

## LEGACY® Northwest XL™ HIGHLANDER-CS™

**Roof Deck** – Decks must be constructed of wood, plywood, or OSB (oriented strand board) and be rated for structural use as roof sheathing or roof decking. All other decking types must be approved by Malarkey before installation to ensure that the shingles will comply and qualify for a limited material warranty.

Plywood and OSB minimum thickness for use as a nailable substrate for Malarkey roofing systems is 15/32" (12 mm). Wood board decks must be an interlocking type (i.e. shiplap or tongue and groove) with a minimum thickness of 5/8" (16 mm). Wood boards must be no wider than 8" (203 mm). Decking must be attached in accordance to local building code requirements. See the current edition of the Malarkey specification book or contact Malarkey for more information regarding roof decks.

**Special Applications** – CSA-A123.5-M90 requires shingles applied in Canada between September 1 and April 30 be adhered with a field applied adhesive as outlined by manufacturer.

**Caution** – To avoid staining or sticking do not double stack pallets. When storing outside, stack on a raised platform.

**Underlayment** – Right Start UDL labels include installation instructions describing application procedures which produce a flat underlayment for your roof covering. Right Start UDL has a fiberglass mat which may have dimensional memory. If the underlayment is not relaxed before it is fastened, it may return to its rolled shape. This can result in buckles or wrinkles in the underlayment that appear when the temperature eventually rises.

Store materials in heated or protected areas whenever possible. Limit the amount of time underlayment rolls are stored on the roof. Roll products should be stored standing on end; do not lay the rolls on their sides. This prevents the rolls from becoming oblong and creating mole runs in the underlayment. Cut the underlayment into shorter lengths. This allows the membrane to be positioned and stretched easier by the installer.

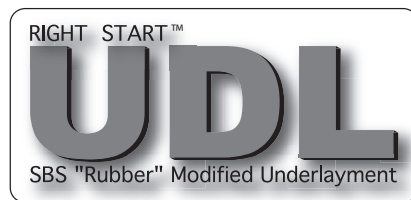
**Allow the underlayment to completely relax** before fastening. Kicking out a roll and me-

chanically attaching it in place immediately is not the proper method of installation and leads to buckles and mole runs that will telegraph through the finished roof covering.

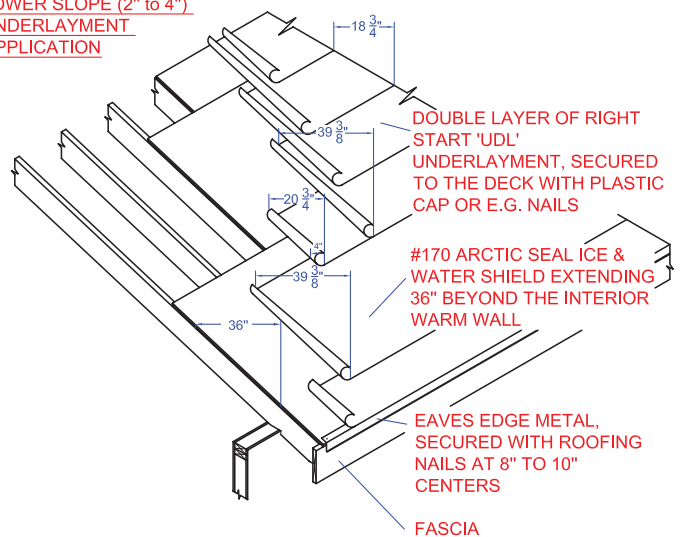
Use the 'base sheet shuffle' method to remove the slack in the sheet. Position underlayment and secure one end at the center closest to the rake or hip edge with a few plastic cap (recommended) nails. Slide or drag feet across the surface of the underlayment to eliminate all wrinkles and buckles. Secure using plastic cap (recommended) nails.

Note: installation over wet or frozen plywood or OSB can also lead to buckles and mole runs. Buckles can form at the joints of plywood or OSB sheets due to the moisture migration from the wood. In some instances, by following these additional steps, the buckles may still appear. These will require the underlayment to be cut at the buckle and overlaid with an additional layer or in some cases, removed and repositioned.

