WHITE PAPER

METAL CONSTRUCTION ASSOCIATION

Important Things to Remember about "Wet" Sealed MCM Systems

Overview:

While many of today's MCM cladding systems are installed as rain screen systems, there still is a significant amount of MCM cladding installed using "wet" sealed systems. While these systems may be more popular on low rise construction, there are still certain installation and maintenance considerations that must be made to ensure proper performance of the MCM system.

Panel Finishes:

MCM cladding typically uses a PVDF or FEVE paint systems; however, alternate finishes such as anodized or polyester are still quite common. Each of these finishes must be reviewed and determined to be compliant for adequate adhesion to the chosen joint sealant. Sealant manufacturers have run adhesion tests on several different finishes and should be able to provide installation instructions defining a) the cleaning required for the finish and b) whether any additional primers or preparation is required to ensure adequate adhesion.

Sealant Types:

The metal facers of the MCM panels dictate the amount of thermal expansion and contraction that the joint with experience over time. This expansion and contraction is important in joint design and the type of sealant used within that joint. It is important that the sealant be capable of movement without separation from the finished panel or cohesive failure within the sealant itself. Silicone, urethane, and other types of sealants can be tested to determine the quality of the sealant in areas of elasticity, cohesive strength, age hardening (changes in the elasticity of the sealant over time), and colorfastness of the sealant itself. Because the sealant integrity is so important regarding water penetration, it is important that the sealant remaining elastic and adhered to the panels over time.

Sealant Installation:

Wet seal MCM installations have been used for many years. While the performance of may have improved over time, installation techniques have remained relatively constant. Important factors regarding the installation of joint sealants include:

- ensuring that the panel is clean and free of all oils and debris
- sealant primer, if required, is used and is compatible with the sealant type chosen
- the application temperature is within the range defined by the sealant manufacturer for acceptable curing of the sealant
- care is taken regarding fasteners, clips, backer rod, insulation, and all other installation accessories so

that the sealant can be applied per the manufacturer's instructions and provide an acceptable visual appearance and sealed against water intrusion behind the MCM panels.

- The installation of sealant is only as good as the quality and experience of the installer.

Additional Information:

There are several additional items that need to be mentioned regarding joint sealant installation and performance. These include:

1. Masking: The goal of joint sealant is to keep water from penetrating past the MCM cladding, but it is important that the installation be visually acceptable. To obtain straight lines, masking is typically used on the panel to keep sealant off the panel surface and to create that straight visual appearance. Once the sealant is applied and somewhat cured, the masking can be removed without damage to the sealant joint or the MCM panel surface. If any sealant, or other material, finds its way onto the surface of the panel, it should be cleaned off as soon as possible to prevent any visual damage to the finish.
2. Sealant "leach": Even though the joint sealant is cured, there are certain sealants that leach an oil-like substance over time. This substance will run along the joint/panel interface and could damage the paint finish, but more often will simply be a collection point for dirt and dust on the panel. If the sealant used does leach this substance over time, it is important that the cladding is cleaned and maintained on a regular schedule so that no permanent damage to the finish takes place.
3. Aging Sealant: Over time, many sealants age and lose elasticity. This can lead to either cohesive failure of the sealant, tears within the sealant itself, or create separation at the panel surface. Either of these conditions would lead to water being able to penetrate behind the MCM cladding. While not a desired outcome, sealant is easily removed and replaced to maintain this exterior envelope. Again, a primary reason for a good exterior cladding maintenance plan. (NOTE: Concern over water penetration, whether by sealant failure or not, is another reason why a "weep" (drainage) system must be designed into the MCM cladding system.)
4. Sealant replacement/repair: One of the benefits of joint sealant is that it is easily repaired if there are any problems. The area of repair must be carefully cut out, so as not to damage the panel finish, and cleaned. Once clean, new sealant can be applied in much the same way as the original joint seal was done. Temporary masking can be applied to the panel surface and removed once the sealant is installed and partially cured.

Summary:

"Wet" seal MCM panel systems remain popular in today's construction. With the right product choices and installation procedures, these installations can provide a very desirable and long-lasting exterior cladding. Should any damage or failure occur, these joint sealants can be easily repaired and expected to perform like a new installation.

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