DIAMOND
STEEL ROOFING

Diamond Steel Roofing Installation Procedure

Introduction

This document describes the steps required to install a Diamond Steel Roof.

For videos on how it is done visit us on YouTube https:// www.youtube.com/user/diamondsteel1

If you need more assistance feel free to reach out to us by

Phone 1-888-810-7663 or Email sales@diamondroof.on.ca or in person at our plant in Wingham, ON.

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Diamond Steel Roofing Installation Procedure

Arrival

At Diamond Steel each roofing package is custom to your specific roof design, upon consultation and ordering. However there are a few main components that you are guaranted to see. The boxed shingles will always contain starter shingles, full shingles, and finish shingles. When unloading your roofing order it is best practice to set aside the starter, finish and any pattern coloured shingles so that they are easy to find. Place all boxes somewhere dry so the card board boxes do not separate and make carrying difficult. We also recommend that you stack the boxes on the edge to prevent damage to the folds from excess weight. A breathable roofing membrane is recommended for underlay on top of your full deck, plywood or OSB board.

Trims that may be included are: Eavestarter, Gable, Valley, Side wall flashing, End wall flashing, Hip/ Sectional Hip & Ridge.

Recommended Tools

- Coil Roofing Nails
- Hand Nails
- Utility Knife
- 25’ Tape Measure
- Air Coil Nail Gun
- 16oz Hammer
- Drill/Nut Driver
- Slap Stapler
- Gloves
- Air Hose
- Pouch
- Pencils
- Air Compressor
- 1/4 “ Nut Driver Bit
- Swanson(speed) Square
- Right & Left Aviation Style Tin Snips
- Valley Protector
- Barfolder (included on the first valley order)

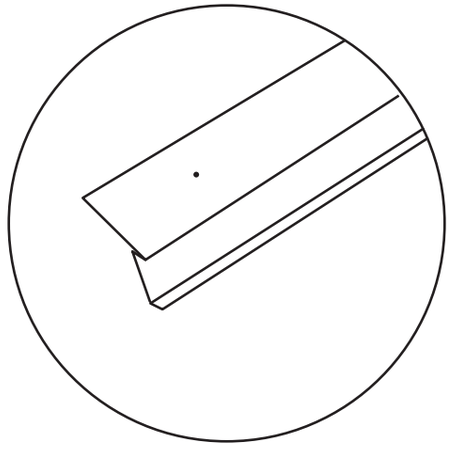
Safety

Before starting any roofing project, it is beneficial to discuss the best practices for roofing safety. The following are a few of those practices :

- Work in ideal weather conditions. Extreme weather can cause hazards like slips, trips and falls. It can also cause improper execution of your roofing project.
- Ensure that all your equipment is in good working condition.
- Wear proper protective gear. ie: gloves, hard hat, fall arrest equipment ie: harness
- Keep the roof clear of tripping / slipping hazards.
- Well secured roofing anchors and ladders.
- Ensure that your roofing project is water tight at the end of each working day.

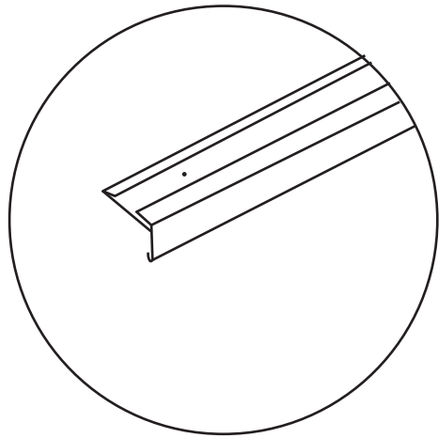
Initial Trim & Membrane Application

Eavestarter



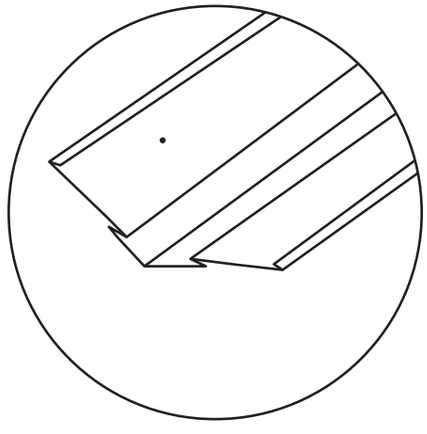
The Eavestarter is the first piece of trim that will be installed. It is nailed on where the roof sheathing meets the fascia board. This trim will be cut flush at a gable end and mitered at a hip and valley. For a secure fit this trim should be nailed approximately every 2 ft .

Gable Trim (Rake)



The gable trim is put on with the 1 3/4” face covering the top edge of the gable board and the bottom is made flush with the eavestarter. Cut the roof side bottom corner of the trim off at a 45 degree angle approximatley 1” x 1”. Secure the gable by using roofing nails every 2ft on the top side of the trim. When joining lengths, overlap them by 3/4”. Gables are to be mitered at the ridge point. The gable trims are factory pre notched to join together, avoid interlocking field cut edges or piecing these together from many small pieces as it can be labour intensive to notch them.

