Why Use Backing Materials?

Homeowners often ask why we specify the use of backing materials on the application instructions for all our sealants. Is there something special about our sealants that require backing materials? Many general-purpose caulks never mention the use of backing materials on their labels. When applied to wood, any type of sealant, be it a high-quality Perma-Chink Systems' sealant or an inexpensive construction caulk will perform better if a backing material is used in joints that are 1/4" or greater wide. We want our customers to know the proper and best way to seal a joint so that it does not fail.

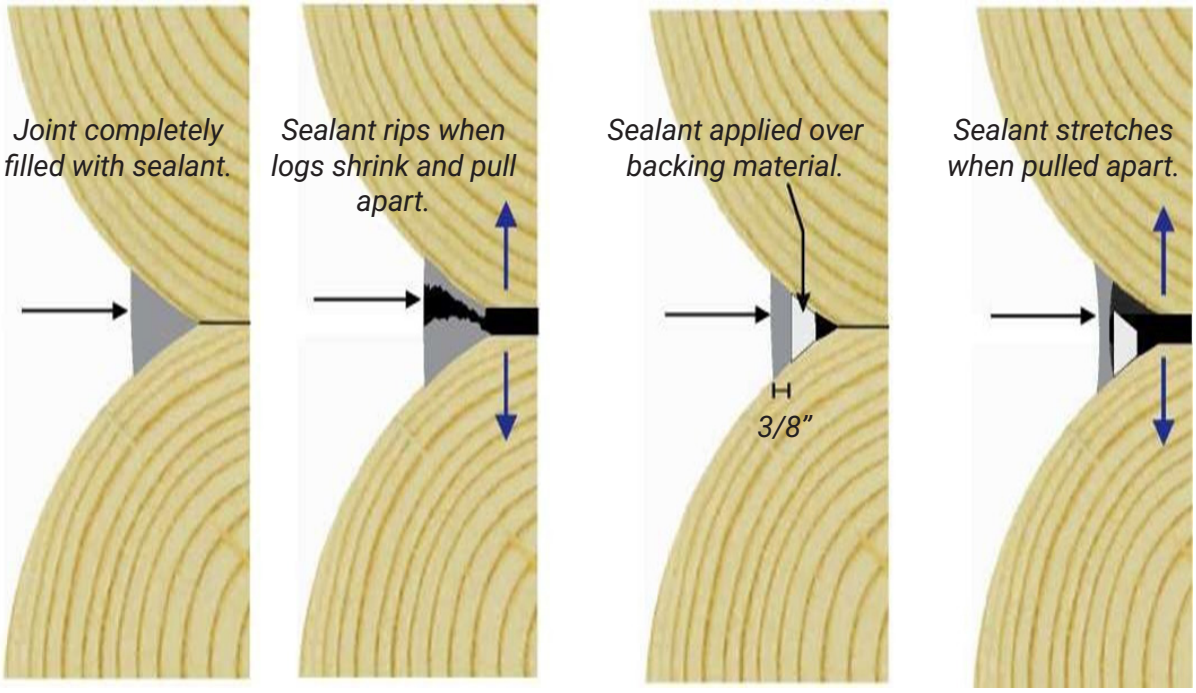
The use of backing material behind a sealant serves two purposes; First, to assure the proper thickness of the sealant so that it can stretch and contract without breaking; and second, to provide a surface that the sealant will not bond to so that it can stretch without tearing away from the wood. The dynamics of sealing an exterior joint or crack in wood are the same regardless of the width of the gap or the product being used. If the wood is unseasoned at the time a sealant is applied, the wood will shrink with time and to compensate for the shrinkage the sealant must be applied in a manner that will allow it to stretch. When a sealant is applied too thick, once it cures it won't be able to stretch enough to compensate for the wood's shrinkage and may rip apart. When applied too thin it becomes too weak to stretch without breaking. Think of it like a rubber band. A thick rubber band cannot stretch as far as a thin one. However, if the rubber band is too thin, it will break when it is stretched. The same concept applies to sealants. If applied too thick they can't stretch without tearing and if too thin they will be weak and will tear when pulled apart. In the case of sealants manufactured by Perma-Chink Systems the magic number is an applied wet thickness of 3/8". This results in a cured sealant with excellent elongation and maximum strength.

Sealant applied without a backing material to a joint between unseasoned logs.

Backing Materials

Backing materials serve to provide suitable sealant thickness and surface for the proper application and performance of the sealant. A variety of materials can be successfully used. Some important features of good backing material include:

1. It must be inert and not outgas or react with the sealant.
2. The sealant itself should not bond tightly to it.
3. It should not wrinkle or deform when the sealant is applied over it.
4. It needs to be able to withstand temperatures of at least 190 degrees.



There are several products specifically designed for use as backing materials for sealants. For smaller gaps, joints and cracks the most used material is round Backer Rod™. It comes in a range of sizes and is relatively inexpensive. Since it is flexible it can be pushed into a crevice without needing to be nailed or stapled.

Backer Rod

Grip Strip™ is designed for sealing larger gaps. Similar in composition to Backer Rod, it is shaped like a trapezoid so it can be squeezed in between round logs, although it can be used for a variety of situations. It provides a flat surface for

chinking or sealing. For wide chink joints between squared logs, we typically recommend the use of polyisocyanurate board (polyiso or R Max) or expanded polystyrene (EPS) beadboard. When cured, the sealant should release from the backing material. If the sealant stays tightly adhered to the backing material, this places much more demand on the sealant on the top and bottom of the joint. Failure is often the result of improper backing materials being used.

Grip Strip

Materials that should never be used as backing include Blueboard or any other colored beadboard (they outgas and create blisters in the sealant), open cell foams (they absorb water), extruded polystyrene (XPS) (causes blisters) or anything that you're not sure about. Avoid foil-faced materials as the chinking will bond tightly to the foil and interfere with joint movement across the entire joint placing more stress on the top and bottom of the joint. If you are unsure or need some assistance with selecting the proper backing material to use for your job, give us a call and one of our technical representatives will help provide an answer as to its appropriateness as a backing material.

What about joints that are too narrow to insert even the smallest diameter Backer Rod? In these situations, a narrow strip of water-resistant masking tape works quite well. You don't want to use masking tape that wrinkles when it gets wet since the wrinkles may show through the sealant. An excellent option is to use pinstripe tape available at most automotive supply stores. The tape is vinyl, so it's waterproof and our sealants won't adhere to it. Pinstripe tape is available in widths down to 1/8".