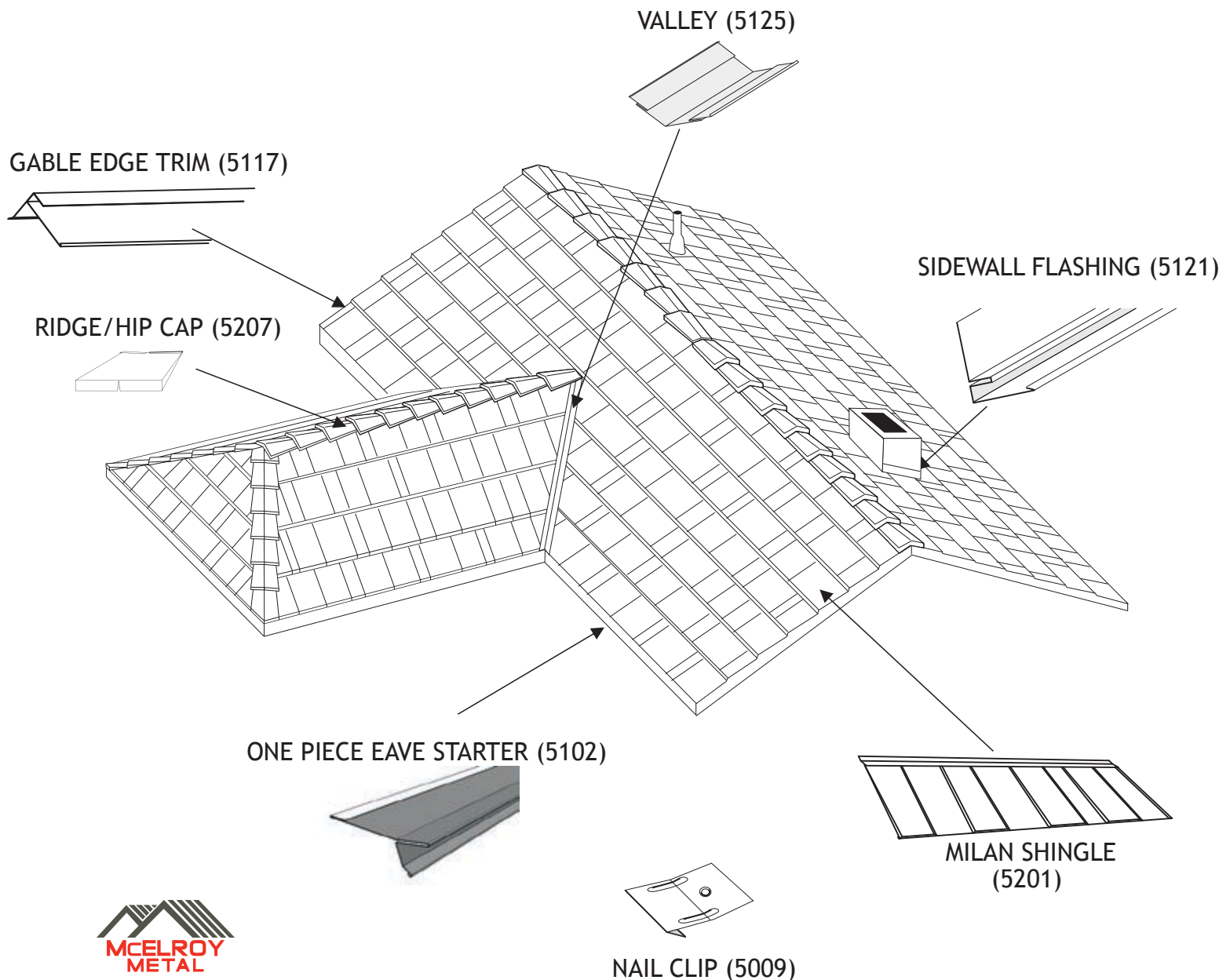


Milan Steel Shingle

INSTALLATION INSTRUCTIONS



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GENERAL GUIDELINES

Use only accessories supplied by McElroy Metal, with matching finish. Do not combine dissimilar metal parts with these metal roofing systems. Insulate metal flashings from contact with existing metal or masonry with a coating of roofing cement and a layer of roofing underlayment.

