KEY RESIN COMPANY

Installation Instructions

Key Chip-100 Flooring

I. GENERAL INFORMATION

KEY CHIP-100 FLOORING is a decorative resin flooring system consisting of clear, 100% solids epoxy resin and colored vinyl chips. **KEY CHIP-100 FLOORING** 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 BROADCAST CHIPS** 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.** Specific attention should be paid to the following:

A. Concrete Placement--An efficient vapor barrier should be directly 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
F. Make sure the floor is free of excessive moisture vapor transmission or moisture content

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

A. Guideline System Requirements for 1000 ft²

Key Chip-100 Flooring System – Full Broadcast	*Qty./ 1000 ft²*
1. *Key #502* 100% Solids Epoxy Primer*	4 gallons
2. *Key #515* 100% Solids Epoxy Binder (pigmented)	6-10 gallons
2A. *Key #521* 100% Solids Epoxy Coating (pigmented)**	6-10 gallons
3. *Key Broadcast Chips (Full Broadcast)*	150 pounds
3A. *Key Broadcast Chips (Partial Broadcast)***	5-15 pounds
4. *Key #512 L*V UV Resistant Binder (clear)***	6-10 gallons
5. *Key #450* Urethane Topcoat (optional)	3-4 gallons
5A. Optional Topcoats: *Key #470, Key #445, Key #446, Key #467*	Varies
6. *Key Non-Skid Additive (Fine or Coarse)- optional*	Varies

Note: A second chip broadcast is optional depending on desired system thickness.
* Key #521 or Key Epocon SL can be used in lieu of Key #502 for priming.

** For partial broadcast figure 5 lbs.-15 lbs. of Broadcast chips per 1000 sq.ft. and use Key #521 instead of Key #515.
*** For areas exposed to direct sunlight, substitute Key #470 for Key #512.

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 reduce outgassing and air bubbling in the finished system. This is very important with residential garage floors, which are prone to concrete outgassing. If excessive moisture vapor emissions rate exists, substitute Key Epocon SL for Key #502, and follow the directions outlined in the Key Epocon SL data sheet and installation instructions.

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 pint of xylene per gallon of epoxy at time of mixing.
   d. ***Mix only that amount of material that can be mixed, immediately poured out in strips and backrolled in 30 minutes. Mixed material left in the pail longer than 5 minutes will have accelerated reaction and reduced working time.***
2. Application
   a. Pour primer onto the prepared concrete.
   b. Spread with either a flat trowel or squeegee to a coverage of 250-275 ft² per gallon.
   c. Back roll with a short nap roller.
3. Allow Primer to sit for 12 to 16 hours.
4. **Key #521 Epoxy Primer/Bodycoat** can be used in lieu of Key #502. Since Key #521 can also be used for the bodycoat, this may offer added convenience.

   Key #521 is a 4/1 mix ratio. Otherwise, follow mixing and application instructions as above.

B. Chip Broadcast

1. Mixing ***Key #515 100%*** **Solids Epoxy Binder**

(If substituting ***Key #521***, mix at 4:1 ratio and apply as outlined below)
   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.
   c. ***Do not mix more material than can be used in 30 minutes.***

2. Application
   a. Pour material onto floor in a line and spread with a flat or notched squeegee to a coverage of 100-160 ft²/gallon. This will yield 10-16 mils dry film thickness.
   b. Back roll with a short nap roller to even the surface texture of the coating.
   c. To minimize marks in finished system, the contractor should wear "spiked" shoes while walking on wet material.
   d. Allow the material to level 10 minutes before broadcasting chips.

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 Broadcast Chips* 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 125-150 pounds of chips will be needed for 1000 ft² of flooring, depending on thickness of resin and broadcast technique. A one gallon container holds approximately 8 pounds of chips. If terminating the system with tape as described in note above, broadcast chips 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 rotate feet while walking with spikes to avoid creating gouges in the material.***

   a. Partial Broadcast: For projects requiring a very light broadcast of chips, broadcast lightly into the wet floor coating. As an option you may instead choose to broadcast the chips into the Key #512 Clear Epoxy and backroll to wet out the chips. This is typically a random broadcast using approximately 5-15 pounds of broadcast chips per 1000 sq.ft. If terminating the system with tape as described in the note above, broadcast chips up to the tape and remove after material cures for thirty (30) minutes. ***Remember to only walk on the wet surface wearing "spiked" shoes!!***

4. Allow the broadcast floor to cure overnight. Sweep excess chips with a stiff bristled broom and vacuum. If applying a second broadcast, substitute Key #512 Clear or Key #510 Clear and repeat steps 1-4.

