BUILDING TRUST

PRODUCT DATA SHEET

SikaQuick®-2500

Very Rapid Hardening Repair Mortar

PRODUCT DESCRIPTION

SikaQuick®-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, ramps and walkways
- Full depth patching repairs (may require multiple lifts when mixed Neat)
- Full depth patching repairs when mix is Extended with additional aggregate
- Economical patching material for horizontal flatwork repairs of mortar lines and concrete surfaces

CHARACTERISTICS / ADVANTAGES

- Very rapid hardening as defined by ASTM C928
- 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 to 45 °F (- 7 to 7 °C)]
- Increase Application Time in warm temperatures with SikaCem® Summer Extender [at ambient and substrate temperatures of 85 to 100 °F (29 to 38 °C)]

APPROVALS / STANDARDS

- Meets ASTM C 928, Type R3

PRODUCT INFORMATION

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

TECHNICAL INFORMATION

Abrasion Resistance	28 days		0.026 inch (0.066 mm) of wear at 1 hour		(ASTM C779) 73 °F (23 °C), 50% R.H.

Compressive Strength		**73 °F (23 °C), 50% R.H.**	**20 °F (- 7 °C) with 1 cup of SikaQuick® Winter Boost ***	**100 °F (38 °C) with 1 cup of SikaCem® Summer Extender ****	(ASTM C109)
	1 hour	2,500 psi (17.2 MPa)	-	2,200 psi (15.2 MPa)	
	2 hours	4,000 psi (27.6 MPa)	1,400 psi (9.7 MPa)	3,000 psi (20.7 MPa)	
	1 day	5,700 psi (39.3 MPa)	4,500 psi (31.0 MPa)	4,000 psi (27.6 MPa)	
	7 days	7,500 psi (51.7 MPa)	7,000 psi (48.3 MPa)	6,400 psi (44.1 MPa)	
	28 days	8,500 psi (58.6 MPa)	8,000 psi (55.2 MPa)	7,100 psi (48.9 MPa)	

* Consult current SikaQuick® Winter Boost Product Data Sheet.
** Consult current SikaCem® Summer Extender Product Data Sheet

Modulus of Elasticity in Compression	28 days	4.6 ×10⁶ psi (32 GPa)		(ASTM C469) 73 °F (23 °C), 50% R.H.
Flexural Strength	1 day	800 psi (5.5 MPa)		(ASTM C293) 73 °F (23 °C), 50% R.H.
	7 days	1,000 psi (6.9 MPa)		
	28 days	1,100 psi (7.6 MPa)		
Shrinkage	28 days	0.06%		(ASTM C157 modified per ASTM C928) 73 °F (23 °C), 50% R.H.
Tensile Adhesion Strength	28 days	Approximately 300 psi (2.1 MPa) Substrate failure		(ASTM C1583) 73 °F (23 °C), 50% R.H.
Freeze Thaw De-Icing Salt Resistance	50 cycles	0.080 lb/ft² (391 grams/m²)		(ASTM C672)
Rapid Chloride Permeability	28 days	< 500 Coulombs		(ASTM C1202 / AASHTO T 277) 73 °F (23 °C), 50% R.H.
Slant Shear Strength	1 day	1,800 psi (12.4 MPa)		(ASTM C882 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.

Freeze-Thaw Stability	28 days	300 cycles	98%	(ASTM C666) 73 °F (23 °C), 50% R.H.

Splitting tensile strength	1 day	300 psi (2.1 MPa)	(ASTM C496) 73 °F (23 °C), 50% R.H.
	7 days	500 psi (3.4 MPa)	
	28 days	600 psi (4.1 MPa)	

APPLICATION INFORMATION

Mixing Ratio

5 – 5.5 pints (2.4 – 2.6 liters)

Coverage

	Yield
Neat	0.43 ft³ (0.012 m³)
Extended with 25 lbs. (11.4 kg) of 3/8 inch (10 mm) pea gravel	0.58 ft³ (0.017 m³)
Extended with 50 lbs. (22.7 kg) of 3/8 inch (10 mm) pea gravel	0.77 ft³ (0.022 m³)

(Yield figures do not include allowance for surface profile, porosity or material waste)

Layer Thickness

	Minimum*	Maximum (per lift)
Neat	1/4" (6 mm)	6" (152 mm)
Extended	1" (25 mm)	8" (203 mm)

- Do not feather edge.
- Do not exceed 7" (178 mm) slump when extended.
- 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.
- The maximum aggregate extension is 50 lbs (22.7 kg) of coarse aggregate per bag. Maximum thickness per lift = 8" (203 mm).

* Minimum 'Neat' thickness is 1/2" (13 mm) with the use of SikaQuick® Winter Boost

Product Temperature

65 to 75 °F (18 to 24 °C)

Ambient Air Temperature

> 40 °F (4 °C) and rising
20 to 45 °F (- 7 to 7 °C) with the use of SikaQuick® Winter Boost
Up to 100 °F (38 °C) with the use of SikaCem® Summer Extender

Substrate Temperature

> 40 °F (4 °C) and rising
20 to 45 °F (- 7 to 7 °C) with the use of SikaQuick® Winter Boost
Up to 100 °F (38 °C) with the use of SikaCem® Summer Extender

Application Time

Approximately 15 minutes *
Product temperature will affect the Application Time:

- Above 73° F (23° C) will reduce the Application Time and workability
- Below 73° F (23° C) will extend the Application Time and workability

* At ambient and substrate temperatures from 75 to 100 °F (24 to 38 °C), gain up to an additional 15 minutes (typical) with the use of SikaCem® Summer Extender.

