

## **APPLICATION INSTRUCTIONS**

### **Thin Film Coating Systems**

#### **GENERAL**

Thin film coating systems are usually 2-coat epoxy systems or an epoxy primer and 1 or 2 coats of aliphatic polyurethane. Finished thickness of these systems is 4-20 mils and they are normally applied by roller or airless spray.

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

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

#### **APPLICATION OF EPOXY 100 PRIMER COAT**

Material may be applied to a damp surface, but standing water should be removed. If surface is dry, sweep well to remove dust.

Recommended coverage is 200-300 sq. ft. per gallon of mixed material. Any water added to the system is not considered for purposes of coverage. A heavy primer coat improves gloss and cleanability of the finished system.

Mix only the amount of material that can be used in a 3-4 hour period. For large jobs or when the weather is hot, mix a smaller amount first for brush work.

Stir colored Part A, bringing settled pigments up from bottom of container before adding Part B. Mix 4 Parts A to 1 Part B. Stir well for 2 minutes using a wooden paddle, being sure to scrape sides and bottom of mixing vessel. Add water to achieve a good working consistency, not more than 2 quarts to 5 quarts of mixed material. Do not overthin.

Apply using a bristle brush and non-shedding medium nap roller. Do brush work first being careful to feather out the edges. When rolling material, pour a workable amount from the bucket onto the surface and disperse evenly with the roller being careful to smooth out ridges. Rolling once side to side and once up and down is suggested.

When coating porous concrete, especially on driveways, a heavier base coat is desirable. This can be accomplished by rolling the first coat in the usual manner and then, while wearing golf shoes, applying additional material to the freshly coated area.

For exterior polyurethane finishes and for all Design Roller Systems, a non-skid surface is obtained by sprinkling 28 mesh quartz granules into the epoxy primer. This should be done section by section while the primer is still wet. Golf shoes are used to walk over the uncured coating. The aggregate should be sprinkled sparingly from a gallon metal can with small nail holes on the bottom. Hold the can above the head and walk at an even pace shaking the can to disperse the particles evenly. Ideal distribution of the aggregate is 25-35 particles per square inch. An alternate method of achieving slip-resistant is to incorporate a lightweight particle into the material prior to application. Complete all brush work and then add 1 - 5 oz. cup of 30 mesh "Res-N-Sand" to each mixed gallon of product. Do not use any water added for this calculation. Mix well and apply the material from a 5 gallon pail or roller pan. Backroll well to achieve an even distribution.

#### **APPLICATION OF THE 400 PRIMER COAT**

Epoxy 400 Damp Surface is a solvent free resin that bonds well to damp concrete. It is used in place of Epoxy 100 as a primer when a higher film build is desired. This material may be applied to any thickness.

Mix only that amount of material that can be spread during the pot life of the product - 35 minutes for regular cure and 15 minutes for fast cure. Mix the pigmented Part A well before adding Part B. Mix according to its published mixing ratio. Stir well for 2 full minutes using a wooden stir stick being sure to scrape the sides and bottom of the mixing vessel. If the material is mechanically mixed, use a low speed drill with a Jiffy type mixer. One full minute of drill mixing is sufficient.

The material should be reduced with 15% Acetone to reduce viscosity and achieve better penetration. Pour the mixed material immediately onto the floor in strips. Brush trim the edges and spread the material with a 3/8" nap roller, notched trowel or squeegee. Normally the trowel or squeegee is used when a thicker coating is desired. The mechanic doing the rolling should wear spiked shoes to walk onto the wet coating and backroll well for good distribution.

A slip -resistant surface may be achieved by sprinkling quartz aggregate or suitable sized aluminum oxide into the primer before it has cured. When choosing the particle size, remember that at least 50% of the particle must be embedded in the resin for good, long-term performance. Contact our technical service department for specified guidance.

The particles are sprinkled out of a shaker can using the same method as described for Epoxy 100. Particle spacing of approximately 1/8" apart will give good traction and easy cleanability.

