

# Sikagrout® -214

## High Performance Non Shrink, Cementitious Grout

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

- A blend of cement & cement fillers.
- Properly graded quartz aggregates.
- Proprietary admixtures + superplasticizer. 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 equipment, 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** 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:  

- High mechanical compressive & 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.

**Compliance Standards**

- 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.

### Technical Data

**Density (at 20° C )** Of the fresh mixture: approx. 2. 2 kg/lit

**Packaging** 25 kg double lined paper bag.

**Storage/ Shelf Life** 6 months (protect from damp or high humidity conditions).

**Setting time (at 20° C )**

|               | Plastic  | Flowable |
|---------------|----------|----------|
| ■ Initial Set | 1.4 hrs  | 5 hrs    |
| ■ Final Set   | 3.10 hrs | 8.3 hrs  |

**Compressive Strengths Min Average** (Results based on 5 x 5cubes, water cured, crushing speed 2.5 KN/sec. Ambient temp. 20° C) maximum particle grading 3 mm.

| Test Sample Age in days | Compressive strength(kg/cm <sup>2</sup> ) Q.C. Laboratory Results./Consistency |       |
|-------------------------|--|-------|
|                         | Plastic  | Fluid |
| 1                       | 300  | 250   |
| 3                       | 400  | 380   |
| 3                       | 430  | 410   |
| 28                      | 550 - 600  | 550   |
| Test Sample Age in days | Flexural strength (kg / cm <sup>2</sup> ) / Consistency                        |       |
|                         | Plastic  | Fluid |
| 7                       | 33.5   | 430   |
| 28                      | 110.5  | 118   |



**Adding Fillers**

For large scale grouting projects, silica sand and gravel can be added to SikagROUT® -214, provided the aggregate is 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 <sup>2</sup> ) | Flexural strength (kg/cm <sup>2</sup> ) |
|-------------------------|--|---|
| 1                       | 250  | -                                       |
| 7                       | 360  | 40                                      |
| 28                      | 580  | 114                                     |

Do not exceed 25 kg of sand per bag of SikagROUT® -214 : sand = 1:1 by weight)  
 Note: Expansion decreases when the proportion of sand added increase.

**Pull Tests**  
 (Torsteel & Smooth steel embedded in SikagROUT® -214 fluid consistency)

|        | SikagROUT® -214 – steel adherence, fluid consistency |                        |
|--------|--|------------------------|
|        | Torsteel   | Smooth                 |
| 24 hrs | 55 kg/cm <sup>2</sup>                                | 20 kg/ cm <sup>2</sup> |
| 28 hrs | 110 kg/cm <sup>2</sup>                               | 40 kg/ cm <sup>2</sup> |

Note: SikagROUT® -214 – steel adherence (plastic consistency) equal to or greater than the above.

**Application instructions**  
**Application Data**

- Minimum application temperature: + 5 °C.
- 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). This is extremely important during hot weather applications.
- After placing SikagROUT® -214 it should be moist cured for a minimum 12 hrs. after achieving initial set. Sika Antisol® -E Curing compound can also be used to ensure proper curing.
- SikagROUT® -214 must be used within ½ hr. after mixing.
- Depending on the amount of mixing water used a fluid or plastic mortar will be obtained:

| Ambient Temp. degree C. | Water: SikagROUT® -214 (25 kg bag SikagROUT® -214) |               |
|-------------------------|--|---------------|
|                         | Plastic  | Fluid         |
| 5                       | lt/25 kg<br>2.25                                   | lt/25 kg<br>3 |
| 20                      | 2.5  | 3.25          |
| 35                      | 2.7  | 3.5           |

The above proportions should be complied with to avoid bleeding.

- How to Use**
- 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. 300 rpm).
- NOTE: Hand mixing does not ensure proper dispersion and is not recommended.
- Prepare the amount of water required to obtain the right consistency (refer to application data).
  - 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.
  - To make the most of SikagROUT® -214's initial expansion properties, it is recommended to use the product within minutes of mixing.

**Handling Precautions**

Safe to handle. In case of skin contact rinse immediately with Water.  
 SikagROUT® -214 contains cement with high alkalinity, which can sensitize skin.

**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 products when properly stored, handled and applied under normal conditions. 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 proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the technical data sheet for the product concerned, copies of which will be supplied on request.  
 For further technical information, please consult our technical service department.



**Sika Egypt for Construction Chemicals**  
 El About City  
 1<sup>st</sup> industrial zone (A)  
 Section # 10 Block 13035,  
 Egypt

Tel :+202- 6100714/15/16/17/18  
 Fax :+202- 6100759  
 Mob :+2012- 3908822/55  
 www.sika.com.eg

