

SILIKAL® Mortar R 16

Reactive resin mortar for quick concrete repair



SILIKAL® Mortar R 16 is a solvent-free quick-hardening two-component methacrylate resin mortar that provides mid-range compressive and flexural strength. It has a very low degree of linear shrinkage. No priming is required.

Because of its strength, this mortar is suitable for repairing damaged concrete when applied in layers with a minimum thickness of 6 mm. Its low tendency to shrinkage means it can be used to fill holes. In this case, medium-coarse aggregate must be added (quartz gravel). The mortar has a surface appearance similar to fine-grain facing concrete. Its hardening time is approx. 1 hour at +20 °C; the process requires a temperature of between -10 °C and +35 °C (approx. 1 – 3 hours). Its low viscosity means the mixture can be prepared and applied quickly.

Application

It is particularly suitable for concrete surfaces or cement floors subject to normal forces. If formwork (moulds) is required, wooden boards with coating (e.g. melamine) should be used.

Preparation Instructions

Normally, the substrate should be prepared beforehand (it must be dry, free of dust and grease, and sufficiently strong).

⇒ For more information, consult the technical documentation, sheet “DUG”, “The substrate”. Concrete priming need not be applied.

SILIKAL® R 16 powder is used as mortar. The second component is methacrylate-based hardening liquid, SILIKAL® R 16.

The consumption of basic mortar mix is 2.2 kg/m² per mm of layer thickness. The mixing-ratio is 15 kg (1 bag) of SILIKAL® R 16 powder to approx. 2.1 – 2.5 litres of SILIKAL® R 16 hardener. The amount of hardener must be measured accurately, as the specified proportions provide properties ranging from stiff to low viscous. The mixture must never include other different components. The thickness of the layer should at no point be less than 6 mm. On unevenness which runs out to zero, cuts must be made in the edge area. Lower thickness leads to a decrease in strength and hardening problems.

Preparing Reactive Resin Mortar

To prepare the mortar, add between 2.1 and 2.5 l of SILIKAL® R 16 hardener to SILIKAL® R 16 powder, depending on the required consistency.

A liquid consistency permits a quicker preparation time using a high-speed agitator; lower amounts can be prepared with manual procedures. Once the mortar has been prepared, spread it evenly and smooth it down with a trowel or doctor blade, finally going over the surface with an aluminium lath and screed board. Use polypropylene (PP) strips as boards, as these are easy to be removed and cleaned from the set mortar.

Pot-life at normal temperatures is 12 – 14 minutes, and hardening time 60 – 90 minutes. These times may vary with air temperature.

Intermediate priming (e.g. with SILIKAL® Resin R 51 or SILIKAL® Resin RU 727) is required, if methacrylate reactive resin coating is to be applied to the surface treated with SILIKAL® Mortar R 16.

Special Colours

The standard colour is RAL 7030 medium grey. If complete batches and minimum quantities are purchased, special colours are available on request.

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Silikal product information

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Data sheet SILIKAL® R 16

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Characteristics of the R 16 Hardener Liquid as supplied

Property	Measuring method	Approx. value
Viscosity at +20 °C	DIN 53015	20 – 30 mPa · s
Flow time at +20 °C, ISO 4	ISO 2431	17 – 20 sec.
Density D ₄ ²⁰	DIN 51757	0.98 g/cm ³
Flash point	DIN 51755	+10 °C
Pot-life at +20 °C with R 16 powder		approx. 15 min.
Application temperature with R 16 powder		-10 °C to +35 °C

Characteristics of Mortar R 16 once hardened

Property	Measuring method	Approx. value
Apparent density	DIN 53479	2.10 g/cm ³
Compressive strength	DIN 1164	32 N/mm ²
Flexural strength	DIN 1164	13 N/mm ²
Modulus of elasticity	DIN 53457	2,300 N/mm ²
Water absorption, 4 days	DIN 53495	90 mg (50 · 50 · 4 mm)
Water vapour permeability	DIN 53122	1.05 · 10 ⁻¹¹ g/cm · h · Pa

Calculation aid for application and costing

SILIKAL® Mortar R 16	Quantity in kg	Quantity in litres Loose	Quantity in litres Solid volume	Thickness (mm)
R 16 powder	15.00	11.50		
R 16 hardener	2.30	2.30		
	<u>17.30</u>		8.30	6 – 25

⇒ Other relevant documentation:	Technical Documentation	
	Data sheet	Page
General processing information	AVH	83 – 86
The substrate	DUG	87 – 89
Information on safety and protection	SUS	94 – 95
Storage and transport	LUT	96 – 98

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