BUILDING TRUST

PRODUCT DATA SHEET

SikaGrout®-4800

(formerly MFlow 4800)

Metallic aggregate reinforced, ultra-high strength precision grout

PRODUCT DESCRIPTION

SikaGrout®-4800 is a one-component, cement based, metallic aggregate reinforced, non-shrink, ultra-high strength precision grout.
When mixed with water, SikaGrout®-4800 forms a mortar with a fluid consistency which can be easily applied by hand or machine.
SikaGrout®-4800 can be used in thickness from 20 mm up to 150 mm.

USES

SikaGrout®-4800 is used for assembling and fixing of the following items:

- Industrial turbines, generators and compressors.
- Rolling, stamping, grinding, drawing and finishing mills.
- Forging hammers.
- Rail tracks, crane rails.
- Paper machine sole plates.
- Machinery and equipment requiring high strength maximum bearing.

Note: For wind turbine installations please refer to our Sikagrout®-9000 product range.

CHARACTERISTICS / ADVANTAGES

- Contains metallic aggregates to provide high strengths and increased impact resistance under dynamic and repetitive loading.
- Very high early strengths shorten the waiting time for starting the machinery process.
- Ultra-high final strengths allow very high compressive loading.
- Provides solutions for various application details with wide application thickness: 20 to 150 mm.
- Hardens without bleeding, settlement or drying shrinkage when mixed, placed and cured.
- Can be used at temperatures down to +2 °C.
- Designed for use where thermal movement of equipment and machinery and other effects of heating / cooling and wetting / drying are anticipated.
- High flow for full compaction, even in areas with congested steelwork.
- For hand or machine application.
- Extra low shrinkage for durability.
- Excellent freeze / thaw resistance.
- Very low permeability to water and chlorides.
- Sulphate-resistant.
- CE Marked in accordance with EN 1504-6.

ENVIRONMENTAL INFORMATION

SikaGrout®-4800 contains more than 20% by weight of post-consumer material recycled content from the normal recovery of raw materials in manufacturing processes.

PRODUCT INFORMATION

Packaging	SikaGrout®-4800 is available in 25 kg paper bags.
Shelf Life	12 months after date of production if stored as per stated requirements.

Storage Conditions	Store at ambient temperatures, out of direct sunlight, in cool, dry warehouse conditions and clear of the ground on pallets protected from rainfall prior to application. Storage temperatures should not exceed +30 °C.	
Appearance / Colour	Grey powder	
Maximum Grain Size	4.0 mm	
Total Chloride Ion Content	< 0,01 %	(EN 1015-17)

TECHNICAL INFORMATION

Effective Bearing Area	93 to 95 %		(ASTM C1339-02)
Compressive Strength	**Testing Conducted at +20 °C:**		
	16 hours	≥ 50 N/mm²	(EN 196-1)
	1 day	≥ 70 N/mm²	
	7 days	≥ 100 N/mm²	
	28 days	≥ 110 N/mm²	
	Cold Temperature Strength Development (Testing Completed at +2 °C):		
	2 days	≥ 30 N/mm²	(EN 196-1)
	7 days	≥ 90 N/mm²	
	28 days	≥ 100 N/mm²	
Modulus of Elasticity in Compression	**Static:**		
	After 90 days	~35,900 N/mm²	(EN 13412)
	Dynamic:		
	After 28 days	**~38,000 N/mm²**	(EN 13412)
	After 90 days	~42,000 N/mm²	
Flexural Strength	**Testing Conducted at +20 °C:**		
	16 hours	≥ 8 N/mm²	(EN 196-1)
	1 day	≥ 9 N/mm²	
	7 days	≥ 15 N/mm²	
	28 days	≥ 17 N/mm²	
	Cold Temperature Strength Development (Testing Completed at +2 °C):		
	2 days	≥ 5 N/mm²	(EN 196-1)
	7 days	≥ 12 N/mm²	
	28 days	≥ 16 N/mm²	
Pull-Out Resistance	Displacement at load of 75 kN	0.36 mm	(EN 1881)
Sulfate Resistance	Dimensional change after 126 days in 10% Na_2SO_4-solution	passed (difference = 0.4 mm/m)	
Freeze thaw resistance	No scaling		
Freeze Thaw De-Icing Salt Resistance	Adhesion to concrete after freeze-thaw (50 cycles with salt)	≥ 2.0 N/mm²	(EN 13687-1)