Valley Trim



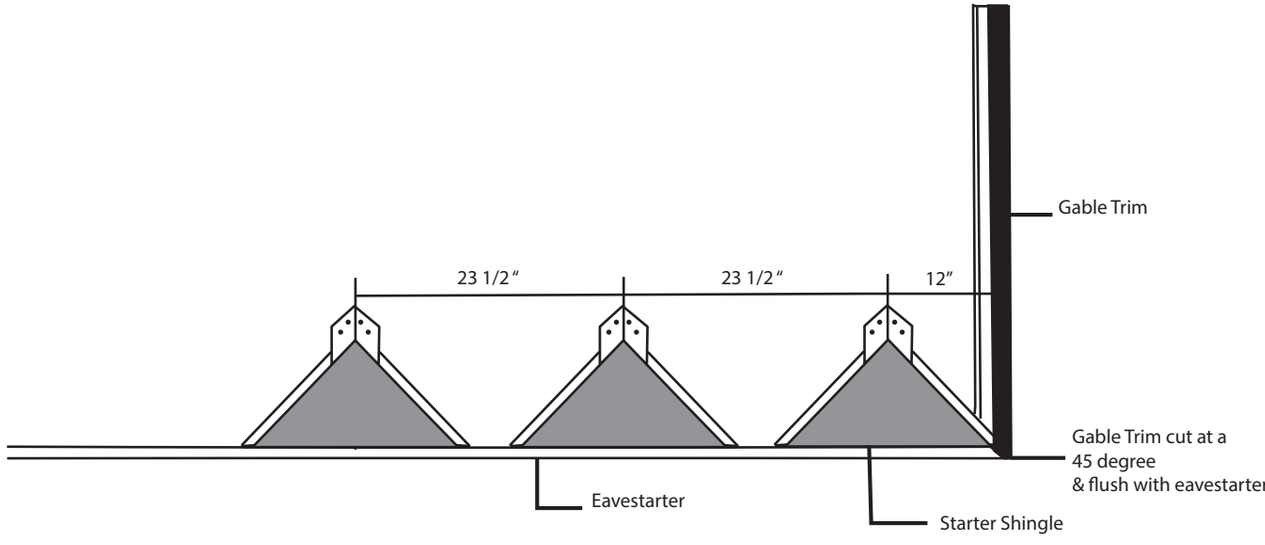
The valley will come to you with a centre fold that should match the slope of your roof.
When installing the valley, line it up with eavestarter by matching up the valley folds with the line of the eavestarter. Push tightly into place and nail the valley into place. When securing the valley make sure that the nails are placed at least 1 1/2” away from the valley (S) fold . At the ridge, the valley is sent past and then folded over the ridge. On a dormer it is folded over to meet the valley on the other side. When lapping valleys lap the sections 6-8”. Use a hammer to pound flat the hem on the lapping portion of the lower valley so that the top valley will sit flat and tight over top of the lower valley.

Roofing Membrane

Breathable roofing membrane is rolled out and nailed up about 3/4” from the edge of the eavestarter. Cut at the fold, 3” out from the centre of the valley, or cut 4” past the hip line and tack over the other side of the hip. Lap the membrane 3“ horizontally and 6”vertically. The membrane must be nailed according to manufacturers instructions. If not properly nailed the membrane can rip loose when stepped on and cause a fall.

Starter Shingles

Starter shingles can be started anywhere along the eave, however, if the first is placed 12” from the outside of the gable trim it means that only every second row has to be cut. Starters are always measured at the top points of the shingle (not the clip) and after the first one is set each one is set at 23.5” point to point. Be sure the bottom lip is snugly hooked onto the eavestarter. Starter shingles are calculated by the eave length given at the time of quoting.

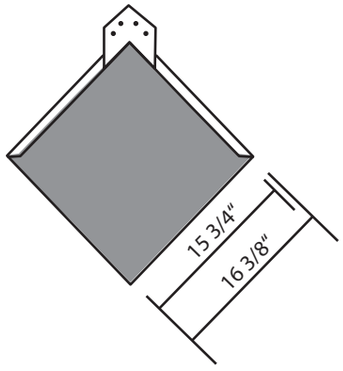


* Measurements for a 30’ tape measure are attached for your convenience below.
You can copy this and tape to the side of your tape measure if you want.*

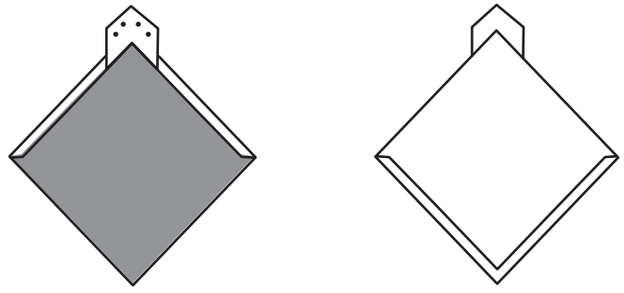
23.5	235
47	258.5
70.5	282
94	305.5
117.5	329
141	352.5
164.5	
188	
211.5	

