



REMR MATERIAL DATA SHEET CM-LM-1.1  
 LATEX-MODIFIED MORTAR: SikaTop 123  
 GEL MORTAR

1. NAME

SikaTop 123 Gel Mortar  
 Latex-Modified Mortar

2. MANUFACTURER

Sika Corporation  
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 Tel 201-933-8800

3. DESCRIPTION

SikaTop 123 Gel Mortar is a latex-modified mortar consisting of two components: a latex emulsion and cementitious powder. When mixed and cured, the material has the appearance of a portland-cement mortar.

4. USES & LIMITATIONS

Uses: SikaTop 123 Gel Mortar can be used for repairing and overlaying concrete. It has been formulated specifically for vertical and overhead applications. Other, less viscous latex-modified mortars should be used for most horizontal applications. The material can be applied in layers of up to 1-1/2 in. thick for one application to repair overhead and vertical spalls in concrete. Spalls of greater depths can be repaired by letting the material harden after the first application and then applying a second layer. The length of time between applications is dependent on a number of factors including weather conditions.

Limitations: The minimum application thickness of this material is 1/8 in. The minimum ambient and surface temperatures should be 45°F (7°C) and rising at time of application. No solvent-type curing compounds should be sprayed over this material. The material should not be subjected to continuous water immersion until it has air cured for at least 7 days.

5. MANUFACTURER'S TECHNICAL DATA

Packaging: Two-component kit which weighs 52.5 lb and yields approximately 0.4 cu ft. Component A is a blue-colored, emulsified copolymer in a 1-gal plastic bottle. Component B is a blend of graded aggregates, selected cements, and admixtures.

Shelf Life: Component A--1 year  
 Component B--6 months

Storage Conditions:

Component A should be stored at 65 to 80°F and protected from freezing. If frozen it should be discarded. Component B should be stored at 65 to 80°F and kept dry.

Mixing Ratio: Component A: Component B, 1:5.17 by wt.

Application Time: Approximately 15 min after adding the bagged dry component to the liquid component. The mortar remains plastic for a longer period but will have less adhesion after 15 min. The application time is dependent on temperature: it is faster in heat; slower in cool.

Finishing Time: Approximately 20 to 60 min after combining components; depends on temperature, relative humidity, and type of finish desired.

Bond Strength (Pull-Off Method):  
Greater than concrete

Compressive Strength:

|   |                   |
|---|-------------------|
| 75°F, 50% relative humidity (typical results) | 1-day--2,000 psi  |
|   | 3-day--3,500 psi  |
|   | 28-day--5,000 psi |

## 6. MANUFACTURER'S GUIDANCE FOR APPLICATION

Substrate: Concrete, mortar, and cementitious masonry products.

Surface Preparation: Remove all deteriorated concrete, dirt, oil, grease, and other bond-inhibiting materials from surface. Be sure patch area is not less than 1/8 in. in depth. Preparation work should be done by sand-blasting, chipping, or other appropriate mechanical means. Obtain aggregate fracture with a minimum surface profile of  $\pm 1/16$  in. Dampen surface to be repaired with clean water. Substrate should be saturated surface dry prior to application.

Mixing: SikaTop 123 can be mixed manually or mechanically. Manual mixing should be done in a bucket, wheelbarrow, or mortar box. Mechanical mixing should be done with a heavy-duty, slow-speed drill (400- to 600-rpm) with a Sika Gel mixing paddle.

Mixing Procedures: Approximately four-fifths of Component A should be poured into the mixing container and Component B added while mixing continues until a uniform consistency is obtained for a maximum of 3 min. If a looser consistency is desired additional Component A can be added. If manual mixing takes more than 3 min, smaller quantities should be used.

Should smaller quantities be needed, components must be dosed in correct ratio and Component B thoroughly premixed before dosing.

Application & Finishing: At the time of application, the surface should be damp (saturated surface dry) with no glistening water. A portable sprayer is suggested. The mortar must be scrubbed into the substrate, filling all pores and voids. The material should be forced against the edge of repair and worked toward the center. It should be allowed to set to desired stiffness and then cut and finished with a wood or sponge float for a smooth surface. For an extra smooth finish, the surface should be blessed with water and then steel trowelled. Priming is not always required. If the surface is porous, or the mixture is stiff, the remaining Component A can be used as a prime coat. It should be brushed over the substrate just before the repair is placed. The repair area should not be primed until time to place the patch. The mortar must be placed while the prime coat is wet. It must not be allowed to dry before the mixture is placed. Should the prime coat dry, the area should not just be reprimed; first the dried prime coat must be removed by mechanical means.

Curing: Curing is not required under most conditions. A mist spray of water can be used if ambient conditions (high temperature, low humidity, strong winds) might cause premature surface drying. If necessary, the newly applied mortar should be protected from rain. To prevent freezing, the repair should be covered with insulating material.

Clean Up: SikaTop 123 should be removed from tools and mixing equipment with water. Cured material can only be removed mechanically.

## 7. CORPS OF ENGINEERS' EVALUATION

This material was tested at the Waterways Experiment Station (WES) and was chosen for vertical and overhead concrete-spall repairs on buildings and concrete footings around a water tower at Fort Bragg, NC.

### Test Results:

|   |       |
|---|-------|
| Bond str to concrete,<br>ASTM C 88, psi | 2,600 |
| Compressive str, psi                    | 5,800 |
| Tensile str, psi                        | 840   |

All test specimens were tested after air curing for 28 days at 75°F and 50 percent relative humidity.

The material was used for concrete repairs at Fort Bragg in August 1984. Concrete spalls located on the bottom side of concrete balconies and their support columns on a multistory building were repaired, and the material was also applied to concrete footings around a watertower. No problems in application were observed during the repairs. The overhead spalls on the balconies were 1/2 to 1-1/2 in. in depth, and these were patched in one application. Some of the spalls on the support columns were 3 to 4 in. in depth. These were patched in two applications. The patches were finished with a steel trowel followed by a damp sponge float. The durability of these repairs is being monitored by WES.

## 8. ENVIRONMENTAL CONSIDERATIONS

Reasonable caution should guide the preparation, repair, and cleanup phases of concrete or mortar repair activities involving potentially hazardous and toxic chemical substances. Manufacturer's recommendations to protect occupational health and environmental quality should be

carefully followed. Material safety data sheets should be obtained from the manufacturers of such materials. In cases where the effects of a chemical substance on occupational health or environmental quality are unknown, chemical substances should be treated as potentially hazardous toxic materials.

## 9. AVAILABILITY & COST

Availability: This material is available throughout the US through a network of local distributors.

Cost: Approximately \$30 per kit.

## 10. TECHNICAL SERVICES

A national network of applicators approved by the manufacturer offers field services, assistance, and related information.