

# Sikacrete®-214

## Free-flowing structural repair concrete

Construction

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### Product Description

Sikacrete®-214 is a free-flowing, high strength, cementitious micro concrete with a maximum aggregate size of 9 mm.

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### Use

Sikacrete®-214 is used for the structural repair of deteriorated concrete. It is ideal for casting sections or members where the volumes required are too large for conventional grouts, and too small and inaccessible for normal concreting procedures. A typical application is the re-profiling of damaged concrete members, such as the underside of bridge beams, using formwork. Sikacrete®-214 provides a compatible surface for the application of Sika coatings and finishes.

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### Characteristics / Advantages

- Easy to mix, apply and finish
  - Economical
  - Excellent adhesion
  - Shrinkage compensated
  - Rapid strength development
  - Compatible with the properties of typical concretes
  - Vapour permeable
  - High resistance to freeze/thaw cycling
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## Product Data

### Form

<b>Appearance / Colour</b>	Powder	grey
	Aggregate	Whitesh/brown
<b>Packaging</b>	20kg bags powder 5kg bags aggregate	
<b>Storage Conditions / Shelf-Life</b>	12 months in original, unopened packaging. Store in a dry area between 5°C and 40°C. Protect from direct sunlight.	

## Technical Data

<b>Chemical base</b>	Cement, Crystalline free Silica, aggregate and additives
<b>Density</b>	2,3 - 2,4 kg/litre
<b>Layer Thickness</b>	Min. 25mm - max. 200mm

### Mechanical Properties

Property	Age days	N/mm <sup>2</sup>
Compressive Strength	1	34,0
	7	55,0
	28	75,0
Flexural Strength	1	3,8
	7	5,7
	28	7,5
Tensile Strength	28	5,5

## System Information

<b>System Structure</b>	<b>Primers:</b> Sika Monotop <sup>®</sup> -610 or SikaTop ArmaTec <sup>®</sup> -110 EpoCem <sup>®</sup> <b>Repair Mortar:</b> Sikacrete <sup>®</sup> -214 (25 – 200 mm layer thickness)
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### Application Details

<b>Consumption / Dosage</b>	Volume Yield: 11,0 litres per 25kg bag
<b>Mixing Procedures</b>	<p>Mixing can only be achieved using either a slow speed drill (set at 400 - 600 rpm) fitted with a clean, rust free, mixing paddle, or standard mortar mixing equipment. <b>DO NOT ATTEMPT TO MIX BY HAND.</b></p> <p>Add 3,0 -3,12 litres of water to a suitable mixing vessel and then add Sikacrete<sup>®</sup> 214 powder slowly whilst mixing. Mix for at least 3 minutes until you have a homogenous mix, then add the 5kg bag of aggregate to the grout and mix until aggregate has thoroughly dispersed and a uniform, free-flowing consistency is obtained. Full mixing time should be 5 minutes.</p>
<b>Substrate Quality</b>	<p>The concrete substrate must be sound and of sufficient compressive strength (min. 20 N/mm<sup>2</sup> (MPa) with a minimum pull off strength of 1.5 N/mm<sup>2</sup> (MPa).</p> <p>The surface must be dry and free of all contaminants such as oils, grease, coatings, surface treatments, etc.</p> <p>The substrate must be prepared mechanically to remove cement laitance and achieve a profile open textured surface.</p> <p>Weak concrete should be removed and surface defects such as honeycombed areas; blowholes and voids must be fully exposed.</p> <p>Repairs to substrate, filling of blowholes/voids and surface levelling should be carried out using the appropriate product from the Sikafloor<sup>®</sup>, Sikadur<sup>®</sup> and Sikagard<sup>®</sup> range of materials.</p>

<b>Substrate Preparation</b>	All surfaces must be clean, sound and properly cured. Remove all loose material mechanically, with a wire brush, or by water or sand blasting. Embedded reinforcing steel should be free from scale, rust, oil and grease, and treated with a suitable protective coating such as SikaTop Armatec® 110 EpoCem®. The application of a suitable bonding agent, such as Sikadur® -32 ZA or SikaTop Armatec® 110 EpoCem®, is recommended to improve adhesion on large areas or where particularly dense concrete substrates are involved.
<b>Forming</b>	Ensure that the formwork is grout tight and that sufficient hydrostatic head is available to allow the mixed Sikacrete® -214 to flow into every extremity. If required, formwork can be sealed with Sikacryl® or Sikasil sealants.
<b>Application Conditions / Limitations</b>	
<b>Substrate Temperature</b>	Min 5°C – Max 30°C
<b>Ambient Temperature</b>	Min 5°C – Max 35°C
<b>Pot Life</b>	Approximately 20 minutes.
<b>Application Instructions</b>	
<b>Mixing (Ratio/Dosage)</b>	3,0 -3,12 litres per 25kg bag.  Pour clean water in the correct proportion into a clean mixing vessel. Add the Sikacrete® -214 slowly while mixing continuously. To avoid entraining too much air use a slow speed mixer (max. 500 rpm) for minimum of 3 minutes. By gradually adding the powder in portions, the desired application consistency can be obtained.
<b>Application Method / Tools</b>	Dampen the surface thoroughly with clean water prior to the application of Sikacrete® -214.  Place the mixed Sikacrete® -214 directly after mixing ensuring that any displaced air is allowed to escape. Maintain sufficient hydrostatic head to keep the product flowing.  Protect from rain until initial set has been achieved.
<b>Curing Details</b>	
<b>Curing</b>	Where ambient conditions may lead to rapid surface drying, the use of light water fogging for 48 hours or suitable water based curing compound is recommended. (Do not commence fogging until initial set has been reached; typically 1 - 2 hours depending upon ambient conditions).

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**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.

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**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.

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**Health and Safety Information**

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**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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