



# Installation Instructions

## Key Lastic SQT

### I. GENERAL INFORMATION

**KEY LASTIC SQT** is a 100% solids, two component resilient resin system containing pigmented resin and mixed with a wide selection of rubber chips. **KEY LASTIC SQT** is trowel applied to a 3/8" nominal thickness followed by grinding to provide an attractive decorative finish at 1/4". **KEY LASTIC SQT** may also be applied at 1/4" nominal thickness followed by grinding to 3/16". **KEY LASTIC SQT** provides outstanding durability, acoustical quietness, and comfort underfoot.

### II. SURFACE PREPARATION

**Surface Preparation** is the most critical portion of any successful resinous flooring system application. All substrates must be properly prepared and tested for moisture vapor emissions as outlined in **KEY RESIN COMPANY'S TECHNICAL BULLETIN #1**. If moisture testing confirms excessive levels of moisture, apply moisture control treatment Key Epocon SL. 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
- F. Moisture Vapor Emission Rate from Concrete

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> (for 3/8" Mortar Base)

|  |             |
|--|-------------|
| 1. Key #502 Low Modulus Primer                                       | 4 gallons   |
| 2. Key #585 SQT Binder   | 106 gallons |
| 3. Key ATF-20 Filler   | 885 pounds  |
| 4. Rubber Chips  | 1170 pounds |
| 5. Key #585 SQT Binder (for Grouting)                                | 2-3 gallons |
| 5A Key #470 Polyaspartic Clear (for Grouting-fast cure)              | 3 gallons   |
| 6. Key #445 Urethane Topcoat (2 coats)                               | 6 gallons   |
| 6A Key #450 Urethane Topcoat (satin finish)—2 coats may be necessary | 4-8 gallons |
| 6B Key #467-HS Low Odor Urethane Topcoat (satin finish)              | 2 gallons   |

Note: The mix design above will achieve the best combination of chip density, trowelability and ease of grinding. This mix design may be modified, experiment with test panels

before actual project installation. Quantity of filler and chips may be increased or decreased, ease of application will vary depending on mix design. *Important: Maintain a consistent chips/filler mix design to ensure a consistent finished appearance!*

Note: The system as outlined above assumes approximately 1/8" will be removed during the grinding process. This will vary depending on the contractor and equipment used. If the specification calls for 3/16" finished thickness and you believe only 1/16" will be removed during the grinding process, use guideline estimate for 1/4" before grinding.

## B. Recommended Batch Quantities

1. 5 gallons *Key #585 SQT Binder*
2. 40 pounds *Key ATF-20 Filler* (~3 gallons by volume)
3. 50-55 pounds Rubber Chips (~8 gallons by volume)

## Small Batch Size

- 1.25 gallons
- 10 pounds (~0.8 gallons)
- 12-14 pounds (~2 gallons)

Estimated Batch Coverage: 64 ft<sup>2</sup> at 1/4", 48 ft<sup>2</sup> at 3/8"

16 ft<sup>2</sup> at 1/4", 12 ft<sup>2</sup> at 3/8"

## IV. INSTALLATION

### A. Priming

**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** if moisture vapor emission rate or moisture content exceeds recommended maximums.

1. Mixing **Key #502 Low Modulus Epoxy Primer**.
  - a. Thoroughly mix each component prior to combining.
  - b. 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.
  - c. If thinning is desired, add no more than one pint of xylene per gallon of epoxy at time of mixing.
  - d. **Mix only that amount of material that can be used in 30 minutes.**
2. Application:
  - a. Pour primer onto the prepared concrete.
  - b. Spread with either a flat trowel or squeegee to a coverage of 250 ft<sup>2</sup> per gallon.
  - c. Backroll with a short nap roller. Do not allow the primer to puddle. Primer need only wet the concrete surface.
3. Allow primer to sit for 30 minutes. Trowelled mortar may be applied to wet primer for up to five (5) hours after primer application. If primer is to be allowed to sit overnight, broadcast lightly with dry silica sand.

