BUILDING TRUST

PRODUCT DATA SHEET

SikaGrout® S 55

(formerly MFlow 928)

Pourable, rheodynamic, expansive mortar with very high performance and excellent durability for precision structural anchoring and concrete repair, thicknesses from 10 to 100 mm.

DESCRIPTION

SikaGrout® S 55 is a cementitious mortar to be applied by pouring for thicknesses from 1 to 10 cm between base plate and foundation. SikaGrout® S 55 complies with the requirements and acceptance limits of expansive mortars for anchors supplied by:

- UNI 8993 and UNI 8994 about the consistency classes for superfluid, fluid and plastic types;
- UNI 8994 and UNI 8996, UNI 8147 for expansion both plastic and hardened stage;
- UNI 8998, absence of bleeding.

In particular, SikaGrout® S 55 is an high performance structural mortar (class R4) since it meets the requirements of the EN 1504-3 standard.
SikaGrout® S 55 is resistant to aggressive agents in the environment by offering a protective barrier for reinforcement by minimizing the risk of corrosion, improving the durability of the rehabilitation work. For anchors with thicknesses greater than 100 mm use SikaGrout® S 33.

USES

SikaGrout® S 55 is suitable for precision anchorages such as the ones related to gas or steam turbines, alternators, compressors, paper mill machines, frontal and horizontal lathes, milling machines, planing machines, presses, hot rolling mills, drawing machines, boring machines, balancing machines, cranes, diesel engines, pumps, wind shovels, plant hoisting, crushing mills, machines for marble cutting, steel or prestressed concrete pillars.

FEATURES

The special characteristics of SikaGrout® S 55 are:

- very high fluidity and flow capacity: an important property for underplate anchors because it allows the filling of all spaces even the most distant ones;
- compliance with the requirements of the Italian regulations regarding expansive mortars for anchors: these regulations supplies the basic requirements for the material in order to be successfully used for precision filling and anchoring;
- high mechanical performance in both short and long curing: such properties mean long service life of the machinery anchoring; high adhesion to concrete and steel;
- impermeability to water;
- high resistance to attack by lubricating oils;
- high resistance to fatigue, thermal cycling and high temperatures.
- It resists to the aggressive agents of the environment: the product is impervious to water, chlorides and sulfates; it resists to freeze/thaw cycles even in the presence of salts de-icing and carbonation by forming a protective barrier for the reinforcement.

CERTIFICATES AND TEST REPORTS

In compliance with the European Regulation (EU No. 305/2011 and EU No. 574/2014) the product is provided with CE marking according to UNI EN 1504-3 and UNI EN 1504-6 and the relevant DoP (Declaration of Performance).

PRODUCT INFORMATION

Composition	Cementitious mortar CC	
Packaging	25 kg bags	
Colour	Grey powder	
Shelf life	12 months from the date of production	
Storage conditions	Store in the undamaged, sealed original packaging in a cool and dry, protected from frost min. +5°C / max. +35°C	
Total chloride ion content	<0,05%	(EN 1015-17)

TECHNICAL INFORMATION

Effect on setting	Assessment of surface quality at the interface: > 85%		(ASTM C1339-02)
Compressive strength	Class R4		(EN 1504-3)
	> 35 MPa	1 day	(EN 12190)
	> 65 MPa	7 days	(EN 196-1)
	> 75 MPa	28 days	
Modulus of elasticity in compression	28000 ± 2000 MPa		(EN 13412)
Flexural-strength	> 6 MPa	1 day	(EN 196-1)
	> 8 MPa	7 days	
	> 9 MPa	28 days	
Tensile strength	Indirect tensile strength of specimens: ~ 6 MPa		(EN 12390-6)
Pull-out resistance	Steel bar draw-out - relative load displacement 75 kN: < 0,6 mm Pull-out resistance: > 30 MPa		(EN 1881) (RILEM-CEB-FIP RC6-78)
Shrinkage	1 day ≥ 0,03 %		(UNI 8147)
Expansion	In plastic phase: > 0,3 %		(UNI 8966)
Tensile adhesion strength	Concrete: ≥ 2,0 MPa		(EN 1542)
	Shear adhesion strenght in concrete: ~ 6,0 MPa		(EN 12615)
Chemical resistance	Resistance to lubricating oils, 60-day oil bath at 40°C: No degradation		
Watertightness	Average depth of penetration < 5 mm		(UNI 12390-8)
Carbonation resistance	Specification exceeded		(EN 13295)
Bleeding	Absent		(EN 8998)

APPLICATION INFORMATION

Mixing ratio	Each 25 kg bag requires 3.6-4 L of water: 14.4-16% by weight.
Consumption	~ 1950 kg/m³

Layer thickness	Min. 10 mm - max. 100 mm
Ambient air temperature	Min. +5°C / max. +35°C
Pot Life	~ 80 min. a +20°C
Consistency	Flow after mix: > 55 cm

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. Technical data according to EN 1504-3 and EN 1504-6 are obtained with the average water dosage.

