MOMENTIVE
performance materials

Cold Weather Sealing Guidelines

Information For Use With GE's Construction Sealants

Installation Temperature:

As temperatures fall, it is usually the case that moisture/frost becomes increasingly difficult to remove (particularly on porous substrates) and hence, work productivity drops. Workmanship can also be compromised because of cold conditions. It is most appropriate to install sealants when the ambient temperature is at or above 40º F (4°C), however sealing can proceed on most substrates at lower temperatures after consultation with GE technical services and with the understanding that it is the installers responsibility to assure a clean, dry substrate by consistently removing moisture and/or frost. For additional in-depth discussion of this topic, reference the latest version of ASTM C1193 Standard Guide for Use of Joint Sealants, section 5.8.1.

Cure Time:

The lower the temperature, the longer it will take for the sealant to skin over, become tack-free, and cure throughout. Under winter conditions it could take several days for silicone to become tack-free (depending on humidity and temp). Adhesion testing during winter climates should not proceed, and would not be indicative of bond strength, until sufficient cure has taken place.

Movement During Cure:

Since the sealant takes longer to skin-over and cure, the chances for surface irregularities in the sealant increase due to substrate movement during cure.

For a full discussion of movement during cure, the following references are helpful:
ASTM C1193 – Standard Guide for Use of Joint Sealants (see section 12.5)
ASTM C1472 – Standard Guide for Calculating Movement and Other Effects when Establishing Sealant Joint Width
ASTM STP1286 – Movement During Cure of High Performance Building Joint Sealants (p.129)
ASTM STP1168 – Deformation of Building Sealants Due to Movement During Cure (p. 5)

Frost Removal:

Difficult or nearly impossible to see on a joint substrate, frost is likely to develop on substrates when temperatures drop near the freezing point. Since frost and moisture will interfere with proper sealant adhesion, it is important to confirm that substrates are dry prior to application of the sealant. At colder temperatures, the removal of moisture/frost on surfaces that will receive sealant is critical for successful adhesion. Sealant should not be installed if it is snowing, raining, sleeting, etc…

Sealant Rheology:

Silicone sealant can be easily dispensed at cold temperatures as the sealants' internal properties & flow characteristic in the uncured (paste) state remain virtually unchanged. Cold temperatures do not affect the silicones' ability to extrude and the cartridges do not require heating or other preparation.

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