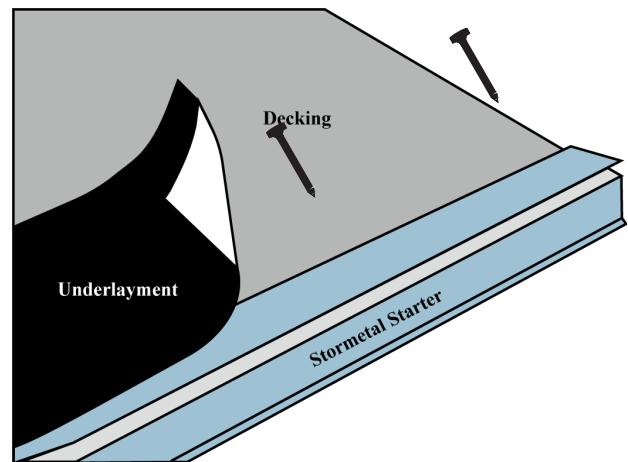
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Underlayment Installation (continue):

- **Overlap and Sealing:** For each successive course of underlayment, overlap the lower course by at least **2-4 inches** (follow underlayment spec; synthetic underlays 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.
- **Stormetal Starter:** Before fully finishing the underlayment at the eaves and rakes, install **Stormetal Starter**. At the eaves, the starter goes **under** the underlayment (since underlayment was left hanging). Starter should be nailed to the deck every **12"** (use galvanized roofing nails). Then lap the underlayment over the starter flange and secure it. Overlap adjoining pieces of starter by at least **2"**.

Stormetal Starter Installation (Eave/Fascia):

- The starter strip (also known as a starter course or starter flashing) is critical for the first row of Stormetal Shingles/Shake. It serves to secure the bottom of the first course and often provides a drip-edge functionality.
- **Placement:** Install the starter strip along the eave edge of the roof, on top of the underlayment. Position it so that the **starter's lower lip hangs ~1"** over the eave (to guide water into the gutter and prevent capillary action back onto the deck). Ensure it's straight and parallel to the eave. If the roof has valleys, run the starter strip so that it stops short of the valley center by a few inches, allowing the valley flashing to be installed underneath later.
- **Fastening:** Secure the starter strip to the deck using the recommended fasteners - **typically #9 hex-head screws, 1-1/2 inches or 8d ringshake nails**. Fasten at roughly every 6 inches on center along the length of the starter. Drive fasteners in the upper portion of the starter strip (so that the first course of shingles/shakes will cover them). The fastener heads should sit flush; do not overdrive and distort the metal.

