



Additional Installation Requirements: Emerald Premium Warranty Projects



Additional Installation Requirements for Steep Slope, Emerald Premium Warranty Projects

GENERAL INSTRUCTIONS

Malarkey installation instructions and shingle installation details must be followed or have written approval from the Technical Services Department.

Emerald Premium warranties require *all* Malarkey products where applicable, including the following shingles and accessory products:

3-tab Shingles

- Dura-Seal® AR

Laminates

- Highlander®
- Highlander® AR
- Vista®
- Vista® AR
- Ecoasis®
- Legacy®
- Legacy® Scotchgard™

Designer Heavyweights

- Windsor® Scotchgard™

Accessory Products

- Smart Start® Starter Shingles
- Windsor® Starter Shingles
- EZ-Ridge® Hip & Ridge Shingles
- EZ-Ridge® XT Hip & Ridge Shingles
- 10" RidgeFlex® Hip & Ridge Strips
- 12" RidgeFlex® Hip & Ridge Strips
- Right Start® UDL Field Underlayment
- Arctic Seal® Self-Adhering Underlayment
- Secure Start® HT Self-Adhering, High Temp Underlayment
- Secure Start® Synthetic Field Underlayments: Secure Start® SG, Secure Start® Plus, and Secure Start® Permeable

PRELIMINARY REQUIREMENTS

All work must be completed by a Malarkey Emerald Premium *Certified Residential Contractor* and installed according to Malarkey's latest published installation instructions and adopted building code.

The building structure and roof deck must be sound, comply with all local codes and ordinances, and sufficient to support the weight of the roofing system and transient load during application.

The roof deck must be an acceptable substrate:

- Install solid sheathing (4x8) when wood board decking is the existing substrate.
- Sheathing panels shall meet adopted building code requirements and be at least 3/8" (10 mm) thick, exterior-grade plywood or 7/16" (11 mm) oriented strand board (OSB).
- Likewise, sheathing panels should be supported, gapped and securely nailed to all framing members per APA recommendations.

- **Installing over existing roofing materials (i.e., re-covering) or deteriorated wood products is not acceptable. A complete tear-off is required.**

- Direct-to-deck, ASTM D1970 self-adhering underlayments can remain in place; ensure the surface of the roof deck is sound, smooth, and free of debris and protrusions.

Besides replacement of warped or rotted decking, repairs are required at other areas of roof that could lead to leaks unrelated to proper installation of the Malarkey roofing system such as deteriorated chimney mortar joints, etc.

Ventilation must comply with FHA Minimum Property Standards.

Use only manufactured Malarkey products for starter and hip & ridge shingles (see list opposite).

DRIP EDGE FLASHING, UNDERLAYMENT, AND STRIPPING PLIES

Install *drip edge flashing* (drip edge, eave metal, rake metal, etc.) along the eave edges of roof.

Apply 6"-wide (152 mm) membrane of *self-adhering* Arctic Seal around roof penetrations, and at all roof deck-to-vertical transitions (sidewalls, dormers, chimneys, curbs, skylights, etc.) - 3" (76 mm) up the wall and 3" (76 mm) onto the field.

*See the ROOF VALLEYS section for additional applications of Arctic Seal prior to installation of the field underlayment.

Apply *field* underlayment; installation begins at the eave edge:

- If field underlayment is *mechanically-fastened* Right Start UDL or Secure Start SG, Plus or Permeable, strip-off the eave metal with min. 6"-wide (152 mm) Arctic Seal *prior* to installation of the field underlayment.
- If *self-adhering* (SA) Arctic Seal or Secure Start HT is used as field underlayment or applied over the eave metal for ice and water protection, it is not necessary to strip-off the eave metal.

Once an expanse of roof is covered by underlayment up to the ridge, install rake metal over the ends of the underlayment at the *rakes*.

UNDERLAYMENTS CONT'D.

All buckles and wrinkles must be corrected prior to installation of shingles. Cut and install, in water-shedding fashion, membrane patches according to the number of plies affected.

Plastic cap or metal cap fasteners are required when mechanically fastening *any* underlayment. No staples without plastic caps.

