

Successful Cold Temperature Coating Application

In many portions of the United States and in Canada, the application of coatings and linings in cold weather is not only a reality and common occurrence but many times a project is planned for a spring/summer timeline and ends up running into the colder months. This usually incurs increased costs that generally are not included in the project bid. Heating the work area usually requires a large amount of electricity to run the heating equipment, normally a generator that requires diesel fuel and 24 hour surveillance. Insulating the structure, tank or vessel to reduce heat loss, are labor intensive and require constant maintenance by the applicator. Weather conditions such as rain, snow and wind further reduce barrier properties while adding costs. The cost of heating and the monitoring of ambient conditions, create a dilemma not realized by most owners and owner reps.

With heating costs increasing proportionately with labor and fuel costs, manufacturers have realized this problem and have developed cold weather coating systems. These systems generally fall into two categories, low temperature catalyst or moisture cured. With all two component systems, there is still the chance for an amine blush. (See Amine Blush on the Technology Update page.) The specifier should obtain case histories of these coating systems for guideline to proper material selection.

Manufactures liability is to provide a curing schedule for recoating (minimum and maximum), drying, curing, dry film thickness (minimum and maximum) and to provide a schedule for the amount of thinner for the cold weather conditions. The project is greatly enhanced by a specification calling for a pre-job meeting that addresses these issues and the inspection of these issues. Eliminating the causes of failure is greatly reduced.

Successful cold weather applications are affected by material temperature and viscosity requirements. Storage is critical to cold weather application and depending upon the application such as a lining, the material may require heating straps and in-line heaters. Good painting practice dictates that we use temperature before thinning to reduce viscosity.

Theoretically, coatings should always be applied under the best of conditions. The use of a lab for these projects would be ideal! Practically, these ideal conditions are seldom available for not only the application of coatings but also for the storage of material. Variables stated on product data sheets that are associated with ambient conditions include, surface temperature, air temperature, relative humidity and dew point. Every phase of the application may be affected by these variables. Successful cold temperature applications are greatly enhanced with successful specifications and proper material selection and perhaps most importantly, aided by the manufacturer's on-site technical support.