KEY RESIN COMPANY
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Installation Instructions

Key Epocon SL (Epocoat)

Moisture Vapor Control System

I. GENERAL INFORMATION

KEY EPOCON SL is designed as a concrete slab surface treatment when moisture vapor transmission exceeds 3 pounds of moisture as tested with the calcium chloride test procedure (ASTM F-1869-11), or for use when concrete slabs test higher than 79% as tested with the relative humidity probe test (ASTM F-2170-11). The entire concrete substrate should be treated when any individual test confirms excessive moisture, as it is impossible to spot-treat with a moisture mitigation system.

II. SURFACE PREPARATION

Surface Preparation is the most critical portion of any successful resinous flooring system application. All substrates must be properly prepared with ***Shotblasting method ONLY*** to a minimum surface profile of ICRI CSP-3 to a maximum CSP-6 (www.icri.org) as outlined in **KEY RESIN COMPANY'S TECHNICAL BULLETIN #1**, unless alternative method is approved by Key Resin Technical Service**.** Specific attention should be paid to the following:

A. Concrete Placement
B. Curing and Finishing Techniques of the concrete substrate
C. Age of Concrete
D. Previous Contamination of the substrate
E. Present Condition of the Substrate

Also, the temperature and humidity conditions of the area to receive the flooring system should be checked. An optimum room temperature of 75ºF with a minimum slab temperature of 60ºF is required for proper cure of the resin flooring system.

III. MATERIAL QUANTITIES

Guideline System Requirements for 1000 ft²

Key Epocon SL Moisture Vapor Control System--100-125 mils	*Qty/ 1000 ft²*	*Coverage Rate*
1. Key Epocoat Primer/Scratch Coat—add 5% water (optional)	6 gallons	160 ft^2/gallon
2. Key Epocoat Body Coat	43 gallons	18 ft^2/gallon*
3. Key #730 Filler Sand (80-100 mesh)	250 pounds	mixed with Epocoat
4. Key Broadcast Sand (30 mesh, or 40-60 mesh) (sand broadcast step may be deleted if smooth finish is desired)	300-500 lbs	0.3-0.5 lbs/ft^2

*Note: Coverage rate of Key Epocoat mixed with Key #730 Sand is 18 ft²/gallon of mixed slurry. Typical batch size: 2.5 gallons Key Epocoat + 1 gallon (13 lbs.) Key #730 Filler Sand = 3.3 gallons of mixed slurry, covering 60 ft^2 at 90 mils.

Note: Total system thickness is nominal 100-125 mils (1/8") as outlined. Sand broadcast step #4 may yield thickness slightly greater than 125 mils. It is ***required*** to add Key 730 Sand (80-100 mesh) as a filler to the Key Epocoat bodycoat during mixing as outlined, for both smooth and broadcast options.

IV. INSTALLATION

Note: Route cracks larger than 1/16" and fill with sand-filled Epocoat with NO ADDED WATER (i.e., bodycoat mix design) during the scratch coat application. If filling control joints (sawcuts) with the intention to cover the filled joint with the Key Epocon SL system and the floor system, follow the same procedure as used for cracks. If using Key #580 Flexible Epoxy Membrane for overlaying cracks or sawcuts, the Key #580 must be applied over the finished Key Epocon SL system (i.e., over the sand broadcast, after sweeping and vacuuming all loose or poorly adhered sand, or over smooth Key Epocon SL). If applying Key #580 over sand broadcast finish, factor an additional 20%-30% material to achieve a minimum 32 mils over the sand texture. Be aware that flexible membrane should only be used under aggregate-filled floor systems unless exceptions are approved by Key Resin. Be aware that flexible membrane used to treat isolated cracks or joints may be evident through 1/16"-1/8" floor toppings as a slightly raised area, a minimum 3/16"-1/4" topping is recommended to reduce this effect, or apply the Key #580 Membrane over the entire floor area.

1. Mixing ***Key Epocoat***
   a. Do not alter mixing ratios in any way. Part I and Part II are supplied in the correct mixing ratios. Always mix a complete unit in the proportions supplied, or if using a 5 gallon unit, carefully split Parts I and II precisely into exact half portions if mixing in a small mix vessel or pail (pre-mix Part II before splitting). If mixing a full 5 gallon unit in a very large mix vessel such as a 30 gallon galvanized metal trash can, additional mixing time with a large mix drill and double blade Jiffy mixer will be necessary to ensure adequate mixing.
   b. Pre-mix Epocoat Part II before combining with Epocoat Part I. Also do the pre-mixing before splitting units. Mix material ***thoroughly*** for approximately 3-4 minutes to form a homogenous consistency using a slow speed drill and "Jiffy" blade. **IMPORTANT:** Do not add any water (if used for Primer coat) until this minimum mix time is achieved, then continue to mix for 1 additional minute with the added water. Do not entrap excessive air. Move mixer around and scrape all sides and bottom of container to ensure thorough mixing.
   c. For primer/scratch coat material: Optionally add 5% water to lower viscosity (6-8 oz per 1.25 gallons Epocoat, 12-16 oz per 2.5 gallons Epocoat, or 24-32 oz per 5 gallons Epocoat). Do not add Key #730 Filler Sand to the primer/scratch coat material.
   d. For bodycoat material: Do not add water to lower viscosity unless approved by Key Resin Technical Service. After mixing Epocoat Part I and II as outlined previously, continue mixing and add Key #730 Filler Sand at rate of 1 gallon (13 lbs) per 2.5 gallons Epocoat, continue mixing until thoroughly blended, or about 1 additional minute.
   e. For material used to fill cracks/joints: Do not add water. After mixing Epocoat Part I and II as outlined previously, continue mixing and add Key #730 Filler Sand at rate of 1 gallon (13 lbs) per 2.5 gallons Epocoat, continue mixing until thoroughly blended, or about 1 additional minute.

