TEK INDUSTRIES

HIGH COUNTRY



METAL SHAKE



INSTALLATION MANUAL

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HIGH COUNTRY® METAL SHAKE

The **High Country® Metal Shake** panels are designed to provide the decorative properties of traditional wooden shake shingles and asphalt shingles while incorporating the benefits and durability of metal roofing.

Each panel is made with a 28 gauge Zinc-aluminum coated steel core that offers high heat reflectivity and high corrosion resistance in many types of environments. The Al-Zn coated steel core then has an acrylic resin protective coating applied that creates a strong bond between the steel core and the stone coating. Finally the panel is coated with a protective clear acrylic overglaze which increases brightness, bonding strength and assures a long lasting finish.

The side, top and bottom overlaps between each panel prevents water leakage. The ridges on the side underlap of each panel stop water from overflowing through the overlap and thus redirecting the water on to the center of the panel towards the eaves.

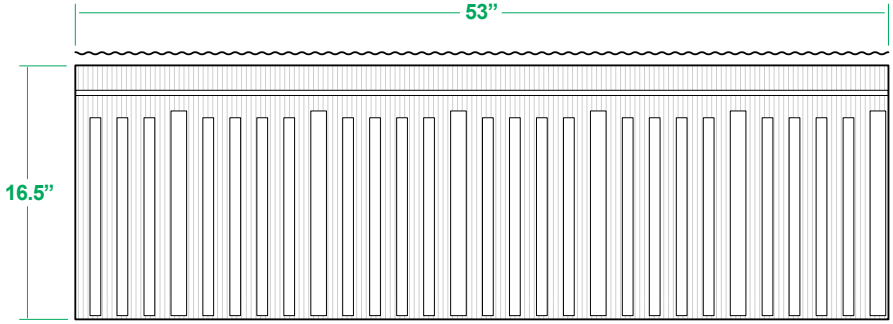


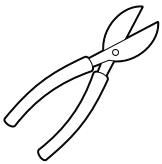
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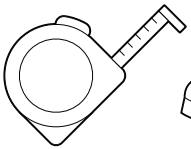
- OVERVIEW: ICE DAM FORMATION (SNOW & ICE PROTECTION)

TOOLS REQUIRED





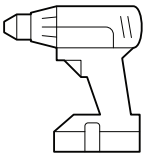
SNIPS



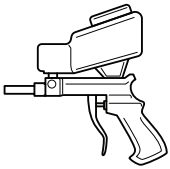
RULER



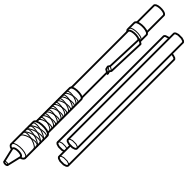
SAFETY SHOES



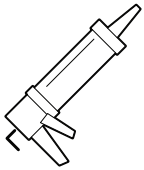
SCREW GUN



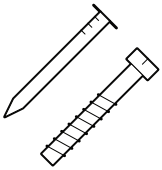
SAND BLASTER GUN



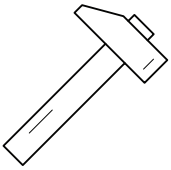
SOAPSTONE PENCIL



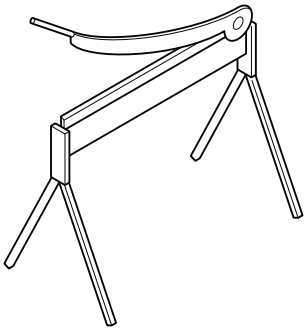
SEALANT



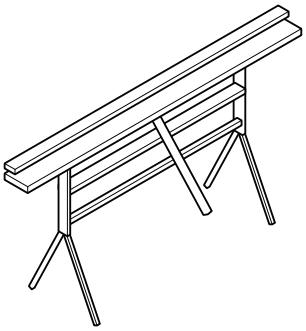
NAILS, SCREWS



HAMMER



CUTTER

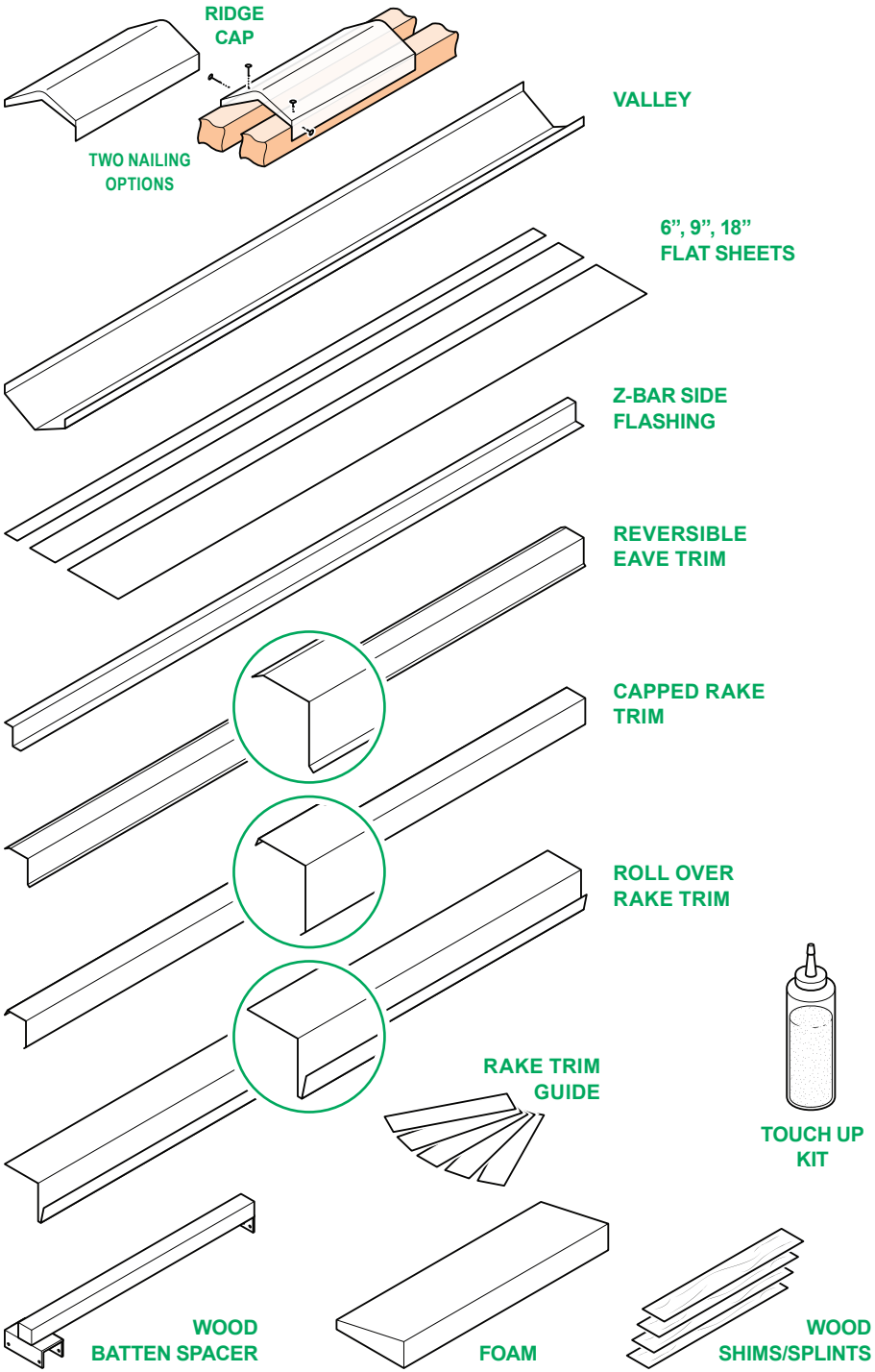


BENDER



DO NOT USE ELECTRIC CUTTER!

INSTALLERS ARE REMINDED TO WEAR THE PROPER GEAR WHEN HANDLING OBJECTS WITH SHARP EDGES


RIDGE CAP
TWO NAILING OPTIONS
VALLEY
6", 9", 18" FLAT SHEETS
Z-BAR SIDE FLASHING
REVERSIBLE EAVE TRIM
CAPPED RAKE TRIM
ROLL OVER RAKE TRIM
RAKE TRIM GUIDE
TOUCH UP KIT
WOOD BATTEN SPACER
FOAM
WOOD SHIMS/SPLINTS

Not following the care and recommendations will void the warranty.

Products should be installed in accordance with the following guidelines established by TEK® Industries:

- DO NOT use accessories that contain copper or lead with the steel roof system, as they are incompatible metals and will void the warranty. This includes direct contact products such as accessories and situations where copper/lead drains onto the panels.
- Physical contact with industrial or agricultural corrosive materials should be treated as corrosive to the steel core of the panel.
- A slope of 3/12 or more is required to install this product.
- When handling the product, be careful not to deform panels.
- Always wear gloves when working with metallic products.
- When installing TEK® roofing panels, care should be taken to avoid excessive friction between panels. This could damage the durability of the stone coating.

TEK INDUSTRIES STORAGE RECOMMENDATIONS 3

- Store the product in a dry and ventilated area.
- Avoid stocking the product in direct contact with the ground or floor over large periods of time. Panels and accessories should always be kept off the ground on wooden pallets.
- If stored outside: Store product on a firm surface and protect from potential damage. Allow for water to drain off of the panels and protect it from being blown by wind. Extra care must be taken to protect from moisture damage.
- A canvas tarp is best to cover materials to ensure proper airflow. DO NOT use airtight covers or plastic tarps as they create and retain condensation.
- Do not store detergents, solvents, acidic materials, or alkali such as concrete or plaster with TEK® products to avoid unwanted chemical reactions and corrosion.
- It is recommended to store products near the place where they will be installed to avoid damage from handling.

- TEK® is designed to withstand most environments, but the product life can be extended with proper maintenance.
- Immediately after and/or during installation, remove any steel particles that may remain on the panels due to drilling and cutting. These particles will rust and might damage or stain the panels
- It is recommended that those working on the roof use rubber soled shoes to avoid damaging the product. Foam inserts are used to increase walkability
- It is recommended to clean the roof surface every six months when installed in a highly corrosive environment
- Always carry out any work on the roof deck using all safety measures and wooden planks for weight distribution.

