

Sikagrout® -214

High Performance, Non Shrink, Expanding Cementitious Grouting Mortar

Product Description	<p>Sikagrout® -214 is a high performance, shrinkage compensating, ready to use grouting mortar. Consisting of :</p> <ul style="list-style-type: none"> ■ A blend of cement & fillers, ■ Properly graded quartz aggregates, ■ And Special additives. <p>When mixed with water, the product forms a fluid grey coloured grout (similar to concrete colour).</p>
Uses	<ul style="list-style-type: none"> ■ 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.
Advantages	<p>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.</p> <p>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:</p> <ul style="list-style-type: none"> ■ 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 / Standards	<ul style="list-style-type: none"> ■ 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. <p>* Sika Grout 214 has been tested as per SCAQMD Rule 1168' Result VOC Content 0 g/L</p>

Product Data

Appearance / Colour	Grey Powder
Packaging	25 kg paper bags
Storage Conditions / Shelf Life	12 months from date of production if stored properly in unopened and undamaged original well sealed packing, protect from damp and high humidity conditions.

Technical Data

Base	Cement, selected fillers & aggregates and special additives		
Density (at 20° C)	approx. 2.2 kg/l (of the fresh mortar)		
Setting Time (at 20° C)		<u>Plastic</u>	<u>Flowable</u>
ASTM-C-191-95	Initial Set	1.40 hrs	5.00 hrs
	Final Set	3.10 hrs	8.30 hrs



Mechanical / Physical Properties

Compressive Strength
(kg/cm²)
(EN 196 – 1 Din 1164/7)
(Moulds / Prisms
4cm x 4cm x 16cm)

Test Sample Age in days	Consistency	
	Plastic	Fluid
1	300	250
3	400	380
7	430	410
28	550 - 600	550

Flexural Strength
(kg/cm²)
(ASTM-C-348-95)

Test Sample Age in days	Consistency	
	Plastic	Fluid
7	33.5	43
28	110.5	118

Pull out Strength
(kg/cm²)

Test Sample Age in hrs	Fluid Consistency	
	Tore steel	Smooth Steel
24	55	20
28	110	40

Note: SikagROUT® -214 steel adherence values in plastic consistency are equal to or greater than the above values.

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/cm ²)	Flexural Strength (kg/cm ²)
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.

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.

Moisten concrete or mortar substrate for 12 hrs. before applying SikagROUT® -214 (surface saturated dry condition SSD). This is extremely important during hot weather applications.

Application Details**Application Data**

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.

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.

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



Pre-cautions	<p>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.</p> <p>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.</p> <p>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</p>
Application	<p>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.</p> <p>When grouting base plates etc., ensure that a continuous and sufficient head of pressure is maintained to keep the grout flowing.</p> <p>To make optimum use of the products expansion properties, apply the grout as quickly as possible (within max. 15 minutes).</p>
Cleaning of Tools	<p>Clean all tools and application equipment with water immediately after use. Hardened/cured material can only be mechanically removed.</p>
Curing	<p>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.</p>
Safety Instructions	
Safety Precautions	<p>Wear gloves and goggles. In contact with eyes or skin product may cause skin irritation.</p>
Ecology	<p>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.</p>
Toxicity	<p>Non-Toxic under relevant health and safety codes.</p>
Transport	<p>Non-hazardous</p>

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.



Sika Egypt for Construction Chemicals
 El Abour City
 1st industrial zone (A)
 Section # 10 Block 13035,
 Egypt

Tel :+202- 44810580 - 90
 Fax :+202- 44810459
 Mob :+20122- 3908822/55
 www.sika.com.eg