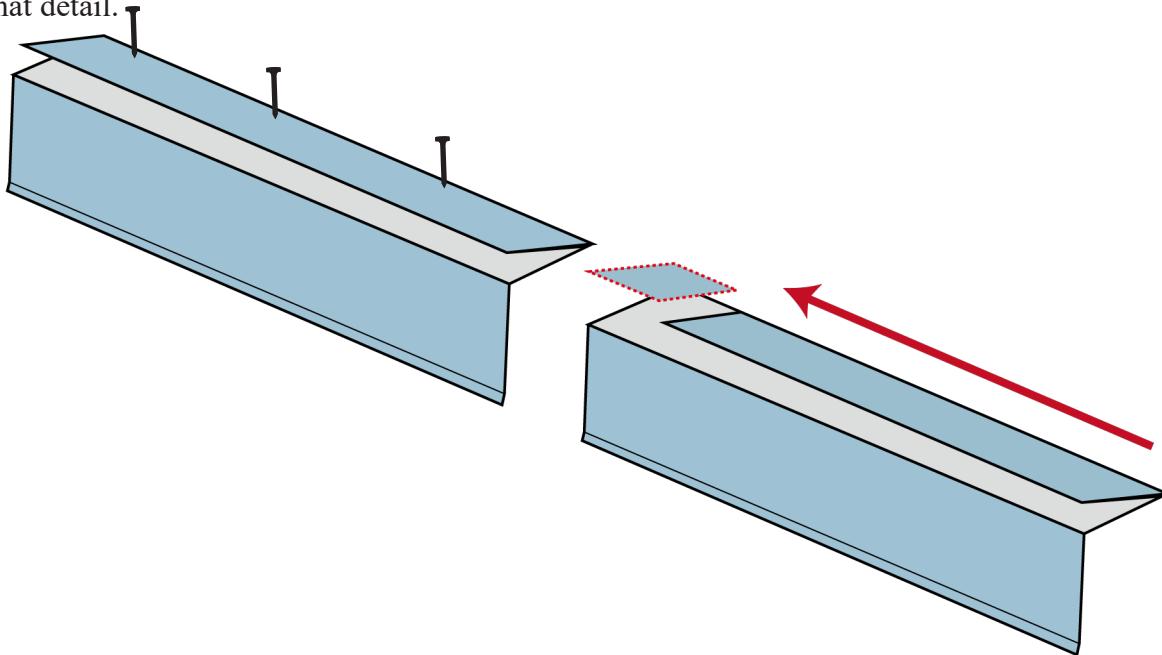


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Stormetal Starter Installation (Eave/Fascia):

- **Joining Starter Pieces:** Starter strips come in 78 inches lengths. Overlap each starter piece by about 1" to maintain a continuous line. At joints, make sure the overlap is tight and forms a uniform line; you may use a small amount of sealant between overlapping sections for additional hold (not usually necessary if screwed down).
- **Corners and Ends:** At the roof edges (rakes), you may need to trim the starter strip flush with the edge of the roof deck or the outer edge of the fascia board. Ensure the end of the starter strip does not stick out beyond the fascia or barge board. If the design calls for a small gap to the rake trim, follow that detail.



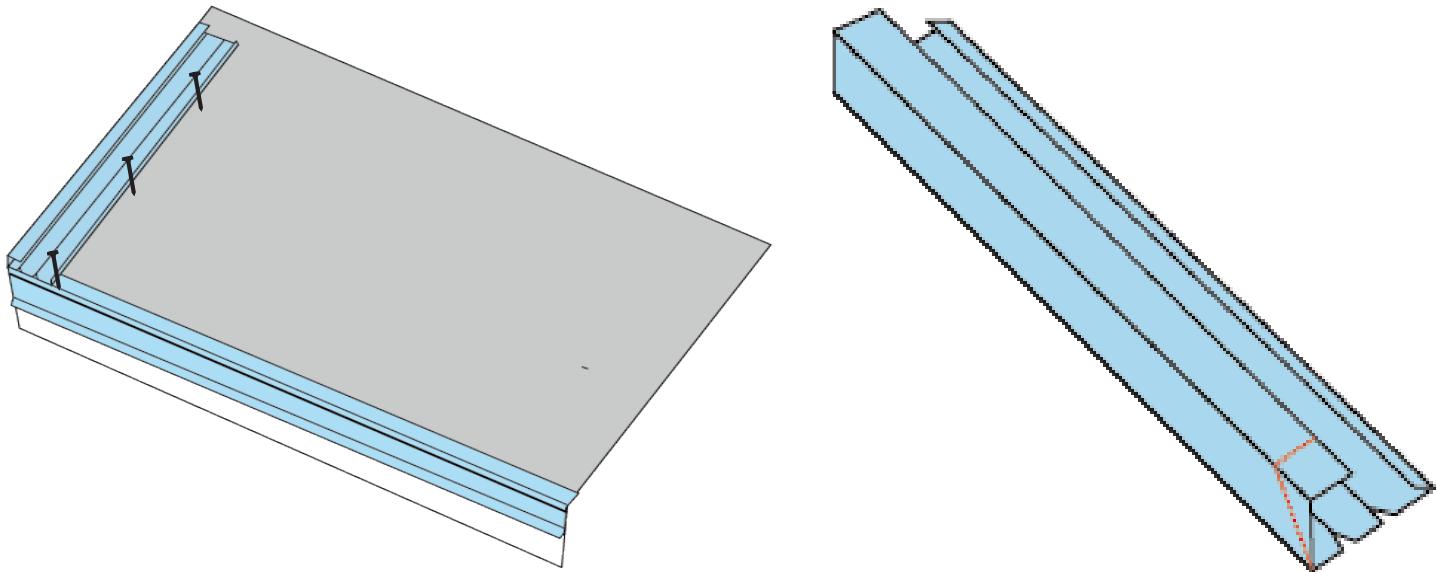
Stormetal Rake (Gable) Channel Installation:

- The Stormetal Rake Channel should be installed along all rake (gable) edges, with its outside edge flush against the rafter. Position the Stormetal Rake Channel over the Stormetal Starter so it is flush with the leading edge at the eave. Install the first fastener (a #9 screw) 6" from the leading edge of the Starter, then fasten at 12" on-center in the outside channel nearest the hemmed edge. Notch the bottom of adjoining Stormetal Rake Channel pieces at least 2" before overlapping. For each subsequent piece, repeat the notching process and secure as before. At the ridge line, miter the channel and fold a minimum of 1" over the ridge to ensure proper coverage and weatherproofing panel's edge down over the rake board as a drip edge (using a hand seamer) and then use a small metal cover to cap any exposed cut edges. Always seal the joint between the roof and the rake flashing with sealant if needed (especially near the eave and ridge transitions).

