

PRODUCT DATA SHEET

SikaGrout[®] Ultra

FLOWABLE, ~100MPa ULTRA HIGH STRENGTH CEMENTITIOUS GROUT

DESCRIPTION

SikaGrout[®]-Ultra is a ready mixed, high quality cement grout that expands in two stages (class A and C) to counteract the shrinkage normally associated with Portland cement grouts.

SikaGrout[®]-Ultra is a blend of Portland cement, carefully selected and graded aggregates and Sika Admixtures, enabling it to be self levelling and achieve very high strengths in short times, making SikaGrout-Ultra suitable for critical grouting applications in the most demanding of circumstances.

USES

- Grout projects requiring 100MPa compressive strengths
- Static load grouting
- Machine base plates
- Anchor bolting
- Bridge bearing pads
- Pre-cast concrete sections
- Shear Key Grouting

PRODUCT INFORMATION

Packaging	20kg bags
Appearance / Colour	Grey Cementitious Powder
Shelf life	9 months from date of manufacture.
Storage conditions	Store product in Dry conditions out of direct sunlight
Density	~ 2,200 kg/m ³ approx. (dependent on water addition rate)
Maximum grain size	Maximum particle size for pumping ~2.0mm

CHARACTERISTICS / ADVANTAGES

- Self levelling capabilities
- Shrinkage compensated
- High early strengths - 35 MPa in 24 hours
- High 28 day strengths – greater than 100 MPa
- Does not segregate or bleed
- High impact and thermal resistance
- Non corrosive to steel or iron

APPROVALS / CERTIFICATES

Department of Main Roads Qld (TMR) 2019, Product Index for Bridges and Other Structures, Section 5. Registered and Conforming Products, 5.33 Repair Materials (Concrete) – Grouts

TECHNICAL INFORMATION

Compressive strength	<u>1 day</u>	<u>~ 40 MPa</u>	(AS 1478.2:2005)
	<u>7 days</u>	<u>~ 80 MPa</u>	
	<u>28 days</u>	<u>~ 100 MPa</u>	
	<i>Material and curing conditions at 23°C / 50% r.h. Above results based on 50x50mm cube @ 2.7 litres water per 20kg bag</i>		
Tensile strength in flexure	<u>28 days</u>	<u>13 MPa</u>	(ASTM C348)
Splitting tensile strength	<u>28 days</u>	<u>7.5 MPa</u>	(AS 1012.10:2000)
Expansion	<u>Height Change %</u>		(ASTM C1090-01)
	<u>1 Day</u>	<u>~ 0.02</u>	
	<u>3 Days</u>	<u>~ 0.02</u>	
	<u>14 Days</u>	<u>~ 0.03</u>	
	<u>28 Days</u>	<u>~ 0.03</u>	
Electrical resistivity	<u>7 day</u>	<u>~ 17,000 Ω.cm</u>	(FM 5-578) 50mm Probe Spacing
	<u>28 days</u>	<u>~ 25,000 Ω.cm</u>	
	<u>56 days</u>	<u>~ 31,000 Ω.cm</u>	
	<u>90 days</u>	<u>~ 37,000 Ω.cm</u>	

APPLICATION INFORMATION

Mixing ratio	2.7 - 2.8 litres of water per 20kg bag			
Yield	Yield per 20kg bag: 10.3 litres approx. Quantity of 20kg bags per 1m ³ : 97 bags approx.			
Layer thickness	min. 10mm / max. 100mm <i>For application greater than 100 mm in depth, Add a clean, well graded and smooth aggregates to reduce the exothermic heat.</i>			
Flowability	<u>Initial Flow</u>	<u>Flow Retention @ 30min</u>	(QCM002)*	
	<u>300mm</u>	<u>270mm</u>		
<i>*Sika Test Method - Spread on glass</i>				
Pot Life	35 minutes approx. @ 23°C			
Setting time	<u>Temp</u>	<u>Initial Set</u>	<u>Final Set</u>	(AS 2350.4:2006)
	<u>23°C</u>	<u>~ 3 hrs</u>	<u>~ 4 hrs</u>	

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.