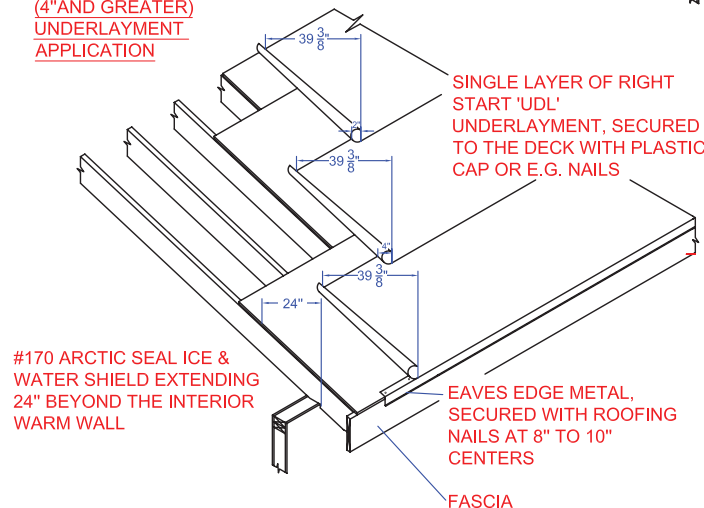
Please contact the Malarkey Roofing Products technical department with any installation questions.



**LOWER SLOPE (2" to 4") UNDERLAYMENT APPLICATION**



**STANDARD SLOPE (4" AND GREATER) UNDERLAYMENT APPLICATION**



**Re-roofing over existing asphalt shingles** – If local building codes permit, it is generally not necessary to remove old roofing if (1) the square butt asphalt shingles and the existing framing will support the workers, the new roofing and the required dead loads, and (2) the old wood deck is sound and will provide good anchorage for nails. Make the surface as smooth as possible by replacing missing shingles and securely nailing all buckles, raised tabs or curled shingles or overlapping with a heavy weight underlayment like Malarkey Right Start UDL. For smoother appearance, we recommend applying a layer of Malarkey UDL over the old shingles and then proceeding with the new shingles as if applying a new roof as described in steps 1-3 at right.

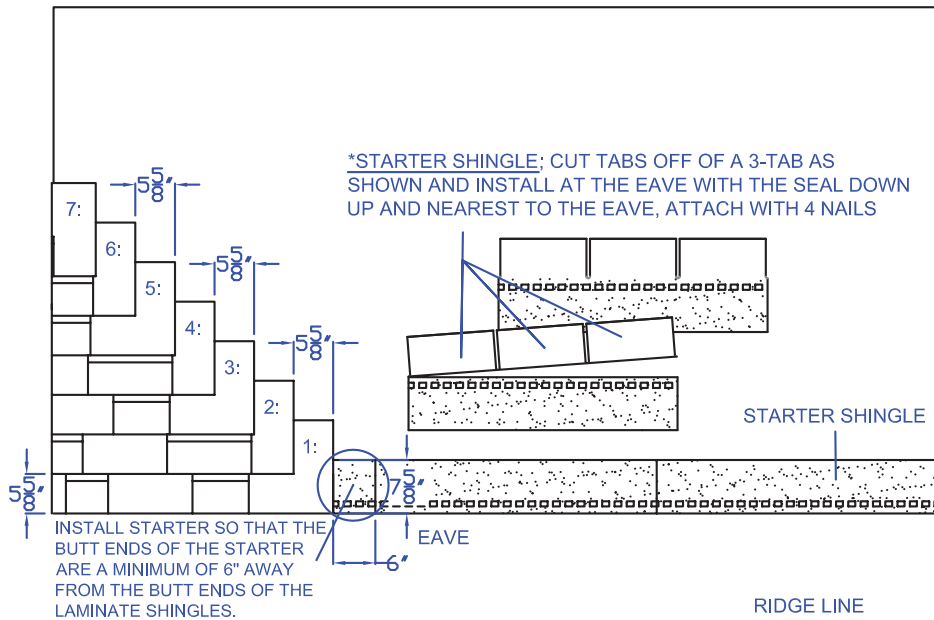
**Wind Resistance** – Malarkey Laminate Shingles include a factory applied, thermally activated seal down adhesive that provides additional wind protection. This seal down adhesive requires warmth to activate. Typical installations from Spring through Fall will likely allow the shingles to seal on their own. But some conditions like geographic location, wind, dust, moisture, and late/early year installations may affect their ability to seal on their own

Malarkey recommends that when shingles do not seal on their own due to the conditions stated above, that each shingle be hand sealed. See the **Hand Sealing** illustration at right for application details.

