

**TO: GENFLEX CONTRACTORS
GENFLEX DISTRIBUTORS
GENFLEX SALES REPRESENTATIVES**

NOVEMBER 2014

RE: COLD WEATHER APPLICATION GUIDELINES 2014/2015

Cold temperatures change the physical properties of adhesives, sealants, and primers and alter the handling characteristics of roofing membranes. The information provided below is intended to help the installer successfully apply GenFlex roofing materials in cold weather.

ROOFING ADHESIVES, SEALANTS, AND PRIMERS

A. Storage

All adhesives, sealants, and primers must be stored between 60 °F (15.6 °C) and 80 °F (26.7 °C) prior to use, in order to ensure proper mixing and dispensing of the product and to ensure an appropriate application rate. If the properties and application characteristics of the materials begin to change during cold weather application, restoring them to room temperature will be necessary. Materials that have been stored below 60 °F (15.6 °C) need to be brought up to room temperature, thoroughly mixed and then examined for proper blend (no marbling or separation of components) prior to application. Never allow water-based products to freeze (Genflex Water-Based Adhesive P, Vapor Shield Water Based Primer). Freezing of water-based products renders them permanently unsuitable for use.

B. Cold Weather Dispensing

When liquid materials are cold, their viscosity increases causing solvents and solids to separate, which makes mixing and dispensing very difficult. **Refer to the Product Data Sheets for each individual product for their minimum application temperature at the time of installation.** Be sure to reference and follow all local Air Quality Management Districts' requirements for application temperatures.

To minimize the potential for materials cooling on the roof before application, follow these additional guidelines:

- Only bring materials from warm storage within 1 to 4 hours of application to ensure dispensable material is close to 60 °F (15.6 °C).
- Always thoroughly mix adhesive and primers to a uniform, smooth state before and during use. Follow mixing instructions provided with each product and do not use any mixing equipment that could generate a spark, igniting flammable material.
- Keep adhesives, sealants, and primers as close to 60 °F (15.6 °C) as possible during application. In extreme conditions it may be necessary to rotate material between a hot box or warm storage area and the roof during application in order to maintain appropriate application temperature.

Drying times depend on ambient conditions: cool and overcast conditions will lengthen open times, while sunny and dry conditions shorten open times. Expect and plan for longer open times in cooler weather. Solvent blisters can occur if membrane is mated while the solvents in the adhesive/primer are not sufficiently dried.

C. Application

To compensate for ambient conditions, additional time may be required for solvents to properly flash-off prior to adhering insulation or membrane. This applies to all primers and adhesives. During cold temperatures, a false reading may be given if a “touch-push” test is not performed properly. Be sure to conduct the “touch-push” test in the area(s) with the heaviest application of primer or adhesive and be sure to use a clean finger with adequate pressure to verify that all the solvents have flashed-off. Additionally, some products may not be verified by a “touch-push” test, but rather by time lapse. Be sure to refer to the GenFlex website for the most current Product Data Sheets for all products being used on a cold weather job for proper application instructions.

Do not apply water-based products if freezing temperatures are expected within 48 hours after application of a water based product. Precautions should be taken to prevent disruption of the assembled materials while the assembly is transitioning from a green bond to full strength.

**The standard reference for Evaporation Rate is n-butyl acetate with evaporation rate of 1.0.*

Solvent	VOC Exemption	Evaporation rate*	Relative flash-off
Water	VOC Exempt	0.3	Extremely Slow
PCBTF	VOC Exempt	0.9	Slow
Naphtha	Not VOC Exempt	1.4	Medium
Toluene	Not VOC Exempt	2.2	Medium
TBAc	VOC Exempt, except for applicable CA Air Quality Districts	2.8	Medium
Acetone	VOC Exempt	5.6	Fast
Hexane	Not VOC Exempt	8.3	Extremely Fast

D. Solvent Evaporation Rates

The chart below shows the various flash-off times associated with the solvent components of our adhesives, sealants, primers, and coatings. Products may contain one or more of the solvents listed below. Because of the various formulation ratios of solvent components in each product, we cannot specifically assign a flash-off comparative value per product. Referencing the specific product’s Safety Data Sheet (SDS) for chemical components and comparing that information with the table below will provide some idea of what to expect regarding flash-off efficiency. Ambient conditions will affect all solvent flash-off times, but the effect will be proportional. To achieve Low Volatile Organic Compound (LVOC) status, materials must use highly engineered solvents that meet rigorous environmental criteria.

E. Adhesive “Blushing”

“Blushing” occurs when the evaporative cooling of the material during dry time lowers the surface temperature at or below the dew point, resulting in condensation formation on the adhesive/primer film. When “blushing” occurs, the condensation on the adhesive/primer will not permit proper adhesion. The use of adhesives/primers should be monitored closely when the ambient temperature is relatively close to the dew point, keeping in mind that these temperature gaps are typically much narrower in the early morning and late afternoon. The use of adhesives/primers should be scheduled for midday to take advantage of the best adhesive application conditions of the workday, i.e. midday sun and the greatest difference between ambient and dew point temperature.

ROOFING MEMBRANES

A. Membrane Size

During colder weather, folded membrane panels become more difficult to relax and install, especially with adhered systems. The use of no-fold panels is highly recommended. Always unfold single ply membrane panels in order to allow the membranes to fully relax prior to installation.

B. EZ TPO Installation

To ensure that seams are properly welded when using an automatic welder, it is critical that test welds are done 1) at daily start-up, 2) whenever ambient conditions change, and 3) if welding is stopped for a significant period of time (lunch breaks, etc.). When using a hand welder, test welds should be performed on scrap membrane or flashing material to ensure that the operator is using the proper technique and temperature setting.

EZ TPO membrane can become stiffer in colder temperatures. To help EZ TPO membrane relax and increase its flexibility, remove the white wrapping on the roll early in the day that the membrane will be installed and leave the roll in the sunlight as long as possible before installation. This will enable the dark bottom ply on the EZ TPO membrane to absorb as much heat as possible and help the EZ TPO membrane to become more flexible.

C. EPDM Flashing Installation

Uncured EPDM flashing products are designed to be formable during warmer temperatures, but in cold weather, supplemental warming may be needed. This warming can be achieved by using a heat gun during application. Care should be taken to keep any heat gun away from cleaners, primers, adhesives, or other flammable materials. Ambient conditions (sunlight, wind, and temperature) and flashing color will determine the need for supplemental heat. Typically, temperatures below 60 °F (15.6 °C) may require the use of an additional heat source to ensure the formability of uncured flashing products.

VAPOR BARRIER AND UNDERLAYMENTS

A. Air and Vapor Barrier

GenFlex Vapor Shield Membrane and Vapor Shield Solvent Based Primer have a minimum installation temperature of 14 °F (-10 °C). Vapor Shield Water Based Primer has a minimum installation temperature of 41 °F (5 °C).

For further information and assistance please contact the Quality Building Services Technical Department at 1-800-443-4272, Option 4.