Where required by building code or in climates with a history of ice damming, install self-adhering Arctic Seal or Secure Start HT underlayments up and out onto the roof as necessary to a point not less than 24" (610 mm) past the interior warm inside wall of the house or above the expected level of ice dams. (**See Figure 1**)

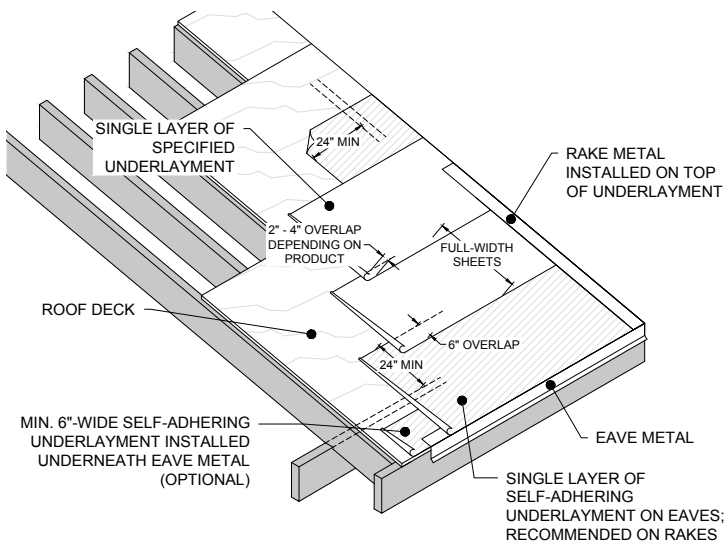


Figure 1 - Application of Self-Adhering and Field Underlayments on 4+ Roof Slopes in Ice Dam Regions

UNDERLAYMENT CONFIGURATIONS

Slopes 4:12 and Above, One (1) layer of the following:

- Right Start UDL
- Secure Start SG, Plus, or Permeable
- Arctic Seal
- Secure Start HT

Slopes 3:12 up to 4:12, A double layer of the following (See Figure 2):

- Right Start UDL (strip-off eave metal with SA prior to installing)
- Secure Start SG, Plus, or Permeable (strip-off eave metal with SA prior to installing)
- Arctic Seal (stripping ply not required)
- Initial layer of Secure Start HT or Arctic Seal and one additional layer of mechanically-attached underlayment (Right Start UDL or Secure Start SG/Plus/Permeable) (See Figure 3)

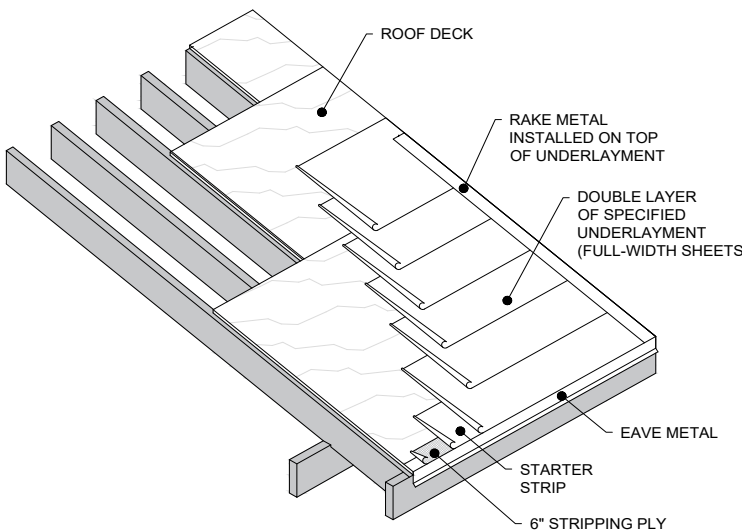


Figure 2 - Application of a Double Layer of Field Underlayments on Roof Slopes 3:12 Up to 4:12; Strip-off Eave Metal with SA if Using Right Start UDL, Secure Start SG, Plus or Permeable

Slopes 2:12 up to 3:12:

- Install an initial layer of Arctic Seal or Secure Start HT and one additional layer of mechanically-attached underlayment (Right Start UDL or Secure Start SG/Plus/Permeable). Two (2) layers of Arctic Seal are also acceptable. (See Figure 3)