### B. Key Lastic SQT Surfacing

1. Mixing batches of **Key Lastic SQT** should be done in a barrel-type (5 cubic feet) concrete mixer with stationary internal blades. This type of mixer mixes the blend of chips and epoxy very well and is easy to empty and clean. An alternative mixing procedure for a smaller batch is to use a slow speed <sup>3</sup>/<sub>4</sub> HP drill with a Jiffy blade.
2. It is also recommended that a polyethylene film be placed under and in front of the mixer and where **Key Lastic SQT** will be stored to ease clean up.
3. Mixing:
  - a. Thoroughly mix each component prior to combining.
  - b. Mix four (4) parts by volume of Part A (Resin) with one (1) part by volume of Part B (Hardener) for three minutes at a low speed in the barrel mixer.
  - c. Slowly add **Key ATF-20 Filler** into the mixed **Key #585 SQT Matrix** while mixing in the barrel mixer until filler is completely wet.
  - d. Continue mixing and add required rubber chips.
  - e. Continue mixing blend of chips and matrix for 3-4 minutes or until a lump free, even mix is obtained.

**Note: Key Lastic SQT MUST be mixed in a mechanical mixer. It is impossible to adequately mix the liquid components with the rubber chips and fillers by hand.**

- f. After thorough mixing, transfer material to trowel area using a wheelbarrow or buckets.
  - g. A complete batch (5 gallons of Key #585) of **Key Lastic SQT** will cover approximately 48 ft<sup>2</sup> at 3/8" or 64 ft<sup>2</sup> at 1/4", prior to grinding. Do not mix more material than can be applied in 40-50 minutes. Working life and cure time of **Key Lastic SQT** are affected by changes in temperature. Do not install **Key Lastic SQT** in temperatures below 60°F. **Do not change epoxy resin/hardener ratios for any reason.**
  - h. It is not necessary to clean out the mixer as long as mixing is continuous. Thoroughly clean mixer prior to all work breaks, at the end of the workday, or changes in color of the matrix. Equipment should be cleaned with xylene or other clean-up solvent.
4. Application:
- a. Place the matrix mixture on primed surface. Spread material in a line or in small areas to assist trowel mechanic. Do not pile material in large volumes.
  - b. Note: It is highly recommended to use a vibrating screed vs. hand troweling to "push down" the chips and "pull up" the resin to the surface. This will yield a much more consistent appearance vs. hand troweling. Consult with Key Resin on sourcing a vibrating screed. Hand troweling method: Spread slowly with a flat trowel using the rubber chips as an approximate thickness guide but do not pull the material tight against the rubber chips or pull the trowel too quickly. A gauge rake with pins (not cams) may also be used to spread the material, followed immediately with light troweling. It may help to reduce the filler content if spreading with a gauge rake. Be sure to eliminate any knits lines or other visible lines caused by the rake. Make sure the surface is level with minimal low spots (divots) with an even distribution of rubber.
  - c. Very light finish troweling may be necessary to properly level the surface and minimize low spots. Back roll mortar with a rib roller to bring resin to the surface. Some rubber chips may be protruding above the **SQT** matrix. Hardened material may still be tacky after 24 hours depending on temperature.
  - d. Allow the material to cure 48 hours at 75 degrees F. before grinding.

### C. Grinding/Sanding

1. Allow 48 hours for cure at 75 degrees F. after placement. This will vary by temperature, do not grind if material feels tacky.
  - a. It is best to use a small, two headed grinding machine, terrazzo grinder or disc grinder using 60-80 grit stones or diamonds for the initial cut to expose the rubber. A larger machine may be used but care must be taken to ensure you do not grind through the topping. Refer to section F below for recommended equipment suppliers. Use a laser temperature gun to measure the heat generated during the grinding process. Consider wet grinding if the heat exceeds 130 degrees F.
  - b. After the initial grind, inspect surface for low spots (divots). If numerous, regrind floor using the 60-80 grit stones or diamonds. Once the rubber is uniformly exposed with minimal divots, inspect for grind marks or scratches. If necessary, use 80 grit stones or 80 grit carborundum paper on the floor to remove the deep scratches. If grind marks or scratches are still evident, 80-100 grit or finer is the final stage of grinding/sanding. Clean and vacuum floor after sanding.

