Sealant Maintenance Routine

One of the easiest ways to save operating and maintenance expenses around the church is to simply institute a good sealant maintenance routine. Often, maintaining sealed joints around a church goes forgotten until a water stain or other unsightly breach brings a failed joint to attention. Sometimes, failed joints go unnoticed for years and the resultant moisture intrusion and damaged never telescopes to interior or visible construction, yet extensive damage hidden from view has occurred, resulting in excessive repair expenses. Such damage and costs can be avoided by simply checking and maintaining joints on a regularly scheduled basis. If your church utilizes a cleaning company or does annual or semi-annual clean-up days, request workers bring any apparent bad sealant joints to the attention of the trustees for action.

Preparing Sealants

- Always remove old sealant from a joint when repairing a breech. Leaving old sealant invites pre-mature failure of new materials since the bond is compromised.

- Always properly prepare joints. Clean all contamination to extent possible and follow sealant manufacturer’s printed instructions for both joint preparation and sealant installation. Don’t assume each sealant has the same installation parameters as the last one you used. Some sealants require priming of surfaces joined so use one if one is required by the sealant manufacturer’s literature.

- Never consider only first cost when selecting quality or type of a sealant. Selecting the correct sealant for application is critical and sealants often vary in price based on bond, formula type, and expected longevity. Using the wrong type for an application will result in premature failure and result in just having to do it all over again.

- Remember sealants always perform best when adhering only to two relatively parallel surfaces. Bonding to three surfaces is a sure avenue of failure. Use backer rods in joints (round stuffing in a joint), bond-breaker tapes, or other methods recommended by sealant manufacturer to prevent bonding to that undesired third surface.

- Select the right sealant. Most manufacturer’s have charts to help you with selection based on your use and materials sealed. Stick to their recommendations.

Instituting a proper sealant/maintenance campaign can pay dividends on reduced repair costs—dollars that could otherwise be used in other ministries. Such a program just makes good “cents”!
Sealant Types

What are the best sealant types for the dollars spent? Here are a few generalities on sealant types.

Basically there are five types of commercial sealants (avoid using residential-grade ones for your church):

- Acrylic latex (or siliconized acrylic latex types)
- Polysulfide types
- Polyurethane types
- Silicone types
- Hybrids (SDPE)—newest in United States but used since 1970s in Europe

Here are general qualities and comparisons of each to help you decide based on cost:

**Acrylic Latex sealants or blends ($)**
Suitable for interior applications only for commercial buildings or churches. This is adequate for exterior uses on residential applications. Use only in applications where minimum joint movement is expected. These sealants adhere to most building materials to form a seal that offers good resistance to air and moisture penetration. These sealants are easy to apply and tool, and clean up with water. They are paintable when cured and offer resistance to mildew and mold, and have almost no odor. They are nonstaining, nonyellowing and nonsagging, and generally good for sealing around rigidly secured fixtures, splashes, door frames, windows (interior side) and other areas where movement expected in less than 25% of the joint width. (For a ¼” joint, that would be only 1/16” movement. More movement than that and these sealants fail).

**Polysulfides ($$)**
You probably will never use this type because it is considered ancient technology by some and can’t be economically produced anymore. However, in some older churches it may have been used. These sealants are sometimes considered a marine sealant and are basically a synthetic rubber with excellent adhesive characteristics. They do, however, eat away plastics when applied. Our recommendation is to replace it with a newer product if you find you have this type. The only instance where you may have a need is if you have concrete or other joints that are subject to constant water immersion or chemical attack (such as at the bottom of a built-in concrete or stone fountain).

**Polyurethanes ($)**
These are the most used exterior sealants in commercial construction because they are inexpensive and come in many colors. These are most likely what a contractor used to seal exterior joints around your church.
Positive Points:
- Lowest price
- 40-plus colors
- Nonstaining
- Good elasticity (negative 25% to over 50% joint width)
- Good abrasion resistance
- Dust pick-up resistant once cured

Negative Points:
- Low life: seven to 10 years
- Questionable paintability
- Good adhesion to clean, primed surfaces or other polyurethanes; does not stick well to other sealants.
- If replacing sealant in joints, silicones or hybrids may be better choices in today’s world considering longevity.

Silicones ($$$)
Twice as expensive as urethanes. You may want to use these in food-prep areas (look for USDA approval on label).

Positive Points:
- Versatile for many uses including structural glazing (glass joined to glass)
- 20-year durability
- Many colors available, even tintable ones (however more limited than polyurethanes)
- Better elasticity (negative 50% to over 100% joint width)

Negative Points:
- Not paintable, therefore must use close color match, clear or tintable
- Higher cost
- Poor abrasion resistance (a minor cut may cause whole bead to “zipper out”)
- Can stain stones and other porous materials surrounding joints
- Picks up dirt even after cured
- Good adhesion to clean, primed surfaces or other silicone; does not adhere well to other sealants.
- Joint preparation is more critical.

Hybrids
These sealants are new in United States, but not in Europe. Chemically they are sily-terminated ether—basically urethane polymer linked to a silicone molecule. This changes them chemically so they are not silicones with great benefit:
Positive Points:
• Good elasticity just like silicone
• Equal in price to silicone
• Equal versatility to silicone, EXCEPT cannot be used for structural glazing.
• 20-year durability and warranty
• Unlimited colors
• Nonstaining
• Paintable
• Made in the United States with imported polymers (though U.S. polymer plants are coming online).
• Good adhesion to porous and non-porous surfaces without a primer as well as other sealant types.
• No dirt pick-up
• Withstands high temperatures

Negative Points:
Few if any. There is a perception that since it is a new U.S. product, it is untested. However, this sealant has been used in Europe for 40 years with great success. It cannot be applied to structural glazing.

Final, extra points and tidbits about sealants
• Use care when installing backer rods (foam round stuffing) in joints. Don’t puncture the skin on the rod as off-gasing may blow tiny pinholes in sealants applied over the rod.

• DO NOT CLEAN joints with denatured alcohol prior to installing sealants. The chemical nature of alcohol (even the vapors) kills the curing agents in sealants and the sealant will never cure out.

Contact LCEF to find an Architectural Advisory Committee member near you for additional information.

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