

Sika® Microcrete-217

Self-compacting concrete for formwork repairs

Product 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 Data

Appearance / Colour Pre-bagged concrete grey powder

Packaging 25 kg bags

Storage Conditions / Shelf Life 6 months from the date of production if stored properly in original, unopened and undamaged sealed packaging in dry conditions. Keep away from direct sunlight.

Density ~ 2-3 kg/ltr (freshly mixed mortar)

Aggregate Size 6 mm max.

Construction



Mechanical / Physical Properties

Typical Results

Tests carried out at +25°C

Description	Results
Flow Spread	> 650 mm
L-Box	> 80%
Compressive Strength, N/mm ²	at 7 days at 28 days
	20 - 25 40 - 45

The above tests were conducted under laboratory conditions in accordance to the following standards:

- Flow Spread EFNARC
- Bleeding ASTM C940
- Compressive Strength MS 522: Part 2: 1989
- L-Box EFNARC

System Information

Application Details

Substrate Preparation

Concrete surfaces should be clean, free from oil, grease, laitance and loosely adhering particles. A few hours prior to grouting / repair work, the substrate must be properly saturated by filling the formwork with clean water. Drain away the water prior to starting work.

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 edging. 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.

Application Conditions / Limitations

Application Temperature

At temperatures of +20°C and below, setting time and strength development will be slower.

Application Instructions

Mix Ratio

Flowable consistency: 3.0 ltr - 3.3 ltr of water/25 kg bag

Mixing

Sika® Microcrete-217 should be mechanically mixed in a clean container using a heavy-duty drill and paddle or a forced-action mixer. According to the mixing ratio place first the water into the clean mixing container and add Sika® Microcrete-217 slowly while mixing. Ensure a minimum mixing time of 3 minutes.

During mixing, the mortar will initially have a visibly stiff appearance, but upon continuous stirring, it will become free-flowing. Hence, do not add more water than the recommended maximum mixing ratio.

The speed of the mixer should not exceed 500 rpm to minimise air entrainment.

Application Method / Tools	<p>After mixing, stir lightly with a spatula for a few seconds to release any entrapped air. Pour the free flowing mortar immediately into the prepared formwork. Place the mortar within 40 minutes after mixing. Pour the mixed material to 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 repair.</p> <p>When placing Sika® Microcrete-217 over a large area, it is important to maintain continuous flow throughout. Work sequence must be properly organised to ensure uninterrupted flow.</p>
Pot Life	40 minutes min. (at +30°C)
Cleaning of Tools	Clean all tools and application equipment with water immediately after use. Hardened and/or cured material can only be mechanically removed.
Curing Details	
Curing	<p>Exposed surfaces should be kept to a minimum and cured with appropriate curing methods as soon as the mortar has hardened.</p> <p>The formwork can be stripped after at least 3 days.</p> <p>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.</p>
Value Base	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.
Health and Safety Information	For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet (available upon request) containing physical, ecological, toxicological and other safety-related data.
Legal Note	<p>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.</p>



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