Most lineal flashings have a return flange, which is part of a channel for water to drain under the shingles. Be careful not to flatten this return flange. No nails should penetrate the flashing within this channel area. Fasten these flashings to the roof with Nail Clips (5009) 12" on center.

Uphill flashings should nest inside or lap downhill by 1-1/2" and be sealed with sealant in matching colors or clear.

Minimum pitch is 3:12. On steep installations, distribute weight loads by placing planks under ladders or other scaffolding used on the roof. Adhere to all applicable building codes.

Installation Sequence

1. Prepare roof and apply underlayment.
2. Install **EAVE STARTER**.
3. Install **GABLE EDGE TRIM, VALLEY** and **SIDEWALL FLASHING**
4. Install **SHINGLES**, left to right, eave to ridge.
5. Install **RIDGE/HIP CAPS** as needed.

Roof Preparation

Milan Shingles may be installed over solid sheathing, or old composition shingles which are in good condition. To prepare for reroofing, nail down any loose or curled shingles and protruding nails, cut off overhanging shingles from eaves and gables and remove any ridge or hip caps. Sweep the roof clean. Milan Shingle may not be installed over wood shakes or shingles, tile, cement shakes, or metal.

Underlayment

Underlayment should be a minimum of one layer of 30-pound felt, or synthetic equivalent. Cover entire roof with underlayment, from left to right, eave to ridge. Allow underlayment to overhang eaves by 1½" and extend up all pipes, chimneys and sidewalls by 1½". Lap head and ends joints 6", lap successive courses 4". Run additional underlayment lengthwise up all valleys and hips and against all sidewalls. Nail underlayment according to manufacturer specifications. In areas with heavy ice and snow potential, use ice & water shield or similar underlayment above overhanging eaves plus two feet past exterior wall line.

Fasteners

Use 11 gauge hot dipped galvanized or stainless steel nails or #12 stainless steel pancakehead screws with threaded points. Fasteners should be of adequate length to fully penetrate decking.

Eave Starter (5102)

Install Eave Starter on all eaves. Underlayment should extend 1" down onto fascia beneath the Eave Starter. Nail Eave Starter to roof deck 12" on centers. Gutters should be installed behind the overhanging underlayment and the Eave Starter Drip Edge.

Gable Edge Trim (5117)

Install Gable Edge Trim or Channel on all gable ends. Underlayment should extend 1-1/2" onto fascia beneath Gable Edge Trim or Channel. Gable Edge Trim or Channel should overlap Drip Edge at the ½" and be plumb-cut with the gable fascia. Fasten Gable Edge Trim or Channel to roof deck using Nail Clips 12" on centers. Uphill pieces should lap downhill pieces by at least 1-1/2". Cut a drain in the butt of the first shingle that overlaps the end of the water return channel.

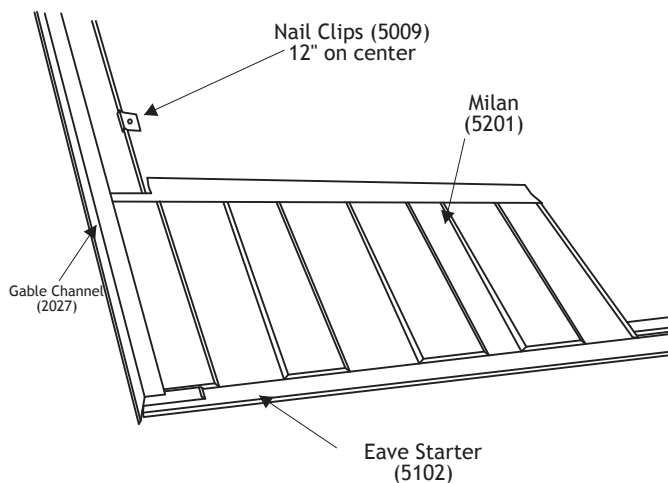
Gable Channel (5127)

Install Gable Channel on all gable ends. Underlayment should extend 1.5" onto fascia beneath Gable Channel. Gable Channel should overlap Drip Edge ½" at the eave and be plumb-cut flush with the drip leg of the starter. Fasten Gable Channel to roof deck using Nail Clips 12" on centers. Uphill pieces should lap downhill pieces by at least 1-1/2". Open side lock if necessary and mark shingles directly over the channel as well as 1-5/8" past the channel at the butt and 1-1/4" at the top lock. This will be the cut line and will provide a gentle, tapered profile. Cut and bend open the top and bottom locks of the shingle outside of the channel and cut off the tabs created. Bend along the initial marks over the channel to 90 degrees and slide into Gable Channel.

