Waterproofing Shingle Underlayments

One of CertainTeed's waterproofing shingle underlayment is called DryRoof™ SA. DryRoof SA is a long-lasting self-sticking modified asphalt on a glass mat reinforcement. In all cases the product must be applied to a clean dry roof deck.* The cost is much higher than standard water-resistant underlayment because of the high percentage of asphalt and polymer modifier. DryRoof SA is warranted against leaks and it is not destroyed when nails are driven through it because it seals around nails as they are driven. It is designed to seal the roof and prevent water from getting inside a building due to ice dams and/or wind-driven rain. ASTM standard D1970 applies to DryRoof SA and other similar products.

WHERE IS DRYROOF SA USED?

DryRoof SA can be used on both new or existing decks. It is installed beneath shingles, slate, tile, or cedar shakes. DryRoof SA is easy to apply and an excellent underlayment for low-slope shingle applications. It is commonly used to protect against water backup caused by ice dams at the roof eaves. It is also used in critical areas such as valleys, and as concealed flashing around roof penetrations and up sidewalls. In addition, DryRoof SA is very useful on roofs exposed to occasional high winds where wind-driven rain can penetrate beneath shingles.

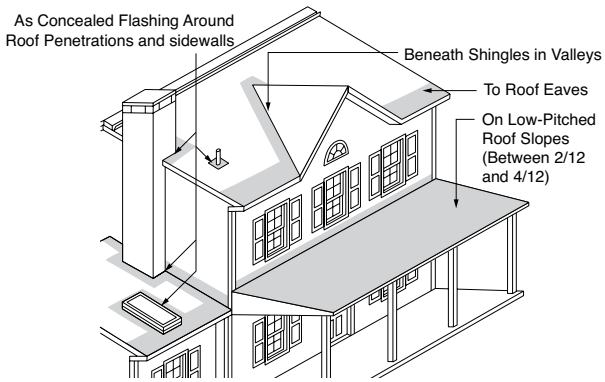

Figure 5-3: DryRoof SA's many uses.

THE APPLICATION OF DRYROOF SA OVER OLD SHINGLES

DryRoof SA must be applied over a clean, dry deck. Any other application, such as over old shingles, will void the DryRoof SA warranty.

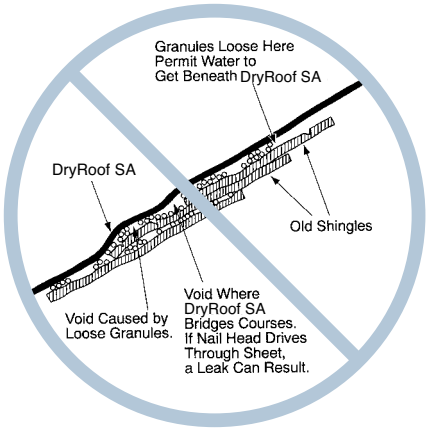

Figure 5-4: Problems with DryRoof SA application over old roof.

* Miami-Dade County acceptance requires the application of DryRoof SA™ over mechanically fastened #30 felt or #43 base sheet, and not directly to the deck. Such application is acceptable only when required by local code in areas where ice damming does not occur. Doing so will not affect the product's limited warranty.

WHAT IS THE DIFFERENCE BETWEEN DRYROOF SA AND STANDARD UNDERLAYMENT?

All the No. 15 and No. 30 underlayment products will wrinkle somewhat when dampened. Some will wrinkle very badly. All felt underlayments can leak, especially if they are cut to make them lie flat after they have wrinkled, and they can leak around nails driven through them.

Waterproofing shingle underlayments, such as CertainTeed's DryRoof SA, do not wrinkle from moisture absorption. They do not need to be cut to flatten wrinkles, because when properly installed, there are no wrinkles. Once adhered, they will not blow off the roof. They do not leak around nails driven through them, because the thick layer of polymer-modified asphalt coating is designed to be sticky and flexible, so it seals around the nails that puncture it. Therefore, these underlayments are not just water-resistant, they are waterproof. But they must be applied fully adhered to a clean, dry wood deck, in accordance with the manufacturer's specifications, in order to get the promised performance. And nails must be properly set according to manufacturer's requirements.

