K A U F M A N

PRODUCT
INFORMATION

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GENERAL EPOXY INSTRUCTIONS FOR 100% SOLID SYSTEMS

Before attempting a job with a material of procedure that you are not familiar with, we recommend trying the product(s) and procedure in a small area to familiarize yourself with handling performance properties.

SURFACE PREPARATION
Correct surface preparation is the most critical part of any floor resurfacing, coating, bonded topping, or repair project. The desired adhesion to the substrate will not be obtained if the preparation does not leave the surface free of foreign matter, including curing compounds, and form release agents. Concrete surfaces must be clean and sound. The surface must be roughened to a proper degree. There should be a profile of at least 1/16" - 1/8" between the high and low points of the concrete prior to application of the epoxy resin system (coarse aggregates should show). We recommend strict adherence to International Concrete Repair Institute (ICRI) Guideline # 03732, *Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Ploymer Overlays* (1997). This standard details the proper surface preparation and techniques for all types of concrete repair and coatings application.

All concrete has a layer of dense laitance at the surface, which will reduce the penetration and subsequent adhesion of sealers, adhesives, topping and membranes. Remove laitance and all foreign matter as per ASTM D-4258 and D-4259. Water blasting followed by shot blasting is the preferred method of preparation to provide a fractured aggregate profile. Sandblasting or shot blasting are also satisfactory, whether the used aggregate is captive or not.

Acid etching according to ASTM D-4260 with a 15-20% muriatic acid solution can be used as an alternate to the above. Wash acid and loose mortar off with high pressure water until the slush is removed. Test with litmus paper to be sure acid is removed entirely. Final rinse with a 1% solution of ammonia is beneficial to be sure any traces of the acid is neutralized.

Grinding is not recommended because it make the surface smooth, which is opposite to the surface profile we are trying to achieve.

If compressed air is used on the surface, it must be fitted with an oil trap to produce oil free air. Never use sweeping compounds prior to application of products to a floor. They contain oils and waxes which will contaminate the surface. Chipping tools often leave particles that have been broken or fractured, but not dislodged. These particles should be removed by high pressure blasting.

The American Concrete Institute provides a wealth of information in 503R-93, *Use of Epoxy Compounds with Concrete*, specifically regarding non-destructive test methods for determinng the suitability of the prepared concrete to receive the epoxy-resin sustem. This “Pipe-Cap” test is recommended in determinng tif the concrete is solid and ready to receive the expox-resin system.
Oil and grease soaked surfaces make for extremely poor adhesion. Even if degreasers and cleaners are used, they usually only remove the surface oil, at best. Subsurface oil will work its way to the top, in time and destroy the bond of the subsequently applied material. If a degreaser is utilized, please see the product data on K Pro CD, in the miscellaneous section of the catalog.

In addition, products brought to a featheredge are inherently weaker, than if they are done properly. Some products cannot be feather-edged at all. For this reason, we recommend that the concrete should be cut around the perimeter of the repair area with a concrete saw to provide a straight vertical butt joint of at least 1/4"-1/2" deep at the edges.

Concrete should be at least 28 days old or substantially cured to the equivalent design strength prior to application of epoxy products to avoid trapping water/moisture beneath it, and to mitigate any potential shrinkage cracks that might telegraph up through the epoxy coating or topping. If application is to occur prior to a full twenty-eight days of curing, plese call Kaufman Products directly to discuss your appliction. In many cases, such as precast and pre-stressed concrete, it is certainly fine, within a few days of stripping the concrete from the forms, to used epoxy compounds.
For slabs on grade, it is imperative that the contractor makes sure that a vapor barrier is used and not punctured during the placement of the concrete. In addition, never apply a topping or mortar over a joint.

We also always recommend the use of a neat epoxy primer prior to application of epoxy mortars and go\routs. The mortar or grout musht be applied while the primer is tacky. If primer begins to dry, re-coat immediately with another coad of the primer.

TEMPERATURE
Specifications sheets for each product show the pot life, cure time, viscosity, etc. However, those specifications are given for a specific quantity of approximately 1 pint of neat material, and a specific temperature, 75°F for a

Class C and 50ºF for a Class B material, as specified by the American Society of Testing Materials (ASTM) standard C-881, *Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete*. Our products comply with this specification and as such should only be used within the temperature range for which they are manufactured. If the epoxy system is used outside of the referenced temperatures, then the specifications in our literature may not be met.

If the product is used at the high end of the specifcation range, the pot life and cure time will be shortened. Likewise, if the temperature during application goes to the low end of the referenced temperature range, the pot life and cure time will be extended. Movements further away from the referenced temperature ranges will change these characteristics to a much greater extent.

The temperature for application of these materials is based on air and surface temperature of the substrate. If the temperature of the substrate is hot, it will accelerate the curing. Likewise, if the temperature is low, it will retard or stop the curing. We suggest heating or cooling the concrete and/or steel that will be in contact with the epoxy to bring it into the specification range.

QUANTITY
The batch size plays a large part in effecting performance. Large batch sizes will accelerate the set due to exothermic heat. Likewise small batches will take longer to set. This change in viscosity will dramatically change the handling characteristics of the product. Never mix large batches of epoxy liqud without adding enough of the appropriate aggregate to help dissipate the heat.

AGGREGATE
Selection of the proper aggregates for epoxy systems is both an art and science. We recommend SurePoxy Mortar Aggregate or K Pro HP Grout Aggregate for use in your mortar and grout systems. Use of common clay or masonry sands will not produce the results claimed in our literature.

In addition to being properly graded for the job intended, the aggregate must be properly washed and absolutely dry. The aggregate should be of a similar temperature as the epoxy system in which they will be mixed. The addition of aggregate to the epoxy-resin system will extend the pot life. Increasing amounts of aggregate will extend the pot life, increasingly. The aggregate may also be heated, during wintertime, to help with the epoxy set time. In short, the pot life and cure time of all epoxy systems are depependent on the temperature, aggregate added, and quantity used.

THINNING
These products are sold as high or 100% solids. Thinning is not normally recommended. however, some applictions may require its' use for unusual reasons. In those cases, we recommend the use of SurePoxy Thinner or MEK.

VERTICAL/OVERHEAD LOADS
When used as a vertical/overhead anchoring adhesive that will carry a sustained tension load, this product is intended only for short-term use. This product is manufactured to meet all aspects of ASTM C-881 which includes no performance standards with regard to creep and/or deformation. It is the responsibility of the engineer and/or contractor to determine the suitability of this product for the intended use.

STORAGE
Never store epoxy materials below 50° F. If they are stored in a very cold place, each component could separate and coagulate. Any product stored below this temperature should be brought to at least 90° F for several days, and then stirred well before use as this will ensure that the original characteristics are still accurate. Storage in air-conditioned or heated trailers, cold or hot water baths are recommended.

COLOR
All hardened epoxy products will change color after exposure to ultraviolet rays from sunlight. Some products may take longer than others, but they all will change. This color change usually gives the product a yellow or greenish cast. Even products used inside buildings will be affected by this color change, due to daylight coming inside.

NOTE
Material is a vapor barrier after cure. Do not apply over existing expansion joints or moving cracks. Some pigmented coating requires an induction period with re-stirring after 10 minutes. Check on their individual instructions. Read the complete Ssafety Data Sheet and Product Data Sheet prior to use. **The NTSB has stated that epoxy products are suitable for short term loads only. Our product line should never be used in sustained tensile load adhesive anchoring applications where adhesive failure could result in a public safety risk. Consult a design professional prior to use.**