**Shingle Fastening** (new, re-roof or re-cover) – Malarkey requires the use of either hand or pneumatically driven non-corrosive roofing nails with a 3/8" (10 mm) head and of sufficient length to penetrate the roof sheathing or decking 3/4" (19 mm) or completely through 1/8" (3 mm). When fastening, butt ends together loosely to prevent buckling.

See **Nailing Pattern** illustrations at right for correct nail placement.

**STANDARD LAMINATE SHINGLE OFFSET PATTERN: STANDARD EXPOSURE IS 5-5/8" (143 MM) TO THE WEATHER. OFFSET BETWEEN COURSES IS 5-5/8" (143 MM).**

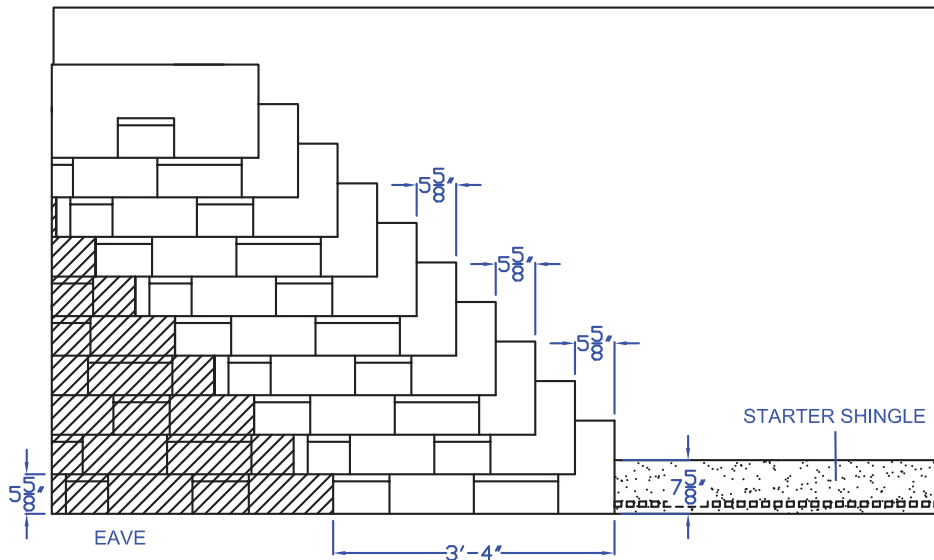


**STEP 1.**

\*TRIM SHINGLES ON THE LEFT SIDE WHEN INSTALLING FROM LEFT TO RIGHT

\*TRIM SHINGLES ON THE RIGHT SIDE WHEN INSTALLING FROM RIGHT TO LEFT

- 1: 40" LONG
- 2: 34 3/8" LONG
- 3: 28 3/4" LONG
- 4: 23 1/8" LONG
- 5: 17 1/2" LONG
- 6: 11 7/8" LONG
- 7: 6 1/4" LONG



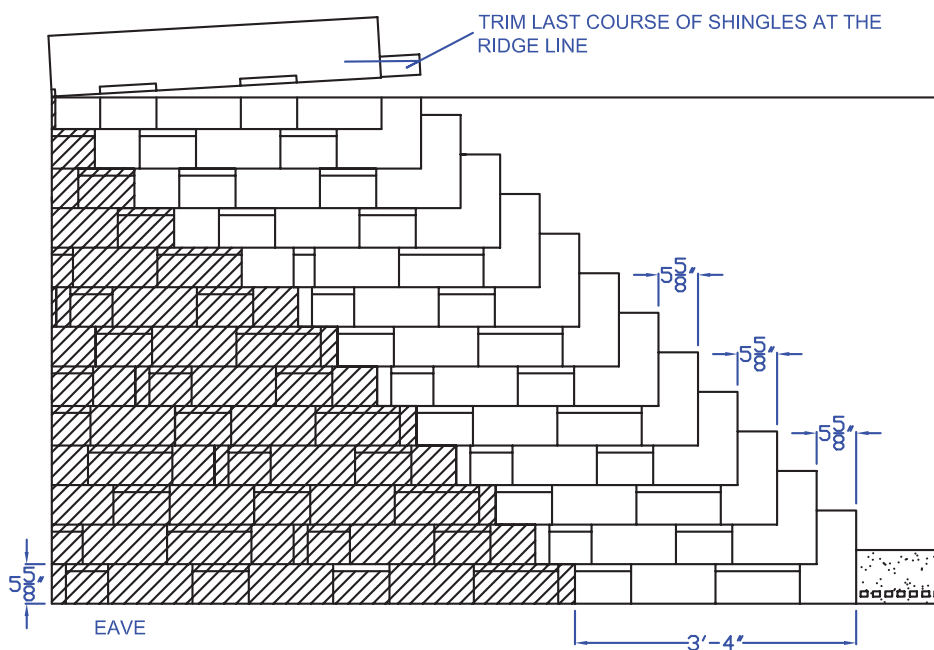
**STEP 2.**

COURSES 1-7:

APPLY A FULL SHINGLE TO EACH OF THE FIRST SEVEN COURSES TO EXTEND THE PATTERN STARTING WITH THE FIRST COURSE.

COURSES 8-14:

REPEAT THE PROCESS BEGINNING WITH A FULL SHINGLE AND CONTINUE SUCCEEDING COURSES WITH A PARTIAL SHINGLE 5-5/8" SHORTER EACH TIME.



**STEP 3.**

APPLY A FULL SHINGLE TO EACH OF THE COURSES TO EXTEND THE PATTERN STARTING WITH THE FIRST COURSE.

TRIM LAST COURSE OF SHINGLES AT THE RIDGE LINE.



## CORRECTLY DRIVEN NAIL

## INCORRECTLY DRIVEN NAILS

BOTTOM OF THE NAIL HEAD IS FLUSH WITH THE TOP OF THE NAILED SHINGLE

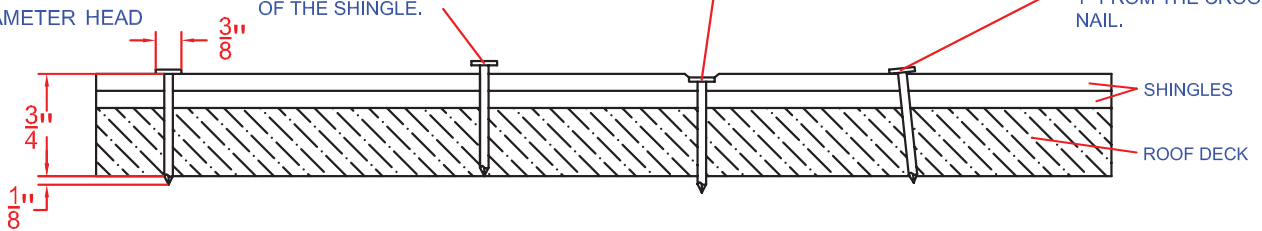
**UNDER-DRIVEN:** MUST HAMMER NAIL FLUSH WITH THE TOP OF THE SHINGLE.

**OVER-DRIVEN:** INSTALL A NEW NAIL 1" FROM THE OVER-DRIVEN NAIL.

**CROOKED:** REMOVE NAIL AND INSTALL A NEW NAIL 1" FROM THE CROOKED NAIL.

$\frac{3}{8}$ " (10mm) MIN. DIAMETER HEAD

NAIL TO PENETRATE A MIN. OF  $\frac{3}{4}$ " INTO THE ROOF DECK, OR AT LEAST  $\frac{1}{8}$ " THROUGH THE BOTTOM OF THE DECK.



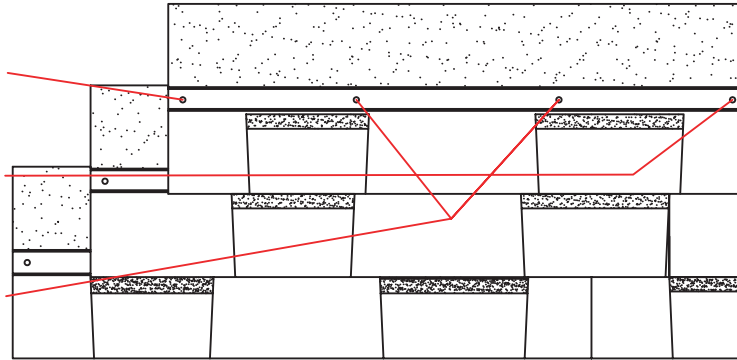
### Fastening Malarkey Laminated Shingles:

**Standard Attachment** – Install 1 roofing nail starting at one end of the shingle  $\frac{3}{4}$ " to 1- $\frac{1}{4}$ " (19 mm to 32 mm) from the butt edge and in 'The Zone'.