2. Application of ***Key Epocoat***
   a. Primer/Scratch Coat: Apply with a squeegee and short nap roller at a coverage rate of 160 ft^2/gallon. After squeegee application, back roll with the short nap roller to achieve a uniform coverage. Allow to cure hard enough for light foot traffic before application of bodycoat, about 3-4 hours at 75 degrees F.
   b. Crack/Joint Filling: Use Epocoat Bodycoat mix formula without the additional water. Additional sand may be added if desired, but **DO NOT** create a dry-pack consistency mortar, it must be very resin rich or cure problems may result. Due to increased thickness of material the filled crack/joint should ideally cure for a minimum of 12 hours before overlaying with the Epocoat bodycoat slurry. Schedule this work a day before the primer application or same day, depending on when the bodycoat is to be installed.
   c. Drain/Termination Key-Way, Spalls, Pop-Outs: For these and other areas thicker than 1/8", use Epocoat Bodycoat mix formula without adding water, and add additional sand (730 Sand or larger mesh, or BMA-50 blended sand) as needed to create a resin rich mortar or thick slurry, but **DO NOT** create a dry-pack consistency mortar, or cure problems may result. **DO NOT** use fumed silica (e.g., Cab-O-Sil, Aerosil) under any circumstances.

   d. Bodycoat: Mix as outlined in steps 1-a, b, and d. Apply mixed material using a cam/pin gauge rake set at 1/8", or ½" V-notched trowel or V-notched metal rake. **DO NOT** use V-notch squeegee to avoid thickness inconsistencies. Immediately backroll with a looped roller (protruding loop style only!) or spiked roller. A spiked roller may aid with release of entrained air but will not help to move unevenly applied material.

      Typical batch size (Bodycoat): 2.5 gallons Key Epocoat + 1 gallon (13 lbs) Key #730 Filler Sand = 3.3 gallons of mixed slurry, covers 60 ft^2 at 90 mils (18 ft^2/gallon). ***80-90 mils is the minimum slurry thickness required and 125 mils is the maximum slurry thickness allowed***. Check thickness with a gauge to ensure consistent thickness is achieved and maximum thickness is not exceeded.

      IMPORTANT: DO NOT EXCEED 125 MILS (1/8") THICKNESS IN BODYCOAT SLURRY UNLESS ADDING ADDITIONAL FILLER SAND OR BLENDED MORTAR AGGREGATE, OR CURE PROBLEMS MAY RESULT (e.g., Mud Cracking, Poor Adhesion).

   e. Optional: Broadcast surface with 30 mesh sand or 40-60 mesh sand to excess (30-50 lbs/100 ft^2) to achieve nominal 1/8 inch. Broadcasting procedure should begin within 5-10 minutes after spreading resin to ensure adequate absorption of aggregate into resin. Sweep and vacuum excess or loose sand after hardening, allow for 16-24 hours of cure time, depending on temperature. NOTE: Higher humidity and cooler temperature will inhibit the release of water from the Epocoat Bodycoat and slow the cure time.

   f. If a smooth finish is desired, delete the sand broadcast procedure. A smooth finish may be preferred for thin topcoats needing a smooth finish, or if Key #580 Flexible Epoxy Crack Isolation Membrane will be used, etc. If the finish is to be sanded before application of the subsequent floor covering materials, allow the Epocoat Bodycoat to cure 48-72 hours to obtain sufficient hardness.

3. Top Coating, Overlays, Floor Coverings

Apply top coatings or resin floor system directly over broadcast surface or smooth surface. Prime surface with appropriate Key Resin primer if required (varies by product), or apply Key Resin bodycoat, mortar, etc. For vinyl flooring, VCT, carpet, and other floor coverings, consult with manufacturer of floor covering for requirements. A self-leveling cement underlayment may be required before application of water based floor covering adhesives to

ensure proper cure, consult with adhesive manufacturer and/or self-leveling cement manufacturer for their requirements.

V. WARRANTY

Key Resin Company offers warranties for systems installed by approved installers. Contact **Key Resin Company** for details and warranty pre-approval requirements.