It is important to carefully read each of the recommendations in this installation manual before starting the installation process.

For the most current and up-to-date installation instructions go to
www.TEKRoofingSystems.com

TEK Industries assumes no liability for either incorrect installation of its products, misinterpretation of this manual, or personal injury that may occur as a result of installing such products.

The installation methods demonstrated are not the only way to install TEK products, but have been developed as a reference guide using acceptable, tested and proven methods. Installers should use their professional judgement at all times and tailor such methods where appropriate to suite each installation of any applicable local building codes or ordinances. Due to the fact that TEK has no control over the actual installation method used, no warranty is expressed or implied relating to installation of TEK products. TEK's liability with respect to TEK products is limited exclusively to its standard written limited lifetime warranty.

It is the responsibility of the installer to adhere to local building codes.

Structure: Installation over existing roof is limited to a maximum of one existing layer of composition shingles, built-up roofing, or roll roofing applied over an existing solid deck. Inspection of existing roof deck must be made prior to the installation of the roof panels.

Decking: The condition of the existing roof deck must be acceptable to receive the roof panels before the roof panel installation proceeds.

Battens: Are not required. If used, wood battens must be 2"x2" or 1"x2". Nails should be placed every 6" to 12".

Recommended fasteners for battens: 16D ring shank nail.

Underlayment: A layer of underlayment over the existing roof covering is not required. A minimum underlayment of #30 (ASTM D226) felt or synthetic underlayment is required on all new construction and tear-offs. Always check local building codes prior to installation.

Slope: Should not be installed on roofs with roof slope less than 3/12

Sealants: A one-part polyurethane type sealant is recommended.

New roof: TEK® panels can be installed over battens or directly to the deck.

Prepare the wooden deck to be level and secure. Cut out decking in areas where you plan to install ridge vents and install #30 felt or equivalent synthetic underlayment on the decking. Always check local building codes for additional requirements.

Re-roofing: TEK® panels may be installed over an existing asphalt shingle roof (maximum of 1 layer). Follow the steps below before installing TEK® panels and accessories over shingles:

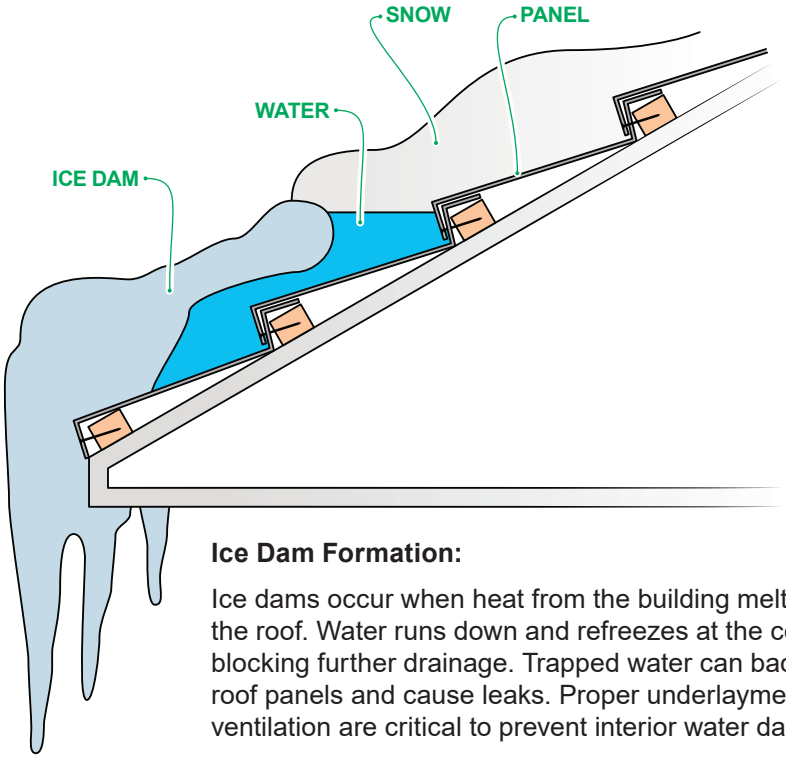
Step 1: Cut any existing overhang flush with the existing fascia. If necessary, build up the first run at the eave using 1"x4"s, 2"x2"s or foam inserts until the first row is flush with the rest of the roof.

Step 2: (optional) Install a new layer of underlayment over the entire roof area. #30 felt or equivalent synthetic underlayment is recommended. Always check local building codes, additional materials such as ice and water shield might be required for your area.

Step 3: Install TEK® panels following the installation procedure described in this manual. Be sure to use screws or nails that are long enough to correctly fasten the panels and accessories to the deck or battens.

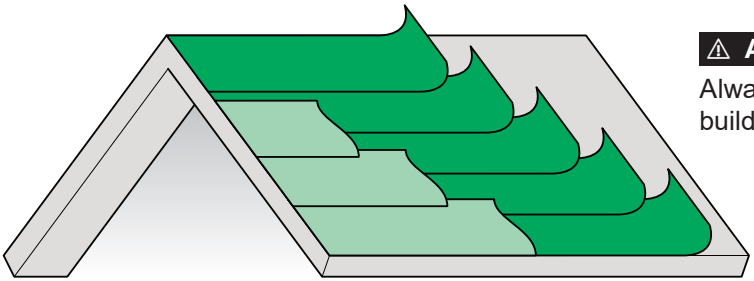
Recommended fasteners for layover: No.10 12x2-1/2" hex head or a hot dip 8D ring shank nail.

Tear-offs: If a complete tear-off is required, make sure to completely remove all pre-existing roofing materials in order to work on a leveled surface. Clean the deck thoroughly and install a layer of underlayment before installing the new product.



Ice Dam Formation:

Ice dams occur when heat from the building melts snow on the roof. Water runs down and refreezes at the cold eaves, blocking further drainage. Trapped water can back up under roof panels and cause leaks. Proper underlayment and ventilation are critical to prevent interior water damage.



⚠ ATTENTION

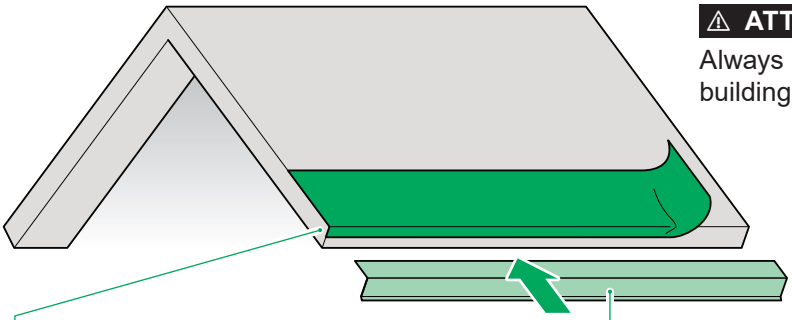
Always check local building codes.

Double Felt Underlayment:

Recommended for heavy snow areas to strengthen underlayment protection across the full roof area.

Ice and Water Shield:

In heavy snow regions, installed locally in vulnerable areas (eaves, valleys, chimneys, and skylights).



⚠ ATTENTION

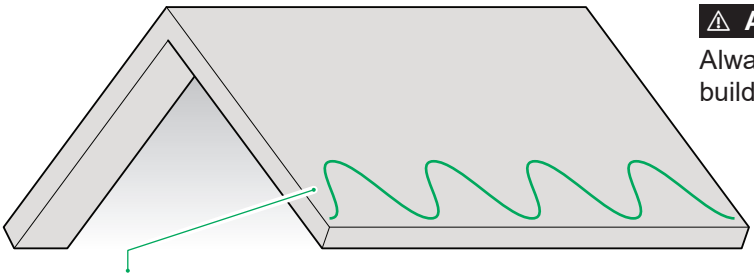
Always check local building codes.

⚠ Extend the membrane 3" past the roof deck over the fascia to prevent rot from standing meltwater.

⚠ Must be fully covered by eave trim to prevent UV damage.

De-Icing Cables (Optional):

Installed along the eaves and gutters in heavy snow regions to melt snow, clear water drainage paths, and prevent ice dam formation.



⚠ ATTENTION

Always check local building codes.

Cable layout and spacing depend on roof configuration.

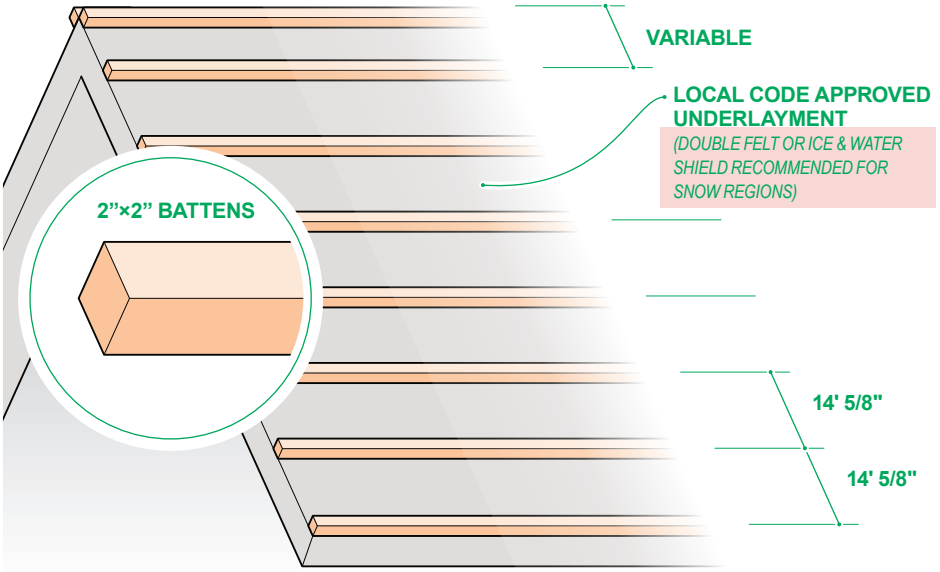
⚠ Always follow the manufacturer's instructions for proper installation and electrical requirements.