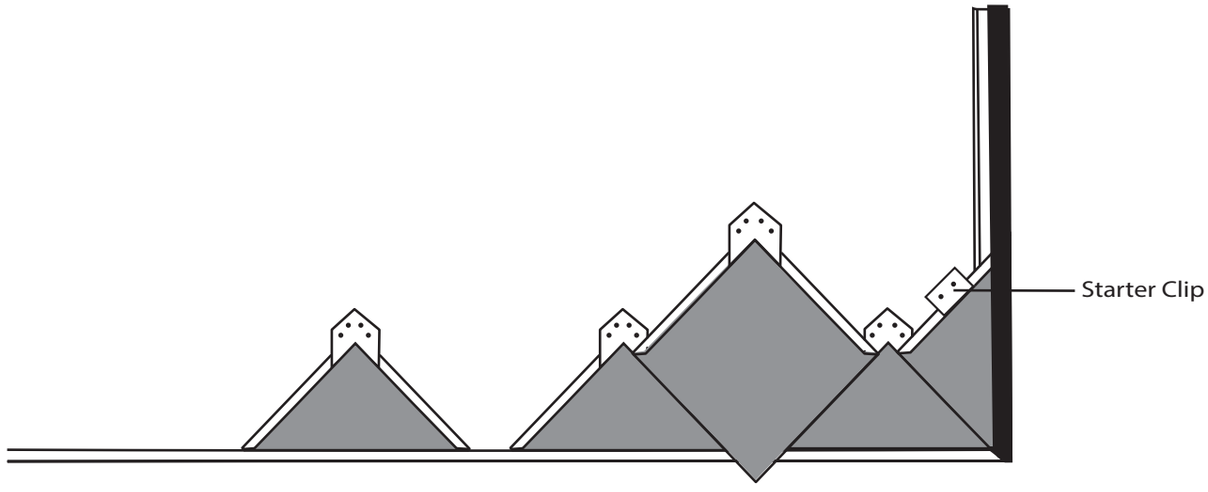
Shingle application

Coverage: 1.72 Square FT



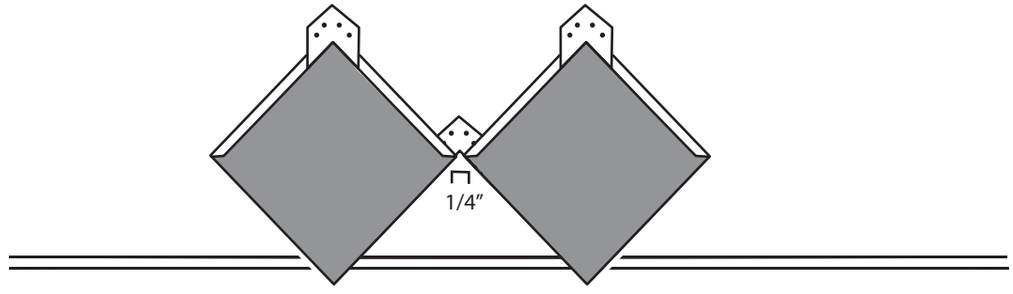
The full shingles are now installed. The shingles are installed with the colour side up. Lay the shingle on the roof between the starter shingles and slide up hooking the folds together. The bottom of the shingle will not lift if properly placed.





Slide the back folds of the shingle you are installing into the front folds of the previously installed shingles to look like this.

When 2 full shingles are in place there will be approx. 1/4” space between the right and left corners. This space can become a little larger or smaller without effecting the integrity of the finished roof. Try to keep the shingles horizontally level by watching the bottom edge of the upper fold on the right and left of each shingle.



Gable Shingling

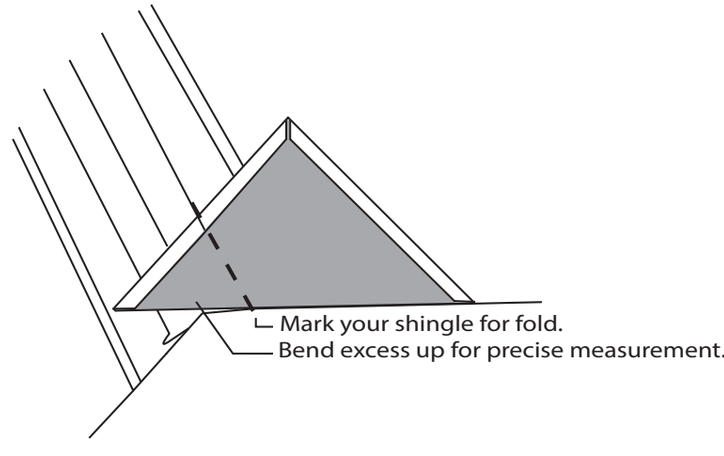
At the gable, the shingle is cut to slide into the fold on the gable trim, if measuring to the outside of the gable 1/4” less than measured usually works well.

Hip Shingling

At a hip the shingle is cut flush at the line of the hip.

Valley Shingling

At the valley, the shingle is laid over top of its eventual position overlapping onto the valley. If this cannot be done because the shingle is too wide and is hitting the other side of the valley, bend the far side of the shingle up out of the way. The top and bottom of the shingle is marked at the point where they overlap the S fold, which is the fold that is 3” out from the centre of the valley.



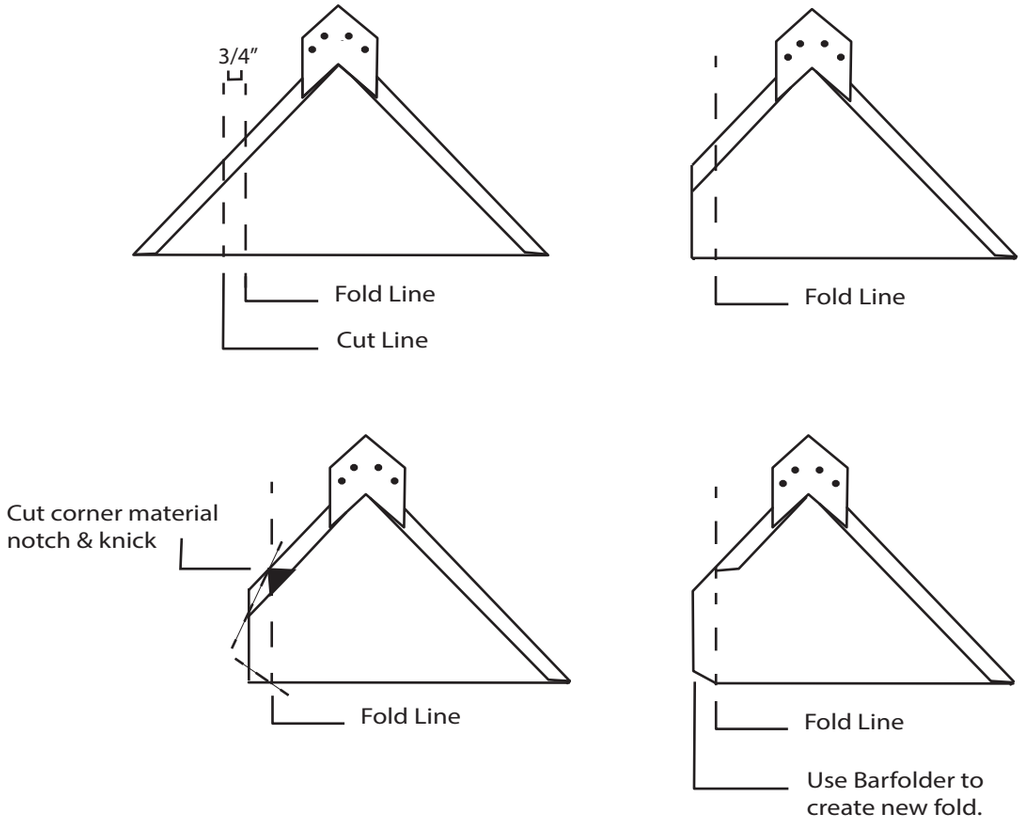
*Mark these two lines with a “C” for cut and “B” for bend with a pencil to keep your measurements clear.

