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PSI Tech-Note

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Cold Weather Application of Roof and Deck Coatings

This Tech-Note is a general guide for application of PolyTuff Coatings in cold weather.

Storage of Materials
It always best to keep the product(s) in room temperature conditions before using. While not always possible, every effort should be made to keep the product as near 70F as possible. Fore every 10 degree drop in temperature below 60F significantly change in the viscosity of the material and cure times. Lower temperatures may make a product difficult to roll, spray, brush or trowel. Therefore, keeping the material warm increases the spread rate, cure rate and ease of application. When storing the product, whether inside or outside, keep the materials closely stacked and bound together to help retain the relative heat sink from within container.

If the material is being stored outside, powerblanket **drum heaters**, **barrel heaters** & **bucket heaters** provide greater efficiency and use significantly less energy than conventional band heaters. Test results show *Powerblanket drum heaters* are much more effective than band heaters for drum warming, barrel heating, pail heating, cylinder warming and IBC tote heating. Powerblanket drum heaters provide the fastest, easiest, and most affordable method for heating and maintaining the temperature of your industrial materials. New Rapid-Ramp heating technology cuts heat time in half. Sunlight under a blanket can aid in keeping the product warm. **Never heat product with a torch.**

40 Degrees F and Rising
Forty degrees Fahrenheit has been chosen by most coating manufacturers as the minimum application temperature for applying coating for very specific reasons. It is at 40F and rising that surfaces manifest wet residual moisture from frost or ice. The surface usually will display a wet bleed-out around ice or frost as a warning not to coat. The rising temperature clause will provide more assurance that the product will not freeze during application. These are industry standards and should be regarded with reverence because they are based upon a good deal of wisdom and experience.

Substrate Inspections and Conditions
Before application of any coating, the substrate should be inspected for frost, dampness and substrate acceptability for coating. Frost and moisture hides in damp shadowy and dark places, pinholes, bug holes and small cavities. This calls for close evaluation of the substrate. An area in the sunlight of the roof or deck can be 50F, while a shadowed area can still be 22F because of cold sink. Water-borne or water based products can instantly freeze when applied to a severely frozen membranes or decks. As well, it is easy to coat over these areas and not notice them until they thaw and present blisters and bubbles on the roof from the heating and trapped water.

Product Application Recommendations
Individual product recommendations are an important factor in the application range of the materials. *B-Tuff 306, B-Tuff 308, B-Tuff 5600* and Topshield *5600 EF* may be applied down to 20F and rising on completely dry and a frost free surface with no precipitation in the next 12-24 hours.

Terra-shield LRM must have a temperature of 35F and rising on a frost free surface. The temperature can fall below freezing after 4-6 hours without harming the product. Do not dilute or thin product.

E-101 Sealant may be applied down to 25F on completely dry frost free surfaces. *Super Seal Tape* should be substrate tested before applying in low temperatures. Epoxy primers are very slow to cure in temperatures below 50F.

Diluting for Viscosity Changes
Thinning or diluting of some products to affect the viscosity of the coating is possible. Consult with PSI with regard to the exact thinner and amounts. Data sheets published do not recommend diluting because PSI does not want to give that discretion to the applicator without our knowledge, consent and advice.

It should be noted that while thinning may have some affect upon the product, it does not dramatically change the viscosity of the material especially when it is very cold.

When applying product in low temperatures always force the material onto and into the substrate. Cold temperatures can drastically change adhesion properties and the ability of the coating to wet out the substrate.

Artificial Drying
Artificial drying by torching and heating rarely improves the surface. It is not only hazardous on many surfaces; it only dries out the surface temporarily and usually brings more moisture to the surface only to be condensed by the cold air. I do not recommend it under any circumstances.

Equipment
Always move equipment inside and keep at the warmest possible room temperature or under a heated blanket. Follow the Equipment manufacturers recommended cleaning and purging requirements.

Heated equipment and hoses are available with some spray apparatus.

Safety
Safety is not the last in importance, it is always first. It is best to pay attention to your instincts and yield to your better judgment. It is can be very difficult to notice frost on concrete, metal, roofing and wood substrates. Frost and thin ice can be very dangerous. Very cold weather and wind may be both dangerous to you employees.

Even when a contractor follows the strictest safety precautions, it is very difficult to concentrate on the work and safety at hand when the person is miserably cold. Add to that the cold can prevent them from doing aesthetically pleasing work. It is difficult to do artistic or creative work when one cannot their feel your fingers and your toes. Your employees must be reasonably comfortable, if they are expected to do good quality work.

The product data sheets in the product data sheet section of the Poly-Tuff Binder or at www.polytuffus.com. Feel free to consult the related data sheet or call 866.977.8833 for further information.

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