



# Installation Instructions

## Key Quartz B-125

### I. GENERAL INFORMATION

**KEY QUARTZ B-125** is a decorative resin flooring system consisting of clear, 100% solids epoxy resin and colored quartz aggregate. **KEY QUARTZ B-125** is finished with clear catalyst-cured coats of resin available in a satin or gloss finish. The installed system can be textured or smooth as desired. Easy maintenance minimizes bacterial growth. **KEY QUARTZ GRANULES** are available in a series of pre-blended patterns or solid colors

### II. SURFACE PREPARATION

**Surface Preparation** is the most critical portion of any successful resinous flooring system application. All substrates must be properly prepared to a minimum CSP-3 surface profile as outlined in **KEY RESIN COMPANY'S TECHNICAL BULLETIN #1**. If moisture testing confirms excessive levels of moisture, apply moisture control system recommended by Key Resin. Specific attention should be paid to the following:

- A. Concrete Placement--An efficient vapor barrier should be under slabs on or below grade to prevent moisture migration.
- 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
  1. Overlaying Ceramic Tile or Quarry Tile: See section E.
- F. Moisture Content and Moisture Vapor Emission Rate of Concrete Substrate

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

### III. MATERIAL QUANTITIES

#### A. Guideline System Requirements for 1000 ft<sup>2</sup>

<i>Key Quartz B-125 (1/8" Double Broadcast)</i>	<i>Qty./ 1000 ft<sup>2</sup></i>
1. Key #502 Primer/Low Modulus Binder	4 gallons
2. Key #510 Epoxy Binder (1 <sup>st</sup> seed coat)	10 gallons
3. Key Blended Granules	400-500 pounds
4. Key #510 Epoxy Binder (2 <sup>nd</sup> seed coat)	12 gallons
5. Key Blended Granules	350-400 pounds
6. Key #510 or Key #512 Epoxy (grout coat)	10-12 gallons
7. Key #510 or Key #512 Epoxy (optional seal coat)	5-10 gallons

8. Key #450 Urethane Topcoat (if specified)	3-4 gallons
2A&4A: Alternate binder: Key #511	10-12 gallons
6A. Alternative grout: Key #470, #615, #630	10-12 gallons
7A. Alternative seal coat: Key #470, #615, #630	5-10 gallons
8.A Alternative Urethane: Key #465, Key #467, Key #445, Key #446	Varies

## IV. INSTALLATION

### A. Priming

While priming is optional on broadcast systems, Key Resin Company recommends that every flooring system be installed with a primer to insure maximum adhesion to the prepared substrate. Priming will also help to seal air in the concrete and prevent outgassing and air bubbling in the finished system. Use **Key Epocon SL** or **Key Urecon SL** if moisture vapor emission rate or moisture content exceeds recommended maximums. Consult with Key Resin for recommendations.

1. Mixing **Key #502 Primer/Low Modulus Binder**
  - a. Stir each component prior to mixing.
  - b. Mix two (2) parts by volume of Part A (Base) with one (1) part by volume of Part B (Hardener) for three minutes with a low speed electric drill mixing paddle.
  - c. If thinning is desired, add no more than one pint of xylene per gallon of epoxy at time of mixing.
  - d. ***Do not mix more material than can be immediately poured out and spread/backrolled in 40 minutes. Do not leave mixed material in the pail for longer than 5-10 minutes or working time will be significantly reduced!***
2. Application
  - a. Pour primer onto the prepared concrete.
  - b. Spread with either a flat trowel or squeegee to a coverage of to 250 ft<sup>2</sup> per gallon.
  - c. Back roll with a short nap roller.
3. Allow Primer to cure for 12 to 16 hours. If the possibility exists that the cure time will exceed 24 hours before applying the first seed coat, broadcast the wet primer lightly with dry 30-mesh silica sand or quartz.

### B. First Seed Coat

1. Mixing **Key #510 Epoxy Binder**
  - a. Stir each component prior to mixing.
  - b. Mix four (4) parts by volume of Part A (Base) with one (1) part by volume of Part B (Hardener) for three minutes with a low speed electric drill mixing paddle.
  - c. ***Mix only that amount of material that can be immediately poured out in ribbons and spread/backrolled in 25-30 minutes. Mixed material left in the bucket longer than 5-10 minutes will have significantly reduced working time.***
2. Application
  - a. Immediately pour mixed material onto floor in strips and spread at a rate of 90 to 100 ft<sup>2</sup> per gallon using a trowel, flat squeegee or notched squeegee. A notched trowel or notched squeegee will help to achieve even distribution. Lightly backroll with a medium or short-nap roller to smooth and level any tails or ridges.

- b. To minimize marks in the finished system, the contractor should wear "spiked" shoes while walking on wet material.
- c. Allow the material to level for approximately 10 to 15 minutes.

