

PRODUCT DATA SHEET

SikaGrout[®]-214 BD

HIGH PRECISION, NON-SHRINK, EXPANDING POURING GROUT

DESCRIPTION

SikaGrout[®]-214 BD is a cement based 1-component, ready to mix, non-shrink, ready to use, pourable and flowable, two stage expanding engineering grout in dry powder form. It is widely used for precision grouting in engineering objects subjected to static and dynamic loads.

USES

- To grout bearings, machine foundations, columns joints in precast construction etc.
- To grout anchors in concrete
- To grout cavities, gaps and voids in concrete
- To grout base plate of turbine, compressor, boilers pumps and heavy machinery
- Sealing around penetrations
- Post fixings

FEATURES

- Dual Shrinkage compensated
- Suitable for temperature of above 0°C to 200°C
- Adjustable consistency
- Rapid strength development
- Excellent bond to Concrete
- No Segregation or bleeding
- High final strengths
- Impact and vibration resistant
- Non-corrosive to anchor bolts, base plate/saddle/frame, sliding plate
- Frost, oil and fire resistant
- Suitable to use under restraints and grout thickness required
- Maximum Flow distance is compatible to the dimensions of base plate/saddle/frame
- Resistant to the chemicals, gases etc. being handled in equipment
- Chloride free

PRODUCT INFORMATION

Composition	Cement, special additives, and aggregates	
Packaging	30kg bag	
Appearance and colour	Grey Powder	
Shelf life	6 months from date of production.	
Storage conditions	Store properly in dry conditions in undamaged and unopened original sealed packaging.	
Product declaration	ASTM C1107	
Maximum grain size	2.36 mm	
Bulk density	1.15–1.60 kg/L (dry powder density) at +27 °C	(ASTM C948)

TECHNICAL INFORMATION

Compressive strength	With 70.6 mm Cube, at ambient Temperature +30°C		
	<u>1 day</u>	<u>≥ 25 N/mm²</u>	(ASTM C 109)
	<u>3 days</u>	<u>≥ 35 N/mm²</u>	
	<u>7 days</u>	<u>≥ 45 N/mm²</u>	
	<u>28 days</u>	<u>≥ 65 N/mm²</u>	
	With 50 mm Cube, at ambient Temperature +30°C		
	<u>1 day</u>	<u>≥ 25 N/mm²</u>	(ASTM C 109)
	<u>3 days</u>	<u>≥ 36 N/mm²</u>	
<u>7 days</u>	<u>≥ 50 N/mm²</u>		
<u>28 days</u>	<u>≥ 65 N/mm²</u>		
Modulus of elasticity in compression	~ 37000 N/mm ²		(ASTM C469)
Flexural-strength	<u>7 days</u>	<u>≥ 7 N/mm²</u>	(ASTM C 293-79)
	<u>28 days</u>	<u>≥ 9 N/mm²</u>	
Ambient Temperature +30°C			
Expansion	Upto 4%		(ASTM C 1090)
Tensile adhesion strength	<u>7 days, +30 °C</u>	<u>≥ 12 N/mm²</u>	(ASTM C882)
	<u>28 days, +30 °C</u>	<u>≥ 2.0 N/mm²</u>	(EN 1542)
	This term is also referred to as Bond Strength		
Splitting tensile strength	<u>28 days</u>	<u>≥ 3.5 N/mm²</u>	(ASTM C 496)

APPLICATION INFORMATION

Mixing ratio	Flowable	Water : Powder = 0.14 - 0.16 by weight*	4.2 - 4.8 litres water per 30 kg bag
	Pourable	Water : Powder = 0.13 - 0.14 by weight*	3.9 - 4.2 litres water per 30 kg bag
*May vary dependng on site condition			
Consumption	~1950 kg/m ³ at water to powder ratio 0.15		
Layer thickness	100 mm max.		
Ambient air temperature	+5°C min / +40°C max		
Substrate temperature	+5°C min / +40°C max		
Pot Life	~ 30 minutes at +30°C		(FIP 5.1)
Flowability	<u>Flow cone (mm)</u>	<u>≥ 200 mm</u>	(ASTM C230/230M)
Fresh mortar density	2000–2300 kg/m ³		

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.

IMPORTANT CONSIDERATIONS

- Minimum application thickness : 10 mm
- Recommended thickness of SikaGrout®-214 BD in

- one pour is 20 mm to 100mm.
- If the thickness exceeds 100 mm, special procedure must be taken to anticipate temperature rise. Iced water, add coarse aggregate to the mix (max. 40% by powder weight), or both of them may be used to eliminate temperature rise.
- Variations in cement could cause shade differences in colour of the mortar.

FURTHER INFORMATION

- Use SikaGrout®-214 BD for grouting only; do not use SikaGrout®-214 BD for patch repair work etc.
- Ensure formwork is secure and watertight to prevent movement and leaking during placing and curing.
- Use chilled water for mixing in case of high ambient temperature. Use hot water for mixing in case of very low ambient temperature.
- Depending on requirements and site conditions the addition of dry, single size and clean aggregates is possible.
- Trials are recommended to confirm suitability of aggregates to be used.
- For large bedding holes and higher gaps duly washed coarse aggregates of size 6mm down may be mixed with SikaGrout®-214 BD in the proportion of grout: aggregate= 2:1 (by weight).
- For additional technical information on SikaGrout®-214 BD or other grouting materials contact the technical services department.

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

Concrete, grout, stone:

Surfaces must be sound, clean, free from ice, oils, grease, standing water and any loose or friable particles and any other surface contaminants. The concrete “pull off” (tensile) strength should be ≥ 1.0 MPa.

Steel, iron:

Clean, free from oil or grease, rust and scale etc. The substrate should be prepared by suitable mechanical preparation techniques such as high pressure water jetting, breakers, blast cleaning, scrabbles, etc. The concrete substrates should be pre-soaked with clean water continuously for 2 - 6 hours to ensure a saturated surface dry condition throughout the operation.

Immediately before pouring remove all excess or standing water from within any formwork.

MIXING

Mixing Time : 3 minutes minimum

Mixing Tools : Mix grout powder mechanically in the correct ratio with water with low speed (max. 500 rpm) electric drill to avoid entraining too much air. Put around 80 to 90% of required water in the mixing drum, followed by SikaGrout®-214 BD and then add the balance water.

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Dependent on the desired consistency and flow properties, the mixing ratio can be adjusted.

Do not mix more grout, which cannot be used within Pot Life.

DO NOT ADD EXTRA WATER.

APPLICATION

Pour grout immediately after mixing into the prepared openings. Ensure that air displaced by the grout 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).

CURING TREATMENT

Keep any visible, exposed grout surfaces as small as possible and protect from premature drying out by suitable measures (keep moist, cover with wet Hessian etc.).

CLEANING OF EQUIPMENT

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 declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

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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