



## **Self-Adhering Underlayment Installation Instructions**



# Directions for Applying Malarkey Arctic Seal® Ice and Water Protection Underlayment

## GENERAL INSTRUCTIONS

Install Malarkey's 400 & 401 Arctic Seal® Self-Adhering Underlayments (Arctic Seal®) according to adopted building code and local amendments. To qualify for warranty protection and obtain stated coverage, the installation instructions detailed here must be followed. Contact Malarkey Technical Services or check our website at [WWW.MALARKEYROOFING.COM](http://WWW.MALARKEYROOFING.COM) for the most current version.

We assume no responsibility for damage to the underlayment or water damage to the roof deck prior to installation of the finished roofing system, or for leaks due to improper application or failure to properly prepare the surface.

## IMPORTANT

- ALWAYS wear fall protection when working on a roof.
- All underlayments can be slippery, particularly when wet or covered with frost.
- Do not walk on the membrane until it bonds to the substrate.

## PRODUCT DESCRIPTION

**Product Use:** Arctic Seal® is a specially designed and manufactured, self-adhering underlayment for use on steep slopes and as a flashing membrane in areas susceptible to leaks, such as valleys, roof-to-wall transitions, and around vents, curbs, skylights and other roof penetrations.

It is ideal for low-slope applications (2" [51 mm] up to 4" [102 mm] per 12" [305 mm]) that demand complete roof coverage and protection, particularly along the eaves; in fact, its application is required by many building codes in cold weather climates (where icing along the eaves is anticipated or where the average January temperature is 25°F [-4°C] or less<sup>1</sup>) or areas of high wind to prevent moisture intrusion caused by ice dams and wind-blown rain.

Arctic Seal® is used with Malarkey's Right Start™ UDL and SecureStart™ Plus underlayments in their "ice dam protection" applications. Please refer to those installation instructions for more information.

Contact Malarkey's Technical Services Department for help with the use of Arctic Seal® at (800) 545-1191 or (503) 283-1191, weekdays 7:00 a.m. to 5:00 p.m., Pacific Time.

**Composition and Materials:** Arctic Seal® is manufactured on a durable fiberglass mat with a Flexor™ SBS polymer modified asphalt top coating and surfaced with a sand release agent that resists wear and improves footing. The bottom coat is an aggressive, asphalt-based adhesive and protected with a factory-applied, split-release plastic film that is removed during installation. (See Figure 1)

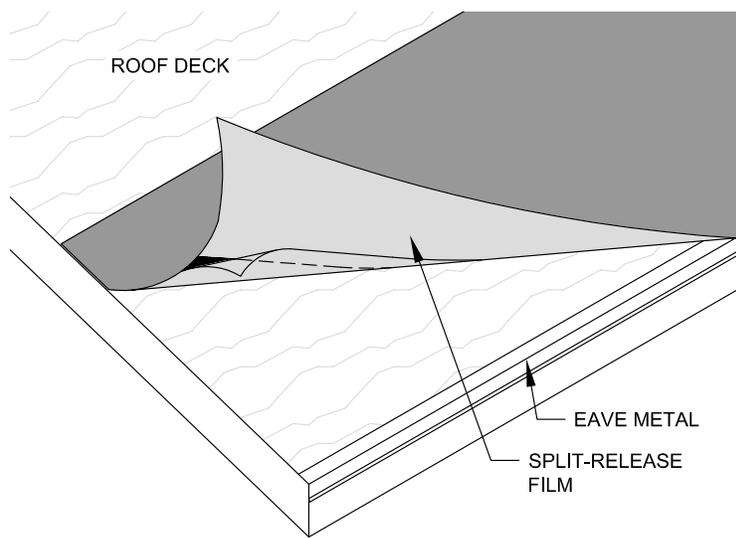


Figure 1 - One Side of the Split-Release Film Overlaps the Other for Easy Removal

Arctic Seal® meets the requirements of ASTM D1970, Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.

**Precautions:** Arctic Seal® requires dry, well-ventilated storage and protection from the weather. Store the rolls on end.

