Shield Products

Cold Weather Application
Tips for Roof Coatings

Bitumen, as well as a number of other of non-bituminous resins that are used in roof coatings, are often referred to as thermoplastics. This means that their viscosity is very dependent upon temperature. When warmed or heated, thermoplastic resins are softer and more fluid. When cooled, they will stiffen and become more viscous. Today's manufacturers of solvent-based cold applied [liquid at room temperature] roof coatings formulate their products to facilitate application at ambient temperatures as low as 40 ºF and up to a high temperature of around 120°F,whereas water-based roof coatings, are usually designed for application temperatures of 50° F or higher.

In an effort to accommodate the wide temperature range associated with certain geographic climates, some manufacturers offer "all temperature" products; while others may offer "winter grade", "summer grade" and even "intermediate grade" products. Check with your supplier or manufacturer to determine which version(s) they may offer and to assist with proper product selection. If the manufacturer offers various viscosity grades, be certain to inquire as to how they distinguish one grade from the other, which may involve specific container markings or labels, and to determine the appropriate imitations on their use.

Regardless of the weather, there are always important "do's and don'ts" to follow for a successful coating application. These include:

Storage:
Always keep the product stored as close to room temperature as possible. Ideally, a heated warehouse is generally the preferred type of storage area. If the coating must be kept outside, store the containers as close together as possible and under a moisture proof tarp**.** This will slow the internal temperature drop of the product, helping to maintain the viscosity and application properties closer to the desired target for a longer period of time. While this technique can help, it is important to recognize that significant temperature losses can still occur, particularly during the evening hours, which may make auxiliary heating necessary prior to application. Further, water-based products that are susceptible to freezing may be damaged if subject to temperatures at or below 32 º F, rendering them useless.

Heating:
With proper storage**,** heating should not be necessary. However, on the job site, the use of heated storage cabinets/units or warming devices which use circulating oil to heat cold applied roofing materials may be utilized to obtain an acceptable application viscosity. Consult the equipment manufacturer for specific information on the safety and operation requirements pertaining to the heating equipment that is used.

Surface Preparation:
Never apply roof coatings to a frost, snow or ice covered surface. In addition, for most solvent-based roof coatings, the surface must be dry unless the coating has been specifically formulated for adhesion to wet surfaces. Slightly damp surfaces may be acceptable for emulsions. However, it is always best to consult the manufacturer for specific recommendations and requirements, particularly as it relates to cold weather application. Once the surface has been prepared in accordance with the manufacturer's requirements, application can proceed.

continued

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Application:
When applying roof coatings in cold weather, delay application until the afternoon on a sunny day, if possible. This will enable the roof surface to warm up as much as possible, prior to receiving the coating. Remember when coating a black roof, the surface will absorb infrared heat from the sun, making the roof temperature warmer than the air temperature, helping to improve the overall cure rate. Special limitations may be specified for particular roof coatings, such as emulsions and asphalt aluminum coatings. These may include details regarding minimum temperatures allowed, as well as exposure to moisture within a certain time period following the application. Specific instructions from the manufacturer should be followed.

Cure Time:
While modern technology permits the application of some roof coatings at low temperatures, you can expect the cure time to be longer than on a warm summer day. A product that may cure overnight at a temperature of 70°-75°F may take several days to cure at 40°F.

Remember that water-based coatings (emulsions) require temperature conditions which permit complete evaporation of the water before the film can be subjected to freezing or moisture (rain, heavy dew, snow and frost). While there are some modified, water-based coatings that have shorter set and cure times, it is important to consider their limitations and to review the application conditions with the manufacturer, prior to use.

In conclusion ... select one of the many fine roof coating products that have been formulated for use during cold weather. When in doubt concerning the product or the particular weather conditions, it is always advisable to give the manufacturer or supplier a call to discuss your particular situation and to provide assistance in product selection so that your cold weather application or repair will yield the desired results.

Note: These recommendations were prepared by and have the approval at the Roof Coating Manufacturers Association for informational purposes only. They are not intended to revoke or change the requirements or specifications of the individual roofing material manufacturers or local, state and federal building officials at have jurisdiction in your area. Any question, or inquiry, as to the requirements, or specifications of a manufacturer, should be directed to the roofing manufacturer concerned.