APPLICATION INFORMATION

Fresh mortar density	~2.7 kg/l
Consumption	~2,370 kg powder is needed to prepare 1 m³ of fresh grout. One 25 kg bag will yield ~10.5 litres of mortar.
Layer Thickness	20 to 150 mm
Product Temperature	+2 °C to +35 °C
Ambient Air Temperature	+2 °C to +35 °C
Mixing Ratio	2.4 to 2.6 litres of water per 25kg bag.
Substrate Temperature	+2 °C to +35 °C
Pot Life	~45 minutes at +21 ± 2°C and 60 ± 10% relative humidity. Higher temperatures will reduce this time and lower temperatures will extend it.

VALUE BASE

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.

LIMITATIONS

- Do not apply at temperatures below +2 °C nor above +35 °C.
- Do not add any other substance that could effect the properties of the product.
- In case of deep pour applications and complex geometries consult your local Sika Representative.
- Do not exceed allowed maximum water demand!
- Under no circumstances should SikaGrout®-4800 be re-tempered by the later addition of water.

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

For mixing of SikaGrout®-4800 use force-action mixers only!

SUBSTRATE PREPARATION

The concrete should be free of frost, curing membranes, waterproofing treatments, oil stains, laitance, friable material, dust, and anything that may impair adherence and performance.
The concrete surfaces should be (wherever possible) open-textured to provide a mechanical key. If there is a water leakage, it must be drained or properly plugged. Soak the area to be grouted with water for 24 hours prior to grouting to minimise localised absorption and to assist in the free flow of the grout. Surfaces should be matt damp, but free of standing water (i.e. saturated surface dry). Particular attention should be paid to bolt holes to ensure that these are free of water. Use oil free compressed air to blow out bolt holes and pockets as necessary (or use a sponge to remove excess water, if possible).
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. Ensure formwork is of sufficient strength, 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 (or kept cool by other suitable means).
In cold weather, the temperature of base plates and foundations should be preferably raised to over +10 °C.

MIXING

For mixing of SikaGrout®-4800 use force-action mixers only!
Damp down the inside of the grout mixer with clean water prior to mixing the initial batch of SikaGrout®-4800. Ensure the mixer is damp but free of standing water. The product should be mixed with 2.5 litres of water (+/- 0.1 litres) per 25 kg bag. Add the pre-measured quantity of water. Slowly add the powder whilst mixing continuously. Mix for at least seven minutes

until a smooth, uniform consistency is achieved without lumps in the mortar.
In hot weather, use cold water to bring the mixed grout temperature to below +30 °C. In cold weather, use warm water to raise the mixed grout temperature to over +10 °C for quicker hardening.

APPLICATION

Lengths of metal strapping laid in the formwork prior to placing may be necessary to assist grout flow over large areas and in compacting and eliminating air pockets. Have sufficient manpower, materials and tools to make mixing and placing rapid and continuous. 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. The grout shall be poured continuously and from one side only, to avoid entrapment of air while grouting.
Maintain a constant hydrostatic head, preferably of at least 15 cm. On the side where the grout has been poured, allow 10 cm clearance between the side of the form and the base plate of the machine. On the opposite side allow 5 to 10 cm clearance between the formwork and the base plate.
Make sure the grout fills the entire space to be grouted and remains in contact with the plate throughout the entire grouting placement.
Due to differences in temperature between the grout under the base plate, and exposed shoulders that are subject to more rapid temperature changes, debonding and / 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®-4800 is suitable for use with most types of pumping equipment.
NOTE: Do not use vibration on the placed grout!

CURING TREATMENT

Immediately after SikaGrout®-4800 is placed, cover all exposed grout with clean, wet hessian and keep moist by covering with polythene.

CLEANING OF TOOLS

Tools and mixer must be cleaned immediately after use with water. Cured 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.

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