HOW IS DRYROOF SA MADE AND HOW DOES IT WORK?

DryRoof SA is a composite material of asphalt and elastomeric polymers reinforced with a fiber glass membrane. It is formed into a rolled sheet. The rubberized asphalt provides the waterproofing. The polymers make the asphalt elastic and sticky all the way through the membrane. This means DryRoof SA has the ability to both stretch and cling, and not rip when stressed. It seals like a gasket around nails driven through it. It sticks to a clean roof deck like glue and is warranted to remain effective for the life of the new asphalt shingle system applied over it, up to 50 years.

HERE ARE SOME OTHER FACTS ABOUT DRYROOF SA

- DryRoof SA is available in sand surface.
- The standard roll of DryRoof SA is 65' in length and 3' wide. One standard roll contains 195 square feet of material.
- During installation, an initial light "tack" (stickiness) makes DryRoof SA easy to lift if you accidentally put it in the wrong place.
- Once DryRoof SA is installed, however, it locks tight after being warmed by the sun. If an immediate seal is desired, press overlaps firmly with a roller. A heavy-duty wallpaper seam roller or "J" roller works well.

CAUTION:

- To help prevent shingles from fusing to the waterproofing underlayment, you can cover DryRoof SA with a layer of felt-underlayment. Although not required, adopting this practice will serve the property owner and your fellow roofing contractor well when it comes time for the next re-roof.

Here's a Tip… *In addition to being used for ice-dam protection and valley liners, it is good practice to use DryRoof SA to seal around pipes, skylights, chimneys, sidewalls, dormers, roof transitions and other roof areas vulnerable to leaks.*

- DryRoof SA may not come in contact with excessive amounts of petroleum solvent-based cements, such as asphalt plastic cement. For use with DryRoof SA, CertainTeed recommends urethanes or polymer-modified cements. Use such materials sparingly.
- Do not apply over shingles. With the exception of certain roof penetration flashing details do not apply over water-resistant underlayment.*
- If necessary, you may apply new DryRoof SA over an older existing piece of WSU; however, be sure the following conditions are met in order for the DryRoof SA warranty to remain in force:
  - The underlying roof deck must be acceptable and in good condition.
  - The existing WSU must have a smooth, clean surface. Nail holes can be present, but all shingles, nails, etc. must be removed and the existing WSU surface swept clean.
  - The surface of the existing WSU must be primed with an ASTM D41 asphalt primer in order to achieve proper adhesion when applying all surface style versions of DryRoof SA.
  - All laps must be offset between the existing WSU and new DryRoof SA by at least 8".
  - "Feather" the high edge of the DryRoof SA over the existing WSU to avoid telegraphing its double thickness.

  Note: CertainTeed is not responsible for and disclaims any and all liability for any damage caused by incompatibility of its DryRoof SA products when applied over WSU from other manufacturers.
- Do not use DryRoof SA as a permanently exposed roofing surface because it will begin to degrade after too much exposure to ultraviolet light. However, after being properly applied to an acceptable deck, DryRoof SA can be left exposed for three to six months (depending on the weather) prior to the installation of the roofing shingles – without significantly damaging DryRoof SA's performance in the finished system. When exposing DryRoof SA for more than one day, we strongly recommended that you:
- Press down all laps with a wallpaper seam roller to assure immediate adhesion. End laps and side laps should be 6".
- Use additional fasteners to hold the sheet in place (especially if cool, windy weather is anticipated).
- Close-off holes and joints in the roofs, since the finished roofing system and its flashing components will not be in place to prevent leakage.
- Prior to roofing over the exposed DryRoof SA, inspect it for damage and replace or recover any worn areas. If any fasteners are removed, the DryRoof SA must be replaced or the holes must be filled with one of the adhesives mentioned above so that it remains watertight.

