

## PRODUCT DATA SHEET

# SikaRep<sup>®</sup>-200 Multi

Multi-purpose and lightweight, cementitious mortar for repairs & strengthening, pointing & rendering of masonries and for non-structural concrete repairs



### DESCRIPTION

SikaRep<sup>®</sup>-200 Multi is a ready to use, multi-purpose, lightweight, cementitious, fiber reinforced mortar for repairs & strengthening, pointing & rendering of masonries according to EN 998-2 & EN 998-1 and for non-structural concrete repairs according to EN 1504-3.

### USES

- High-thickness patch repairs, crack filling, pointing, leveling and rendering of new or existing masonries (brick, stone, mixed, e.t.c.).
- Patch repairs in existing plasters.
- Concrete (non-structural) repair and re-profiling or re-surfacing of damages areas on vertical or horizontal surfaces. Honey comb filling, small defects, edges such as balconies, barriers, e.t.c. and joint side filling, forming and finishing of joints and coverings.
- Suitable for use in load-bearing masonry walls prior to Textile Reinforced Mortar (TRM) systems or other traditional, strengthening solutions.
- Suitable for use as a construction mortar in masonries and as a leveling mortar prior to various applications.
- Suitable for use as a rendering mortar with grid (Sika<sup>®</sup> Fibernet, 110gr/m<sup>2</sup>) embedding.
- Suitable for use as a general purpose mortar (type GP CS-IV, according to EN 998-1) for renderings in internal and external applications.
- Suitable for use as general purpose masonry mortar (classified as G, according to EN 998-2) for external use in elements subject to structural requirements
- Suitable for restoration works (Principle 3, Methods 3.1 & 3.3 of EN 1504-9). Repair of spalling and damaged concrete in buildings.
- Suitable for preserving or restoring passivity (Principle 7, Method 7.2 of EN 1504-9). Replacing contaminated or carbonated concrete.

### CHARACTERISTICS / ADVANTAGES

- Class R2, according to EN 1504-3
- General purpose (GP) mortar, according to EN 998-1
- Class M20/ G type, according to EN 998-2
- Ideal for high-thickness applications of between 5 mm and 60 mm (per layer)
- Excellent workability, thixotropy and finishing
- Good dimension stability with no sagging even in high thickness applications
- Low modulus of elasticity: the product follows the masonry's deformations without detachment
- Suitable for non-structural patch repair works of low to medium concrete strength class, due to similar elastic modulus
- Reduced consumption due to the special light-weight formulation
- Very good adhesion on porous substrates, such as bricks, natural stones, concrete, e.t.c.

### APPROVALS / CERTIFICATES

- CE Marking and Declaration of Performance to EN 1504-3 - Concrete repair product for non-structural repair
- CE Marking and Declaration of Performance to EN 998-2 - Designed general purpose mortar for external use in elements subject to structural requirements
- CE Marking and Declaration of Performance to EN 998-1 - General purpose rendering / plastering mortar for external and internal use (GP)

## PRODUCT INFORMATION

Composition	Portland cement, selected aggregates and additives		
Packaging	20 kg bags		
Appearance / Colour	Grey powder with fibers		
Shelf life	12 months from date of production		
Storage conditions	Store properly in original unopened, sealed and undamaged packaging in dry conditions, at temperatures between +5°C and +35°C. Protect from moisture.		
Density	Fresh mortar density: approx. 1.85 kg/lt	(EN 1015-6)	
Maximum grain size	approx. 1.7 mm		
Soluble chloride ion content	≤ 0.05 %	(EN 1015-17)	
Product declaration	<ul style="list-style-type: none"> <li>▪ CE marking and Declaration of Performance as Repair mortar PCC for non structural repair of concrete structures in buildings and civil engineering works, Class R2 according to EN 1504-3:2005, based on certificate of factory production control issued by notified factory production control certification body and type testing.</li> <li>▪ CE marking and Declaration of Performance as Designed general purpose masonry mortar for external use in elements subject to structural requirements according to EN 998-2: 2016, based on certificate of factory production control issued by notified factory production control certification body and type testing.</li> <li>▪ CE marking and Declaration of Performance as General purpose rendering / plastering mortar for external and internal use (GP) according to EN 998-1: 2016, based on type testing and factory production control.</li> </ul>		

