

Modifying System Three Epoxies With Filler Materials

Filler materials fall into four general classes: thixotropic agents, bulking agents, fibrous agents, and pigments. The [fillers](#) listed below are available on the System Three website.

[Silica thickener](#) (Cab-O-Sil or Aerosil), and [Wood Flour](#) are thixotropic agents. They turn the epoxy into a thixotropic fluid or paste. These fluids flow under shear stress but do not readily flow once the stress is removed. Ketchup and latex house paints are examples of thixotropic fluids. Adding one of these materials to mixed resin and hardener produces a fluid that will easily flow under the spreading stress of a putty knife. Once the stress is removed the thickened epoxy retains its shape. In short, these fillers make the epoxy non-sagging and are added specifically to make gap-filling compounds.

[Glass Microspheres](#) are low cost, low density bulking agents. Added to epoxy they make a light-weight fairing compound. Combine with silica to add non-sagging characteristics.

[Milled Glass](#) is a fibrous materials that can be incorporated into structural filleting putties to improve tensile strength. Combine with silica to add non-sagging characteristics.

Our [Epoxy Pigment Dispersions](#) are pure dry colorants ground into epoxy resin. Since they are dispersed into epoxy resin, they may be added to the resin side of our epoxy systems to produce stable pigmented resin. The volume of the pigmented resin is used to determine the hardener necessary. These pigments are transparent when used in tiny amounts in an epoxy and can be said to act as dyes. In larger amounts they are opaque. Our pigments come in white, black, brown, yellow, red, green and blue and may be blended with each other to produce various hues. They should be used in epoxy systems only and never used in our paints.

When adding fillers to epoxy:

1. Correctly measure and mix resin / hardener
2. Add fibrous materials if any (milled glass or mini-fibers)
3. Add bulking agents (glass microspheres, wood flour)
4. Add thixotropic agents (silica or wood flour)