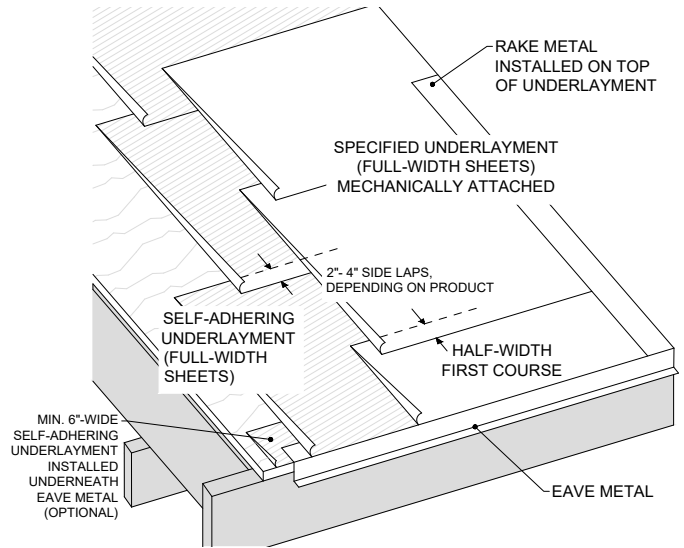


Figure 3 - Initial Layer of Self-Adhering Underlayment Followed by Mechanically-Attached Underlayment

FLASHING

Sheet metal flashing and accessories* must be installed at roof intersections, wherever there is a change in roof slope or direction, and around roof openings; step flashing required at all roof-to-vertical transitions; and counter flashing should extend past and cover the top edge of flashing metal a minimum of 2" (51 mm).

*New/like new sheet metal flashing and accessories are required to match projected life cycle of roof. (See Figure 4)

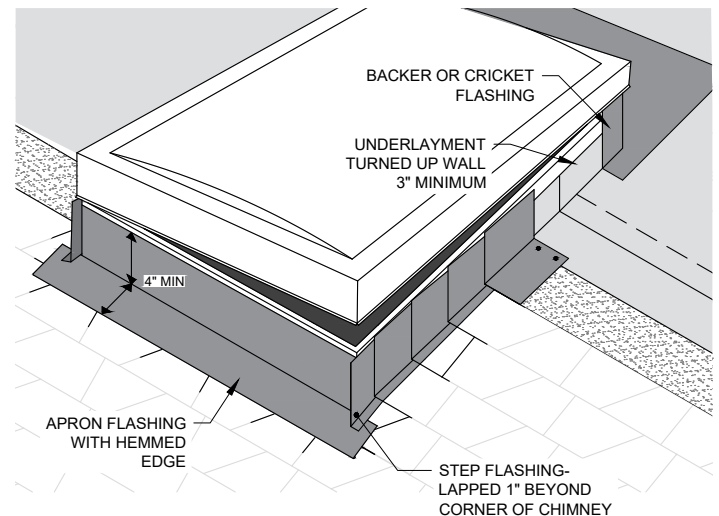


Figure 4 - Installation of Self-Adhering Underlayment and Metal Flashings at Roof Openings

Flanged penetration flashing (vent pipe collars, pipe jacks, etc.) must be sealed underneath along the top and both sides with asphalt roof cement conforming to ASTM D4586 (or other Malarkey-approved sealant).

Strip-off the unexposed flanges of penetration flashing with min. 6"-wide (152 mm) Arctic Seal, covering all fasteners used to secure the flashings. (See Figure 5)

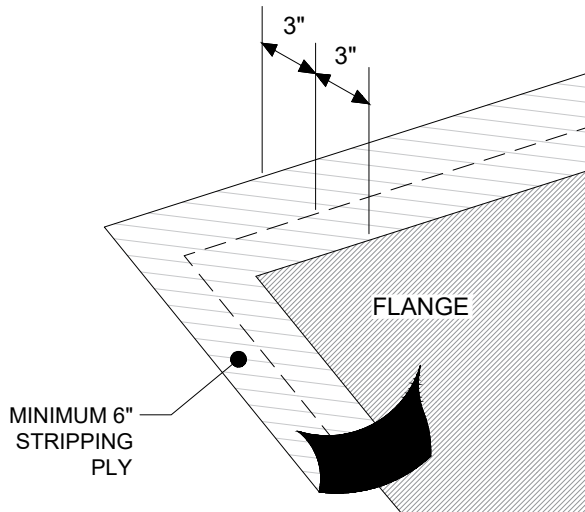


Figure 5 - Stripping-off Flanges of Penetration Flashing

Shingles installed on top of flanged penetration flashing should be sealed down with a bead of asphalt roof cement conforming to ASTM D4586.