Ridge Shingling

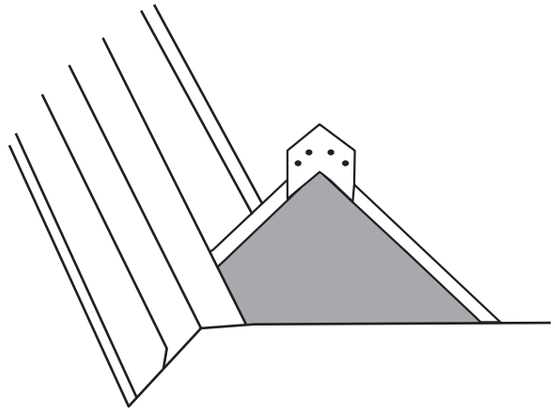
The shingles are cut flush with the ridge or flush from the opening where vented ridge is used.

Valley Shingling Continued

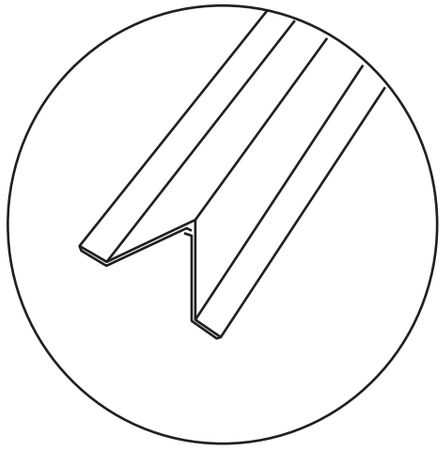
Draw a line between these points on the shingle and make another line 3/4” toward the center of the valley, parallel to the first. Your first line is where the fold will be bent, the second is the cut line. Cut away the excess following your cut line. Then, on an angle cut away the corner material between your fold line and the newly cut line, reflecting that same angle notch of the existing fold material. Remove any material that is left over from the notch. Knick the fold line for ease of bending. Slide the barfolder over the 5/8” edge and fold down and under the shingle to form the new fold.



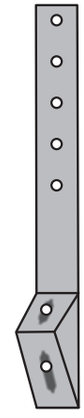
The new fold will attach onto the S fold of the valley. Attach with the appropriate clips and secure in place with nails. To reduce the risk of scratching the valley trim when installing the newly made shingle, there is a valley protector provided with the barfolder that is available upon request.



Snow Guards



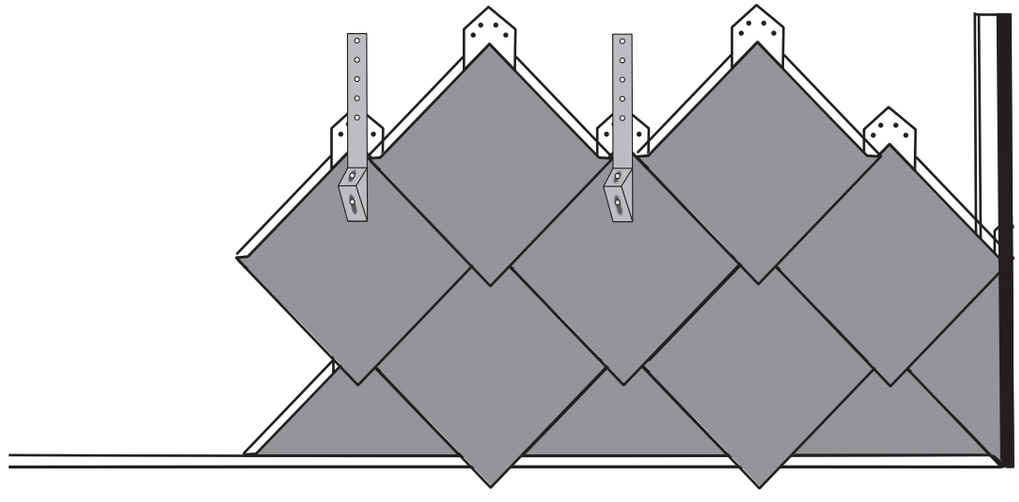
Brackets



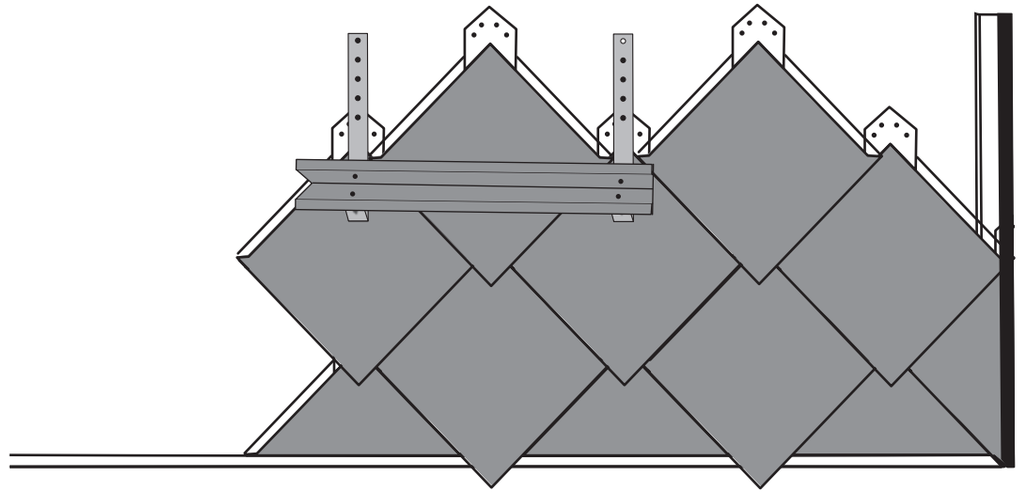
The need for snow guards, the amount and the placement is not an exact science. There are many factors that effect it including slope, attic insulation, attic ventilation, local climate, sun exposure and shade.

Bar Style Snow Guard

The snow guard is generally installed 1.5-2 shingle rows or more above the eave. In the area to be covered, install brackets on the tip of each diamond shingle or about every 2 ft. Keep well away from valleys at least 2 shingles or preferably more. Place brackets so that the first screw hole in the bracket meets the centre point between the holes in the shingle clip, this is approximately 1”. This will allow the next shingle to be installed without any interference. Attach the bar after brackets are installed by screwing the bar into the prepunched holes of the bracket. When joining, lap additional sections of bar to the brackets.