Milan Shingle (5201)

Shingles are installed from left to right, eave to ridge. Begin the first shingle by inserting into the left trimpiece. Remove the butt of the first shingle that covers the end of the water return channel. Lock the bottom edge of the shingle over the Drip Edge. Each shingle receives a minimum of five evenly spaced fasteners through the nailing flange. Succeeding shingles lock into the side lock of the previously-installed shingle and proceed in parallel courses from left to right. The bottom lock of the next course of shingles is locked into the top lock of the shingles below. Successive courses of shingles are staggered on a random basis, or in a full, 2/3, 1/3 panel stagger pattern, avoiding direct repeat of vertical lines in successive courses. Chalk lines are recommended for keeping courses straight, especially going into valleys and hips.

When a shingle is installed into the Gable Edge Trim, insert fully so it extends all the way into the receiving channel.

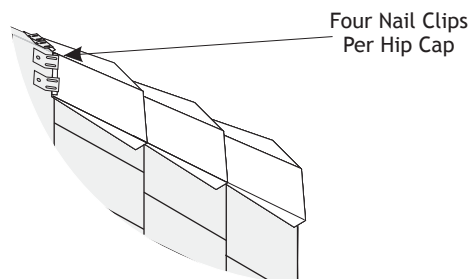


Hip Treatment

Cut the panels to the hip angle so that the gap at the hipline is minimal and secure into place. As an option, fold the shingles from one side over the other.

For the first cap on a hip, modify a Ridge/Hip Cap (5207) that will fit over the shingles, lock into the Eave Starter (5102) and bend the end of the cap to conform to corner of the roof.

Hook four nail clips (5009) into the back flange of the Ridge/Hip Cap (5207) and fasten them in place. Be certain the fasteners are long enough to penetrate solid decking. Continue to lock the caps into each other as they are installed up the hip line. Flatten shingle butts as needed to allow Ridge/Hip Caps to sit as flat as possible.

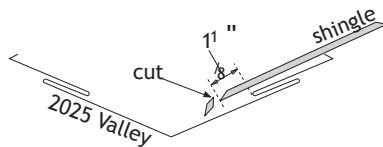


Valley (5125)

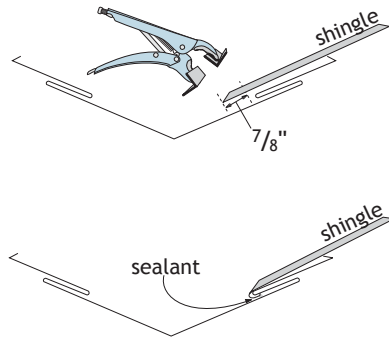
Prepare the valley by laying a full width of underlayment down the valley, using Plastic-Top Felt Nails (N-501). 5125 Valley is installed in all roof valleys by use of Nail Clips fastened to the return flanges, 12" on centers, on each side of the Valley. Uphill Valley should lap downhill Valley by at least 3" and be sealed with Sealant. Valley should lock into the Eave Starter. Trim and fold tabs to conform to the corner and fit the Eave Starter

As shingles reach a previously-installed 2025 Valley, shingles are trimmed and folded into the receiving channels on each side of the Valley as follows:

Point A: Lay the 5201 shingle in place where it will be installed into the valley and mark the shingle with a line that runs parallel to the Valley receiving channel, 1" from the channel. Cut the shingle along this mark.



