SILIKAL® R 15

Flexible reactive resin mortar for asphalt and concrete

Expect more from your floor.

SILIKAL® R 15 is a solvent-free 2-component methacrylic resin mortar for grouting of cavities, manhole frames and rapid repairs of transport surfaces or building structures. It is characterised by its (low-temperature) flexibility.

The mortar can be applied in thicknesses of 5 – 30 mm. Due to its elasticity even larger unevenness may be levelled out without cracking. For layer thicknesses more than 30 mm, SILIKAL® QS Filler is added. The hardening time is about 35 minutes at +20 °C. The hardening takes place at temperatures ranging from 0 °C (approx. 3 hours) to +35 °C (approx. 20 min). The low viscosity enables rapid mixing and application.

Application

The mortar is suitable as a wear-resistant road surface, concrete covering or grouting for exterior surfaces. Layer thicknesses of 5 – 30 mm are possible without SILIKAL® QS Filler 2 – 8 mm. To absorb the reaction heat that develops, larger thickness layers (e.g. ramps) require the addition of more coarse particles. SILIKAL® QS Filler with a grain size of 2 – 8 mm has to be used, see table below. SILIKAL® R 15 is UV-resistant and impermeable to water.

Advice on application

SILIKAL® R 15 consists of SILIKAL® R 15 Powder containing quartz sand of particle diameter up to 2.2 mm and low-viscosity methacrylic-based SILIKAL® R 15 Hardener. The consumption of basic mortar mix is 2 kg/m² per mm of layer thickness. The mixing ratio is 15 kg of SILIKAL® R 15 Powder (1 sack) to 3 litres of SILIKAL® R 15 Liquid Hardener (one container).

All substrates must be dry, free of dust and oil, and free of loose constituents. The substrate must have sufficient load-bearing capacity. Old markings must be removed where necessary. Processing must not be performed on moist substrates. The coating is suitable for direct application on asphalt or with primer on cement substrates. In general coating tests have to be performed (15 cm x 15 cm) and the adhesion has to be checked after curing.

The product is applied directly onto the substrate when the substrate is bituminous. This should be dry and free of dust and oil. New bitumen coatings should be weathered for longer than 6 weeks.

On concrete or cement-bonded substrates, any constituents of the surface that impair adhesion (e.g. fine mortar, laitance or the like) must be removed using suitable methods (e.g. milling or shot blasting). The type of concrete and the curing conditions determine whether the surface must be removed and to what depth. Concrete or cement-bonded substrates must be primed. We recommend SILIKAL® RU 380 for the primer. The substrate should not exceed a residual moisture content of 4 CM %.

Mixing the reactive resin mortar

To produce the mortar mix, 15 kg of SILIKAL® R 15 Powder (one sack) is added to 3 litres of SILIKAL® R 15 Hardener (one container). Because of its low-viscosity consistency, the mix can be easily prepared. We recommend to homogenize the components for 2 minutes with a double agitator. Mixes with coarse aggregates SILIKAL® QS Filler 2 – 8 mm can also be produced using low-speed forced agitators or in the normal concrete mixer. You must ensure that the coarse particles are not added until the SILIKAL® R 15 Powder and SILIKAL® R 15 Hardener have already been mixed together.

The finished mortar is spread evenly by means of a scraper and smoothed or applied using screed boards.

The pot life at +20 °C is about 15 minutes, the hardening time about 35 minutes. The values indicated vary according to the ambient temperature.

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Characteristics of R 15 Hardener as delivered

Property	Measuring method	Approx. value
Viscosity at +20 °C	DIN 53 015	60 mPa · s
Density D_4^{20}	DIN 51 757	0.98 g/cm³
Flash point	DIN 51 755	+10 °C
Flow diameter 100 g Powder, 20 g Hardener	Silikal standard	100 mm

Characteristics of R 15 – processing

Property	Approx. value
Pot life at +20 °C	15 min
Curing time at +20 °C	35 min
Application temperature	0 °C to +35 °C
Viscosity, visual	pasty, thixotropic
Consumption per mm layer thickness	2 kg/m²
Layer thickness without SILIKAL® QS Filler 2 – 8 mm	5 – 30 mm
Layer thickness with SILIKAL® QS Filler 2 – 8 mm	20 – 80 mm

Characteristics of R 15 in the hardened state

Property	Measuring method	Approx. value
Density D_4^{20}	EN ISO 2811-2	2 kg/litre
Compressive strength	DIN EN 196-1:2005	30 N/mm²
Colour	approx. RAL 7043 Traffic grey B	

Calculation aid for application and costing

Coating thickness	Component	Quantity in kg	Quantity in litres, loose	Quantity in litres, solid volume	Container unit
5 – 30 mm for > +25 °C: 5 – 20 mm	SILIKAL® R 15 Hardener SILIKAL® R 15 Powder	3 15 18	3 11	 9	3 kg metal hobbock 15 kg sack
20 – 80 mm for > +25 °C: 20 – 60 mm	SILIKAL® R 15 Hardener SILIKAL® R 15 Powder SILIKAL® QS Filler 2 – 8 mm	3 15 5 23	3 11 3	 11	3 kg metal hobbock 15 kg sack 25 kg sack
> 80 mm for > +25 °C: > 60 mm	Install in layers	See above			

Equipment cleaning

The working tools should be cleaned with SILIKAL® MMA Cleaner, ethyl acetate or acetone immediately after use.

Shelf life

6 months in original packaging below +25 °C.

Safety advice

Please follow the general protection, as well as the warnings and safety advice on the delivery containers or the detailed information in section 2 of the component-specific safety data sheets. The specified personal protective equipment must be worn.

Other applicable documents

Safety data sheet (MSDS)

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