Install another roofing nail similar to the first one but on the opposite end of the shingle and  $\frac{3}{4}$ " to 1- $\frac{1}{4}$ " (19 mm to 32 mm) from the butt edge and in 'The Zone'.

Install two more nails evenly spaced within 'The Zone' +/-  $\frac{1}{2}$ " (13 mm)

Standard Laminate Nailing Pattern

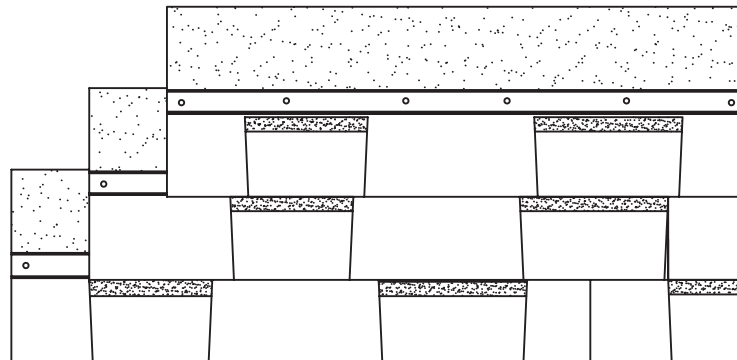


**High Wind and Steep Slope** attachment method (12 in 12 or greater) – Install the first roofing nail beginning at one end of the shingle  $\frac{3}{4}$ " to 1- $\frac{1}{4}$ " (19 mm to 32 mm) from the butt edge and in 'The Zone'.

Install another roofing nail similar to the first one but on the opposite end of the shingle and  $\frac{3}{4}$ " to 1- $\frac{1}{4}$ " (19 mm to 32 mm) from the butt edge and in 'The Zone'.

Install four more nails evenly spaced +/-  $\frac{1}{2}$ " (13 mm) from the butt edge and in 'The Zone'

High Wind and Steep Slope Nailing Pattern



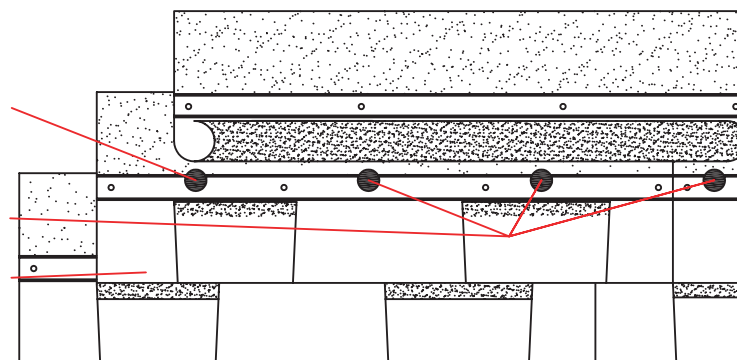
**Hand Sealing** – Lift shingle and place a nickel to a quarter-sized dab of shingle tab adhesive 2" (51 mm) up from the bottom and 2" (51 mm) in from side of the shingle.

Place three more dabs evenly spaced as shown at right.

Press the overlapping shingle firmly into the adhesive.

Warning: excessive adhesive may cause blisters.

3-Tab Shingle Hand Sealing



**Caution** – Malarkey Roofing Products assumes no responsibility for leaks or effects in the case of improper application or failure to properly prepare the surface to be roofed or failure to provide proper ventilation in accordance with F.H.A. Minimum Property Standard Requirements.

Always follow local building codes. To qualify for warranty protection and to obtain stated coverage, shingles must be applied in accordance with printed instructions.

Do not apply these shingles on roofs having a slope less than 2" (51 mm) per foot or more than 21" (534 mm) in 12" (305 mm).

**Warranty** – Malarkey products are sold with an express *limited materials warranty* only. A copy of the Limited Warranty stating its terms and restrictions may be obtained from the distributor of this product or directly from Malarkey Roofing Products at 1-800-545-1191

You may obtain a Malarkey Roofing Products warranty from your supplier, applicator, or by contacting Malarkey at 800-545-1191.