The panels should be installed left to right and should be fastened to the roof deck with a minimum of 4 fasteners across back flange. The fasteners are to be placed approximately 16" apart with one fastener placed at point of panel overlapping on the back flange.

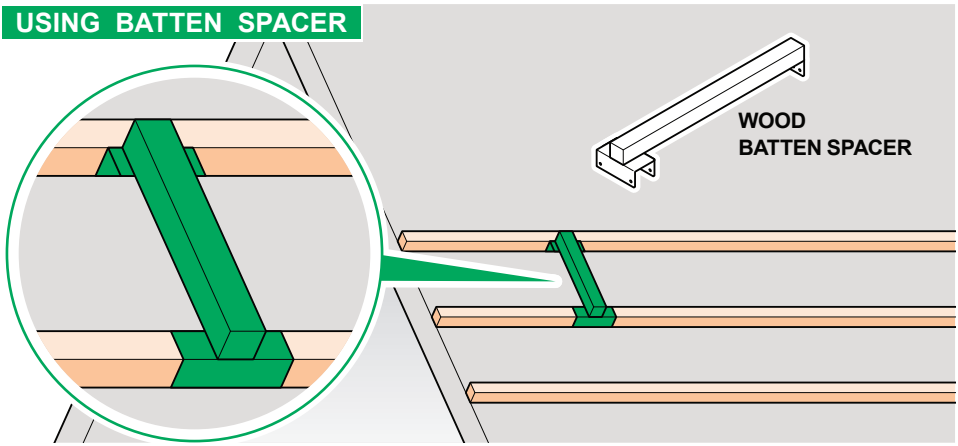
The front nose of the panel should be fastened with a minimum of 4 fasteners across the front nose. The fasteners should be placed approximately 16" apart with one fastener placed at point of panel overlapping on front nose of the panel (see Tile Fasteners Points, page 18).

Foam should be inserted into cavity of panel as an option for walkability and added R-value (R5).

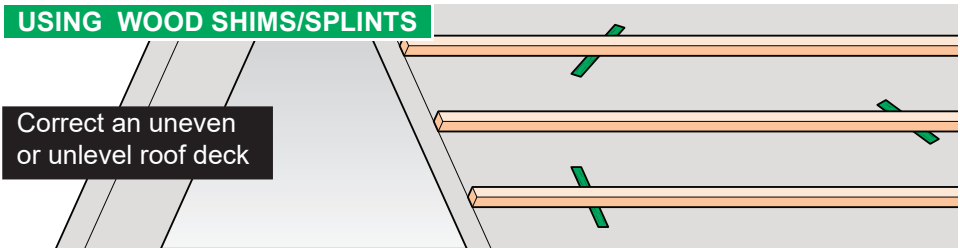
HORIZONTAL BATTENS



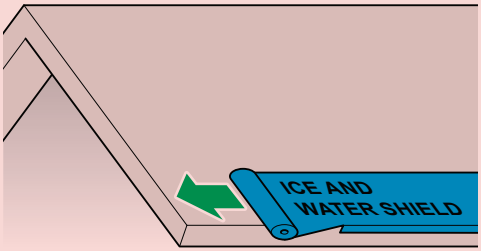
USING BATTEN SPACER



USING WOOD SHIMS/SPLINTS

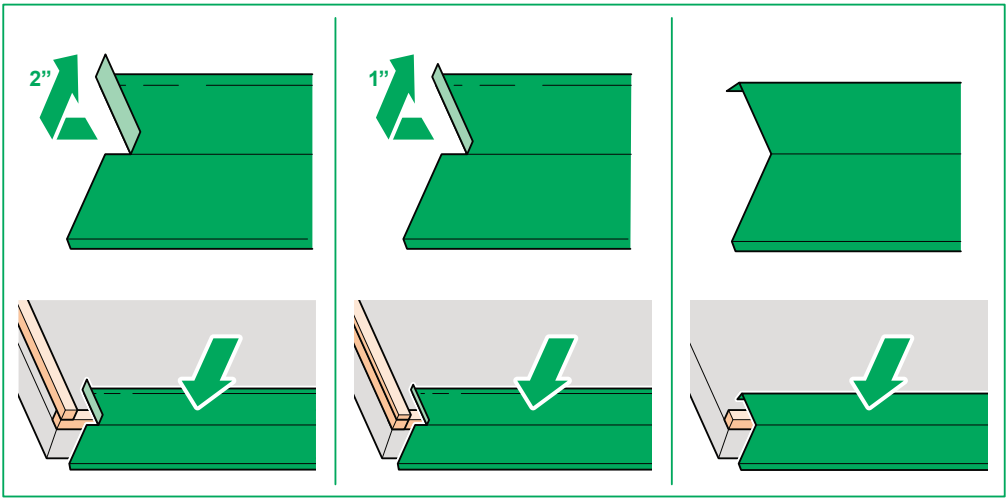


REVERSIBLE EAVE TRIM INSTALLATION

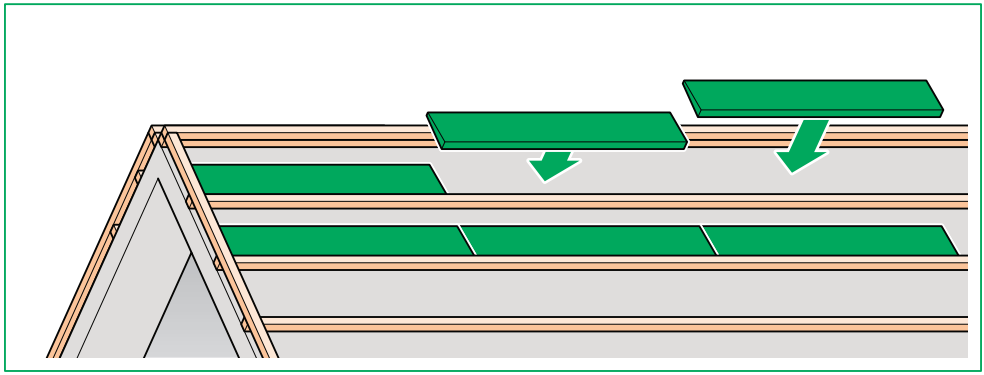


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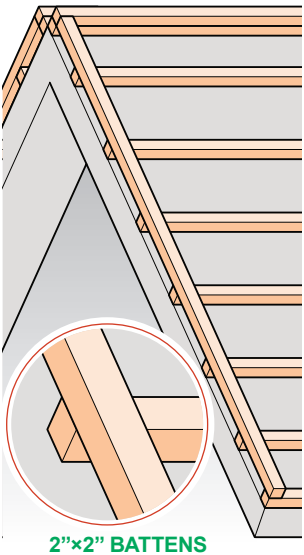
In heavy snow regions, it is recommended that Ice and Water Shield is installed along eaves before trim installation.



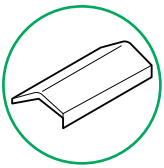
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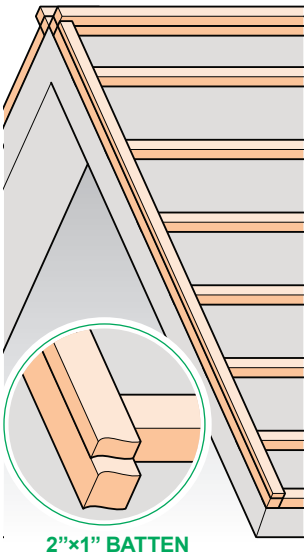
VERTICAL BATTENS VARIATIONS



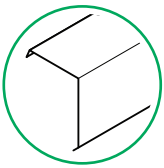
2”×2” BATTENS



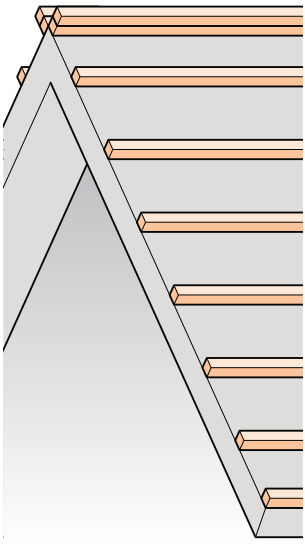
RIDGE CAP ON RAKE OPTION

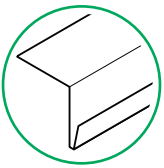


2”×1” BATTEN
2”×2” BATTEN



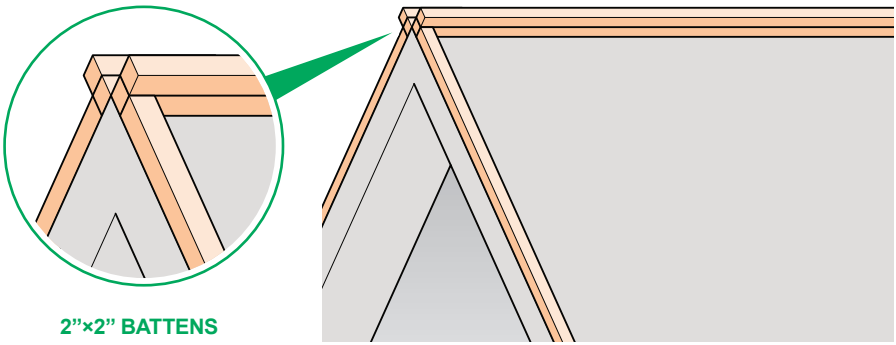
CAPPED RAKE TRIM OPTION





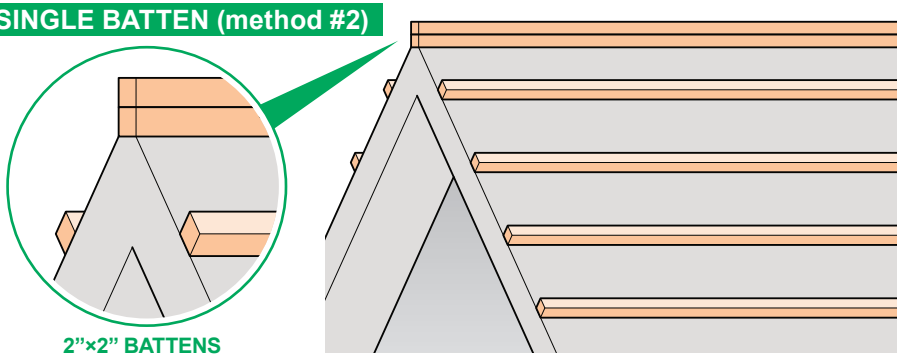
ROLLOVER RAKE OPTION

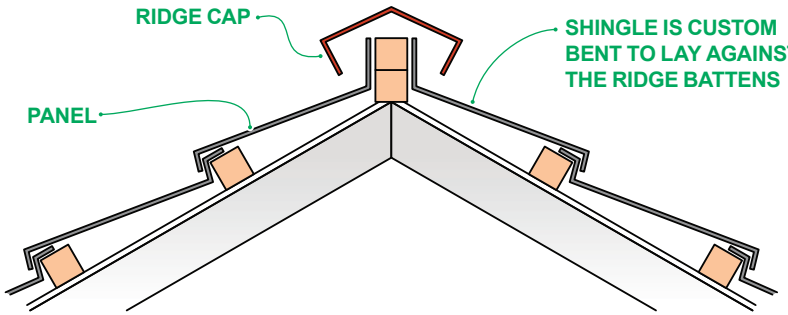
DOUBLE BATTEN (method #1)

