

PRODUCT DATA SHEET

SikaGrout[®]-214 R

1-Part, Cementitious, Rapid Setting, High Early Strength, Non-Shrink Precision Grout

PRODUCT DESCRIPTION

One-component, rapid setting, high early strength, non-shrink, high flowability, precision cementitious grout, which meets the requirements of EN 1504-6: Anchoring of reinforcing steel bar.

USES

SikaGrout[®]-214 R is a free-flowing grout for application layer thicknesses of 4 to 120 mm, and is ideal for the following:

- Anchoring applications, such as bars, bolts, rods, etc.
- Fast-track securing of metal structures.
- Grouting heavy machinery, in and under supports, pile foundations, machine base plates and columns.
- Filling of cavities, cracks, gaps, recesses and porosities in concrete, masonry, rocks, etc.
- Grouting between foundations and bases to support equipment.
- Concrete restoration by recasting into formworks (beams, columns, bridge decks, etc.).
- Post and sign fixings.
- Restoration work (Principle 3, method 3.2 of EN 1504-9). Repair of spalling and damaged concrete in buildings, bridges, infrastructure and superstructure works.
- Structural strengthening (Principle 4, method 4.2 of EN 1504-9). Installing bonded rebars in preformed or drilled holes in concrete.
- Structural strengthening (Principle 4, Method 4.4 of 1504-9). Increasing the bearing capacity of the concrete structure by adding mortar.
- Preserving or restoring passivity (Principle 7, Method 7.1 & 7.2 of 1504-9:2008). Increasing cover with additional mortar or concrete or replacing contaminated or carbonated concrete.
- Factory floor repairs, ruts, hollows and cracks.
- Fast-track installation of precast concrete units.
- Repairs to car parks, forecourts, loading bays and ramps that require early trafficking.
- Grouting in marine / tidal zones.
- When a rapid return to service is required (e.g. limited possession work on tracks).

CHARACTERISTICS / ADVANTAGES

- Wide application layer thickness (4 to 120mm).
- Rapid strength development.
- High final strength.
- No segregation or bleeding.
- Shrinkage compensated (non-shrink).
- Easy to mix (just add water) and use.
- Adjustable consistency by varying the water content (within permissible limits).
- High resistance to frost and de-icing salts.
- Non-corrosive.
- Suitable for marine or tidal zones.
- EuroClass A1 reaction to fire rating.

APPROVALS / STANDARDS

- CE marking and declaration of performance according to EN 1504-6: Anchoring of reinforcing bars.

PRODUCT INFORMATION

Chemical Base	Cement, selected aggregates and special additives	
Packaging	Bags	25 kg
	Pallets	42 x 25 kg (1,050 kg)
Shelf Life	In the original, unopened packaging: 9 months from the date of production	

Storage Conditions	Store in the undamaged, original container in a cool, dry place. Protect from moisture.	
Appearance / Colour	Grey powder	
Maximum Grain Size	D _{max} :	1.2 mm
Density	Hardened density:	~2.3 kg/l
Soluble Chloride Ion Content	≤ 0.01 %	(EN 1015-17)

TECHNICAL INFORMATION

Compressive Strength	1 Hour	2 Hours	28 Days	(EN 12190)
	≥10 MPa	≥20 MPa	≥60 MPa	
NOTE: The above values are based on performance at 20°C. Colder temperatures will retard the compressive strength development (i.e. at 5°C, compressive strength will be ≥10 MPa after 2 hours).				
Modulus of Elasticity in Compression	~37 GPa			(EN 13412)
Flexural Strength	1 Day	28 Days	(EN 12190)	
	~6 MPa	~9 MPa		
Pull-Out Resistance	Pull out displacement ≤ 0.6 mm at load of 75 kN			(EN 1881)
Shrinkage	~ 900 µm/m			(EN 12617-4)
Thermal Compatibility	Freeze-thaw resistance: Exposure Class XF4			
Reaction to Fire	EuroClass A1			

APPLICATION INFORMATION

Consumption	At 10 mm layer thickness, 1 m ² will require ~20 kg of powder. NOTE: The material consumption depends on the roughness of the substrate and the thickness of the applied layer.		
Yield	25 kg bag:	~13.2 litres of grout	
Layer Thickness	Minimum 4 mm; maximum 120 mm		
Ambient Air Temperature	Minimum +5 °C, maximum +30 °C		
Mixing Ratio	3.2 to 3.3 litres of water for 25 kg of powder		
Substrate Temperature	Minimum +5 °C, maximum +30 °C		
Pot Life	~6 to 8 minutes	(at +20 °C)	
Initial set time	~10 minutes	(at 20°C)	
Final set time	~15 minutes	(at 20°C)	

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.