C. Grout

Note: For residential garages, use Key #450, Key #467 or Key #470 for the grout coat.

The applicator should complete the broadcast portion of the application prior to grouting. Optional: Thoroughly but lightly sand dry chips with pole sanders (36 grit sandpaper) in two directions prior to grouting. A floor buffer with abrasive screen (60-100 grit) mounted to the white pad can also be used, being careful with technique: Keep the buffer moving at all times, left to right motion, pulling rather than pushing. Broom and vacuum loose particles from floor surface. Scraping with a trowel or tile scraper to knock off ridges is also an option. These procedures are optional depending on the finished appearance you are trying to achieve. If doing a partial broadcast with small chips, you may not need to sand or scrape prior to topcoating (grouting).

1A. Mixing ***Key #512 LV UV Resistant Epoxy Sealer***
   a. Stir each component prior to mixing.
   b. Mix two (2) parts by volume of Key #512 LV UV Part A (Resin) with one (1) part by volume of Key #512 LV UV Part B (Hardener) for three minutes with a low speed electric drill mixing paddle.
   c. ***Mix only that amount of material that can be mixed, <u>immediately</u> poured out in strips and backrolled in 30 minutes. Mixed material left in the pail longer than 5 minutes will have accelerated reaction and reduced working time.***

2. Application
   a. Immediately pour mixed material onto floor in strips and spread at a rate of 100 to 160 ft² per gallon (or specified coverage rate) using a trowel or squeegee. It is recommended that the material be lightly backrolled with a short or medium-nap roller (1/4"-3/8") 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.

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. Where necessary to touch-up, lightly broadcast *Key Blended Broadcast Chips* into the wet floor system as needed to provide an even appearance. Be careful not to clump the material or produce high spots.
4. Carefully backroll the second broadcast into the *Key #512* to distribute the chips into the coat using a short nap mohair or sponge roller. By keeping the roller wet, the chips will lay flat and not stick to the roller.
5. If terminating the system with tape as described in note above, broadcast chips 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.***
6. When material is hard, lightly sand or scrape to remove any protrusions or unevenness. Excess sanding is not required or advisable.

D. Sealing

Prior to applying final topcoat, it is optional to lightly sand or screen the cured grout coat to further reduce texture and improve overall finished appearance. If sealing with Key #450, #467 or #470 a light sanding is highly recommended to ensure the best adhesion possible.

Using ***Key #450 Urethane Topcoat***

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!***

b. Application
   i. Pour material onto floor in a line and spread with a flat squeegee to a coverage of 250-300 ft²/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.
   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 overroll 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. 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.

c. 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 Service to confirm suitability for your particular project.

a. <u>Primer</u>
   Key #532 Water Emulsion Epoxy Primer
   Key #521 Epoxy Primer/Bodycoat

Key Urecon SLT, Key Epocon SL or Key #635 MVT for excessive moisture vapor emissions.

b. Binder for Chip Broadcast
Key #625 Epoxy, Key #521 Epoxy (Primer/Bodycoat), Key #446 Water Based Urethane (pigmented, for partial broadcast)

c. Grout and Seal Coat
Key #470 Polyaspartic Sealer for faster cure time situations and UV light resistance.
Key #450 Urethane applied in multiple coats (3-4 is typical) for UV light resistance.

d. Urethane/Polyaspartic Finish
Key #470 Polyaspartic Sealer for faster cure time situations or low odor requirements. Key #445 Water Based Urethane (For selected applications only) (matte finish only) as an optional seal coat to eliminate the solvent odor of Key #450 Urethane. Key #446 Water Based Urethane (gloss finish only) (For selected applications only) as an optional seal coat to eliminate the solvent odor of Key #450 Urethane. Key #467-HS Urethane as optional seal coat with reduced odor and VOC content.