

SikaQuick® 1000

Rapid Hardening Repair Mortar with Extended Working Time

Description SikaQuick® 1000 is a one-component, 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.
 - Economical patching material for horizontal repairs of concrete and mortar.

- Advantages**
- Specifically suited for hot weather applications when extended working time is required.
 - Rapid hardening as defined by ASTM C 928.
 - Can be used with Sikacem® Accelerator for cold conditions, increased early strengths & reduced curing time.
 - Compatible with Sikafloor®, SikaBond®, and Sika® AcouBond systems.
 - Allows application of an epoxy coating within 6 hours.
 - Freeze/thaw resistant.
 - Easy to use, labour saving material.
 - Contains no added chlorides.
 - Formulated with inert, non-reactive aggregates to eliminate potential Alkali-Aggregate Reactivity (AAR).
 - Not gypsum based.
 - Open to foot traffic in 4 hours, to vehicle traffic in 6 hours [23°C (73°F)].
 - Easily applied to clean, sound substrates.
 - Not a vapour barrier.
 - Canadian Food Inspection Agency acceptance.

Technical Data

Packaging 25 kg (55 lb) bag
Colour Concrete Grey
Yield Approx. 13 L (0.459 ft³). When extended with 11 kg (24 lb) of 10 mm (3/8 in) aggregate, yield is approx. 17 L (0.6 ft³).
Shelf Life 1 year in original, unopened packaging. Store dry at 5° - 35°C (41° - 95°F). Condition product to 15° - 24°C (59° - 75°F) before using.
Mixing Ratio 2.6-2.87 L (0.7-0.75 US gal.) of water per bag

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

Working Time Approx. 30 min after adding powder to the water

Setting Time ASTM C 266

Initial set Approx. 45-65 min
 Final set Approx. 55-100 min

Compressive Strength, Mortar ASTM C 109, MPa (psi)

1 day 30 (4350)
 7 days 40 (5800)
 28 days 50 (7250)

***Compressive Strength ASTM C 109, MPa (psi) (tested with Sikacem® Accelerator)**

Temperature	Dosage	12 hours	1 day	2 days	28 days
-5°C	180 mL	15 (2175)	19 (2755)	26 (3770)	-
-5°C	360 mL	17 (2465)	19 (2755)	27 (3916)	-
0°C	180 mL	23 (3335)	35 (5076)	41 (5946)	62 (8992)
0°C	360 mL	29 (4206)	43 (6236)	48 (6961)	69 (10007)
10°C	180 mL	30 (4350)	40 (5800)	45 (6526)	68 (9862)
10°C	360 mL	36 (5221)	45 (6526)	50 (7250)	70 (10152)
23°C	180 mL	42 (6091)	48 (6961)	52 (7541)	68 (9862)
23°C	360 mL	48 (6961)	53 (7687)	54 (7832)	70 (10152)

*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® 1000) = 0.115; [2.87 L (0.75 US gal.) of liquid per 25 kg (55 lb) bag of SikaQuick® 1000].

Flexural Strength ASTM C 78

28 days 8.0 MPa (1160 psi)

Splitting Tensile Strength ASTM C 496

28 days 6.0 MPa (870 psi)

Bond Strength ASTM C 882 (modified)

28 days 15.5 MPa (2250 psi)

Direct Tensile Bond ACI 503

28 days > 2 MPa (290 psi) (substrate failure)

Drying Shrinkage ASTM C 596

28 days 0.07%



Modulus of Elasticity ASTM C 469	
28 days	32.7 GPa (4.7 x 10 ⁶ psi)
Freeze/Thaw Resistance ASTM C 666	
300 cycles	98%
Scaling Resistance ASTM C 672	
50 cycles	0.39 kg/m ² (0.08 lb/ft ²)

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) 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 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.

Priming

Prime reinforcing steel with SikaTop® Armatec 110 EpoCem®, applied as an anti-corrosion coating, and allow to cure. Prime the concrete substrate with a scrub coat of SikaQuick® 1000 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® 1000 while continuing to mix. Add up to another 270 mL (9.0 fl oz) of additional water to achieve desired consistency. Do not over water. For application greater than 25 mm (1 in) in depth, add 10 mm (3/8 in) 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, high density and comply with ASTM C 33, size number 8 per table 2.

Note: Variances in aggregate may result in different strengths. Add 11 kg (24 lb) of 10 mm (3/8 in) [8 L (2 US gal.) by loose volume] aggregate by bag of SikaQuick® 1000. Do not exceed a slump of 175 mm (7 in). 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 the material against the edge of the repair working towards the centre. After filling the 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 30 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 4 hours. To prevent from freezing, cover with insulating material. If necessary, cure using a solvent curing compound which meets ASTM C 309 requirements, such as Sika® Flortec® 22. **Note:** Do not moist/wet cure.

Clean Up

Remove SikaQuick® 1000 from tools and mixing equipment with water. Cured product can only be removed mechanically.

Limitations

- 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.
- Do not exceed 175 mm (7 in) slump when extended.
- Not compatible with normal-setting bonding agents, e.g. SikaTop® Armatec 110 EpoCem® and Sikadur® 32 Hi-Mod.
- Do not feather edge.
- Use only potable water.
- Variation in aggregates may produce differences in strengths from the typical values stated in Sika's technical data.
- 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.

Caution

Contains cement and silica sand which may in certain cases, cause skin and eye irritation. Avoid breathing dust. Use only with adequate ventilation. In confined areas, use of a NIOSH/MSHA approved respirator is recommended. Consult product label for additional information.

First Aid

In case of skin contact, wash with soap and water. For eye contact flush immediately with plenty of water for at least 15 min. Contact a physician. For respiratory problems, transport victim to fresh air. Remove contaminated clothing and wash before re-use.

For more information, consult Sika Material Safety Data Sheet.

**KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY**

The information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions, within their shelf life. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Technical Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under www.sika.ca.

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