

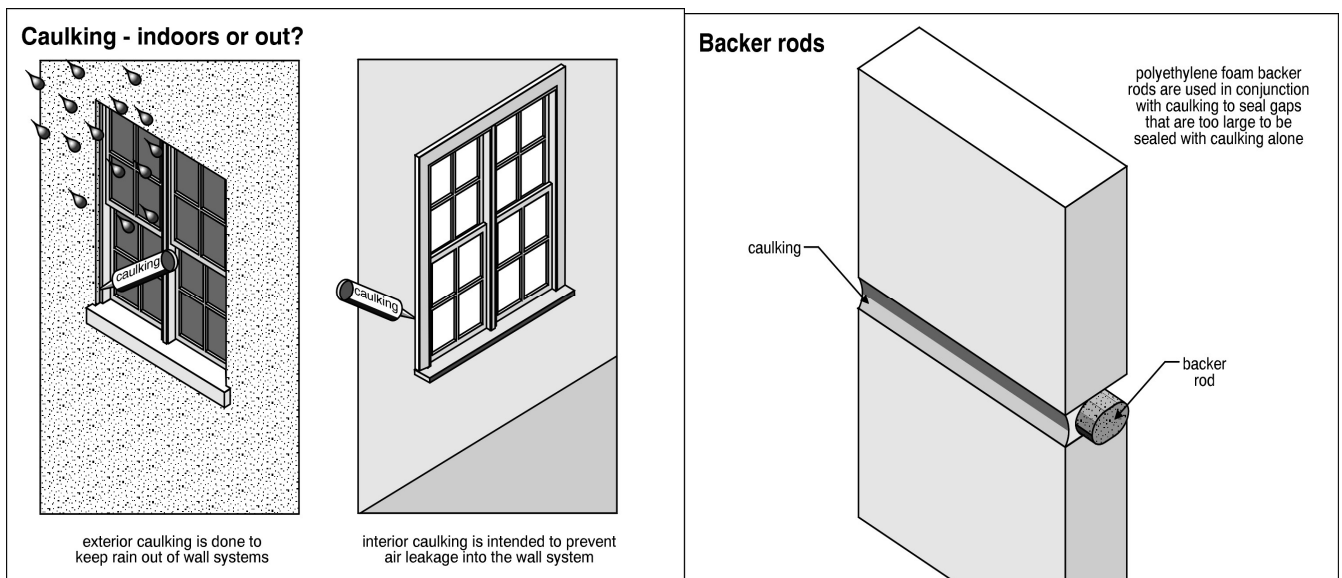
Caulking/Sealing Basics

Types & Characteristics

- All caulks are formulated with a base polymer sometimes called a “backbone polymer” where fillers, plasticizers, solvents, adhesion promoters, UV absorbers, pigments etc. are added to sealants depending on need.
- There are three main types of polymers for residential use:
 - **Silicones:** A highly versatile (almost any temperature) non-paintable caulk. Silicones can be separated into “acid cure” or “neutral cure” varieties which may corrode metal and etch some plastics. The different types are often not identified on the label. Silicone caulk is usually messier to work with requiring paint thinner for cleanup and “dry-tooling” (no water) during the application process. Silicones have very good long-term UV protection, weather resistance and a low shrinkage rate. Silicones have a reputation of not sticking to concrete and masonry. Silicones are popular in areas subject to moisture such as kitchens and baths. If replacing silicone for a non-silicone type of caulk, the original surface may reject a non-silicone type caulk.
 - **Polyurethanes:** A preferred caulk for masonry/concrete and metal roof/flashing applications. Polyurethanes will stick to most masonry products without a primer and do not have the staining properties associated with silicones. Polyurethanes have a very good adhesion rates (almost everything) and are an ideal choice for joints with dissimilar materials (wood, masonry, metal etc). They are not naturally UV resistant, but are formulated with UV absorbers. They will not corrode metals and are paintable.
 - **Latex (Acrylics):** Latex based caulks are widely used for their low odor and easy workability and cleanup. They are often used indoors. Latex caulks require more time to cure than silicones and polyurethanes. With plasticizers, latex caulks have improved flexibility (elongation and compression) but are not as flexible as silicones and polyurethanes. Latex caulks, being water based, may shrink up to 30% when cured. More caulk may be necessary. With the addition of adhesion promoters called “silanes” (a form of silicone), Latex/Acrylic caulks are labeled as “siliconized” (all caulks are siliconized) so the term is more of a marketing angle on the reputation of silicones.

Application Tips (General guidelines only. Refer to label and/or manufacturer recommendations)

- Consider a “Dripless Caulking Gun” with a higher gear ratio or “thrust” (around 14:1 is good) for slower, more controlled delivery of caulk per handle squeeze.
- Cut nozzle tip to a 45 degree angle, and avoid applying when temperature is below 50 degrees Fahrenheit.
- Use bond breaker tape or backer rod to avoid 3 sided adhesion. If caulk adheres to three sides (side to side and up and down for example) it may pull the caulk loose on one or more sides leading to caulk failure.



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