Roof decks should be sound, smooth (free of protrusions), meet necessary local requirements, provide positive drainage, and be dry at the time of installation. The presence of moisture can affect the adhesion of the membrane.

Sweep dirt and debris from the roof deck. Minimum approved slope is 2" (51 mm) per 12" (305 mm).

If installing in cooler temperatures, unroll the membrane, cut into manageable lengths (10' [3 m] to 15' [5 m] long), and lay them out to relax before installing. Storage conditions and temperatures will determine how long this might take, so times will vary. Failure to allow Arctic Seal® to fully relax can result in wrinkles of the membrane once it warms up.

The warmer the weather, the more aggressive the adhesive. Elevated temperatures can also affect the ability to remove the release film, and too cold can prevent the membrane from fully adhering to the roof deck. In most instances, proper application is better, more easily accomplished with two installers.

If necessary, Arctic Seal® can be nailed in place with fasteners or the adhesive activated by heat welding. Use only enough fasteners to hold the material in place and work safely (or per adopted building code) until shingles are applied. Drive nails straight and flush to the surface of the underlayment.

Install Arctic Seal® first in roof valleys (see instructions below) and as a flashing membrane at roof-to-wall transitions, around vents, curbs, skylights and other roof penetrations; then apply along the eaves. Once in place, follow by flashing the rakes.

Strips of the membrane can also be used as stripping plies over flanges of metal flashing. If Arctic Seal® is not used on

<sup>1</sup> Residential Asphalt Roofing Manual, 2014 Edition, Asphalt Roofing Manufacturers Association.

the entire roof, other underlayments should be lapped 6" (152 mm) onto Arctic Seal® applications (like roof valleys).

When using for full deck protection, make sure proper ventilation and moisture control issues are addressed; building use and internal moisture can increase condensation beneath the roof deck.

Arctic Seal® is not intended as a permanently-exposed roofing surface but can be left uncovered for up to 60 days if necessary before the primary roof covering is installed. Good roofing practice dictates the primary roof covering be installed the same day as the underlayment.

Arctic Seal® is not made for use under metal roof systems.

## APPLICATION

**Drip Edge Flashing:** In accordance with 2015 International Building Code, Section 1507.2.9.3, and 2015 International Residential (Building) Code, Section R905.2.8.5, install non-corrosive, 26-gauge, sheet metal *drip edge flashing* (drip edge) along eave and rake edges for shingle installations.

Drip edge applications should have dimensions large enough to both position the top flange of the metal 2" (51 mm) back from the edge of the roof deck, and extend outward, down over the edge.

Secure drip edge with roofing nails, centered on the top flange at 8" (203 mm) to 10" (254 mm) on center, or per adopted local building code.

Install drip edge first along the eaves, and lap the initial course of Arctic Seal® over it. Once underlayments have been applied up to the ridge on that section of roof, follow by flashing the rakes (over the ends of the underlayment).

Begin application of the rake drip edge at the lower corner of roof near the eave, and work your way up, lapping subsequent lengths of flashing over the lower pieces by a minimum of 2" (51 mm). Be sure to overlap the eave drip edge, too.

## INSTALLATION

There are a number of different methods for installing Arctic Seal®.

### Method #1 – Removal of the Release Film while End of Sheet Is Adhered in Place

Begin at a lower corner of roof, and position a length of Arctic Seal® parallel to the eave (atop the drip edge), adhesive side down, aligning in the desired position.

At the starting end, lift the membrane, and peel back at least 6" (152 mm) of release film. While still grasping the release film in one hand, press a corner of the sheet firmly to the roof deck with the other, adhering the exposed adhesive to the deck.

Once secure, pull the release film out from under the sheet at a 45° angle, and don't stop until the film is completely removed. Do this in a continuous motion while maintaining proper placement of the sheet.