Any deviation from printed instructions shall be the sole responsibility of applicator and/or specifier and may void or place certain limitation on the warranty coverage.

# Malarkey Performance Ridge Shingles

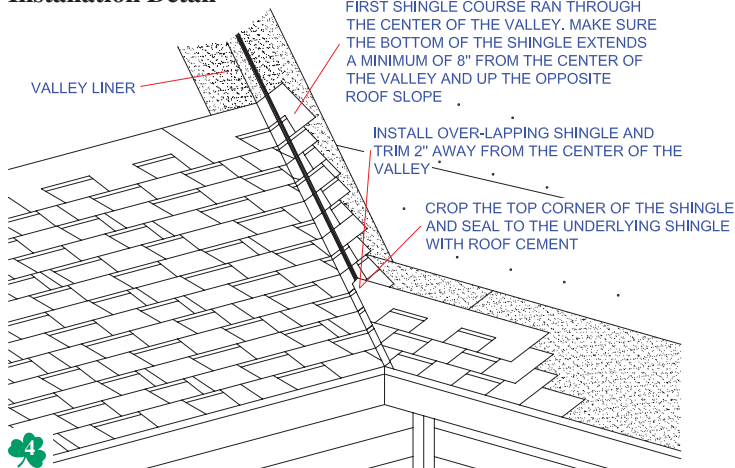
**Hip & Ridge Shingles** – Install Malarkey Ridge Shingles over the roof shingles as described on the Malarkey product packaging.

1. Cut ridge shingle using a roofing knife or utility knife at the dimensional fold.
2. Save cut piece for cap.
3. Install dimensional fold ridge shingle flush with the shingles at the rake edge of the roof.
4. Install a full ridge shingle overlapping the first piece 1/4" to 1/2" (6 mm to 13 mm).
5. Nail with one fastener on each side 1" (25 mm) from the bottom and side of the dimensional fold.
6. Continue installing ridge shingles until the entire ridge is covered.
7. During installation in high wind areas Malarkey recommends hand sealing or face nailing high-profile ridge shingles to avoid wind damage.

**Roof to wall, step, chimney saddles, and crickets** – Step flashing is to be at least 3" high by 4" (76 mm by 102 mm) wide and a minimum of 7-3/4" (197 mm) long. Step flashing is to be used on the sides of chimneys, dormers, and walls. Individual metal step flashing pieces are to be used for each course of shingle.

To allow for possible roof movement, do not nail flashing to the wall or chimney. Carry a metal counter flashing or the wall siding material down over the step flashing. Roof to wall metal, chimney saddles, and crickets (see illustration at right) shall have flanges of at least six (6) inches (152 mm) and be made of 26-gauge

## Closed Cut Valley Installation Detail



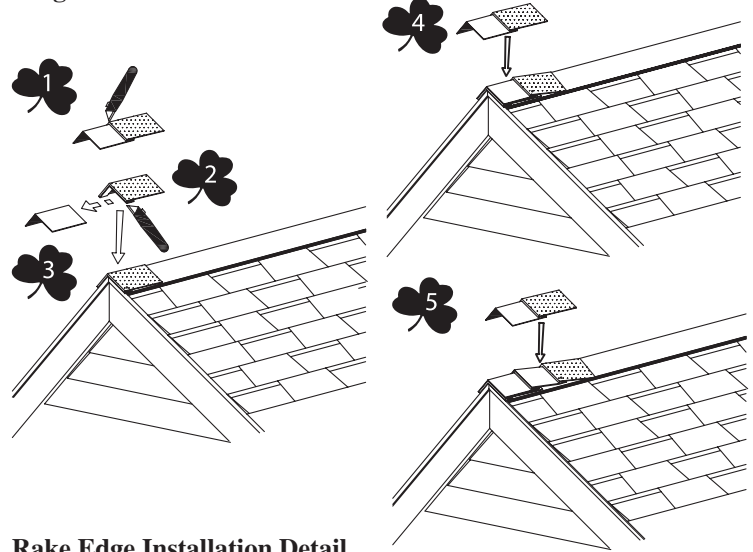
galvanized steel.

Install a bead of plastic cement on the top surface of all chimney saddles and press overlapping shingle courses into the plastic cement to seal. Counter flashing shall cover the metal step flashing at the chimney and lap under counter flashing with flange extending under each shingle course, a minimum of 4" (102 mm). Where shingles lap onto metal stop flashing, shingles shall be embedded in a thin, uniform layer of plastic roof cement.

