

PRODUCT DATA SHEET

SikaGrout®-3320

Ultra-high-strength, fatigue-certified, onshore wind tower precision grout with reduced carbon footprint

DESCRIPTION

SikaGrout®-3320 is a 1-part cementitious grout specially designed for onshore steel and precast concrete wind towers. It contains recycled materials and can therefore contribute to reducing the carbon footprint of the application.

USES

SikaGrout®-3320 is used for:

- Ultra-high performance precision grouting of joints
- Filling horizontal joints between tower base and foundation
- Filling horizontal joints between precast concrete elements

Please note:

- The Product may only be used by experienced professionals.

FEATURES

- Application thickness 20 mm to 500 mm
- Rapid early-strength development even at low temperatures
- Ultra-high final strength > 110 MPa
- Very low shrinkage
- Fatigue-certified
- Good flowability

- Very good adhesion to concrete
- Ready to use, just add water
- Suitable for pumping long distances

SUSTAINABILITY

- Contributes towards satisfying Materials and Resources (MR) Credit: Building product disclosure and optimization — Environmental Product Declarations under LEED® v4
- Contributes towards satisfying Materials and Resources (MR) Credit: Building Product Disclosure and Optimization — Sourcing of Raw Materials under LEED® v4
- Contributes towards satisfying Materials and Resources (MR) Credit: Building Product Disclosure and Optimization — Material Ingredients under LEED® v4
- Environmental Product Declaration (EPD) in accordance with EN 15804. EPD independently verified by Institut für Bauen und Umwelt e.V. (IBU)

CERTIFICATES AND TEST REPORTS

- CE marking and declaration of performance based on EN 1504-6:2006. Products and systems for the protection and repair of concrete structures — Anchoring reinforcing steel bar
- Simplified fatigue test report , Applus, SikaGrout-3320, No. 22/32304192-S

PRODUCT INFORMATION

Composition	Sulphate resistant cement, selected aggregates, additives and polymers	
Packaging	Standard bag	25 kg
	Refer to the current price list for available packaging variations.	
Shelf life	Standard bag	12 months from date of production

Storage conditions	The Product must be stored in original, unopened and undamaged packaging in dry conditions at temperatures between +5 °C and +35 °C. Always refer to the packaging. Refer to the current Safety Data Sheet for information on safe handling and storage.
Appearance and colour	Grey powder
Maximum grain size	3 mm

TECHNICAL INFORMATION

Compressive strength	Cured 24 h at 21 °C	60 MPa	(EN 12190)
	Cured 3 d at 21 °C	85 MPa	
	Cured 28 d at 21 °C	115 MPa	
	150 mm cylinder, cured 28 d at +20 °C	110 MPa, Class C100/115	(EN 12390-3)
	Early strength: ≥ 40 N/mm ² after 24 hours (class A), according Guideline DAfStb		
	For concrete exposure classes: X0, XC 1-4, XD 1-3, XS 1-3, XF 1-4, XA 1-2/ WA (EN 206)		
Modulus of elasticity in compression	Cured 28 d at +21 °C	55 GPa	(EN 13412)
Flexural-strength	Conditioned 28 d at +20 °C	15 MPa	(EN 196-1)
Shrinkage	<0.3 mm/m Shrinkage class SVKM 0 according to DAfStb Guideline		
Expansion	>0.1 % volume after 24 hours. Maximum 2 %		

APPLICATION INFORMATION

Fresh mortar density	2.4 kg/l	
Yield	11.1 L of mortar per 25 kg bag	
Layer thickness	Maximum	500 mm
	Minimum	20 mm
Flowability	≥ 600 mm in flow channel Class f1: 550 mm to 640 mm	
Material temperature	Maximum	+35 °C
	Minimum	+5 °C
Ambient air temperature	Maximum	+35 °C
	Minimum	+5 °C
Mixing ratio	Fluid consistency	1.7 lt to 2.0 lt
	Fluid consistency — water ratio by weight	6.75 % to 8 %
Substrate temperature	Maximum	+35 °C
	Minimum	+5 °C
Pot Life	At +20 °C	180 minutes
	Pot life depends on temperature Note: Pot life will be shorter at higher temperatures. Pot life will be longer at lower temperatures.	

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.

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 Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION

Concrete:

The substrate must be structurally sound, thoroughly clean and free from dust, dirt, and loose material, surface contamination, such as oil or grease, cement laitance, which reduce bond, prevent suction or impair the mortar's flow. Delaminated, weak, damaged and deteriorated concrete and where necessary sound concrete - but not to the detriment of the structural integrity - shall be removed by suitable mechanical preparation techniques, such as high-pressure water cleaning or sandblasting. No vibration cleaning methods are preferable. Roughen concrete surface to expose aggregates to 2 mm depth, in accordance with EN 1766 or CSP 5 from ICRI Guidelines. The edges of the area affected by the intervention will have to be cut perpendicular (90 degrees) up to a minimum depth of 5 mm. The concrete's tensile strength (pull off) shall be > 1.5 MPa. Follow the directions given by the Supervising Officer or Qualified Engineer.

