

PRODUCT DATA SHEET

Sika[®] Microcrete[®]-217

SELF-COMPACTING CONCRETE FOR FORMWORK REPAIRS

DESCRIPTION

Sika[®] Microcrete[®]-217 is a pre-bagged self-compacting concrete. It has very good flow properties and has been specifically developed to reduce heat generation. As such, large volume repairs may be performed without addition of aggregates.

Sika[®] Microcrete[®]-217 contains blended cement, graded aggregates and additives which give rise to controlled expansion in both the plastic and hardened states.

USES

Sika[®] Microcrete[®]-217 is suitable for structural repairs to bridges, columns, etc. It is also conducive for use in the following repair works where single placing is in excess of 50 mm thickness:

- Bridge columns and beams
- Concrete piling
- Dams
- Grouting applications

Sika[®] Microcrete[®]-217 can be applied by gravity pour.

CHARACTERISTICS / ADVANTAGES

- Pre-bagged at the factory / consistent quality
- Easy to mix and apply
- Good flow characteristics
- Suitable for large repairs
- Non-toxic and non-corrosive
- Impact and vibration resistant
- Placing thickness up to 300 mm

PRODUCT INFORMATION

Packaging	25 kg bag
Appearance / Colour	Concrete grey powder
Shelf Life	6 months from the date of production, if stored properly in original, unopened and undamaged packaging.
Storage Conditions	Store in dry conditions between +20 °C to +30 °C. Protect from direct sunlight, moisture, water and rain.
Density	~2.25 kg/l (freshly mixed mortar)
Maximum Grain Size	6 mm

TECHNICAL INFORMATION

Compressive Strength	at 7 days	~25 N/mm ²	(ASTM C109)
	at 28 days	~40 N/mm ²	

APPLICATION INFORMATION

Mixing Ratio	Flowable consistency: 3.0–3.3 L of water per 25 kg bag
Layer Thickness	25 mm min. / 300 mm max. per pour
Flowability	> 650 mm (EFNARC)
Pot Life	40 minutes min. (at +30 °C)

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

The concrete substrate shall be sound, clean, and free from dust, loose material, surface contamination and coatings which reduce bond. Concrete surfaces shall be generally level (within tolerances) and MUST NOT be laid to a gradient, that the concrete flows to the lowest end.

Concrete surfaces shall be saturated with clean water at a minimum 2 hours before application ensuring that all pores and pits are adequately wet. The surface shall not be allowed to dry-out before application of Sika® Microcrete®-217. Prior to application, remove excess water and ensure there is no standing water on the surface. The surface shall achieve a dark matt appearance (saturated-surface-dry) without glistening and surface pores and pits shall not contain water.

Metal surface (iron and steel) should be free from scale, rust, oil and grease. For marine structures, it is recommended that the steel bars be protected with SikaTop® Armatec®-110 EpoCem® (refer to Product Data Sheet for details).

Saw cut the extremities for the repair to at least 10 mm depth to prevent feather edges. Exposed re-bars should have clearance of at least 30 mm.

FORMWORK PREPARATION

The formwork must be constructed to be leak proof, as Sika® Microcrete®-217 is a free flowing material. However, it should include outlets to drain out water used for pre-soaking the substrate. Adequate air release shall be installed. If repair is carried out at the soffits, provision for air venting through the substrate must be provided.

MIXING

Sika® Microcrete®-217 should be mechanically mixed in a clean container using a Collomix Mixer with mixing paddle MK type (or any other equivalent Force-Action Mixer with the appropriate paddle, if any) to achieve the required flow, workability and quality. If a heavy-duty hand-drill mixer is used, it must be fitted with a mixing paddle that provides high shear force and thorough mixing. In some cases, the use of a hand-drill mixer may restrict the flowability and workability of the concrete.

Firstly, place the required water into a clean mixing

container and add Sika® Microcrete®-217 slowly while mixing. During mixing, the material will initially have a visibly stiff appearance, but upon continuous stirring, it will become free-flowing. Mix for a minimum of 3 minutes, until the mix is homogenous. Do not add any additional water to improve flowability and workability as this will have a negative impact on both the physical and mechanical properties of the concrete. The speed of the mixer should not exceed 500 rpm to minimise air entrainment.

APPLICATION

After mixing, stir lightly with a spatula for a few seconds to release any entrapped air. Pour the free flowing concrete immediately into the prepared formwork. Place the concrete within 40 minutes after mixing. Pour the concrete onto the lowest point in the formwork. Care shall be taken not to entrap any air during the repair operation as this may affect the bonding properties of the concrete to the substrate. When placing Sika® Microcrete®-217 over a large area, it is important to maintain a continuous flow throughout the concreting operation. Work sequence must be properly organised to ensure an uninterrupted flow of Sika® Microcrete®-217.

CURING TREATMENT

Exposed surfaces should be kept to a minimum and cured with appropriate curing methods as soon as the concrete has hardened.

The formwork can be stripped at minimum 3 days later.

Upon removal of the formwork, cure the repaired areas immediately with Antisol® E curing compound if no further treatment is required or Antisol® - A curing compound if a protective coating is to be applied (consult our Technical Service Department) – refer to the respective Product Data Sheet for application rate and method.

CLEANING OF TOOLS

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

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are

based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

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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Product Data Sheet
Sika® Microcrete®-217
November 2018, Version 01.01
020201010060000017

SikaMicrocrete-217-en-MY-(11-2018)-1-1.pdf