## TECHNICAL INFORMATION

Compressive strength	Class M20			(EN 998-2)
	Class CS IV			(EN 998-1)
	Class R2			(EN 1504-3)
	<b>1 day</b>	<b>7 days</b>	<b>28 days</b>	(EN 12190)
	≥ 6 MPa	≥ 17 MPa	≥ 20 MPa	
Modulus of elasticity in compression	approx. 10 GPa			(EN 13412)
Tensile strength in flexure	28d: ≥ 4.5 MPa			(EN 196-1)
Tensile adhesion strength	≥ 0.8 MPa			(EN 1542)
	≥ 0.8 MPa – FP: A			(EN 1015-12)
Shear adhesion strength	> 0.5 N/mm <sup>2</sup>			(EN 998-2)
Thermal compatibility	(λ <sub>10, dry, mat</sub> ) 0.8 W/m·K (tab. Mean value, P=50%)			(EN 1745:2012, Table A.12)
Reaction to fire	Euroclass A1			
Permeability to water vapour	(μ) 15/35 (tabulated value)			(EN 1745: 2012, Table A.12)
	(μ) ≤ 60			(EN 1015-19)
Water absorption	Wc2			(EN 1015-18)
	≤ 0,2 [kg/(m <sup>2</sup> min <sup>0.5</sup> )]			(EN 998-2)

## SYSTEM INFORMATION

### System structure

SikaRep®-200 Multi is part of the range of Sika® mortars in different systems, complying with the relevant part of European Standard EN 1504, EN 998-1 & EN 998-2 and comprising of:

#### Concrete

##### Bonding primer and reinforcement corrosion protection:

Sika MonoTop®-910 Eco: Normal use (EN 1504-7)

##### Repair mortar:

SikaRep®-200 Multi: Ready to use, cementitious fiber reinforced mortar for non-structural concrete repairs according to EN 1504-3

##### Fairing coat / Levelling mortar:

Sika MonoTop®-723 Finiro: Normal use (EN 1504-2)

#### Masonry

##### Bonding primer:

SikaLatex® Max or Sika Viscobond®: Admixture for mortars

##### Rendering coat / Levelling mortar:

SikaRep®-200 Multi: Ready to use, General purpose masonry mortar (GP), according to the standard EN 998-1: 2016  
General purpose masonry mortar, Class M20/ G type, according to EN 998-2

Sika® Fibernet (110gr/m<sup>2</sup>) embedding: Alkali resistant glass fiber mesh used as mortars reinforcement

##### Textile reinforced mortar (TRM):

Sika MonoTop®-722 Mur E (or SikaRep®-200 Multi): Ready to use, cementitious mortar with reactive pozzolanic components for masonry constructions' repair and reinforcement

SikaWrap®-350G Grid: Alkali resistant, balanced bi-directional glass fiber mesh used as mortars reinforcement and as part of TRM strengthening systems

SikaWrap® FX-50 C: Carbon fiber string for structural connection and anchoring of TRM strengthening systems

##### External Thermal Insulation Composite System (ETICS):

Sika ThermoCoat® ETIC system with EPS insulation boards and finishing renders of different qualities, certified acc. to ETAG 004

## APPLICATION INFORMATION

Mixing ratio	2.9 – 3.3 lt of water per 20 kg bag, depending on the desired workability
Consumption	~ 1.6 kg/ m <sup>2</sup> per mm of thickness depending on the substrate's roughness
Yield	20 kg of powder yields approximately 12.5 litres of mortar
Layer thickness	min. 5 mm / max. 60 mm
Ambient air temperature	+5°C min. / +35°C max.
Substrate temperature	+5°C min. / +35°C max.

## 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

- Do not add water over the recommended dosage
- Do not add cement or other substances that could affect the properties of the mortar
- Do not add water or fresh mortar to a mortar mix which has already started setting
- Avoid application in direct sun and/or strong wind
- Apply only to sound, prepared substrate
- Protect freshly applied material from freezing and from rain
- Do not add additional water during the surface finishing as this will cause discolouration and cracking
- Record ambient and substrate temperatures before and during application

## 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

### SUBSTRATE QUALITY / PRE-TREATMENT

The substrate must be structurally sound, thoroughly clean and free from dust, dirt, remnants of old renderings and loose material, surface contamination such as oil or grease, cement laitance which reduce bond or prevent suction or wetting. The substrate should be prepared by suitable mechanical preparation techniques, such as high water pressure or grind blasting, mechanical or manual breakers. Non impact / vibrating cleaning methods are preferred.

#### Concrete:

The concrete tensile strength (pull-off) shall be > 0.8 MPa. Delaminated, weak, damaged and deteriorated concrete, masonry and renderings (and where necessary sound substrate) shall be removed by suitable means. Aggregates should be clearly visible on the surface of the prepared concrete. The edges of the to-be-repaired concrete area must be cut vertically (90°) to a minimum depth of 5 mm.

#### Masonries:

In cases of weak masonries with cracks, voids and gaps inside, mechanical performance should be increased by grouting or low-pressure injection using SikaMur® Grout\*.

In all cases, rising moisture phenomena must be treated and damp areas must be dry out before the application of the mortar.

#### Renderings:

The substrate must be sound, free from dust, dirt, fri-

able parts, grease, efflorescence, e.t.c. Old existing renderings must be checked in order to verify their adhesion to the substrate and must be removed if they are considered to be unsuitable.

