KEY RESIN COMPANY
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Installation Instructions

KEY URECON SLT-HP Quartz

I. GENERAL INFORMATION

URECON SLT-HP Quartz is a three component, self-leveling, urethane-modified cementitious topping broadcast with quartz aggregate and designed to protect concrete substrates from chemical corrosion, abrasion, impact and thermal shock. Urecon SLT-HP Quartz requires a clear chemical resistant epoxy or polyaspartic sealer.

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.** 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 recommended for proper cure of the resin flooring system. Cooler temperatures will slow cure times. System may be installed with integral cove base.

III. SPECIAL CONDITIONS

Do not apply in temperatures below 45°F, above 85°F, or if relative humidity is above 85%. Do not apply to sand-cement screeds (tile setting bed mortars), asphaltic substrates, glazed tile or brick (unless glaze is mechanically abraded), copper, aluminum, softwood, or existing coatings of epoxy*, polyester, or urethane*. Do not apply to wet concrete (i.e., surface wet to the touch) or to polymer modified concrete with moisture content above 10%. Do not apply to concrete if air temperature is within 5°F of dew point. Do not featheredge application or mix material by hand.

*Note: For application over existing ***well-bonded*** epoxy or urethane coatings, thoroughly sand coating, apply Key #502 Epoxy at 10 mils, broadcast 30 mesh sand/quartz to excess. Allow to cure, sweep/vacuum excess sand, proceed with installation of Key Urecon SLT-HP.

IV. MATERIAL QUANTITIES

A. Guideline System Requirements for 1000 ft²

Key Urecon SLT-HP Quartz (3/16"-1/4")	***Qty./ 1000 ft²***
1. *Key Urecon SC Primer (neutral color)--optional* (lightly broadcast sand or quartz into primer if used, ~100 lbs/1000 ft²)	8-10 kits
2. *Key Urecon SL (neutral color)*	25-33 kits
3. *Key Colored Quartz Granules*	300-400 pounds
4. *Key #615* Chemical Resistant Epoxy*	10-12 gallons
5. *Key Colored Quartz Granules*	350-400 pounds
6. *Key #615** Chemical Resistant Epoxy*	10-12 gallons
7. *Key #615** Chemical Resistant Epoxy (for less texture)*	6-10 gallons

Optional Non-Slip Additives for additional texture in very wet areas:

8. *Aluminum Oxide (24 or 80 mesh, white)*	50 pounds
8. *Non-Skid Additive (20/30 mesh or 40/60 mesh)*	1 gallon

*Note: For step #4, Key #615 or Key #615-OP may be used at installer's discretion. Key Cold Cure Hardener may be substituted for Regular Cure Hardener to speed up curing. Other optional substitute resins depending on project requirements: Key #510, Key #511.

**Note: Key #470 Polyaspartic and Key #630/#633 Novolac are optional substitutions for Key #615 Epoxy depending on project requirements. Contact Key Resin for detailed mixing and application instructions.

V. INSTALLATION

Note: If using Key Urecon SC for primer, consult with Key Resin Technical Services. ***Important:*** Lightly broadcast 30 mesh sand or colored quartz into primer at rate of 100 lbs/1000 ft².

Mechanical mixing is required. A ten-gallon KOL Mixal and paddle is recommended or a ¾ horsepower drill and "jiffy" or helical mixer may also be used with a 5 gallon pail.

1. **Mixing Key Urecon SL.**
   a. Add Part I and Part II to mixer and blend for 30 seconds. *Important:* Do not overmix or working time will be significantly reduced.
   b. Add Part III slowly to the mix (while mixer is running) and allow to blend for 1-2 minutes. Only mix as long as needed to completely "wet-out" aggregate or working time will be significantly reduced. Be sure to "wet-out" all parts of mix, scraping sides and bottom of mixer during mixing. All powder must be uniformly blended with no visible lumps of dry powder. Mixing bucket and mixer or blades should be scraped out thoroughly and cleaned with solvent (acetone, MEK or xylene) every few batches or working time on subsequent batches will be shortened. If mixing in a plastic bucket, dispose of bucket after every 2 mixes and replace with a clean bucket for this reason. *Important:* Do not overmix or working time will be significantly reduced.

Set up mixing station as near to the work area as possible. Exothermic heat will be generated and flash setting may occur if material remains in the pail too long. Do not mix more than can be used in 10 minutes.

2. **Application of Key Urecon SL and 1st quartz broadcast.**
   a. Place mixture on floor and spread with a gauged straight edge (gauge rake set 3/16" to 1/4", slightly higher than desired thickness) or flat trowel. Leave a "wet line" or puddle of material between batches to avoid "knit-lines" in the finished system. Since a double quartz broadcast will be applied over the Urecon SL, the visibility of any knit lines should be minimal. Be sure to grind out any ridges or lumps that form where material from adjacent batches may overlap after the first broadcast has cured, prior to starting second broadcast procedure. Maximum working life is 15 minutes at 70

degrees F, less than 10 minutes at 80+ degrees F. To extend the working life in very hot temperatures, cool the resin components prior to use. If pigment pack is to be used, add to urethane resin during mixing.

b. Back-roll the surface lightly with a loop roller while material is still wet. To minimize marks in the finished system, the contractor should wear "spiked" shoes while walking on wet material. Keep roller cleaned with isopropyl alcohol.

c. Broadcast *colored 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. Approximately 3-4 pounds of sand will be needed for 10 ft² of flooring. Allow to cure minimum 8 hours. Sweep and vacuum excess granules, spot sand or grind to reduce any significant uneven areas.