The split-release film may be removed one side at a time or simultaneously. If doing one side at a time, start with the side of the film that overlaps the other. (See Figure 2)

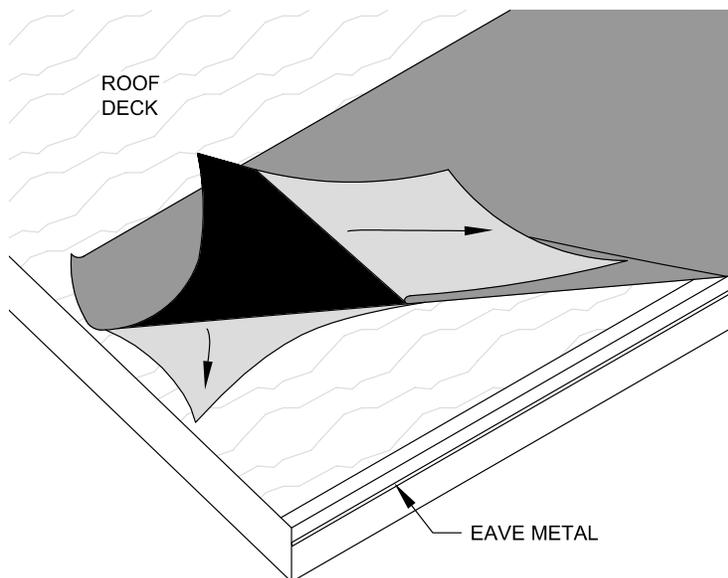


Figure 2 - Application Method #1

### Method #2 – Exposing Half of the Underside at a Time and Removing the Release Film from That Half

Begin at a lower corner of roof, and position a length of Arctic Seal® parallel to the eave (atop the drip edge), adhesive side down, aligning in the desired position.

Fold the upper half of the membrane back on itself to expose the release film on that side: 1) Peel off the release film completely; and 2) Carefully lay that portion of Arctic Seal® back down into place onto the roof deck.

Once secure, repeat the process for the lower half: fold it back over the adhered upper half, peel off the release film, and return that portion into place. (See Figure 3)

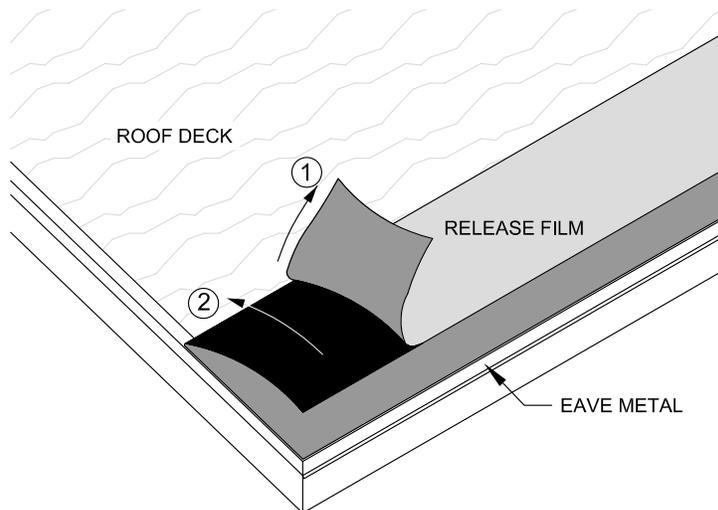


Figure 3 - Application Method #2

### Method #3 – Complete Removal of the Release Film Prior to Laying in Place

Cut Arctic Seal® to a convenient length, and “dry-fit” the membrane to the roof before removing the release film.

Begin at a lower corner of roof, parallel to the eave, and flip the whole sheet over so the adhesive side with release film faces up.

Peel both sides of the release film completely off. Hold tight to each end, and flip the sheet back over.

