

## PRODUCT DATA SHEET

# SikaQuick<sup>®</sup>-2500

Very Rapid hardening, repair mortar

### PRODUCT DESCRIPTION

SikaQuick<sup>®</sup>-2500 is a one-part, cementitious, very rapid hardening, early strength gain, cementitious, patching mortar for concrete.

### USES

- On grade, above grade and below grade concrete conditions
- Highway overlays and repairs
- Structural repair material for concrete roadways, parking structures, bridges, dams and ramps
- Full depth patching repairs (may require multiple lifts)
- Economical patching material for horizontal flatwork repairs of mortar lines and concrete surfaces

### CHARACTERISTICS / ADVANTAGES

- Very rapid hardening as defined by ASTM C 928
- Epoxy coatings can be applied as early as 4 hours at 73° F (23° C)
- Freeze / thaw resistant
- Easy to mix and apply - labor-saving
- Not gypsum-based
- High early strength
- Fast-setting
- Open to foot traffic in 45 minutes / Open to vehicular traffic in 1 hour at 73° F (23° C)
- Use in cold temperatures with SikaQuick Winter Boost [at ambient and substrate temperatures of 20° - 45° F (-7° - 7° C)]

### APPROVALS / STANDARDS

- Meets ASTM C 928, Type R3

### PRODUCT INFORMATION

<b>Packaging</b>	50 lb (22.7 kg) bag
<b>Appearance / Color</b>	Gray powder
<b>Shelf Life</b>	12 months from date of manufacture if stored properly in original, unopened and undamaged, sealed packaging
<b>Storage Conditions</b>	Store dry at 40° - 95° F (4° - 35° C) Protect from moisture. If damp, discard material.

## TECHNICAL INFORMATION

Compressive Strength	73° F (23° C)		20° F (-7° C) with 1 cup of SikaQuick® Winter Boost*	(ASTM C 109) 50 % R.H.
	1 hour	2,500 psi (17.2 MPa)		
	2 hours	4,000 psi (27.6 MPa)	1,400 psi (9.7 MPa)	
	1 day	5,700 psi (39.3 MPa)	4,500 psi (31.0 MPa)	
	7 days	7,500 psi (51.7 MPa)	7,000 psi (48.3 MPa)	
	28 days	8,500 psi (58.6 MPa)	8,000 psi (55.2 MPa)	
* Consult SikaQuick® Winter Boost Product Data Sheet.				
Modulus of Elasticity in Compression	28 days	4.6 ×10 <sup>6</sup> psi (32 GPa)		(ASTM C 469) 73° F (23° C), 50% R.H.
Flexural Strength	1 day	800 psi (5.5 MPa)		(ASTM C 293) 73° F (23° C), 50% R.H.
	7 days	1,000 psi (6.9 MPa)		
	28 days	1,100 psi (7.6 MPa)		
Splitting Tensile Strength	1 day	300 psi (2.1 MPa)		(ASTM C 496) 73 °F (23 °C), 50% R.H.
	7 days	500 psi (3.4 MPa)		
	28 days	600 psi (4.1 MPa)		
Tensile Adhesion Strength	Approximately 300 psi (2.1 MPa) Substrate failure; after 28 days			(ACI 503R) 73° F (23° C), 50% R.H.
Slant Shear Strength	1 day	1,800 psi (12.4 MPa)		(ASTM C 882 modified)*
	7 days	2,500 psi (17.2 MPa)		
	28 days	2,700 psi (18.6 MPa)		
* Mortar scrubbed into mechanically prepared, SSD substrate at 73° F (23° C), 50 % R.H.				
Shrinkage	28 days	0.06 %		(ASTM C 157 modified per ASTM C 928) 73° F (23° C), 50% R.H.
Abrasion Resistance	28 days	0.026 inch (0.66 mm) of wear at 1 hour		(ASTM C 779)
Freeze-Thaw Stability	28 days (300 cycles)	98%		(ASTM C 666) 73° F (23° C), 50% R.H.
Freeze Thaw De-Icing Salt Resistance	50 cycles	0.080 lb/ft <sup>2</sup> (391 grams / m <sup>2</sup> )		(ASTM C 672)
Rapid Chloride Permeability	28 days	< 500 Coulombs		(ASTM C 1202 / AASHTO T 277) 73° F (23° C), 50% R.H.

