

## Technical Bulletin #8

### Pitching & Sloping Epoxy Toppings

#### I. GENERAL INFORMATION

Often flooring projects require that the floor be pitched or sloped to a drain. Key Resin Company recommends that this be accomplished with similar materials or compatible materials to the flooring system. For example, an epoxy flooring system needs an epoxy fill material while a vinyl ester requires a vinyl ester fill material. Failures can result from using improper fill material.

Time permitting, cost savings can be achieved by using a polymer modified concrete system. These cure more rapidly than conventional Portland cement systems but still require extra time for curing. Key Resin Company recommends that polymer modified concrete fill for sloping or repair only be used for epoxy and polyurethane flooring systems. **Never use polymer modified fill beneath polyester or vinyl ester flooring systems.** Contact the Key Resin Company Technical Department for information concerning fill systems that may be used under polyester or vinyl ester flooring systems.

#### II. CALCULATING FILL MATERIAL REQUIREMENTS

The required slope for a project is expressed in terms of sloping x inches in y feet. The slope is specified as providing a "slope to drain of 1/2" in 5 ft." Calculating the material required involves determining the volume of the area to be sloped.

##### A. EPOXY FILL MATERIAL FOR FILLS UP TO 1/2"

1. 1.25-gallon unit *Key #510 Epoxy Binder*
2. 80 pounds (2 x 40#) *Key Mortar Blended Aggregate*

##### B. EPOXY FILL MATERIAL FOR FILL 1/2" TO 1" (approximate yield = 1 ft<sup>3</sup>)

1. 1.25-gallon unit *Key #510 Epoxy Binder*
2. 60 pounds 1/4" pebbles
3. 20 pounds 1/8" pebbles
4. 10 pounds 20-40 mesh silica sand
5. 10 pounds 50-100 mesh silica sand

##### C. EPOXY FILL MATERIAL FOR FILL OVER 1" (approximate yield = 1 ft<sup>3</sup>)

1. 1.25-gallon unit *Key #510 Epoxy Binder*
2. 40 pounds 1/2" pebbles
3. 20 pounds 1/4" pebbles
4. 20 pounds 1/8" pebbles
5. 10 pounds 20-40 mesh silica sand
6. 10 pounds 50-100 mesh silica sand

### D. POLYMER MODIFIED FILL MATERIAL FOR FILL OVER 1" (approximate yield = 5 ft<sup>3</sup>)

1. 5-gallon unit *Key Acrylic Polymer*
2. 94 pounds (1 bag) Portland Cement
3. 200 pounds 1/16"-1/8" Graded Quartz
4. 75 pounds 1/16" Quartz
5. 25 pounds Silica Flour
6. 200 pounds 3/8" Graded Hard Aggregate

Polymer modified concrete can be used to fill under epoxy or polyurethane flooring systems with proper cure.

Resin flooring system	Days of Cure Required
Epoxy	10-14 days
Polyurethane	14-18 days

### E. VINYL ESTER FILL MATERIAL FOR FILL 1/2" (approximate yield = 3 ft<sup>3</sup>)

Vinyl Ester mortars should never be applied at less than 1/2" depth at a time. Depths of vinyl ester will tend to shrink and pull away from the substrate. Requirements of more than 1/2" should be applied in successive applications of 1/2" toppings.

1. 5-gallon unit *Key Vinyl Ester Binder*
2. 200 pounds 1/16" Graded Quartz
3. 50 pounds 28 mesh silica sand
4. 50 pounds Marble Fines