

## **SURFACE PREPARATION INSTRUCTIONS**

### **APF Resinous Flooring Systems**

#### **GENERAL**

Surface preparation is the most critical aspect of any resinous flooring application. Thorough preparation ensures maximum adhesion and long-term integrity of the flooring system. The following guidelines have been prepared to assist the applicator in the preparation of a variety of substrates. Should there be questions about a specific job condition not clearly covered in these instructions, contact our technical service department for guidance prior to application.

#### **MOISTURE VAPOR EMISSION TESTING**

All interior concrete floors are subject to possible moisture vapor drive which could ultimately cause coating failure. Prior to application, calcium chloride moisture testing should be done according to ASTM 1869-04.

#### **NEW CONCRETE**

New concrete on or below grade should be poured over an effective moisture vapor barrier. Concrete must be cured for 30 days prior to the application of any coating, except Epoxy 100, which can be successfully applied to “green” concrete. Curing compounds should not be used on new concrete pours where a resinous flooring system or coating has been specified because they may affect the bond of the material. A good method for detecting curing compounds or clear sealers is by pouring a small amount of diluted muriatic acid onto the surface. If vigorous bubbling does not occur, a curing compound or sealer is present. These must be mechanically removed before proceeding. New concrete must be prepared by shotblasting, careful acid etching or diamond grinding. In either case, a properly prepared surface will have a minimum 5 mil profile. This “toothed” surface insures proper adhesion.

If acid etching, the area to be prepared is hosed thoroughly, being careful to wet down any adjoining areas that may be damaged by contact with the acid solution. It is very important to keep the entire area wet until completion of the etching process. Never allow the acid solution to dry on the concrete as this could weaken the adhesion of the system.

Etching is normally a two-man procedure, with one man operating the floor machine (a nylogrit brush is used for etching) and the other man responsible for pouring the acid evenly and working the broom. The second man will also control the flushing of the area with the hose. The acid is mixed in a 5 gallon plastic pail - 3 or 4 parts water to 1 part acid. The strength of the solution is determined by the condition of the concrete. Very hard, smooth or shiny concrete will require a stronger solution.

The acid solution is poured into a sprinkling can and then onto the surface. Hold the sprinkling can close to the surface to avoid splashing the acid on adjoining areas. Caution: the acid solution will permanently damage aluminum doors or painted metal surfaces. Keep adjoining outdoor carpet wet at all times and minimize contact with the acid solution. Do not get acid on concrete areas not to be etched. If contact does occur, flush as soon as possible with water.

## **New Concrete - Cont'd**

Five-gallons of mixed solution will cover approximately 150 sq. ft. The area will be scrubbed with the floor machine, systematically going first left to right, and then up and down. The second man will aggressively scrub the edges and places inaccessible to the floor machine. Use a stiff bristled broom or wire brush for this purpose. He will also work the hose to keep the area wet during the procedure.

Upon completion of a 150 sq. ft. area, rinse well. A properly etched concrete surface has the profile of 120 grit sandpaper. If the concrete still feels smooth, repeat the procedure. After the concrete is thoroughly etched, pour 8 oz. APF Super Base Neutralizer into 4 gallons of water. Pour into the sprinkling can and disperse evenly over the area just etched. Scrub aggressively with the broom paying special attention to the edges and areas that may retain the acid solution (next to cabinets, washer and dryer, etc.). Rinse well.

If it is necessary to walk on an area that has been etched and neutralized, be sure to hose boots off to avoid recontaminating the area. If the etched area was a driveway or garage, be sure to flush the residue well down the street. This is done with one man working the hose and the other brooming the residue until it is well dispersed.

If concrete is diamond ground, it must be done thoroughly to "open up" the surface. After diamond grinding, pressure wash or vacuum surface well to remove all dust. After surface preparation, the surface must have the texture of 120 grit sandpaper.

## **OLD CONCRETE**

Old concrete slabs must be structurally sound and free of contaminants such as dirt, grease, oil, mastics or unsound coatings that interfere with the bonding of the flooring system.

Grease and oil must be removed from the concrete using the floor machine and nylogrit brush. This is accomplished using Maintex 7-11 Degreaser. Heavily soiled areas will require multiple cycles of chemical application, scrubbing and rinsing. After the degreasing procedure, these areas would normally be acid etched using the acid solution and Maintex 7-11 together for further deep cleaning.

Mastics used to adhere carpet or tile are best removed by shotblasting, mechanical grinding or scraping. Effective tools for this type of removal are diamond grinders, angle sanders with course sandpaper and "scrape away" type attachments for the floor machine. If possible, remove the carpet or tile a day or two in advance and allow the mastic to dry thoroughly before attempting removal. The flooring contractor needs to be aware of the special health regulations governing the removal of asbestos tile. Removal of this type of tile and mastics is normally done by a specialty asbestos abatement contractor.

Remove old coatings except for well adhered epoxy materials. Adhesion should be assessed by doing several crosshatch/tape pull tests. Coating removal can be done mechanically by grinding, sanding or shotblasting. Chemical removal can be accomplished using DBX Safety Stripper available through APF.

After removal of contaminants, old concrete must be shotblasted, acid etched or diamond ground in the same manner as new concrete.

## **WOOD FLOORS**

Polymer floors should not be applied to plank or stripped flooring. Use exterior grade plywood or tongue and groove underlayment grade plywood only. On new construction apply 3/4" plywood over a subfloor that is well supported by adequate floor joists. If the existing floor is completely solid and adequately fastened to the floor joist, 1/2" plywood will suffice to cover it. Stagger plywood sheets to avoid a four corner meeting. Secure plywood with barbed underlayment grade nails, 6" on center along all edges and 9-12" on center elsewhere. Do not butt edges too tightly, allowing space for expansion. Use a penny to gage spacing.

Sand the entire surface lightly. If adjoining edges do not have the exact same thickness, sand the high edge to make level.

For areas exposed to water and moisture, it is recommended to seal all edges and bottom side of plywood. Apply 2 coats of Epoxy 100 before installing plywood.

Fill all joints, nail holes, etc., with Epoxy 300 Flex Paste.

## **QUARRY TILE, CERAMIC TILE AND OTHER HARD SURFACES**

Examine any tile floor to be coated for soundness. Each tile should be "sounded" with a hammer individually, making sure it is firmly bonded to the substrate. Loose tiles should be removed.

The floor should be mechanically cleaned and degreased if necessary. The ideal method of achieving a profile on hard dense surfaces is shotblasting or diamond grinding. Repair all chips and holes with Epoxy 300 Flex Paste before application of the coating system.

## **PREVIOUSLY COATED SURFACES**

If the surface to be coated is not a well adhered epoxy material, it should all be mechanically removed. Sound surfaces are prepared by scrubbing with APF Orange Clean using a floor machine and a coarse black janitor pad. This cleaning is normally a two-man procedure, with one man operating the floor machine and the second man working the hose, pouring the cleaner out of a sprinkling can, and cleaning the joints and edges by hand.

Cleaning is to be done in 200 sq. ft. areas. Wet down the surface and apply the Orange Clean. The area is then scrubbed with the floor machine, systematically going first left to right, and then up and down. All of the edges and joints will be scrubbed with steel wool. Be certain that the area being cleaned is kept continually wet. Do not allow the cleaning solution to dry on the surface. Rinse well. After surface has dried, sand well with 80-100 grit sandpaper. Sweep well before coating.