



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 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 75°F with a minimum slab temperature of 50°F is required for proper cure of the resin flooring system.

III. MATERIAL QUANTITIES

Guideline System Requirements for 1000 ft²

<i>Key Luster Metallic</i>	<i>Qty./ 1000 ft²</i>
1. Key #502 100% Solids Epoxy Primer*	4 gallons
2. Key Luster Metallic Epoxy Coating	8-10 gallons
3. Key Luster Metallic Epoxy Coating	6-10 gallons
4. Key #450 Urethane Topcoat (clear)	3-4 gallons
4.A Alternative Topcoats: Key #470, Key #467-HS, Key #446	Varies
5. Key Non-Skid Additive (Fine)--optional	Varies

* Key #521 Epoxy Primer can be used in lieu of Key #502.

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. Either *Key #502 Primer/Low Modulus Binder* or *Key #521 Epoxy Primer* can be used. Contact your **Key Representative** for the best choice.

Using **Key #502 Primer/Low-Modulus Binder**

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 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 in ribbons and spread with squeegee and backrolled within 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 250 to 275 ft² per gallon.
 - c. Back roll with a short nap roller.
 - d. Allow primer to cure 8-12 hours 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 prolonged periods, broadcast lightly with dry silica sand.

B. Key Luster Metallic

1. **Key Luster Metallic Epoxy Coating (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.
 - iii. ***Do not mix more material than can be immediately poured out in ribbons and spread with squeegee and backrolled within 30 minutes.***
 - b. Application
 - i. Pour material onto floor in a line and spread with a flat/notched squeegee or trowel to a coverage of 100-125 ft²/gallon (or specified coverage rate). This will yield 12-16 mils dry film thickness.
 - ii. Back roll with a short nap roller to even the surface texture of the coating.
 - iii. Allow material to cure a minimum of 14-16 hours before applying the second coat. Two coats are required unless a single coat is applied at least 20 mils thick.
 - iv. Second coat: mix and apply material as before. If backrolling second coat, be aware that roller pattern may remain visible in cured finish depending on finishing techniques used. 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 CO₂ 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 75 degrees.

c. Other Application Details to Consider

- i. Using an eyedropper to apply individual drops of solvent will create a “fish eye” or “hammered” effect. Trowelling (vs. backrolling) will create a different visual effect, particularly when the material is applied thicker than 150 ft²/gallon (e.g., 75 ft²/gallon). Using a fresco troweling technique (i.e., using random “x” and “y” patterns to break up the “windshield wiper” effect of hand troweling) can also create an interesting effect. Another option to create an unusual visual effect is to wait for the Key Luster Metallic to become slightly tacky (20 minutes after mixing) 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. Small quantities (e.g., eyedropper quantities) of mixed solid color Key #520 or Key #510 may be sprinkled into the second coat of Key Luster Metallic while wet and lightly troweled to create a swirled or mottled appearance.
- ii. Apply Key #502 Black under certain Key Luster Metallic colors for contrast. Broadcasting the Key #502 with 30 mesh silica sand or black colored quartz also can create different textured visual effects.

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 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)

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

Note: For residential garages use Key #450, Key #467-HS or Key #470 for the topcoat. It may be advised to use Key Luster Metallic Pigment Packs in Key #470 for final metallic topcoat in direct sunlight.

1. Key #450 Aliphatic Urethane Coating (Clear, Gloss or Satin Finish)

- 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 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. Note on finished appearance: Thinner application rates (>300 ft²/gallon) will result in a slight to prominent orange peel texture, thicker application rates (225-300 ft²/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 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.
2. **Key #445 Water-Based Aliphatic Urethane Coating (Clear, Matte)**
 - 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 ft²/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 ft²/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. Two coats are recommended for consistent appearance, superior protection against wear, impact, and chemical attack.
 - iv. Do not open to light traffic for 24 hours. Full chemical cure and maximum resistance are achieved in five (5) days.
3. **Key #446 Water-Based Aliphatic Urethane Coating (Clear, Gloss)**
 - 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. If approved, up to 5% (by volume) water may be added.
 - iii. **Do not mix more material than can be used in two hours.**
 - b. Application

- i. Apply at a coverage rate of 300-350 ft²/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 ft²/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 10 hours (at 77 degrees F) before applying a second coat. Two coats may be necessary (depending on coverage rate) for consistent appearance, superior protection against wear, impact, and chemical attack.
 - iv. Do not open to light foot traffic for 24 hours. Full chemical cure and maximum resistance are achieved in five (5) days.
4. **Key #470 Polyaspartic Polyurea Coating (Clear, Gloss)**
 - a. Mixing
 - i. 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.
 - ii. Up to 15% solvent by volume (MEK or VOC compliant solvent available from Key Resin) may be added to lengthen pot life and allow for easier application at 200-250 ft²/gallon.
 - iii. **Do not mix more material than can be immediately poured out in ribbons, spread and backrolled in 15 minutes, unless 10%-15% MEK solvent is added which will increase pot life to 20+ minutes.**
 - b. Application
 - i. Immediately pour material onto floor in a ribbon and spread using a squeegee, notched squeegee or trowel at a coverage rate of 100-200 ft²/gallon. This will yield 8-15 mils dry film thickness. Applying at a thinner application rate (except when solvent is added), over rolling or backrolling too late MAY RESULT IN BUBBLING IN THE CURED FILM. “Dip and roll” procedure may be used if solvent is added.
 - ii. Immediately back roll gently with a short nap roller to even the surface texture of the coating. Application rate of >200 ft²/gallon will yield an “orange peel” appearance over a smooth basecoat.
 - iii. Allow material to cure 2-3 hours (at 75 degrees F) before applying a second coat. If cure time exceeds 6 hours, first coat **must** be sanded or screened before applying second coat, except when the prior coat is a grout coat over a full aggregate broadcast.
 - iv. Do not open to light foot traffic for 2-3 hours (at 75 degrees F). Vehicle traffic in 24-48 hours depending on applied thickness and temperature. Full chemical cure and maximum chemical resistance and hot tire resistance are achieved in 48 hours.
5. **Key #512 UV Resistant Epoxy (Clear)**
 - a. Mixing
 - i. Mix two (2) parts by volume of Key #512 UV Part A (Resin) with one (1) part by volume of Key #512 UV Part B (Hardener) for three minutes with a low speed electric drill mixing paddle.
 - ii. **Mix only that amount of material that can be immediately poured out in ribbons, spread with squeegee and backrolled in 30 minutes.**
 - b. Application
 - i. Immediately pour mixed material onto floor in strips and spread at a rate of 100 to 160 ft² per gallon using a trowel or squeegee. It is recommended that the

material be lightly backrolled with a short or medium-nap roller to smooth and level any tails or ridges.

- ii. Allow material to cure 14-16 hours (at 70 degrees F) before applying a second coat.
- iii. Do not open to light traffic for 24 hours. Full chemical cure and maximum resistance are achieved in five (5) days.