

NOTE TO INSTALLER: Improper sealant, joint design and joint preparation can lead to water infiltration problems and window/door damage. This information sheet is to aid installers in properly caulking the sealant joints around Kolbe & Kolbe products. This is general information; not all comments are appropriate for all situations. The illustrations are for wood units, but the principles apply to other unit types. The architect, engineer, builder, installer or sealant manufacturer can supply additional information regarding anticipated joint movement and sealant joint design. Window damage and water penetration due to improper sealant joint design, sealant failure, or wall flashing failure, are not the responsibility of Kolbe & Kolbe.

Installer added sealant joints on Kolbe & Kolbe units are often one of these types: lap, fillet, modified-fillet or wide-butt. In this text and these top view illustrations, the window frame's side jamb and brickmould are assumed to be stationary, and the wall or siding is assumed to move horizontally.

LAP JOINT:

The lap joint shown is rated as non-moving, because the two building components on either side of the joint are very close to each other. A concealed sealant joint is difficult to inspect later for problems (Fig. 1 & 5).

FILLET JOINT:

The brickmould side jamb fillet joint is non-moving by similar reasoning. However, the perimeter fillet joint sealing the brickmould to the siding will experience movement, even if the brickmould is nailed to wall, since the siding will move. A different "moving" rated sealant joint is required to seal to the siding (Fig. 2 & 6).

MODIFIED-FILLET JOINT:

The modified-fillet joint shown leaves a gap between brickmould and siding. Insert a foam backer rod into gap and apply sealant similar to what is shown. This sealant joint can tolerate some movement. (Fig. 3 & 7). A similar movement problem occurs when a window is structurally fastened to a wood main wall, while the perimeter seal is to a floating brick veneer. The brick wall may move independent of the wood wall. A joint with more movement tolerance may be required.

WIDE-BUTT JOINT:

Wide-butt joints are often 3/8" wide or more. This type of sealant joint has the greatest movement ability. A foam backer rod is usually behind the sealant (although in some special situations a TEFLON® or polyethylene bond breaker tape can be used). The joint has an hour-glass shape with plenty of adhesive contact surface along both sides, thinner in center to allow easy movement (Fig. 4 & 8).

