

PRODUCT DATA SHEET

EQIOM Spinor® A12 Microcement

Ultra-fine microcement for soil and rock grouting, structural rehabilitation and high-performance applications

PRODUCT DESCRIPTION

EQIOM Spinor® A12 Microcement is an ultra-fine hydraulic binder based on blast furnace slag, with a maximum particle size of 12 µm and a highly controlled particle size distribution for consistent and reliable performance.

WHERE TO USE

EQIOM Spinor® A12 Microcement can be used in the following applications, but is not limited to:

- Consolidation and sealing of underground works, foundations and cut-off walls.
- Injection of soils, rock fissures, annular voids, and under-slab cavities.
- Creation of waterproof barriers, and groundwater control systems.
- Rehabilitation and strengthening of masonry, concrete, weak mortars, and other deteriorated structures.
- Consolidation and regeneration of wells, mines and weakened ground.

CHARACTERISTICS / ADVANTAGES

- Ultra-fine hydraulic binder based on blast furnace slag, providing a sustainable solution
- Controlled particle size distribution for consistent performance and reliable results
- Outstanding injectability and penetrability due to its very low viscosity and yield value
- Excellent grout stability and long-term durability, with no loss of strength over time
- High resistance to aggressive environments, including sulphates, chlorides, acids, and leaching
- Improves soil watertightness and provides effective water sealing in fractured ground
- Capable of penetrating finer voids and microcracks than conventional Portland cement grouts
- Effective for the stabilization and consolidation of soils, sands, gravels, and other unstable ground conditions
- Suitable for the rehabilitation and strengthening of weak mortars, concretes, and deteriorated structures
- Cost-effective and environmentally friendly alternative to silicate gels and certain resins
- Compatible with additional admixtures, including set accelerators such as SikaSet® NC, to meet specific application and project requirements
- Flexible and adaptable to a wide range of grouting applications and mix designs

PRODUCT INFORMATION

Composition / Manufacturing	Ultra-fine hydraulic binder based on blast furnace slag
Packaging	25 kg bag
Shelf Life	12 months from date of production
Storage Conditions	Under cover in a cool, dry place, in its original sealed packaging
Density	~2.94 kg/m ³
Maximum Grain Size	12 µm (100 % passing)
Bulk Density	~0.70 kg/m ³

TECHNICAL INFORMATION

Specific Advice

EQIOM Spinor® A12 Microcement requires the use of a dispersing agent, such as Sikament®-300N, to ensure proper particle deflocculation and optimum performance. The data presented in this Technical Data Sheet were obtained using 350 mL of Sikament®-300N per 100 kg of EQIOM Spinor® A12 Microcement, corresponding to the minimum recommended dosage.

For faster setting and accelerated strength development, the use of a set accelerator such as SikaSet® NC may be used. The data presented in this Technical Data Sheet were obtained using 2940 mL of SikaSet® NC per 100 kg of EQIOM Spinor® A12 Microcement, corresponding to the maximum recommended dosage.

Note: Actual dosage requirements may vary depending on the application and site conditions, and should be verified through appropriate testing prior to use.

The following table presents the properties achieved with EQIOM Spinor® A12 Microcement using three example mix designs with water-to-cement ratios of 0.8, 1.0, and 1.2, incorporating Sikament®-300N. Results obtained with the addition of SikaSet® NC are also presented, where applicable.

	<u>W/C</u>	<u>0.8</u>	<u>1.0</u>	<u>1.2</u>	
Compressive Strength	<u>7 days</u>	<u>22 MPa</u>	<u>17 MPa</u>	<u>14 MPa</u>	(ASTM C109)
	<u>28 days</u>	<u>30 MPa</u>	<u>20 MPa</u>	<u>15 MPa</u>	
	With the use of set accelerator SikaSet® NC:				(ASTM C109)
	<u>7 days</u>	<u>26 MPa</u>	<u>18 MPa</u>	<u>16 MPa</u>	
	<u>28 days</u>	<u>32 MPa</u>	<u>23 MPa</u>	<u>21 MPa</u>	
Flow Resistance	<u>Viscosity</u>	<u>45 s</u>	<u>33 s</u>	<u>30 s</u>	(ASTM D6910)
	Marsh Funnel with a 4.76 mm inside orifice diameter				
Current Density	<u>Unit Weight</u>	<u>1.58 kg/L</u>	<u>1.50 kg/L</u>	<u>1.45 kg/L</u>	(ASTM C138)
Bleeding	<u>3 hours</u>	<u>0.5 %</u>	<u>1.5 %</u>	<u>2.5 %</u>	(ASTM C940)

Gel time	W/C	0.8	1.0	1.2
	Gelation	3 h 30	4 h 00	5 h 00
<u>With the use of set accelerator SikaSet® NC:</u>				
	Gelation	2 h 45	3 h 00	4 h 30

Loss of grout horizontality upon tilting a transparent cylinder.

BASIS OF PRODUCT DATA

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.

ENVIRONMENT, HEALTH & SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

EQUIPMENT

EQIOM Spinor® A12 Microcement can be used with the same on-site equipment as conventional cementitious grouts, including:

- High energy mixer (1500 rpm), turbo mixer, or high speed colloidal mixer.
- Low agitation tank (approx. 60 rpm) to keep grout at low viscosity and prevent sedimentation.
- Grouting pump or press.

MIXING

Admixtures, such as the superplasticizer Sikament®-300N, are typically added to the mixing water prior to the introduction of EQIOM Spinor® A12 Microcement. When applicable, the set accelerator SikaSet® NC is added after EQIOM Spinor® A12 Microcement has been mixed for a minimum of five (5) minutes.

The grout should be mixed using high-energy mixing and maintained under low agitation throughout the injection process. Use a minimum mixing time of five (5) minutes and limit the batch size to a maximum of 80 % of the container volume.

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Note:

- Handling of EQIOM Spinor® A12 Microcement requires the same precautions as ordinary Portland cement.
- Turbo mixers are recommended, as a centrifugal pump circulates the grout at high speed, ensuring optimal dispersion and grout homogeneity.
- Colloidal mixer may increase grout temperature, which can accelerate setting. Appropriate temperature control is recommended.

CLEANING

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

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

LEGAL NOTES

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 in accordance with Sika's recommendations. 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.

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EQIOMSpinorA12Microcement-en-CA-(10-2026)-1-1.pdf