



PRODUCT DATA SHEET

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CAST-IN-PLACE CONCRETE

Sikacem®-810

LATEX/SILICA FUME ADMIXTURE FOR CEMENT MORTAR/CONCRETE/BONDING SLURRIES

Description	Sikacem®-810 is a patented, latex/silica fume admixture for cement mortars, concrete and bonding slurries to enhance adhesion, physical properties and performance.
Where to Use	<ul style="list-style-type: none"> ▪ Bonding slurry additive. Improves adhesion of cement mortars and concrete. ▪ Admixture designed to improve physical properties of cement mortars and concrete. ▪ For structural repairs to buildings, roadways, bridges, floors, tanks, etc.
Advantages	<ul style="list-style-type: none"> ▪ Improves adhesion. ▪ Increases density; lowers permeability. ▪ Increases compressive, tensile, and flexural properties. ▪ Reduces absorption of water and chlorides. ▪ Excellent scaling resistance. ▪ Improves workability and finishing. ▪ Superior freeze/thaw durability. ▪ Improves abrasion resistance. ▪ Economical to use. ▪ Canadian Food Inspection Agency (CFIA) acceptance. ▪ Complies with ASTM C1059 for type II, non-redispersible latex bonding agents for bonding fresh to hardened concrete.

Technical Data

Packaging	18.9 L (5 US gal.) pail
Colour	Grey
Shelf Life	9 months in original, unopened packaging. Store dry at temperatures between 5 and 32 °C (41 and 89 °F). Protect from freezing and high heat. If frozen, discard.

Mix Ratio

Application	Cement/Sand	Sikacem®-810/Water	Yield (Approx.)
Bonding slurry*	1:1 (1 kg = 2.2 lb)	1:1-1:0 (3.78 L = 1 US gal.)	
	40 kg:40 kg	10 L:10 L	45 L (11.9 US gal.)
	40 kg:40 kg	20 L:0 L	40 L (10.6 US gal.)
Mortar [max. thickness 25 mm (1 in)]	1:3-1:4	1:1-1:3	
	50 kg:150 kg	10 L:10 L	100 L (3.5 ft³)
	50 kg:200 kg	5 L:15 L	130 L (4.6 ft³)

*Note: Sikacem®-810 must never be used "neat" as a bonding agent but always combined with cement and sand.

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

Application Time Approx. 2 hrs after proportioning depending on temperature

Sikacem®-810 Mortar
Cement:masonry sand = 1:3

Compressive Strength ASTM C109, MPa (psi)

	Control	Sikacem®-810/Water (1:1)	Sikacem®-810/Water (1:3)
1 day	11 (1596)	16 (2321)	11 (1596)
3 days	24 (3482)	27 (3917)	26 (3772)
7 days	28 (4063)	33 (4788)	32 (4343)
28 days	31 (4498)	46 (6674)	35 (5078)

Splitting Tensile Strength ASTM C496, MPa (psi)

	Control	Sikacem®-810/Water (1:1)	Sikacem®-810/Water (1:3)
1 day	1.6 (232)	2.3 (333)	1.9 (275)
7 days	3.0 (435)	3.8 (551)	3.4 (493)
28 days	3.1 (449)	4.3 (623)	3.8 (551)

Flexural Strength ASTM C348, MPa (psi)

	Control	Sikacem®-810/Water (1:1)	Sikacem®-810/Water (1:3)
28 days	6.9 (1001)	8.3 (1204)	7.6 (1102)

Sikacem®-810 Micro-Concrete [max. aggregate size: 9 mm (3/8 in)]

Note: Data based on laboratory mix design. Contact Sika Technical Service for further information on suggested mix design proportions.

Compressive Strength CSA A23.2-9C, MPa (psi)

1 day	20 (2902)
3 days	31 (4498)
7 days	39 (5658)
28 days	56 (8125)

Flexural Strength, CSA A23.2-8C

28 days 6.1 MPa (885 psi)

Bond Strength CSA A23.2-6B

(Pull out method with Sikacem®-810 bonding slurry)

28 days 1.4 MPa (203 psi)

VOC Content 0 g/L

Chemical Resistance Consult Sika Canada.

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	Concrete, mortar and masonry substrates must be clean and sound. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles and disintegrated materials. Prepare surface by appropriate mechanical method i.e. shotblast, scarifying, sandblast or other mechanical means approved by Sika. Thoroughly saturate the prepared substrate with potable water to saturated surface dry (SSD) condition. Remove any standing water before application.
Mixing	<p>Bonding Slurry: Use Sikacem®-810 neat or dilute with water 1:1. With mixer running, add products in the following order: Sikacem®-810 solution, cement/sand blend, additional Sikacem® solution to obtain required consistency.</p> <p>Patching/Topping Mortar: Use Sikacem®-810 diluted 1:1 or 1:3 with water. With mixer running, add products in the following order: Sikacem®-810 solution, cement/sand blend, additional Sikacem® solution to obtain required consistency.</p> <p>Micro-Concrete: It is recommended that trial batches be run using specified mix-design with on-site raw materials to ensure adequate performance is obtained with Sikacem 810 micro-concrete under field conditions. For large projects, it is advised to use concrete "Mobile-Mixers" to ensure uninterrupted supply of Sikacem®-810 micro-concrete. Sikacem®-810 micro-concrete is recommended for bonded toppings or overlays with a minimum depth of 25 mm (1 in).</p>
Application	Brush or broom the bonding slurry onto the prepared, saturated surface dry (SSD) substrate uniformly. Scrub into the substrate. Place mortar or micro-concrete before the bonding slurry dries. Trowel into place, forcing the mortar against the edge of the area, working toward the center. After filling area, consolidate, then screed. Allow mortar or micro-concrete to set to the required stiffness and apply finish, as required.
Curing	As per ACI 308 recommendations for cement concrete, curing is required. To achieve performance consistent with technical data sheet results, curing must be provided by recognized curing methods, such as, mist spray of water/damp burlap, white polyethylene film or approved curing compound. Moist curing must start immediately after finishing. Protect freshly applied mortar from direct sunlight, wind rain and frost.
Clean Up	Remove material from tools and mixing equipment with water. Cured product can only be removed mechanically.
Limitations	<ul style="list-style-type: none"> Pre-mix Sikacem®-810 before using. Sikacem®-810 mixes should not be placed below 7 °C (44 °F). Keep Sikacem®-810 dilutions agitated or remix prior to each use. Use only well-graded, smooth, round masonry sand. Avoid air entrapment during mixing; do not overmix. Use only potable water.
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

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 shelflife. 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 information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: www.sika.ca

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