



# Installation Instructions

## Key Luster Metallic Coating System

### I. GENERAL INFORMATION

**KEY LUSTER METALLIC** is a high performance decorative coating system that provides protection against dirt and chemical penetration to concrete floors. **KEY LUSTER METALLIC** is available with various topcoats. Contact your **KEY REPRESENTATIVE** for assistance with proper material choice for specific performance criteria.

### 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 surface profile of CSP-3 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
- F. Moisture content and moisture vapor emission rate 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 75°F with a minimum slab temperature of 50°F is required for proper cure of the resin flooring system.

### III. MATERIAL QUANTITIES for 1000 Square Feet

#### System Option #1 (To Match Key Resin Color Chart/Fan Deck)

	<i>Material</i>	<i>Qty/1000 ft<sup>2</sup></i>	<i>Coverage</i>
1.	Key #502 Primer (Black) <i>(3 or 15 gallon unit)—Note: Available in factory tinted or add pigment packs to Clear</i>	4-6 gallons	160-250 ft <sup>2</sup> /gallon
2.	Key #511 Epoxy Binder (Clear) <i>(3 or 15 gallon unit)—Note: Key #510 or Key #470/#471 may be substituted for Key #511</i>	12 gallons	75-80 ft <sup>2</sup> /gallon
3.	Key Luster Metallic Pigment Pack <i>(4, 12, or 16 oz unit)—Note: All pigments are drop-shipped from our supplier</i>	48-96 vol. oz	4-8 vol. oz/mixed gallon
4.	Key #450 Urethane (Clear)-optional* <i>(3 or 15 gallon unit)</i>	3-4 gallons	250-350 ft <sup>2</sup> /gallon
5.	Key Non-Skid Additive (Fine Mesh)-optional <i>(Optional, unless anti-slip texture is needed)</i>	12-48 vol. oz	4-12 vol. oz/gallon

\*Note: Key #450 may be optional depending on project requirements, it is recommended to protect the metallic coat from scuffs, scratches, or to provide greater chemical/stain resistance. Other possible substitute sealers include: Key #446, #446-LV, #465, #467-HS, #470, #471, #512, #512-LV, #513-OP. Consult with Key Resin to review options.

Note: Key #511 Luster Metallic body coat may be applied in one coat as outlined, over a black primer/basecoat, to 'match' (i.e., approximate) the colors of the Key Luster Metallic Color Fan Deck\* and Standard Samples made by Key Resin. Note that 4 volume ounces/mixed gallon is the minimum pigment required, increasing to 8 volume ounces/mixed gallon will increase hiding power and create a more intense/vivid color.

Or, apply two coats of metallic as outlined below in System Option #2, depending on the application procedure used and the desired aesthetic effect. Applying one metallic resin coat over a clear primer or white primer will create a different color hue versus a black primer or metallic pigmented primer. Also, increasing the pigment quantity will create greater hiding power and more vivid/intense color with certain hues. If you are distorting the metallic resin layer by sprinkling drops of solvent, it is recommended to do this in a 2<sup>nd</sup> coat of the metallic as outlined in System Option #2, to avoid exposing the black undercoat used in Option #1.

Substituting Key #470/#471 for the Key #511 body coat will create a different aesthetic effect due to differences in viscosity and cure time. ***IMPORTANT: Experiment with samples to create different aesthetic effects, and to confirm the color selection and aesthetic effect for your customer. Communicate to your customer that Key Luster Metallic will vary somewhat in appearance from area to area. Variance in the thickness of the metallic body coat and quantity of pigment used will result in a variable appearance, with the possibility of "seeing through" thin areas, possibly requiring an additional coat of metallic body coat.***

***Important: The color image reproductions in the Key Luster Metallic Color Chart/Brochure do NOT exactly match the actual colors due to the nature of the printing process, use only actual resin samples to make final selections! It is highly advised to make your own samples for use as the "design standard", as thickness and application techniques will alter the color and overall appearance.***