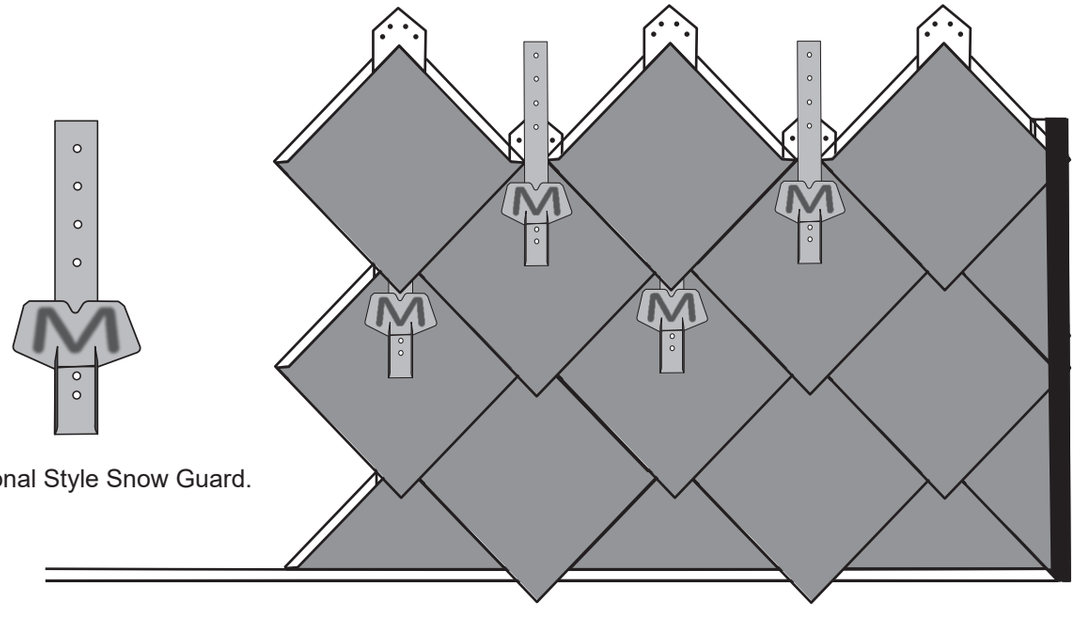


* the bar is to be cut flush on the bracket so the bar will not be bent .



Sectional Style Snow Guard

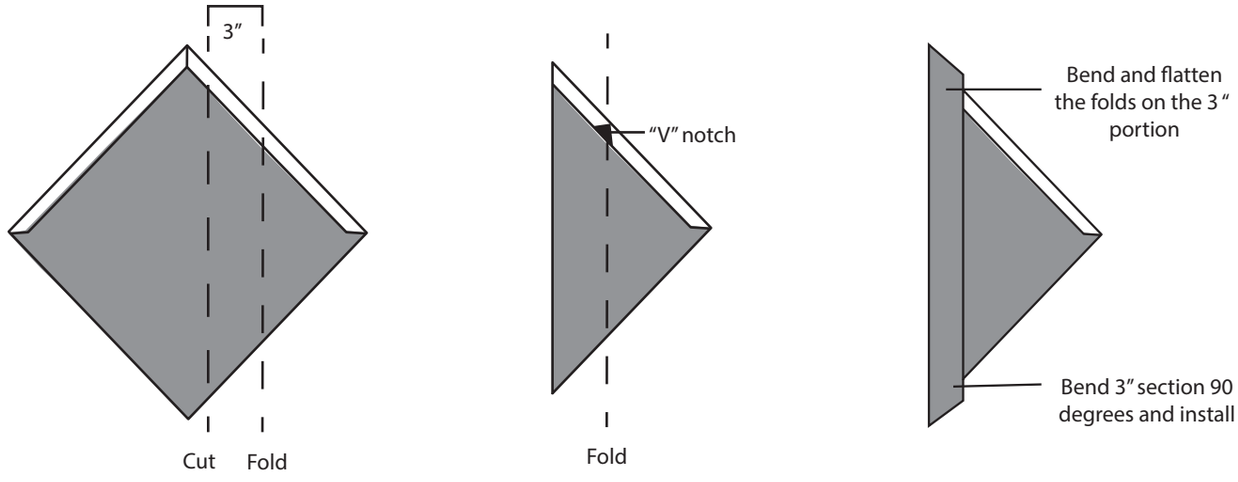
Generally installed 1.5-2 shingle rows or more above the eave. In the area to be covered, install brackets on the tip of each diamond shingle. They are normally staggered with the row above, as shown in the drawing below. More rows above this can be installed if required for additional snow hold.
Keep well away from valleys at least 2 shingles or preferably more.

