

TECHNICAL BULLETIN

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

OCTOBER 2021

RE: COLD WEATHER APPLICATION GUIDELINES 2021-2022

Cold temperatures change the physical properties of adhesives, sealants, primers, and coatings, and alter the handling characteristics of roofing membranes due to increased rigidity. The information in this bulletin is intended to help installers successfully apply GenFlex materials in cold weather. GenFlex recommends cold weather application procedures be used when ambient and substrate conditions fall below 40 °F (4 °C). Refer to applicable Product Data Sheets (PDS) for specific storage and application recommendations.

ADHESIVES, SEALANTS, AND PRIMERS

STORAGE

- Store all adhesives, sealants, and primers between 60 °F (16 °C) and 80 °F (27 °C) to ensure proper mixing and dispensing of the products, and to promote appropriate application rates.
- If the properties and application characteristics of the materials begin to change during cold weather application, restore them to room temperature. Materials stored below 60 °F (16 °C) must be brought to room temperature, thoroughly mixed, and examined to verify proper consistency (no marbling or separation of components) prior to application.

MIXING & DISPENSING

- When liquid materials are cold, their viscosity increases, and may cause solvents and solids to separate. This separation can make mixing and dispensing difficult. To minimize the potential for materials cooling on the roof before application, follow these additional guidelines:
 - Only bring materials from warm storage to the roof 1 to 4 hours prior to application, or as necessary to ensure materials are close to 60 °F (16 °C) when dispensed.
 - Always thoroughly mix adhesives, and primers to a smooth, uniform state before and during use. Follow mixing instructions provided with each product. Do not use mixing equipment that could generate a spark, which could ignite flammable material.
 - In extreme conditions, it may be necessary during application to rotate material between a hot box or warm storage area and the roof to maintain the appropriate application temperature.

APPLICATION

- Drying times depend on ambient conditions. Cool and overcast conditions lengthen open times (or “tack times”), while sunny and dry conditions shorten open times. Expect and plan for longer open times in colder weather prior to adhering insulation or membrane.
- Do not apply water-based products when freezing temperatures are expected within 24 hours after application and do not apply solvent-free products when freezing temperatures are expected within 12 hours after application.

APPLICATION CONTINUED

- Blisters may occur when membranes are installed using solvent-based adhesives or primers that have not sufficiently dried. During cold temperatures, a false reading may be given if a “touch-push” test is not performed properly. Be sure to conduct “touch-push” tests in areas with the heaviest application of adhesive or primer, using a clean finger and adequate pressure to verify solvents have flashed-off. Additionally, some products’ readiness may not be verified by a “touch-push” test, but should be determined instead by the specific open times for those products. Refer to the GenFlex website for current PDS and application instructions for each product.
- Follow all local air quality management requirements when installing products containing Volatile Organic Compounds (VOCs).

SOLVENT EVAPORATION RATES

The table below shows various flash-off times associated with solvent components of GenFlex adhesives, sealants, and primers. Our products may contain one or more of the solvents listed below. Because the ratios of solvents in each product vary, a definitive flash-off time for each product cannot be assigned. Reference the specific product’s Safety Data Sheet (SDS) for chemical components and compare that information to the table below for an indication of relative flash-off efficiency. Ambient conditions will affect flash-off times, but the effects are proportional.

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

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

ADHESIVE “BLUSHING” (CONDENSATION)

- 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 on adhesive and primer films. This condensation prevents proper adhesion. Discontinue application immediately if blushing occurs.
- The use of adhesives and primers should be closely monitored for blushing when the ambient temperature is close to the dew point. The gap between the ambient temperature and the dew point is typically narrower in early morning and late afternoon, so midday is often the optimal time to use adhesives and primers when applying GenFlex products in cold weather conditions. Greater exposure to sunlight at any time of day decreases the risk of blushing.

ROOFING MEMBRANES AND FLASHINGS

MEMBRANE PREPARATION

- Store roofing membranes in a clean, dry location out of direct sunlight, and away from sources of punctures or other physical damage.
- Prior to installation, unroll membranes and allow them to relax for a minimum of 30 minutes.
- During cold weather, folded membrane panels become more difficult to relax and install, especially with adhered systems. The use of no-fold panels in cold weather is highly recommended.

EZ TPO INSTALLATION

- EZ TPO membranes become more rigid in cold temperatures. To help EZ TPO membranes relax (including all standard, Peel & Stick, and EZ Fleece Backed TPO membranes), early on the day of installation, remove the outer wrapping and leave the roll in the sunlight as long as possible. This will enable the darker bottom ply of the EZ TPO membrane to absorb as much heat as possible and increase the membrane's flexibility.
- To ensure seams are properly welded when using an automatic welder, it is critical that test welds are done:
 - At daily start-up
 - When ambient conditions change
 - When welding stops for a significant period of time (e.g., lunch breaks)
- When using a hand welder, test welds should be performed on scrap membrane or unsupported flashing material to ensure the operator is using the proper technique and temperature setting.

SEAM2SEAM™ and EZ TPO PEEL & STICK™ MEMBRANE INSTALLATION

- Seam2Seam EPDM SA and EZ TPO Peel & Stick membranes utilize GenFlex's Secure Bond™ technology to adhere to various horizontal roofing and vertical wall substrates.
- Store Seam2Seam EPDM SA and EZ TPO Peel & Stick membrane in a clean, dry location, and keep dry prior to installation.
- Seam2Seam EPDM SA and EZ TPO Peel & Stick may be installed when ambient and substrate temperatures exceed 20 °F (-7 °C).

EZ TPO INVISIWELD™ APPLICATIONS

- The minimum safe application temperature for induction welding of the EZ TPO membrane to EZ TPO InvisiWeld or EZ TPO InvisiWeld-S plates is 0 °F (-18 °C).
- Before induction welding with the appropriate tool, ensure there is no moisture or condensation present on the top surface of the plate or on the bottom surface of the EZ TPO membrane. Moisture will affect the ability of the induction tool to weld, and may result in partial or incomplete welds.
- Always follow the induction tool manufacturer's guidelines for calibration and use of the tool in cold temperatures. In general, the tools must be calibrated regularly or in real time and **ON-SITE**, i.e., using materials (membrane and plates) that are at the same the same temperature conditions the jobsite materials.

EPDM FLASHING and TAPE PRODUCTS (PEEL & STICK) INSTALLATION

- Uncured EPDM flashing and tape products (both standard and FlexWhite) are designed to be formable, but cold weather may require supplemental warming by using a heat gun during application.
- Care should be taken to keep heat guns 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 (16 °C) may require the use of additional heat to ensure the formability of uncured flashing products.

BARRIERS

VAPOR BARRIER

Vapor Shield Membrane may be applied at ambient temperatures as low as 25 °F (-4 °C) provided the Vapor Shield has been stored between 50 °F to 100 °F (10 °C to 38 °C) prior to application.

For further information or assistance, please contact Firestone Technical Services at 800-443-4272.

Sincerely,



Ben George
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