Installation Instructions

Key Mortar Standard

I. GENERAL INFORMATION

KEY MORTAR STD is a resin flooring system consisting of 100% solids epoxy resin and aggregates which provide heavy-duty protection at 3/16"-1/4". When grouted and sealed, **KEY MORTAR STD** eliminates porosity and produces a dense, skid-inhibiting finish that will minimize dirt and chemical penetration. Urethane and epoxy finish coats provide specific performance characteristics as applicable. Consult subsequent installation instructions concerning specific requirements.

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 75ºF with a minimum slab temperature of 60ºF is recommended for proper cure of the resin flooring system. Use Key #635 MVT, Key Urecon SLT or Key Epocon moisture vapor treatment if moisture testing confirms excessive moisture. Consult with Key Resin on the proper system to use for your specific project.

III. MATERIAL QUANTITIES

A. Guideline System Requirements for 1000 ft²	**1/4 inch**	**3/16 inch**
Key Mortar STD	*Qty./ 1000 ft²*	*Qty./ 1000 ft²*
1. *Key # 502* Primer/Low-Modulus Binder	4 gallons	4 gallons
2. *Key #510 or Key #515* Epoxy Binder	26¼ gallons	21 gallons
3. *Key Mortar Blended Aggregate BMA-50*	2100 #	1680 #
4. *Key #510-P* Epoxy Binder (grout coat)	10-12 gallons	10-12 gallons
5. *Key #520* 100% Solids Epoxy Coating*	6-10 gallons	6-10 gallons
6. *Key #450* Urethane Topcoat (optional)*	3-4 gallons	3-4 gallons

Note: Key #520 may be substituted for Key #510-P in step #4

Note: Key One Step Aggregate Blend (37 lbs.) or BMA-40 (42 lbs.) may be substituted for BMA-50 if a more resin rich mix design is preferred. Be sure to increase the quantity of resin per 1000 square feet (i.e., maintain the same quantity in weight of the total aggregate used).

*Note: Alternative topcoats may be required depending on project specifications. Consult with Key Resin Technical Service as necessary.

B. Recommended Batch Quantities

(Note: Key #515 may be substituted for Key #510-P for the mortar binder resin, use same 4:1 mix ratio. Do not use Key #515 for the grout coat)

1. 1.25 gallon unit *Key #510*
2. 100 pounds (2 x 50#) *Key Mortar Blended Aggregate—BMA-50*

Estimated Batch Coverage: 42-48 ft² at ¼"

Recommended quantities for smaller mixers

1. ½ gallon *Key #510* part A/ 1 pint *Key #510* part B
2. 50 pounds *Key Mortar Blended Aggregate—BMA-50*

Estimated Batch Coverage: 21-24 ft² at ¼"

Note: Alternative blended mortar aggregates may be substituted for BMA-50.

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.

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 and helical mixer.
   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 immediately poured out and spread/backrolled in 30-40 minutes (at 75 degrees F.). Do not let mixed material remain in mixing bucket longer than 5 minutes or pot life 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 200 to 250 ft² per gallon.
   c. Back roll with a short nap roller.
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 or for prolonged periods, broadcast lightly with dry silica sand.

B. Trowelled Mortar

1. Mixing ***Key #510*** **Epoxy Binder & Aggregate**
   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 and helical mixer.

c. Slowly add *Key Blended Mortar Aggregate* to the premixed *Key #510* while mixing in a KOL Mixer, or in a suitable container for mixing with a drill and large helical mixer. A “hole hog” works best with a drill.
d. Continue mixing resin/aggregate mortar for 3 to 4 minutes or until aggregate is uniformly wet.

2. Application
   a. Place mortar mixture on primed surface and spread with flat trowel or screed to a thickness of 1/4 inch.
   b. Finish trowel with a flat steel trowel (recommended 3" x 12"). Use sufficient pressure to compact the surface of the topping. Machine trowelling is recommended for better compacting of the mortar for applications where feasible.
3. Allow the trowelled mortar to cure overnight.

C. Grouting and Sealing

Grouting with *Key #510 Epoxy Binder*

1. Lightly sand and sweep trowelled mortar after overnight cure prior to grouting. Grouting may be performed with *Key #510* Pigmented Epoxy Binder if a second topcoat is applied using *Key #520*. Alternatively, *Key #520* Epoxy Coating may be substituted for the grout coat for better pigment hiding.
2. Mixing ***Key #510*** **Epoxy Binder**
   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 and helical mixer.
   c. ***Do not mix more material than can be immediately poured out in ribbons and spread/backrolled within 30-40 minutes. Do not leave mixed material in the pail for longer than 5-10 minutes or working time will be significantly reduced!***
3. Application of **grout coat**
   a. Pour mixed epoxy onto sanded and swept surface.
   b. Spread with either a flat trowel or squeegee at a coverage rate of 80-100 ft² per gallon forcing material tightly onto the surface.
   c. Back roll with a short nap roller.

Note: Additional application of Key #510 may be necessary if grout soaks unevenly into surface.

Sealing with *Key #520 100% Solids Epoxy Coating*

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 and helical mixer.
   iii. ***Do not mix more material than can be immediately poured out in ribbons and spread/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!***

b. Application of **finish/seal coat**
   i. Pour material onto floor in a line and spread with a roller or flat squeegee to a coverage of 100-160 ft²/gallon. This will yield 10-16 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 12 hours before applying a second coat. Two coats are recommended for 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.

Key #450 Urethane Topcoat

A finish coat using *Key #450 Urethane Topcoat* can be applied in order to achieve added performance and chemical resistance. If desired, *Key #450* is applied over the grouted and sealed portion of the floor. Be careful in small enclosed rooms with poor ventilation or when conditions are very humid. Poor curing can result in either situation.

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.