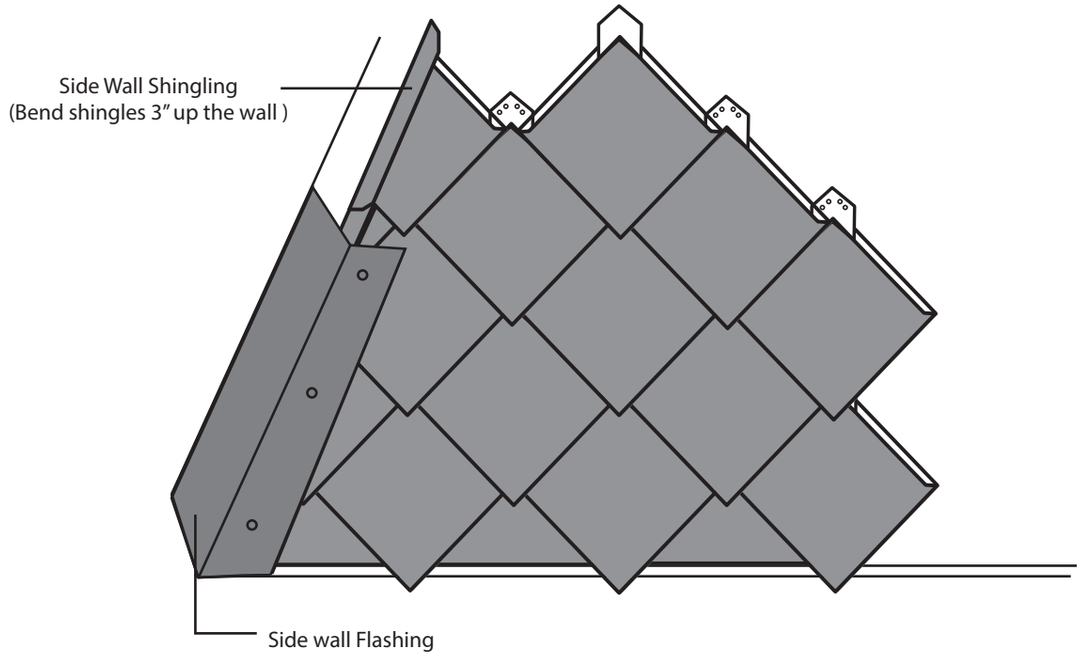


Sectional Style Snow Guard.

Side Wall Shingling

Where the roof meets the side wall each shingle is cut and bent 3” up the side of the wall. Start by measuring from the wall to where the side point of the part shingle will be. Then, transfer that measurement to the shingle plus another 3” further. With a Swanson or combination square, draw vertical lines through the marks and mark with a “C” for cut and “B” for bend. Cut the shingle at the farthest line away and cut a “V” notch from each fold at the bend line. Now bend out and flatten the folds on the 3” portion. Bend the 3” section up 90 degrees and install.

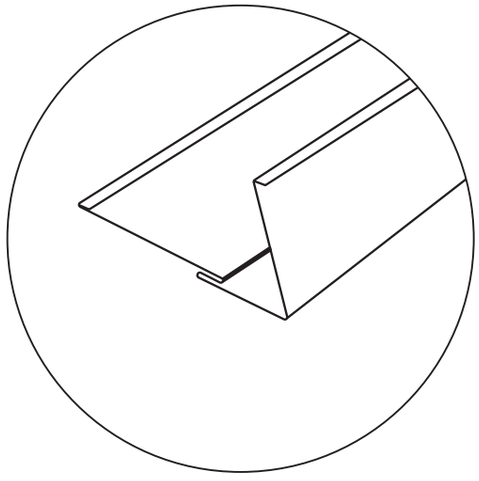




End Wall Shingling

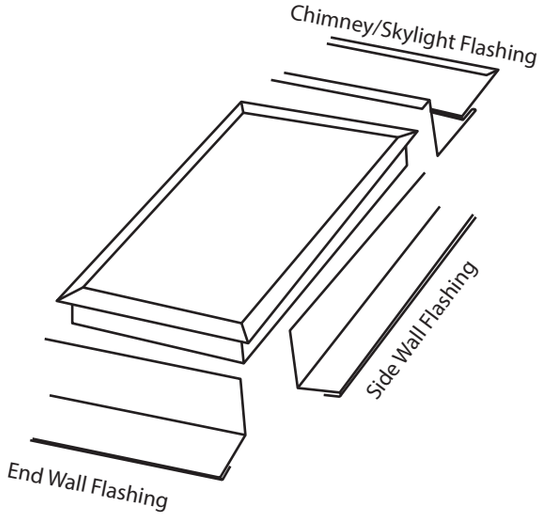
End wall shingles are installed similar to side wall shingles and tucked up under the siding or against the wall that will be flashed.

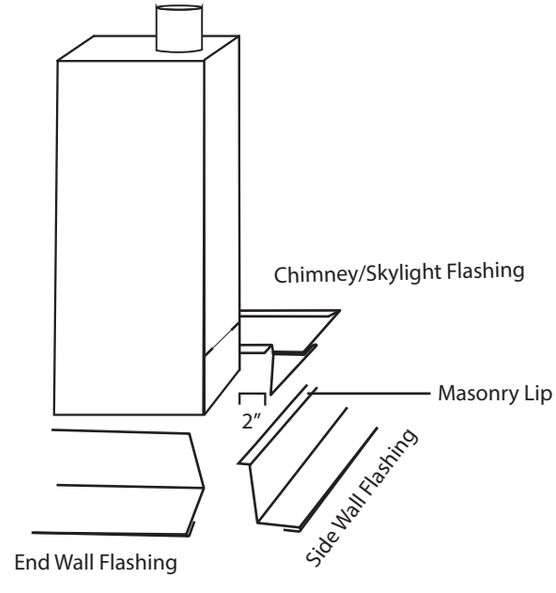
Chimney/Skylight Flashing



Chimney/Skylight Flashing is used to flash the top of either a skylight or a chimney. The specially designed flashing provides a “S” bend to make it simple to continue your shingling up the roof.

Around a skylight the shingles are bent up the bottom and sides approx 3“ as in side wall and end wall shingling. The shingles are laid under and then over the skylight trim interlocking on the top.
The chimney/skylight flashing is fitted to the top of the skylight with an over hang on both sides of approximately 2”. End wall, side wall and chimney/skylight flashing are trimmed to fit the skylight.
Trim the flashing in height so that the factory over trim of the skylight can fit over top.

