



REMR MATERIAL DATA SHEET CM-PC-1.5

CONCRETE PATCHING MATERIAL: SIKASET ROADWAY
PATCH

1. NAME

SikaSet Roadway Patch

that is easily applied to clean, sound substrate. It contains no chlorides, is not flammable, and is not a vapor barrier.

2. MANUFACTURER

Sika Corporation
PO Box 297
Lyndhurst, NJ 07071
Telephone: 201-933-8800

Limitations: SikaSet Roadway Patch should be stored at 65 to 80° F, according to ACI recommendations. Only potable water should be used in mixing; it must be applied on a clean, sound substrate with minimum ambient and surface temperatures at 45° F and rising. The minimum application thickness is 1/2 in. as a mortar and 1 in. extended with aggregate. It should not exceed a 7-in. slump and should not be featheredged.

3. DESCRIPTION

SikaSet Roadway Patch is a one-component, very rapid-hardening, early strength-gaining, cementitious, patching material for concrete.

6. MANUFACTURER'S TECHNICAL DATA

4. APPLICATION SPECIFICATION

ASTM C 928, "Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs."

Packaging: 60-lb multiwall bag of blended cements, accelerators, and fine aggregates.

Yield: Approximately 0.45 cu ft.

5. USES & LIMITATIONS

Uses: SikaSet Roadway Patch is a structural repair material for pot holes in concrete roadways, parking structures, bridges, dams, and ramps. An economical patching material for horizontal repairs of concrete and mortar, it can be used on, above, and below grade. As defined by ASTM C 928, it hardens very rapidly. It has high early strength and is fast setting. It is open to foot traffic in 1-1/2 hr and to vehicle traffic in 2 hr. It is a labor-saving device

Mixing ratio: Approximately 1 gal of water per bag. If a higher flow is needed, up to 1 pt of additional water may be added.

Color: Concrete gray.

Shelf life: 1 yr in original container. Keep dry.

Storage conditions: Store at 65° to 80° F. Keep dry.

Application life: Approximately 15 to 25 min working time after powder is added to the water.

Mechanical properties:

<u>Properties</u>	<u>Test Method</u>	<u>Results</u>			
		<u>2 hr</u>	<u>1 day</u>	<u>7 days</u>	<u>14 days</u>
Compressive strength, psi	ASTM C 109	2,200	5,400	7,200	7,800
Flexural strength, psi cured @ 100% relative humidity, 1 day	ASTM C 078	300	500	1,500	--
Splitting tensile, psi	ASTM C 496	200	500	580	--
Bond strength, psi	ASTM C 882 (modified)	850	2,100	3,000	--

Setting time: (ASTM C 266) Initial set is approximately 40 min; final set, approximately 50 min.

7. MANUFACTURER'S GUIDANCE FOR APPLICATION

Surface preparation: Before SikaSet Roadway Patch is applied, the surface must be clean and sound. All deteriorated concrete, dirt, oil, grease, and other bond-inhibiting materials must be removed from the area to be repaired. Preparation work should be done by jack-hammering or with an appropriate chipping device. The repair area should not be less than 1/2 in. in depth. A new aggregate face should have a minimum surface profile of +1/8 in. Sawcutting the edges is preferred; a dovetail edge is recommended. The surface to be repaired should be dampened with clean water, but there should be no puddles. The substrate should be saturated surface dry prior to application.

Mixing: SikaSet Roadway Patch should be mechanically mixed in an appropriately sized mortar or concrete mixer. Prior to mixing, the mixer and all tools to be used should be wet down. Approximately 1 gal of water should be put into the mixing vessel, and 1 bag

of SikaSet added while the mixing continues. If additional water is needed to produce a higher flow, up to 1 pt of water may be added. For an application greater than 1 in. in depth, 3/8-in. coarse aggregate should be added. The aggregate must be clean, well graded, and surface dry. The additional rate must not exceed 42 lb of aggregate per bag of SikaSet Roadway Patch. (Forty-two pounds of 3/8-in. aggregate is approximately 3.0 to 3.5 gal by loose volume aggregate.) Exceeding a 7-in. slump may cause excessive bleeding and retardation and will reduce the strength and performance of the material.

