



PRODUCT DATA SHEET

SikaGrout®-928

(formerly MFlow 928)

High strength, non-shrink precision grout for placement by pouring or pumping

PRODUCT DESCRIPTION

SikaGrout®-928 is a one-component, cement-based, non-shrink, high strength precision grout. When mixed with water, SikaGrout®-928 forms a mortar with a fluid consistency which can be easily applied by hand or machine for all grouting works. SikaGrout®-928 provides excellent flow properties without segregation or bleeding.

WHERE TO USE

SikaGrout®-928 is typically used for:

- Load-transferring, supporting, force transmitting bond between concrete foundations and machines, steel bed plates, steel rails (crane track rails) and high shelving pillars
- Precision grouting of machines, turbines, pumps and generators
- Force-transmitting grouting of prefabricated concrete pillars in hole footings
- Void-free bond between components and non-reinforced concrete or reinforced concrete
- Anchoring of bolts and reinforcing bars

CHARACTERISTICS / ADVANTAGES

- Non-shrink
- Easy application
- Excellent flow properties without bleeding and segregation
- Can be pumped into intricate areas or areas inaccessible to conventional grouting methods
- High early and final strengths
- Excellent adhesion and excellent durability
- Controlled expansion for perfect adhesion and volume filling
- Provides a smooth bond-free of cracks and cavities, enabling smooth machine running and therefore more accurate working and lower wear and tear of machinery
- Excellent freeze-thaw and de-icing salt resistance
- Impermeable to water
- Meets the requirements of ASTM C1107 and US Army Corps of Engineers CRD C621 (Grades B and C), at a fluid consistency over a 30-minute working time
- 50 % reduction of airborne dust for added worker comfort and safety
- Contains high-quality, well-graded quartz aggregate for optimum strength and workability
- Sulfate resistant for marine, wastewater and other sulfate-containing environments

PRODUCT INFORMATION

Packaging

- 25 kg bag
- 1000 kg FIBC (on request)

Shelf Life

12 months in original, unopened packaging

Storage Conditions

Material should be stored in a dry, covered area and protected from the elements. No permanent storage over +30 °C.

Product Data Sheet

SikaGrout®-928

September 2024, Version 03.01

020201000000002081

TECHNICAL INFORMATION

Compressive Strength

	Plastic ¹	Consistency flowable ²	Fluid ³	(ASTM C942, according to ASTM C1107 of ASTM C109)
1 day	31 MPa (4500 psi)	28 MPa (4000 psi)	24 MPa (3500 psi)	
3 days	41 MPa (6000 psi)	34 MPa (5000 psi)	31 MPa (4500 psi)	
7 days	52 MPa (7500 psi)	46 MPa (6700 psi)	45 MPa (6500 psi)	
28 days	62 MPa (9000 psi)	55 MPa (8000 psi)	52 MPa (7500 psi)	

¹100–125 % flow on flow table per ASTM C230

² 125–145 % flow on flow table per ASTM C230

³ 25 to 30 seconds through flow cone per ASTM C939

Modulus of Elasticity in Compression

3 days	19.4 GPa (2.82 x 10 ⁶ psi)	(ASTM C469 modified)
7 days	20.8 GPa (3.02 x 10 ⁶ psi)	
28 days	22.3 GPa (3.24 x 10 ⁶ psi)	

Test conducted at a fluid consistency

Tensile Strength in Flexure

3 days	6.9 MPa (1000 psi)	(ASTM C78)
7 days	7.2 MPa (1050 psi)	
28 days	7.9 MPa (1150 psi)	

Test conducted at a fluid consistency

Tensile Strength

3 days	3.4 MPa (490 psi)	(ASTM C190)
7 days	3.44 MPa (500 psi)	
28 days	3.44 MPa (500 psi)	

Splitting Tensile Strength

3 days	4.0 MPa (575 psi)	(ASTM C496)
7 days	4.3 MPa (630 psi)	
28 days	4.7 MPa (675 psi)	

Test conducted at a fluid consistency

Coefficient of Thermal Expansion

11.7 x 10 ⁻⁶ mm/mm/°C (6.5 x 10 ⁻⁶ in/in/°F)	(ASTM C531)
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Freeze thaw resistance

Resistance to rapid freezing and thawing, 300 cycles (ASTM C666, Procedure A)
Durability factor > 90 %

APPLICATION INFORMATION

Fresh Mortar Density

Approx. 2.2 kg/L

Consumption

12 to 13 L of grout per 25 kg bag, depending on the water dosage used
Approx. 1,900 kg powder is needed to prepare 1 m³ of fresh mortar.

Product Temperature

+5 °C to +30 °C

Ambient Air Temperature

+5 °C to +30 °C

Mixing Ratio

Use the water dosage provided on the product packaging. Do not exceed maximum water amount!