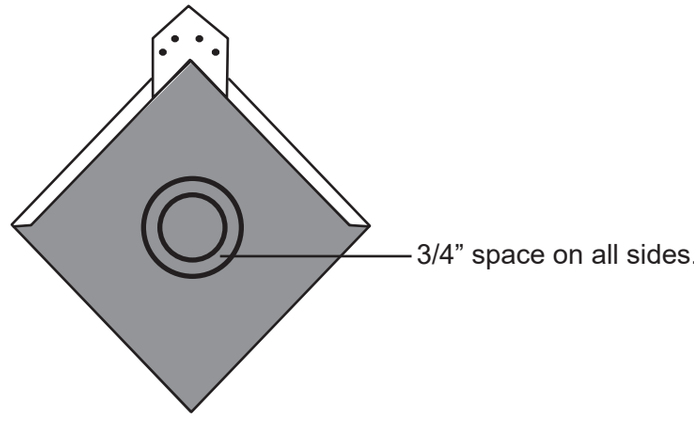




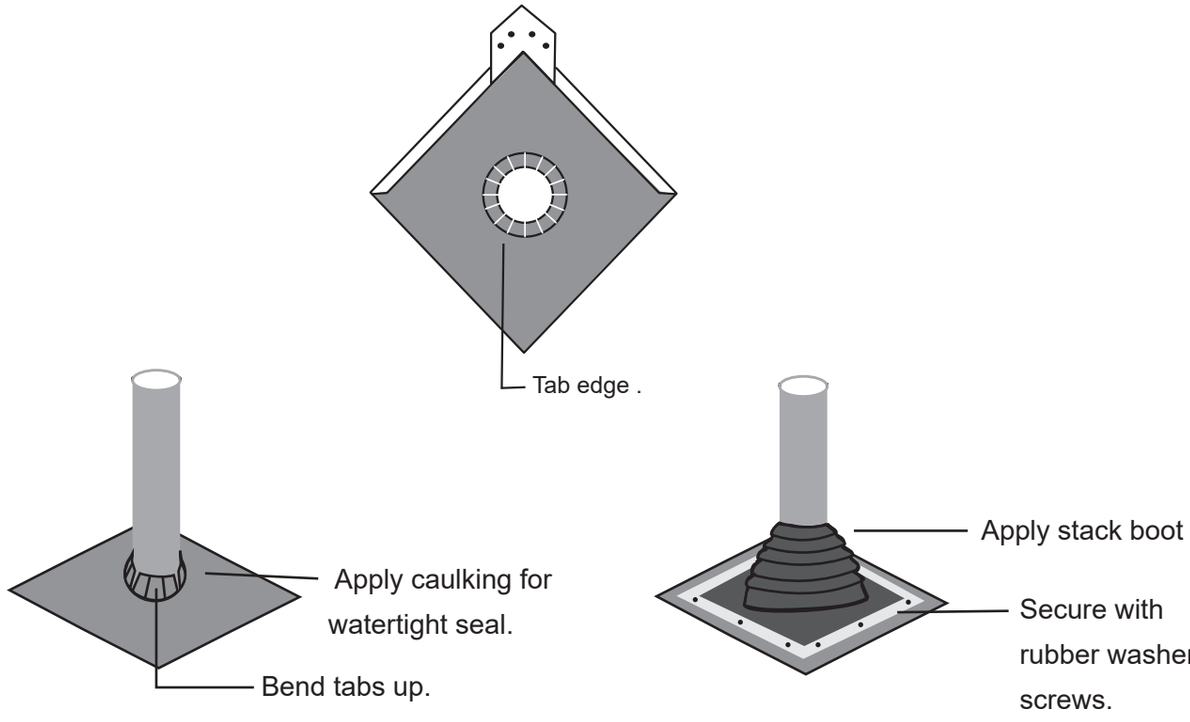
On a chimney the shingles are laid and bent up the sides and bottom the same as in the skylight installation. End wall, side wall, and chimney/skylight flashing are trimmed to fit around the chimney. The chimney/skylight trim is fitted to the top of the chimney with an overhang of 2” on both sides. On brick, the flashing is cut into the brick of the chimney, caulked and fastened to the brick.

Toilet Stacks

Toilet stacks should ideally be installed on the flat area of a shingle. If the stack does not line up completely on a shingle, sometimes you can use a Sawzall to slot the hole around the stack so that you can move it to end up on the flat area of a shingle. Mark the shingle with a hole of the same diameter as the toilet stack and then draw a smaller hole in the middle with a diameter at least 1.5” smaller than the hole as to leave 3/4” on all sides.

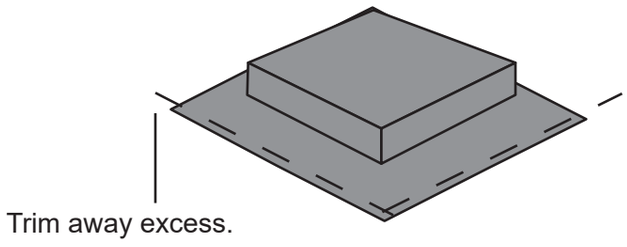


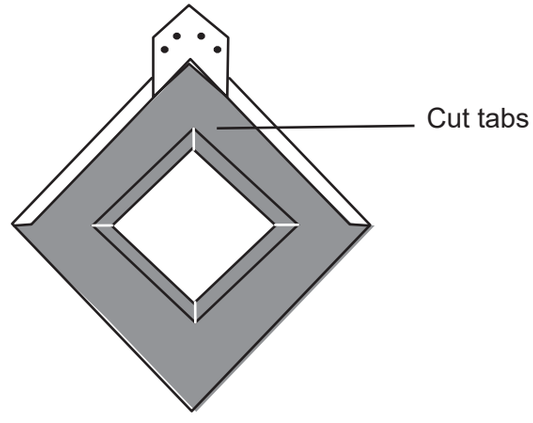
Cut the smaller hole away and tab the edge from the small hole to the large hole, about 3/4” for each tab. Then bend the tabs out of the way and test fit the stack. Make minor adjustments, if your measurement was quite off, start again with a new shingle. Fit the shingle over the stack, bend the tabs upright so they are tight to the stack and caulk around the tabs. Apply the stack boot on the same angle as the shingle and screw the boot with the rubber washer roofing screws.

