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Soprastar Membrane Installation

Description

Soprastar membranes are composed of select, highly elastomeric SBS-modified bitumen with fiberglass mat reinforcement and a highly reflective proprietary film laminated to the top surface. Soprastar Stick (PDS 421) is self-adhering membrane with a release film on the bottom; Soprastar Flam (PDS 420) and is heat-welded membrane with a plastic burn-off film on the bottom. Soprastar Sanded (PDS 422) has sand on the bottom and is either hot asphalt or cold adhesive applied. Soprastar membranes (CRRC Product ID No. 0772-0026) offer an initial solar reflectance of 0.78 and initial thermal emittance of 0.89, yielding a typical SRI of 96. See the Product Data Sheets for further details.

Approved Applications

All Soprastar membranes are approved by SOPREMA for use in applications where other SOPREMA self-adhered, heat-welded and adhesive applied membranes are approved for use. Always consult the Technical Department concerning the use of Soprastar membranes in high wind zones. Always use assemblies that are approved for your specified application. Refer to ICC/ES, Factory Mutual, Miami-Dade County, Florida Building Code and Underwriters Laboratories, Inc. File #R11436 for specific approvals and limitations.

Soprastar Flam is heat welded to a base ply having a burn-off film on the top surface (typically designated either as a “Flam,” “Soprafix” or “PS” membrane). Heat welding is accomplished using a torch or hot air welding techniques.

Soprastar Flam may be heat welded to “high brush” sand-surfaced base plies. [This application is typically limited to Soprafix systems.]

Soprastar Stick is self-adhered to base membranes having a sanded top surface (only). The sand-surfaced base membrane must first be primed with Elastocol 400, 500 or other ASTM D 41 primer (assemblies rated up to and including Class 1-90) or Elastocol 600c (approved for all assemblies; required for Class 1-105 & greater) just prior to installing this self-adhering cap membrane. Observe all instructions & limitations on the primer Product Data Sheet. Note!

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Soprastar Stick is not to be adhered to membranes covered with burn-off films on the top surface.

Soprastar Sanded are hot asphalt or cold adhesive applied to base membranes having a sanded top surface (only). Observe all instructions & limitations on the Product Data Sheet.

Limitations

Soprastar membranes are composed of essentially three different materials: elastomeric asphalt, fiberglass reinforcement and a proprietary film finish. Each of these three materials has a different coefficient of expansion – meaning each responds differently to heat – making it very important that Soprastar membranes are installed according to the installation instructions below to avoid installation difficulties. Although accommodation for differentials in expansion coefficients under normal environmental conditions have been engineered into Soprastar membranes, it is essential that these membranes be installed under prescribed conditions.

Recommended Re-rolling Procedure

Unroll and relax Soprastar as described for each type of Soprastar membrane. Adhering to the following procedure will result in a higher quality installation with fewer installation difficulties. Re-roll the relaxed membrane using a 38" long, 4" diameter, section of PVC pipe. Staging three stacks (with three rolls in each stack) will provide nine squares ready to install. With Soprastar Flam, "shocking" with a wet sponge mop before re-rolling on to the 4" PVC pipe will significantly improve the finished appearance of the Soprastar Flam.

Installing Soprastar Flam (Heat Weld)

- 1) Completely unroll membranes and allow the unrolled membrane to completely relax (typically 20 minutes minimum in warm, sunny conditions). "Relaxed" membranes appear 'limp', 'wilted', or 'flaccid'. When installed, the Soprastar relaxed membranes should be at, or very near, the same temperature as the base membrane to which it is being applied. The membrane will relax more rapidly on a sunny day if the bottom of the membrane is exposed to the sunlight.
- 2) Once completely relaxed, Soprastar membranes are ready to install.
- 3) Set membrane in place over the base ply as specified (starting at the lowest point on the roof) so as to offset head laps a minimum of two feet (0.6 m) and side laps a minimum of twelve (12") inches (305 mm) from those occurring in the base ply membrane. Subsequent rolls should be aligned with six and one-half (6 ½") inches (165 mm) end laps and four (4") inch (102 mm) side laps.

