

Sikacem Gunit® -103

Microsilica Based Gunit Mortar

Product Description	Sikacem Gunit® -103 is a ready to use, one-component cementitious polymer-modified silica fume based micro concrete, shotcrete gunite mortar Suitable for use in hot and tropical climatic conditions.			
Uses	A high-performance mortar for dry-spray application to concrete, stone and mortar substrates. Suitable for new construction, repairs and maintenance work. Typical applications include: <ul style="list-style-type: none">■ Construction of power stations and penstocks■ Tunnels and galleries■ Bridges.■ Industrial and residential buildings.■ High strength mortar.■ Levelling of large areas.■ Concrete repair work.			
Advantages	<ul style="list-style-type: none">■ Ready-for-use, one-component material■ Superior workability■ Can be trowelled and screeded after application■ Rapid strength development.■ Outstanding resistance to attack of frost and de-icing salts■ Very high density■ Highly effective carbonation inhibitor■ Excellent adhesion to substrate■ Coat thickness up to 150 mm in a single application■ Extremely economical in use, only 5% rebound■ W/C ratio consistently within range 0.34 - 0.36■ Excellent sulphate resistance.			
Approval	Sikacem Gunit® -103 has been tested as per SCAQMD Rule 1168. Result: VOC Content 0 g/L			
Product Data				
Form	Powder			
Colour	Grey			
Packaging	30 kg paper bags			
Storage	Sikacem Gunit® -103 must be stored in dry conditions. Protect from direct sunlight			
Shelf life	12 months from date of production if stored properly in unopened original packing.			
Technical Data				
Density (at 20°C)	Bulk density 1.7 kg/l Specific density 2.2 kg/l			
Particle Grading	Grain size 0 - 4 mm			
Mechanical Properties (at 23°C / 50% r.h) W/P ratio 0.057	<ul style="list-style-type: none">■ Compressive strength■ Flexural strength■ Bond strength on concrete (sandblasted) after freeze/thaw cycling with do-icing salts	<div>1 day</div> 15-20 N/mm ² 6-7 N/mm ²	<div>7 days</div> 30-40 N/mm ² 9 -10 N/mm ²	<div>28 days</div> 40-45 N/mm ² 1.5 -2.5 N/mm ²
Coefficient of Thermal Expansion	8.10 ⁻⁶ per °C			
Index of Resistance to Diffusion of Water Vapour (μH ₂ O)	1'000			
Chloride content	Nil (EN 934-2)			



Application Details

Limitations

- Minimum application temperature: 5 °C
- Minimum application thickness per coat: 9 mm
- Maximum application thickness per coat: 150 mm

Coverage

The rate of coverage depends on the surface texture of the substrate, the location of the area to be sprayed (overhead or vertical) and the thickness of the applied coating. As a general guide, allow 22-24 kg/m² per 10 mm applied thickness.

Surface Preparation

Concrete, mortar, stone: surfaces must be clean and free from all traces of loose material, laitance, oil and grease.
Iron, steel: surfaces must be clean and free from all traces of oil, grease and rust. The substrate should be wetted down prior to application. When applying over critical substrates or reinforced concrete damaged by corrosion of the underlying steel, the use of SikaTop Armatec® -110 Epocem as a bonding agent is advised.

Method of Application

Sikacem Gunit® - 103 may be applied using any type of small dry-spray cement gun (rotor capacity up to 2.0 litres approx.).
When the substrate has been suitably prepared, wet down thoroughly (this is normally best done using the spray nozzle).
Tip the dry gunite mortar straight into the hopper of the cement gun; the required water is added at the nozzle. Special additives ensure that the water/cement ratio remains within the optimum range, regardless how the nozzleman regulates the water feed.
As soon as the final coat has been sprayed, the gunite mortar can be trowelled and screeded. Any areas where the coverage is found to be inadequate must be resprayed in the proper manner; they should not be patched in with fresh rebound material scraped off the floor.
Sikacem Gunit® -103 gunite mortar is a polymer-modified cement mortar that cures with minimum shrinkage under normal weather conditions. Where the work is exposed to intense sunlight or strong air currents, the freshly applied mortar should be kept damp and prevented from drying out too rapidly.
For optimum strengths and performance characteristics the material should be applied by a skilled nozzleman, and good curing practice should be observed at all times.

Recommended equipment:

Aliva 240 or 246
Rotor capacity (acc. to model): up to 2 litres
Φ 25/40 or 32/52
Φ 25/15 or 32/18,27

Cleaning

Uncured mortar should be removed from tools with water. To clean dry-sprayed cement guns simply blow-out with compression air. Once cured, the mortar can only be removed mechanically.

Safety Instructions

Safety Precautions

Material is caustic due to cement content. Protect your eyes. Contact with skin can lead to skin rash, therefore, during mixing and application of the product, protective clothing (glasses, gloves) should be worn.

Ecology

The dry mortar will pollute water; therefore it must be disposed of properly. Do not pour into sewers, running or standing water or soil. To dispose of, mix powder with water in suitable container and let it harden.

Toxicity

Non-toxic under the relevant, health and safety codes.

Transport

Non-hazardous.

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 written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. 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.



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