Substrate Temperature

+5 °C to +30 °C

Pot Life

Approx. 60 minutes

Initial Set Time	Plastic ¹	Consistency flowable ²	Fluid ³	(ASTM C191)
	150 minutes	180 minutes	270 minutes	
¹ 100–125 % flow on flow table per ASTM C230 ² 125–145 % flow on flow table per ASTM C230 ³ 25 to 30 seconds through flow cone per ASTM C939				
Final Set Time	Plastic ¹	Consistency flowable ²	Fluid ³	(ASTM C 191)
	240 min.	300 min.	360 min.	
¹ 100–125% flow on flow table per ASTM C 230 ² 125–145% flow on flow table per ASTM C 230 ³ 25 to 30 seconds through flow cone per ASTM C 939				
Waiting Time	Removal of formwork after approx. 12 hours (at +20 °C).			

BASIS OF PRODUCT DATA

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

LIMITATIONS

- Do not apply at temperatures below +5 °C nor above +30 °C.
- Do not add any other substance that could affect the properties of the product.
- Under no circumstances should SikaGrout®-928 be re-tempered by the later addition of water.
- Do not use vibrator for placing the grout.
- In case of severe dynamic operating forces and repetitive loading, such as founding in steel and aluminium rolling mills, crane rails, heavy presses etc., the use of Sikagrout®-4800 (metallic aggregate reinforced grout) is recommended.
- In case of thicker applications and complex geometries, contact your local Sika Technical Sales Representative.

ENVIRONMENT, HEALTH & 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

NOTES ON INSTALLATION

The performance, durability and safety of the installed product used for anchoring steel (rebar), bolts and screws strongly depend on the substrate, the dimensions of the element, the drilling and cleaning of holes, the substrate temperature and the type of

anchoring bolt or bar. It is therefore important that a proper structural assessment of the structural elements to be repaired is carried out by qualified engineers, and that the choice of products, anchor types etc. is based upon such assessment

SUBSTRATE PREPARATION

The concrete should be free of frost, curing membranes, waterproofing treatments, oil stains, laitance, friable material and dust. The concrete surfaces should be chipped. Any water leakage must be drained or properly plugged. Saturate the cleaned foundation and any bolt holes with water for at least six (6) hours, preferably 24 hours. Just before grouting, surfaces should be damp, but free of standing water. Particular attention should be paid to bolt holes to ensure that these are water-free. Use oil-free compressed air to blow out bolt holes and pockets as necessary. Base plates, bolts, etc. must be clean and free of oil, grease and paint etc. Set and align equipment. If shims are to be removed after the grout has set, then lightly grease them for easy removal. The formwork must fit tightly against the substrate and, when grouting material around machines, it has to be at least 20 mm higher than the bottom of the plate to be underpoured. Ensure formwork is secure and watertight to prevent movement and leaking during the placing and curing of the grout. The area should be free of excessive vibration. Shut down adjacent machinery until the grout has hardened. In hot weather, base plates and foundations must be shaded from direct sunlight. Bags of grout should be stored in the shade prior to use. In cold weather, the temperature of base plates and foundations should be raised to over +5 °C.

MIXING

Use one or more mixers to permit mixing and placing operations to proceed simultaneously without interruption. Stick to the water dosage provided on the bags. Mix with clean water only. Put the minimum water amount in the mixer first, then slowly and steadily add the grout.

Mix SikaGrout®-928 for 2 to 3 minutes until a homogeneous consistency is obtained. Add more water if required and continue to mix for at least two (2) more minutes. Do not exceed the maximum water amount! Do not re-temper the grout by adding water or remixing after it stiffens. Do not add cement, sand or other materials to SikaGrout®-928.

APPLICATION

Important: Before grouting, determine if there is excess vibration of the foundation or baseplate caused by nearby operating equipment. Shut down this source of vibration until after the newly-placed grout has taken final set.

Pour freshly mixed SikaGrout®-928 into the voids without interruption. The mortar flow can be improved by moving chains or wire slings in the fresh mortar when areas are inaccessible. The grout shall be poured continuously and from one side only, to avoid air entrapment while grouting. Make sure the mortar fills the entire space to be grouted and remains in contact with the plate throughout the entire grouting placement. Where grout must flow some distance, make the initial batch slightly more fluid or flowable than required; this lubricates the surfaces and avoids blockage of the grout that follows. Due to differences in temperature between the grout under the base plate, and exposed shoulders that are subject to more rapid temperature changes, debonding or cracking can occur. Avoid shoulders wherever possible. If shoulders are required, they should be firmly anchored with reinforcement to the substrate to prevent debonding. SikaGrout®-928 is suitable for use with most types of pumping equipment.

Note: Do not use vibrator for placing the grout!

CURING TREATMENT

Immediately after SikaGrout®-928 is placed, cover all exposed grout with clean wet hessian or burlap, and keep moist by covering with polythene.

CLEAN UP

Tools and mixers must be cleaned with water immediately after use. Cured material can only be removed mechanically.

Sika Canada Inc.

Head Office
601, avenue Delmar
Pointe-Claire, Quebec
H9R 4A9
1-800-933-SIKA
www.sika.ca

Other locations

Boisbriand (Quebec)
Brantford; Cambridge;
Sudbury; Toronto (Ontario)
Edmonton (Alberta)
Surrey (British Columbia)

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 recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. 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 or may be downloaded from our website at: www.sika.ca

SikaGrout-928-en-CA-(09-2024)-3-1.pdf

Product Data Sheet

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