SILIKAL® R 61 resin

Reactive, slightly elasticized resin for slip-resistant floorings in wet areas

Expect more from your floor.

SILIKAL® R 61 resin is a solvent-free, medium-viscosity 2-component methacrylic resin of a slightly elasticized character. It is employed as a binder in the manufacture of self-levelling coatings sprinkled with quartz sand or for smoothable floorings with coloured quartz, predominantly in the food industry (wet areas), in coat thickness of 2 – 3 mm or 4 – 6 mm.

Hot water stress is limited to +60 °C. This limit may be briefly exceeded to +80 °C for cleaning purposes, but only if the floor is not completely warmed through.

Application

Depending on the mechanical stresses, a distinction is made between a thin and a thick coating. For fork-lift truck traffic the minimum thickness of 4 mm must be observed. For temperatures below +5 °C and for outdoor use on concrete, more highly-elasticized resin types are preferred (e. g. SILIKAL® R 61 HW or RV 368 resin).

1. Slip-resistant self-levelling thin coating 3 mm:

Guideline recipe and batch quantities

Item	Component	Guideline recipe (% by weight)	Comments	Batch for 30 litre bucket	
1	SILIKAL® R 61 resin	33 %		12.5 kg	12.5 litres
2	SILIKAL® Filler SL	65 %	1 sack	25 kg	approx. 18 litres
3	SILIKAL® Pigment Powder	2 %		1 kg	
	Total:	**100 %**	**Average consumption: 5 kg/m²**	**38.5 kg**	**approx. 23 litres**
4	SILIKAL® Hardening Powder	2 – 6 % related to item 1	See “Hardener dosages” table for quantities	250 – 750 g	

Following pre-treatment of the concrete and priming, the above mixture is stirred until there are no lumps, mixed with hardener and applied directly on the surface to the recommended thickness by means of a stripper doctor blade, smoothing trowel or toothed comb.

Before the surface gels/hardens, SILIKAL® Filler QS or FS 0.7 – 1.2 mm is sprinkled in until saturation. A finer sand, e. g. of particle size 0.3 – 0.8 mm, can lead to minor hardening problems in unfavourable conditions. After hardening, the excess sand is removed completely by brushing and/or vacuum and the surface is worked by means of a top coat (in wet areas preferably with SILIKAL® R 81 resin).

Characteristics of the 3-mm topping

Property	Measuring method	Approx. value
Compressive strength	DIN 1164	40 N/mm²
Tensile strength in bending	DIN 1164	27 N/mm²
Module of elasticity	DIN 53 457	2340 N/mm²

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2. Slip-resistant self-levelling thick coating 5 mm

(Use in system B)

Guideline recipe and batch quantities

Item	Component	Guideline recipe (% by weight)	Comments	Batch for 30 litre bucket	
1	SILIKAL® R 61 resin	28 %		10 kg	10 litres
2	SILIKAL® Filler SL	70 %	1 sack	25 kg	approx. 18 litres
3	SILIKAL® Pigment Powder	2 %		1 kg	
	Total:	**100 %**	**Average consumption: 9 kg/m²**	**36 kg**	**approx. 20 litres**
4	SILIKAL® Hardening Powder	2 – 6 % related to item 1	See “Hardener dosages” table for quantities	200 – 600 g	

This mixture contains a higher proportion of SILIKAL® Filler SL.

It is applied in the same way as the thin coating.

Characteristics of the 5-mm topping

Property	Measuring method	Approx. value
Compressive strength	DIN 1164	46 N/mm²
Tensile strength in bending	DIN 1164	29 N/mm²
Modulus of elasticity	DIN 53 457	4830 N/mm²

3. Decorative coloured quartz coating 4 – 6 mm (screed)

Guideline recipe and batch quantities

Item	Component	Guideline recipe (% by weight)	Comments	Batch for 30 litre bucket	
1	SILIKAL® R 61 resin	21 – 23 %		e.g. 6.5 kg	6.5 litres
2	SILIKAL® Filler CQ	77 – 79 %	1 sack	25 kg	approx. 16 litres
	Total:	**100 %**	**Average consumption: 2 kg/m² per mm thickness**	**31.5 kg**	**approx. 18 litres**
3	SILIKAL® Hardening Powder	2 – 6 % related to item 1	See “Hardener dosages” table for quantities	130 – 390 g	

Characteristics of the coloured quartz coating (screed)

Property	Measuring method	Approx. value
Compressive strength	DIN 1164	38 N/mm²
Tensile strength in bending	DIN 1164	23 N/mm²

This smoothable coloured quartz coating represents an alternative to the self-levelling formulations. The mixture of resin and filler is applied to the primed and loosely sanded surface and initially spread coarsely to the desired thickness by means of a doctor blade. The mortar must then be compressed and smoothed using the large smoothing trowel so that no pores and trowel marks remain in the floor (danger of hardening problems). Since the smoothable coating does not flow by itself, it is particularly suitable for areas with higher inclinations.

The application of the system requires special skills and practice (the prevention of puddles, good compaction of the mortar) to avoid pores and air bubbles within the mentioned tolerance of fillers and resin with dependence on the thickness.

After hardening, the surface must be applied by top coat again (e. g. with SILIKAL® R 71, R 71 RE, R 72 or R 81 resin).

In the case of coatings and floors in areas between metal profiles and inlets, we recommend that elastic joints with the same decorative look be laid in the transition area. Otherwise temperature stresses could lead to small cracks forming at the contact zone.

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Characteristics of R 61 as delivered

Property	Measuring method	Approx. value
Viscosity at +20 °C	DIN 53 015	260 – 320 mPa · s
Flow time at +20 °C, 4 mm cup	DIN 53 211	50 – 60 sec.
Density D_4^{20}	DIN 51 757	0.99 g/cm³
Flash point	DIN 51 755	+10 °C
Pot life at +20 °C (100 g, 3 % pbw. hardening powder)	approx. 15 min.	
Application temperature	0 °C to +35 °C	

Characteristics of R 61 in the hardened state

Property	Measuring method	Approx. value
Density	DIN 53 479	1.14 g/cm³
Ultimate elongation	DIN 53 455	34 %
Shore-D	DIN 53 505	61 – 63 units
Water absorption, 4 days	DIN 53 495	90 mg (50 · 50 · 4 mm)
Water vapour permeability	DIN 53 122	$1.05 \cdot 10^{-11}$ g/cm · h · Pa

Hardener dosages

Temperature	Hardening powder % pbw. *	Pot life approx. min.	Hardening time approx. min.
0 °C	6.0	20	60
+10 °C	4.0	20	45
+20 °C	3.0	15	30
+30 °C	2.0	10	25

* The quantity of hardening powder is always related to the quantity of resin.
For further information, please refer to the separate product information sheet **"SILIKAL® Hardening Powder"**.

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