## APPLICATION INFORMATION

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020302040040000012

**BUILDING TRUST**



<b>Mixing Ratio</b>	5 – 5.5 pints (2.4 – 2.6 L)		
<b>Coverage</b>	Neat	0.43 ft <sup>3</sup> (0.012 m <sup>3</sup> )	
	Extended with 25 lbs (11.4 kg) of 3/8 inch (10 mm) pea gravel	0.58 ft <sup>3</sup> (0.017 m <sup>3</sup> )	
	Extended with 50 lbs (22.7 kg) of 3/8 inch (10 mm) pea gravel	0.77 ft <sup>3</sup> (0.022 m <sup>3</sup> )	
(Yield figures do not include allowance for surface profile, porosity or material waste)			
<b>Layer Thickness</b>	<b>Minimum*</b>	<b>Maximum (per lift)</b>	
	Neat	1/4" (6 mm)	1" (25 mm)
	Extended	1" (25 mm)	6" (152 mm)
<ul style="list-style-type: none"> <li>▪ Do not feather edge.</li> <li>▪ Do not exceed 7" (178 mm) slump when extended.</li> <li>▪ Greater application thickness can be achieved with the addition of up to a maximum 50 lbs (22.7 kg) of 3/8 inch (10 mm) coarse aggregate.</li> <li>▪ The maximum aggregate extension is 50 lbs (22.7 kg) of coarse aggregate per bag. Maximum thickness per lift = 8" (203 mm).</li> </ul>			
* Minimum thickness is 1/2" (12.7 mm) with the use of SikaQuick® Winter Boost			
<b>Product Temperature</b>	65° – 75° F (18° – 24° C)		
<b>Ambient Air Temperature</b>	> 45° F (7° C) 20° - 45° F (-7° - 7° C) with the use of SikaQuick® Winter Boost		
<b>Substrate Temperature</b>	> 45° F (7°C) 20° - 45° F (-7° - 7° C) on a frost-free surface with the use of SikaQuick® Winter Boost		
<b>Set Time</b>	12 – 24 minutes	(ASTM C 266) 73° F (23° C), 50% R.H.	
<b>Final Set Time</b>	20 – 40 minutes	(ASTM C 266) 73° F (23° C), 50% R.H.	
<b>Application Time</b>	Approximately 15 minutes Product temperature will affect the Application Time: <ul style="list-style-type: none"> <li>▪ Above 73° F (23° C) will reduce the Application Time and workability</li> <li>▪ Below 73° F (23° C) will extend the Application Time and workability</li> </ul>		

## APPLICATION INSTRUCTIONS

### SURFACE PREPARATION

- Concrete surface must be clean and sound.
- Remove all deteriorated concrete, dirt, oil, grease, and other bond-inhibiting materials from the area to be repaired.
- Be sure repair area is not less than 1/4" (6 mm) in depth.
- Preparation work should be done by high pressure water blast, scabblor or other appropriate mechanical means to obtain an exposed aggregate surface profile of ±1/8" (3 mm) [minimum CSP-6].
- To ensure optimum repair results, the effectiveness of decontamination and preparation should be assessed by a Tensile Adhesion Strength (pull-off) test.
- Saw cutting perimeter edges of concrete repair area at a dovetail angle is preferred.
- Substrate should be Saturated Surface Dry (SSD) with

clean water prior to application. No standing water should remain during application.

- Rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes to corrosion shall be removed from steel reinforcement.
- Surfaces shall be prepared using abrasive blast cleaning techniques or high pressure water-blasting to achieve a bright metal finish.

#### With SikaQuick® Winter Boost

- All the above recommendations have to be followed.
- The concrete must be frost-free before the application.
- Consult current Product Data Sheet SikaQuick® Winter Boost for Dosage recommendations.

## PRIMING

- **Concrete Substrate:** Install a scrub coat of SikaQuick®-2500 prior to placement of the mortar. The repair mortar has to be applied into the wet scrub coat before it dries.
- **Reinforcing steel:** Steel reinforcement should be thoroughly prepared by mechanical cleaning to remove all traces of rust. Where corrosion has occurred due to the presence of chlorides, the steel should be high pressure washed with clean water after mechanical cleaning. For priming of reinforcing steel use Sika® Armatec® corrosion protection products (consult current Product Data Sheets).