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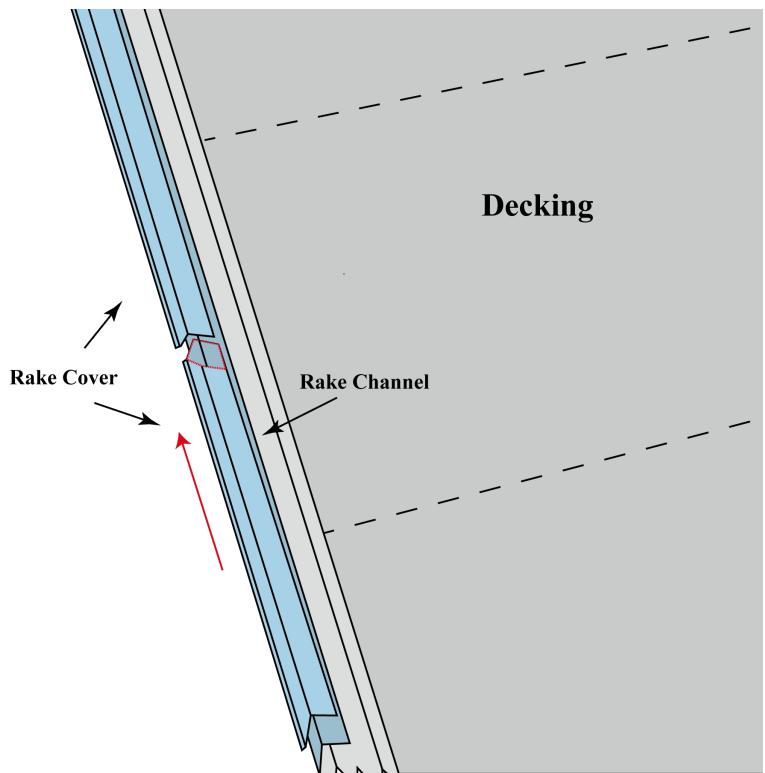
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Stormetal Rake (Gable) Channel Installation (Continue):



Stormetal Rake (Gable) Cover Installation:

Notch the Stormetal rake cover—typically at least two inches—to accommodate overlaps, then slide it tightly into place over the rake channel. Overlap subsequent rake covers by fitting the notched end of one piece over the un-notched end of the next, securing each overlap with the specified fasteners. Keep fasteners properly spaced and use a sealant, if required, for weather-tightness. Regularly remove any metal shavings and inspect overlaps to maintain the system's integrity.

