



## PRODUCT DATA SHEET

# SikaQuick® Set-45

(formerly MasterEmaco® T 545)

### VERY RAPID-SETTING CHEMICAL ACTION MORTAR

#### PRODUCT DESCRIPTION

SikaQuick® Set-45 is a one-component magnesium phosphate-based mortar for ambient and substrate temperatures below 85° F (29° C).

#### USES

- Interior and exterior
- Horizontal and formed vertical or overhead repairs
- Applications requiring high early-strength gain
- Structural concrete repairs
- Partial and full-depth repairs
- Cold temperature repairs
- Grouting applications such as anchor bolts, rebar, dowel rods, and precast applications

#### Substrates

- Concrete

#### CHARACTERISTICS / ADVANTAGES

- Single component to just add water and mix
- Reaches 2,000 psi compressive strength in 1 hour to rapidly return repairs to service
- Takes rubber tire traffic in 45 minutes
- Wide temperature use ranges from below-freezing to hot weather exposures
- Very low drying shrinkage for improved bond to concrete for repair and anchoring applications
- Resistant to freeze/thaw cycles and deicing chemicals so it is usable in most environments
- Air cure only, no wet curing compounds required
- Coefficient of thermal expansion similar to Portland cement concrete for more permanent repairs
- Higher sulfate resistance than conventional mortars

#### PRODUCT INFORMATION

<b>Chemical Base</b>	SikaQuick® Set-45 is a magnesium-phosphate patching and repair mortar.
<b>Packaging</b>	50 lb (22.6 kg) polyethylene-lined bags
<b>Shelf Life</b>	12 months when properly stored
<b>Storage Conditions</b>	Store in unopened containers in cool, clean, dry conditions

## TECHNICAL INFORMATION

<b>Compressive Strength</b>	<b>Time</b>	<b>Plain Concrete at 72° F (22° C)</b>	<b>SikaQuick® Set-45 at 72° F (22° C)</b>	<b>SikaQuick® Set-45 at 36° F (2° C)</b>	(ASTM C 109, modified)
	1 hour	-	2000psi (13.8MPa)	-	
	3 hours	-	5000psi (34.5MPa)	-	
	6 hours	-	5000psi (34.5MPa)	1200psi (8.3MPa)	
	1 day	500psi (3.5MPa)	6,000psi (41.4MPa)	5,000psi (34.5MPa)	
	3 days	1,900psi (13.1MPa)	7,000psi (48.3MPa)	7,000psi (48.3MPa)	
	28 days	4,000psi (27.6MPa)	8,500psi (58.6MPa)	8,500psi (58.6MPa)	
	<b>Modulus of Elasticity in Compression</b>	<b>Time</b>	<b>SikaQuick® Set-45</b>		(ASTM C 469)
	7 Days	4.18 x 10 <sup>6</sup> psi (2.88 x 10 <sup>4</sup> MPa)			
	28 Days	4.55 x 10 <sup>6</sup> psi (3.14 x 10 <sup>4</sup> MPa)			
<b>Flexural Strength</b>	1-day strength on 3 by 4 by 16" (75 by 100 by 406 mm) prisms				(ASTM C 78, modified)
	SikaQuick® Set-45: 550psi (3.8MPa)				
	SikaQuick® Set-45 with 3/8" (9 mm) pea gravel: 600psi (4.2MPa)				
	SikaQuick® Set-45 with 3/8" (9 mm) crushed angular noncalcareous hard aggregate: 650psi (4.5MPa)				
<b>Coefficient of Thermal Expansion</b>	Hot Weather coefficients***: 7.15 x 10 <sup>-6</sup> /° F (12.8 x 10 <sup>-6</sup> /° C)				(CRD-C 39)
	***Determined using 1 by 1 by 11" (25 mm by 25 mm by 279 mm) bars. The test was run with neat mixes (no aggregate).				
<b>Sulfate Resistance</b>	SikaQuick® Set-45 length change after 52 weeks: 0.09%				(ASTM C 1012)
	Type V cement mortar after 52 weeks: 0.20%				
<b>Freeze-Thaw Stability</b>	80% RDM at 300 Cycles				(ASTM C 666, Procedure A(modified**))
	**Method discontinues test when 300 cycles or an RDM of 60% is reached.				
<b>Freeze Thaw De-Icing Salt Resistance</b>	<b>Scaling resistance to deicing chemicals</b>				(ASTM C 672)
	5 Cycles: 0				
	25 Cycles: 0				
	50 Cycles: 1.5(slight scaling)				
<b>APPLICATION INFORMATION</b>					
<b>Coverage</b>	A 50 lb (22.6 kg) bag of mixed with the required amount of water produces a volume of approximately 0.39 ft <sup>3</sup> (0.011 m <sup>3</sup> ); 60% extension using ½" (13 mm) rounded, sound aggregate produces approximately 0.58 ft <sup>3</sup> (0.016 m <sup>3</sup> ).				
<b>Set Time</b>	9-15 min at 72° F (22° C)		(Gilmore ASTM C 266, modified)		
<b>Final set time</b>	10-20 min at 72° F (22° C)		(Gilmore ASTM C 266, modified)		

## BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

## ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

## APPLICATION INSTRUCTIONS

### NOTES ON INSTALLATION

- Color variations are not indicators of abnormal product performance.
- SikaQuick® Set-45 will not freeze at temperatures above -20° F (-29° C) when appropriate precautions are taken.
- Do not add sand, fine aggregate, or Portland cement.
- **Do not use SikaQuick® Set-45 for repairs less than ½" (13 mm) deep. For deep repairs, use SikaQuick® Set-45 formula extended with aggregate,** regardless of the temperature. Consult your Sika representative for further instructions.
- Do not use limestone aggregate.
- Do not deviate from the recommended water content printed on the bag.
- Precondition these materials to approximately 70° F (21° C) for 24 hours before using.
- Protect repairs from direct sunlight, wind, and other conditions that could cause rapid drying of material for the first three hours.
- When mixing or placing in a closed area, provide adequate ventilation.
- Do not use it as a precision machinery grout.
- When using in contact with galvanized steel or aluminum, consult your local Sika sales representative.
- Do not mix partial bags.
- For professional use only; not for sale to or use by the general public.
- Make certain the most current versions of the product data sheet and SDS are being used.
- Proper application is the responsibility of the user. Field visits by Sika personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

### SURFACE PREPARATION

1. Concrete must be structurally sound and fully cured (28 days).
2. Saw cut the perimeter of the area being repaired into a

- square with a minimum depth of ½" (13 mm).
3. Refer to current ICRI Guideline no. 310.2R for surface prep requirements to permit proper bond.
4. Any surface carbonation in the repair area will inhibit chemical bonding. Apply a pH indicator to the prepared surface to test for carbonation. If carbonation is present, abrade the surface to a depth that is not carbonated.

## MIXING

1. SikaQuick® Set-45 must be mixed, placed, and finished within 10 minutes in normal temperatures (71° F [21° C]). Only mix quantities that can be placed in 10 minutes or less.
2. Do not deviate from the following sequence; it is important for reducing mixing time and producing a consistent mix. Use a minimum ½" slow-speed drill and mixing paddle or an appropriately sized forced-action mortar mixer. Do not mix by hand.
3. Pour potable water into mixer. Use a maximum of 4 pts (1.9 L) of water per 50 lb (22.6 kg) bag of SikaQuick® Set-45. Do not deviate from the recommended water content.
4. Add the powder to the water and mix for approximately 1–1½ minutes.
5. Use neat material for repairs from ½–2" (13–51 mm) in depth. **For deeper repairs, extend a 50 lb (22.6 kg) bag of SikaQuick® Set-45 by adding up to 30 lbs (13.6 kg) of properly graded, dust-free, hard, rounded aggregate or non-calcareous crushed angular aggregate, not exceeding ½" (13 mm) in accordance with ASTM C 33, #8 (Test aggregate for fizzing with 10% HCl). If the aggregate is damp, reduce the water content accordingly. Special procedures must be followed when angular aggregate is used. Contact your local Sika representative for more information.**

## APPLICATION

1. Immediately place the mixture onto the properly prepared substrate. Work the material firmly into the bottom and sides of the patch to ensure good bond.
2. Level the SikaQuick® Set-45 and screed to the elevation of the existing concrete. Minimal finishing is required.

## CURING TREATMENT

No curing is required but protect from rain immediately after placing. Liquid-membrane curing compounds or plastic sheeting may be used to protect the early surface from precipitation, but never wet cure.

## LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at [usa.sika.com](http://usa.sika.com) or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

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### Product Data Sheet

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