LIMITATIONS OF USE

- SikaGrout® S 55 is a product for professional use.
- Do not apply on gypsum substrates, on painted substrates,on friable substrates, on mixed substrates without adequate prior preparation. For further information please consult Sika Technical Service.
- Do not add water beyond the recommended dosage.
- Do not add fresh mortar to the mixture after the start of the setting process.
- Protect the newly applied material from dehydration,freezing and rain.
- SikaGrout® S 55 can be used when the ambient temperature is between +5 and +35°C. In case the temperature, at the time of application, is between +5 and +10°C, the development of mechanical strengths will be slower. It is recommended to use heated mixing water (+30 to +50°C) and to apply the mortar in the middle hours of the day. Should the temperature, at the time of application, is between +30 and +35°C, it is it is recommended to use mixing water at a low temperature (+5 to +10°C) and apply the mortar during the hours least hot hours of the day.
- For the purpose of the overall durability of the restoration, it is always recommended to apply over the entire structure a protective system that is capable of achieve continuity of the exterior surfaces. The protection of the system is achieved with the application of CE-marked Sika protectives in accordance with EN 1504-2 to be defined according to environmental exposure conditions. Such treatment is necessary especially in case of use for concrete restoration without the use of passivating agent.

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

Foundation and machine preparation
Before placing the machine, remove from the surface of the foundation the deteriorated concrete and any grout slurry, and roughen the surface. Remove oil, grease, debris and dust from the foundation, from the anchor pits, bolts and the support plate. Check that the plate has holes have been drilled for the air outlet. Position, align and level the machine. After positioning the machine, saturate the foundation concrete with water for at least 8 hours before pouring of the anchoring mortar. Remove the free water with air jets or with sponges or a siphon from the sumps anchorage pits.

Formwork
Formwork must have sufficient impermeability to prevent water subtraction from the anchor mortar, and be anchored and resisted to resist the pressure of the mortar when it is poured in place. From the side where pouring takes place provide at least 15 cm of hydraulic head and a clear space of at least 15 cm between the side of the formwork and the base of the machine. On all other sides leave 5 cm of space between the formwork and base and 5-10 cm for the mortar hopper. In the case of very large plates, in addition to providing higher values (up to 1.5 m) of hydraulic head, to promote the flow of the mortar itself, it may be useful to: a) move the hopper at points more advanced than the initial point of the casting; b) provide more fluid mixes (about 5-10% of more water) to lubricate the concrete foundation, followed by mix at standard fluidity. Seal the formwork to prevent mortar leakage and reduction of hydraulic head.

MIXING

Mix for 3-4 minutes, in concrete mixer, or for small quantities, with whisk mounted on drill at low speed, the entire contents of the bags with the amount minimum amount of water provided until the mixture is homogeneous and free of lumps. Then possibly add more water without exceeding the maximum amount provided to obtain the rheodynamic consistency.

APPLICATION

Verify by observing the surface of the water in a container placed on the plate of the machine to be anchored, that vibrations generated by any machines operating nearby are not transmitted to the foundation of the machine being anchored. If this occurs, it is necessary to stop these machines until setting is complete and curing has begun (at least 10 to 12 hours at 20°C). Carry out the casting with continuity without any interruption and avoiding excessively moving or vibrating the mortar under the plate. The mortar should be poured on one side only to promote the es-

cape of air. Avoid, in any way, pouring the mortar from two opposite sides. Make sure that the mortar has completely filled the space between the plate and the foundation, helping yourself if necessary with flexible rods slid back and forth under the machine base.

CURING TREATMENT

All parts exposed to air must be immediately protected from evaporation and cured for at least 24 hours by wetting and/or damp cloths or by spray application of curing products Sika antevaporants. Failure to cure could cause, especially in hot and dry climates, the formation of surface cracks or micro-cracks in the part of the mortar exposed to air, but without affecting anchorage. Remove and shape, if necessary, the parts of the mortar exposed to air, after the mortar has finished setting and started hardening (10-12 hours at 20°C). The removal of the formwork, if required by the manufacturer of the machine, must be done not earlier than 48 hours.

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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