Tech Hotline

Sealants and EIFS

Sealants are an important component of a wall assembly. They are used to seal openings between EIFS and other wall components such as windows, doors and penetrations, as well as joints within the EIF system. Historically, the traditional method of keeping water out of a building was by flashing all openings. Today and in recent years sealants are used on their own to keep water out of wall assemblies. They can also be used in conjunction with flashings and as part of or in conjunction with an air barrier system to prevent water penetration. Generally low modulus sealants are preferred for use with EIFS (refer to figures 1,2,3 and 4).

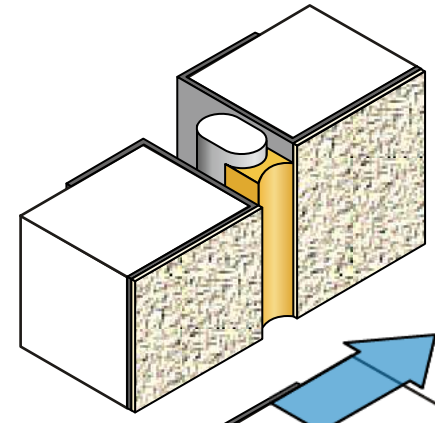

Figure 1

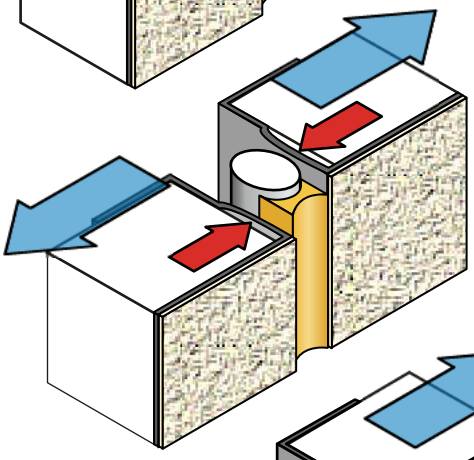

Figure 2

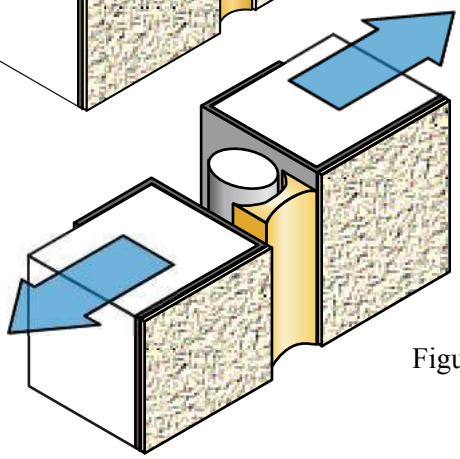

Figure 3

Figure 1.
Sealants are installed in an hourglass shape against a closed cell backer rod. The shape ensures maximum bonding area to the base coat and a thin cross section in the middle of the joint. The thin cross section allows the sealant to stretch as the joint moves.

Figure 2.
If a high modulus sealant is used, the sealant requires much more force to stretch. The force might exceed the strength of the base coat bond to the insulation resulting in deformation of the joint.

Figure 3.
A low modulus sealant is softer and will stretch more easily. This places low stress at the bond interface with the EIFS coatings and insulation. Ideally, the sealant should maintain its low modulus through in-service temperature ranges and UV exposure.

Figure 4.
An air barrier system, continuous over the substrate behind the joint, improves the performance of the sealant joint by providing a secondary barrier against rain penetration and becoming the principal barrier for wind loads. By leaving vents in the sealant, the cavity between the exterior sealant and the air barrier will pressurize to match the wind pressure. This reduces the pressure across the sealant joint and directly reduces the likelihood for rain penetration through the joint. This is referred to as

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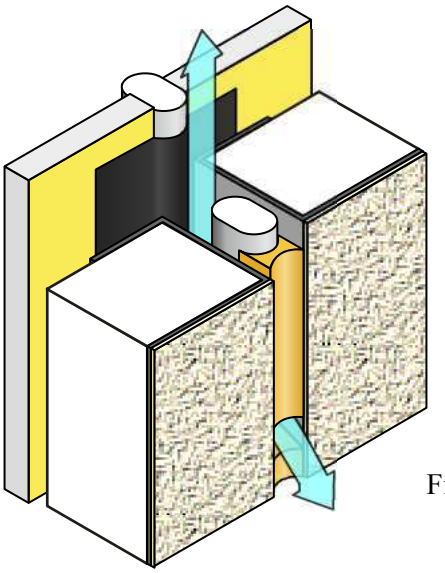

Figure 4

a pressure-equalized or pressure-moderated rainscreen joint design. The cavity between the seals should be vented and drained at strategic locations, and horizontal joint cavities should be sealed at changes in plane to prevent air movement laterally around a building.

For best performance with its EIF systems Sto recommends the use of Dow 790 for EIFS to EIFS joints, and Dow 795 as a perimeter seal around windows, doors, and similar through wall penetrations. Alternative sealants should be low modulus sealants that have been tested in accordance with *ASTM C 1382, Test Method for Determining Tensile Adhesion Properties of Sealants When Used in Exterior insulation and Finish System (EIFS) Joints*.

This test is intended to determine the compatibility of the sealant with the EIFS and the sealant‘s tensile adhesive properties after dry, wet, frozen, high temperature, and accelerated aging conditioning. The test method does not purport to simulate all of the exposures that may be encountered in service.

Sealant performance is a function of many factors such as proper installation, joint design, and resistance to deterioration by other causes.

Sto recommends that the sealant manufacturer be contacted prior to the selection of a sealant and primers. Different conditions may require different products. For example, a termination at a concrete wall may not have much movement compared to a joint around an aluminum window. The sealant manufacturer should advise which product has been tested in accordance with the ASTM method for the system intended, and should verify compatibility with any dissimilar material to which the sealant will be bonded.

Note: This Tech Hotline replaces Technical Bulletin S-01, “SEALANTS SUITABLE FOR USE WITH STO EIFS”, Sept. 1995 and Tech Hotline 0597-E Sealants and EIFS modified January 2002.

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