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- 4) Back-roll Soprastar membranes loosely and gently from each end while standing on the rolls, walking backwards, creating two equivalent sub-rolls with 3 feet (0.9 m) left flat in the center of the sheet. Care should be taken to keep rolls aligned.
- 5) Pulling (not pushing) each sub-roll with a roll puller, heat weld the membrane using a sweeping “box” torching technique (see Soprema Roofer’s Guide for details) simultaneously softening the bitumen of both the base and cap membranes to create a 100% heat-fused bond. Do not overheat the membranes (excessive smoke emitted). Take care to turn flame away from adjacent sheets to avoid discoloring the (white) reflective finish.
- 6) A neater, cleaner installation can be achieved (i.e., bitumen bleed-out is more uniformly controlled and less chance of heating the adjacent sheet film) if the three (3”) inch (76 mm) side laps are sealed using hot air welding techniques (either electric or torch).
- 7) **End laps** are to be sealed using hot air. The white film must be removed at all end laps to ensure a 100% bond of bitumen-to-bitumen. Prepare end laps by carefully scoring the reflective film (only) of the installed membrane at six (6”) inches (152 mm) from the up-slope end. Use only **sharp** utility knife blades or a **Dexter Model 54150 mat cutter** with the blade set to one (1 mm) millimeter depth. Carefully avoid cutting through the membrane reinforcement – score only the film. Should the reinforcement be accidentally cut, completely remove that 6” inch (152 mm) end altogether.
 - A. Lightly warm the surface of the scored film to be removed (using a torch or hot air tool) to loosen the bond between the film & bitumen and carefully peel off the film. Use extra heat as necessary. Care must be taken not to discolor or burn adjoining areas.
 - B. Heat weld the six and one-half (6 ½”) inch (165 mm) end lap, overlapping onto the film edge approximately one-half (½”) inch (13 mm). Ensure that the two membranes are completely heat-fused, without air pockets, wrinkles, fishmouths or tears and that the one-half (½”) inch (13 mm) **overlap** protects the cut film edge from possibly becoming delaminated. Continuous bleed-outs of one-eighth (1/8”) inch (3 mm) are ideal. Bleed-outs greater than one-quarter (1/4”) inch (6 mm) should be avoided.
 - C. Once installed, check all seam laps using the edge of a hot trowel. Correct any defects.

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Installing Soprastar Stick (self-adhering)

Soprastar Stick membrane cap ply are self-adhered to base ply membranes having sanded top surfaces (only). Soprastar Stick is not to be adhered to membranes covered with burn-off films on the top surface. **The ideal temperature range for installing Soprastar Stick is between 60° and 95° F (16° to 35° C).**

- 1) The sanded surface of the base membrane must be cleaned of all construction material, debris, dirt and dust.
- 2) The sanded surface base membrane must be primed with Elastocol 400, 500, or 600c (approximately one gallon per square) prior to installing this self-adhering cap ply membrane. Observe all instructions & limitations on the primer Product Data Sheet. Care should be taken to not allow foot or machine traffic, moisture or precipitation, dust or debris to come into contact with the primed surface before the Soprastar Stick cap ply is installed. Primed surfaces should be covered with membrane the same day the primer is applied. Re-priming may be required if the surfaces become contaminated, wet or remains uncovered overnight (resulting in a loss of tack & bonding ability).
- 3) Align the Soprastar Stick membrane by completely unrolling and setting the roll exactly where it will be installed. Head laps are offset a minimum of two (2') feet (0.6 m) and the side laps a minimum of twelve (12") inches (305 mm) from those of the base membrane. Note! Alignment is of critical importance as the Soprastar membrane may be extremely difficult to remove if it is placed incorrectly!
- 4) Completely unroll the membrane and allow the unrolled membrane to completely relax (typically 20 minutes minimum in warm, sunny conditions). "Relaxed" membranes appear 'limp', 'wilted', or 'flaccid'. When installed, the Soprastar relaxed membranes should be at, or very near, the same temperature as the base membrane to which it is being applied.
- 5) Back-roll Soprastar Stick membranes loosely and gently from each end while standing on the rolls walking backwards, creating two equivalent sub-rolls with three (3') feet (0.9 m) left flat in the center of the sheet. Care should be taken to keep rolls aligned.
- 6) Carefully score the release film backing on one of the sub-rolls with a sharp utility knife, taking care not to cut through to the reinforcement. While one person stands on the center of the sheet, another person unrolls this sub-roll onto the primed substrate at a steady, measured pace while simultaneously walking backwards, pulling back on the release film.

