

## PRODUCT DATA SHEET

# SikaMur<sup>®</sup>-310 Grout

CEMENT FREE, M10 CLASS MASONRY CONSOLIDATION GROUT FOR INJECTIONS, BASED ON NATURAL HYDRAULIC LIME AND POZZOLAN

### DESCRIPTION

SikaMur<sup>®</sup>-310 Grout is a ready-mixed grout based on Natural Hydraulic Lime (NHL 3.5) and pozzolan. It is a cement free, highly fluid grout, for consolidation injections of masonry structures. It is applied by gravity, pouring it into holes or by low-pressure injection.

### USES

SikaMur<sup>®</sup>-310 Grout fills holes, cracks, crevices and cavities in brick, stone or tuff masonry constructions. The fluid-like consistency makes it possible to apply it either by pouring or by low-pressure injection. It is therefore suitable for consolidating and structurally reinforcing stone, brick or mixed masonry. SikaMur<sup>®</sup>-310 Grout is also suitable for fixing steel rods within masonry for structural strengthening via the "stitching reinforcement" technique. SikaMur<sup>®</sup>-310 Grout can be used in combination with SikaMur<sup>®</sup> rehabilitation mortars for masonry with capillary rising moisture phenomena and soluble salts.

### FEATURES

- Natural Hydraulic Lime (NHL 3.5) based, cement free
- Easy pouring or low-pressure injecting
- High fluidity and very low viscosity
- Very cohesive without segregating or bleeding
- Very low heat generation during setting and hardening
- Final mechanical strength and modulus of elasticity are suitable and compatible with masonry structures
- After hardening, the masonry structure is consolidated, restoring its initial mechanical performance
- High filling ability of holes and gaps due to its high fluidity
- Suitable for masonry with capillary rising damp and soluble salts
- No efflorescence formation
- SikaMur<sup>®</sup>-310 Grout is chemically inert with any water-soluble compounds present in the constituents of the masonry

### CERTIFICATES AND TEST REPORTS

CE Marking and Declaration of Performance to EN 998-2 - Designed general purpose mortar for use in masonry walls, columns and partitions

### PRODUCT INFORMATION

Composition	Natural hydraulic lime (NHL 3.5), pozzolan, special aggregates and additives
Packaging	20 kg bags
Appearance and colour	Beige powder
Shelf life	12 months from the date of production

<b>Storage conditions</b>	Product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperatures between +5 °C and +35 °C. Always refer to packaging.		
<b>Density</b>	Fresh mortar density: ~1.90 kg/lt	(EN 1015-6)	
	Dry bulk density ( $\rho_w$ ): 1,500 kg/m <sup>3</sup>	(EN 1015-10)	
<b>Product declaration</b>	CE marking, and Declaration of Performance as designed general purpose mortar for use in masonry walls, columns and partitions according to EN998-2: 2016, based on certificate of factory control issued by notified factory production control certification body and type testing.		
<b>Maximum grain size</b>	~0.30 mm		
<b>Soluble chloride ion content</b>	<0.1%	(EN 1015-17)	

## TECHNICAL INFORMATION

<b>Compressive strength</b>	Class M10	(EN 1015-11)	
	<u>7 days</u>	<u>28 days</u>	<u>90 days</u>
	≥2.0 N/mm <sup>2</sup>	≥10 N/mm <sup>2</sup>	≥10 N/mm <sup>2</sup>
<b>Flexural-strength</b>	<u>7 days</u>	<u>28 days</u>	<u>90 days</u>
	≥1.0 N/mm <sup>2</sup>	≥1.5 N/mm <sup>2</sup>	≥1.5 N/mm <sup>2</sup>
<b>Tensile adhesion strength</b>	Shear bond strength: 0.15 N/mm <sup>2</sup> (tabulated value)		(EN 998-2)
<b>Thermal compatibility</b>	$(\lambda_{10,dry,mat})$ 0.55 W/m·K (tab. mean value, P=50 %)		(EN 1745:2002, Table A.12)
<b>Reaction to fire</b>	Class A1		(EN 998-2)
<b>Permeability to water vapour</b>	$(\mu)$ 5/20 (tabulated value)		(EN 1745:2012, Table A.12)
<b>Water absorption</b>	≤0.80 [kg/(m <sup>2</sup> min <sup>0.5</sup> )]		(EN 1015-18)
<b>Bleeding</b>	<0.5%		(ΕΛΟΤ ΤΠ 1501-14-02-04-00)

