BUILDING TRUST
CONSTRUIRE LA CONFIANCE

PRODUCT DATA SHEET
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MAINTENANCE OF CONCRETE

SikaQuick®-2500

VERY RAPID-HARDENING REPAIR MORTAR

Description

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

Where to Use

- Use on grade, 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.
- Horizontal repairs of concrete and mortar.

Advantages

- Very rapid hardening as defined by ASTM C928.
- Can be used with Sikacem® Accelerator for cold conditions, increased early strengths and reduced curing time.
- Compatible with Sikafloor®, SikaBond®, and Sika® AcouBond systems.
- Allows application of an epoxy coating within 4 hours.
- Freeze/thaw resistant.
- Easy to use; economical patching and labour saving material.
- Contains no added chlorides.
- Formulated with inert, non-reactive aggregates to eliminate potential Alkali-Aggregate Reactivity (AAR).
- Open to foot traffic in 45 minutes, to vehicle traffic in 1 hour [23 °C (73 °F)].
- Easily applied to clean, sound substrates.
- Not a vapour barrier.
- Product recognized by the British Columbia Ministry of Transportation(BC MoT).
- Meets the requirements of CFIA and USDA for use in food plants.

Technical Data

Packaging	25 kg (55 lb) bag
Colour	Concrete Grey
Yield	Approx. 13 L (0.459 ft³). When extended with 12-14 kg (26-30 lb) of 10 mm (3/8 in) aggregate, yield is approx. 17 to 18 L (0.6 to 0.64 ft³).
Shelf Life	12 months in original, unopened packaging. Store dry, ensuring that product is not exposed to rain, condensation or high humidity. For best results, condition product at temperatures between 18 and 29 °C (65 and 84 °F) before using.
Mix Ratio	2.6 - 2.87 L (0.7 - 0.76 US gal.) of water per bag

Properties at 23 °C (73 °F) and 50 % R.H.

Working Time	Approx. 15 min after adding powder to the water
Setting Time ASTM C266	
Initial set	Approx. 14 - 28 min
Final set	Approx. 20 - 40 min

Compressive Strength, MPa (psi)	**Mortar ASTM C109**	**Concrete* ASTM C39**
1 hr	-	8 (1160)
2 hrs	22 (3200)	25 (3630)
4 hrs	35 (5100)	-
1 day	40 (5800)	33 (4790)
7 days	53 (7687)	35 (5100)
28 days	53 (7687)	37 (5366)

*Concrete mix was tested at the addition rate of 12 kg (26.5 lb) of clean, well graded, saturated surface dry, low absorption and high density coarse aggregate. Water was added [2.87 L (0.75 US gal.) per 25 kg (55 lb) bag] to achieve a 125 to 175 mm (5 to 7 in) slump.

***Compressive Strength ASTM C109, MPa (psi) (tested with Sikacem® Accelerator)**

Temperature	**Dosage**	**12 hours**	**1 day**	**2 days**	**28 days**
-5 °C	1 bottle (150 mL)	18 (2610)	26 (3770)	33 (4786)	40 (5800)
-5 °C	2 bottles (300 mL)	25 (3625)	30 (4350)	38 (5511)	53 (7687)
0 °C	1 bottle (150 mL)	23 (3335)	33 (4786)	39 (5656)	55 (7977)
0 °C	2 bottles (300 mL)	30 (4350)	39 (5656)	43 (6236)	58 (8412)
10 °C	1 bottle (150 mL)	30 (4350)	36 (5221)	40 (5800)	58 (8412)
10 °C	2 bottles (300 mL)	36 (5221)	40 (5800)	46 (6671)	61 (8847)

*All moulds, mixing tools and powder components were pre-conditioned to the test temperatures. Prepared test specimens were cast and then cured at the indicated test temperatures until the time of testing.
Liquid/solids ratio (water + Sikacem® Accelerator/SikaQuick® 2500) = 0.115; [2.87 L (0.75 US gal.) of liquid per 25 kg (55 lb) bag of SikaQuick®-2500].