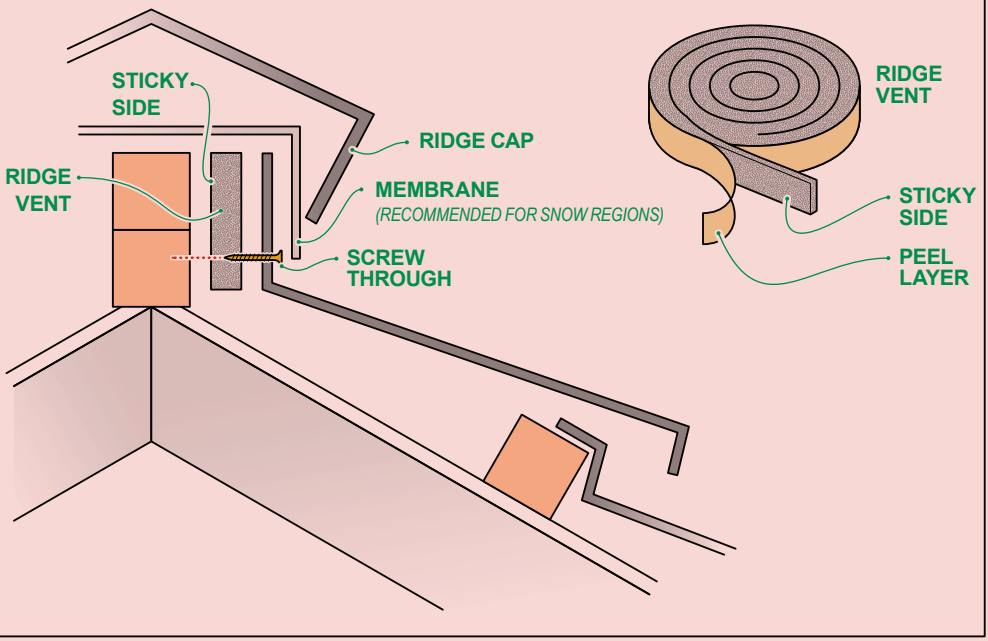


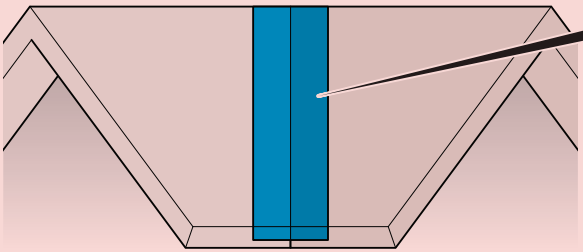
2”×2” BATTENS

SINGLE BATTEN (method #2)



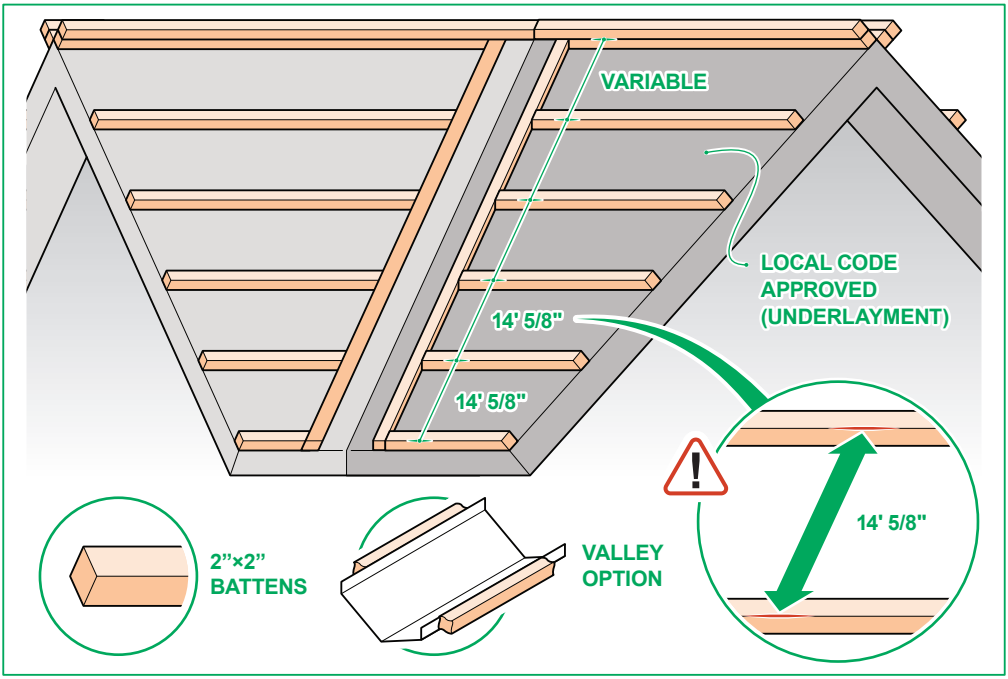


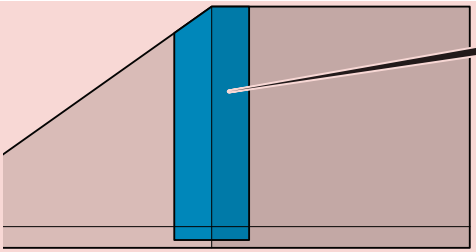




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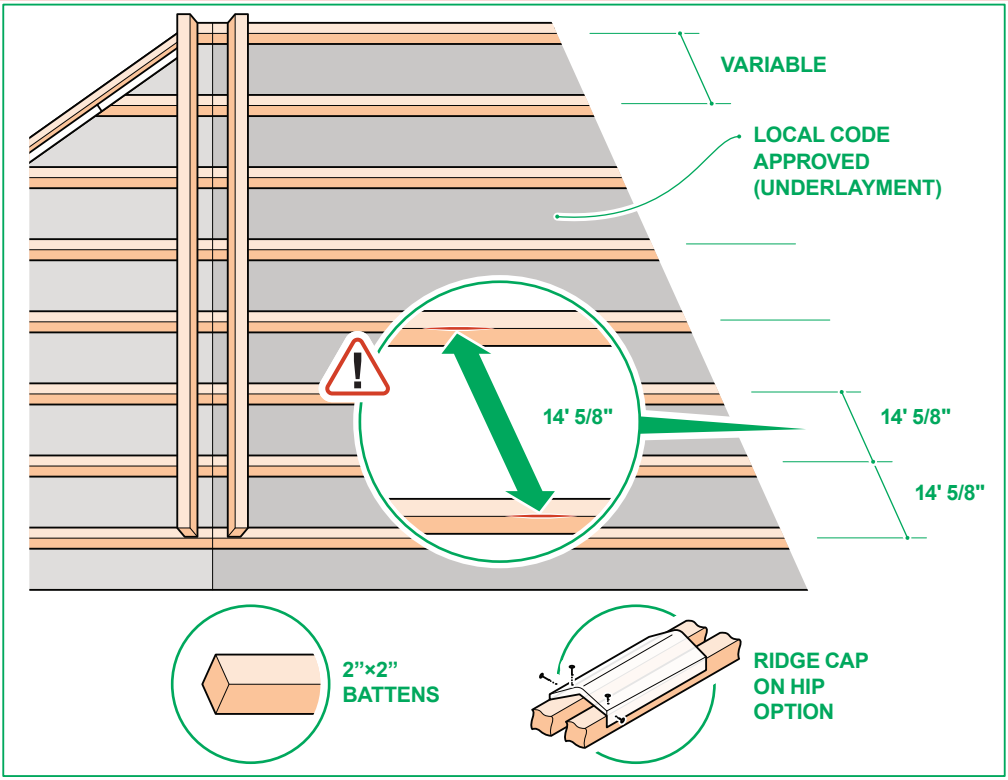
In heavy snow regions, it is recommended to install Ice and Water Shield along the valley before mounting battens and valley flashings.