Pull the sheet taut, and carefully lower the membrane to the roof in unison from both ends. Allow the middle of the sheet to contact the deck first, then lower the ends, ensuring it is fully adhered and wrinkle free. (See Figure 4)

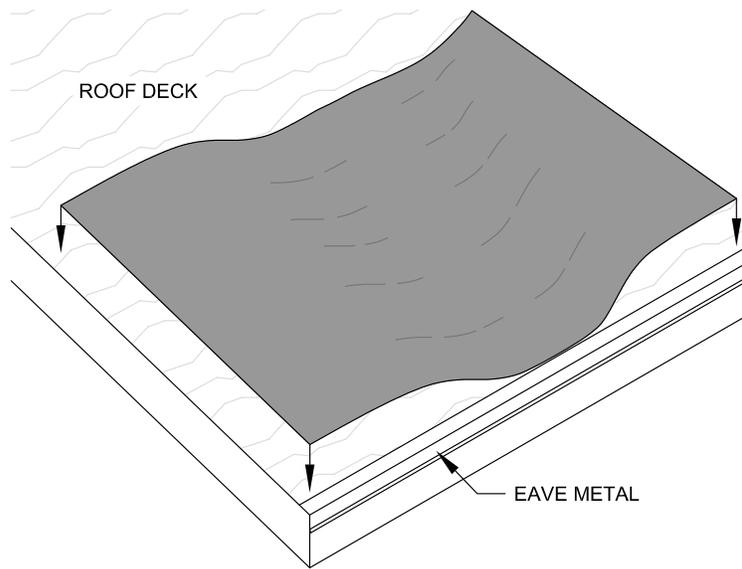


Figure 4 - Application Method #3

**Method #4 – Removing the Release Film as Arctic Seal® is Unrolled (This method is usually employed only when temperatures are hot or very warm.)**

Begin at a lower corner of roof, roll out a couple feet of material, and align the membrane parallel to the eave.

Reach under the roll, and peel back both halves of the release film, pulling them back under the roll until the adhesive can be seen.

Press the exposed adhesive firmly to the roof deck with heavy hand pressure, and once secure, begin unrolling the membrane across the roof while simultaneously pulling up (and removing) the release film. (See Figure 5)

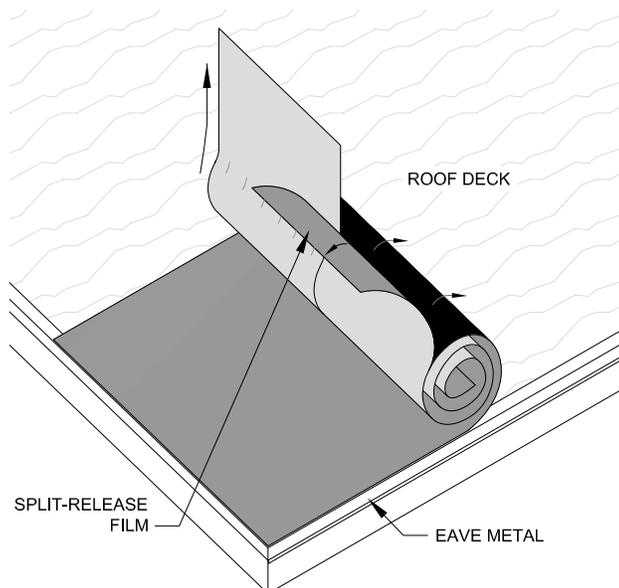


Figure 5 - Application Method #4

**Details Common to All Methods:** Ensure each course application of Arctic Seal® is taut, properly placed, lays flat, and is sticking well. If necessary due to the weather or on steep slopes, back-nail the Arctic Seal®.

End laps in the same course should be 6" (152 mm), and side laps in overlying courses lapped to either the 2" (51 mm) or 4" (102 mm) lay lines. Stagger end laps 6' (1.8 m) apart in subsequent courses.

At roof-to-wall transitions, lap Arctic Seal® a minimum of 3" (76 mm) up the vertical wall and secure in place.

When a section of roof is covered, use a heavy membrane roller over the entire surface to ensure complete adhesion. Roll overlap areas thoroughly.

**INSTALLATION IN ICE DAM REGIONS**

**Roof Slopes 4:12 and Greater**

Start at a lower corner of roof and begin by applying a full-width sheet of Arctic Seal® flush with the drip edge.