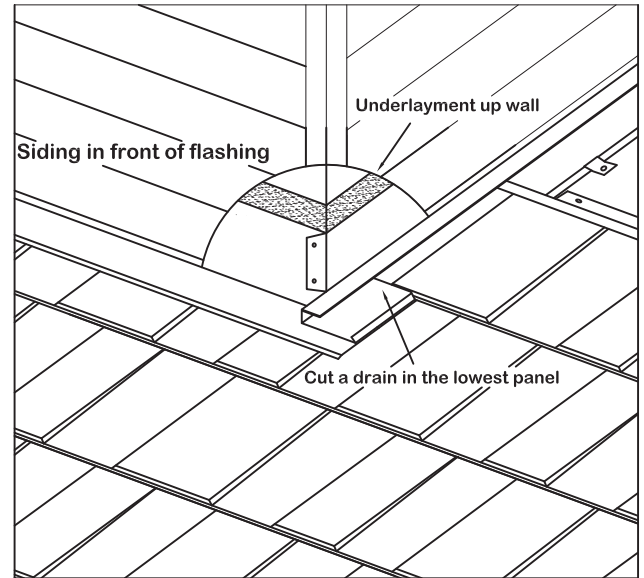
Point B: Using hand flangers, grip the shingle $\frac{3}{4}$ " from the trimmed edge and fold a full 180° downward and back under. Install the trimmed and folded shingle by locking the fold into the Valley receiving channel.



Remember to stagger succeeding courses of shingles proceeding out of a valley to the right.

Sidewall Flashing (5121)

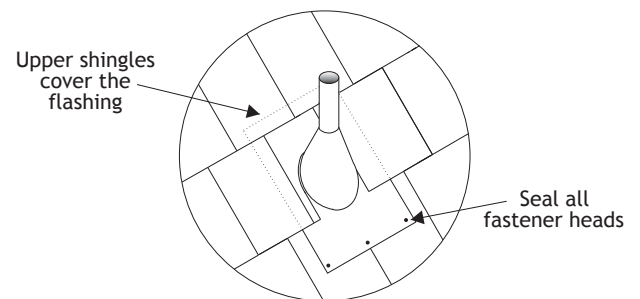
Sidewall Flashing should be fastened to the roof deck with Nail Clips (5009) attached to the return flange 12" on center. Sidewall Flashing has a leg extending up the wall which should be inserted behind the sidewall covering. If the flashing cannot go behind the siding, attach it to the sidewall and seal, or secure to wall with a terminator bar and seal. If the sidewall is masonry, treat as chimney side flashing. Sidewall Flashing should extend $\frac{1}{2}$ " past the Eave Starter at the eave. Milan Shingles are installed into the Sidewall Flashing by inserting the shingle into a receiving channel in the flashing. Cut a drain in the butt of the first shingle that covers the end of the water return channel. Be sure that no nails penetrate the water channel. All shingle nails should be driven outside this channel.



Vent Pipe Flashing

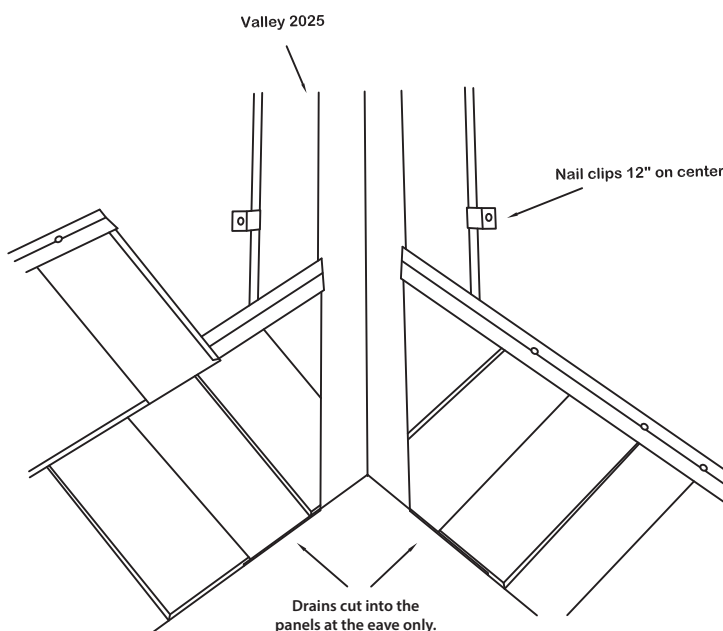
Bring underlayment $1\frac{1}{2}$ " up around pipe, and add an additional piece of underlayment extending 18" to each side, the downhill side of which should rest on top of the shingles beneath the vent pipe.