Any obstructions greater than 30" (762 mm) in width will need to have a cricket installed on the upslope side of the curb.

SMART START STARTER SHINGLES

Apply to both eave and rake edges of roof; overhang the drip edge flashing, 1/4" - 3/4" (6 - 19 mm).

Fasten with four (4) nails placed 1 1/2" - 3" (38 - 76 mm) back from the roof edge: one (1) nail 1" (25 mm) from each end and the other two (2) evenly spaced on the same line as the end fasteners. Do not place fasteners in the seal-down strip. No staples. (See Figure 6)

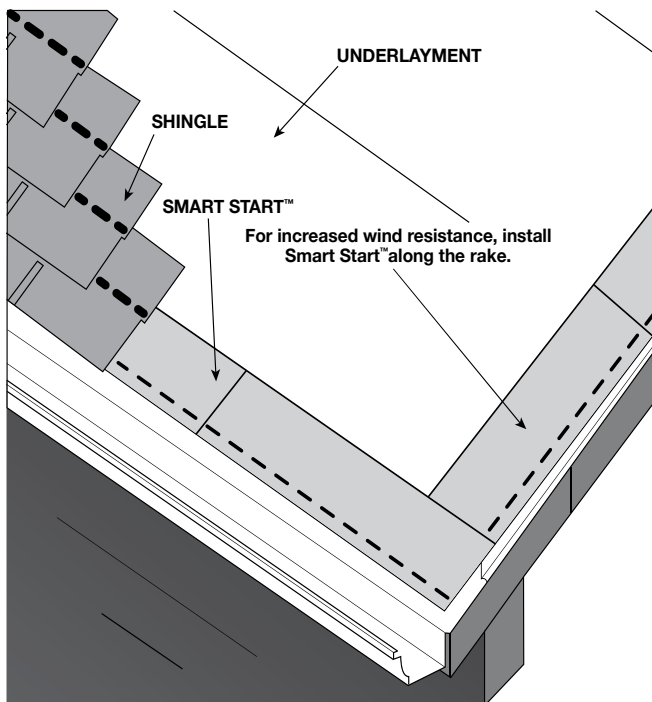


Figure 6 - Application of Smart Start® along the Eave and Rake Edges of Roof

WINDSOR STARTER SHINGLES

Installation of Windsor Starter shingles *must be preceded* by a starter course of Smart Start (see fastening instructions above).

Windsor Starter should completely overlap the starter course and overhang it by 1/8" (3 mm).

Fasten with four (4) nails placed in-between the nailing lines: one (1) nail 1" (25 mm) from each end and the other two (2) evenly spaced on the same line as the end fasteners. (See Figure 7)

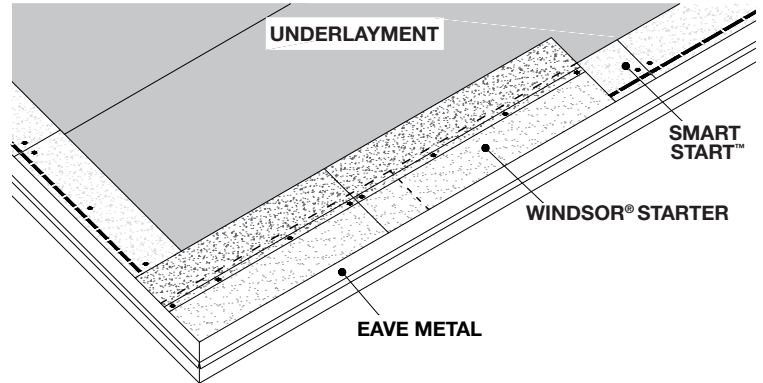


Figure 7 - Application of Windsor® Starter Shingles over Smart Start® at the Eave Edge of Roof

SHINGLE FASTENING

Proper shingle fastening is one of the most critical aspects of a successful roofing application. Nails must be driven flush to the shingle surface and not overdriven, underdriven or driven at an angle, especially on low slope installations where water runs off less freely and leaks could result. When fastening adjacent shingles, butt them loosely together to prevent buckling.

