Abolin Co
Cool Roofing Building Materials

Techline #12
Applying Elastomeric Coatings in Cold Weather

ELASTOMERIC COATINGS TECHNICAL BULLETIN

From: Technical Service Department
Date: 17th November 2011

Subject: Applying Elastomeric Coatings in Cold Weather

BACKGROUND INFORMATION

This bulletin offers suggestions for minimizing application problems in cool weather.

All latex-emulsion-based products use water as a diluting agent. When applied to a roof, coatings will dry or cure by evaporation, bringing latex particles into direct contact with each other to form a solid film. Once cured, coatings form a tough, weather-resistant barrier that is highly resistant to water.

It is critical that the initial drying phase of each coating application be complete BEFORE additional moisture is introduced to the coating surface.

- Damaged coating often appears wrinkled, loose, and lifeless. Coatings can fail from moisture above or below if present before curing is complete.
- Water still in the coating provides a pathway for surface moisture to penetrate the coating and break the new coating's adhesion with the roof.
- If moisture from rain, condensation, or any source reaches the new coating before water within the coating has evaporated, adhesion to the roof surface can be affected.
- Problems also occur when a damp roof surface traps moisture below the coating surface. This can be caused by dew, standing wate.

WEATHER

Drying time increases as temperatures fall and humidity rises. Direct sun is very helpful in drying. Overcast skies dramatically slow drying. Days are shorter in winter, allowing fewer hours of drying heat. Temperatures often drop rapidly when the sunsets.

Condensation on roofs at night is common in cooler weather. This moisture must cause a delay in the application of coatings until the roof is dry. This may be 10 AM or later in some areas. Higher altitudes or proximity to washes may cause increased roof frost, longer periods of moisture on the roof during the day, and longer drying times.

If conditions on a roof are unfavorable, wait for better weather!

If water is present on a roof in the morning, it is likely to form there again the next night unless the weather warms. So, coatings must be given adequate drying time before sundown to prevent the uncured coating from being damaged overnight.

MULTIPLE COATS

Multiple coats cause longer drying times and can lead to moisture damage. Second coats should not be applied the same day when temperatures are below 23 ^{O}C.

Remember, liquid applied fabric membranes represent two coats and should only be installed when weather is favorable.

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Primers dry more quickly than topcoats. Thick coatings, *Crack & Joint Sealant* and coatings in fabric will take much longer to dry. Primer alone does not have as much water resistance as primer plus topcoats (thicker is better but it takes more drying time).

Never dilute coatings with water...this extends drying time.

Shaded areas and low areas on a roof present the greatest danger for moisture damage. The water in coatings and moisture in the roof migrates to low areas, such as around scuppers and drains. These areas may remain un-cured long after the balance of the roof is dry. At night, condensation also follows gravity and collects in the same low areas. Standing water in areas of un-cured coating can lead to failure.
Tinted coatings can speed drying by absorbing more of the sun. Energy is heat. **Abolin Co** can tint primers and sealants a light color in winter.

TO MINIMIZE COOL WEATHER APPLICATION PROBLEMS

- Coat only when the temperatures are above 10 ^{O}C (Most Preferably 15 ^{O}C) and unlikely to fall below 10 ^{O}C during drying time, a minimum of 4 hours after application.
- When temperatures are below 23 ^{O}C, coat only on sunny days when no moisture is predicted for 24 hours. In cool weather, stop coating early in the afternoon (2 PM) to allow for drying.
- Coat only over a dry roof and don't dilute coatings. **Apply only one coat per day**.
- Delay coating over recently applied asphalt emulsion until daytime temperatures exceed 23 ^{O}C (asphalt emulsion often holds moisture and has a slick surface which may cause adhesion problems for coatings when cold).
- DO NOT apply thick layers of Crack & Joint Sealant in ponding areas during cool weather. It may not cure in time.
- Use Cool Barrier 1k Rigid Mortar as an alternative to Crack & Joint Sealant.
- Allow extra drying time for shaded and low areas on the roof. Apply to these areas first if practical or wait for better weather. When roofs are wet overnight, do not coat ponding areas. Wait for dry weather forecast.
- Consider the likelihood of rain, day and night temperatures, and the dew point prediction.

When in doubt,
WAIT FOR BETTER WEATHER

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