BUILDING TRUST

PRODUCT DATA SHEET

SikaQuick®-2500

Very Rapid hardening concrete repair mortar

DESCRIPTION

SikaQuick®-2500 is a 1-component, very rapid hardening, early strength gaining, cementitious, patching material for concrete.

USES

- On, above and below grade on concrete
- Highway overlays and repairs
- Structural repair material for concrete roadways, parking structures, bridges, dams and ramps
- Full depth patching repairs
- Economical patching material for horizontal repairs of concrete and mortar

CHARACTERISTICS / ADVANTAGES

- Very rapid hardening as defined by ASTM C-928
- Epoxy coatings can be applied as early as 4 h
- 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 vehicle traffic in 1 hour (+73 °F / +23 °C)
- Not a vapour barrier

PRODUCT INFORMATION

Chemical Base	Cement, selected aggregates and special additives
Packaging	25kg bag
Appearance / Colour	Grey powder
Shelf Life	12 months from date of production
Storage Conditions	Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between ~4 °C and +35 °C(40 °F and 95 °F). Always refer to packaging.

TECHNICAL INFORMATION

Compressive Strength (ASTM C-109)

Time	Compressive Strength
1 hour	~17 MPa (~2'500 psi)
2 hour	~27 MPa (~4'000 psi)
1 day	~39 MPa (~5'700 psi)
7 days	~51 MPa (~7'500 psi)
28 days	~58 MPa (~8'500 psi)

These values were measured at 23 °C/ 50 % r.h. with a w/c= 0.12

Modulus of Elasticity in Compression	~4,6×10⁶ psi (~32 GPa) after 28 days at +73 °F (+23 °C) / 50 % r.h.	(ASTM C-469)

Tensile Strength in Flexure (ASTM C-78)

Time	Tensile strength in Flexure
1 day	~5.5 MPa (~800 psi)
7 days	~6.9 MPa (~1'000 psi)
28 days	~7.6 MPa (~1'100 psi)

These values were measured at +23 °C/ 50% r.h. with a w/c=0.12

Splitting tensile strength (ASTM C-496)

Time	Splitting Strength
1 day	2.0 MPa (300 psi)
7 days	3.4 MPa (500 psi)
28 days	4.1 MPa (600 psi)

These values were measured at +23 °C, 50% r.h. and w/c=0.12

Tensile Adhesion Strength	~2.0Mpa (substrate failure) after 28 days at +23°C/ 50% r.h.	(ACI 503)

Shear Adhesion (ASTM C-882 modified)

Time	Shear Adhesion Strength
1 day	~12 MPa (~1'800 psi)
7 days	~17 MPa (~2'500 psi)
28 days	~21 MPa (~2'700 psi)

These values were measured at +23 °C, 50% r.h. and w/c=0.12

Shrinkage	~0.06% after 28 days at +23 °C/ 50% r.h.	(ASTM C-596)
Abrasion Resistance	~0.026 inches of wear at 1 hour (with a 28 days mortar at 23 °C/ 50% r.h./ w/c= 0.12)	(ASTM C-779)
Freeze thaw resistance	~98% after 28 days at +23 °C/50% r.h. and w/c=0.12	(ASTM C-666)
Freeze Thaw De-Icing Salt Resistance	~0.080 lb/ft² after 50 cycles at +23°C/ 50% r.h.	(ASTM C-672)
Chloride Ion Diffusion Resistance	<500 Coulombs after 28 days at +23 °C/ 50% r.h.	(ASTM C-1202)

APPLICATION INFORMATION

Mixing Ratio	Approximately 2.6 - 2.8 litres of water per 25kg bag
Fresh mortar density	~2'200 kg/m³
Yield	Approximately 12.5ltr. When extended with 12 to 14kg of 10mm stone the yield is approximately 17 -18ltr.

