

Specifications for Modified Epoxy Resin

Prime Epoxy Resin products are generally specified in sections 11600 and 12345 of most equipment specifications.

Prime Epoxy Resin Work Surfaces shall be 1" (25mm). Work surfaces shall be monolithic and molded from a modified epoxy resin. Work surfaces shall have a smooth, non-glare finish. Work surfaces shall be installed with a uniform 1" (25mm) overhang on the front and exposed ends. Work surfaces shall have a continuous drip groove 1/8" (3mm) wide on the underside of all exposed edges. All exposed edges shall be finished with a 1/8" (3mm) bevel or a 3/16" (4.7mm) radius. Work surfaces shall be provided in longest practical lengths to minimize joints.

Backsplashes shall be of the same material, thickness and finish as the work surface. Backsplashes are to be supplied loose for field application to assure proper fit at walls.

Sinks shall be selected from Prime's standard sizes. All rectangular sinks shall be molded in one piece with corners covered and bottom sloped to the outlet. All rectangular sinks may include Prime's PSO-3R 1-1/2" (38mm) sink outlet, POF-1R overflow and PSS-2R stopper. Sinks, outlets and stoppers are to be supplied loose for field application.

Fume Hood Tops shall be selected from Prime's standard sizes. Fume hood tops shall be dished a minimum of 1/4" (6mm) to contain spills unless otherwise specified on architectural drawings.

Typical color of work surfaces, sinks, accessories and fume hood tops shall be black or gray.

PHYSICAL PROPERTIES

Flexural Strength	ASTM-Method D790
Compressive Strength	ASTM-Method D695
Hardness, Rockwell M	ASTM-Method D785
Density GR/CC	ASTM-Method D792
Water Absorption	ASTM-Method D570
Flame Test	ASTM-Method D635

HEAT RESISTANCE

A high form porcelain crucible (size: 15ml capacity) was heated over a Bunsen burner until the crucible bottom obtained a dull, red heat. Immediately the hot crucible was transferred to the Prime work surface and allowed to cool to room temperature. Upon removal of the cooled crucible, there was no effect to the Prime work surface; no blisters, cracks or any breakdown of the work surface whatsoever. The Prime work surface showed no blistering or cracking when exposed to direct flame. An overturned 3/8" (9.525mm) Bunsen burner, adjusted to quiet flame with a 1 1/2" (38mm) inner cone, was allowed to remain on the work surface for a period of five (5) minutes with no effect.

CHEMICAL RESISTANCE

Tops shall be highly resistant to the normally used laboratory reagents. The following is the test that was performed at an independent test laboratory.

Installation Procedure

Epoxy resin countertops are custom fabricated from your shop drawings, including sink cutouts, drillings and special cutouts. Each piece is numbered and should be installed exactly as per the shop drawings, to minimize normal variations. Tolerances in thickness and warpage (due to the very nature of resin) are held to a minimum, and are easily corrected in the field by shimming or sanding. Note: Sanding of the top surface is not recommended.

Epoxy resin tops should be cemented together using a black epoxy adhesive (in some instances, where flexibility is most important, a silicone adhesive should be used. This will facilitate breaking a joint for top replacement). The epoxy adhesive will set firmly, and breaking this bond is extremely difficult. Be sure the room temperature is 60 ° or warmer for better results.

The surface to be joined should be clean and free from coatings, dust or dirt. We recommend using acetone or lacquer thinners to wipe those edges in question. If a reduction in ultimate clean up time is desirable, masking tape can be used to mask adjacent areas, then removed after final cementing.

Lay out the whole item before cementing. Shim where necessary, clamp and align all pieces carefully. Leave 1/16" to 1/8" between pieces at joints. Using a putty knife or plastic spreader, push the cement into the joints and smooth out. Wipe away any excess cement with a cloth moistened in cold water and then remove masking tape.

After a period of 1-2 hours (longer if colder than 60°) the joints can be dressed up. Let set overnight, for a bond of sufficient strength. It may be necessary to apply additional cement after the first application, as it sometimes shrinks in the joints. We recommend a thorough cleaning of the tops with detergent and water. If building construction is still in process, cover all tops with a suitable material to protect.