WARNINGS

- Always remember that roofing activity can be dangerous. All necessary precautions and safety guidelines should be observed in accordance with proper roofing trade practices.
- When sand-surfaced DryRoof SA is left exposed for long periods of time, the sand embedded in its top surface will gradually come loose, possibly creating a slippery condition. Be sure to sweep the loose sand off "long-exposed" DryRoof SA before walking on it. If, for any reason, you must leave DryRoof SA exposed for a long period of time, you can possibly avoid the "loose-sand" situation by completely covering the DryRoof SA with a standard water-resistant underlayment such as #15.
- DryRoof SA's release film can be slippery. We suggest that you get the release film off the roof immediately after pulling it off each section of DryRoof SA.
- DryRoof SA is applied along the eaves and up the roof no less than 24" beyond the interior wall line to protect against leaks caused by ice dams. In areas of severe icing, it must be applied at least up to the highest water level that might conservatively be expected to occur from ice dams. This will vary by climate, amount of ventilation and insulation, and roof slope. For additional information on ice dams, visit www.certainteed.com.
- DryRoof SA is a vapor retarder. If you apply it over the entire roof, special care must be taken to ensure there is sufficient ventilation beneath the roof deck to prevent condensation. Refer to Chapter 7 for more information on ventilation.
- DryRoof SA will temporarily lose most of its sticky nature at temperatures under 40°F or even at higher temperatures, depending on its age. We recommend that it be applied in fair weather, at temperatures above 40°. If you need to apply it at colder temperatures, we suggest that you:
  - Nail it in place with fasteners. Nailing, however, cannot provide protection from ice dams.
  - Seal the laps with a heat gun or use one of the caulks/adhesives mentioned above.

  Installed according to instructions, DryRoof SA will become sticky again and adhere when temperatures rise.

DECK PREPARATION

- Remove all roofing material down to a clean, dry, and smooth deck.
- Get rid of anything that is sticking up, such as nails or wood splinters. Also eliminate dust, dirt, loose objects, and moisture.
- If you are covering a concrete or masonry roof surface, prime the surface first with an asphalt primer meeting ASTM D41 requirements. Follow the manufacturer's instructions for applying the primer. The primer must be dry before installing DryRoof SA.

* Miami-Dade County acceptance requires the application of DryRoof SA™ over mechanically fastened #30 felt or #43 base sheet, and not directly to the deck. Such application is acceptable only when required by local code in areas where ice damming does not occur. Doing so will not affect the product's limited warranty.

Here's a Tip... *Using the "Fly-In" Method, place your thumbs down. It makes the job easier in hot weather, to let go of the sticky DryRoof SA. (Thanks to Mike Dempsey of Eagle River, WI.)*

THREE INSTALLATION METHODS

(1) THE "ROLL-OUT" APPLICATION METHOD

NOTE: This method requires two workers.

1. DryRoof SA can be applied in any length convenient to the applicator.
2. First, unroll the material (keeping protective release film in place), line up with the lower edge of the roof, and hold it in place.

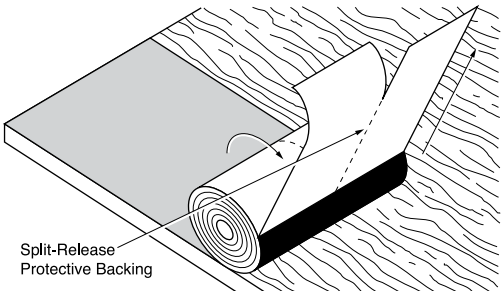

Figure 5-5: Application using the "Roll-Out" method

3. Lift the starting-end of the material (approximately 1'), peel back, and fold under at least 6" of both protective release film sections.
4. Carefully return the exposed adhesive surface to the deck and press it firmly in place. It is recommended that you walk over DryRoof SA to set it firmly to the deck.
5. If it's cold and the material does not stick immediately, tack in place with a few fasteners.
6. Reroll the material from the other end until the peeled and folded-back film is exposed.
7. Beginning with the already peeled release film, continue to peel both sections of film from the roll, pulling the roll parallel to the eaves (*Figure 5-5*). Be sure the DryRoof SA lays flat and is sticking well.
8. Press overlaps firmly into place with a hard roller.

