

## PRODUCT DATA SHEET

# SikaRep® Microcrete-3 UW

ANTI-WASHOUT, NON-SHRINK, HIGH STRENGTH CEMENTITIOUS MICRO-CONCRETE FOR UNDER-WATER REPAIRS

### DESCRIPTION

SikaRep® Microcrete-3 UW is a factory design, pourable/ pumpable, non-shrink anti-wash repair concrete with selected cement, aggregate and other chemicals. Recommended water only to be added at site.

### USES

SikaRep® Microcrete-3 UW is mainly recommended for the repair of damaged concrete structures for damp wet and submerged condition.

- Bridge Columns
  - Pier
  - Pile caps
  - Quay Pillars
  - Retaining wall in splash zone / submerged condition
  - It is also recommended for grouting of large gaps
- For larger pockets of voids SikaRep® Microcrete-3 UW can be added with 8 mm down aggregate in the ratio of 2:1

### CHARACTERISTICS / ADVANTAGES

SikaRep® Microcrete-3 UW has the following advantages :

- Shrinkage compensation
- Anti wash property
- Low porosity
- High bond strength
- High early strength
- Chloride free
- Durability

### PRODUCT INFORMATION

<b>Packaging</b>	30 kg bag
<b>Appearance / Colour</b>	Grey powder
<b>Shelf Life</b>	6 months from date of production if stored properly in undamaged and unopened, original sealed packaging.
<b>Storage Conditions</b>	<ul style="list-style-type: none"> <li>▪ In dry conditions at temperatures between +5°C and +40°C.</li> <li>▪ Protect from moisture, direct sunlight and frost.</li> </ul>
<b>Bulk Density</b>	~1.30 kg/l at 27 °C
<b>pH-Value</b>	11 - 13.5 when mixed with water (ready to pour)

<b>Compressive Strength</b>	<b>1 Day</b>	<b>3 Days</b>	<b>7 Days</b>	<b>28 Days</b>	ASTM C 109* , 70mm Cube Ambient temperature: +30°C
	20 N/mm <sup>2</sup>	35 N/mm <sup>2</sup>	45 N/mm <sup>2</sup>	55 N/mm <sup>2</sup>	
*Test were conducted simulating site conditions by casting cubes under water					
<b>Tensile Strength in Flexure</b>	<b>7 Days</b>		<b>28 Days</b>		ASTM C 293-79 Ambient temperature: +30°C
	6.5 N/mm <sup>2</sup>		8 N/mm <sup>2</sup>		
<b>Pull-Out Resistance</b>	According to IS:2770(Part-1)-1967 ~6 N/mm <sup>2</sup> at water: powder ratio 0.18 at 0.025mm slip at 28 days (Used 12mm dia TMT bar)				
<b>Mixing Ratio</b>	Water : Powder = 0.18 to 0.19 by weight (5.4 l to 5.7 l water per 30 kg bag) dependent on the desired flow.				
<b>Consumption</b>	2200 kg/m <sup>3</sup> at water: powder ratio of 0.19				
<b>Initial Set Time</b>	~250 minutes				
<b>Setting Time</b>	~450 minutes				

### SUBSTRATE QUALITY / PRE-TREATMENT

- Substrate must be clean and sound. All loose material must be removed.
- Substrate that is permanently immersed should be cleaned by suitable means.
- Non-immersed or intermittently immersed substrates can also be prepared using these techniques. Depending on the circumstances, scrubbing or bush hammering may be appropriate.
- In view of the fluid nature of SikaRep® Microcrete-3 UW, all shuttering must be leakproof. This can be achieved using foam rubber sealing strips at the edges.

### MIXING

- Mix powder by mechanically powered mixer or drum type concrete mixer. Ensure that the machine capacity and the number of operators are adequate to enable grouting to be carried out as a continuous operation.
- Put around 80 to 90% of required water in the mixing drum, followed by SikaRep® Microcrete-3 UW and then add the balance water.
- Mix for a minimum of 5 minutes
- Do not mix more material, which cannot be used within Pot Life. DO NOT ADD EXTRA WATER.

### APPLICATION

- The mixed material shall be placed within 20 minutes of mixing to gain full benefit of the expansion process
- Continuous material flow is required and the material should be poured or pumped through a flexible tube, minimum diameter 50mm, to the lowest point in the form. At the start of the operation, the material flow should be restricted in order to avoid any water entrapment
- The bottom of the tube may be raised as necessary to reduce any back pressure but should not be raised above the level of the material
- SikaRep® Microcrete-3 UW may be placed in thicknesses upto 80mm in one pour when placed above

water

- When placed under water, the heat sink effect in this environment permits thicknesses upto 150mm to be placed
- For thicker sections upto 200mm above water and 400mm under water, it is necessary to fill out SikaRep® Microcrete-3 UW underwater micro concrete using a clean, rounded and well graded aggregate in the size range from 2mm upto 8mm
- The quantity of aggregate added should not exceed 1 part aggregate to 1 part SikaRep® Microcrete-3 UW by weight. For such mixes a concrete mixer must be used
- Unrestrained surface area should be kept to a minimum

### CURING TREATMENT

- Curing will not be required in intermittently or totally submerged situations.
- When cast above water, all exposed surfaces should be thoroughly cured

### CLEANING OF TOOLS

- Clean all tools and application equipment with water immediately after use
- Hardened / cured material can only be removed mechanically

### 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.

### 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.

# ECOLOGY, HEALTH AND SAFETY

## 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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