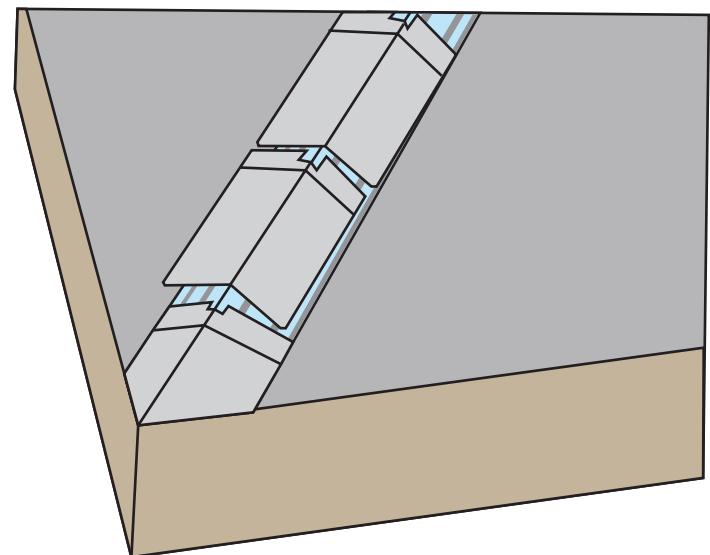
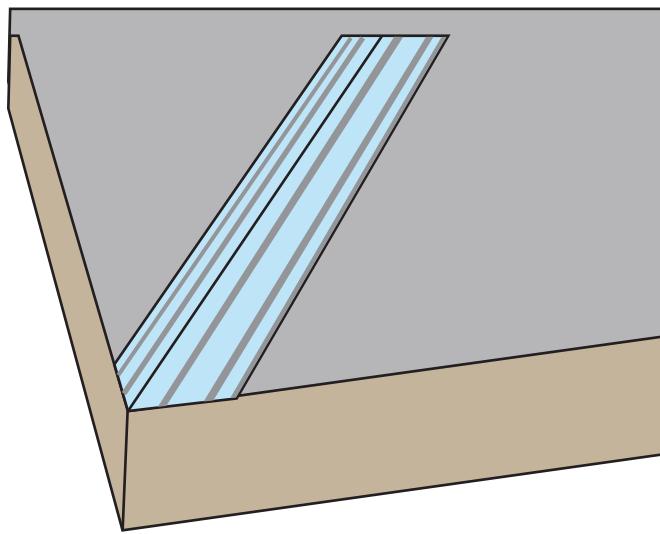


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Stormetal Hip Installation:

- **Hips:** Start at the bottom of the hip (at the eave) and work upward towards the ridge. Begin with a hip cap overhanging the eave by ~1" (you might trim the bottom of the cap to match the eave angle or use a Stormetal starter). Fasten on both sides into hip **channel**. Then overlap the next hip cap above it, fasten, and continue up the hip. Make sure each hip cap also covers the cut edges of the field panels on either side of the hip. At the top where the hip meets the ridge, cut the last hip cap to fit and integrate under the ridge cap or hip/ridge intersection as described, sealing the joint. Just like ridge, fasten each cap with two screws (one per side) into the roof. The exposed bottom edges of these caps will have the stone coating, but if any cut end is exposed, touch it up with paint and granules.



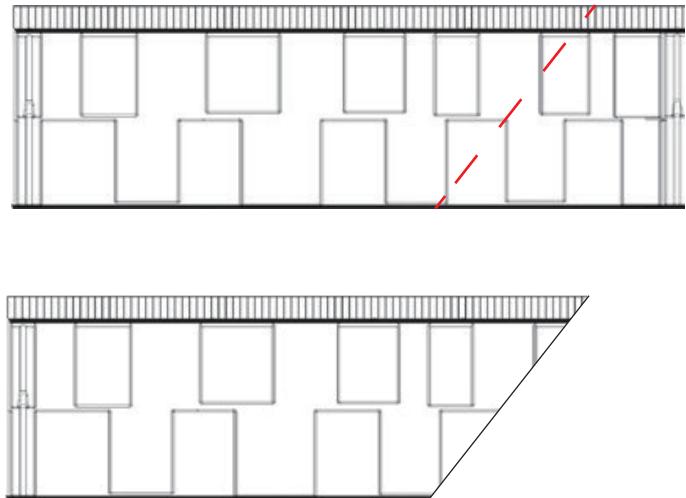
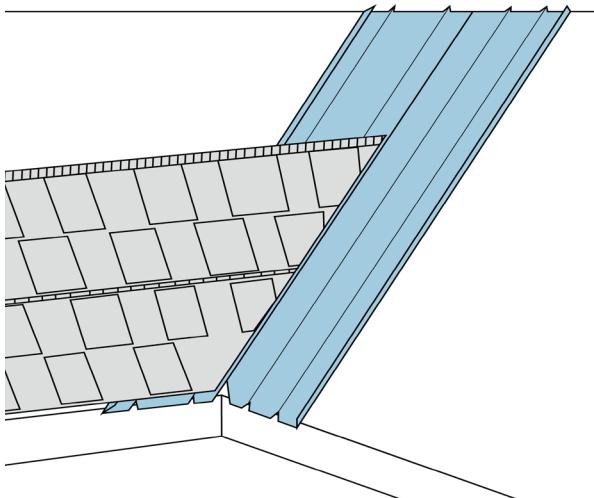
Stormetal Valley Installation:

When installing the valley flashing, secure it along the outer edges—about an inch or two from the center crease—at approximately 12" intervals and avoid over-driving fasteners, which could warp the metal. Never drive nails or screws through the middle of the valley pan to prevent leaks, and ensure any pre-formed raised edges remain snug to the roof surface. When cutting panels to fit around the valley, leave a 2" clearance on each side of the center channel for water flow, and cover the cut edges with a small turn-up.