Layer Thickness

	Minimum	Maximum
Mortar	~6mm	~25mm
Extended with aggregate	~25mm	~150mm

Ambient Air Temperature	+7 °C (+45 °F) min.
Substrate Temperature	+7 °C (+45 °F) min.
Pot Life	~15 minutes at +23 °C
Initial Set Time	~6 -10 minutes at +23 °C/ 50% r.h. (ASTM C-266)
Final Set Time	~10-20 minutes at +23 °C/ 50% r.h. (ASTM C-266)

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

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 ~6,0 mm deep. Preparation work should be done by appropriate mechanical techniques. Obtain an exposed aggregate surface with a minimum surface profile of ~3,0 mm (CSP-6) on clean, sound concrete. To ensure optimum repair results, the effectiveness of decontamination and preparation should be assessed by a pull-off test. Saw cutting of edges is recommended. Saturate surface to be repaired with clean water. Substrate should be saturated surface dry (SSD) prior to application.
Steel reinforcement
Rust, scale, mortar, concrete, dust and other loose and deleterious material which reduces bond or contributes 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.

MIXING

For best results, condition material to ~+18 – 24 °C (+65 – 75 °F) before mixing and using.
Mechanically mix in an appropriately sized mortar mixer. Wet down all tools and mixer to be used.
With water: Start with 2.6ltr of water added to the mixing vessel. Add 1 bag of SikaQuick®-2500 while continuing to mix. Add up to another 0.25ltr of water to achieve desired consistency. Do not over water.
With SikaLatex® : Pour 2.8ltr of SikaLatex® into the mixing container. Slowly add powder, mix and adjust as above.
With diluted SikaLatex® : SikaLatex® may be diluted up to 5:1 (water: SikaLatex®) for projects requiring minimal polymer modification. Pour 2.8ltr of the mixture into the mixing container. Slowly add powder, mix and adjust as above. For application greater than 25mm in depth, add 10mm coarse aggregate. The aggregate must be non-reactive (reference ASTM C-1260, C-227 and C-289), clean, well graded, saturated surface dry, have low absorption and high density, and comply with ASTM C-33 size number 8 per Table 2.
Note: Variances in aggregate may results in different strengths. The addition rate is 8 - 13.6 kgs of aggregate per bag of SikaQuick®-2500 8 - 13.6 kgs of 10mm aggregate is approximately ~5-9 ltr by loose volume of aggregate. Do not exceed a slump of 180mm. This may cause excessive bleeding and retardation and will reduce the strength and performance of the material.

APPLICATION

Reinforcement Corrosion Protection / Primer Coating
Where a reinforcement coating is required, apply to the whole exposed circumference, SikaTop® Armatec®-110 EpoCem®. (Refer to Product Data Sheet). The repair mortar must be applied onto coating ‘wet’ on ‘wet’.
Concrete Bonding Primer
Prime the prepared substrate with a scrub coat of SikaQuick®-2500 by firmly scraping the scrub coat over the substrate surface to form a thin layer and fill any pores or cavities in the surface. Ensure the whole surface to be repaired is covered by the scrub coat. The repair mortar has to be applied onto primer ‘wet’ on ‘wet’
Repair Mortar
The repair mortar shall be applied onto the wet scrub coat between the minimum and maximum layer thicknesses without the formation of voids. Where layers are to be built up, to prevent sagging or slumping, each layer should be allowed to stiffen before applying subsequent layers “wet on wet”.
After filling repair, screed off excess. To control setting times, cold water should be used in hot weather and hot water used in cold weather.
Finishing
Finishing should be carried out to the required surface texture using a suitable float as soon as the mortar has started to stiffen.
Note: Mixing, placing, and finishing should not exceed 15 minutes maximum.

CURING TREATMENT

As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a curing compound meeting ASTM C-309. Moist cure should commence immediately after finishing. If necessary, protect newly applied material from rain. To prevent from freezing, cover with insulating material.

CLEANING OF TOOLS

Clean all tools and application equipment with water immediately after use. Hardened material can only be mechanically removed.

LIMITATIONS

- Apply only to sound, prepared substrate.
- Avoid application in direct sun and/or strong winds.
- Do not feather edge.
- Do not exceed ~180 mm slump when extended.
- Use only potable water.
- Variations in aggregates may produce differences in strengths from the typical values stated in Product Data Sheet.
- 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® 32N.
- Do not use SikaTop® Armatec®-110 EpoCem® as a

bonding agent with SikaQuick®-2500.
- For early application of epoxy coatings. On site testing is recommended for verification. Consult coatings manufacturer for advice.

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

ECOLOGY HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

LEGAL NOTES

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