### **System Option #2 (To Achieve Higher Pigment Hiding, More Vivid Colors)**

<i>Material</i>	<i>Qty/1000 ft<sup>2</sup></i>	<i>Coverage</i>
1. Key #502 Primer (Clear) (3 or 15 gallon unit)	4-6 gallons	160-250 ft <sup>2</sup> /gallon
2. Key Luster Metallic Pigment Pack (4, 12, or 16 oz unit)—Note: All pigments are drop-shipped from our supplier	32-48 vol.oz	8 vol. oz/mixed gallon
3. Key #511 Epoxy Binder (Clear) (3 or 15 gallon unit)—Note: Key #510 or Key #470/#471 may be substituted for Key #511	8-12 gallons	75-125 ft <sup>2</sup> /gallon
4. Key Luster Metallic Pigment Pack (4, 12, or 16 oz unit)—Note: All pigments are drop-shipped from our supplier	64-96 vol.oz	8 vol. oz/mixed gallon
5. Key #450 Urethane (Clear)-optional* (3 or 15 gallon unit)	3-4 gallons	250-350 ft <sup>2</sup> /gallon
6. Key Non-Skid Additive (Fine Mesh)-optional (Optional unless texture is needed)	12-48 vol. oz	4-12 vol. oz/gallon

\*Note: Key #450 may be optional depending on project requirements, it is recommended to protect the metallic coat from scuffs, scratches, or to provide greater chemical/stain resistance. Other possible substitute sealers include: Key #445, #446, #446-LV, #465, #467-HS, #470, #471, #512, #512-LV. Consult with Key Resin to review options.

## **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 reduce outgassing and air bubbling in the finished system.

**Important Note on Outgassing:** If concrete outgassing is severe, pinholes may form in the cured primer resin, or bubbles that collapse and form raised rings. Thoroughly sand down any raised material and re-prime until a pinhole-free, flat surface is obtained. Verify that the primer coat is free of any pinholes *before* application of the metallic epoxy body coat, otherwise pinholes may occur in the metallic body coat. Continuous concrete outgassing may reopen pinholes/voids multiple times, requiring spot application of a heavy-bodied epoxy paste/spackle to fill the pinhole/void. Any epoxy paste repairs will require careful sanding to eliminate raised edges. Raised edges/rings will cause the metallic epoxy body coat to run off leaving thin areas that have reduced hiding power, which may be visible through the metallic coating.

#### Using **Key #502 Primer/Low-Modulus Binder (Pigmented or Clear)**

1. Mixing
  - 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 (3) minutes with a low speed electric drill mixing paddle. If using a pigment pack, add at this time and continue mixing. Standard pigment pack ratio is one (1) quart mixed with three (3) gallons of Key #502.
  - 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 in ribbons and spread with squeegee and backrolled within 30 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 160 to 250 ft<sup>2</sup> per gallon.
  - c. Back roll with a short nap roller.
  - d. Allow primer to cure 8-12 hours (at 75F degrees, longer in cooler temperatures) prior to re-coating. A fast cure formulation is available to reduce re-coat window to 4-6 hours. If primer is to be allowed to sit for longer than 24 hours, broadcast lightly with dry silica sand.

## **B. Key Luster Metallic Body Coat(s)**

**Important Note:** Below are outlined general mixing/application instructions. Follow the coverage rate, pigment quantity, and application technique recommendations required for your specific system/project. Refer to '**Miscellaneous Application Notes**' at end of this document for suggested application techniques to consider.

1. **Key Luster Metallic Epoxy Body Coat (Using Key #511 Epoxy)**
  - 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. While mixing, add the Key Luster Metallic Pigment at the required quantity.

- iii. ***Do not mix more material than can be immediately poured out in ribbons and spread with squeegee/trowel/smoothing trowel/roller within 30 minutes.***

b. Application

- i. Pour material onto floor in a line and spread with a flat/notched squeegee, trowel, smoothing trowel, or roller to a coverage of 75 ft<sup>2</sup>/gallon for System #1 or 75-125 ft<sup>2</sup>/gallon for System #2, or at the necessary coverage rate to match samples, mock-up, etc., as determined by the installer.
- ii. Resin may be back-rolled with a short nap roller to even the surface texture of the coating, or the resin may not require any further work depending on the desired aesthetic effect.
- iii. Refer to 'Miscellaneous Application Notes' at end of this document for several suggested application techniques to consider. You are only limited by your imagination!
- iv. Allow material to cure a minimum of 14-16 hours before applying a second coat (for System #2) or a final clear sealer (for System #1 and System #2). Two coats are required unless a single coat is applied at least 20 mils thick to obtain adequate pigment hiding power.