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A safety monitor must be present to make sure everyone is fully aware of where the roof edge is at all times.

Note! An alternate installation method is to have three (3) people installing the membrane. Using this method, one person stands at the roll's center, another holds the membrane in position at the end lap while a third pulls the release film backing out from under the membrane, starting at the center and ending at the end lap. The third person pulls the release film back toward himself at a 45° (forty-five degree) angle to the roll. The release film is removed while maintaining alignment of the side lap.

- 7) Immediately apply a firm and deliberate pressure by slowly rolling a minimum thirty (30) pounds (14 kg) roller over the entire surface of the installed membrane to ensure a complete bond to the substrate.
- 8) **Side laps** are sealed by removing the release film and applying firm and deliberate pressure to the lap with a hand roller, ensuring a complete bond between the two plies, without air pockets, wrinkles, fishmouths or tears.
- 9) **End laps** are sealed using hot air. The white film must be removed at all end laps to ensure a 100% bond of bitumen-to-bitumen. Prepare end laps by carefully scoring the reflective film (only) of the installed membrane at six (6") inches (152 mm) from the up-slope end. Use only **sharp** utility knife blades or a **Dexter Model 54150 mat cutter** with the blade set to one (1 mm) millimeter depth. Carefully avoid cutting through the membrane reinforcement – score only the film. Should the reinforcement be accidentally cut, completely remove that six (6") inch (152 mm) end altogether.
 - A. Lightly warm the surface of the scored film to be removed (using a torch or hot air tool) to loosen the bond between the film & bitumen and carefully peel off the film. Use extra heat as necessary. Care must be taken not to discolor or burn adjoining areas.
 - B. Heat weld the six and one-half (6 ½") inch (165 mm) end lap, overlapping onto the film edge approximately one-half (½") inch (13 mm). Ensure that the two membranes are completely heat-fused, without air pockets, wrinkles, fishmouths or tears and that the one-half (½") inch (13 mm) **overlap** protects the cut film edge from possibly becoming delaminated. Continuous bleed-outs of one-eighth (1/8") inch (3 mm) are ideal. Bleed-outs greater than one-quarter (1/4") inch (6 mm) should be avoided.
 - C. Once installed, check all seam laps using the edge of a hot trowel. Correct any defects.

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Installing Soprastar Sanded (Hot Asphalt or Cold Adhesive)