LIMITATIONS

- Further information can be found in the Method Statement.
- Apply only through gravity pouring (the Product is

too rapid for pumping).

- Do not use as a repair mortar / grout - use a product compliant with EN 1504-3.
- Avoid application in direct sunlight and / or strong winds.
- Do not exceed the stated maximum mixing water amount.
- Apply only to clean and prepared surfaces.
- Do not add additional water during surface treatment, this will cause discoloration and / or cracking.
- Protect freshly applied material from frost.

ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

All necessary preparatory work must be completed before the grout is mixed. Formwork should be erected and made grout-tight. Sealing can be achieved by using Sikaflex®-11FC+ sealant beneath or around formwork and between joints. The formwork must be designed with sufficient hydrostatic head to ensure grout flow into and across the grouting area. Substrates must always have a sufficient roughness to provide a mechanical key.

Concrete Substrates

The concrete substrate must be load-bearing and have sufficient compressive strength (>25 N/mm²) and a minimum adhesive tensile strength of 1.5 N/mm². The substrate must be clean, free of grease and oil, without loose or poorly adhering parts. Cement skin, paints or other surface treatment agents must be completely removed. The concrete substrates should be pre-soaked with clean water continuously for 2 to 6 hours to ensure a saturated surface dry condition throughout the operation. Immediately before pouring grout, remove all excess or standing water from within any formwork, cavities or pockets.

Steel Substrates

Rust, scale, mortar, concrete, dust and other loose or harmful material that reduces adhesion or contributes to corrosion must be removed (Sa 2.5 according to ISO 8501-1). Further information can be found in the EN 1504-10 standard.

MIXING

For each 25 kg bag of SikaGrout®-214 R, 3.2 to 3.3 litres of water is required. SikaGrout®-214 R can be mixed with a high torque, low-speed electric mixer (maximum 500 rpm). Single and double-blade mixers, forced mixers and static mixers are recommended as mixing tools with suitable grout stirrers. Add the stated minimum amount of water to a suitable container. Add powder to the water, stirring continually, and mix well for at least 2 minutes after all the powder has been added until a homogeneous product is achieved. If necessary, whilst mixing, add water until the desired consistency is reached, but do not exceed the maximum amount of water permitted. Allow to vent for approximately 1 minute and place grout immediately.

APPLICATION

The substrate must be pre-wetted to capillary saturation and must be kept matt damp (saturated surface dry) until application. Standing water must be removed.

After venting, pour the grout immediately into the prepared openings with sufficient pressure. It is important to ensure that the air displaced by the grout is able to escape properly, otherwise air pockets will make it impossible to pour it thoroughly. Continuous placing is important, pouring from one side of the formwork until the grout appears at the opposite side of the grouting area. Do not disturb once grouting has been completed before the grout has hardened. When pouring, care must be taken to ensure a sufficient pressure gradient ('head') is maintained to allow for continuous filling with the grout.

For optimal use of the expansion properties, the grout should be applied immediately after mixing. SikaGrout®-214 R may be placed at temperatures between 5°C and 30°C. For temperatures above 20°C, care should be taken to avoid premature setting before complete placement has been achieved.

CURING TREATMENT

After the grout has initially hardened, remove formwork and trim edges while concrete is 'green'. Protect the fresh material from premature drying using appropriate curing method e.g. curing compound such as Sikafloor® ProSeal, moist geo-textile membrane, damp hessian, polythene sheet, etc. In cold weather, apply heat blankets to maintain a constant temperature.

CLEANING OF TOOLS

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

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.

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.

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Product Data Sheet

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