Set Time	12 – 24 minutes	(ASTM C266) 73 °F (23 °C), 50% R.H.
Final set time	20 – 40 minutes	(ASTM C266) 73 °F (23 °C), 50% R.H.

BASIS OF PRODUCT DATA

All stated technical data based on laboratory tests. Actual measured data may vary due to circumstances beyond Sika's control.
Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

LIMITATIONS

- Avoid application in direct sunlight, during precipitation and/or when strong winds prevail.
- Use only clean, potable water when mixing.
- Remixing product after it begins to set is prohibited.
- 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.
- Slower setting bonding agents (e.g. Sika® Armatec®-110 EpoCem, Sika® Armatec®-1C) 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. If Sikadur®-32 Hi-Mod epoxy bonding adhesive is used, moist cure after finishing and do not subject SikaQuick®-2500 to service loads (e.g traffic) for a minimum 24 hours.
- For early application of epoxy coatings, on site testing is recommended for verification. Consult coating manufacturer for advice.
- SikaQuick®-2500 does not form a vapor barrier when cured.
- Do not use solvent based curing compounds. See CURING TREATMENT section for curing compound recommendations.
- Ensure SikaQuick®-2500 is applied to a Saturated Surface Dry (SSD), frost free surface.
- Ensure temperatures do not drop below 20 °F (- 7 °C) for the first 3 hours after application of SikaQuick®-2500 mixed with SikaQuick® Winter Boost.
- Proper application is the responsibility of the end 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.

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

SURFACE PREPARATION

- **Concrete:** 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, scabbler or other appropriate mechanical means to obtain an exposed aggregate surface profile of ±1/8" (3 mm) [minimum ICRI 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.
- **Steel:** Rust, scale, mortar, concrete, dust, other loose and deleterious materials which reduce bond or contribute to corrosion shall be removed.
- 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 above recommendations must be followed.
- Mechanically prepared concrete must be SSD and free of frost before application. Installation in colder temperature conditions makes this requirement very critical.
- Consult the current Product Data Sheet for SikaQuick® Winter Boost for Dosage recommendations.

With SikaCem® Summer Extender
- All above recommendations must be followed.
- Mechnaically prepared concrete must be SSD before application. Installation in warmer temperature conditions makes this requirement very critical.
- Consult the current Product Data Sheet for SikaCem® Summer Extender for Dosage recommendations.

PRIMING

- Concrete Substrate: Install a scrub coat of Neat SikaQuick®-2500 prior to placement of the mortar. The Neat or Extended repair mortar must be applied into the wet scrub coat before it dries.
- Reinforcing Steel: Steel should be thoroughly prepared by mechanical means to a bright finish removing all traces of rust. Where corrosion has occurred due to the presence of chlorides, 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 (i.e. paddles / blades) to be used for mixing.
- 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 water content. Do not overwater.
- 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 for no more than a maximum 3 minutes, until a lump free, homogeneous blend is achieved. Do not overmix.
- 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 liters) of liquid into the mixing container. Slowly add powder, mix and adjust as above. Add up to an additional 1/2 pint (0.25 liter) maximum of liquid to achieve desired consistency. Do not overdose.

- **With diluted SikaLatex® R**: SikaLatex® R admixture may be diluted up to 5:1 (i.e. water to SikaLatex® R) for projects requiring minimal polymer modification. Pour 5 pints (2.4 liters) of the mixture into the mixing container. Slowly add powder, mix and adjust as above. Add up to an additional 1/2 pint (0.25 liter) maximum of liquid to achieve desired consistency. Do not overdose.

- **With SikaQuick® Winter Boost**
- Pour the recommended volume of clean, potable water [> 34 °F (1 °C)] into a suitably sized and clean mixing container. There should be no ice in the water.
- Add 1/2 cup or 1 cup per bag into the water and mix until it is dissolved.
- Add contents of the SikaQuick®-2500 bag while continuing to mix.
- Refer to the current Product Data Sheet for complete instructions on the use of SikaQuick® Winter Boost.

With SikaCem® Summer Extender
- Pour the recommended volume of clean, cold, potable water into a suitably sized and clean mixing container.
- Add 1/2 cup or 1 cup per bag into the water and mix until it is dissolved.
- Add contents of the SikaQuick®-2500 bag while continuing to mix.
- Refer to the current Product Data Sheet for complete instructions on the use of SikaCem® Summer Extender.

EXTENSION WITH AGGREGATES

- When necessary and/or for full depth applications, add 3/8" (10 mm) coarse aggregate [minimum 1" (25 mm) required].
- The typical addition rate is 25 - 30 lbs. (11.4 -13.6 kg) of aggregate per bag. This is approximately 2.0 - 2.4 gallons (7.6 - 9.1 liters) by loose volume of aggregate. Maximum amount of aggregate that can be added is 50 lbs. (22.7 kg) or approximately 4 gallons (15 liters) by loose volume.
- The aggregate must be non-reactive (reference ASTM C1260, C227 and C289), clean, well graded, Saturated Surface Dry (SSD), have low absorption and high density, and comply with ASTM C33 size number 8 per Table 2.
- Variances 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 SikaQuick®-2500 material onto wet scrub coat and 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; 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 the current Product Data Sheet for SikaFilm® before use.
- 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 compatible*, water based, curing compound meeting ASTM C309 (e.g. Sika® Antisol-250 W, Sikagard®-1319 KNS or Sikagard®-180 KNS WB - consult current Product Data Sheets).
- 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 any non-Sika curing compound is highly recommended.

OTHER RESTRICTIONS

See Legal Disclaimer.

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 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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