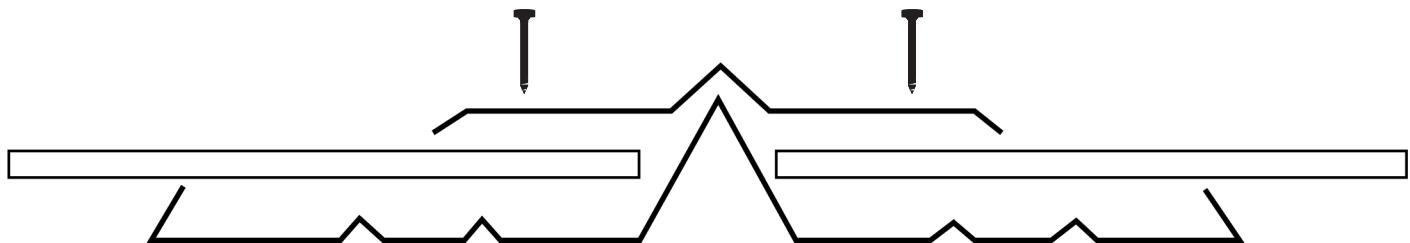
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Stormetal Valley Installation (Continues):



Install the valley cover over the center of the valley, securing it with screws on the high part of the shingle/shake at each step.

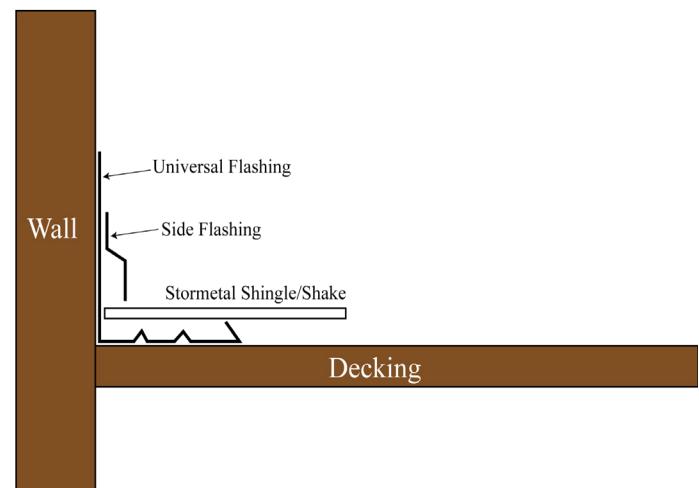
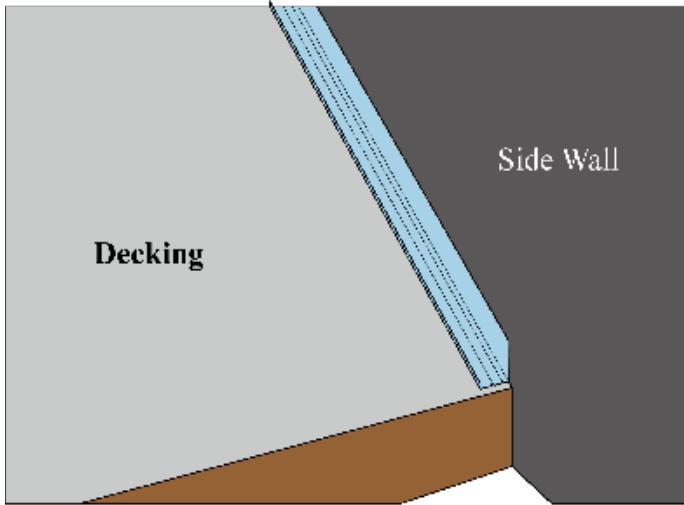


Stormetal Side Flash Installation:

Side flashing runs up alongside walls. The vertical leg goes at least 4-6" up the wall and should be behind the wall's siding if possible. The horizontal leg extends out on the roof under the shingles/shakes. When installing, each panel that abuts the wall should be cut about 1/2" away from the wall and its top end can be bent up a bit. The channel flashing then covers that gap. Overlap sections of sidewall flashing at least 6", and put a small amount of sealant where they overlap to prevent water from seeping under the lap. Fasten the flashing to the deck along its outer edge (away from wall). If the vertical leg is exposed (e.g., brick wall), counter-flash it: by cutting a reglet and inserting metal counter-flashing Z-flashing sealed to the wall. Seal the top of any exposed flashing with appropriate masonry or siding sealant. Sidewall flashing should run continuous past any step in roof elevation or turn into headwall flashing at top if the roof ends at a wall.