***Important:*** Verify with samples/mock-up that the particular pigment color and quantity/gallon provides the desired amount of hiding power at the intended thickness—before ordering materials or finalizing price with your customer!

- v. Second coat (for System #2): Mix and apply material as before. If back-rolling second coat, be aware that roller pattern may remain visible in cured finish depending on finishing techniques used. Optional: While material is still wet, lightly mist surface with dispersing agent (99% anhydrous isopropyl alcohol, acetone, MEK or xylene work well) using a Hudson sprayer to create various effects. A CO<sub>2</sub> powered hand sprayer is a good option to avoid unwanted drips. Experimentation is necessary to determine how long to wait before spraying dispersing agent, based on such factors as temperature, amount of solvent, type of solvent, etc. Spray too soon and the epoxy will flow back to its original appearance. Spray too late and the epoxy will not be affected by the solvent mist. Waiting about 15-25 minutes is typical at 75F degrees. Be aware that walking in the wet epoxy with spike shoes will also affect the appearance at a later stage in the curing process.

c. Other Application Techniques to Consider

*Note: Use these techniques individually or in various combinations*

- i. Use an eyedropper to apply individual drops of solvent to create a "fish eye" or "hammered" effect.
- ii. Trowelling (vs. back-rolling) will create a different visual effect, particularly when the material is applied thicker than 150 ft<sup>2</sup>/gallon (e.g., 75 ft<sup>2</sup>/gallon).
- iii. Use a fresco troweling technique (i.e., using random "x" and "y" patterns to break up the "windshield wiper" effect of hand troweling) to create a different visual effect.
- iv. Use a Smoothing Trowel to spread material without back-rolling to create a different visual effect.
- v. Wait for the Key Luster Metallic to become slightly tacky (20+ minutes after spreading) and very lightly roll the surface with a loop roller. Use protruding loop style only, NOT compressed loop style, which may cause

air entrainment and bubbles to form. This technique may be difficult to duplicate consistently over a large area. Be aware that walking in wet material with spikes may leave visual marks if done too late in this process.

- vi. Small quantities (e.g., eyedropper quantities) of mixed solid color Key #520 or Key #511 may be sprinkled into the second coat of Key Luster Metallic while wet and lightly troweled to create a swirled or mottled appearance.
- vii. Also consider using Key Metallic Broadcast Chips for added effect. Available as special order only at additional cost to standard color Key Broadcast Chips. Contact Key Resin for pricing.

**IMPORTANT:** Experiment with wet samples before quoting your customer to determine which procedure you will be using on the project. Communicate to your customer (in writing!) that any of these techniques will result in a varying appearance across the floor. Confirm customer approval with large samples and/or install a mock-up area.

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/roll 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.

### C. Topcoat(s)

A final clear topcoat is recommended to protect the metallic coating from scratches and abrasions.

The following topcoats are possible options depending on your specific project requirements. Consult with Key Resin to determine the best choice:

Key #446, Key #446-LV, Key #450, Key #465, Key #467-HS, Key #470, or Key #471, Key #511, Key #512, Key #512-LV, Key #513-OP

Note: For residential garages use Key #450, Key #465, Key #467-HS, Key #470, or Key #471 for the final topcoat. It is recommended to use Key Luster Metallic Pigment Packs in urethane or polyaspartic for the final metallic topcoat if exposed to direct or indirect sunlight.

Refer to the specific topcoat mixing/installation instructions document for further details.

### D. Curing and Cleaning

Refer to individual product data sheets for cure times. Refer to Key Resin Technical Bulletin #3 and Technical Bulletin #3-A for general guidelines on proper cleaning procedures and maintenance requirements for the Key Luster Metallic Coating System.