



Self-Adhering Underlayment Installation Instructions



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

GENERAL INSTRUCTIONS

Install Malarkey's 401 Arctic Seal® Self-Adhering Underlayment (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 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 roof valleys, roof-to-vertical 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 climates with a history of ice damming or where the mean January temperature is 25°F [-4°C] or less¹. Arctic Seal® is also effective in areas of high winds, preventing moisture intrusion caused by wind-blown rain.

Arctic Seal® is used with Malarkey's water-resistant, *mechanically-attached* field underlayments, *Right Start™ UDL* and our *Secure Start® line* of synthetic underlayments, in their respective "ice dam protection" applications. Please refer to those installation instructions at WWW.MALARKEYROOFING.COM.

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

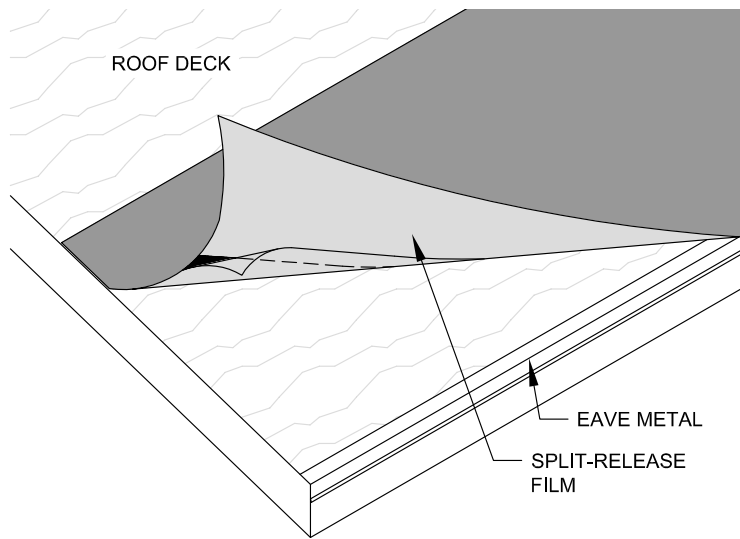


Figure 1 - One Side of the Split-Release Film Overlaps the Other for Easy Removal

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 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 begin field application.

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

¹ 2017 National Roofing Contractors Association *Roofing Manual: Steep Slope Roof Systems* and the 2014 Asphalt Roofing Manufacturers Association *Residential Asphalt Roofing Manual*.

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 2018 International Building Code, Section 1507.2.8.3, and 2018 International Residential (Building) Code, Section R905.2.8.5, *drip edge flashing* (drip edge, eave or rake metal) is required on the eave and rake edges of shingle roofs.

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).

INSTALLATION

There are a number of different methods for installing Arctic Seal® but all include the use of hand and/or weighted rollers over the entire surface to ensure complete adhesion.

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)

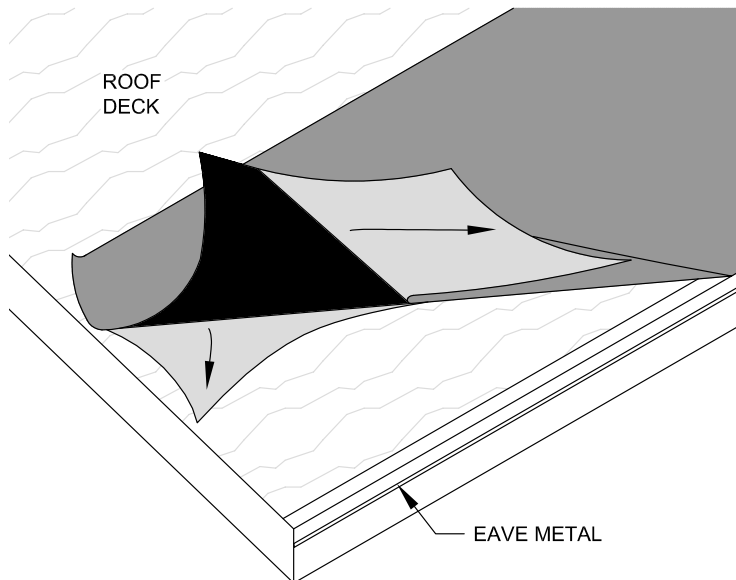


Figure 2 - Application Method #1

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.