Continue installing Arctic Seal® up the roof from the eaves and along the rakes, no less than 24" (610 mm) past the interior warm inside walls of the house<sup>2</sup> or a spot well above the highest expected level of water backup from ice dams or according to adopted building code requirements.

Once past 24" (610 mm), follow with full-width courses of Right Start™, SecureStart™ Plus, or other code-compliant underlayment, the first course lapped 6" (152 mm) over the Arctic Seal®, and the rest with a minimum of 2" (51 mm) side laps, on up the roof.

After the top of that expanse of roof is reached, apply drip edge flashing to the rakes, over the ends of your underlayments.

For extra protection at the eaves and prior to the installation of drip edge, install an 8" (203 mm) stripping ply of Arctic Seal®, and ensure it covers the junction of roof and fascia.

(See Figure 6)

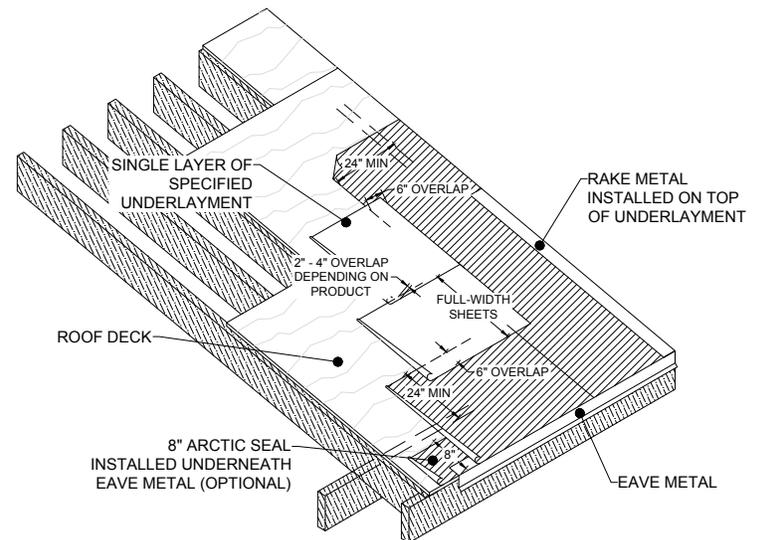


Figure 6 - Application of Arctic Seal® for Ice Dam Protection, Roof Slopes 4:12 and Greater

**Roof Slopes 2:12 Up to 4:12**

In adverse weather conditions, roof slopes between 2:12 (2" [51 mm] per 12" [305 mm]) up to 4:12 (4" [102 mm] per

2 The 24-inch dimension is a requirement of 2015 International Residential Code®, Section R905.1.2 for Ice Barriers in areas where there has been a history of ice forming along the eaves, causing a backup of water.

12" [305 mm]) require a *double layer* of underlayment over the entire roof deck.

Like the 4:12 (4" [102 mm] per 12" [305 mm]) and greater instructions, again apply Arctic Seal®, but this time start with a half-width *starter strip* and apply along the eaves and rakes.

Succeeding courses are full-width, the first course completely overlapping the starter, and followed by courses half-lapped over preceding courses.

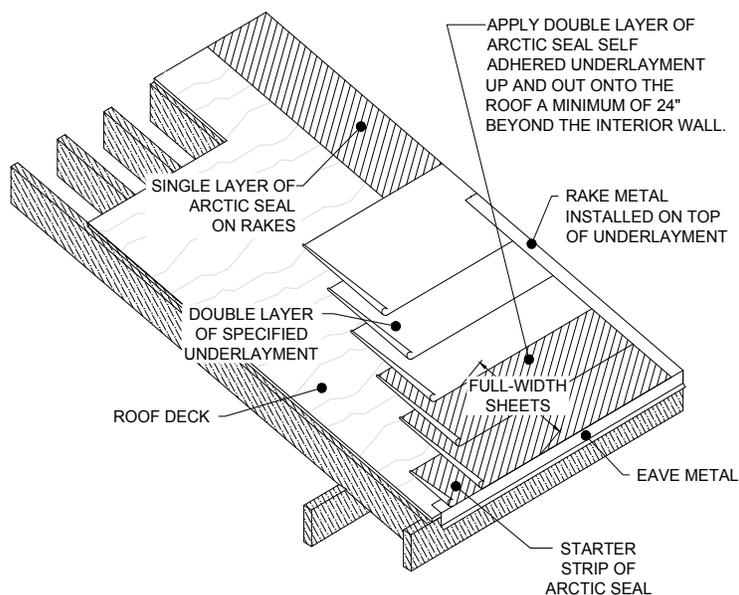
Continue applying Arctic Seal® up and out onto the roof a minimum of 24" (610 mm) beyond the inside, warm interior wall of the house or above the expected level of ice dams or according to building code requirements. Be aware that ice dams extend further inward from the roof edge on low slope roofs.

