

## Pam Holway

**From:** Mason Contractors Association Pointers, Caulkers & Cleaners Committee  
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**Sent:** Monday, January 10, 2011 9:55 AM  
**To:** pam.mca@sbcglobal.net  
**Subject:** Air and water infiltration at windows and panels

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## Mason Contractors Association of St. Louis PCC (Pointers, Caulkers, Cleaners) Committee

### MONTHLY REPORT:

January 2011

### POLYURETHANE VS. SILICONE SEALANTS



Dear Pam,  
*Once a month the Mason Contractors Association of St. Louis PCC Committee will report on a subject or highlight a project which illustrates the challenges that Owners, Architects, and Contractors face when dealing with pointing, caulking, or cleaning repairs.*

Sincerely,

**Pam Holway for the PCC Committee**  
Mason Contractors Association of St. Louis  
314-645-1966

**Structure:** Multi-Story Office Building; Granite panels and large expanses of glass

**Problem:** Air and water infiltration at windows and panels

**Solution:** Complete re-caulking of panel and glass system joints

This building was constructed 25 years ago and sealed at

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that time with a polyurethane sealant, which has exceeded its life expectancy by perhaps 10 years. The signs of sealant aging and deterioration include cracking, alligatoring, and reversion (where the sealant, over time, loses its ability to actually seal joints): the sealant in place on this building exhibited all these conditions:



There are advantages and disadvantages to using polyurethane vs. silicone sealants, so each project should be evaluated based on its own unique characteristics. Sealant formulations are constantly changing, so it is imperative to keep up with the latest advances. For example, there is far better UV resistance in urethane sealants compared to what existed when the building was constructed.

This building required a sealant with high UV stability, flexibility over a wide temperature range, and the ability to accommodate extreme joint movement. After careful consideration, it was determined that a silicone sealant would be used to replace the original sealant. Our biggest concern on this project was joint movement. There is a range of panel joint size on this building from narrow to wide; the narrow joints concerned us most:  $\frac{1}{4}$ " of joint movement, for example, puts more stress on a  $\frac{1}{2}$ " joint (50% movement) than on a  $\frac{3}{4}$ " joint (33%), which a silicone sealant is better suited for.

After sealant selection, the next critical step in a re-caulking project is determining the installation procedure. Owners and Architects must work with the contractor/sealant manufacturer team to determine proper joint preparation and sealant installation procedures for each joint substrate condition. For example, in the case of the panel to panel joints on this project, it was decided that in order for the new sealant to adhere properly the existing sealant would be removed in its entirety: after sealant removal the joint substrates would be ground down and the joints would be solvent wiped per the manufacturer's recommendations, prior to the installation of new sealant.

The same decision process was followed on all joint substrate combinations of this job: panel to panel, panel to metal window, and glass to metal window joints. No sealant choice or installation procedure was implemented or even specified without first making sure it was per the manufacturer's recommendations and then installed and tested (via sealant pull tests) by the manufacturer's representatives.

For additional information regarding this project contact

## [B & K Tuckpointing Co.](#)

### About MCA PCC Committee

*The mission of the MCA Pointers, Caulkers and Cleaners (PCC) Committee, through a cooperation of contractors, suppliers and manufacturers, is to raise the level of performance to the highest level possible. The focus areas are safety, workmanship, education, product selection, performance and productivity.*

*The PCC Committee strives to be a resource to owners, architects, engineers and contractor to help provide information and high quality workmanship on new masonry and masonry restoration projects, through:*

- 1) Certification Training*
- 2) Specification Development*
- 3) PCC Technical Bulletins*



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