Bonding Of Bench Tops To Cabinets

Epoxy adhesive or silicone is recommended. The area to be bonded on both the furniture and the underside of the top should be sanded with coarse sandpaper. As before, dust should be removed with acetone or lacquer. The adhesive may be applied to the tops and cabinets and fixed in place at the same time tops are being bonded together.

Field Fabrication

If necessary, emergency field cuts can be made using a carborundum abrasive blade (masonry type). If the piece to be cut produces an exposed edge, it can be cleaned up with abrasive paper and then dressed with an oil based product (i.e. WD-40). Service holes can be drilled using a carbide masonry drill, which will require frequent sharpening. Diamond tools are recommended for best results.

NOTE

Due to the very nature of resin, tolerances in thickness and minor warpage can develop. It is not uncommon to have a 1/8" warp in a 4 feet, or 1/16" difference in thickness. Careful installation when aligning sections is recommended, we emphasize the importance of installing all tops in numerical order. Prime assumes no responsibility for the removal of material that has been cemented in place.

Care And Maintenance Of Epoxy Resin Tops

A regular schedule of maintenance is the most effective means to prolong the surface life and attractiveness of Epoxy Resin epoxy table tops. It is important that the counter top surface be protected during installation, after installation, and before acceptance. However, if some minor surface or edge damage does occur, we recommend the following procedures be used:

For light scratches and scuff marks, clean the area thoroughly with mild soap and water, then apply a light coat of an oil based product (i.e. WD-40). This will bring back the black color of the work surface.

For deep scratches on the work surface, clean the scratch or gouge thoroughly and remove any loose debris. Mix an appropriate amount of the two part black epoxy cement being used as a joint compound. Note: Follow mixing instructions on the label. Observe all cautions listed by the manufacturer. Using a putty knife, fill in the scratch until it is level with the surrounding top surface. Remove any excess epoxy cement from the working surface immediately adjacent to the scratch. Let the patch cure according to the directions on the can.

For chips on the front edge of the counter tops, clean and prepare the area to be patched as done for a deep scratch. A very small chip on the front edge can sometimes be sanded out. Mix an appropriate amount of epoxy cement and apply to the chip. The front edge is a sanded finish and the damaged area can be sanded to a 150 grit finish.

We do not recommend sanding the work surface itself, as this is a molded product, which has a matte finish by design and is very difficult to duplicate using sandpaper.

WARNING

Ordinary Tap Water Contains Minerals That May Discolor Smooth-on Adhesive!

Duron recommends using a clear isopropyl alcohol or clear thinner for smoothing joints and general clean-up.

Chemical Spot Test for Modified Epoxy Resin

Procedure

With nonvolatile reagents, approximately ½ cc of the reagent was applied to the surface tested. The reagent was covered with a wide mouth bottle to retard evaporation. With volatile reagents, a 1" (25mm) ball of cotton was saturated with the reagent and placed on the surface tested, then covered with a wide mouth bottle. All surface test spots were wet with reagent for a 16 hour period. After exposure, the surface was washed with soap and water, rinsed and dried before examination and evaluation.

Acetic Acid, 5%	Iso-Octane
Acetic Acid, Glacial	Kerosene
Acetone	Methyl Alcohol
Ammonium Hydroxide, 28%	Mineral Oil
Aniline Oil	Nitric Acid, 70%
Benzene	Nitric Acid, 10%
Carbon Tetrachloride	Oleic Acid
Citric Acid, 10%	Olive Oil
Cottonseed Oil	Phenol
Diethyl Ether	Soap Solution, 1%
Dimethyl Formamide	Sodium Carbonate, 20%
Distilled Water	Sodium Carbonate, 2%
Detergent Solution, ¼%	Sodium Chloride, 10%
Ethyl Acetate	Sodium Hydroxide, 10%
Ethyl Alcohol, 95%	Sodium Hypochlorite, 5%
Ethyl Alcohol, 50%	Sulfuric Acid, 60%
Ethylene Dichloride (Dichloroethane)	Sulfuric Acid, 33%
Heptane	Toluene
Hydrochloric Acid, 37%	Transformer Oil
Hydrochloric Acid, 20%	Turpentine
Hydrogen Peroxide, 20%	100 Hr Soaked Cellulose Sponge Test
Hydrogen Peroxide, 3%	Boiling Water, Trickling, 5 Minutes