When installing the shingles, ensure the top of the pipe flashing is covered by the upper course of shingles. The bottom of the flashing must rest on top of the lower course of shingles. Install shingles up to and around the pipe. Trim the shingles as necessary. Apply a bead of sealant around the pipe.



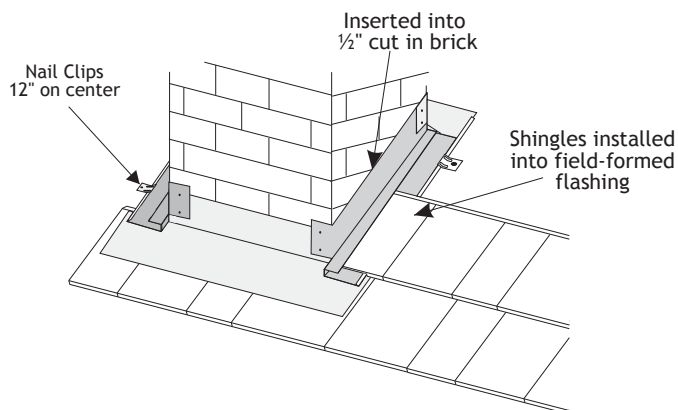
Form return flanges on the sides of the concealed portion of the pipe flashing. Apply a bead of sealant around the perimeter of the bottom side of the pipe boot and place it over the pipe. Fasten the concealed portion of the flashing with Nail Clips. If necessary, fasten the exposed portion of the flashing to the shingles with pop rivets or stainless steel screws and seal the fastener heads. Trim uphill shingles to fit around the pipe if necessary, and fill gap between the shingle and the pipe flashing with sealant.

Please see McElroy Vent Pipe Cone Template included with trim coil for instructions on capping vent pipe boot with color matched, Kynar-coated trim coil.



Chimney Flashing

Make a 1/2" cut in the masonry above existing flashings, parallel to the roof deck. On the downhill side of the chimney field-form a flashing to be received into this cut, extend down to the roof deck and 4" out on top of the installed shingles below. On the sides of chimney, use 5121 Sidewall Flashing. The downhill ends of Sidewall Flashings should rest on top of the front chimney flashing. On the uphill side of the chimney, the flashing should be formed to be received into the masonry cut, extend down the back of the chimney and rest on top of the Sidewall Flashings. The uphill portion of this flashing should lay beneath the shingles above. If the chimney is over 18" wide, the uphill side should be cricketed.



Ridge Treatment

Ridge caps may also be run from one direction, with the low end of the caps either facing the predominate wind direction or the direction that makes the most sense aesthetically. To finish the last ridge cap, either trim and form into Gable Channel and fasten into fascia with trim nails or pop rivets, or trim cap so it extends completely into the Gable Edge Trim and fasten into roof deck with screws and sealant hidden inside Gable Edge Trim.

12" wide, solid plastic ridge vent products like Lomanco OmniRidge, Cor-A-Vent V-600 or AirVent ShingleVent II can be used in conjunction with decorative ridge caps. Make ridge water tight as described above and then cut metal and decking for appropriate exhaust from attic. Form a 3/8 back turned flange at the ridge opening as a water stop. Install ridge vent per manufacturer specifications and finish with ridge caps.

Make Ridge Watertight Before
Installing Ridge Caps

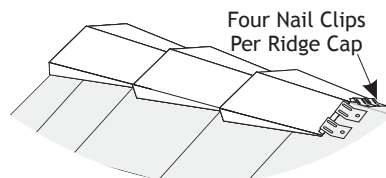


Bend Shingles Over Ridge

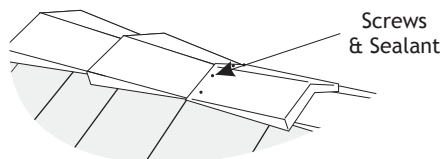
-OR-



Field-Form a Two-Piece Flashing
(Can Be One-Piece with Precise Measuring)



Four Nail Clips
Per Ridge Cap



Screws
& Sealant

Caps Meet in Center



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