#### Steel Reinforcement:

Steel surface must be clean from rust products, mill scale, mortar, concrete residues, oil, grease, dust and other loose materials which may reduce bond or may contribute to corrosion. In case of rust, clean uniformly the whole circumference of the steel bars (where applicable) using abrasive blast cleaning techniques or high pressure waterblasting to a minimum Sa 2 ½ in accordance with ISO 8501-1. If required, apply around the whole exposed circumference two coats of corrosion inhibitor such as Sika MonoTop®-910 (please refer to the respective Product Data Sheet). Protect cleaned bars from further contamination, prior to application of the mortar.

*Reference should also be made to EN1504-10 for specific requirements.*

## MIXING

SikaRep®-200 Multi can be mixed with a low speed (~ 500 r.p.m.) electrical hand drill mixer or using a force action pan mixer for large volumes. Pour the water in the correct desired proportion into a suitable mixing container. While stirring slowly, add the powder to the water and mix thoroughly at least for 3 minutes, adding additional water during the mixing time up to the maximum specified amount, until a homogeneous lump-free required consistency is reached. Mix full bags for best results.

## APPLICATION

Application can be carried out by trowel (for masonry leveling or rendering), joint trowel (for pointing or re-pointing), using Sika Pointing gun, hand (for concrete patch repairs, decorations, edges, forming of joints, honey comb filling, etc.) or mechanically using wet spray equipment on the well prepared substrate. Thoroughly pre-wet the prepared substrate, recommended 2 hours before applying SikaRep®-200 Multi. Keep the surface wet and do not allow drying. Before application remove excess water e.g. with a clean sponge. The surface shall appear a dark matt appearance without glistening and surface pores and pits shall not contain water.

#### As a leveling / rendering mortar

SikaRep®-200 Multi should be applied in 2 coats using a trowel or spray techniques, a preliminary adhesion layer followed by the rendering layer. The adhesion layer should be applied with a fluid like consistency. Once the adhesion layer has set then the rendering layer should be applied with a creamy consistency, which can be built up to the required thickness. Apply subsequent layers if required. Keep the fresh mortar surface moist over several hours by protecting it from wind and direct sunlight.

In cases of use as a rendering mortar in masonries and concrete, apply SikaRep®-200 Multi with grid (Sika®

Fibernet, 110gr/m<sup>2</sup>) embedding in order that to be placed in the middle of the application thickness (in one or two layers). To avoid cracks between consecutive rolls of the mesh, ensure an overlapping of  $\geq 10$ cm. As a leveling mortar, apply SikaRep<sup>®</sup>-200 Multi vertically at approximately every 1m shaping each up to the final level of the application. As soon as these leveling formations are cured, apply the product filling the surface between them and securing the final leveling to be the desired in terms of evenness and alignment. The surface can be finished according to the requirements using a float or a plastering trowel (sponge trowel) while wet or with a relevant rough-cast tool as soon as the mortar has started to stiffen.

#### As a pointing mortar

Remove any loose joint material and if required fill bed joint using SikaRep<sup>®</sup>-200 Multi. When the bed joint is cured, apply the product as a joint mortar by using a joint trowel, a trowel, hand or using Sika Pointing gun. In all cases, ensure that the product will be well-compacted. In cases of high-width joints, firmly scrap SikaRep<sup>®</sup>-200 Multi on the substrate surface to form a thin layer as a scratch coat. Then apply the product exerting good pressure and compacting well the product on the area. The surface can be finished according to the requirements using a plastering trowel (sponge trowel) while wet, a relevant rough-cast tool as soon as the mortar has started to stiffen or by a wet brush according to the aesthetic aspect.

#### As a repair mortar

First make a scratch coat by firmly scrapping the repair mortar over the substrate surface to form a thin layer and fill any pores or pits in the surface. Ensure the whole surface to be repaired is covered by the scratch coat. Then apply the product exerting good pressure and compacting well the product on the area. When a bonding primer is required (especially when reinforcement rebars need treatment against corrosion), ensure it is still tacky when the repair material is pressed on (wet on wet technique). Refer to the System Information for compatible Sika products and to the relevant Product Data Sheet for more detailed information (eg. Sika MonoTop<sup>®</sup> -910 Eco). The application thickness layers must be between 5 and 60 mm. Higher thickness must be built in subsequent layers when the mortar starts to set (tack free). Do not smooth the first layer before applying a second layer.

Do not over work the finished surface. For large surface application, the product may be applied using suitable wet spray equipment (e.g. Turbosol or Putzmeister) or using plaster sprayer (e.g. PFT G4 or G5). Follow the same application sequence and apply the same layers thickness as manual application.

Allow sufficient curing time before overcoating the product.

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## CURING TREATMENT

Protect the freshly applied mortar from early dehydration and/or premature drying by using the relevant curing methods (at least for 24 hours), e.g. curing compound such as Sika<sup>®</sup> Antisol<sup>®</sup> or Sikafloor<sup>®</sup> Proseal once any surface water has evaporated.

## 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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