HERITAGE & CLASSIC SERIES

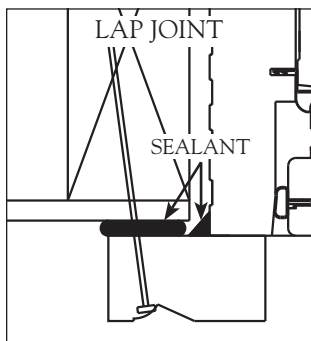


Fig. 1

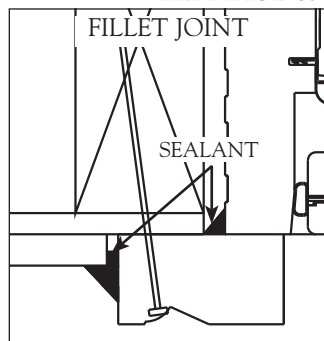


Fig. 2

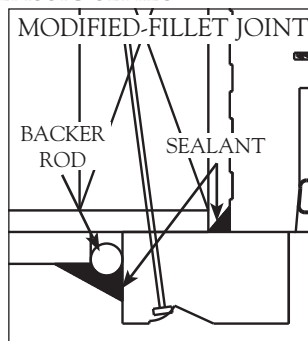


Fig. 3

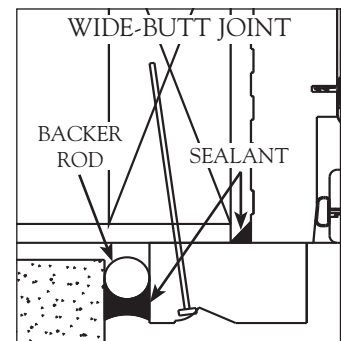


Fig. 4

ULTRA SERIES

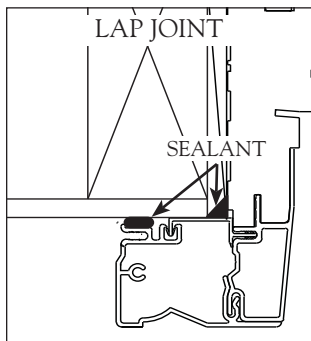


Fig. 5

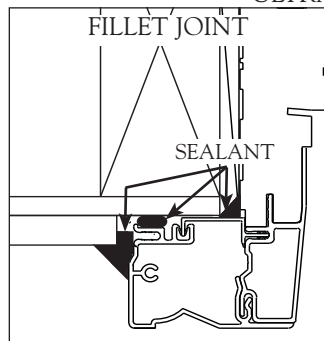


Fig. 6

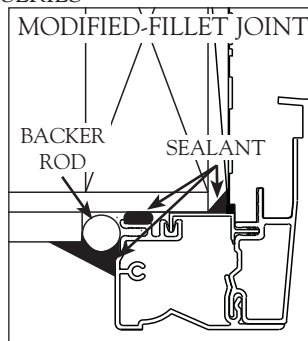


Fig. 7

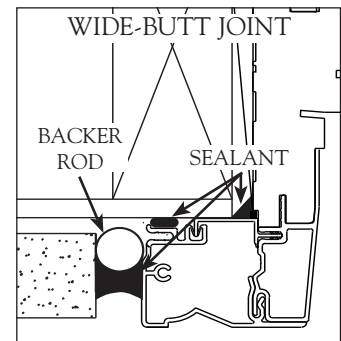


Fig. 8

A sealant joint design rule-of-thumb is: "distance between the two building components should be 4 times anticipated movement." This keeps sealant strain to 25%. Always use high quality sealant with low modulus and high movement rating. A movement rating of 25% is acceptable, however 50% would be better. Low modulus is easier to stretch or compress. The installer decides if a moving joint is required. Kolbe & Kolbe recommends that moving joints have at least .25" gap between building components. (That's only $.25"/4 = .06"$ movement). This minimum recommendation does not relieve installer of responsibility for accommodating greater movement when appropriate.

Kolbe & Kolbe recommends silicone sealants for most applications. Silicone sealants are good all-around performers. They have good movement rating, adhere to most building components and have a long life cycle. Check that the sealant is rated for adhesion to both building components. Sometimes special cleaning, priming or even a different sealant may be required.

TYPES OF SEALANTS:

Silicone - Recommended by Kolbe & Kolbe for most applications. Many products are rated for up to 50% joint movement, have very long life expectancy, excellent adhesion to most surfaces and have good performance over a wide temperature range. Silicone sealants can be either paintable or non-paintable.

Urethane - Fair joint movement tolerance. Occasionally required for some building component surfaces.

Acrylic - (Latex & solvent based) are not recommended by Kolbe & Kolbe since they have a poor movement rating, often short life expectancy and become very stiff and brittle with age. Silicone sealants (acrylic, latex) have only a little silicone added, and usually retain most of the disadvantages of latex.

COMMENTS ON BUILDING SURFACES:

REMEMBER: surface must be clean and dry!

Bare Wood - Wood may bleed oils or resins. Most silicone sealants adhere well.

Latex Painted Wood - Paint must be well cured. Most silicone sealants adhere well.

Polyurea Primer Painted Wood - Most silicone sealants adhere very well.

K-Kron (polyurethane) Painted Wood - Most silicone sealants adhere very well.

Polyester Painted Aluminum - A smooth surface that can be difficult to obtain good sealant adhesion. Generally requires a silicone sealant with aggressive adhesion.

Fluoropolymer Painted Aluminum - A smooth surface that can be difficult to obtain good sealant adhesion. Generally requires a silicone sealant with aggressive adhesion. Special surface preparation is sometimes required.

Vinyl Siding - Not all silicone sealants are rated for adhesion to (PVC) vinyl.

Brick Masonry (kiln fired) - Don't use acetoxy base (smells like vinegar) silicone sealants, which may degrade mortar.

Concrete & Concrete Block Masonry - Don't use acetoxy base (smells like vinegar) silicone sealants, which may degrade concrete & mortar.

Stone Masonry - Don't use acetoxy base (smells like vinegar) silicone sealants, which may degrade stone and mortar. Some stone is quite porous and may require a primer to enhance adhesion and limit sealant bleeding.

Portland Cement Stucco & MB (Mineral Based) EIFS (Exterior Insulation Finish Systems) - Stucco has most of the same concerns as concrete. When stucco is over insulation as in an EIFS system, wide moving joints may be desirable to avoid over-stressing limited adhesive bond to insulation substrate. Check with EIFS supplier.

PM (Polymer Modified Mineral) EIFS - Similar concerns to MB EIFS above. Some EIFS Systems are not compatible with silicone sealants. Check with EIFS supplier.

PB (Polymer Based) EIFS - Similar concerns to MB & PM EIFS above. Check with EIFS supplier.

Kolbe & Kolbe Reserves the right to change specifications without notice.