### D. Grouting

1. Once the sanding is complete, inspect the floor for rubber consistency and any divots (low spots) or pinholes. There may be pinholing which requires grouting.  
Grouting should be done with the same color **Key Lastic SQT Binder** as was used in the troweled application. Alternatively **Key #470 Polyaspartic Clear** may be used to allow for faster finish sanding. Refer to product data sheet for mixing and application instructions.
2. Mixing and applying **Key #585 SQT Grout**:
  - a. Thoroughly mix each component prior to combining.

- b. Mix four (4) 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. Slowly add **Key ATF-20 Filler** to the mixed **Key #585 SQT Grout** at the same mix ratio as was used with the **SQT** surfacing (e.g., 10 pounds filler per 1.25 gallons **Key #585**) to form a suitable consistency for grouting. Due to the slower cure time of **Key #585**, consult with Key Resin on alternative clear grout materials such as **Key #470 Polyaspartic** if time constraints do not allow for adequate curing of **Key #585**.
  - c. **Do not mix more material than can be used in 30 minutes.**
  - d. Apply **Key #585 SQT Grout** using a straight edge trowel or putty knife tightly to the surface.
3. Allow **SQT Grout** to cure thoroughly before sanding, this may require up to 48 hours. For isolated spot grinding/sanding, use a hand grinder with a 100-120 mesh disc or paper to remove surface grout and smooth the floor. For larger areas, set up a Clarke or similar rotary sander or buffer with 100-120 mesh screen or paper to remove surface grout and smooth the floor. Complete a pass over entire floor. The **SQT** surface should now be uniform and ready for sealing. Vacuum, damp mop, and allow to dry.

## E. Sealing

1. **Key Lastic SQT** is sealed with two coats of **Key #445 Water Emulsion Urethane**.
  - a. Mixing
    - i. Thoroughly mix each component prior to combining.
    - ii. Mix four (4) 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. Allow material to sit for 15-20 minutes for viscosity adjustment (it will initially increase then decrease). DO NOT ADD WATER or NMP solvent unless approved by Key Resin Technical Service.
    - iii. **Do not mix more material than can be used in two hours.**
  - b. Application
    - i. Apply at a coverage rate of 300-350 ft<sup>2</sup>/gallon. This will yield 1.5-2 mils dry film thickness. A thicker application rate MAY RESULT IN BUBBLING IN THE CURED FILM.
    - ii. Dip and roll procedure works well due to the extended pot life. Maintain a wet roller at all times, do not dry roll or apply too thin (greater than 400 ft<sup>2</sup>/gallon) to reduce occurrence of roller marks, lap marks or “skippers”. Back roll with a short nap roller to even the surface texture of the coating. When rolling back into previous batch of material, do not exceed 15 minutes from the time the previous batch was placed or lap marks may occur. If cross-rolling, do so immediately after backrolling.
    - iii. Allow material to cure 8 hours (at 77 degrees F) before applying a second coat, even if the material appears dry to the touch prior to 8 hours. Two coats are recommended for consistent appearance, superior protection against wear, impact, and chemical attack.
    - iv. Do not open to light foot traffic for 24 hours at 75 degrees F, 48 hours for moderate wheeled loads, 96 hours for wash down/cleaning and heavy traffic. Full chemical cure and maximum resistance are achieved in five (5) days.
  - c. Alternative Sealers
 

**Key #450 Satin Urethane Sealer, Key #470 Polyaspartic Sealer (gloss) and Key #467-HS Satin Low Odor Urethane Sealer** may be used for better stain resistance. Consult with Key Resin for best selection and refer to product data sheet for mixing and application instructions.