The use of staples is not an approved fastening method. (See Figure 8)

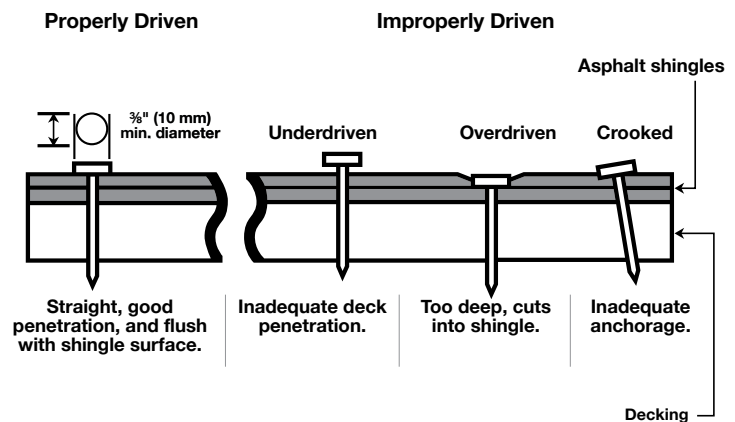


Figure 8 - Nailing Instructions

3-tab Nailing Pattern: Under normal conditions, use four (4) fasteners for each full shingle. Fasteners must be placed above the cutouts and below the seal-down strip, approximately 1" (25 mm) in from each end of the shingle, with the two remaining nails above the cutouts and below the sealant. (See Figure 9)

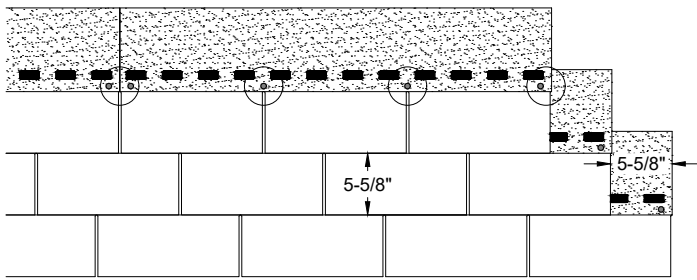


Figure 9 - 3-Tab, 4-Nail Fastening Pattern

Laminate Nailing Pattern: Under normal conditions, use four (4) fasteners for each full shingle. Fasteners must be placed in the nailing area approximately 1" (25 mm) in from each edge and the remaining fasteners evenly spaced between. Malarkey laminate shingles feature The Zone®, an enlarged, 1⁵/₁₆" (33 mm) wide nailing area that helps ensure correct fastener placement. (See Figure 10)

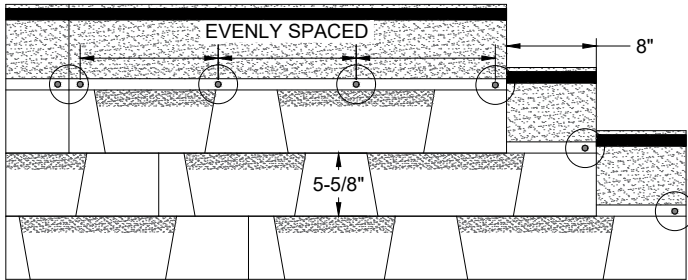


Figure 10 - Laminate, 4-Nail Fastening Pattern

Windsor Nailing Pattern: Use five (5) fasteners for each shingle, evenly spaced across the shingle, and placed within the high nailing area designated by the parallel nailing lines. Ensure the outside fasteners are approximately 1" (25 mm) from each edge. (See Figure 11)