## MIXING

- Wet down all tools and mixer to be used.
- Pour the required amount of clean potable water [approximately 70° F (23° C)] into a suitably sized and clean mixing container, using a calibrated measuring jug or similar, to ensure strict control of the water content. Do not over-water.
- Add 1 bag while continuing to mix with a low-speed drill (400-600 rpm) and mortar mixing paddle or in an appropriate mortar mixer.
- Once all the powder has been added, mix to a uniform consistency, maximum 3 minutes, until a lump-free blend is achieved.
- Thorough mixing and proper proportioning of the powder and liquid is necessary.
- Inaccurate proportioning of the powder to liquid will result in a finished product that may not conform to the typical published performance property values.
- **With water or undiluted SikaLatex® R:** Pour 5 pints (2.4 L) of liquid into the mixing container. Slowly add powder, mix and adjust as above. Add up to an additional 1/2 pint (0.24 L) maximum of liquid to achieve desired consistency. Do not over-water.
- **With diluted SikaLatex® R:** SikaLatex® R admixture may be diluted up to 5:1 (water: SikaLatex® R) for projects requiring minimal polymer modification. Pour 5 pints (2.4 L) of the mixture into the mixing container. Slowly add powder, mix and adjust as above.
- **With SikaQuick® Winter Boost**
- Pour the recommended volume of clean, potable water [ $> 34^{\circ} \text{F}$  ( $1^{\circ} \text{C}$ )] into a suitably sized and clean mixing container. There should be no ice in the water.
- Add 1/2 or 1 cup per bag into the water and mix until it is dissolved.
- Add the contents of the SikaQuick®-2500 bag while continuing to mix.
- Refer to the current Product Data Sheet for complete and detailed instructions on the use of the SikaQuick® Winter Boost.

## EXTENSION WITH AGGREGATES

- For applications greater than 1" (25 mm) in depth, add 3/8" (10 mm) coarse aggregate.
- The typical addition rate is 25 - 30 lb (11.4 -13.6 kg) of aggregate per bag. This is approximately 2.0 - 2.4 gallons (7.6 - 9.1 L) by loose volume of aggregate.
- Greater application thickness can be achieved with the addition of up to 50 lbs (22.7 kg) of 3/8" (10 mm) coarse aggregate.
- The aggregate must be non-reactive (reference ASTM C 1260, C 227 and C 289), clean, well graded, Saturated Surface Dry (SSD), have low absorption and high density, and comply with ASTM C 33 size number 8 per Table 2.
- Variations in the quality of the aggregate will affect the physical properties of SikaQuick®-2500 and may result in different strengths.
- Do not use limestone aggregate.
- Do not exceed a slump of 7" (178 mm). This may cause excessive bleeding and retardation and may reduce the strength and performance of the material.

## APPLICATION

- A neat mix of SikaQuick®-2500 mortar must be scrubbed into the mechanically prepared, SSD substrate. Be sure to work into all pores and voids.
- Force material against edge of repair, working toward center. After filling repair area, screed off excess.
- Allow material to set to desired stiffness, then finish with wood or sponge float for a smooth finish, or broom or burlap-drag for a rough finish.
- If a smoother finish is desired, a magnesium float should be used.
- To assist in the finishing process, use SikaFilm® finishing aid. Consult current Product Data Sheet.
- Mixing, placing, and finishing should not exceed 15 minutes maximum.
- Refer to ACI 305 the "Guide to Hot Weather Concreting" or ACI 306 the "Guide to Cold Weather Concreting" when there is a need to place this product while either hot or cold temperatures prevail. Thinner placements will be more sensitive to the temperature conditions.

## CURING TREATMENT

- As per ACI recommendations for portland cement concrete, moist curing is required.
- Moist cure with wet burlap and polyethylene, with a fine mist of water or with a water based,\* compatible, curing compound meeting ASTM C 309.
- Moist curing should commence immediately after finishing.
- Protect freshly applied mortar from direct sunlight, wind, rain and frost.
- To prevent from freezing, cover with insulating material (e.g. curing blanket).

\* Pretesting of curing compound is recommended.

## LIMITATIONS

- Avoid application in direct sunlight, during precipitation and/or when strong winds prevail.
- Use only clean, potable water.
- As with all cement based materials, avoid contact with aluminium to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminium bars, rails, posts, etc. with an appropriate epoxy such as Sikadur®-32 Hi-Mod.
- Bonding agents (e.g. Sika® Armatec® 110 EpoCem) should not be used. Use of the neat mortar as a scrub coat is recommended and preferred. If bonding agents are used, follow cure times for the bonding agents used as a guide prior to putting SikaQuick®-2500 in service. Assure suitability with the manufacturer of the bonding agent.
- For early application of epoxy coatings, on site testing is recommended for verification. Consult coatings manufacturer for advice.
- SikaQuick®-2500 does not form a vapor barrier when cured.
- Ensure temperature do not drop below 20°F the first 3 hours after application of the SikaQuick®-2500 mixed with SikaQuick® Winter Boost.

## 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.

## OTHER RESTRICTIONS

See Legal Disclaimer.

## 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.

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November 2018, Version 01.02  
020302040040000012

## 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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