- 1) Completely unroll membranes and allow the unrolled membrane to completely relax (typically 20 minutes minimum in warm, sunny conditions). “Relaxed” membranes appear ‘limp’, ‘wilted’, or ‘flaccid’. When installed, the Soprastar relaxed membranes should be at, or very near, the same temperature as the base membrane to which it is being applied. The membrane will relax more rapidly on a sunny day if the bottom of the membrane is exposed to the sunlight.
- 2) Once completely relaxed, Soprastar membranes are ready to install.
- 3) Set membrane in place over the base ply as specified (starting at the lowest point on the roof) so as to offset head laps a minimum of two feet (0.6 m) and side laps a minimum of twelve (12”) inches (305 mm) from those occurring in the base ply membrane. Subsequent rolls should be aligned with six and one-half (6 ½”) inches (165 mm) end laps and four (4”) inch (102 mm) side laps.
- 4) Back-roll Soprastar membranes loosely and gently from each end while standing on the rolls, walking backwards, creating two equivalent sub-rolls with 3 feet (0.9 m) left flat in the center of the sheet. Care should be taken to keep rolls aligned.
- 5) With the mop cart or cold adhesive containers placed on the up-slope side, apply the adhesive in front of the back-rolled portion in accordance with standard practice. Push each sub-roll with a broom as the asphalt or cold adhesive is being applied.
- 6) A neater, cleaner installation can be achieved (i.e., bitumen bleed-out is more uniformly controlled) if the three (3”) inch (76 mm) side laps are sealed using hot air welding techniques (either electric or flame generated hot air).
- 7) **End laps** are to be sealed using hot air. The white film must be removed at all end laps to ensure a 100% bond of bitumen-to-bitumen. Prepare end laps by carefully scoring the reflective film (only) of the installed membrane at six (6”) inches (152 mm) from the up-slope end. Use only **sharp** utility knife blades. Carefully avoid cutting through the membrane reinforcement – score only the film. Should the reinforcement be accidentally cut, completely remove that 6” inch (152 mm) end altogether.
 - A. Lightly warm the surface of the scored film to be removed (using a torch or hot air tool) to loosen the bond between the film & bitumen and carefully peel off the film. Use extra heat as necessary. Care must be taken not to discolor or burn adjoining areas.

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- B. Heat weld the six and one-half (6 ½") inch (165 mm) end lap, overlapping onto the film edge approximately one-half (½") inch (13 mm). Ensure that the two membranes are completely heat-fused, without air pockets, wrinkles, fishmouths or tears and that the one-half (½") inch (13 mm) **overlap** protects the cut film edge from possibly becoming delaminated. Continuous bleed-outs of one-eighth (1/8") inch (3 mm) are ideal. Bleed-outs greater than one-quarter (1/4") inch (6 mm) should be avoided.
- C. Once installed, check all seam laps using the edge of a hot trowel. Correct any defects.

Clean Up Of Hot Asphalt Or Cold Adhesive On The Soprastar Surface

- A. The following must be done during the same day as the occurrence of the contamination. Delaying the cleaning may result in irreparable damage to the Soprastar surface.
- B. Using a plastic knife, carefully remove any large asphalt by gently scraping the contaminant off of the Soprastar surface. Take care not to scratch the surface of the Soprastar membrane.
- C. Apply only approved Soprastar Cleaner. Other cleaning agent may adversely affect the Soprastar surface. Apply Soprastar Cleaner to affected areas and let stand for 5 minutes.
- D. Using only a clean cotton cloth, gently wipe off asphalt stains. Reapply as needed to clean the Soprastar surface.
- E. CAUTION: Surface may become slippery until surface has dried.

Alternate End Lap Securement

Option #1 End laps may also be fully adhered with High Velocity Soprastar Lap Adhesive applied with a three-sixteenths (3/16") inch (4.8 mm) notched trowel to membrane with the six (6") inch (152 mm) film removed (as above). Immediately embed the membrane in the troweled adhesive (it sets up quickly) and apply firm and deliberate pressure to the lap with a hand roller, ensuring a complete bond between the two plies, without air pockets, wrinkles, fishmouths or tears. Overlap the one-half (½") inch (13 mm) onto the film surface.

Option #2 Do not remove the white film surface at the six and one-half (6 ½") inch (165 mm) end lap. Instead, thoroughly clean the end lap film surface with acetone, removing all traces of gloss from the reflective film. Once dry, adhere the end lap with High Velocity Soprastar Lap Adhesive as outlined above.

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Optional Lap Edge Treatment

Option #1 While the bleed-out is fluid or hot, sprinkle Soprastar Chips into the exposed bleed-out until refusal. Excess chips may be swept up and reused once the bleed-out has solidified. Reference the Soprastar Chips Product Data Sheet for additional information and coverage rates.