Apply firm, even pressure from the center to the outer edge, eliminating wrinkles. (See Figure 3)

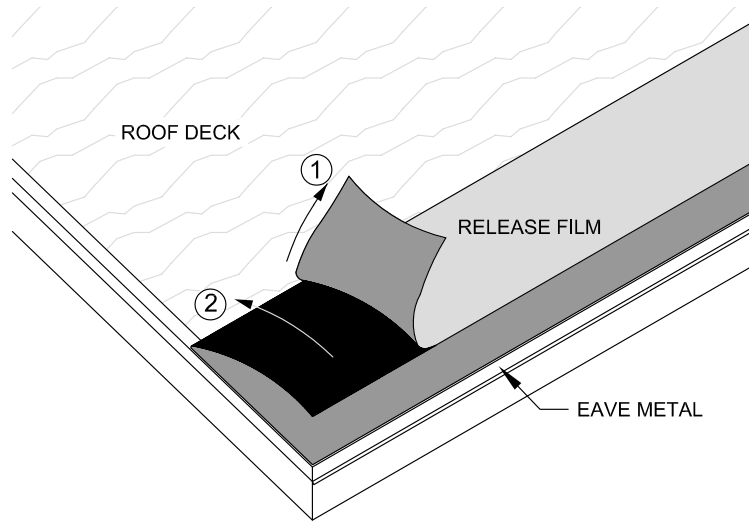


Figure 3 - Application Method #2

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. With the help of a second installer, hold tight to each end, and flip the sheet back over.

Pull the sheet taut, and carefully “fly-in” (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)

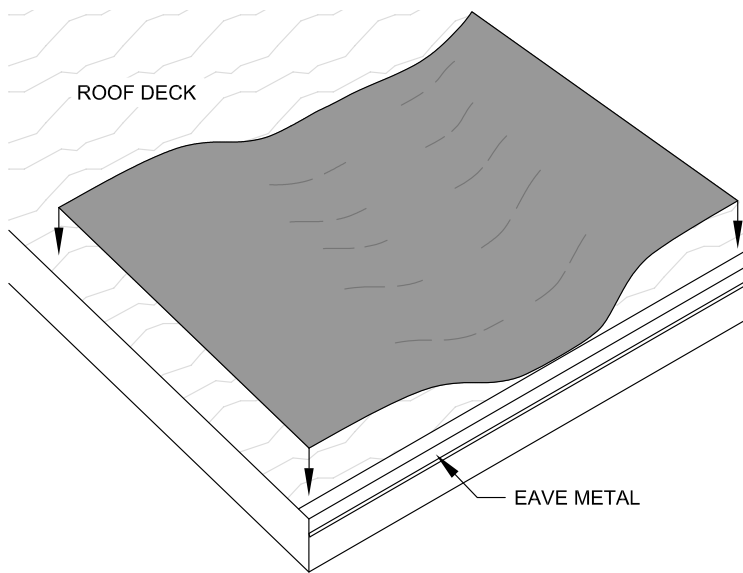


Figure 4 - Application Method #3

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 and roll out 2-3 feet of material (610-914 mm) along the eave. From the *front of the roll* (in the working direction across the roof), carefully score the release film all the way across with a straight blade knife.

Peel back both ends of the release film *on the side of the roll closest to you*, and pull upward. This will cause the roll to roll back on itself and expose the adhesive from the *starting end*. Lay that end down on the deck and adhere with hand or foot pressure.

Returning to the front of the roll, grasp the remaining release film, both sides, stand up, and begin walking backward while pulling up on the release film. Be aware of roof edges.

