ARMOR-REZ
HD

Arizona Polymer Flooring

Application Instructions: Armor-Rez HD

General
Armor-Rez HD flooring system is a combination of low viscosity, 100% solids epoxy resin and different types of aggregate fillers. 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 on service requirements. Surface texture can vary from aggressively slip-resistant for wet areas, such as showers areas, to smooth finishes 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, while a floor with a smooth finish in a wet area will be too slippery.

Moisture Vapor Emission Testing
All interior concrete floors are subject to possible moisture vapor emission and/or excessive alkalinity that could ultimately cause coating failure. Prior to application, calcium chloride moisture testing should be conducted according to ASTM 1869-04.

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 conducted 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 ¼ inch 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 that may interfere with bonding. Concrete must be shot-blasted or scarified to achieve a CSP 3-4. Properly prepared concrete must have a texture similar to 60-80 grit sandpaper.

Small depressions, cracks, holes and control joints should be filled with Epoxy 300 Flex Paste or Epoxy 400 thickened with fumed silica. 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.

Cracks and control joints in temperature-controlled buildings normally do not move after initial curing 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 pre-marked and filled with epoxy paste before the flooring system is applied. After a 24-hour cure, saw cut through the floor and fill the saw cut with a Epoxy 300 Flex Paste in the same color as the finished floor.

Cove Base Installation
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 the primer cures past the point of being tacky, it must be re-applied.

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Application of Expoxy 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 2 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. 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 Thixotropic 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 the 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 at the rate of 200-225 sq. ft. per gallon using a 1/8 inch notched squeegee, and then back roll the material with a 3/8 inch nap non-shedding roller.

Application of Second Top Coat
For areas requiring additional chemical, abrasion and U.V resistance, a second top coat of Polyurethane 100, 100 VOC 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.