Caution: Soprastar Chips clump when exposed to water. Loose Soprastar Chips left on the surface of the roof after completion of the project may collect in, and clog, the drain(s). Please sweep or vacuum up excess or loose Soprastar Chips before leaving the project to avoid this condition

Option #2 Lap bleed-outs may be treated with ALSAN Trafik 520 (White) liquid. This liquid is a ready-to-use, single-component, UV-resistant finish coat resin that is highly flexible and self-cleaning. Use of a bulk-loading caulking gun with a screed tip makes the job easier. Sealing joints with ALSAN Trafik 520 creates a continuous white surface, without black bleed-out “striping”, creating a more aesthetically pleasing finish. (Refer to the ALSAN Trafik 520 Product Data Sheet for application and limitations). This method is only recommended if the Soprastar Chips were not applied during installation of the membrane.

Installing Flashings

The same scoring & sealing techniques specified above apply when flashings are tied-in to Soprastar installations.

When Soprastar membrane is installed as the flashing cap ply, heat or hot-air welding of the side laps is required.

Cold Weather Limitations

Soprastar Flam - While there are no temperature limitations to installing SOPREMA heat-welded membranes generally, the unique character of Soprastar membranes can make relaxation of Soprastar Flam difficult in cold weather. Soprastar Flam may be installed in cold weather provided adequate relaxation of the Soprastar membrane can be accomplished.

Soprastar Stick - Do not install Soprastar Stick unless the ambient and surface temperatures are 60°F (16°C) and rising.

Soprastar Sanded - Follow asphalt installation instructions as published in Section 3 of the current Soprema Technical Manual.

Installing Soprastar Membrane Walk Pads

Do not remove the white film surface from the in-place Soprastar. Instead, thoroughly clean the in-place film surface with acetone, removing all traces of

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gloss from the reflective film. Once dry, fully adhere with High Velocity Soprastar Lap Adhesive applied with a three-sixteenths (3/16") inch (4.8 mm) notched trowel. As an alternate, Soprastar membrane walk pads can be ribbon-adhered with High Velocity Soprastar Lap Adhesive applied in one-half (1/2") inch to three-quarter (3/4") inch (13-19 mm) wide ribbons spaced twelve (12") inch (305 mm) on center.

Recommended Patching Procedure

If the reflective film surfacing is damaged and in need of repair, the following is the recommended repair procedure:

- Remove the reflective film a minimum of three (3") inches in all directions from the affected area (minimum patch size would be a 6" circle).
- The patch must extend a minimum of one-half (1/2") inch beyond the area where the film was removed.
- Cut the patch material out of Soprastar Flam.
- Heat, or hot air weld, the patch to the affected area.

Grease Inhibitor System

If the Soprastar membrane is installed on a roof where it will be exposed to grease, the following is the recommended procedure:

- Mark off an area a minimum of three (3') feet around the rooftop unit that will vent grease to the roof surface. If necessary, the area between the unit and the roof drain may also be treated.
- Apply Alsan 2K Primer to the area and permit to dry one (1) to four (4) hours. The Alsan 2K Primer must be covered within four (4) hours and may be tacky when the next layer is applied.
- Apply Alsan Trafik 520 over the Alsan 2K Primer and embed a layer of Alsan PolyFleece covered with a second application of Alsan Trafik 520 and permit to cure a minimum of eight (8) hours before the application of the next layer.
- Apply Alsan Trafik 540 over the Alsan Trafik 520.

LPN Systems

If an LPN system will be installed on a Soprastar system, the following is the recommended procedure:

Do not remove the white film surface from the in-place Soprastar. Instead, thoroughly clean the in-place film surface with acetone, removing all traces of gloss from the reflective film, in the area where the LPN plates will be placed. Prepare an area that is the same diameter as the plate. Once dry, fully adhere

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the plate with High Velocity Soprastar Lap Adhesive applied in a bead that is large enough to extend beyond the edge of the plate.