(2) THE "PEEL AND FLOP" APPLICATION METHOD

NOTE: This method is recommended for one-worker applications.

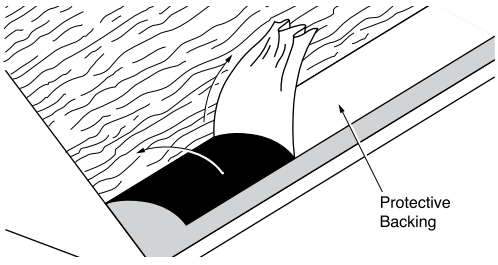

Figure 5-6: Application using the "Peel and Flop" Method.

You can apply DryRoof SA with the "Peel and Flop" method, using the "two-piece, split-sheet, release-film" feature to adhere the longitudinal halves, one at a time. This feature allows one person to position the sheet before removing the protective plastic sheeting on the underside, then flop it back, peel off the release film, and set it, all without help. Press overlaps firmly into place with a hard roller. It is best to cut the product into manageable lengths of about 12' when applying DryRoof SA by this method.

(3) THE "FLY-IN" APPLICATION METHOD

NOTE: This method requires two workers.

1. Cut DryRoof SA to a convenient length and dry-fit the sheet to its proper location before removing the plastic release film.
2. Turn the entire sheet over and remove all the protective release film.
3. Pick up the sheet of DryRoof SA from both ends and turn it over. Be careful that the wind doesn't catch the sheet when it's raised off the roof. In fact, don't even try this method on a windy day.

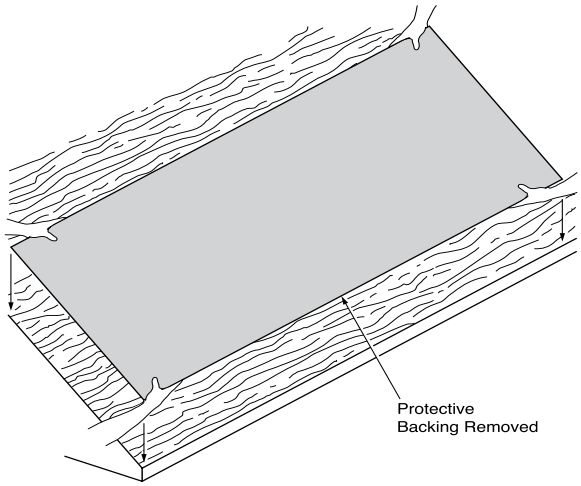

Figure 5-7: Application using the "Fly-In" Method.

4. Drop or "fly" the sheet into place, using great care to assure correct placement (*Figure 5-7*).
5. Press the sheet firmly against the deck to be sure of complete adhesion. It is recommended that you walk over DryRoof SA to set it firmly to the deck.

APPLYING DRIP EDGE

1. Drip edge must be applied so that the higher pieces will overlap the lower pieces.
2. At the rake, drip edge may be installed under or over DryRoof SA. When drip edge is installed over DryRoof SA, the DryRoof SA must cover the top of rake board.
3. At the eaves, if there is a chance of snow or ice build-up in the gutters, install drip edge over DryRoof SA. DryRoof SA must cover top of fascia board. In severe ice dam regions, DryRoof SA can be wrapped over the fascia board and, if desired, onto the soffit. Cover all exposed DryRoof SA with drip edge, gutter, wood or other weather-resistant material to protect it from damage. If there is no chance of snow or ice build-up in the gutters, install drip edge under the DryRoof SA.

