

EUCOLASTIC I AND II APPLICATION GUIDELINES

SURFACE PREPARATION: All of the rules for joint preparation come down to a few words...the joint must be **clean** and **dry**.

CONCRETE & MASONRY: Concrete surfaces must be fully cured, clean and dry; curing aids and form release agents removed, if necessary, by sandblasting or grinding. Loose dust must be thoroughly brushed off. If curing or form release agents have been used, run a test to determine their effect on adhesion of sealant. Concrete surfaces are often wet, either from retained water or rain. The surface may appear dry and still contain too much moisture for a good bond. If this is the case, flame drying may be called for, or washing with water miscible solvents such as methyl ethyl ketone (MEK). A discussion of this problem will be found below in the section on handling of wet concrete joints.

GLASS, PORCELAIN, TILE, ETC.: Excellent seals can be made to glass and other surfaces. Absolute cleanliness is needed. Surfaces must be cleaned by a material such as methyl ethyl ketone, dried well, and then sealed. Protection from oil and fingerprints is important. Solvents used must be clean and free of oil.

WOOD: Eucolastic will adhere well to new, dry wood. If surface has been painted, it must be cleaned. The bond of Eucolastic to painted wood is of no more value than the bond of the paint to the wood. Eucolastic will adhere to paint, but if possible, paint should be scraped away to expose the wood.

METAL: Seals can be made to steel, stainless steel, aluminum, brass or bronze, and most other metals. The surface should be wire brushed and solvent cleaned. Protective varnishes should be removed unless they are very firmly adhered. Baked finishes are usually as good as clean metal, but must be oil and wax free. Surfaces should be clean of all rust and loose particles and cleaned as well as possible before priming. Grinding is preferred, if possible. Solvents such as paint thinner will remove grease and oil, but care must be taken to prevent redeposition of oil from the solvent. The solvent should be clean (not reused) and applied liberally and wiped off with a clean rag. A rough, clean surface from wire brushing is very good for adhesion. It should be solvent wiped but not polished.

BACKING MATERIALS: The maximum usable depth for Eucolastic sealants is ½ inch; typically ¼ inch (6.4 mm) is all that is necessary for good sealant performance. Since many joints are deeper than ½ inch (12.7 mm), backer rod is needed to control sealant depth.

After joint is clean and dry, and the backer rod is properly placed, sealing can begin. Sealants can be applied by gun or knife. Two considerations must be kept in mind: 1. Fill opening from bottom up or out; as entrapped air is not a sealant. 2. Use some force to help the sealant wet the surface. Sealed joint should not bulge out from excess material, but be slightly concave. Gun grade sealant will do a very poor job of "wetting" to a rough surface such as concrete unless some force is applied. Even under the best application conditions, the area of contact to concrete is probably less than 50%. Tooling will not be as effective on concrete as initial pressure since tooling cannot eliminate small surface bubbles. Vertical joints must be backed to the proper depth and the sealant forced against the sides by same techniques as described above. Freehand filling of unbacked vertical joints will lead to sealant failure.



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WET OR FRESH CONCRETE JOINTS: Since Eucolastic sealants are cured by moisture and the reaction of water or moisture vapor with this type of material is rather complex, a detailed consideration of joints in wet concrete is necessary, with the understanding, Euclid Chemical does not recommend applying sealants to wet surfaces. The reaction of moisture with the active component of the uncured sealant can result in formation of carbon dioxide, which leads to bubbling and unsightly joints. This “blowing” reaction takes place at temperatures of 90°F (32°C) and above and conditions of moisture or high humidity.

Sealants cure primarily from the top down or from the outside in. Gas formation and bubbling is greatly reduced if thickness of sealant is kept below ¼ inch (6.4 mm). If sealant layer is ¼ inch (6.4 mm) or less, much of the gas is diffused to the atmosphere. If joints are prepared as described, a minimum of difficulty will be encountered.

TOOLING: The surface of a sealant joint may be tooled or smoothed in order to obtain a better appearance. This tooling also has a favorable effect on obtaining seating of the sealant against the walls of the cavity. Taping the sides of a joint is recommended where an extremely accurate match to the edge is desired. The tape can be removed without difficulty any time up to four hours after application of Eucolastic. When tooling follow these simple guidelines:

1. Tool the sealant with light pressure before a skin begins to form. Tooling forces the sealant against the backing material and the joint surfaces, improving adhesion and reducing the risk of weak points and blisters caused by entrapped air. Do not use liquid tooling aids such as water, soap or alcohols such as isopropyl alcohol (IPA). These materials may interfere with sealant cure and adhesion and create aesthetic issues.
2. Always tool in both directions. For best sealant performance tool a concave surface with a custom ground tapered spatula or tuck pointer. A concave sealant bead (hourglass in profile) is best for reducing internal stresses from joint movement.
3. Tooling achieves a visually satisfactory finish. Sealants in rough or exposed aggregate panels are best applied and finished with a slight recess. Recessed sealant is best applied with a straight tuck pointer (to size) with the corners slightly ground.
4. Successful tooling requires experience and a trained eye. Installation and tooling of Eucolastic sealants is best done by professionals skilled in proper techniques.

Urethane sealants cure by reaction with the moisture of the air. They cure fastest in hot, moist air, slowest in cold, dry air. Under normal conditions, 40% to 70% relative humidity, and 50° to 80°F (10° to 20°C), the exposed surface of sealants will “skin” overnight and will cure in 48-72 hours. After this length of time, cure is complete; but adhesion is only partially developed. The adhesion bond does not achieve its maximum strength for two to four weeks. Samples tested after several hundred hours of weatherometer exposure have better adhesion than the originals. The cure of Eucolastic is greatly affected by temperature and humidity. Under conditions of high temperature and high humidity, the cure may be extremely rapid. In this case, the cure will be too rapid after the skin has formed and bubbling will occur. If substrates are porous materials such as concrete or limestone, the excessive amount of moisture may accelerate curing still further with resultant swelling and bubbling of the sealant. Always install Eucolastic sealants in proper conditions.

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