Application: At the time of application, the surface should be saturated surface dry with no glistening water. The prepared mortar must be scrubbed into the substrate; all pores and voids must be filled. The material should be forced against the edge of the repair and then worked toward the center. After the repair is filled, the excess should be removed with a screed. After the concrete sets to the desired stiffness, it can be finished. If a smoother finish is desired, a magnesium float should be used. Mixing, placing, and finishing should not exceed a 30-min maximum. Setting times can be controlled by the

use of cold water in hot weather and hot water in cold weather.

Special considerations: Maximum bond is achieved with application of a scrub coat of properly prepared, saturated surface dry substrate. The application of a curing compound such as Sikagard Cure/hard meeting ASTM C 309 is recommended. Tools should be washed free of SikaSet Roadway Patch; cured material can be removed only by mechanical means.

Safe handling information: SikaSet Roadway Patch, as with any cementitious material, may, in certain cases, cause skin irritation. In case of skin contact, the area must be washed thoroughly with water. If there is eye contact, the eyes must be washed thoroughly with water and the nearest doctor consulted.

8. CORPS OF ENGINEERS' EVALUATION

Technical data:

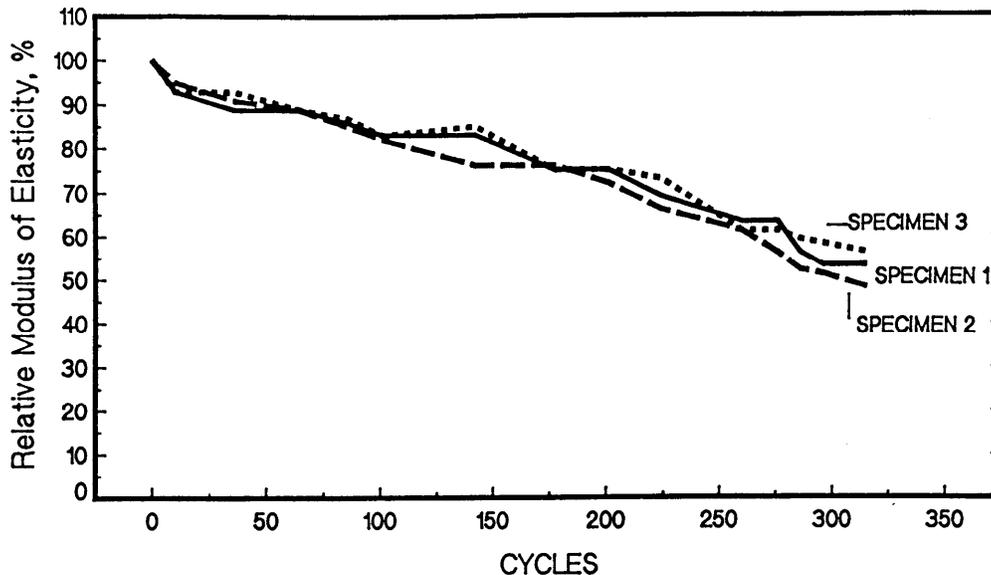
<u>Properties</u>	<u>Test Method</u>	<u>Results</u>
Compressive strength, psi	ASTM C 39	
	2 hr	1,310
	3 hr	2,350
	4 hr	2,430
	24 hr	5,520
	28 days	6,520
Modulus of elasticity, psi	ASTM C 469	
	1 day	5.94×10^6
	28 days	5.24×10^6
Flexural strength, psi	ASTM C 78	
	3 hr	350
	24 hr	770
	28 days	880
Bond to concrete, psi	ASTM C 882	
	24 hr	2,160
	28 days	3,810
Shrinkage, percent	GR-83-10*	
	(Unconfined Condition)**	0.001
	(Concrete Patch)†	-0.006

* Bureau of Reclamation Technical Report Standard.

** An exotherm of 20° F was reported at 1-1/2 hr on the shrinkage specimen using a mixture proportion of 60 lb of material, 35 lb of aggregate, and 1 gal and 1 pt of water.

† An exotherm of 5° F was reported on this specimen with the same mixture proportion as above.

Rapid Freezing and Thawing, ASTM
C 666, Relative Dynamic Modulus of
Elasticity, %:



9. ENVIRONMENTAL CONSIDERATIONS

Reasonable caution should guide the preparation, repair, and cleanup phases of concrete patching 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.

10. AVAILABILITY & COST

Availability: A network of local distributors is set up to distribute the material.

Cost: The material sells FOB Sika Corporation for \$13.20/bag. It was locally available at the end of 1986 for \$25.00/bag.

11. TECHNICAL SERVICE

Local distributors and a national network of Sika-approved applicators are available.