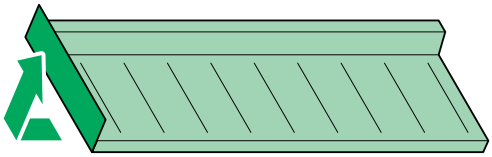


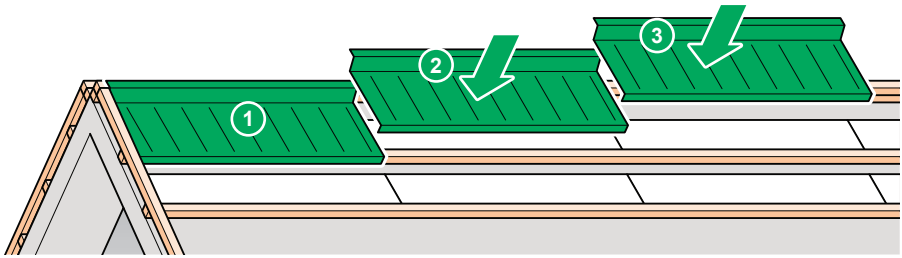
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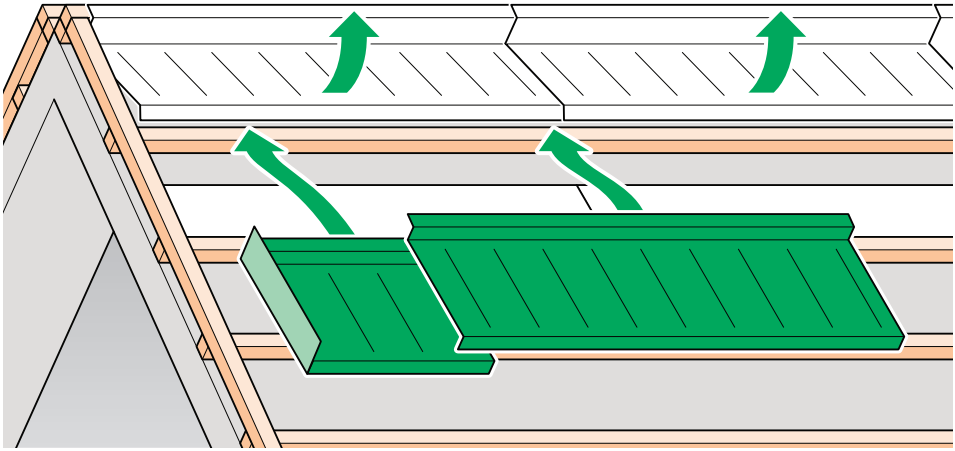
In heavy snow regions, it is recommended to install Ice and Water Shield along the hip area before mounting battens and ridge components.

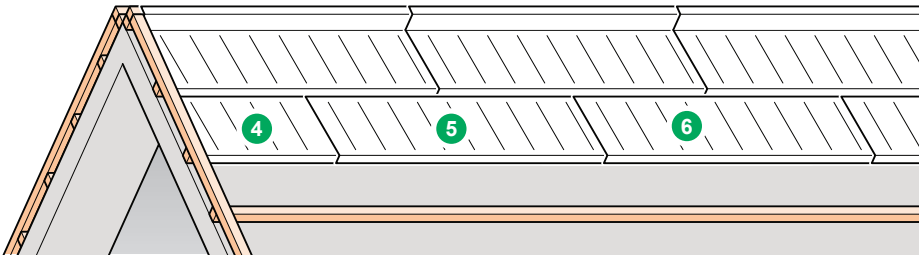


Bend the first tile of each row upwards on the ridge

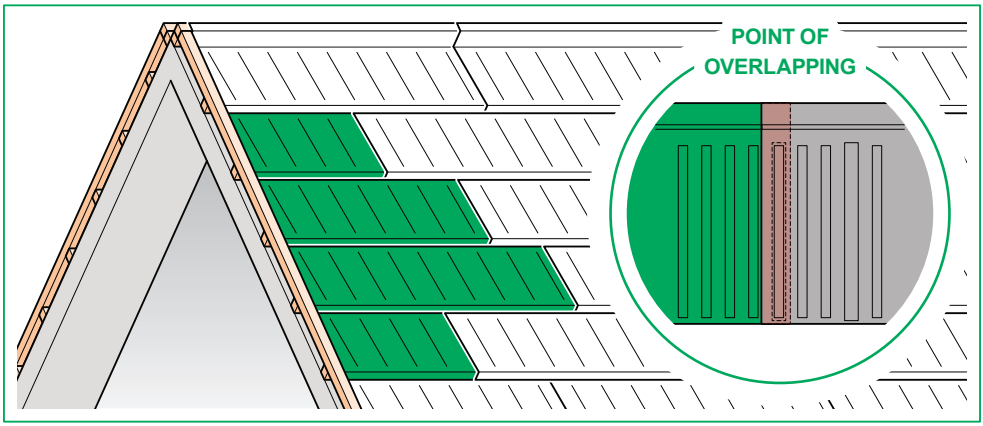




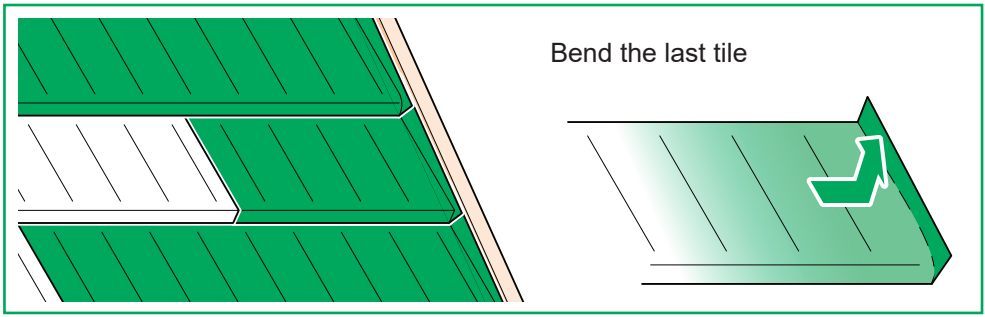




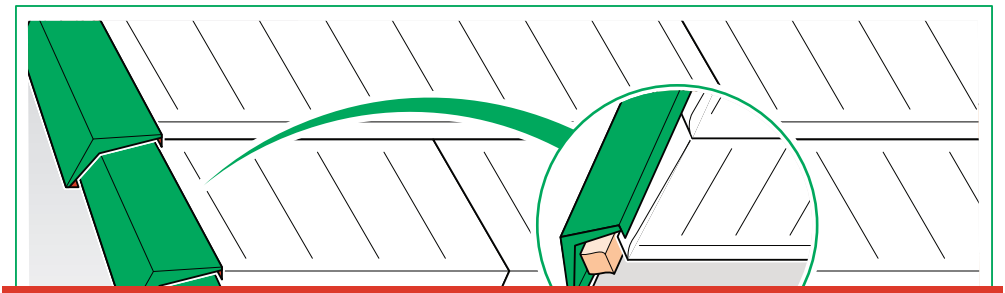
RIDGE CAPPED RAKE EDGE TILE PLACEMENT CONTINUED



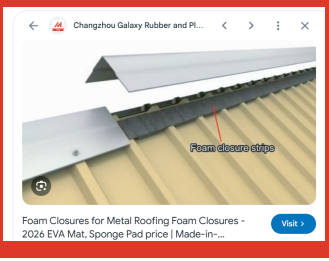
RIDGE CAPPED RAKE EDGE LAST TILE PLACEMENT



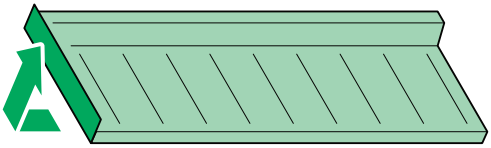
RIDGE CAP INSTALLATION

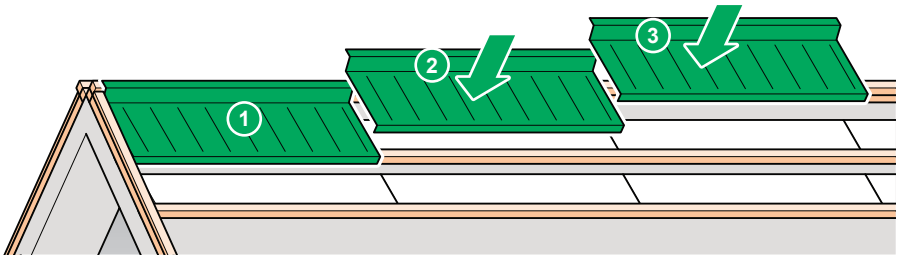


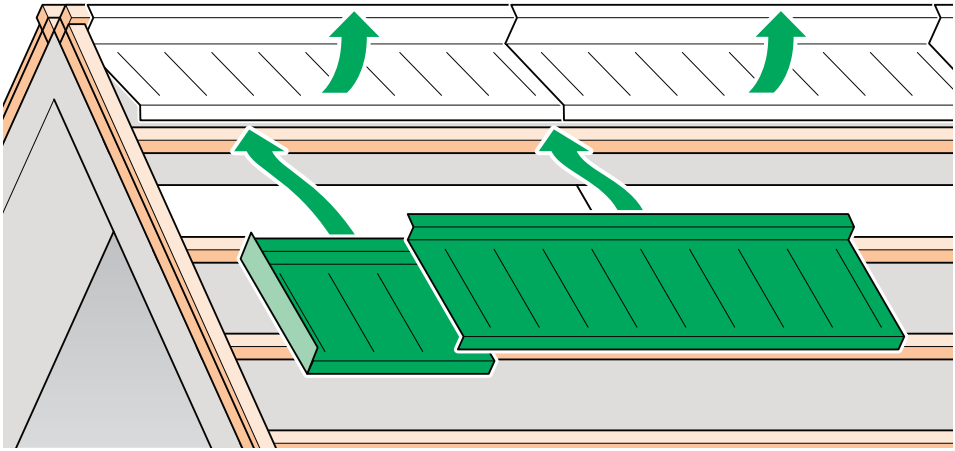
Should we recommend foam closure strips (or sealant) under the rake edges/ridge area here or is standard overlap sufficient?

