

# COLD ADHESIVE INSTALLATION PROCEDURES

December 4, 2008

Effective immediately, the following installation procedures are recommended for all projects in which membrane is to be adhered with FM Adhesive, FM Adhesive (VOC), and FM Adhesive (VOC-1).

FM Adhesive, FM Adhesive (VOC), and FM Adhesive (VOC-1) are cutback adhesives – the adhesive can only cure as solvent flashes off. Therefore, allowances must be made for the escape of these solvents in order for the adhesive to properly cure. Improper installation can result in installation difficulties.

## **Storage**

- 1) All materials shall be delivered and stored in their original unopened containers in a dry area with adequate ventilation between 60° F (16° C) and 80° F (27° C).
- 2) Remove materials from dry, vented storage only as needed for daily production.

## **Surface Preparation**

- 1) Priming of the substrate is not required unless specified for test agency or building code approval.
- 2) Cleaning and priming of the base membrane surface may be required if the base membrane is not covered with the cap membrane within one week.

## **Conditions & Limitations of Cold Process Applications**

- 1) Squeegee grade adhesives are intended for horizontal applications of the field membrane, except end laps. For the best results, trowel grade FM Adhesive should be used in the end laps.
- 2) On roofs with slopes of less than ¼:12, heat-welded side laps on the cap membrane are required. The solvents shall be permitted to flash off before the cap membrane laps are heat welded. Cap membrane end laps should be sealed the same day as the cap membrane installation.
- 3) Temperature range: The membrane, substrate and ambient temperatures must all be 50° F (10° C) and rising; adhesive may be applied up to 100° F (38° C) ambient temperature.
- 4) Not for use with polystyrene insulations without additional design considerations and pre-approval by the Soprema Technical Department.
- 5) Allow a *minimum* of 3 days after a membrane is installed for the adhesive to sufficiently cure before allowing foot or equipment traffic on the installed membrane and/or before successive plies are installed. *When walking on the cold-adhered membrane, a sunken footprint should not be visible nor should the adhesive be capable of sustaining a flame.*
- 6) When the adhesive is used to seal side and end laps, a continuous bleed-out of one-eighth (1/8") inch (3 mm) to one-quarter (¼") inch (6 mm) is required; bleed-out of cap membranes must be dressed with granules to the point of refusal. *See notes on drying-in (below).*

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## **Installation with Cold Process**

- 1) All membranes (both polyester & glass) must be allowed to “relax” prior to their installation in FM Adhesive. *See separate section on polyester-reinforced membranes (below).*
- 2) Apply the adhesive with a three-sixteenth (3/16”) inch (4.8 mm) or one-quarter (1/4”) inch (6.4 mm) notched squeegee, or spray-apply, for a uniform application of one and one-half gallons (1.5 gal/100 ft<sup>2</sup>) per square (0.6 L/m<sup>2</sup>). *Do not apply more than this amount unless it is specified; do not allow the adhesive to puddle. Porous substrates typically require more adhesive than nonporous substrates.*
- 3) Apply the adhesive in an area slightly larger than the width of the sheet; allow 5 to 15 minutes for solvents to flash off before embedding the membrane. *Flash-off time will vary depending on available sunlight, relative humidity, wind flow and ambient temperature.*
- 4) At the three (3”) inch (76 mm) side laps and six (6”) inch (152 mm) end laps, bleed-out of one-eighth (1/8”) inch (3 mm) to one-quarter (1/4”) inch (6 mm) is required; bleed-out of cap membranes should be dressed with granules to the point of refusal.

## **Side & End Lap Limitations of Cold Process Applications**

- 1) Laps may be sealed with FM Adhesive or heat welded. Trowel grade adhesive is recommended on end laps.
- 2) Adhesive sealed laps are not considered watertight until the adhesive sets, approximately 24 hours.
- 3) If base membrane side and end laps must be sealed watertight the same day, (i.e. when slopes are less than 1/4:12; waterproofing applications; and green roof applications), then the side and end laps shall be sealed with cold adhesive. *However, laps may remain unsealed (if inclement weather is not imminent) for the allowance of solvent migration provided these laps are subsequently sealed only when they are completely clean and dry. It is the installer’s responsibility to ensure proper dry-in; to prevent the entry of water into the assembly during adhesive cure; to ensure adequate adhesive cure prior to sealing the side and end laps; and, to ensure adequate cure of the adhesive prior to installation of successive (additional) membranes.*
- 4) Heat welded laps are watertight the day they are welded. Heat welding side laps may delay the migration of solvents and cause surface blemishes if the adhesive open time is not adequate for the ambient conditions.

## **Cold Weather & Cold Process**

- 1) Install membrane in lengths no greater than sixteen and one-half (16 1/2’) feet (5 m).
- 2) Never throw or drop rolls of material, especially glass-reinforced membrane.

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December 4, 2008

## **Polyester-Reinforced Membranes & Cold Process**

- 1) Polyester-reinforced membranes require extra care due to the “memory” of the polyester reinforcement. Allow these membranes to relax for “as long as it takes” – preferably in direct sunlight and on a warm or hot surface. As necessary, the membrane can be rolled up “backwards” and stored in the sun to absorb & retain heat to help reduce memory effects.
- 2) Installing 250-gram polyester membranes in FM Adhesive and FM Adhesive (VOC) is strongly discouraged (though it is warrantable if required by the specification). *For projects in which 250 g polyester are specified for installation in cold process adhesive – please contact the Soprema Technical Department.*

## **Steep Slopes & Cold Process**

- 1) Slopes up to 1”: Some fastening may be required to stabilize the sheets until the adhesive cures. *Fasten with 4 Soprafix fasteners and plates (preferred) or 4 approved ringshank nails with 1” heads, evenly spaced, per headlap.*
- 2) Slopes of 1-2”: Block & backnail ≤ 24’ o.c.
- 3) Slopes of 2-6”: Block & backnail ≤ 16’ o.c.
- 4) Slopes > 6”: Block & backnail 12’ o.c.

## **Flashing Installation with Cold Process**

- 1) All membranes (both polyester & glass) must be allowed to “relax” prior to their installation in FM Adhesive. *See separate section on polyester-reinforced membranes (below).*
- 2) Apply the **trowel grade** adhesive to the back of the flashing membrane with a three-sixteenth (3/16”) inch (4.8 mm) or one-quarter (1/4”) inch (6.4 mm) notched squeegee for a uniform application of one and one-half gallons (1.5 gal/100 ft<sup>2</sup>) per square (0.6 L/m<sup>2</sup>). *Do not apply more than this amount unless it is specified; do not allow the adhesive to puddle. Porous substrates typically require more adhesive than nonporous substrates.*
- 3) Apply the adhesive in an area the width of the sheet; allow 5 to 15 minutes for solvents to flash off before mounting the membrane to the vertical surface. *Flash-off time will vary depending on available sunlight, relative humidity, wind flow and ambient temperature.*
- 4) At the three (3”) inch (76 mm) side laps and six (6”) inch (152 mm) end laps, bleed-out of one-eighth (1/8”) inch (3 mm) to one-quarter (1/4”) inch (6 mm) is required; bleed-out of cap membranes should be dressed with granules to the point of refusal.