Once that point is reached, proceed up the roof with double layers of Arctic Seal® or switch to Malarkey Right Start™, SecureStart™ Plus, or other code-compliant underlayment.

Install enough fasteners to hold the standard underlayments in place and work safely until shingles are applied or per adopted building code.

Once the top of that expanse of roof is reached, apply drip edge flashing to the rakes, over the ends of underlayment.

(See Figure 7)



**Figure 7 - Application of Arctic Seal® for Ice Dam Protection, Roof Slopes 2:12 Up to 4:12**

## ROOF VALLEYS

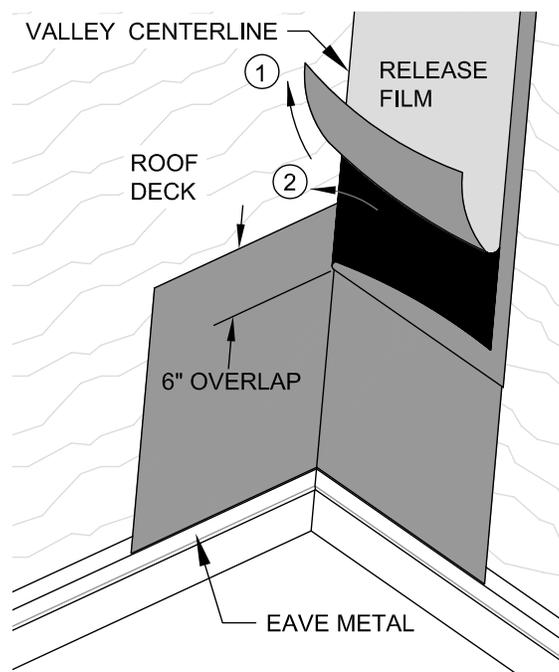
Arctic Seal® is recommended to line roof valleys, and application Methods 1, 2 or 3 can be used effectively here.

Start application at the low point of the valley, apply full-width Arctic Seal® over and flush with the eave drip edge, and work upward.

A single length of Arctic Seal® works best, but if that isn't possible, successive overlaps should be 6" (152 mm). Firmly hand-roll the laps to ensure a complete, watertight bond.

As you apply Arctic Seal®, complete adhesion to the break of the valley and up the sides is essential. Make sure equal amounts of the membrane lay on both sides of the valley centerline.

If fasteners are required, they cannot be applied closer than 6" (152 mm) from the valley centerline. (See Figure 8)



**Figure 8 - Installation of Arctic Seal® in a Roof Valley Using Application Method #2**

Subsequent installation of underlayment on the field of the roof can be laced across roof valleys (over the Arctic Seal®) and up the adjacent roof a minimum of 6" (152 mm) or lapped 6" (152 mm) onto each side of the Arctic Seal® valley liner.

## FINAL NOTE

These instructions are meant to act as a general guide. If you have questions about this installation or any Malarkey roofing product, please contact our Technical Services Department weekdays at (800) 545-1191 or (503) 283-1191, 7:00 am to 5:00 pm, Pacific Time. You can also email us at [technicalinquiries@malarkeyroofing.com](mailto:technicalinquiries@malarkeyroofing.com). Thank you.



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