

SikaGrout®-220

High strength shrinkage compensated cementitious grout

Product Description

SikaGrout®-220 is a high strength, non-shrink, self-levelling, prebagged cementitious grouting mortar with extended working time to suit local ambient temperatures.

Uses

SikaGrout®-220 is for grouting in the following locations with clearances of 10 mm or more:

- Machine foundations
- Columns in pre-cast construction
- Concrete anchors
- Cavities
- Gaps
- Recesses
- Rail beds

Characteristics / Advantages

SikaGrout®-220 is an economical and easy to use material requiring only the addition of water. Other beneficial properties are:

- Easy to mix and apply
- Good flow characteristics
- Very high early and ultimate strength
- Impact resistant
- Non-corrosive
- Non-toxic
- Iron and chloride free
- Dense and non-shrink (2-step expansion)
- Extended working time

Product Data

Form

Appearance / Colour Grey premixed powder

Packaging 25 kg bags

Storage

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



Technical Data

Wet Density ~ 2.2 kg/ltr (freshly mixed mortar)

Aggregate Size 3.3 mm max.

Layer Thickness 50 mm max. per pour / 10 mm min. per pour

Mechanical / Physical Properties

Typical Results

Tests carried out at +25°C

	Mix Design	Flowable (Water content 4.0 ltr/25 kg)
Flow	BS Cone	300 mm
Initial setting time		4 h : 20 m
Bleeding at 24 hours		0 %
Expansion at 24 hours		0.63 %
Compressive strength	1 day 3 days 7 days 28 days	~45 N/mm ² ~60 N/mm ² ~80 N/mm ² ~85 N/mm ²

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

- Initial setting ASTM C 191
- Bleeding ASTM C 940
- Expansion ASTM C 940
- Compressive strength ASTM C 109 / C 109M

The results above are typical data and given as a guide only. Site results may differ according to mixing process, placing, curing, etc. Preliminary tests are always recommended.

Resistance

Fire Resistance Fire rating, Classified A1 – SikaGrout®-220 will not contribute in any state of the fire including the fully developed fire. (EN 13501-1)

System Information

Application Details

Typical Yield

Flowable consistency

SikaGrout®-220	1.90 kg	25 kg	75 x 25 kg bag
Water	0.30 ltr	4.0 ltr	303 ltr
Volume mortar	1 ltr	13.2 ltr	1 m ³

Substrate Quality

Concrete, mortar and stone

Surfaces must be sound, clean, and free from frost, oils, grease, standing water and all loosely adhering particles and other surface contaminants.

Metal surfaces (iron and steel)

Surfaces should be clean, free from scale, rust, oil and grease.

Substrate Preparation	<p>The substrate should be prepared by suitable mechanical preparation techniques such as high pressure water, breakers, grit blasting, scabblers, etc.</p> <p>All absorbent surfaces must be well saturated with clean water, but be free of any surface water or puddles prior to the application of SikaGrout®-220.</p>
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Application Instructions

Mix Ratio	Flowable consistency ~ 4.0 ltr water/25 kg of grout
Mixing	Place 70 – 80% of the premeasured clean water (depending on consistency required - refer to 'Mix Ratio') into a clean container and gradually add the whole bag of SikaGrout®-220 into it while continuously mixing. Add the remaining water until the desired consistency is obtained.
Mixing Time	Mix for 2 – 3 minutes with a slow speed drill (500 rpm max.).
Formwork	The formwork shall be constructed to be leak proof. This can be achieved by using foam rubber strips or mastic sealant beneath the constructed formwork and between joints.
Application Method / Tools	<p>After mixing, stir lightly with a spatula for a few seconds to release any entrapped air. Pour the mortar within 10 - 15 minutes after mixing.</p> <p>When carrying out baseplate grouting, ensure sufficient pressure head is maintained to keep mortar flowing. Exposed parts of the mortar surface should be kept as small as possible.</p> <p>Any bolt pockets must be grouted prior to grouting between the substrate and the base plate. Pouring should be from one side of the void to eliminate any air or pre-soaking water becoming trapped under the baseplate. It is advisable to pour the grout across the shortest distance of travel. The grout head must be maintained at all times so that a continuous grout front is achieved.</p> <p><i>Grouting large volumes</i></p> <p>For sections thicker than 50 mm, it is necessary to fill the SikaGrout®-220 with graded 10 mm silt free aggregate to minimise temperature rise. The quantity of aggregate should not exceed 1 part aggregate to 1 part SikaGrout®-220 by weight. Mixing ratio will be determined by consistency required and moisture content of aggregates used. A preliminary trial is recommended.</p>
Cleaning of Tools	Clean all tools and application equipment with water immediately after use. Hardened and/or cured material can only be mechanically removed.
Notes on Application / Limitations	<p>Non-shrink grout contains additives which expand either during the plastic stage and / or the hardening stage to compensate for the shrinkage of the cementitious matrix. However, this 'non-shrink' property will be effective only if the material is not subjected to water loss.</p> <p>This is confirmed by a note in the ASTM C 1107 Standard Specification for packaged dry, hydraulic cement grout (non-shrinkable), which clarifies the behaviour of the non-shrink grout when subjected to some drying:</p> <p><i>"Note 1: Since all conditions of use cannot be anticipated, this specification requires non-shrink grout to exhibit no shrinkage when tested in a laboratory-controlled moist-cured environment, and requires only the reporting of the observed height change, usually shrinkage, when test specimens are subject to some degree of drying".</i></p>

Curing Details

Curing	On completion of the grouting operation, exposed areas should be thoroughly cured. This should be done by the use of Antisol®-E curing compound, continuous application of water and/or wet Hessian.
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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.

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

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.



Sika Singapore Pte Ltd
200 Pandan Loop, 06-02 Pantech 21
Singapore 128388
SINGAPORE

Phone: +65 6777 2811
Fax: +65 6779 6200
e-mail: info@sg.sika.com
www.sika.com.sg



Sika Kimia Sdn Bhd
Lot 689 Nilai Industrial Estate
71800 Nilai, Negeri Sembilan DK
MALAYSIA

Phone: +606-7991762
Fax: +606-7991980
e-mail: info@my.sika.com
www.sika.com.my

