



FLOOR REPAIR, LEVELING & PREP BULLETIN

This bulletin has been prepared by Armorpoxy to assist you in making decisions about repairing and prepping your floor. Many of the products noted below are available at www.armorpoxy.com. Go to the 'Online Store' link, and then select 'Floor Repair' to see more information on these items, or to purchase them. Items that we carry are listed in bold type.

1. Epoxy floor coatings are measured in 'mils' (thousandths of an inch). For reference, standard floor paint dries about 2.5 mils. A medium build epoxy coating system (Armorpoxy II) will cure at 7-15 mils. A high build epoxy coating system will dry at 20-35 mils (ArmorClad and ArmorUltra). For reference, a sheet of standard copy paper is 4.5 mils. *If you need to 'level' just 1/4", that would be 250 mils*, so you can see why using an epoxy to make floor repairs or 'level' a floor would be impractical and expensive. Broom finish floors and rough surface floors can have surface variations of up to 1/8" (125 mils) and normally cannot be leveled by epoxy only. The term 'self leveling' means that the epoxy will smooth itself out in most cases, at the thickness it is applied at.
2. **LEVELING AND PATCHING HOLES, SPALLS AND CORROSION**
 - a. These kinds of floors are not easily repaired using an epoxy so use a commercially available cementitious type floor resurfacer such as Ardex K-15 or SD-L (www.ardex.com) or Quikrete 1249-5 (www.quickrete.com), or a similar product. These products are available nationwide locally at home centers and building material centers and are often referred to as 'skim coat' products and come in 50 lb cement type bags. A 50 lb bag will level only 25 square feet (5' x 5') at a depth of 1/4", so if you need a lot of leveling, you may need quite a few bags of these products to repair your floor. Use these types of products for salt corroded floors and worn floors where the aggregate (rock) is exposed or the floor has 'acne' and is pitted. Please allow adequate time according to manufacturer's recommendations for curing prior to applying the epoxy.
 - b. Alternate: Use Armorpoxy **Epoxy Mortar Liquid Resin**. This product is a 2 part epoxy into which you mix locally-purchased playground sand (it doesn't make sense for us to ship sand, the cost would be very high). Use the Epoxy Mortar for filling smaller areas, holes, spalls, etc. Comes in a 1 gal (holds 50 lbs sand) or 3 gal sizes (holds 150 lbs of sand). The Epoxy Mortar Resin can also be used to make 'coves' that are often required by health departments for where walls meet

floors in kitchens and baths. We also carry a convenient '**Cove Tool**' which is a curved trowel that 'makes' the cove.

- c. Use our **Cement Floor Patch**. This is a less expensive, and less durable pre-mixed vinyl acetate cement product that you trowel onto the floor. Great for small areas, garages (except where the car will drive on it, we do not recommend this product for driving on). Easy to use, pre-mixed.
- d. Use our **Crack Repair Epoxy Putty** for small areas, and minor corroded areas (see below).

3. **CRACK FILLING: Remove any loose or flaking material from cracks. Use angle grinder or other tools if necessary.**

- a. Hairline cracks cannot be filled in with epoxy. Repair all cracks and pitted areas prior to etching, except when using the **Crack Repair Epoxy Putty**. Since epoxies are liquid coatings without aggregate, they will 'fall into' cracks and the cracks may still appear. To fill hairline cracks use our Crack Repair Epoxy Putty. This product is a 2 part very thick putty-like product that you mix in equal parts on a piece of cardboard or wood, and then use a putty knife to apply to small cracks up to 3/8" wide. It mixes and works similar to auto body-type fillers. This is an excellent product that you can paint right over, and does not require drying or curing time.
- b. To fill larger cracks use our Epoxy Mortar (see above).
- c. To fill expansion joints or saw cuts in concrete, fill the joints with sand up to about 3"8" below the surface (this acts as a foundation), and then fill with our **Epoxy Mortar** (see above). For expansion joints with flexible materials, remove material down to at least 1/2" below the surface and fill with our **Flexible Joint Sealer**. This will allow the floor to expand and contract as designed.
- d. For filling smaller joints that need to be flexible, use our **Fast Setting Epoxy Joint Filler**. This is a 2 part epoxy that comes in special dual caulk tubes (you need to obtain or purchase from us the dual caulk gun that mixes the caulk in the tip while applying). This system is like a caulk but much stronger, industrial grade, and faster setting.

4. **SURFACE PREP**

- a. Surface prep is the MOST important step of any coating project. An improperly prepped and prepared floor will result in either a failure, or shortened performance life. Prepping can be done by either using the 'acid etch' method, or mechanical method. New concrete MUST be prepped the same as old concrete.
- b. Acid Etching: Etching is an excellent low cost way to prep. Etching removes any surface lime which all concrete has, and also creates millions of microscopic pores in the surface for adhesion. If you plan on acid etching you can use our **ArmorEtch** acid (which is a kinder/gentler buffered acid and has less fumes and does not affect the skin like standard acids), or locally-purchase muriatic acid. Normal mix is 4 parts water to 1 part acid, but you can use less water if your floor is sealed or particularly dirty. Always rinse well to neutralize any acid and allow to dry fully before coating with epoxy (normally overnight, can be longer based on conditions. A solution of water and TSP (trisodium phosphate, available at any paint or hardware store can also be used to neutralize acid).

- c. Sealed floors: Many floors have sealers added to them when poured or applied at a later date. To determine if your floor is sealed, walk around and dribble water droplets on the floor. If it 'beads up' like on a hood of a waxed car, then you have a sealer, and sealed floors will resist all coatings. The sealer must be removed by acid etching (normally at higher concentrations, or multiple times), or mechanical means. Repeat prep steps until water does not bead. Sanding a sealed floor prior to using acid etch helps to 'open up' the floor to allow the acid to penetrate and etch.
- d. Mechanical methods: You can use a rotary type sander or diamond grinder to prepare your floor. These types of tools are available at most tool rental places. Make sure to vacuum well after this step as sanding or grinding creates a lot of dust. Armorpoxy sells an excellent small **grinding machine** for small/medium sized areas, along with a special vacuum to remove the dust.
- e. Oily/greasy floors: No standard coating can stick to an oily floor. Oil soaks into concrete, and is impossible to remove completely without concrete replacement. We carry an excellent **Oil/Grease Emulsifier** which converts oil and petroleum products into a soapy solution which gets rinsed away. If your floor is oil soaked and/or stained, after prepping, check with the water drop test to see if still beading. If so, then you need to use our **Oil Stop Primer** which is a special primer designed to stick to oily floors. This is an excellent product that is patent-pending.