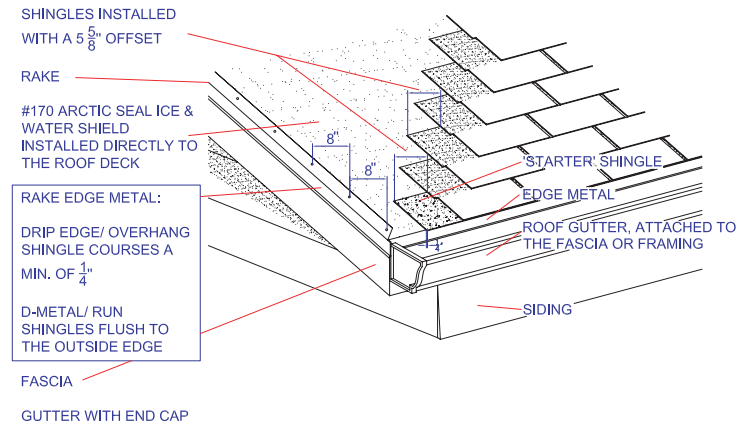
**Eave & Rake Metal** – Eave & rake metal shall be a minimum of 2"x 2" (51 mm x 51 mm) with a 1/4" (6 mm) drip kick to divert water from the fascia. Eave metal is *required* on all Malarkey shingle roofs. Rake metal is optional, but recommended for Malarkey shingle roofs. Eave metals used on Malarkey shingle roofs are to be made of non-corroding metal and can be either galvanized, aluminum, or factory painted. Ice & water shield is to be installed *over* the eave metal. Underlayment is to be installed *under* the rake edge metal. Secure eave & rake metal with roofing nails, centered on the top flange of the metal at 8" to 10" (203 mm to 254 mm) on center (or as required by local building code). Install eave & rake metal with a minimum overlap of 2" with no back water laps

**Valleys** – Malarkey recommends the installation of three types of valleys: Closed cut (see valley illustration), Metal valley, and Membrane valley. For more information that details and illustrates the metal and membrane valleys, contact Malarkey's technical services department.

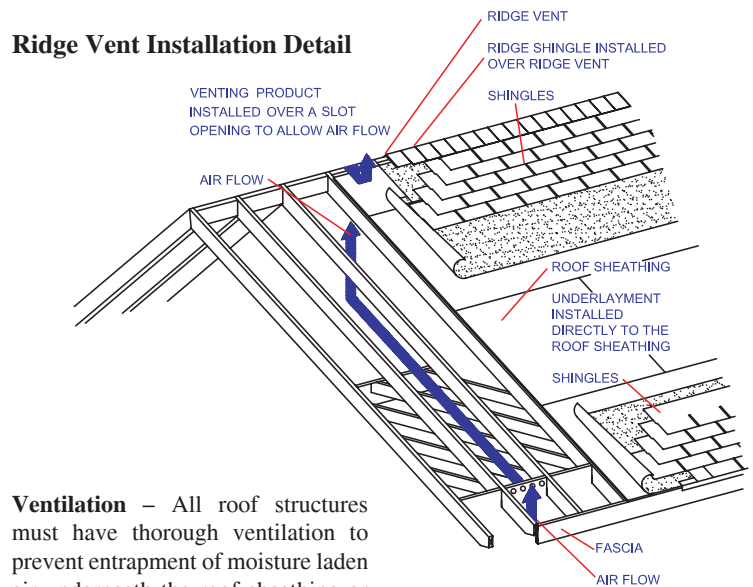
## Ridge Installation Detail



## Rake Edge Installation Detail



## Ridge Vent Installation Detail



**Ventilation** – All roof structures must have thorough ventilation to prevent entrapment of moisture laden air underneath the roof sheathing or decking. Ventilation must meet or exceed the current minimum FHA or HUD requirements of one square foot (929 cm<sup>2</sup>) of ventilation for every 300 square feet (28 m<sup>2</sup>) of attic floor space, distributed 50% at the eaves (split evenly between each side), and 50% at the ridge or peak.

Do not insulate directly under the roof sheathing or decking. Do not block soffit intakes, or ridge vents. Installations over cathedral ceilings or above roof insulation systems require special applications. Contact the Malarkey technical services department for more information.