*Termination points at the end of the day should be made at doorways, expansion joints, etc. If it is not possible to terminate at these points, 2" masking tape should be placed in a straight line at the ending point. Carefully trowel the material up to and slightly over the inside edge of the tape. Allow material to cure for about thirty (30) minutes and remove the tape.*

3. Broadcast to excess

Broadcast *Key Blended Quartz Granules* into the wet floor system until the surface of the system appears dry. Be careful not to clump the material or produce high spots.

Broadcast by hand or power blower high into the air, doing multiple light broadcasts, gradually filling up the resin. Approximately 4 to 5 pounds of sand will be needed for 10 ft<sup>2</sup> of flooring. If terminating the system with tape as described in note above, broadcast sand up to the tape and remove after material cures for thirty (30) minutes. **Remember to only walk on the wet surface while wearing "spiked" shoes!!! Do not walk on floor after broadcasting.**

4. Allow the seeded floor to cure overnight, 14-16 hours. Sweep excess sand with a stiff bristled broom or power vacuum. Optional: It helps to sand the floor in two directions using a pole sander, rubbing stone or buffer with 36 grit sandpaper. Be careful with buffer to avoid missing spots or burning a pattern into the quartz. Sweep and vacuum after sanding procedure.

## C. Second Seed Coat

1. Mixing **Key #510 Epoxy Binder**

- a. Stir each component prior to mixing.
- b. Mix four (4) parts by volume of Part A (Base) with one (1) part by volume of Part B (Hardener) for three minutes with a low speed electric drill mixing paddle.
- c. **Mix only that amount of material that can be immediately poured out in ribbons and spread/backrolled in 25-30 minutes. Mixed material left in the bucket longer than 5-10 minutes will have significantly reduced working time.**

2. Application

- a. Immediately pour mixed material onto floor in strips and spread at a rate of 80 to 90 ft<sup>2</sup> per gallon using a trowel, flat squeegee or notched squeegee. A notched trowel or notched squeegee will help to achieve even distribution. Lightly backroll with a medium or short-nap roller to smooth and level any tails or ridges.
- b. To minimize marks in finished system, the contractor should wear "spiked" shoes while walking on wet material.
- c. Allow the material to level for approximately 10 to 15 minutes.

*Termination points at the end of the day should be made at doorways, expansion joints, etc. If it is not possible to terminate at these points, 2" masking tape should be placed in a straight line at the ending point. Carefully trowel the material up to and slightly over the inside edge of the tape. Allow material to cure for about thirty (30) minutes and remove the tape.*

3. Broadcast to excess

Broadcast *Key Blended Quartz Granules* into the wet floor system until the surface of the system appears dry. Be careful not to clump the material or produce high spots.

Broadcast by hand or power blower high into the air, doing multiple light broadcasts, gradually filling up the resin. Approximately 3 to 4 pounds of sand will be needed for 10 ft<sup>2</sup> of flooring. If terminating the system with tape as described in note above, broadcast sand up to the tape and remove after material cures for thirty (30) minutes. **Remember to only walk on the wet surface while wearing "spiked" shoes!!! Do not walk on floor after broadcasting.**

4. Allow the seeded floor to cure overnight, 14-16 hours. Sweep excess sand with a stiff bristled broom or power vacuum. Optional: It helps to sand the floor in two directions using a pole sander, rubbing stone or buffer with 36 grit sandpaper. Be careful with buffer to avoid missing spots or burning a pattern into the quartz. Sweep and vacuum after sanding procedure.

## D. Grouting and Sealing

The grouting and sealing of a floor should be performed over the entire area receiving the system. The applicator should complete the single seed portion of the application prior to grouting and sealing. The coverage rate and number of the applied grout and seal coats dictate the final texture of the floor. Higher coverage rates will yield rougher textures.

### 1. Grouting

- a. Mix *Key #510* as described in the section above. If using *Key #512 UV Resistant Epoxy*, mix at 2:1 ratio, following mixing and cure time instructions outlined in the product data sheet.
- b. Spread the *Key #510* at a rate of approximately 75-80 ft<sup>2</sup> per gallon over the rough sand surface using a flat trowel or squeegee tightly over the surface.
- c. Lightly back-roll the material with a short nap roller to help spread the material and eliminate trowel marks.
- d. Allow material to cure at least 14-16 hours.

### 2. Seal Coat

(Optional depending on desired finish texture)

Using ***Key #510 Epoxy Binder***

- a. Mix *Key #510* as described in the section above.
- b. Application
  - i. Spread the *Key #510* at a rate of approximately 100-200 ft<sup>2</sup> per gallon (depending upon desired finish texture) over the surface using a flat trowel or squeegee tightly over the surface. If using *Key #512 UV Resistant Epoxy*, mix at 2:1 ratio, following mixing and cure time instructions outlined in the product data sheet.
  - ii. Lightly back-roll the material with a short nap roller to help spread the material and eliminate trowel marks.
  - iii. Allow material to cure at least 14-16 hours if topcoating.
  - iv. Do not open to light foot traffic for 24 hours, medium duty traffic for 48-72 hours. Full chemical cure and maximum resistance are achieved in seven (7) days.