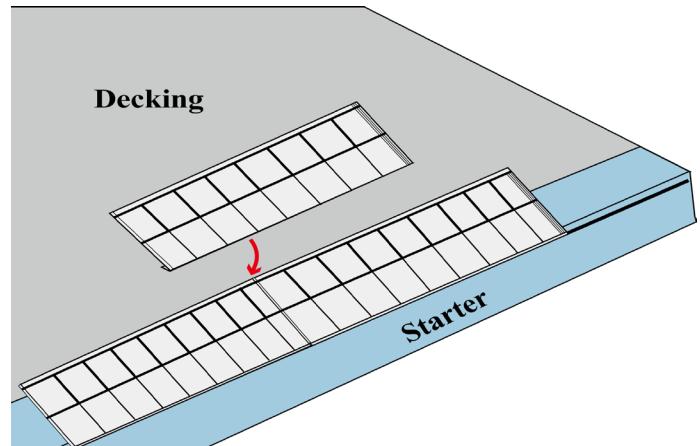
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Stormetal Panel Placement:

Starting at the first course from left to right, begin with a full panel at the gable, valley, hip, or sidewall, and notch the underside of the interlock by 2" (4" in the valley). Secure the panel with five fasteners—using #9 × 1½" screws or 8d ring shank nails, then continue installing the first course across to the termination point. Notch the final panel at its termination point (again 2" or 4" in the valley) and install subsequent courses randomly up the roof, with panels terminating at the center of the ridge. Always start and terminate panels tight to gables, valleys, hips, or sidewalls, maintaining a sidelap exposure of 49 5/8" to cover three water channels, and a headlap exposure of 14½" when fully engaged. Finally, ensure no panel fasteners penetrate the flashing at gables, valleys, hips, or sidewalls. Should run continuous past any step in roof elevation or turn into headwall flashing at top if the roof ends at a wall.



Stormetal Short Course Installation:

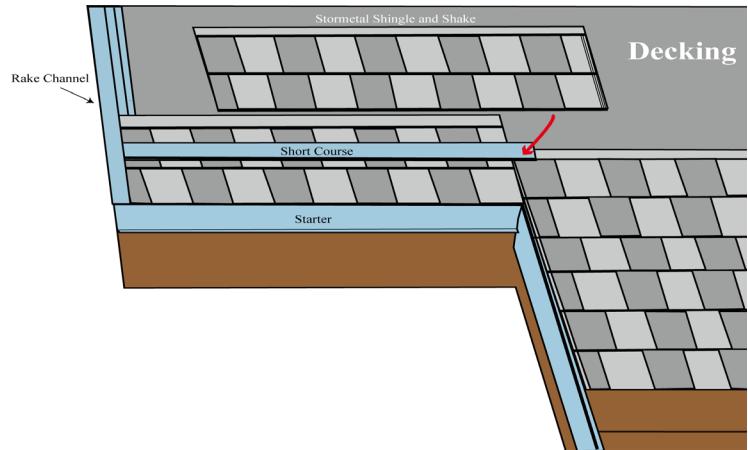
Install the panel on the upper starter strip at the transition so the underlap is flush with the inside of the rake channel, then place a full panel covering the underlay on the transition panel so the headcheck is

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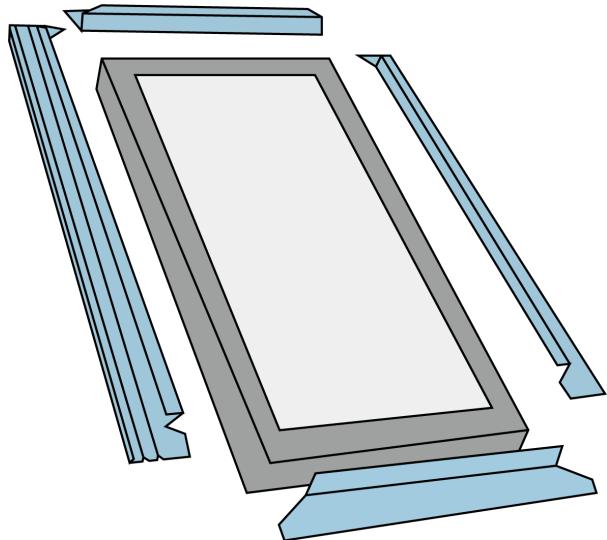
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Stormetal Short Course Installation:

past the upper starter strip. Cut off any excess material above the Short course to avoid interference with the next course of panels. Snap a horizontal line on the transition panel where the short course will begin, and align the Short course along this line. Fasten through the panel into the deck using #9 × 1½" screws or 8d ring shank nails, continuing the installation across the short course at the transition. Ensure the water channel is flush with the offset in the rake.



Chimneys or Skylights Installation:



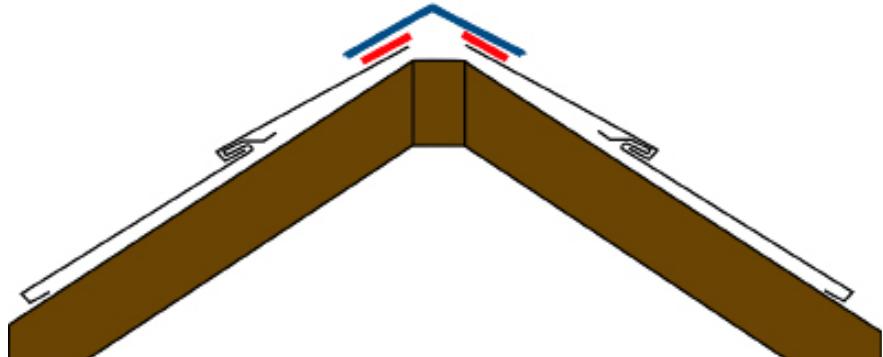
Begin by installing panels up to the bottom of the chimney or skylight and notching the headcheck. Cut the last panel transitioning into the chimney or skylight both vertically and horizontally to fit the lower left corner, then horizontally cut and install subsequent panels. The final panel for that section should be cut both vertically and horizontally to accommodate the lower right corner. Next, counter flash with 4"×6", 110-degree transition/headwall metal (provided by others), and install Universal Flashing flush with the headwall metal on the left and right sides. Notch the panel 4½" at the underside of the interlock, and continue installing panels so they do not extend more than 2" beyond the chimney or skylight. Install a saddle (provided by others), and complete the installation around chimney or skylight, connecting both sides. Depending on the panel layout, a Short course may be required.

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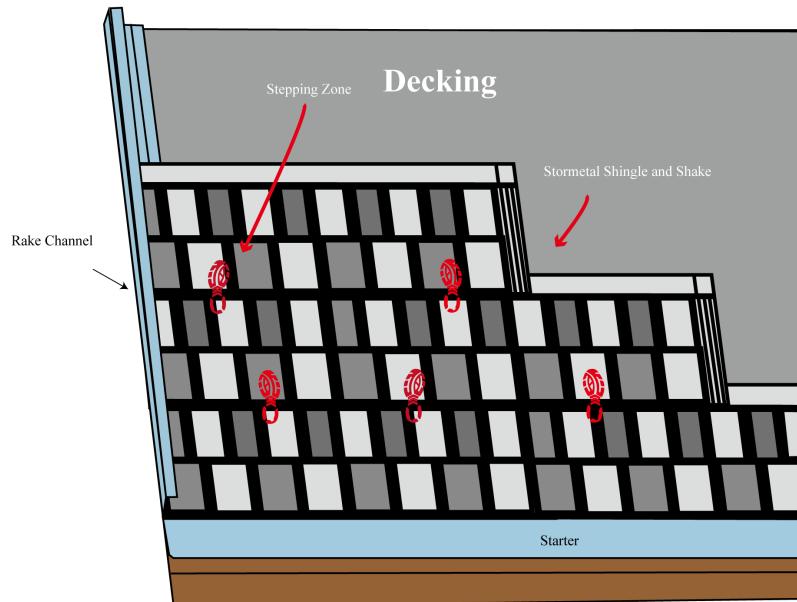
Ridge Installation:

Cut a 1" opening on both sides of the ridge, then install the final course of Stormetal Shingle/Shake panels up to the opening on each side and securing them with #9 x 1½" screws or ring shank nails.



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.