Construction

SikaGrout®-316

High precision, expanding cementitious construction grout

Product Description

SikaGrout®-316 is a cement based, flowable, expanding, high-precision construction grout

Uses

As a flowable grouting mortar in concrete, stone, mortar, steel, iron etc.:

- To grout bearings, machine foundations, columns, joints in precast construction
- To grout cavities, gaps and box-outs in concrete
- To grout crane rails and tracks
- To grout new reinforcement
- To grout and fill cavities and voids in concrete, render, brickwork, rock, natural stone etc.

Characteristics / Advantages

- Easy to use (ready to mix – just add water)
- Very good flow characteristics
- Rapid strength development and high final strengths
- Outstanding substrate adhesion
- Expands by gas generation and chemical swelling in the first 24 hours
- Plastic shrinkage compensated
- Impact and vibration resistant, suitable for use around pre-stressed and post tensioned steel
- Non-corrosive
- Fire rating A1

Product Data

Form

Appearance / Colours: Grey powder

Packaging: 25 kg bags

Storage

Storage Conditions / Shelf-Life: 9 months from date of production if stored in the unopened and undamaged original packaging in cool and dry conditions.
Not susceptible to frost.
Protect from damp.

Technical Data

Density	~ 1.70 kg/l Bulk density of mortar ~ 2.30 kg/l Density of fresh mortar (at +20°C)
Grading	D_{max}: 6 mm
Layer Thickness	Minimum 25 mm per layer Maximum 120 mm per layer

Mechanical / Physical Properties

Compressive Strength (GOST 310.4-81)

20 °C

1 day	7 days	28 days
> 30 N/mm^2	> 60 N/mm^2	> 80 N/mm^2

Flexural Strength (GOST 310.4-81)

20 °C

1 day	28 days
~ 5 N/mm^2	> 8 N/mm^2

System Information

Application Details

Consumption

~ 2.0 kg of mortar powder per m² per mm of finished mortar layer

The actual material consumption depends on the substrate roughness, its profile and the method of application.

1 bag yields approximately 12 litres of mortar

Dosage

2.7 – 2.9 l of water per 25 kg SikaGrout® 316

Substrate Quality

The concrete substrate must be structurally sound with adequate compressive strength (> 25 N/mm²) and must have minimum adhesive bond strength of 1.5 N/mm². The substrate must be dry, clean and free of all traces of oils and grease, with no loose or friable particles. Cement laitance, coatings and any other surface treatments must be completely removed.

Reasonable substrate roughness is essential for a good bond between the substrate and the grout. The average peak-to-valley height should be as high as possible and at least 1 mm (as checked by the sand patch method according to RVS 15.346, page 1).

The substrate must be prepared by suitable mechanical means such as high pressure water jetting or abrasive blastcleaning. Other techniques such as scabbling, milling etc. require further preparation by blastcleaning to ensure the removal of micro-flaws in the prepared surface.

The substrate should be pre-saturated at least 12 hours in advance and must be saturated, surface dry for the application. All standing water must be removed.

Steel surfaces must be clean and free of all traces of oil, grease, rust and scale.

If necessary to confirm that the correct application conditions are met, trials should be carried out.

Application Conditions / Limitations

Application Temperature	+5°C min. / +30°C max.

Application Instructions

Mixing	SikaGrout®-316 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. The powder to water mixing ratio can be varied slightly to produce the precise consistency required. Pour the water in the correct proportion into a suitable mixing container. While stirring slowly, add the powder to the water. Mix during 3 minutes, then mix during 2 minutes after 5 minutes again. To prevent shrinkage cracks forming when grouting large voids, it is advisable to add some additional dry aggregates, e.g. preferably graded, rounded materials, up to an amount which does not greatly affect the flow properties and consistency of the grout (Max ~ 30-50 M%).
Application Method	Pre-wet the substrate to a saturated surface dry condition, leave the grout to settle and de-aerate for 2 minutes after mixing and then pour into the prepared placing points Ensure that air displaced by the mortar can easily escape, otherwise entrapped air could prevent full contact bonding. 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 product's expansion properties, apply the grout as quickly as possible (within max. 15 minutes).
Cleaning of Tools	Clean all tools and application equipment with water immediately after use. Hardened/cured material can only be removed mechanically.
Pot-Life 20°C	~45 minutes
Start of curing	Setting time 5 – 9 hours. Frost resistance is achieved at +8°C after 24 hours (the grout must not freeze during this period and if necessary protective measures should be used to prevent this) If higher 24 hr strengths are required at between 0°C and +10°C, the alternative use of SikaGrout-210 is recommended. If rapid strength gain in the first 8 hours is required, then Sika FastFix-4 SL Normal & Rapid is recommended.

Curing Details

Curing Treatment	Keep any visibly, exposed grout surfaces as small as possible and protect them from premature drying out by suitable measures (keep damp for min 3 days).

Notes	- Use the product only for grouting applications (keep the exposed grout surface as small as possible in relation to the pour volume) - Grout only on clean, structurally sound substrates - Do not expose to frost in the first 24 hours (use heating mats if necessary) - Do not add more water after mixing.

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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.
Local Restriction	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.
Health and Safety Information	For Information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent Material Safety Data Sheet, containing physical, ecological, toxicological and other safety-related data. More information you will find under www.sika.at
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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