

SILIKAL® R 15 mortar

Flexible reactive resin mortar for asphalt and concrete



Expect more from your floor.

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

Due to the low linear shrinkage, the mortar is suitable for layer thicknesses of 3 – 30 mm as delivered. For layer thicknesses more than 30 mm, SILIKAL® QS filler is added. The hardening time is about 35 min at +20 °C, and hardening takes place at temperatures ranging from 0 °C to +35 °C (approx. 1 – 3 hours). 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. The low shrinkage rate enables even larger unevenness to be levelled out. Layer thicknesses of 3 – 30 mm are possible without additives. 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 mortar is UV-resistant and impermeable to water.

Advice on application

SILIKAL® R 15 mortar 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 Liquid 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.

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. In rare cases, bitumens with high proportions of short-chain oils are used. The liquid component of the product causes the bitumen to swell up in this case and it cannot complete its reaction. For this reason, coating tests should generally be performed (4 dm²) and the adhesion checked after one hour.

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 resin for the primer. The substrate should not exceed a residual moisture content of 4 CM %. Coating tests – with primer – should generally be performed (4 dm²) and the adhesion checked after one hour.

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 liquid hardener (one container). Because of its low-viscosity consistency, the mix can be easily prepared in a short time by means of a high-speed 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 an aluminium lath and screed board. The boards should be made from polypropylene strips (PP), as these can be easily detached from the mortar after hardening and then cleaned.

The pot life at normal temperatures is about 15 minutes, the hardening time about 35 minutes. The values indicated vary according to the ambient temperature.

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Silikal product information

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Data sheet SILIKAL® R 15

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Characteristics of R 15 hardener as delivered

| Property | Measuring method | Approx. value |
|--------------------------------------|------------------|------------------------|
| Viscosity at +20 °C | DIN 53 015 | 45 – 70 mPa · s |
| Flow time at +20 °C, 3 mm | ISO 2431 | 65 – 90 sec. |
| Density D ₄ ²⁰ | DIN 51 757 | 0.98 g/cm ³ |
| Flash point | DIN 51 755 | +10 °C |

Characteristics of R 15 mortar – 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/m ² |
| Layer thickness without QS additive | 3 – 30 mm |
| Layer thickness with QS additive | 20 – 60 mm |

Characteristics of R 15 mortar 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 | 37 N/mm ² |
| Tensile strength in bending | DIN EN 196-1:2005 | 30 N/mm ² |
| 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 |
|----------------------------|-----------------------------|----------------|---------------------------|----------------------------------|--|
| 3 – 30 mm for > +25 °C: | SILIKAL® R 15 hardener | 3 | 3 | 9 | 3 kg metal hobbock 15 kg sack |
| | SILIKAL® R 15 powder | 15 | 11 | | |
| 3 – 20 mm | | 18 | | | |
| 20 – 60 mm | SILIKAL® R 15 hardener | 3 | 3 | 11 | 3 kg metal hobbock 15 kg sack 25 kg sack |
| | SILIKAL® R 15 powder | 15 | 11 | | |
| | SILIKAL® QS filler 2 – 8 mm | 5 | 3 | | |
| | | 23 | | | |
| > 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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