

APPLICATION INSTRUCTIONS

Troweled Epoxy Mortar

GENERAL

Troweled epoxy mortar flooring is a combination of low viscosity, 100% solids epoxy resin and different types of aggregate filler. These materials form a seamless, monolithic flooring system suitable for many heavy use areas. Installed flooring thicknesses will vary from 3/16 to 1/4 inch depending upon service requirements. Surface texture can be varied from aggressively slip-resistant for wet areas such as showers and food preparation areas to a smooth finish suitable for hallways, laboratories, production facilities and warehouses. It is very important to achieve the proper texture for a given area. A floor with too much texture in a laboratory will be difficult to clean, and a floor with a smooth finish in a commercial kitchen will be too slippery.

SURFACE PREPARATION

Surface preparation is vital to the long term success of the installation. All sealers and coatings other than well adhered epoxy materials must be removed. Moisture vapor emission testing should be done using the calcium chloride test method according to ASTM 1869-04.

The surface must be smooth and free of ridges and imperfections that may transfer to the finished surface. Projecting roughness should be ground smooth with a floor machine or angle grinder. Wherever the flooring system does not abut a vertical surface and around floor drains, a "keyway" must be cut into the floor. Do not feather edge the materials. In making the keyway, use a grinder or small concrete saw to make a cut approximately 1/4" into the floor. Chisel away the inner shoulder of the concrete at least 1/2 inch. The resin system will flow into this recessed area and be protected from edge damage.

Next, surface preparation on the main field of the floor must be accomplished. All surfaces to be coated must be clean, sound and free of mastics or other contaminants which may interfere with bonding. Concrete must be acid etched, shotblasted or diamond ground to achieve a 10-15 mil profile. If acid etching is used, it must be done using a floor machine with a "nylogrit" type brush. Etching must be done in strict accordance with the guidelines published in the APF Surface Preparation Instructions. Properly prepared concrete must have a texture similar to 120 grit sandpaper. Wood surfaces must be exterior grade plywood, securely fastened to the subfloor or joists. Wood must be sanded before application and the joints filled with Epoxy 300 Flex Paste.

Small depressions, cracks, holes and control joints should be filled with Epoxy 300 Flex Paste or Epoxy 400 thickened with fumed silica. If using Epoxy 400 Damp Surface, patching may be done while the surface is damp. Large holes should be filled with an epoxy mortar consisting of 4-5 parts aggregate (30 mesh silica or graded trowel sand) to 1 part resin. These areas must be primed with liquid resin before filling.

Surface Preparation - Cont'd.

Cracks and control joints in temperature-controlled buildings normally do not move after initial cure and settling of the concrete slab. Normally, these areas are treated only by filling with a thickened resin as stated above. If additional protection against substrate cracks transmitting through the finished epoxy flooring is desired, 3 inch fiberglass tape may be embedded in Epoxy 300 Flex Paste to bridge the joint or crack. Smooth the tape and resin by pulling a squeegee or flat trowel over the area. True expansion joints should be premarked, filled with epoxy paste and the flooring system applied. After a 24 hour cure, saw cut through the floor and fill the saw cut with a flexible urethane caulk.

COVE BASE APPLICATION

The vertical cove base is a necessary part of many aggregate-filled epoxy flooring applications. See the separate APF cove base installation instructions for complete application guidelines.

PRIMING

Apply Epoxy 400 at the rate of 200-250 sq. ft. per gallon. The epoxy mortar must be placed directly on the wet primer. In the event that the primer cures past the point of being tacky it must be re-applied.

APPLICATION OF THE EPOXY MORTAR

All drains, grease traps, etc, must be completely taped prior to resin application. Tape must be pulled as the application proceeds. Mix 1.5 gallons of Epoxy 400 or 600 clear with a Jiffy type mixer for two minutes. Pour mixed material into a clean mortar mixer. With the mixer running, add 9 gallons of graded trowel sand and mix for an additional 2-3 minutes. Place the entire batch of mortar on the floor and spread material to the desired thickness using a screed box or gage rake. Finish smooth using a small hand or power trowel. Make sure to apply sufficient pressure to compact the mortar as much as possible. Make sure to clean trowels frequently with solvent. Using a dirty trowel can cause a less than desirable finish. The use of a halogen light shining on the freshly placed floor will show trowel marks or imperfections, allowing the installer to make any corrections prior to the mortar curing.

GRINDING THE FLOOR

The purpose of grinding the floor is to remove any trowel marks and imperfections. This can be done using a planetary type grinder using 30 grit diamonds. It is important to grind the floor moving from east to west and then north to south. Once all the grinding is complete, vacuum the floor thoroughly.

APPLICATION OF THE GROUT COAT

Apply Epoxy 400 or 600 grout resin at 200-225 sq. ft. per gallon using a flat squeegee, making sure to avoid leaving squeegee lines or puddles. A mechanic wearing spiked shoes should back roll the material using a 3/8 inch non-shedding roller.

APPLICATION OF TOP COAT

Once the grout coat material has cured hard, sand out any imperfections. Make sure to remove all dust prior to installing the top coat. Apply Epoxy 400 or 600 at the rate of 200-225 sq. ft. per gallon using a 1/8 inch notched squeegee, then back roll the material with a 3/8 inch nap non-shedding roller.

APPLICATION OF OPTIONAL SECOND TOP COAT

For areas requiring additional chemical, abrasion and U.V resistance, a second top coat of Polyurethane 100 or 501 may be desired. Prior to installation of the polyurethane, the floor should be screened using a 100-120 grit sanding screen to remove any imperfections. Thoroughly vacuum the floor prior to installation. Apply the polyurethane material using a 3/8 inch nap non-shedding roller cover at a rate of 300-350 sq. ft. per gallon.