



Epoxy Systems Advice from Summitville

Vertical Epoxy Use:

To use epoxy products vertically, the user must recognize that the product cures on a heat reactive system, not a water loss thickens-as-it-dries system (cement). All vertical work must be performed with cool epoxy on cool surfaces. All vertical epoxy work must usually be completed within 20 minutes at 70° F or cooler (unless using low temperature materials). The surface temperature of the intended substrate(s) also affects vertical epoxy application times. Hand or slow speed mix vertical usage epoxy, as drill mixing folds and entraps heat and air into the mix that will make the epoxy too loose too quickly. Do not use epoxy vertically unless the epoxy is approved for the vertical task. If the epoxy is more than one year after its date of manufacture or has been stored for long times in areas above 90° F, consult the manufacturer before attempting to use the vertical approved mix for a vertical application.

Wide Vertical Joints:

Do not expect to grout vertical joints with epoxy that are over ¼ inch wide. Long vertical joints will create more opportunity for epoxy to sag and/or slide out. Thickening agents for epoxy should be added to the appropriate side (A or B) a day or more before the epoxy is to be used. This allows the thickener to perform its designed function properly. Whipping thickening agents into epoxy at high speed just before use or when the epoxy is starting to sag is the incorrect way to use epoxy-thickening agents as heat and air are added that defeats the purpose of trying to thicken the resin. (refer to high speed mixing comment above) Epoxy that is designed and mixed properly, and rated for such work, can be used to set and grout tile on the ceiling.

Making the Most of Epoxy Work Times:

As mentioned above, epoxy cures on a heat reactive system. Heat generated inside a mix will heat up, loosen, and accelerate the cure of the outside of a mix. To use epoxy as long as possible, spread mixed epoxy out to a thin layer after mixing. This will help dissipate reactive heat and prevent a thick center core from quickly heating and speeding up. A thin tray such as a cookie sheet of epoxy can also be placed over a cooling unit such as an ice chest. To extend ice, place 5 pounds of dry ice in the bottom of an insulated container. Add 20 pounds of regular ice over the dry ice. Keep container closed to keep the ice as long as possible. This dry/wet ice chest can be used to cool epoxy units before and/or during use when air conditioned areas to store epoxy before use are not available. Remember to cool all parts of an epoxy mix when powders are used as fillers. Powders can be more than ½ the total volume so to not cool the powder is to invite failure. Keep the epoxy from mixing with water unless the epoxy is specifically designed to be mixed with water, as otherwise the water will permanently stop the epoxy from curing after it made a runny mess. Cool application surfaces by misting the surface with clean cool water, and then allowing the water to evaporate. Do not set or grout epoxy over water or water soaked surfaces unless advised by the manufacturer to do so.

Bonding Issues:

Protect application surfaces from radiant heat until the epoxy has cured. Epoxy that is no longer tacky is no longer able to effectively bond, discard it. Spreading epoxy on a dirty or laitance-covered surface will allow epoxy to bond nicely to the dirt. Such epoxies will be prevented from bonding to the intended surface, as the surface dirt will become the actual bond surface. Bonding to surface dirt, which then fails off the intended bonding surface, is not defective adhesive bonding; this type of bond failure is defective surface preparation. All bonding surfaces to receive any kind of adhesive must be clean, dry, and free from surface contaminants, sealers, oils, and bond breakers of any kind, unless the adhesive is specifically designed to bond to said surface contaminant. (Example: water-cured urethane bonding practices sometimes include dampening the bond surface as part of the primer/preparation step)