



Open Cell Polyurethane Denver Foam



- ▶ Allows sealant to cure from both directions.
- ▶ Should be used in double joints, unless 1st joint is allowed to cure 7 days. Install 25% larger than opening.
- ▶ Will absorb/hold water.
- ▶ Can't be used for EIFS or horizontal joints.

Closed Cell Polyethylene



- ▶ Will not absorb water.
- ▶ Install 25% larger than opening. ▶ Will require out-gassing for cuts at end and punctures.

Open Cell Polyolefin



- ▶ Will not absorb water.
- ▶ Install 50% larger than opening.
- ▶ Will not outgas.

Teflon / Polyethylene



- ▶ Must cover entire 3rd surface.
- ▶ Must not stretch.

If stretched, will create bubbles once the tape relaxes.

General Backer Rod Info

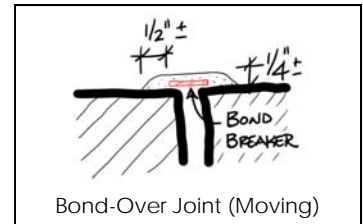
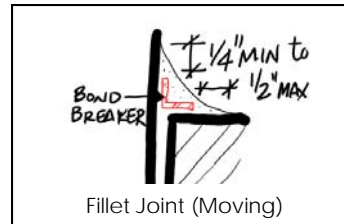
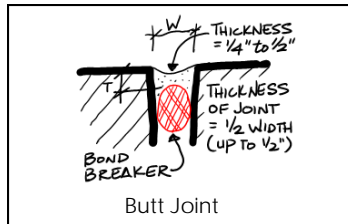
- ▶ The minimum dimension is from the center of the backer rod.
- ▶ Do Not use crayon
- ▶ Fire-safing (mineral wool) works as a bond breaker.

The key to a long lasting sealant joint is proper sealant installation, design, and to avoid three-sided adhesion with the use of a bond breaker. Care and attention to the entire process is critical. There are many different sealant types and materials, all with their own unique requirements and characteristics. At the same time, there are many similar requirements for any sealant type. This bulletin will describe many of the common requirements among sealant types, details and joint designs, including fire stopping joints that have movement capabilities.

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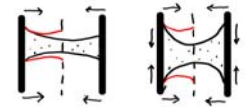
The three typical joints with proper bond breaker in correct location shown:



The common causes of sealant failure are due to inadequate bond, poor surface preparation, poor workmanship, adverse weather conditions, & improper mixing of 2-part components.

- ◎ **ALWAYS REVIEW** INSTALLATION PROCEDURES WITH the SUBCONTRACTOR at a **Pre-installation Meeting**. Identify issues with the subcontractor at this meetings.

- ◎ The sealant joint thickness should be 1/2 joint width, 1/4" minimum and 1/2" maximum. Anything deeper than 1/2" will NOT be capable of stretching to full design capacity. A deeper sealant joint places more stress on the bond in two directions.



Up/Dn & Side Forces

- ◎ **Three-sided adhesion will always tear and fail. Use a bond breaker in every application.**

(A joint with 3-sided adhesion will only move 10%-15% of the sealant design movement)

So, if the sealant has 50% movement & 1/2" joint...the sealant will move: 1/2" x 50% x 10% = ±1/32" or only 5%

- ◎ A high-modulus sealant is stronger and has less capacity to flex, whereas a low-modulus sealant has a high capacity of flex and less puncture strength.
- ◎ Cleaning the joint surface is critical for proper bond. Always use a two-rag system to clean joints and review rags after each use. Apply primer as soon as possible after cleaning and always before the bond breaker installation. **Never install primer on the bond breaker.**
- ◎ Make sure that proper amount of primer is installed and only to the surface which is recommended by the manufacturer. Too much will create a film which must be removed prior to sealant installation. Always prime horizontal joints.
- ◎ Understand the implications of installing sealant in a joint when temperature is too hot or cold, as the joint will start out larger or smaller depending on the material. This will cause sealant to stretch or compress beyond capacity once temperature flips.
- ◎ Tooling the sealant is critical for proper bond. (This includes fire-stopping and acoustical sealant.) Tooling also compacts the joint and eliminates air pockets.
- ◎ Always check and wipe away frost or dew. Failure to do this will assure bond failure.
- ◎ Applying sealant to galvanized steel will usually create a long-term issue due to the sacrificial nature of zinc coating.
- ◎ Always take time and make sure that the complete contents are used and mixed within the time frame as specified by the manufacturer when a **two-part sealant** is used.
- ◎ The sealant thickness should never be less than 1/4" in any situation. This includes cap beading and perimeter joints at a window.
- ◎ Bond breakers are used to avoid the three-sided adhesion, as a back up for installation only, and create proper depth for the joint.
- ◎ We should not seal against unpainted wood, as this surface is not conducive for a good bond and some woods such as redwood will naturally repel the sealant.
- ◎ Painting of the sealant joint should always be carefully considered due to the high elasticity of the sealant and lack of elasticity of the paint, causing the paint to crack.
- ◎ Except in a fire joint, once the sealant joint has cured, the backer rod no longer is needed for the joint performance. The backer rod does NOT perform any waterproofing functions.
- ◎ Sun and temperature shifts will play a role in the quality of the joint. Review time of installation and position of sun.
- ◎ Glazing joints and aluminum / aluminum-face miter joints do NOT need a backer rod, as these are NOT movement joints.

