

## Cold Weather Application Considerations

The following considerations are provided for SOPREMA roofing and waterproofing projects installed during periods of cold or inclement weather.

### Overview

#### Storage and Handling:

Carefully read all pertinent Product Data Sheets (PDS), Safety Data Sheets (SDS) and application instructions prior to storage, handling and applications executed during periods of low temperature and inclement conditions.

Application of roofing and waterproofing materials should not begin, or continue, when water is present in any form on the substrate. Any moisture or condensation can lead to poor adhesion, voids, or moisture entrapment within the system. Moisture must be removed from the substrate prior to application of roofing and waterproofing materials.

#### General Recommendations:

- Store all materials in a warm and dry place prior to and up to the time of application
  - Store rolls on end
  - Water-based materials must not freeze.
    - Discard of any water-based materials that have frozen.
- Relaxation of roll goods
  - The “rule of thumb” is to relax rolls as necessary to facilitate full contact without lifting or wrinkling of the membrane
  - As needed, unroll and cut SBS-modified bitumen roll goods into halves or thirds (maximum 18 feet lengths) and allow to relax a minimum of 15 minutes prior to application. Longer periods of relaxation may be required depending on conditions
- Broom in, roll, or rake rolls immediately after application to ensure complete contact with adhesive
- Complete each roof section daily.
  - Application should be scheduled so that there are no partially completed portions of the roof left exposed

### **SOPRALENE, ELASTOPHENE, SOPRASTAR, and COLPHENE SBS-Modified Bitumen Applications**

SOPREMA places no restrictions on the application of its modified bitumen roofing systems at or above the following temperatures.

Held Welded Applications	No temperature limitation
Cold Adhesive Applications	50°F
Self-Adhered Applications	50-60°F *
Hot Asphalt Applications	40°F

\*Solar load (sun exposure) can influence the effectiveness of self-adhered adhesive materials.

The contractor performing and controlling the cold weather work must make ongoing assessments to determine whether conditions are suitable for roofing operations to continue. Testing and sampling should be completed periodically to determine if proper bonding and adhesion is being achieved. The membrane should always lay flat, without buckles, air pockets or voids, and must be fully bonded. If this cannot be accomplished, application should be discontinued until more favorable temperatures and weather conditions prevail.

### **Heat-Welded SBS-Modified Bitumen Applications**

Except for gypsum-based and certain other substrates as stipulated by the material manufacturer, the substrate should be heated with the torch during membrane application. By warming the substrate before the molten bitumen is rolled into place, adhesion of the membrane is improved. Special care should be given to preheat the lap area of the previously installed sheet to ensure full bonding of the overlap. This is typically accomplished using a sweeping “L” motion during the welding process.

### **Cold Adhesive SBS-Modified Bitumen Applications**

Rolls should be unrolled and allowed to relax prior to application. It is recommended that rolls be cut into halves or thirds, no greater than 18 feet in length. The cold adhesive should be heated with a flameless and thermostatically controllable heat source to a temperature not less than 70°F, and no greater than 100°F, to provide proper viscosity to meet recommended coverage rates.

### **Self-Adhered SBS-Modified Bitumen Applications**

Temperatures below 60°F, heat (sun or other external heat source, or the lack thereof), wind and surface temperatures are factors that can affect adhesion of self-adhered membranes. Depending upon weather conditions and self-adhesive material temperatures, the entire self-adhesive underside of the membrane including the seam area may need to be heat activated to ensure acceptable adhesion and a watertight self-adhesive seam. The roofing contractor must test membrane and seam bonds to determine which method is required to insure proper bonding and watertight side and end laps. Certain weather conditions may require the side and end laps to be either heat welded or hot air welded closed.

### **Hot Asphalt SBS-Modified Bitumen Applications**

At the point of contact with the modified bitumen sheet material, mopping asphalt should be applied at a minimum of 400°F. It is important for the applicator to be aware that hot liquid asphalt cools very quickly\* once applied to a roofing substrate. Components of the roofing system must be installed rapidly and “close to the mop.” Mop-leads should typically be no more than five feet in front of the roll. Failure to follow proper application techniques will result in poor membrane adhesion.

**Note:** It is important to keep the asphalt within the EVT range specified, but never less than 400°F at point of contact with the sheet material and never greater than 25°F below its stated flash point. Never overheat asphalt in the kettle to accommodate for temperature conditions.

In cold weather, proper insulation of all asphalt handling equipment is required to keep asphalt at the proper application temperature. Use of insulated tank trucks and rooftop equipment for transporting asphalt, such as hot luggers and mop buckets, is recommended. Asphalt lines from the kettle to the roof should also be insulated.

All membranes should be installed by rolling them immediately into the molten asphalt. “Mop and flop” procedures are not recommended and may lead to poor bonding and subsequent blistering. Immediately press the roll into the hot asphalt by applying pressure to the factory core embedding the sheet material and immediately pressing in the applied membrane with a stiff broom or purposely designed aluminum rake. Any packaging tapes must be completely removed prior to application; the plastic wrapping tape will not melt in hot asphalt.

Cold weather applications require that most substrates, i.e., wood, metal, steel, concrete, masonry, etc., receiving hot asphalt, must be primed with an approved SOPREMA primer. Do not thin or dilute primers, mastics, and adhesives.

### **ALSAN RS and R NOVA Plus Liquid Applied Membrane Applications**

Due to the number and variety of available liquid applied membrane materials and coatings, please refer directly to specific product information for proper substrate preparation, storage, handling, mixing, and application instructions.

### **SENTINEL® PVC Applications**

Membranes, adhesives, sealants and coatings should be stored in a warm and dry location prior to, and up to the time of, application.

Adhesives, sealants and primers take longer to flash-off (dry) during lower temperatures. Failure to allow appropriate time for the adhesive to become tacky may result in incomplete curing, adhesion problems or possible blistering.

Apply adhesives only when the adhesive, substrate, membrane and ambient temperatures are 40°F (4°C) and rising. Store all adhesives in warm and dry location; do not heat their containers with torches or other high temperature devices, do not thin or dilute these products.

Water-based adhesives should be stored at temperatures of at least 60°F (16°C) and shall not be applied if temperatures are expected to fall below freezing within 48 hours of installation or below the dew point during application or up to 8 hours post installation.

Take at least twice the number of seam samples to test for peel resistance as usual. It is critical to perform test welds in the morning, after extended breaks, or after significant changes in conditions. Many factors affect proper bonding and require adjustments to hot air welder settings, including air temperature, overcast skies, wind speeds, etc. Application quality control including probing seams at the end of the day is recommended.

### **DUOTACK® Applications**

Refer to specific PDS and application instructions pertaining to the use of DUOTACK at low temperatures.

For more product or installation information, visit [www.soprema.us](http://www.soprema.us).

Reference documents include:

1. SOPREMA Roofer's Guide
2. National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual-  
Fifth Edition
3. ARMA Cold Weather Application Recommendations for Modified Bitumen Roofing  
technical bulletin