Flexural Strength ASTM C78, MPa (psi)	
28 days	7.3 (1059)
Splitting Tensile Strength ASTM C496, MPa (psi)	
28 days	6.2 (899)
Bond Strength ASTM C882 (modified), MPa (psi)	
1 day	16 (2300)
7 days	-
28 days	19 (2755)

Direct Tensile Bond ACI 503		
28 days	> 2 MPa (290 psi) (substrate failure)	
Drying Shrinkage ASTM C596		
28 days	0.08 %	0.042 % (ABB)
Modulus of Elasticity ASTM C469		
28 days	35 GPa (5.1 x 10^6 psi)	
Freeze/Thaw Resistance ASTM C666		
300 cycles	98 %	
Scaling Resistance ASTM C672		
50 cycles	0.23 kg/m^2 (0.047 lb/ft^2)	

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

HOW TO USE

Surface Preparation

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 mm (1/4 in) in depth. Preparation work should be done by appropriate mechanical means. Obtain an exposed aggregate surface with a minimum surface profile of ± 3 mm (1/8 in) (CSP 6 - 10 as per ICRI) on clean sound concrete. To ensure optimum repair results, the effectiveness of cleaning and preparation should be assessed by a pull-off test. Saw-cutting the edges is recommended. Saturate the surface to be repaired with clean water. Substrate should be saturated surface dry (SSD) with no standing water prior to application.
Reinforcing steel : To protect it, prime reinforcing steel with SikaTop® Armatec-110 EpoCem®, applied as an anti-corrosion coating, and allow to cure.

Priming

Prime the prepared substrate with a scrub coat of SikaQuick®-2500 prior to placement of the mortar. The repair mortar has to be applied onto the wet scrub coat before it dries.

Mixing

Mechanically mix in an appropriately sized mortar mixer. Wet down all tools and mixer to be used. Start with 2.6 L (0.7 US gal.) of water added to the mixing vessel. Add one bag of SikaQuick®-2500 while continuing to mix. Add up to another 270 mL (9.0 US fl. oz) of additional water to achieve desired consistency. For application greater than 25 mm (1 in) in depth, add 11 kg (24 lb) of 10 mm (3/8 in) coarse aggregate. The aggregate must be non-reactive (as per ASTM C1260, C227, and C289), clean, well graded, saturated surface dry, have low absorption, high density and comply with ASTM C33, size number 8 per table 2.
Note: Do not overwater the mix. This may cause excessive bleeding and retardation and will reduce the strength and performance of the material.

Application

The prepared mortar must be scrubbed into substrate. Be sure to fill all pores and voids. Force material against edge of repair, working toward centre. After filling repair, screed off excess. Allow concrete to set to desired stiffness, then finish. If a smoother finish is desired, use a magnesium float. Mixing, placing and finishing should not exceed 15 minutes maximum. To control setting times, cold water should be used in hot weather and hot water in cold weather.

Curing

Protect newly applied material from rain for at least 2 hours. To prevent from freezing, cover with insulating material. If necessary, cure using Sika® Florseal® WB-18 & -25, which meets ASTM C309 requirements.
Note: Do not moist/wet cure.

Clean Up

Clean all tools and equipment immediately after use with water. Once hardened, material can only be removed manually or mechanically. Wash soiled hands and skin thoroughly in hot soapy water or use Sika® Hand Cleaner towels.

Limitations

- Important: protect stored material from exposure to rain, condensation and high humidity as moisture may penetrate packaging, causing lumps.
- For best results, condition product to 18 to 29 °C (65 to 84 °F) prior to mixing and installation. Lower temperatures may result in slower strength development and longer cure times.
- Minimum ambient and surface temperatures: 7 °C (44 °F) and rising.
- Minimum application thickness: 6 mm (1/4 in) as a mortar and 25 mm (1 in) when extended with aggregate.
- Maximum application thickness: 50 mm (2 in) and 150 mm (6 in) when extended with aggregates.
- Not compatible with normal-setting bonding agents, e.g. SikaTop® Armatec-110 EpoCem® and Sikadur®-32 Hi-Mod.
- Do not featheredge.
- Use only potable water.
- Extending with aggregates will reduce compressive and flexural strengths. Dimensions and grading of aggregates will influence effect on physical properties; pre-testing is recommended.
- As with all cement based materials, avoid contact with aluminum to prevent adverse reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur®-32 Hi-Mod.

Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent SAFETY DATA SHEET containing physical, ecological, toxicological and other safety-related data.

KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY

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