

## SikaGrout® -311

High Performance, low shrinkage, expanding pouring mortar

<b>Product Description</b>	SikaGrout®-311 is cement based, 1-component, ready to mix, free flowing low shrinkage expanding pouring mortar.  SikaGrout®-311 complies with the repair principle structural strengthening - installing rebar with an anchoring product in accordance with EN 1504-6.
<b>Uses</b>	SikaGrout®-311 is used as free flowing pouring mortar for layer thickness of between 3 mm and 10 mm  Suitable for grouting: <ul style="list-style-type: none"> <li>■ Heavy equipment / machine bases</li> <li>■ Base plates</li> <li>■ Bedding joints in pre-cast concrete sections</li> <li>■ Filling cavities, gaps and recesses</li> <li>■ Sealing around penetrations</li> <li>■ Post fixings</li> <li>■ Suitable for structural strengthening (principle 4, method 4.2 of EN 1504-9). Installing rebar with an anchoring product in accordance with EN 1504-6.</li> </ul>
<b>Characteristics / Advantages</b>	<ul style="list-style-type: none"> <li>■ Easy to use (ready to mix powder)</li> <li>■ Easy to mix, only add water</li> <li>■ Adjustable consistency</li> <li>■ Very good flow characteristics</li> <li>■ Rapid strength development</li> <li>■ High final strengths</li> <li>■ Shrinkage compensated (both in plastic and hardening stage)</li> <li>■ Non-corrosive</li> <li>■ Fire Rating A1</li> </ul>
<b>Tests</b>	
<b>Approvals / Testing</b>	Freeze-thaw resistance according to SS 13 72 44, Method 1A  Density according to SS-EN 12390-7  Compressive strength according to SS-EN 12390-3
<b>Product Data</b>	
<b>Form</b>	
<b>Appearance / Colour</b>	Grey powder
<b>Packaging</b>	25 kg bags



## Storage

**Storage Conditions / Shelf-Life** 12 months from date of production if stored properly in dry conditions in undamaged and unopened original sealed packaging.

## Technical Data

**Chemical Base** Cement, selected fillers and aggregates, special additives.

**Density** ~ 2.3 kg/l (density of fresh mortar).

**Grading** D<sub>max</sub>: 1 mm

**Layer Thickness** 3 mm min. / 10 mm max.

## Mechanical / Physical Properties

Requirements as per EN 1504-6

	Test Method	Results (ITT results)	Requirements
<b>Pull Out</b>	EN 1881	Passes	≤ 0.6 mm at load of 75 kN
<b>Chloride Ion content</b>	EN 1015-17	0.0127%	≤ 0.05 %

## Additional Information

### Compressive Strength (EN 196-1)

20°C stored under water

1 day	7 days	28 days
> 30 N/ mm <sup>2</sup>	> 45 N/ mm <sup>2</sup>	> 80 N/ mm <sup>2</sup>

### Flexural Strength (EN 196-1)

20°C stored under water

1 day	28 days
~ 6 N/ mm <sup>2</sup>	> 9 N/ mm <sup>2</sup>

**E-Modules** > 28 kN/mm<sup>2</sup> (GPA)

**Thermal Expansion Coefficient** ~ 12 - 13 x 10<sup>-6</sup> per °C

## System Information

### Application Details

**Consumption** This depends on the substrate roughness and thickness of layer applied. As a guide, ~1.9 kg of powder per 1 mm thickness per m<sup>2</sup>.

1 bag yields approximately 12.3 litres of mortar.

**Substrate Quality** *Concrete*

The concrete shall be free from dust, loose material, surface contamination and materials which reduce bond or prevent suction or wetting by repair materials.

Reference shall also be made to EN1504-10 for specific requirements.

**Substrate Preparation** *Concrete:*

Delaminated, weak, damaged and deteriorated concrete and where necessary sound concrete shall be removed by suitable means.

Pre-wet the surface, the surface shall not be allowed to dry before application of the concrete repair mortar. The surface shall achieve a dark matt appearance without glistening and surface pores and pits shall not contain water.

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**Application Conditions / Limitations**

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**Substrate Temperature** +5°C min. / +30°C max.

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**Ambient Temperature** +5°C min. / +30°C max.

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**Application Instructions**

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**Mixing** Water : mortar powder = 1 : 7.4 to 1 : 7.8 parts by weight for a mortar with good flow properties (3.2 to 3.4 l water per bag).

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**Mixing** SikaGrout®-311 can be mixed with a low speed (<500 rpm) hand drill mixer to avoid entraining too much air. Mix only full bags for best results.

Pour the water in the correct proportion into a suitable mixing container. While stirring slowly, add the powder to the water. Mix thoroughly at least for 3 minutes to the required consistency.

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**Application Method** Pour grout immediately after mixing into the prepared openings. Ensure air displaced by the mortar can easily escape; otherwise entrapped air will prevent full contact grouting. Wet porous substrates to saturated surface dry condition.

When grouting base plates etc., ensure that a continuous and sufficient head of pressure is maintained to keep the grout flowing. To make optimum use of the products expansion properties apply the grout as quickly as possible (within max. 15 minutes).

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**Cleaning of Tools** Clean all tools and application equipment with water immediately after use. Hardened/cured material can only be mechanically removed.

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**Pot-Life @ 20°C** ~40 minutes

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**Notes on Application / Limitations**

- Not to be used for repair works or overlay in unconfined spaces
  - Refer to the Method Statement for Cementitious Grouts for more information regarding substrate preparation or refer to the recommendations provided in EN 1504-10
  - Avoid application in direct sun and/or strong wind.
  - Do not add water over recommended dosage
  - Apply only to sound, prepared substrate
  - Do not add additional water during the surface finishing as this will cause discoloration and cracking
  - Protect freshly applied material from freezing and frost
  - Keep exposed surfaces to a strict minimum
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**Curing Details**

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**Curing Treatment** Keep visible exposed grout surfaces to a minimum. Protect the fresh material from premature drying using appropriate curing method e.g. curing compound, moist geo-textile membrane, hessian, polythene sheet etc.

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**CE Labelling**

The harmonised European standard EN 1504-3 "Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and evaluation of conformity – Part 3 Structural and non-structural repair" specifies the identification, performance (including durability) and safety of products and systems to be used to repair concrete surfaces (either building or civil engineering structures).  
 Non-structural repair fall under this specification – they need to be CE-labelled as per Annex ZA.2, table ZA.2 conformity 2+ and fulfil the requirements of the given mandate of the EU Construction Products Directive (89/106/CE).

<b>CE</b>
<b>1020</b>
<b>Sika CZ s.r.o / Bystrcká 1132/36/ CZ-624 00 Brno / Czech Republic Factory number 1180</b>
<b>11</b>
<b>1020-CPD-020025682</b>
EN 1504-6 Anchor Product
■ Pull out strength displacement ≤ 0.6 mm at load of 75 kN
■ Chloride ion content ≤ 0.05%
■ Reaction to fire Euro Class A1
Dangerous substances comply with 5.3

**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.

Residues of material are handled due to local waste restrictions

**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 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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