Steel:

Steel reinforcement surface must be free from rust products, mill scale, mortar, concrete residues, oil, grease, dust and other loose materials which may reduce bond or may contribute to corrosion. In case of rust, clean uniformly the whole circumference of the steel bars (where applicable) by using abrasive blast cleaning techniques or high pressure water blasting to Sa 2 in accordance with ISO 8501. Protect cleaned bars from further contamination, prior to application of the mortar.

Formwork:

Any formwork shall be capable of withstanding the load and forces imposed on it. Formwork shall be clean and placed in position after preparation of the substrate and reinforcement. Release agents, such as Sika® Separol® series, shall be applied prior to placing the bars into position to avoid contact with prepared substrate.

Formwork shall be correctly designed in order to allow air and water bleed to escape, to support pouring technique, to provide a complete filling, to ensure free flowing, to prevent leakage of the product, e.t.c.

Please consult Sika Hellas' S.A. technical support for more specific directions.

Reference should also be made to EN1504-10 for spe-

cific requirements.

MIXING

ELECTRIC SINGLE OR DOUBLE PADDLE MIXER

IMPORTANT

Do not add more water than the maximum specified

1. Pour the minimum amount of water into a suitable clean mixing container
2. Stir the water slowly with a spiral paddle (300 to 500 rpm)
3. Add the complete bag of powder into the water
4. Mix continuously for 5 minutes to achieve a uniform and lump-free, smooth consistency
5. Add more water within the mixing time up to the maximum allowed until the required consistency is achieved
6. Wait for 2 to 3 minutes to release entrained air bubbles
7. Mix again for 1 more minute

GROUT MIXER

IMPORTANT

Carry out equipment trials

Carry out equipment trials to make sure the Product can be mixed satisfactorily before full project application.

IMPORTANT

Do not use continuous mixing equipment

The Product is not designed for processing with continuous mixing equipment.

1. Pour the minimum water ratio in the correct proportion into the grout mixer
2. While stirring the water, slowly add the powder
3. Add more water within the mixing time, up to the maximum allowed, until the required consistency is achieved
4. Mix continuously for a minimum of 4 minutes. For larger mixes, the mixing time must be extended to approximately 6 minutes or as necessary
5. Mix until the grout achieves a lump-free, smooth consistency

APPLICATION

IMPORTANT

Strictly follow installation procedures

Strictly follow installation procedures as defined in Method Statements, application manuals and working instructions, which must always be adjusted to the actual site conditions.

IMPORTANT

Risk of cracking due to application in direct sun or strong winds

1. Do not apply the Product in direct sun, strong winds or both.

IMPORTANT

Risk of reduced strength gain and physical properties due to cold weather

1. Store bags in a warm environment.
2. Use warm mixing water to assist with achieving strength gain and maintaining physical properties.

IMPORTANT

Risk of cracking and reduced physical properties due to hot weather

1. Store bags in a cool environment.
2. Use cold mixing water to assist with controlling the exothermic reaction to reduce cracking and to maintain physical properties.

Pre-wetting

1. Thoroughly saturate the prepared concrete substrate with clean water for 12 hours before application of the grout.
2. Do not allow the substrate to dry within this time.
3. Remove all water from within the formwork, cavities or pockets.

The final surface must achieve a dark matt appearance (saturated surface dry) without glistening.

Placing Manual Application

Preconditions

After mixing, allow material to remain in the mixing container for ~3 minutes to release entrained air bubbles.

IMPORTANT

1. Avoid trapping air. Pour the mixed grout into the header box or hopper ensuring continuous grout flow during the complete grouting operation.

Placing Grout Pump Application

Use grout pumps for large volume placement.

1. Conduct equipment trials to confirm the product can be pumped satisfactorily before full project application

Surface Finishing

IMPORTANT

1. Do not add water to the surface and do not overwork the surface during finishing. Finish exposed grout surfaces to the required surface texture as soon as the grout has started to stiffen.
2. Remove the formwork when the grout has initially hardened.
3. Trim the grout edges while the concrete is "green".

CURING TREATMENT

Protect exposed grout surfaces after finishing from premature drying and cracking using an appropriate curing method such as curing compounds, moist geotextile membranes, hessian or polythene sheeting. In cold weather, apply insulated blankets to maintain a constant temperature to prevent surface damage from freezing and frost.

CLEANING OF EQUIPMENT

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

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.

Sika Hellas ABEE

15, Protomagias Str.
GR 145 68, Kryoneri, Attica
Tel.: +30 210 81 60 600
E-mail: info@gr.sika.com
www.sika.gr



Product Data Sheet

SikaGrout®-3320
June 2024, Version 05.01
020201010010000483

SikaGrout-3320-en-GR-(06-2024)-5-1.pdf