

PRODUCT DATA SHEET

SikaGrout®-214

HIGH PERFORMANCE, NON SHRINK, EXPANDING CEMENTITIOUS GROUTING MORTAR

DESCRIPTION

Sikagrout® -214 is a high performance, shrinkage compensating, ready to use grouting mortar. Consisting of :

- A blend of cement & fillers,
- Properly graded quartz aggregates,
- And Special additives.

When mixed with water, the product forms a fluid grey coloured grout (similar to concrete colour).

USES

- Anchorage of bolts or iron bars in concrete.
- Precision grouting for industrial equipments, subject to shocks and vibrations.
- Grouting of railway rails or travelling crane tracks.
- Grouting for turbines, alternators, compressors, generators, machine tools.
- Beam keying or bridge springier support construction.
- Assembly of metal reinforced concrete or prestressed concrete prefabricated elements.

CHARACTERISTICS / ADVANTAGES

- Sikagrout® -214 is chloride free and contains no metal particles. Consequently, it does not oxidize when in contact with humidity. Instead it protects metal parts from corrosion owing to its high alkaline Ph.

- It has a unique 2-stage shrinkage compensating system, with a very special blend of shrinkage and water reducing, plasticizing agents, offering the following beneficial properties:

- High mechanical compressive and bending resistances.
- Adheres to concrete, mortar and steel, ensuring a monolithic bond.
- Can be pumped, injected, vibrated or compacted. It's not altered by large humidity or temp. variations.
- Resistant to water and oil penetration.
- High initial strength reduces down time requirement.

APPROVALS / CERTIFICATES

- U.S. Corps of Engineers: CRD C-621 expansion percent.
 - ASTM C-1107 for 2 stage expansion Grout Grades B+C.
 - British Standards for compression, bond and flexural.
 - Tested and approved by the National Organization for potable water & sanitary drainage for contact with potable water and sewage.
- * Sika Grout 214 has been tested as per SCAQMD Rule 1168' Result VOC Content 0 g/L

PRODUCT INFORMATION

Composition	Cement, selected fillers and aggregates, special additives
Packaging	25 and 30 kg bags
Appearance / Colour	Grey powder
Shelf life	12 months from date of production
Storage conditions	Store properly in dry conditions in undamaged and unopened original sealed packaging

Density(at 20° C)
approx. 2.2 kg/l (of the fresh mortar)**TECHNICAL INFORMATION**

Compressive Strength	Test Sample Age in days ASTM C109	Consistency	
		Plastic kg/cm2	Fluid kg/cm2
	1	300	250
	3	400	380
	7	430	410
	28	550-600	550

Tensile Strength in Flexure	Test Sample Age in days ASTM C 580	Consistency	
		Plastic kg/cm2	Fluid kg/cm2
	7	33.5	43
	28	110.5	118

Pull-Out Resistance	Test Sample Age in days	Fluid Consistency	
		Tore Steel kg/cm2	Smooth Steel kg/cm2
	24	55	20
	28	110	40

APPLICATION INFORMATION

Mixing Ratio	Depending on the amount of mixing water used a fluid or plastic mortar will be obtained:		
	Ambient Temp. degree C.	Consistency	
		Plastic (lt/25kg)	Fluid (lt/25kg)
	5	2.25	3
	20	2.5	3.25
	35	2.7	3.5

The above proportions should be complied with to avoid bleeding.

Layer Thickness	From 12 mm up to 50mm without Filler		
	Adding Fillers		
	- For large scale grouting projects, silica sand and gravel can be added to Sikagrout® -214, where the added aggregate must be clean and properly graded.		
	- Example: 12.5 kg of sand graded 1-10 mm to one 25 kg bag of Sikagrout® -214 mixed with 3.5 – 4 lts. of water, yield a grout with the following approximate mechanical strengths:		
	Test Sample Age in days	Compressive Strength (kg/cm2)	Flexural Strength (kg/cm2)
	1	250	-
	7	360	40
	28	580	114
	- Do not exceed 25 kg of sand per bag (Sikagrout® -214 : sand = 1:1 by weight)		
	- Note: Expansion decreases when the proportion of sand added increase. layer thickness up to 150mm		

Setting Time	(at 20° C)		
		Plastic	Flowable
	Initial Set	1.40 hrs	5.00 hrs
	Final Set	3.10 hrs	8.30 hrs

APPLICATION INSTRUCTIONS

Surface Preparation

- The substrate must be properly prepared and free of dust and grease. Remove any losses particles which could affect the final ultimate bond strength.
- Moistened concrete or mortar substrate for 12 hrs. before applying Sikagrout® -214 (surface saturated dry condition SSD). This is extremely important during hot weather applications.

MIXING

Blend in a mechanical mixing device, preferably in a vertical-axis mixer or in a fully – opening container, using a slow- rotating electric or pneumatic stirring drill (approx. 500 rpm). Prepare the amount of water required to obtain the right consistency (refer to mixing ratio). Pour approx. 2/3 of the mix water into the mixer and gradually add Sikagrout® -214, this will help to avoid making lumps. Then pour in the rest of the water and let mix for a minimum of 3 minutes from the time the last water was added to the mix.

NOTE: Hand mixing does not ensure proper dispersion and is not recommended. Recommended to use either low speed (max. 500 rpm) electric drill with a basket type mixing paddle or forced action – or stand type mixers

APPLICATION

Minimum application temperature: + 5 °C.

- For anchoring dowels and bolts the minimum annular space around the shaft is three times, the diameter of the largest grains in the mortar mix.
- Pour grout immediately after mixing. Ensure that 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).

Pre-cautions

- Sikagrout® -214 is always added to the pre-measured gauging water.
- Volume of water must always be within the limits as stated in our Technical Data Sheet.
- Excess water, will cause cracks, segregation and low grout strengths.
- Sikagrout® -214 should be left to stand after final mixing, for 5 minutes, allowing any entrapped air to dispel.
- To take full advantage of Sikagrout® -214 expansion properties.
- Sikagrout® -214 should be poured /placed as soon as possible from 5 minutes standing, up to 30 minutes from mixing
- Kindly refer to Sikagrout® -214 Method Statement and technical office.

CURING TREATMENT

- After placement of Sikagrout® -214, exposed surface area's to be fully cured for a minimum period of 3 days from achieving its initial setting: Or directly bleeding water have evaporated. Sika Antisol® - E curing compound may also be used to ensure ultimate curing.

CLEANING OF EQUIPMENT

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

BASIS OF PRODUCT DATA

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 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.

ECOLOGY, HEALTH AND SAFETY

Safety Precautions

- Wear gloves and goggles.
- In contact with eyes or skin product may cause skin irritation.

Ecology

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

Toxicity

- Non-Toxic under relevant health and safety codes.

Transport

- Non-hazardous

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. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

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Product Data Sheet
SikaGrout®-214
November 2017, Version 02.02
020201010010000018

SikaGrout-214-en-EG-(11-2017)-2-2.pdf