## APPLICATION INFORMATION

<b>Mixing ratio</b>	6.2 – 7.0 lt of water per 20 kg bag		
<b>Consumption</b>	~1.40 kg of powder per 1 lt		
<b>Yield</b>	20 kg of powder yields approximately 14.4 lt of mortar		
<b>Ambient air temperature</b>	+5 °C min. / +35 °C max.		
<b>Substrate temperature</b>	+5 °C min. / +35 °C max.		
<b>Pot Life</b>	~45 min (at +20 °C)* Fluidity <45 sec		ΕΛΟΤ ΤΠ 1501-14-02-04-00 (500 ml of grout through a 10 mm nozzle cone)
	*Pot life is extended by continuously mixing at low speed.		

## 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

Use SikaMur®-310 Grout within the stated pot life. Do not add water after this period of time.

## ECOLOGY, HEALTH AND SAFETY

This product is non-toxic, however its composition has alkaline chemical properties. It is therefore advised to wear a respiratory protective mask, gloves and protective eye-wear.

## APPLICATION INSTRUCTIONS

### SUBSTRATE QUALITY / PRE-TREATMENT

Seal all superficial gaps, such as joints between sections, cracks, crevices, to prevent the freshly applied product from leaking. Install a closed injection circuit. At least 24 hours before injection with SikaMur®-310 Grout, inject fresh water to saturate the pores and remove any loose particles. Continue injecting water until it flows clean from adjacent injection tubes. In high temperatures, the masonry surface should be wetted.

### MIXING

The mixing water, at the lower limit, is added to the mixing container, and then, after mixing has started, the dry ingredient is gradually introduced. High shearing and consolidation are achieved using a high-turbulence mixer ( $\geq 1500$  rpm). If necessary, add additional water during the mixing process, up to the maximum specified amount, and adjust the grout to the required consistency. The total amount of mixing water should not exceed the recommended proportion. After mixing and before injecting, the workability of the mixture can be retained in an additional multi-blade mixer rotating at approximately 200 – 350 rpm.

### APPLICATION

Initially, the pattern is prepared for positioning transparent injection tubes on either one or both sides of the masonry, as outlined by the responsible structural engineer. If a specific tubing route is not specified, the maximum allowance horizontal and vertical distance are 0.5 m and 1.00 m, respectively. In any case, the distance between injection points should not exceed the 2/3 of the masonry thickness. The tubes are placed at the predetermined positions, which should mainly be at joint locations. Approximately half of the tubes are inserted into the masonry to a depth of 1/3 of its thickness, while the remainder are inserted to half of its thickness. The protruding part of the tubes should extend approximately 0.50m from the masonry surface. Insert the injection tubes into the holes and fix them with SikaMur®-200 M15, SikaRep®-200 Multi, or another masonry jointing mortar recommended by Sika Technical Department.

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After mixing, pour the fresh grout into the injection pump and begin injecting, starting from the injection tubes at the lowest level, to avoid liquid grout leaking from adjacent tubes. Ensure that any injection tubes where fluid material is leaking out are sealed. Only proceed to inject into a higher-level tube if fluid SikaMur®-310 Grout flows out from all injection tubes at the previous lower level. After injecting, the edge of the tubes shall be tied with their tied ends upwards, so that the grout is kept in the masonry under pressure until curing is complete. The pressure of the grout application at the injection tube should be continuously checked and recorded and should not exceed 0.10 MPa (1.0 bar). The grout exit points are sealed after all air has been released and a minimum quantity of 5 ml of clean grout is discharged. In any case, the procedures provided in the national technical specifications (ΕΛΟΤ ΤΠ 1501-14-02-04-00) or corresponding standards and guidelines for other countries should be followed in conjunction with the specifications given by the responsible structural engineer.

### CLEANING OF EQUIPMENT

Removal of fresh remnants from tools and application equipment can be carried out using water immediately after use. Hardened / cured material can only be mechanically removed.

### 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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