3. **Mixing Key #615 Chemical Resistant Epoxy.**

(Note: If substituting Key #510 or Key #511, refer to separate installation instructions as needed)

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. ***Mix only that amount of material that can be immediately poured out in ribbons, spread and backrolled within 20-25 minutes.***

4. **Application of Key #615.**

a. Immediately pour mixed material onto floor in strips and spread at a rate of 80-100 ft² per gallon (depending on desired finish texture) using a trowel or squeegee, followed with backrolling. A notched trowel or notched squeegee will help to achieve even distribution. If using a flat squeegee or trowel, it is recommended that the material be lightly backrolled with a medium-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 minutes.

Termination points at breaks and at the end of the day should be made at doorways, expansion joints, etc.

Note: A second quartz broadcast is *highly recommended* to ensure adequate color hiding, a single broadcast may result in thin spots which can show as a color tone variation due to visibility of the Urecon SL color.

d. Broadcast to excess (2nd broadcast).
Broadcast *colored quartz granules* into the wet epoxy until the surface of the system appears dry. Be careful not to clump the material or produce high spots. Approximately 3 to 4 pounds of sand will be needed for 10 ft² of flooring. ***Remember to only walk on the wet surface while wearing "spiked" shoes!!! Do not walk on floor after broadcasting.***

e. Allow the seeded floor to cure overnight. Sweep excess sand with a stiff bristled broom followed with power vacuum. A light sanding or rubbing with a stone will aid in achieving a uniform "sanded" surface.

5. **Application of Grout and Seal Coats.**

The grouting and sealing of a floor should be performed over the entire area receiving the system. The applicator should complete the broadcast 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. Coverage rates outlined will yield a medium texture.

Grouting

(Note: If substituting Key #470 Clear, Key #630 Clear or Key #633 Clear, refer to separate installation instructions as needed)

a. Mix Key #615 as described in the section above.
b. Spread the Key #615 at a rate of approximately 80-100 ft² per gallon over the rough sand surface using a flat trowel or sgueeqee tightly over the surface. A flat trowel will achieve a more consistent thickness at 80 ft² per gallon coverage rate. Handheld window squeegees also work well.
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 12 hours (regular cure hardener). Quicker cure time is possible with fast cure or cold cure hardener.

Seal Coat (optional, to reduce texture)

(Note: If substituting Key #470 Clear, Key #630 Clear or Key #633 Clear, refer to separate installation instructions as needed)

a. Mix Key #615 as described in the section above. While mixing, it is optional to add 80 mesh white aluminum oxide granules and/or Key Non-Skid Additive (40/60 medium mesh or 20/30 coarse mesh) to epoxy as recommended to achieve desired finish texture. If mixed batch is not poured out immediately, briefly remix material to keep granules from settling to bottom of mix container. *Alternate procedure*: Apply Key #615 without adding grit as outlined below, lightly sprinkle 24 mesh white aluminum oxide granules or Key Non-Skid Additive (20/30 coarse mesh) into the applied epoxy and backroll or let granules drop into resin without backrolling. Do this sparingly in the traffic areas, avoid clumping of the granules.
b. Spread the Key #615 at a rate of approximately 100-160 ft² per gallon using a flat trowel or sgueeqee, depending on desired finish texture.
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 24 hours (regular cure hardener) at 70 degrees F. for light foot traffic. Using cold cure hardener allows for recoating or light foot traffic in 3-4 hours at 75 degrees. Full chemical cure and maximum resistance are achieved in five (5) days. Do not clean floor with water for a minimum of 3 days (longer in cooler temperatures) to avoid water spotting or a white haze caused by absorption of moisture into the still curing resin. Always test a small inconspicuous area before cleaning floor. If floor must be cleaned with water sooner than recommended, consult with Key Resin Technical Service.

Terminations, Crack Repair, Joint Treatments

a. All free edges (perimeters, terminations adjoining cove base or control/expansion joints, or along gutters or drains) should ideally be “keyed in” to provide extra anchor to distribute mechanical and thermal stresses. This is optional depending on the application, exposure to severe thermal shock, etc. but is very important around drains or adjoining other floor finishes. This can be achieved using a chipping hammer or saw.
b. All expansion joints must be exposed through the system. Control joints (sawcuts) and cold joints should also ideally be exposed through the Urecon system but may be overlaid if the facility owner accepts that future telegraphing cracks may develop if expansion/contraction movement occurs in the substrate joint. To overlay a control joint, fill with rigid epoxy (e.g., Key #502, Key Crack Filler #715, Key #730) or Urecon SC/SL. Allow to cure. Mix and apply Key #580 Flexible Epoxy Membrane at 40 mils thickness and minimum 24” width. Allow to cure. Mix and apply Key #502 at 10 mils thickness, broadcast 30 mesh sand/quartz to excess, allow to cure. Fast Cure or Cold Cure Hardener may be used to speed up the cure time. This is necessary for good intercoat adhesion with the Key Urecon SL topping. For additional

reinforcement, use 18”-24” wide fiberglass chopped strand mat applied underneath the Key #580. Use Key Urecon SC or Key #502 to adhere and saturate cloth, allow to cure before applying Key #580. Alternative to membrane treatment (less movement resistance): Fill joints as outlined previously, apply 12”-24” wide fiberglass chopped strand mat using Key Urecon SC or Key #502 to adhere and saturate cloth. Allow to cure before applying Key Urecon SL. ***Important:*** Do not overlay expansion/isolation joints.

c. Cracks: Route cracks larger than 1/32” and fill with rigid epoxy (e.g., Key #502, Key Crack Filler #715, Key #730), or Urecon SC/SL. Treat with Key #580 Membrane as outlined previously, or reinforce with minimum 18”-24” wide fiberglass chopped strand mat as outlined previously.