

Technical Bulletin #8-A

Pitching & Sloping Floors

I. GENERAL INFORMATION

Flooring projects may require that the floor be pitched or sloped to a drain. Key Resin Company cannot provide absolute guidelines for a minimum sloping requirement but a general rule of thumb to consider is 1/8" elevation per lineal foot is an effective slope to run water to a drain. If the slope is to be created by the flooring contractor, Key Resin Company recommends that materials used for creating the slope should be similar to or compatible with the flooring system materials. All materials used must be reviewed and approved by Key Resin. Failures can result from using improper materials. For new construction projects the most cost-effective method is to achieve the desired slope during installation of the concrete slab by the concrete contractor.

Time permitting, cost savings can be achieved by using trowel grade acrylic polymer-modified concrete or calcium aluminate cement toppings that have minimum 300 psi tensile pull strength (as measured following ASTM D7234 test method). These materials cure more rapidly than conventional Portland cement systems but still require extra time for curing depending on the material used. Several proprietary cement materials allow for top coating/overlaying with epoxy in 24 hours or less. Key Resin Company recommends that if acrylic polymer- modified (polyacrylate) concrete fill is used for sloping or repair, use only with epoxy and polyurethane flooring systems. **Never use acrylic polymer modified cement fill beneath MMA (methyl methacrylate) or vinyl ester flooring systems.** Contact Key Resin Technical Service for information concerning fill materials that may be used under MMA 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 4 ft.", for example. Calculating the material required involves determining the volume of the area to be sloped.

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

1. 1.25-gallon unit *Key #510 Epoxy Binder (contact Key Resin for other optional materials, including Triple X fill epoxy when available)*
2. 75-100 lbs *Key Blended Mortar Aggregate*

B. EPOXY FILL MATERIAL FOR 1/2" TO 1" (approximate yield = 1 ft³)

1. 1.25-gallon unit *Key #510 Epoxy Binder (contact Key Resin for other optional materials, including Triple X fill epoxy when available)*
2. 50-60 lbs 1/4" pea gravel (washed and dried)
3. 50 lbs *Key Blended Mortar Aggregate*

C. EPOXY FILL MATERIAL FOR OVER 1" (approximate yield = 1 ft³)

1. 1.25-gallon unit *Key #510 Epoxy Binder (contact Key Resin for other optional materials, including Triple X fill epoxy when available)*
2. 30-40 lbs 1/2" pea gravel (washed and dried)
3. 20 lbs 1/4" pea gravel (washed and dried)
4. 50 lbs *Key Blended Mortar Aggregate*

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D. POLYMER MODIFIED CEMENT FILL MATERIAL FOR 1" (approximate yield = 5 ft³)

1. 5-gallon unit *Key #810 Acrylic Polymer (additional Key #810 is needed for priming)*
2. 94 lbs (1 bag) Portland Cement
3. 300 lbs *Key Blended Mortar Aggregate*
4. 200 pounds $\frac{3}{8}$ "- $\frac{1}{2}$ " pea gravel (washed and dried)

Polymer-modified concrete can be used to fill underneath epoxy or polyurethane flooring systems with proper cure. Required minimum cure time before application of the resin flooring system will vary by thickness, temperature, and type of resin flooring system. In general, allow 7-10 days for thickness up to 1", 14-21 days for thickness >1". Several proprietary cement materials allow for top coating/overlying with epoxy in 24 hours or less, contact Key Resin Technical Service for recommendations.

E. VINYL ESTER FILL MATERIAL FOR $\frac{1}{2}$ " (approximate yield = 3 ft³)

Vinyl Ester mortars should never be applied at greater than $\frac{1}{2}$ " depth at a time. Depths of vinyl ester will tend to shrink and pull away from the substrate. Requirements of more than $\frac{1}{2}$ " must be applied in successive applications of $\frac{1}{2}$ " toppings. Allow each application to cure tack free before applying successive applications.

1. 5-gallon unit *Key Vinyl Ester Binder/Coating*
2. 300 pounds *Key SBMA-VE Blended Mortar Aggregate*

F. METHYL METHACRYLATE (MMA) FILL MATERIAL

Key Urecon TG, Key #9418 MMA, or Key #9510 MMA may be used for fill underneath Key MMA Flooring Systems. Contact Key Resin Technical Service for specific recommendations.

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