DEFEATING ICE BUILD-UP IN GUTTERS: Ice build-up in gutters will often allow meltwater to intrude behind fascia boards. Depending on construction of the eaves, deterioration of soffits or even interior damage can occur that looks like a roof leak. One method to solve this problem is shown in *Figure 5-8*. Another method is to wrap DryRoof SA down the fascia onto the soffit, and nail a furring strip to hold DryRoof SA tightly in place. This strip also serves as a UV block. Install the gutter in front of the DryRoof SA-covered fascia. Then install the drip edge on the eaves over DryRoof SA. Make sure the drip edge extends well into the rain gutter as shown in *Figure 5-8*, so UV rays are prevented from reaching DryRoof SA. If the fascia is wider than about 6" DryRoof SA must be stopped behind the gutter to prevent exposure to UV. This approach may not be compatible with vinyl fascia systems due to the chemical reaction which may cause the asphalt to bleed onto the vinyl.

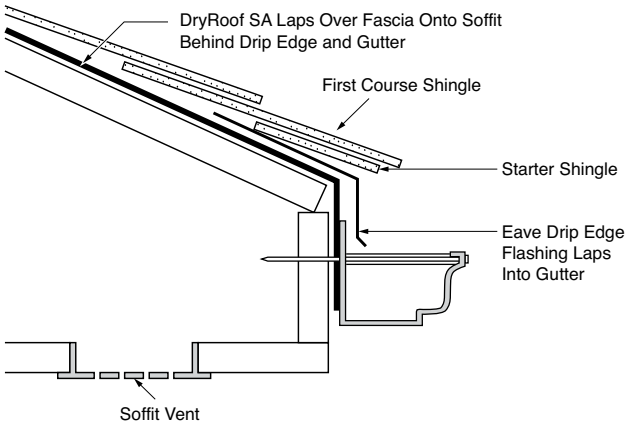

Figure 5-8: Application down the fascia to protect against ice build-up in gutters.

APPLYING DRYROOF SA ON VALLEYS

1. In valleys, the width of the material must be 36" minimum.
2. Apply DryRoof SA using the "Peel and Flop" method described earlier. This time, however, be sure to use two workers to handle the sheet.
3. Be sure you're getting good adhesion down the valley centerline. DryRoof SA must conform smoothly to the valley. If fasteners are required (because of cold weather or a steep slope), they must be no closer than 6" to the valley centerline.
4. In valleys, start the application at the low point and work upward.

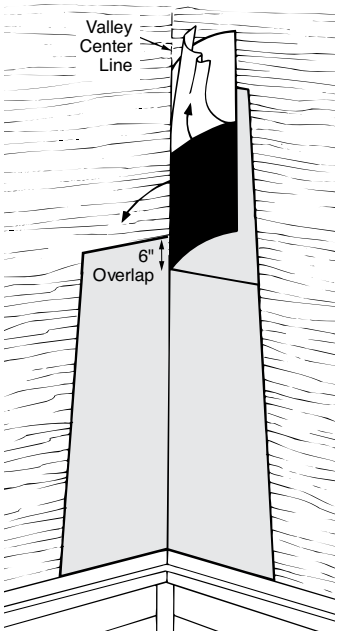

Figure 5-9: Valley application using the two-man "Peel and Flop" Method.

5. To assure waterproofing, overlap all DryRoof SA sheets 6" at lap joints. The uppermost portion must overlap the lower portion. A hard roller is recommended to roll and press DryRoof SA in place at the laps.
6. Do not use DryRoof SA as a permanent weathering surface in open valleys (or elsewhere).

APPLYING DRYROOF SA ON LOW SLOPES

1. DryRoof SA can be applied under shingles to provide protection against wind-driven rain water on low-slope applications.
2. The minimum approved slope for DryRoof SA application is 2/12. If applied to cover the entire roof, ensure sufficient ventilation to avoid condensation.
3. It is especially important to assure adhesion at the laps by pressing all overlaps into place with a hard roller.