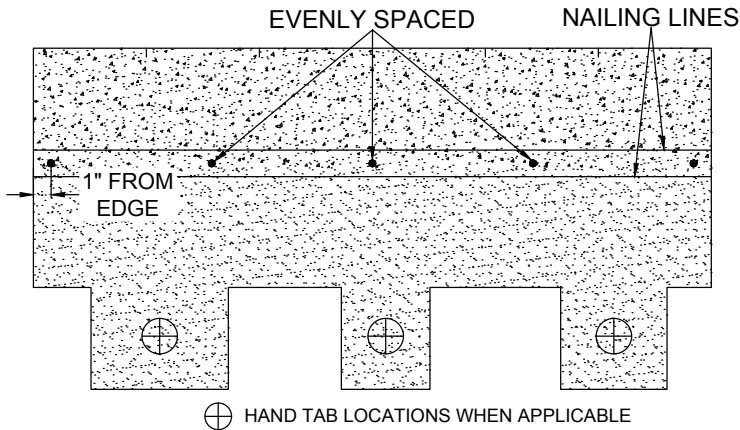


Figure 11 - Windsor, 5-Nail Fastening Pattern and Hand-Tab Locations

For roof slopes >21:12, shingles, including starter shingles, must be 6-nailed; 9-nails for Windsor shingles, and hand-sealed with asphalt roof cement conforming to ASTM D4586 (or other Malarkey-approved sealant).

ROOF VALLEYS

Open metal valley and closed-cut valley details are approved; in fact, installers can choose between two (2) acceptable open

metal valley details. Each begins with the installation of a valley liner; see step-by-step directions next.

Constructing the Valley Liner: Open Metal Valley Option 1

1. Center an initial, full-width membrane of Arctic Seal underlayment in the valley; ensure it is tight to the deck without bridging in the break of the valley.
2. Extend the width of the valley liner by applying a half-width strip of Arctic Seal to each side of the center piece, overlapping the edges 2" (51 mm).

Open Metal Valley Option 1

3. Install minimum 24"-wide (610 mm), metal *W-Valley Flashing* (valley metal) in the center of the valley and secure with fasteners no more than 1" (25 mm) from the outside edges at a spacing of 10" (254 mm) to 12" (305 mm) on center.
4. Apply field underlayment over the valley liner and terminate it approximately 4" (102 mm) from the valley metal (16" [406 mm] from valley centerline).
5. Install a 12"-wide (305 mm) stripping ply of Arctic Seal: 4" (102 mm) over the edge of valley metal (covering fasteners used to secure the metal), 4" (102 mm) over the exposed valley liner, and 4" (102 mm) onto the field underlayment. Employ a silicone hand roller to ensure full adhesion. (See Figure 12)
6. Repeat the installation of field underlayment and stripping ply to the opposite side of the valley.

Proceed with shingle installation.

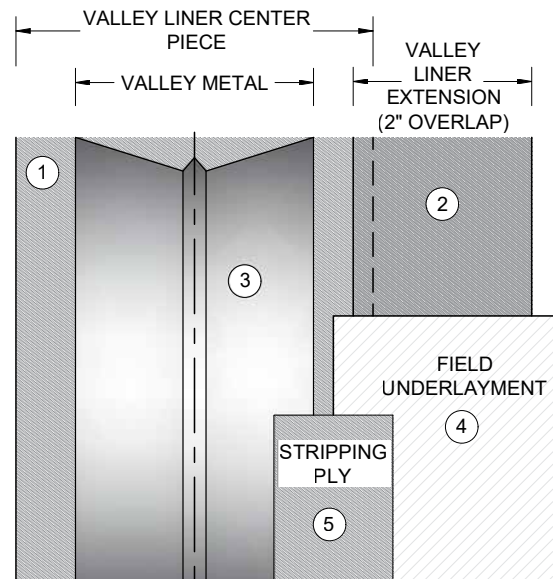


Figure 12 - Construction of Open Metal Valley Option 1

Constructing the Valley Liner: Open Metal Valley Option 2

1. Center an initial, full-width membrane of Arctic Seal underlayment in the valley; ensure it is tight to the deck without bridging in the break of the valley.

Open Metal Valley Option 2

2. Install minimum 24"-wide (610 mm), metal *W-Valley Flashing* (valley metal) in the center of the valley and secure with fasteners no more than 1" (25 mm) from the outside edges at a spacing of 10" (254 mm) to 12" (305 mm) on center.