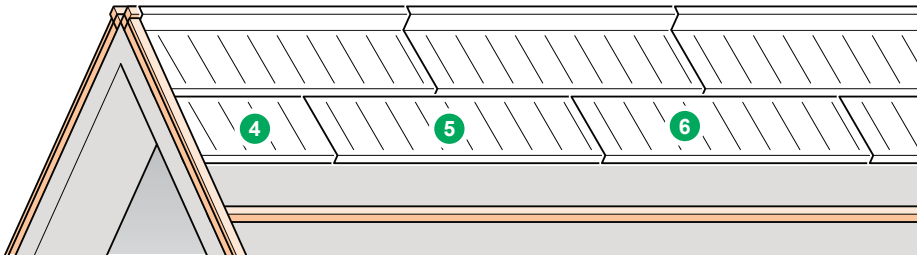


Bend the first tile of each row upwards on the ridge

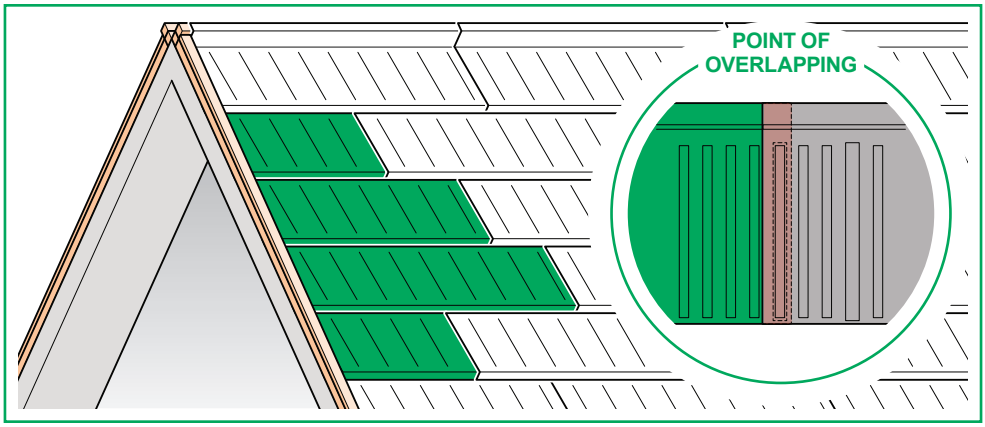




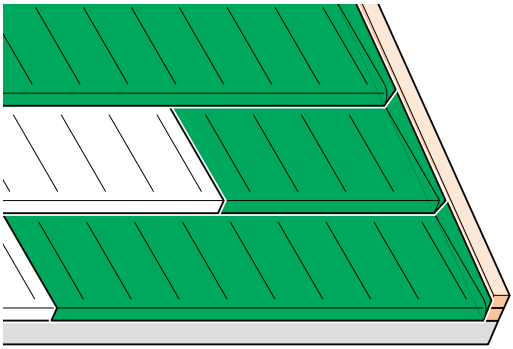




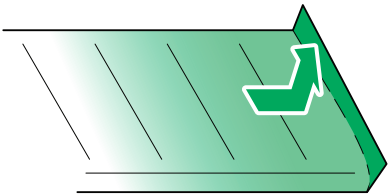
CAPPED RAKE TRIM TILE PLACEMENT CONTINUED



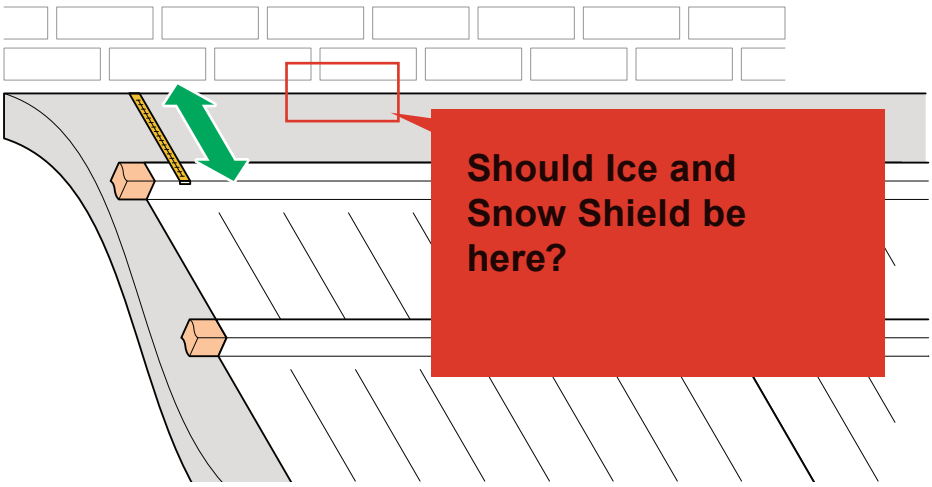
CAPPED RAKE TRIM LAST TILE PLACEMENT

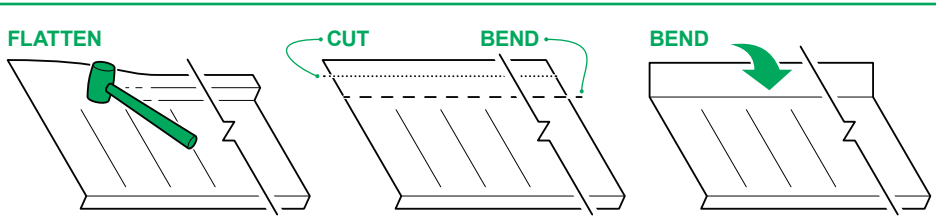


Bend and cut the last tiles



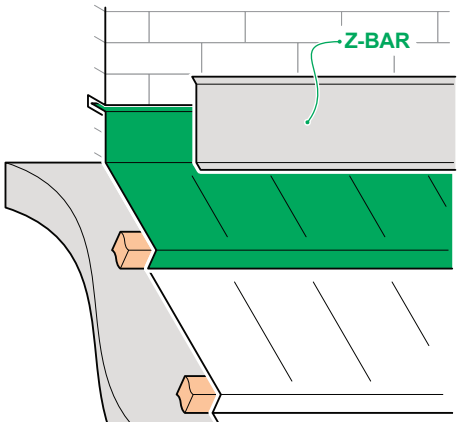
INSTALL SHINGLE BEND



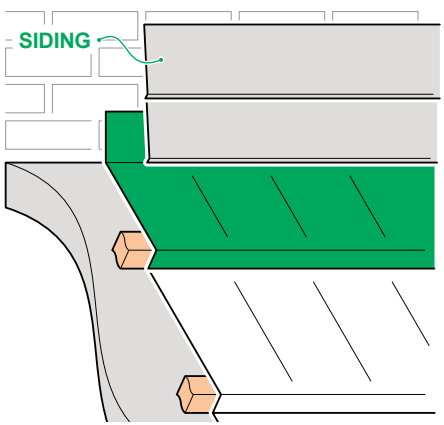


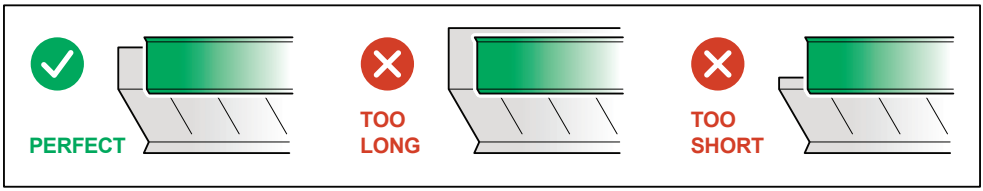
