BUILDING TRUST

PRODUCT DATA SHEET

SikaGrout®-234

HIGH PERFORMANCE, SHRINKAGE-COMPENSATED GROUTING MORTAR WITH REDUCED ENVIRONMENTAL IMPACT

DESCRIPTION

Ready-to-use hydraulic mortar. After mixing with water, a fluid, shrinkage-compensated mortar is obtained. It contains recycled raw materials to replace part of the Portland cement used, thereby reducing the environmental impact (carbon footprint).
Complies with standard NF EN 1504-6, for anchoring rebar in reinforced concrete.
Unfilled application thickness: 12 to 200 mm per pass

USES

- Grouting of anchor bolts or concrete reinforcing bars.
- Precision grouting of industrial equipment subjected to shock or vibration.
- Grouting of railway rails or overhead cranes.
- Wedging of turbines, alternators, compressors, generators, machine tools.
- Wedging of beams or bridge end bearing constructions.
- Assembly of prefabricated metal, reinforced concrete or prestressed concrete elements.

FEATURES

- Reduces carbon footprint by using recycled raw materials in place of Portland cement.
- Resistant to seawater and sulfated water
- Free of chlorides and metal particles.
- Compensated shrinkage, low heat release
- High compressive and flexural mechanical strengths, even in the short term.
- Excellent adhesion to concrete, mortar and steel.
- Provides a monolithic bond and is highly resistant to shock and vibration.
- Resistant to variations in humidity or temperature; water and oil resistant.
- Rapid return to service of equipment thanks to its high initial resistance.
- It can be mixed with fillers to carry out levelling and grouting of substantial volume (outside the field of application of the NF certification).

CERTIFICATES AND TEST REPORTS

- CE marking in accordance with NF EN 1504-6: Anchoring reinforced concrete rebars
- Voluntary certification: NF sealing mark, NF030 regulation.

TECHNICAL INFORMATION

Compressive strength

Mechanical resistances of pure product
According to NF EN 12190 (+20°C and 60% HR)

Delays (days)	Compressive Strenght (MPa)
Plastic consistency (2.5 l water / bag 25kg)	
1 d	approx. 40 MPa
2 d	approx. 55 MPa
7 d	approx. 70 MPa
28 d	approx. 75 MPa
Fluid consistency (3.2 l water / bag 25 kg)	
1 d	approx. 25 MPa
2 d	approx. 40 MPa
7 d	approx. 60 MPa
28 d	approx. 70 MPa

Mechanical resistances of product filled (out of NF field of application)
According to NF EN 12190 (+20°C and 60% HR)

Delays (days)	Compressive Strenght (MPa)
Plastic consistency (3.4 l water / bag 25 kg + 12.5 kg Filler C)	
1 d	approx. 25 MPa
7 d	approx. 50 MPa
28 d	approx. 55 MPa
Fluid consistency (4 l water / bag 25 kg + 25 kg Filler C)	
1 d	approx.15 MPa
7 d	approx. 35 MPa
28 d	approx. 45 MPa

Flexural-strength

Mechanical resistances of pure product
According to NF EN 12190 (+20°C and 60% HR)

Delays (days)	Flexural strenght (MPa)
Plastic consistency (2.5 l water / bag 25kg)	
1 d	approx. 6 MPa
2 d	approx. 10 MPa
7 d	approx. 15 MPa
28 d	approx. 16 MPa
Fluid consistency (3.2 l water / bag 25 kg)	
1 d	approx. 5 MPa
2 d	approx. 7 MPa
7 d	approx. 12 MPa
28 d	approx. 15 MPa

Mechanical resistances of product filled (out of NF field of application)
According to NF EN 12190 (+20°C and 60% HR)

Delays (days)	Flexural strenght (MPa)
Plastic consistency (3.4 l water / bag 25 kg + 12.5 kg Filler C)	
1 d	approx. 5 MPa
7 d	approx.7 MPa
28 d	approx. 8 MPa
Fluid consistency (4 l water / bag 25 kg + 25 kg Filler C)	
1 d	approx. 3 MPa
7 d	approx. 5 MPa
28 d	approx. 7 MPa

Pull-out resistance	According to NF EN 1881, 7 days, wall position, damp substrate: complies with specifications: displacement < 0.6 mm at a load of 75 kN.
Tensile adhesion strength	According to NF EN 1542, at 35 days : > 3,5 MPa According to NF EN 13687-4 (after freeze-thaw cycles) : > 3,5 MPa
Reaction to fire	Reaction to fire classification according to EN 13501-1: Euroclass A1

PRODUCT INFORMATION

Composition	▪ Cements, raw materials from recycling ▪ Quartz sand ▪ Additives, ...
Packaging	25 kg bag.
Shelf life	12 months, in original, unopened packaging
Storage conditions	Protect from humidity.
Appearance and colour	Grey powder. After hardening: concrete-grey mortar.
Maximum grain size	From 0 to 4 mm
Density	Density of fresh mixture: approximately 2.2

APPLICATION INFORMATION

Consumption	A 25 kg bag of SikaGrout®-234 mixed with 2.5 liters of water makes approximately 12.5 liters of mortar. To fill a litre of grouting, therefore, approximately 2 kg SikaGrout®-234 are required. *Note: NF-certified characteristics are obtained for a nominal mixing water quantity of 12.8% (3.2 liters of water per bag).* When using filled SikaGrout®-234 (outside the scope of the NF mark) at a ratio of 1/0.5, consumption is reduced to approximately 1.3 kg of SikaGrout®-234 per liter.
Layer thickness	Unfilled application thickness: 12 to 200 mm per pass.
Material temperature	The temperature (product, environment, substrate) must be between +5°C and + 35°C
Setting time	at +20°C Values measured in the laboratory, according to standard NF EN 480-2:

	2.7 liters / 25 kg bag	3.2 liters / 25 kg bag	3.4 liters / 25 kg bag +12.5 kg filler	4 liters / 25 kg bag +25 kg filler
Start of setting	3h	5h15	4h	2h30
End of setting	3h40	6h45	5h30	4h

The time required to put the product back into service depends on the ex-

BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

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

EQUIPMENT

Mixer with vertical axis (preferably) or electric or pneumatic stirrer at low rotation speed (approximately 300 rpm), in a fully open container. The mixture can be used for approx. 1 h at + 5°C to + 35°C.

SUBSTRATE QUALITY / PRE-TREATMENT

The substrate must be clean, sound and must have undergone suitable surface preparation to free it from all non or poorly adhering parts. It must be particularly free from traces of oil, grease, laitance, curing compounds and all substances likely to harm the adhesion of SikaGrout®-234 and the overall monolithic nature. It must be dampened before the application of SikaGrout®-234, but must not show a film of water on the surface.

MIXING

Pure mixed product:

- Mix the 25 kg bag with 2.5 to 3.2 l of clean water.

Note: NF-certified characteristics are obtained for a nominal quantity of mixing water of 12.8% (3.2 liters of water per bag).

- Add about 2/3 of this water to the mixer. Gradually add the SikaGrout®-234 powder while mixing to avoid lumps.
- Then pour in the rest of the water and leave the mixer running for at least 3 minutes.

Filled product:

- For large-size or large-volume groutings, it is possible to add siliceous sand and gravel, provided clean and of a suitable particle size. For example, add 12.5 kg of Filler C or sand (max. grain size 8 mm) to 1.25 kg bag of SikaGrout®-234. Mix with 3.4 liters of clean water.

CURING TREATMENT

After laying, SikaGrout®-234, like any conventional mortar, must be protected from wind and sun during curing.

CLEANING OF EQUIPMENT

With water before hardening.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

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.