IMPORTANT CONSIDERATIONS

- For detailed information on grouting application and guidelines, refer to Sika Grouting Systems.
- Do not use in combination with retarding admixtures as this may accelerate the reaction.
- Store Sika Grout Ultra in dry conditions in unopened original packaging.
- Never apply to a dry substrate.
- Trials should always be conducted when adding a recommended Sika
- Admixture to SikaGrout® Ultra to determine the optimum dosage rates under local conditions.

- Sika Ferrogard 901 can be added to the mixing water (0.3 litres per 20 kg bag) before mixing the grout to enhance protection of steel reinforcement.

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

EQUIPMENT

SikaGrout® Ultra must be mechanically mixed using a mechanical grout mixer or a suitable drum mixer. The grout mixer will reduce the chances of the mix becoming lumpy or aerated. Smaller quantities should be mixed in clean drum using an electric drill and spiral drill and spiral mixer at a speed of approximately 500 rpm. DO NOT MIX BY HAND or MIX PART BAGS.

SUBSTRATE QUALITY / PRE-TREATMENT

Concrete:

Correct and thorough surface preparation is essential to achieve the high performance qualities of SikaGrout® Ultra. All surfaces must be clean, sound and free from dust, ice, oils, grease or other surface contaminants such as curing membranes and form release agent etc. Bolt

holes and fixing pockets should be free of dirt and debris by air blasting. For maximum bond, surfaces should be abraded or roughened, preferably by mechanical means such as needle gun, grit blasting, grinding etc.

All prepared surfaces must be saturated with water several hours prior to grouting, ensuring it is free of any surface water or puddles.

Formwork:

Where formwork is to be used, all formwork must be of adequate strength, treated with release agent and sealed to prevent leakage of pre-wetting water and grout. Ensure formwork includes outlets for removal of the pre-soaking water if vacuum extraction equipment to remove water will not be used. For manual grout application, a header box or hopper must be constructed on one side of the formwork so that a grout head can be maintained during the grouting operation.

MIXING

Add 2.7 litres of water per 20 kg bag.
Add the powder to the total water while mixing.
Mix until the grout appears homogenous (5-6 minutes). Allow to stand so any entrapped air can escape. Do not add more water to increase flow of the grout if a mix has stiffened due to time delays. If the grout is unworkable discard.

APPLICATION

SikaGrout® Ultra can be placed by either gravity flow or by pump. It is essential that proper placing on the job site is practised to ensure placement is completed without problems. Sufficient labour, grout and equipment must be present to ensure continuous placement.

Gravity:

Mixed grout should be poured one side of the void to avoid air entrapment. Grout is best poured over short distances to ensure this. Use a suitable header box, maintaining the grout head at all times to ensure continuous flow.

To facilitate grout compaction and top plate contact, use rodding, tamping or flexible strapping in short strokes while maintaining an adequate head of grout. Do not vibrate as this will cause segregation. Any adjacent machinery or equipment causing vibration should be shut down until initial set (approx. 3 hours).

Pumping:

When pumping SikaGrout® Ultra, ensure the pump is suitable for the grout consistency and for the distance and height it is to be pumped. A positive displacement pump is recommended. Place grout by pumping into the farthest corner, filling the space gradually. Ensure that air is not entrapped under the base plate.

CURING TREATMENT

Suitable curing methods such as plastic sheet, wet hessian, liquid membrane (eg, Antisol curing membranes) etc. must be used to protect the freshly applied grout from the drying effects of sun and wind. Curing must commence immediately after placement, and continue for at least 7 days. Curing is vital to the ultimate performance of grout as it allows optimum strength development and ensures tight contact with the baseplate.

CLEANING OF EQUIPMENT

Remove uncured SikaGrout-Ultra from tools and equipment with water. Hardened material can only be removed mechanically.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the declared data for this product may vary from country to country. Please consult the local Product Data Sheet for the exact product data.

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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Product Data Sheet

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