## F. Grinding Equipment Suppliers

Key Resin does not promote or endorse any manufacturer of grinding equipment, but good feedback has been received on the use of the Prep/Master 3030 manufactured by Substrate Technology (product information link: <http://www.substratetechnology.com/sti-3030.htm>) The

diamond tools used were the 3TRB80 - 80 grit EZ Turbo Diamond as supplied by Substrate Technology. The contractor who used this equipment was able to complete the grinding process in one step, though this may not always be the case for other projects.

## V. COVE BASE

**Key Lastic SQT Cove Base** is typically installed with an integral cove base using a solid accent color to provide seamless wall to floor protection. The outline below explains mixing and installation procedures using this method at 1/8" thickness. A thicker application may be required depending on project requirements. The **Key Lastic SQT** mortar mixed with Cab-O-Sil (fume silica) may also be used to create the cove base if a terrazzo base grinder is used to finish the cove base. Only experienced terrazzo installers with past experience grinding cove base should consider this option.

**A. Cove Base** installations are normally terminated with a divider strip on the floor 1 – 2 inches from the wall. The top of the cove is preferably terminated with a divider strip on the wall.

### B. Material Quantities

| <i>1/8" thick 4" Cove Base</i>   | <i>Qty./ 70-80 ft</i> |
|--|-----------------------|
| 1. <i>Key #502 Primer/Low Modulus Binder</i>   | 1 gallon              |
| 2. <i>Key #510-CV Cove Paste Binder</i>  | 1.25 gallons          |
| 3. <i>Key Blended Mortar Aggregate</i>   | 100 pounds            |
| 3A <i>Key One-Step Mortar Aggregate</i><br>(Note: One-Step Aggregate requires 1.875 gallons Key #510-CV) | 111 pounds            |
| 4. <i>Key Cove Powder</i>  | 1 quart               |
| 5. <i>1/8" Cove Cap Strips (metal or plastic)</i>  | 70-80 lineal feet     |

### Recommended batch quantities

1. ½ gallon *Key #510-CV* part A & 1 pint *Key #510* part B
2. 50 pounds *Key Blended Mortar Aggregate* or 37 pounds *Key One-Step Mortar Aggregate*
3. 1 pint *Key Cove Powder*

**Estimated Batch Coverage: 35-40 lineal feet at 1/8"**  
(less yield if using Key One-Step Aggregate)

### C. Installation--Priming

It is very important to prime the wall surface prior to installing cove base. Priming insures maximum adhesion to the prepared substrate and helps mixed cove material to "hang" on the wall.

1. Mixing **Key #502 Low Modulus Epoxy Primer**
  - 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 quart of xylene per gallon of epoxy at time of mixing.
  - d. **Mix only that amount of material that can be used in 40 minutes.**
2. Application--Brush primer onto the wall surface.
3. Allow Primer to tack-up.

### D. Installation--Cove Base

1. Mixing **Key #510-CV Cove Paste Binder, Mortar Aggregate, & Cove Powder.**
  - 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. Transfer to KOL mixer and add *Key Cove Powder* to the premixed *Key #510-CV*.

**Note:** *Key Resin Company recommends the use of a KOL Mixer when preparing cove base material. Insufficient mixing of cove base material will result in a stiff, dry, and hard to trowel blend that does not have sufficient wetting of aggregate to insure proper bonding to the substrate.*

- d. Continue mixing while adding *Key Blended Mortar Aggregate* or *Key One-Step Mortar Aggregate*.
  - e. Mix resin/aggregate mortar for 3 to 4 minutes or until aggregate uniformly is wet.
2. Application
    - a. Trowel cove base mixture vertically onto primed wall surface at 1/8" thickness or at specified thickness.
    - b. Place material at the cove and form cove radius using and appropriate cove trowel.
    - c. Terminate bottom of cove base at divider strip and install *Key Lastic SQT* flooring up to divider strip.

## **E. Installation--Sealing Cove Base**

The cove base is grouted with an appropriate color to accent the *Key Lastic SQT*. The cove base should also receive the same seal coats as the finished floor in order to provide the proper appearance.