INSTALLING METHODS

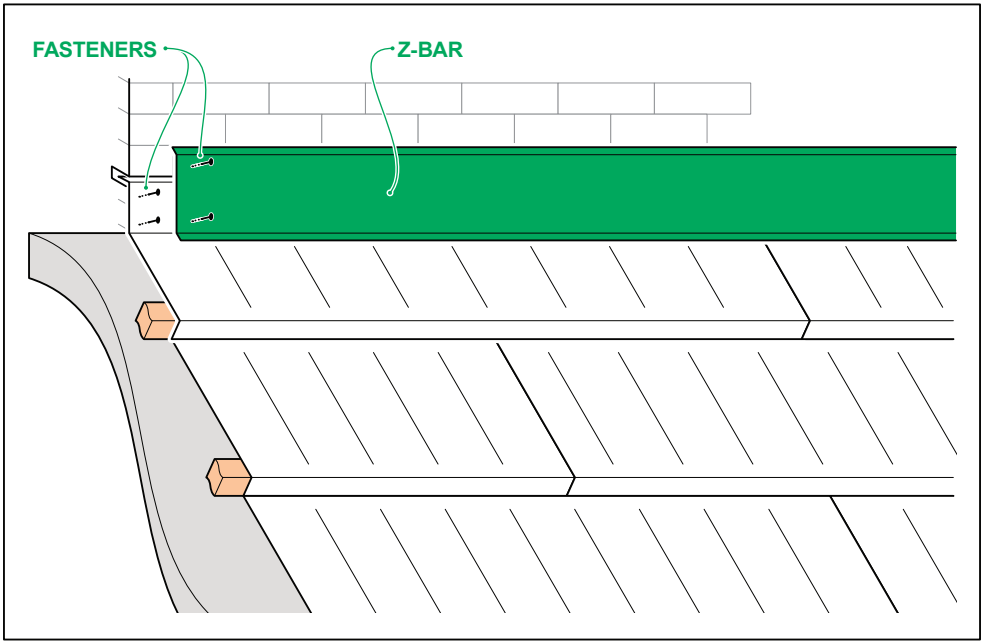
INTO THE WALL

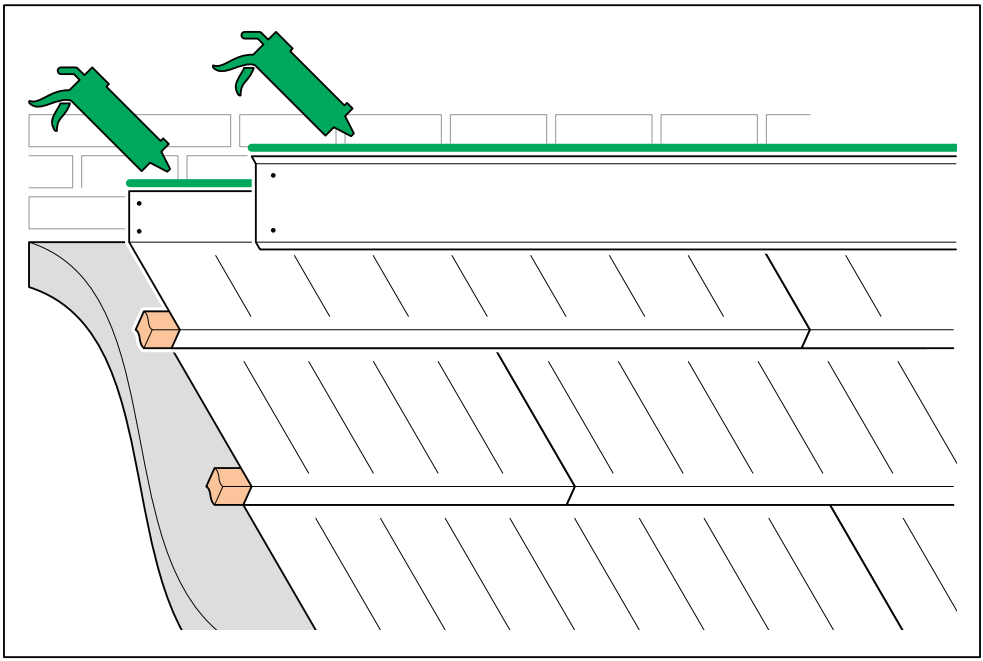


UNDERNEATH THE SIDING

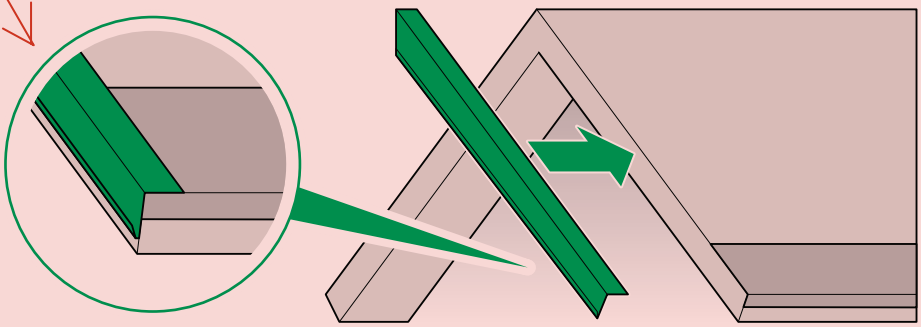


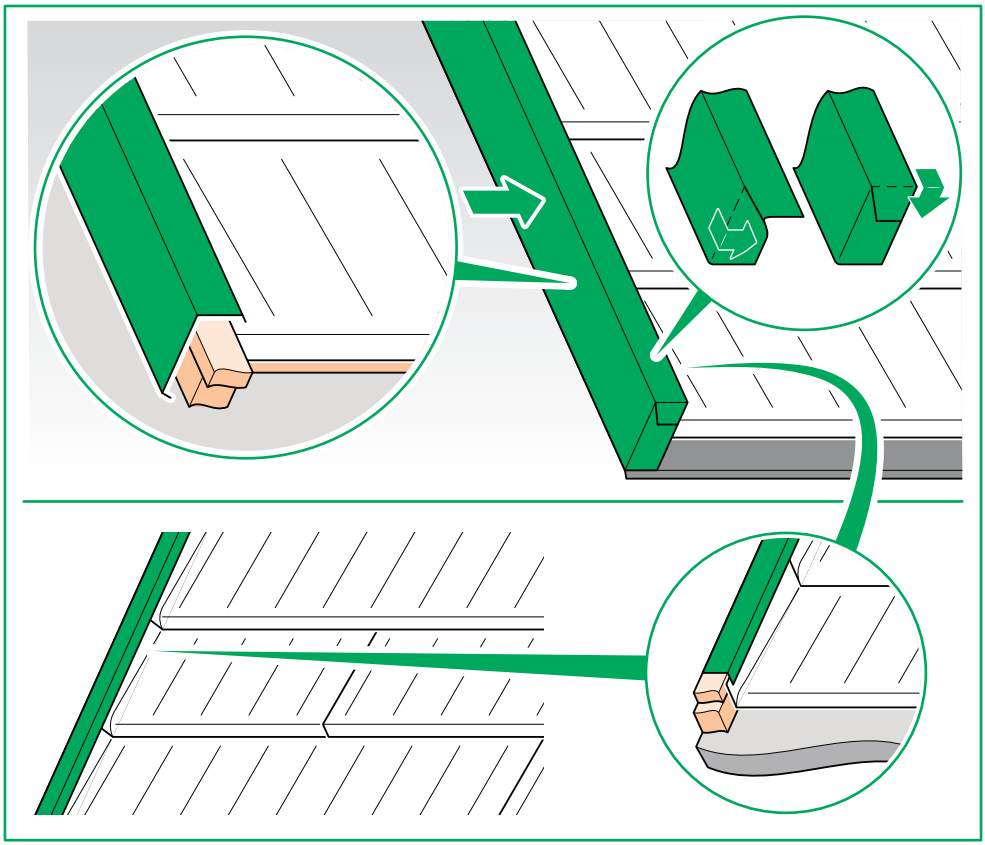

PERFECT
TOO LONG
TOO SHORT

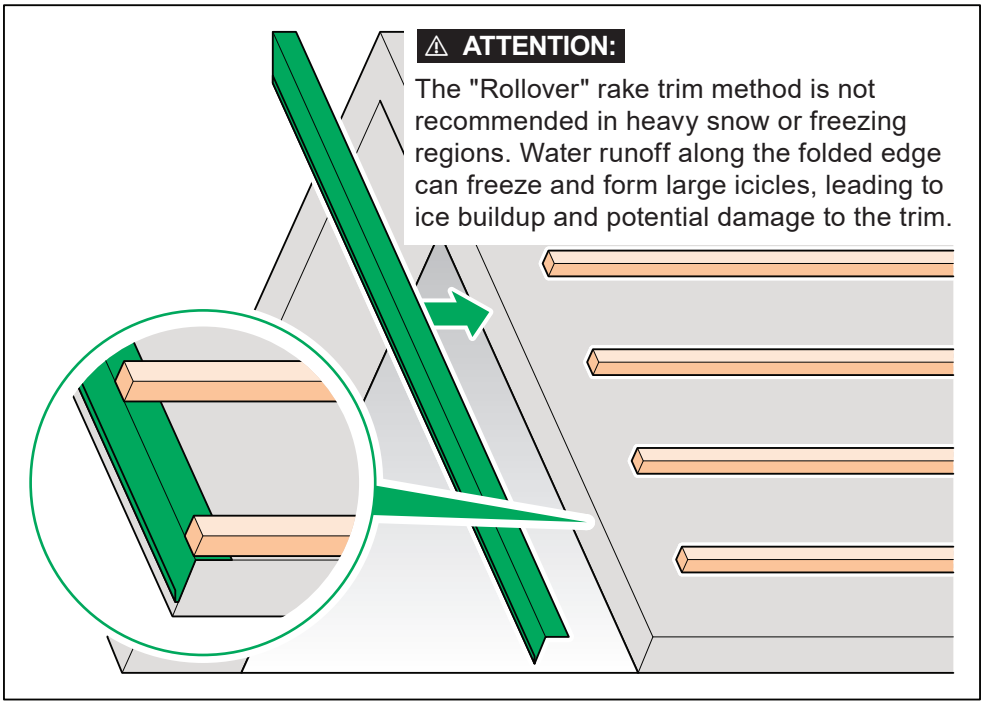

FASTENERS
Z-BAR



There should be a close-up of the heavy snow rake trim here. I couldn't find a reference on the internet. Could you provide it please?

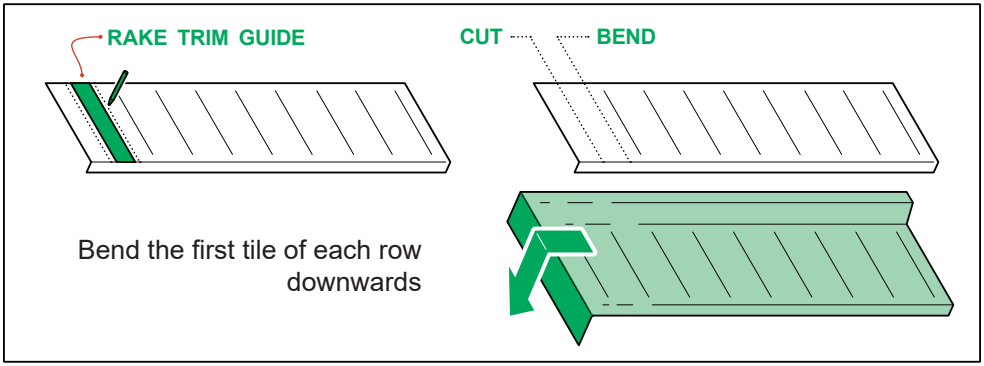




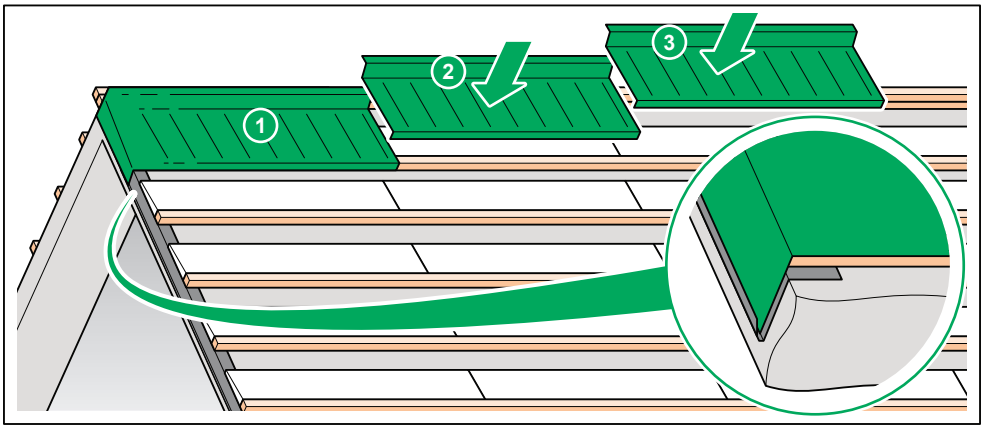


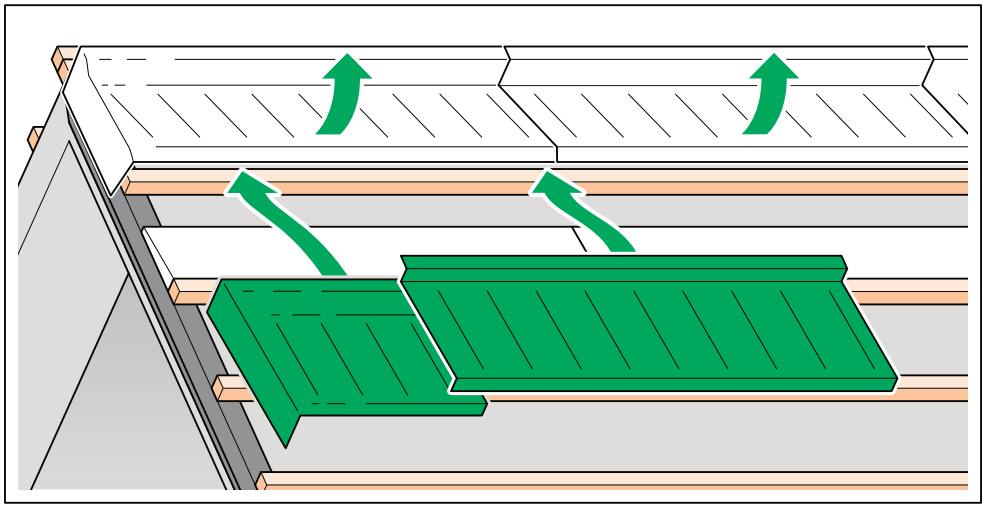
⚠ ATTENTION:

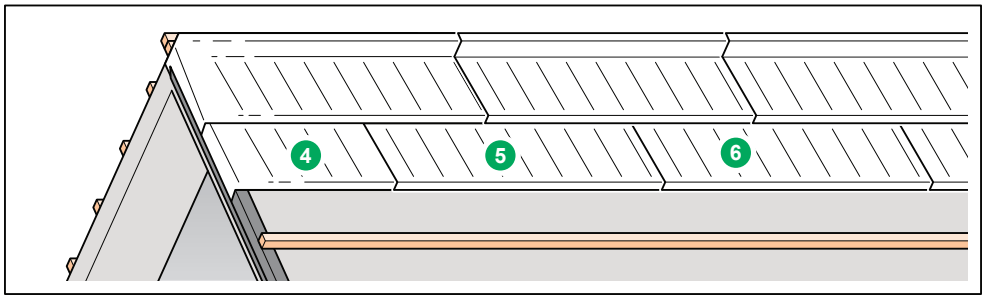
The "Rollover" rake trim method is not recommended in heavy snow or freezing regions. Water runoff along the folded edge can freeze and form large icicles, leading to ice buildup and potential damage to the trim.

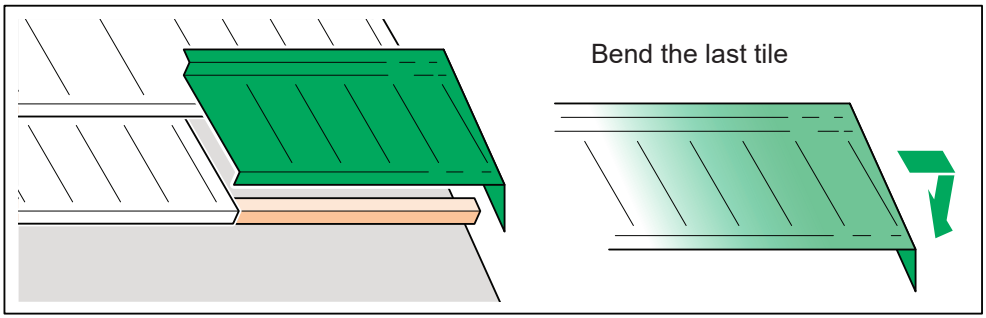


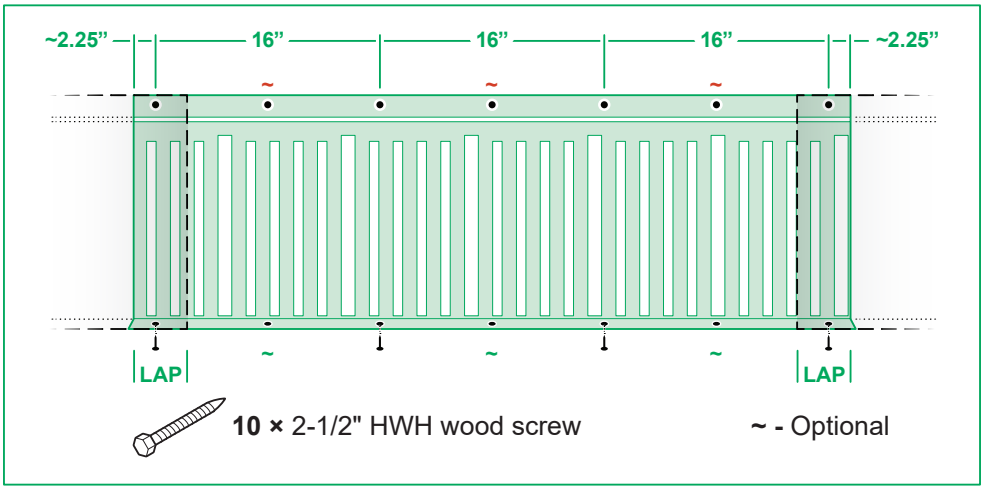
Bend the first tile of each row downwards

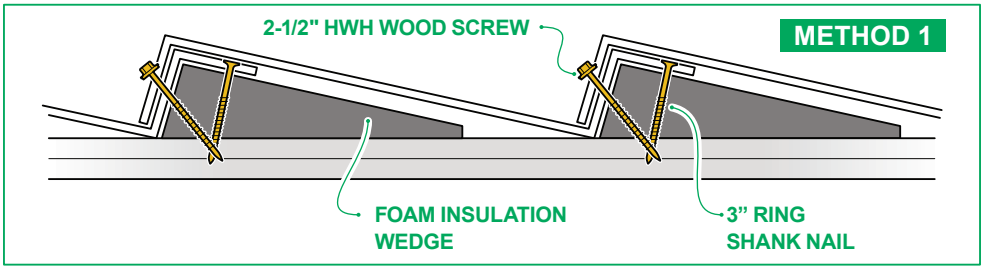


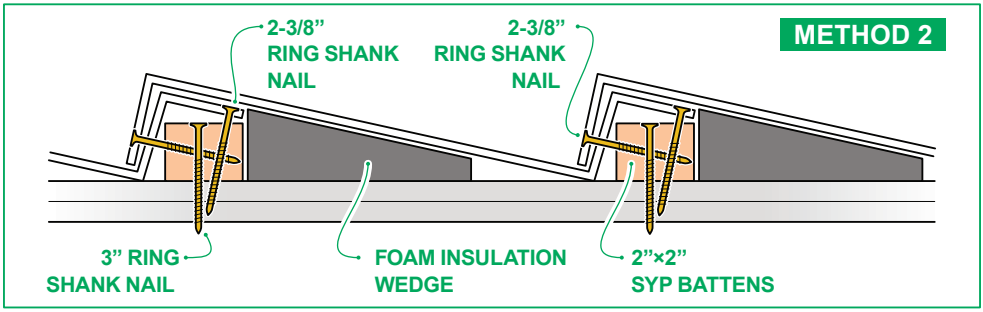


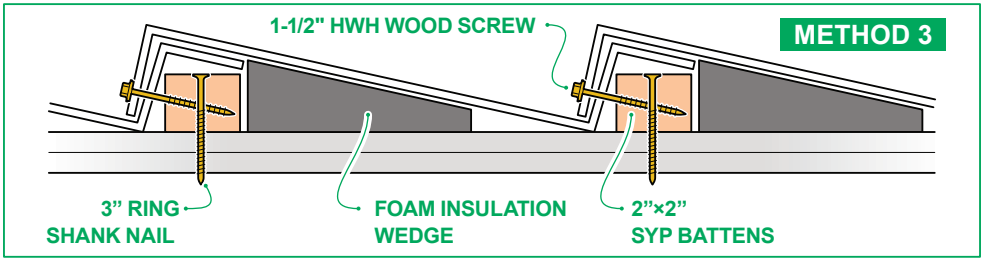

4
5
6


Bend the last tile
7


~2.25”
16”
16”
16”
~2.25”
LAP
LAP
10 × 2-1/2" HWH wood screw
~ - Optional


METHOD 1
2-1/2" HWH WOOD SCREW
FOAM INSULATION WEDGE
3” RING SHANK NAIL


METHOD 2
2-3/8” RING SHANK NAIL
2-3/8” RING SHANK NAIL
3” RING SHANK NAIL
FOAM INSULATION WEDGE
2”×2” SYP BATTENS


METHOD 3
1-1/2" HWH WOOD SCREW
3” RING SHANK NAIL
FOAM INSULATION WEDGE
2”×2” SYP BATTENS

METHOD	SYSTEM CONFIGURATION	ALLOWABLE WIND RESISTANCE (PSF)
Minimum	Panels attached to min. 15/32-in. plywood with eight, min. #10 x 2-1/2 in. HWH wood screws, four screws in the top flange, spaced 2 in. from ends and 16 in. oc. Screws engage the lower flange of the course above.	55
Method 1	Back flange attached to min. 15/32-in. plywood roof deck through a foam insulation wedge with 0.120" x 3" ring shank nails at 6" oc. The front flange attached through the back flange of the panel in the course below, and into the roof deck, with #10 x 2-1/2" HWH wood screws at 6" oc.	124
Method 2	Front and back flanges attached to nominal 2 x 2 wood battens with 0.131" x 2-3/8" ring shank nails at 6" oc. Battens are minimum S.G. of 0.42, attached to min. 15/32-in. plywood with 0.120-in. x 3-in. ring shank nails at 6-in. oc. A foam insulation wedge is loose laid under the tile next to the batten.	116
Method 3	Front and back flanges attached to nominal 2 x 2 wood battens with #10 x 1-1/2" screws at 6" oc. Battens are minimum S.G. of 0.42, attached to min. 15/32-in. plywood with 0.120-in. x 3-in. ring shank nails at 6-in. oc. A foam insulation wedge is loose laid under the tile next to the batten.	86