#### **APPLICATION OF POLYURETHANE FINISH COAT**

Polyurethane finish materials should be applied after the epoxy has dried overnight. In warmer weather, if more than 24 hours elapses between coats, check to determine if the epoxy will still soften in the presence of solvent. Do this by pouring a small amount of xylene or lacquer thinner on the surface and wait several minutes. If the coating does not soften, abrade the surface with 80 grit sandpaper or steel wool before proceeding to insure intercoat adhesion.

Use a razor blade scraper to remove any debris which may have been rolled into the epoxy base coat. Sweep well before coating.

Application of polyurethane must be done on a perfectly dry surface. Recommended coverage is 275-325 sq. ft. per gallon. Apply using a bristle brush and a non-shedding short nap roller.

Mix only that amount of material that can be used in a 1 hour period. It is advisable to mix a smaller amount first and complete brush work before mixing for the body of the job.

Stir colored Part A, bringing settled pigments up from the bottom of container before adding Part B. Mix Parts A and B in the ratio stated on the individual product data sheet. Stir well for 2 minutes using a wooden paddle being sure to scrape sides and bottom of the mixing vessel.

After brush work is completed, apply polyurethane to the body of the job. Pour a workable amount of material from the 5 gallon pail onto the surface and disperse evenly with the roller. Roll first laterally across the body and then up and down for the final distribution. Stir the material before each pouring.

If the weather is hot, be sure to work smaller areas. Be aware that after a certain point in the drying process, rolling back over the coated area can produce a slight color change.

### **APPLICATION OF EPOXY 100 OR EPOXY 400 FINISH COAT**

Use a razor blade scraper to remove any debris which may have been rolled into the primer. Sweep well before coating.

When rolling epoxy finish coat materials, it is important to use the material while still early in the pot life. If the product has advanced too far into the work life, a color change may occur when rolling back into the just coated area. Have enough mechanics rolling to keep a "wet edge."

Epoxy 400 and all 100% solids materials should be poured on the floor immediately after mixing. These materials may be thinned with up to 15% MEK or Glycol Ether EP. Epoxy 100 should be poured from the pail as you go. Brush trim the edges. Roll first laterally across the body and then up and down for the final distribution. Avoid leaving puddles or ridges as these will be evident after the coating cures.

### **APPLICATION OF CLEAR GARAGE FLOOR COATING**

This cost effective system is designed as a 1-coat application applied to damp concrete. After the etching process has been completed, squeegee off any standing water. Mix the Epoxy 400 Damp Surface at the required 2-1 ratio. Coverage will be 200-300 sq. ft. per gallon, depending on the porosity of the concrete. Mix only the amount that can be spread in the 30-40 minute pot life of the material.

It is advisable to work the garage floor in sections. The mechanic must wear spiked shoes. Pour the material in strips around the perimeter and body of the section being coated. Brush trim the edges and vertical areas. Vertical areas need to be coated twice for adequate coverage.

Spread the material over the surface with a flat trowel or squeegee and backroll with a 3/8" nap roller well in both directions to obtain a good distribution. The goal is to obtain a uniform gloss throughout the floor. Watch for areas that soak in and apply more material as needed. When the coating has been applied to the entire job, look again for uneven areas or bubbles. Walk back on the coated surface and pour additional material if necessary and roll well.

## **THE DESIGN ROLLER SYSTEM**

### **GENERAL**

After the surface has been properly prepared, apply Epoxy 100 primer at the rate of 225-275 sq. ft. per gallon. Incorporate slip-resistant particles into the primer as described in previous section.

After the primer has cured overnight, apply pigmented Cem-Seal in the base color chosen. Brush trim the edges and joints first. Cem-Seal may be thinned with water up to 10% if necessary. In very hot weather, dry time can be slowed by the addition of up to 15% Glycol Ether DM. Pour the material from the pail and spread with a 3/8" nap roller. Roll the material laterally across the body and then up and down for final distribution (crosshatch rolling). Apply the material 250-300 sq. ft. per gallon, being sure to completely hide the primer.

The Cem-Seal will dry in 15-40 minutes, depending on conditions. After material has become tack free, apply the roller design.