Using ***Key #450 Urethane Topcoat (If Specified)***

- a. Mixing
  - i. Thoroughly mix each component prior to combining.

- ii. Mix two (2) parts by volume of Part A (Resin) with one (1) part by volume of Part B (Hardener) for three minutes with a low speed electric drill mixing paddle.
  - iii. **Do not mix more material than can be used in 60-90 minutes. Do not leave mixed material in the pail for more than 60-90 minutes!**
  - iv. **Important note for Satin Finish:** Add 10% SU-93 Thinner to reduce occurrence of roller/lap marks. Maintain a wet edge with previous batch or greater thickness at overlap will create a greater satin effect.
- b. Application
- i. Pour material onto floor in a line and spread with a flat squeegee to a coverage of 250-300 ft<sup>2</sup>/gallon (or specified coverage rate). "Dip and roll" procedure may be used with small batches, use within 60-90 minutes. This will yield 3-4 mils dry film thickness. Note on finished appearance: Thinner application rates (>300 ft<sup>2</sup>/gallon) will result in a slight to prominent orange peel texture, thicker application rates (225-300 ft<sup>2</sup>/gallon) will yield a more smooth finish texture.
  - ii. Immediately and slowly back roll with a short nap mohair roller (cleaned of loose hair, lint) to even the surface texture of the coating. If crossrolling will also be done, do so immediately. Do not delay backrolling/crossrolling or excessive solvent may evaporate leading to formation of microbubbles. Do not over-roll or rapidly roll the Key #450 Urethane.
  - iii. Allow material to cure 12 to 16 hours (at 75 degrees F) before applying a second coat (if specified). SU-93 Thinner and/or Key #450 Accelerator may be used as conditions require, consult with Key Resin Technical Service for specific recommendations.
  - iv. Do not open to light foot traffic for 24 hours. Full chemical cure and maximum resistance are achieved in five (5) days.

### 3. Alternative Materials

The following alternative materials may be used following the mixing and application instructions of each material (consult with product data sheet or Key Resin Technical Services):

- a. Primer  
Key Epocon SL, Key Urecon SL or Key #635 MVT for excessive moisture vapor emissions or moisture content. Consult with Key Resin for recommendations.
- b. Grout and Seal Coat  
Key #512 UV Light Resistant Epoxy for improved non-yellowing. Key #470 Polyaspartic Sealer for faster cure time situations and UV light resistance. Key #615 or Key #630 for improved chemical resistance. Cold Cure formulations may be available for very rapid cure time requirements.
- c. Urethane Finish  
Key #465 Urethane Sealer for low VOC requirements. Key #467 High Solids Urethane for low VOC and low odor requirements. Key #445 Water Based Urethane (matte finish, for approved applications only) for low VOC and low odor requirements. Key #446 Water Based Urethane (gloss finish, for approved applications only) for low VOC and low odor requirements.

## E. Procedures for Overlaying Ceramic Tile or Quarry Tile

- 1. Tile must be bonded to the substrate, any hollow sounding tiles must be removed and the cavity filled with epoxy mortar (mix Key 502 or Key 510 with BMA-50 Aggregate Blend).

2. Tile must be thoroughly cleaned and degreased, followed with rough grinding using coarse grit stones or diamonds. All glaze must be removed leaving a consistent rough texture. Follow this procedure for preparing tile base prior to overlaying with quartz cove base mortar.
3. Filling/leveling grout joints: Refer to section A Priming for mixing Key #502. Add Key Self-Leveling Filler powder to the Key #502, approximately equal parts resin to powder by volume. Adjust consistency as desired. Pour slurry consistency resin over floor in ribbons and flat trowel tight against the tile surface, filling the grout joints flush. Allow to cure. Repeat this procedure if grout joints are not filled completely with the first application and allow to cure. Be careful of uneven raised edges of tile ("crowning") that may telegraph through the leveling coat(s) of slurry. Aggressive grinding or a thick topping may be needed to completely level the tile.
  - a. Alternate material for leveling: Most self-leveling cement underlayments are not approved for use underneath Key Quartz B-125. Key Resin has tested and approved Key Self-Leveling Underlayment for selected applications, contact Key Resin for details.
4. Filling/leveling tile cove base joints: Use Key #510-CV Cove Paste resin to fill/level grout joints on vertical surfaces. Use the neat resin, do not mix with quartz aggregate. Allow additional cure time for Key #510-CV as compared to Key #502. Prior to installing quartz cove base mortar, the tile surface must be primed to create a tacky substrate as outlined in the cove base installation instructions (refer to cove base installation instructions document).
5. Proceed with typical installation of quartz cove base (refer to cove base installation instructions document) and quartz floor broadcast procedure as outlined in section B.