Do this in a continuous motion; once started, do not stop. Should you have to stop, a quick tug or jerk on the release film may help restart removal and get you going again. If this doesn't work, cover the partially installed roll with a tarp or synthetic underlayment until it cools, then remove the covering and resume installation. (See Figure 5)

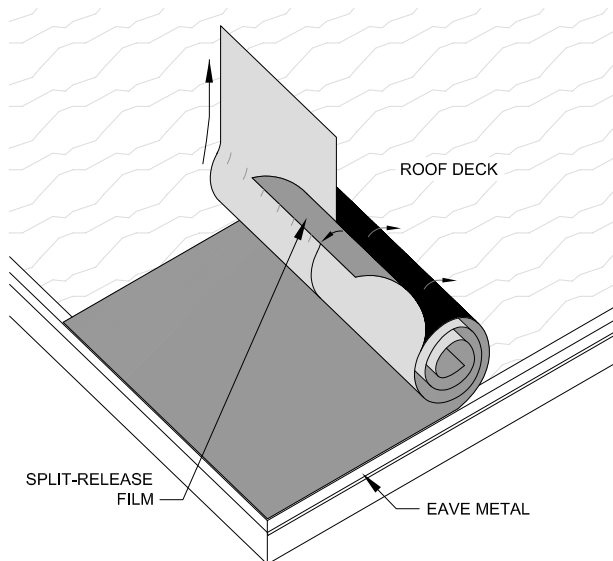


Figure 5 - Application Method #4

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®. Compliant with ASTM D1970, it seals tightly around fastener penetrations.

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.

For extra protection at the eaves and prior to the installation of drip edge, install a 6"-wide (152 mm) stripping ply of Arctic Seal®, and ensure it covers the junction of roof and fascia.

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 eave drip edge.

Continue installing Arctic Seal® up the roof from the eaves no less than 24" (610 mm) past the interior warm inside walls of the house² or a spot well above the highest expected level of water backup from ice dams or according to adopted building code requirements.

If additional courses of Arctic Seal® are necessary to reach that point, lay lines on the sheet show how far to lap the material. Firmly hand-roll the laps to ensure a complete, watertight bond.

Once past 24" (610 mm), follow with full-width courses of your specified field underlayment, the first course lapped 6" (152 mm) over the termination of Arctic Seal® and the rest with 2 to 4-inch (51-102 mm) side laps (depending on product), on up the roof. (See Figure 6)

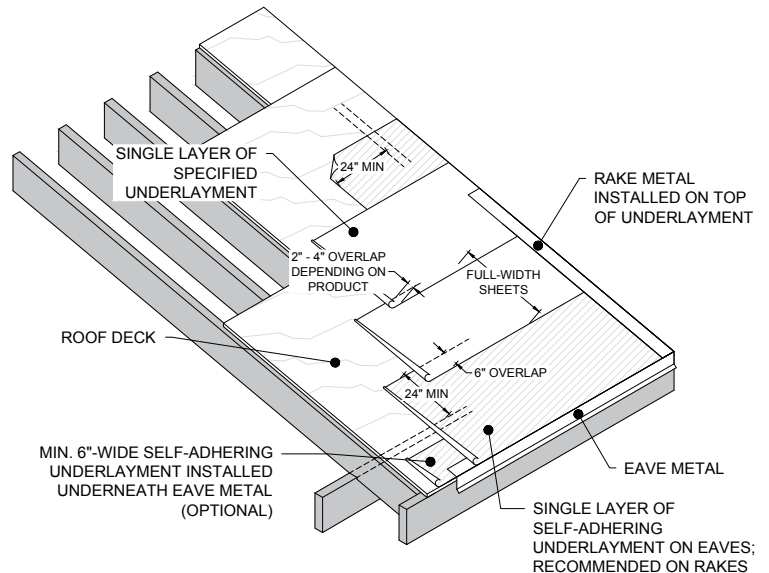


Figure 6 - Application of Arctic Seal® for Ice Dam Protection, Roof Slopes 4:12 and Greater

2 The 24-inch (610 mm) dimension is a requirement of both International Building Code and International Residential (Building) Code for ice barriers in geographic areas where there has been a history of ice forming along the eaves, causing a backup of water.