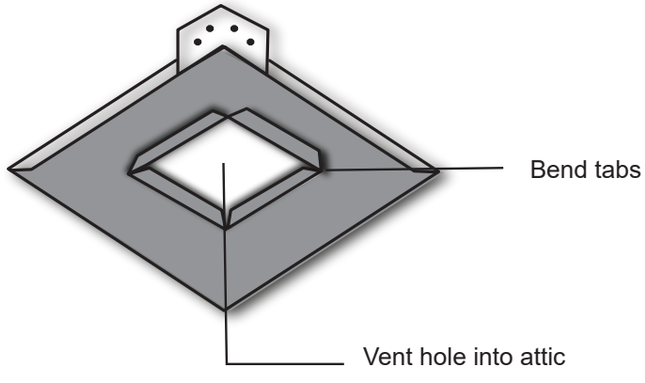


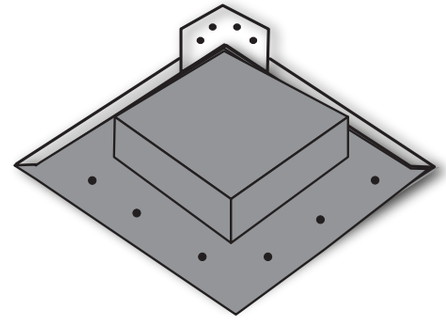
Roof Vents

If vented ridge is not being used roof vents should be chosen that are small enough to be installed on a single shingle. Measure the roof vent to the shingle where it will be placed. The vent should be installed so that the flat material is slid under the folds of the shingle. Cut away any material that does not allow this. Measure the inside vent hole and transfer the measurements to the shingle. Make a smaller square and cut out the inside material. Cut tabs from the smaller square to the larger square and bend the tabs up. If not already done, cutt your roof hole into the attic. Install the roof vent and secure with rubber washer screws.









Install roof vent + secure with screws with rubber washers.

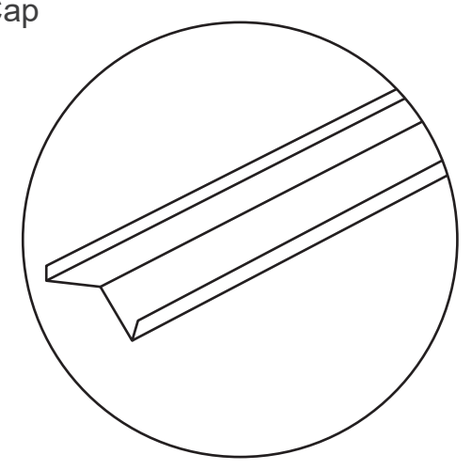
Finish shingles

Finish shingles are installed when you reach the ridge line and need only part shingles. This reduces waste compared to full shingles. The number of finish shingles is calculated by the ridge measurement given at the time of quoting.

Post Shingle Trims

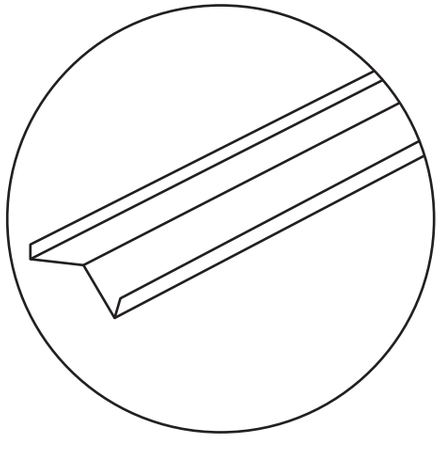
The following trims are applied after the shingles have been installed.

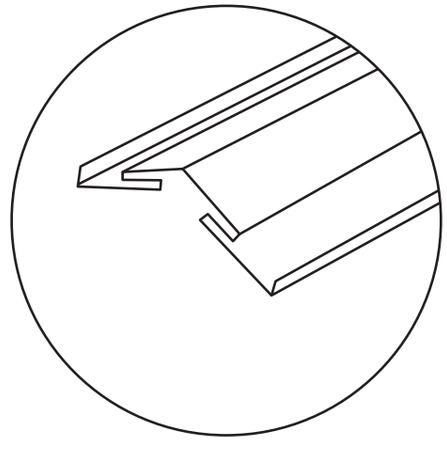
Hip Cap



Hip cap is installed after all shingles are installed. You start at the bottom by cutting and bending a hook fold onto the bottom edge of the eavestarter, then a rubber washer roofing screw in each side every 2'.
Lap end approx 3/4"

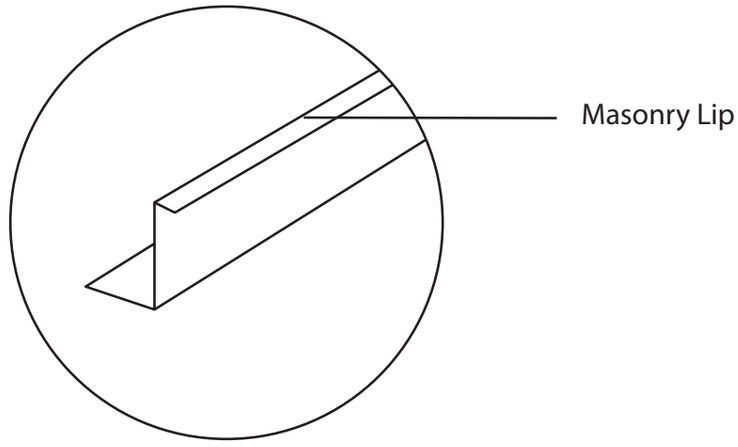
Ridge Cap and Vented Ridge Cap





Ridge cap is installed the same as hip cap. Vented ridge is also similar, note factory pre notching to allow vented ridge to fit together with ease. With the ridge and vented ridge caps it is sometimes necessary to "Cap" the ends. This essentially means to close off the end of your ridge cap. To do this you notch the open end of your cap and bend each side down 90 degrees.

Side or End Wall Flashing



Apply the flashing over top of the shingles that have been bent up the wall. Using rubber washer screws secure the cap to the roof approximately 2” in from the edge of every 2’ or if going into masonry such as brick, cut a slit into the masonry so that the lip of the flashing fits. Apply anchors to hold onto the surface and caulk the upper edge. With siding flatten or cut off masonry lip and slide the vertical edge up underneath the siding.

Key Terms

Gable (Rake) - the part of a wall that encloses the end of a pitched roof.

Valley - and internal angle formed by the intersecting planes of a roof.

Ridge - the line or edge formed where the two sloping sides of a roof meet at the top.

Hip - the sharp edge of a roof from the ridge to the eaves where the two sloped sides meet.

Vented Ridge - a type of vent installed at the peak of a sloped roof in replacement of a ridge cap.
Which allows warm humid air escape a buildings attic.

Dormer - a window that projects vertically from a sloping roof.