

## PRODUCT DATA SHEET

# SikaGrout<sup>®</sup>-4 UW

Shrinkage compensated cementitious grout for underwater application

## DESCRIPTION

SikaGrout<sup>®</sup>-4 UW is a ready to use, cementitious grout that can be used for applications underwater. The grout, when applied, will effectively displace the water.

SikaGrout<sup>®</sup>-4 UW is a blend of portland cement, carefully selected aggregates and Sika admixtures. This raw materials enable excellent flow, non-washout characteristics and high compressive strength. Suitable for use in hot and tropical climatic conditions.

## USES

SikaGrout<sup>®</sup>-4 UW is used for grouting applications underwater or in tidal zones, for reinstating concrete, like:

- Bridge columns
- Pillars
- Piles
- Slipways
- Dams

## CHARACTERISTICS / ADVANTAGES

- Effectively displaces water
- Shrinkage compensated
- Does not segregate or bleed
- Good impact, vibration & thermal resistance
- Non-corrosive to steel and iron
- Application by pouring or pumping

## PRODUCT INFORMATION

<b>Composition</b>	Portland cement, selected fillers and aggregates, special additives.
<b>Packaging</b>	25 kg bag
<b>Shelf life</b>	12 months minimum from date of production.
<b>Storage conditions</b>	Store in original unopened packaging in cool and dry condition between 5 °C and 35 °C. Protect from direct sunlight, heat and moisture.
<b>Appearance and colour</b>	Grey powder
<b>Maximum grain size</b>	~4 mm

## TECHNICAL INFORMATION

Compressive strength	4.5 L water per bag	<b>1 Day</b>	<b>7 Day</b>	<b>28 Day</b>	(ASTM C109)
	w/p ratio = 0.18	~20 N/mm <sup>2</sup>	~40 N/mm <sup>2</sup>	~50 N/mm <sup>2</sup>	

Tensile adhesion strength  $\geq 1.5$  N/mm<sup>2</sup> (28 d)

## APPLICATION INFORMATION

Mixing ratio 4.0 - 4.5 L of water per 25 kg bag

Fresh mortar density ~2.2 kg/l

Yield ~13.4 L per 25 kg bag

Layer thickness

**Under water**

**Above water**

Min. 10 mm

Min. 10 mm

Max. 180 mm

Max. 100 mm

Pot Life

~3 h (25 °C)

## BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

## FURTHER INFORMATION

Method Statement: SikaGrout®-4 UW - Underwater grouting

## 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

### SUBSTRATE QUALITY / PRE-TREATMENT

Concrete surfaces should be clean, rough, sound and free from oil, grease, cement laitance and all loosely adhering particles.

Permanent immersed substrates can be prepared by high pressure water jet. Non-permanent immersed substrates can be prepared by high pressure water jet, sand blasting or by scrubbing.

Metal surfaces (iron and steel) should be free from scale, rust, oil and grease.

## MIXING

Add water according to the desired consistency into a clean mixing vessel before slowly adding the SikaGrout®-4 UW. SikaGrout®-4 UW is best mixed in a forced action mixer, for 2 to 3 minutes or until the mix is free of lumps, not longer than 5 minutes. Slow speed drill (maximum 500 rpm) can be also used for mixing. Normal tumble type concrete mixers are not suitable. Do not mix more grout than can be placed within 15 to 20 minutes. Do not add extra water or other ingredients. Mix only full bags for the best result.

Note: Always start with minimum recommended quantity of water (water/powder ratio), only if required, gradually add water to desired consistency. Do not exceed maximum allowed limit of water per bag weight.

## APPLICATION

Placement:

SikaGrout®-4 UW can be poured or pumped through a flexible tube to the lowest section of the formwork.

The grout flow must be restricted during the pour so that water is not entrapped. The flexible tube can be raised to reduce back pressure, however, it should never be raised above the surface level of the grout.

Curing:

Curing will not be required in submerged situations.

However, grout cast above water level should be cured using suitable methods such as plastic sheeting, wet hessian, or Sika Antisol-WB curing agent.

## CLEANING OF EQUIPMENT

Clean equipment and mixer after application with water. Hardened material can only be removed mechanically.

## 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 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 NORTHERN GULF

Bahrain / Kuwait  
Tel: +973 177 38188  
info@bh.sika.com  
gcc.sika.com

### SIKA SOUTHERN GULF

UAE / Oman / SIC  
Tel: +971 4 439 8200  
info@ae.sika.com  
gcc.sika.com

### Sika Saudi Arabia

Riyadh / Jeddah / Dammam  
Tel. +966 11 217 6532  
info@sa.sika.com  
gcc.sika.com



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All products are supplied under  
a management system certified  
to conform to the requirements  
of the quality, environmental  
and occupational health &  
safety standards ISO 9001, ISO  
14001 and ISO 45001.



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