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

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

Roof Slopes 2:12 Up to 4:12

Like 4:12 and greater slopes, begin with a full-width sheet of Arctic Seal® along the eaves. Continue installation 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 or according to building code requirements.

Once that point is reached, switch to *double layers* of your specified field underlayment, the first course a half-width *starter strip* lapped 6" (152 mm) over the termination of Arctic Seal®.

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

Install enough fasteners to hold the field 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)

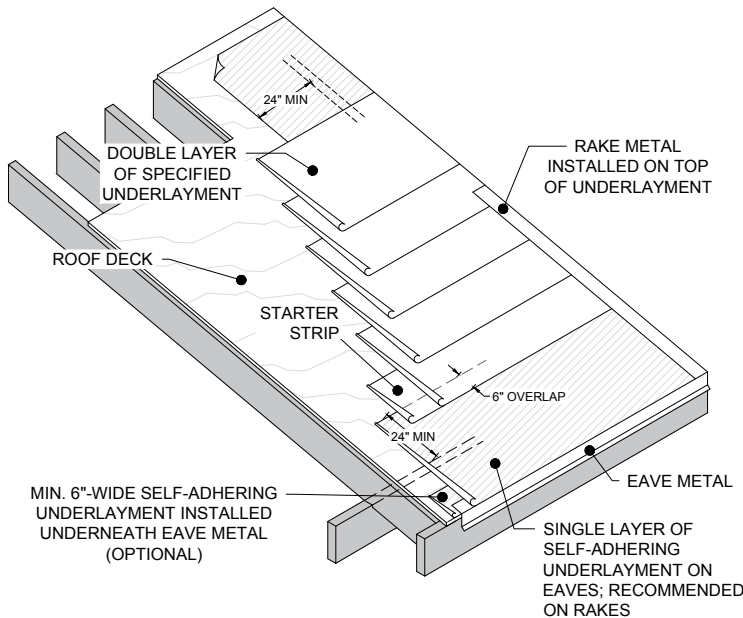


Figure 7 - Application of Arctic Seal® for Ice Dam Protection, Roof Slopes 2:12 Up to 4:12

ROOF VALLEYS

Arctic Seal® is recommended to line roof valleys prior to the field underlayment and valley metal flashing; 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)

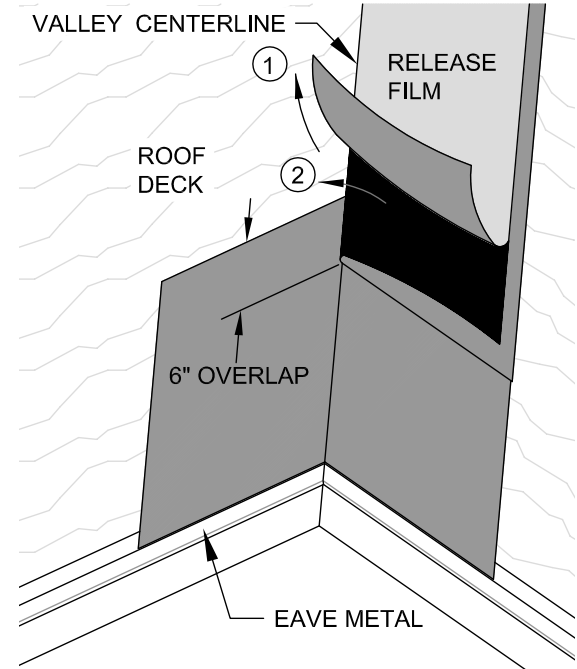


Figure 8 - Installation of Arctic Seal® in a Roof Valley Using Application Method #2

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 12" (305 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. Thank you.



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