

Technical Bulletin # 65

Sealant Application at Temperatures below 40°F

Quite often we are called upon to give an opinion regarding the feasibility of sealant application at temperature below 40 deg. F. Sealants can be applied at temperatures below 40 deg. F. with success provided the problems associated with cold temperature applications are recognized in advance and proper precautions are exercised. The most important aspects to consider are these:

1. Areas to receive sealant must be clean, dry, and free of frost or any contaminating substances. Aside from frost, all other requisites mentioned would apply at temperatures at or above freezing as well.

Do not install sealant when the temperature is at or below the dew point, which is the temperature at which the air is saturated with moisture vapor and liquid water (dew) or frost begins to form on the joint face.

2. Prior to, and during use, the sealant employed should be maintained at a temperature which it is workable. Most sealant has a tendency to become stiffer and more difficult to work with as temperature decreases. Two-part sealants must be mixed at reasonably warm temperatures to obtain uniform blending of the components. (approximately 50 deg to 80 deg. F)

Most all sealants cure either by solvent evaporation, chemical reaction, or combination of both. Cold temperatures retard both reactions.

The main advantage of a slowed or retarded cure is longer “wet” time, which usually results in better ultimate adhesion to the substrate. The main disadvantages of a slow or retarded cure are the increased possibility of dirt pick up due to prolonged tacky surface and the increased possibility of damage from physical contact during a soft or wet state.

Under no circumstances should water emulsion (Latex) sealant be used at temperatures below freezing.

3. The joints to be sealed will be open to their widest dimensions as temperature decreases. The sealant should be tooled accordingly to compensate for compression of the sealant when the temperature rises.
4. The most difficult aspect to weigh properly is the comfort of the mechanic. If items 1, 2, and 3 can be controlled properly, then the final criteria depend upon the ability of the individual to operate satisfactorily at the temperature encountered.

Note: This bulletin applies to all Pecora Silicone and Urethane based sealants.