3. Install a 18"-wide (457 mm) stripping ply of Arctic Seal: 3" (76 mm) over the edge of valley metal (covering fasteners used to secure the metal), and the balance on the field. Employ a silicone hand roller to ensure full adhesion.
4. Apply field underlayment and position 3" max (76 mm) from the edge of the valley liner. **(See Figure 13)**
5. Repeat the installation of a stripping ply and field underlayment to the opposite side of the valley.

Proceed with shingle installation.

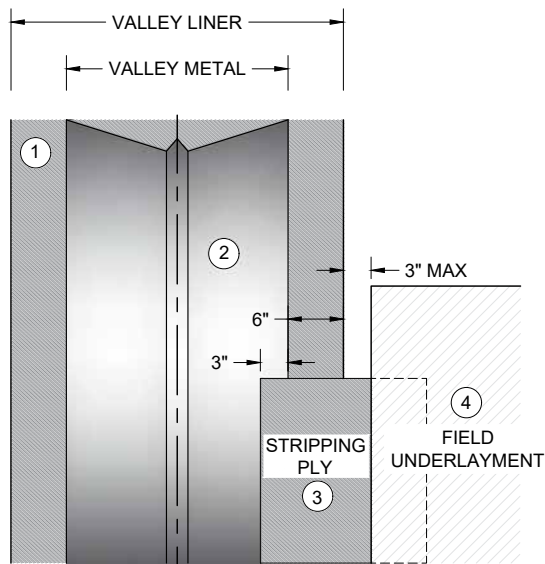


Figure 13 - Construction of Open Metal Valley Option 2

Closed-Cut Valleys

Weave field underlayment across either valley liner and up the opposite side a minimum of 12" (305 mm) or lap it over each side of the liner a minimum of 6" (152 mm). When fastening, be aware no fasteners are allowed within 6" (152 mm) of the valley centerline.

Follow Malarkey's standard installation instructions for constructing closed-cut roof valleys.

MISCELLANEOUS REQUIREMENTS

The use of a *bleeder run* up valleys is not approved, and pointed valleys are not allowed either (aka a *California* valley or no-cut valley).

When runoff from an upper roof drains onto a lower, it is recommended water be channeled to a gutter by a downspout extension or *trough* installed under each downspout. Doing so will protect shingles from damage and avoid unsightly streaking. **(See Figure 14)**

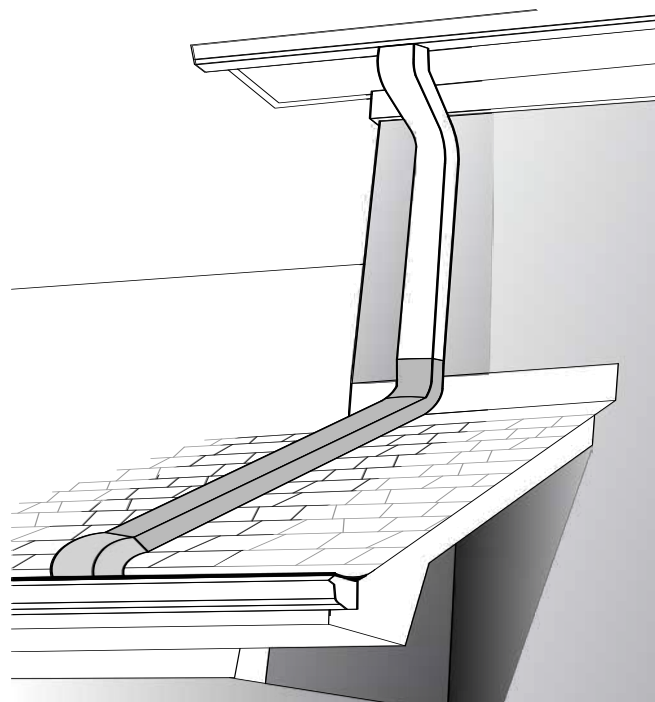


Figure 14 - Channeling Runoff to a Gutter With a Downspout Extension

Vented Nail Base Assemblies: Contact Malarkey's Technical Services Department on any projects with a vented nail base product.

CONTACT US

Malarkey Technical Services is available for questions at (800) 545-1191 or (503) 283-1191, 7:00 am to 5:00 pm, Pacific Time, or email technicalinquiries@malarkeyroofing.com. Thank you.



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