



SikaCem® 133 Gunitite

Dry Sprayed Micro Repair Concrete

Technical Data Sheet

DESCRIPTION

SikaCem 133 Gunitite is a cement based, polymer-modified one component repair mortar containing silica fume and high range water-reducing agents. Formulated for machine applications using the dry process without set accelerators, repairs may be profiled and trowel finished where necessary.

USES

- * Large volume repairs.
- * Bridges.
- * Viaducts.
- * Retaining walls.
- * Marine structures.
- * Fire damaged concrete.
- * Tunnels.
- * Dams.
- * Facades.
- * For exterior and interior use.

ADVANTAGES

- * One component, ready to use micro concrete.
- * Non silica aggregates.
- * Low rebound losses and dust formation during the spraying process.
- * Excellent adhesion to correctly prepared concrete.
- * Layer thicknesses in one application overhead up to 150mm are possible without any additional mesh reinforcement.
- * Rapid strength gain without set accelerators.
- * Very low shrinkage.
- * Can be finished to a high standard.
- * Low water absorption and chloride ion diffusion compared to ordinary concrete.
- * High resistance to freeze-thaw attack.
- * High resistance to the diffusion of carbon dioxide.
- * Complies with BE Directives.
- * Compatible with **Sika® FerroGard®** corrosion inhibitors.
- * Overcoatable with **Sika** reprofiling/levelling mortars and coatings.
- * Suitable for drinking water contact.

Technical Data (typical)

Mixed colour:	Grey
Mixed wet density:	2.2 kg/litre (2200 kg/m ³)
Application temperature:	+3°C min, +30°C max (Substrate and ambient)
Aggregate size:	3.0 mm maximum
Application thickness per layer:	10 mm minimum 150 mm maximum

MECHANICAL PROPERTIES

28 days @ 23°C	Air cured cores RH 50%	
Compressive strength:	12 hrs	1 - 5 N/mm ²
	1 day	5 - 10 N/mm ²
	7 days	25 - 35 N/mm ²
	28 days	45 - 55 N/mm ²

Flexural strength: 10 N/mm²

Bond strength (tensile): 2-3 N/mm²
(Substrate failure)

E-Modulus (static): 24.0 kN/mm²
(+20°C to -20°C)

Drying shrinkage: 0.02% (mean)
(BS6073: Pt 1: 1981)

Coefficient of thermal expansion: 8 x 10⁻⁶/°C

Carbon dioxide diffusion coefficient: μ - 60,000

Coefficient of chloride ion diffusion: 600 - 700 x 10⁻¹⁵m²/s

Water vapour diffusion coefficient: μ - 1,000

Freeze/thaw de-icing salt resistance (to SN 640461) 106% Good resistance with no visible change after 400 cycles.

Resistivity factor WFT-L:

Resistivity:	RH%	Resistivity (kohm.cm)
	100	133
Mott MacDonald	81	249
Report No	45	308
37423/DA/001.Rev A	44	397

Approved for potable water contact.
Details available on request.

All above values are approximate.

CONCRETE SUBSTRATE PREPARATION

Breakout and remove all concrete designated as being defective, loose and unsound, using suitable mechanical equipment.

Ensure sufficient concrete is removed from around reinforcement to allow priming and compaction of the repair material.

At the repair locations, feather edging should be avoided. The edges should be square cut to at least the recommended minimum application thickness of the repair material. Where a saw cut is employed, the substrate should be roughened mechanically to provide a 'key' between the repair mortar and substrate.

REINFORCEMENT PREPARATION

All exposed reinforcement should be thoroughly prepared to clean, bright metal, using abrasive blast cleaning or other approved means.

STEEL REINFORCEMENT PRIMING

Additional corrosion protection can be provided by applying two coats of **SikaTop® Armatec 110 EpoCem®** onto the reinforcement in accordance with the product technical data sheet.

MIXING/APPLICATION

SikaCem 133 Gunite is fed into the dry process spraying machine. The amount of water added is controlled by the nozzleman and should be sufficient to prevent slump and dust. Rebound will be increased with a dry mixture and thin layers.

SikaCem 133 Gunite is finished by leaving 'as shot' or striking off with a straight edge and closing the surface with a wooden/plastic float or damp sponge to achieve the desired surface texture.

IMPORTANT CONSIDERATIONS

CURING

It is essential to cure the repair mortar immediately after application for a minimum of 3 days to ensure full cement hydration and to minimise cracking. Use polythene sheeting taped down at the edges or other approved method, such as a liquid curing membrane. Remove membrane if coating is to be applied as final finish.

- * Do not add water over recommended dosage.
- * Apply only to prepared, sound substrates.
- * Allow repair mortar to harden between applications.
- * Protect freshly applied material from freezing.

CLEANING

Remove **SikaCem 133 Gunite** from tools and equipment with water. Hardened material can only be removed mechanically.

PACKAGING

Refer to latest price list.

CONSUMPTION

2.2 kg/m²/mm (2.2 kg/litre)
Excluding allowances for loss wastage, surface profile and porosity.

STORAGE AND SHELF LIFE

Minimum 6 months in unopened original sealed containers stored in dry warehouse conditions (+5°C - +25°C).

Handling Precautions

Sika products are generally harmless provided that certain precautions normally taken when handling chemicals are observed. The materials must not, for instance, be allowed to come in contact with foodstuffs or food utensils and measures should also be taken to prevent the uncured materials from coming in contact with the skin, since people with particularly sensitive skin may be affected. The use of protective clothing, goggles, barrier creams and rubber gloves is required. The skin should be thoroughly cleaned at the end of each working period either by washing with soap and warm water or by using a resin-removing cream - the use of powerful solvents is to be avoided. Disposable paper towels - not cloth towels - should be used to dry the skin. Adequate ventilation of the working area is recommended. In case of accidental eye or mouth contact, flush with water - consult a doctor immediately. Health and Safety information on Sika Products is available and we strongly advise that this is read prior to their use. Sika products are for professional use and should be stored in sealed containers away from the reach of children.

Important Note

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 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 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.

Please consult our Technical Sales Department for further information

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