

SikaGrout®-215

Pumpable shrinkage compensated cementitious grout

Construction

Product Description

SikaGrout®-215 is a pumpable dual-shrinkage compensated, self-levelling, prebagged cementitious grout with extended working time to suit local ambient temperatures.

Uses

SikaGrout®-215 is suitable for repairs to the following concrete structures:

- Machine foundations
- Columns in precast construction
- Concrete anchors
- Bridge bearings
- Cavities
- Gaps
- Recesses
- Rail beds
- Honeycombs (pre-packed grouting)

SikaGrout®-215 is suitable for grouting works with clearances as low as 5 mm.

Characteristics / Advantages

- Easy to mix and apply
- Good flow characteristics
- Rapid strength development
- High ultimate strengths
- Impact resistant
- Non-corrosive
- Non-toxic
- Iron and chloride free
- Dense and non-shrink (2 step expansion)
 - Gaseous expansion in plastic stage
 - Crystalline expansion in hardened stage
- Extended working time
- Good pumping properties
 - Tested for compatibility with drinking water

Product Data

Form

Appearance / Colour Grey powder

Packaging 25 kg bags



Storage

Storage Conditions / Shelf Life 12 months from the date of production if stored properly in original, unopened and undamaged packaging in dry conditions at temperatures between +5°C and +30°C.

Technical Data

Wet Density ~ 2.20 kg per litre (depending on consistency and temperature)

Aggregate Size 1.2 mm (maximum)

Layer Thickness

- Minimum thickness per pour 5 mm
- Maximum thickness per pour 50 mm

System Information

Application Details

Yield (typical)

Flowable Consistency

SikaGrout® -215	1.84 kg	25 kg	74 x 25 kg bags
Water	0.31 litre	4.2 litres	309 litres
Volume Mortar	1 litre	13.6 litres	1 m ³

Pourable Consistency

SikaGrout® -215	1.90 kg	25 kg	76 x 25 kg bags
Water	0.30 litre	4.0 litres	303 litres
Volume Mortar	1 litre	13.2 litres	1 m ³

Results (typical)

Mix Designs		Flowable Water Content 4.2 litres / 25 kg bag	Pourable Water Content 3.8 litres / 25 kg bag
Tests (at 25°C)			
Flow	BS Cone, mm J Cone, seconds	300 12	270 15
Initial setting time, hour: minute		4 : 20	3 : 40
Bleeding at 24 hours, %		0	0
Expansion at 24 hours, %		0.63	0.40
Compressive Strength, N/mm ²	1 day	30	46
	3 days	45	55
	7 days	60	70
	28 days	70	76
Flexural Strength, N/mm ²	7 days	5.8	6.4
	28 days	7.9	8.3

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

- Initial setting MS 522: Part 2: 1989
- Bleeding ASTM C940 – 87
- Expansion ASTM C940 – 87
- Compressive strength ASTM C109 – 92
- Flexural strength BS 4551: 1980

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.

Substrate Quality *Concrete, mortar and stone*
Surfaces must be sound, clean, 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 The substrate should be prepared by suitable mechanical preparation techniques such as high pressure water, breakers, grit blasting, scabblers, etc.
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®-215.

Application Conditions / Limitations

Substrate Temperature +10°C min. / +30°C max.

Ambient Temperature +10°C min. / +30°C max.

Application Instructions

Mix Ratio	Consistency	Water (litres) per 25 kg of Grout
	Flowable	4.0 – 4.4
Pourable	3.6 – 4.0	
Stiff	3.0 – 3.4 (for special applications such as anchoring of starter bars)	

Mixing Place about 70 - 80% of the premeasured clean water (depending on consistency required - refer to Mixing Ratio Guide) into a clean container and gradually add the whole bag of SikaGrout®-215 into it while continuously mixing. Add the remaining water until the desired consistency is obtained.

Mixing Time Mix for 2 to 3 minutes with a slow speed drill (maximum 500 rpm).

Application Method / Tools **Use SikaGrout®-215 for grouting only.**
After mixing, stir lightly with a spatula for a few seconds to release any entrapped air. The grout is then poured immediately into the prepared formwork.
When carrying out baseplate grouting, ensure sufficient pressure head is maintained for uninterrupted mortar flow. For formwork repair, the prepared formwork must be firmly in place and kept watertight.
When placing grout over a large area, it is important to maintain a continuous flow throughout. Work sequence must be properly organised to ensure an uninterrupted flow. In large areas, SikaGrout®-215 may be pumped using heavy duty diaphragm pumps. Screw feed and piston pumps may also be used.

Specific Areas Of Application

1. *Grouting Under Baseplate* – use pourable consistency.
2. *Formwork Grouting* (example deep honeycombs, column reinforcements, etc.):
 - a. *Pouring Method* – use flowable / pourable consistency.
 - b. *Prepacked Method* – use flowable consistency.
3. *Grouting Anchor Bolts* – use stiff consistency.
4. *Grouting Large Volumes* – For sections thicker than 50 mm, it is necessary to fill the SikaGrout®-215 with graded 10 mm silt free aggregates to minimise temperature rise generated during the curing stage. The quantity of aggregates should not exceed 1 part aggregates to 1 part SikaGrout®-215 by weight. For such mixes, a conventional concrete mixer and pump may be used. To further ensure that air entrapped during mixing is allowed to fully escape, it may be necessary to make breather holes. Use steel rods or chains to assist the flow of grout where necessary.

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

Notes on Application / Limitations

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

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:

“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**.

Curing Details

Curing If formwork type repair is used, leave the formwork in place for at least 3 days. Upon removal of the formwork, cure the exposed surfaces immediately with Antisol®-E curing compound or use other approved curing methods.

Notes 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

Protective Measures As cement is alkaline and may cause irritation, applicators are advised to wear gloves and goggles when using SikaGrout®-215. If the product gets in contact with eyes, flush immediately with clean water and seek medical attention if symptoms persist.

Local regulations as well as health and safety advice on packaging labels must be observed.

Important Notes Residues of material must be removed according to local regulations. Fully cured material can be disposed as household waste under agreement with the responsible local authorities.

Detailed health and safety information as well as detailed precautionary measures e.g. physical, toxicological and ecological data can be obtained from the Material Safety Data Sheet (available upon request).

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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