SILIKAL® RM 613 resin

Reactive methacrylic resin for 1.5 – 3 mm cold-plastic road and safety markings

Expect more from your floor.

SILIKAL® RM 613 resin is a reactive, solvent free, high viscous liquid methacrylic resin based on MMA for the manufacture of 1.5 – 3 mm long-life road and safety markings in various designs. Application is performed manually by means of draw box, trowel or spreader. The compound can be applied directly to asphalt, whereas a concrete primer must be used before application on concrete surfaces. Benzoyl peroxide, a so-called hardening powder, is used for the hardening procedure. Areas of use are bicycle lanes, bus stops, pedestrian walkways or traffic islands. The decorative design of traffic areas in various colours is also very popular.

Characteristics

SILIKAL® RM 613 is characterised by high durability on all types of traffic surfaces. Depending on the formulation with fillers, pigments and additives, it can be adapted to meet the requirements of local authorities concerning abrasion, colour, skid resistance, light reflection, surface texture and durability. Hardening (chemical reaction) takes place once it has been mixed with hardening powder (benzoyl peroxide 50 %). The curing time is between 10 and 15 minutes depending on the temperature and hardener quantity. After 30 – 60 minutes the surface will be tack free for traffic. The road markings and coatings are permanently flexible and resistant to abrasion, weathering and chemicals. A prerequisite for the good characteristics is a suitably good quality of the substrate.

Characteristics of RM 613 as delivered

Property	Measuring method	Approx. value
Viscosity at +20 °C (ISO 6 mm cup)	DIN EN ISO 2431	80 – 100 sec.
Density D_4^{20}	EN ISO 2811-2	0.99 g/cm³
Flash point	DIN 51 755	+10 °C
Pot life at +20 °C (100 g, 2 % pbw. hardening powder)	12 – 15 min.	
Curing time depending on amount of hardener	20 – 50 min.	
Packing	180 kg steel drums or 900 kg IBC container	
Storage time	At least 6 months in original packing, below +25 °C	
Application temperature (substrate)	0 °C to +35 °C	

Cold-plastic compounds based on SILIKAL® RM 613 resin are applied with 1.5 – 3 mm thickness preferably on asphalt road surfaces by hand using a trowel. The thickness depends on the mechanical load and on the evenness of the surface. It is important to ensure a sufficient minimum thickness, especially in the case of heavy traffic load.

When used on concrete road surfaces, the concrete has to be pretreated (e.g. milling, shot blasting, high-pressure water blasting) and an MMA-compatible concrete primer applied. The ready to use cold-plastic compound is dispersed without lumps, with 50 % BPO hardening powder and directly onto the surface.

For the pigmentation, we recommend using titanium dioxide rutile for white paints. Inorganic pigments such as iron oxides are suitable for coloured paints. Carbon black is not suitable as black pigment. Furthermore, many conventional paint additives, such as silicone oils, some dispersing agents or anti-settling agents based on amines are not suitable or only partly suitable as they can affect the curing process. SILIKAL® RM 613 resin can also be mixed with SILIKAL® RM 610 HW resin to reduce viscosity.

SILIKAL® RM 613 resin is the pure resin used as a binder for manufacturing the cold-plastic compound or coating compound. The formulation is usually manufactured in a slow-moving dissolver. Warming of the material above +35 °C due to the shearing forces must be avoided. After mixing, it must be cooled to below +25 °C, as warmth may result in sedimentation of the coarse aggregate in the bucket during storage.

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Cold-plastic compound for traffic areas, pigmented, trowelled on

Guideline recipe and batch quantities (example)

Item	Component	Guideline recipe (% by weight)	Comments
1	SILIKAL® RM 613 resin	30.0 %	Resin
2	Iron oxide, e.g. red	4.5 %	Pigment
3	Millicarb OG	25.0 %	Powder filler
4	Silica sand 0.1–0.4 mm	10.0 %	Fine sand
5	Silica sand 0.4–0.8 mm	15.0 %	Grip
6	Silica sand 0.7–1.2 mm	15.0 %	Grip
7	Wacker HDK N20	0.5 %	Thixotropic agent
8	**Total:**	**100 %**	**Average consumption: approx. 1.7 kg/m² per mm thickness**
9	SILIKAL® hardening powder	0.3–2 %, in relation to item 8	See “Hardener dosages” table for quantities

Grip scattering

On most public roads, skid resistant and reflective road markings are required. Since a high percentage of grip aggregate is already included, additional drop-in grip aggregate is not always necessary, depending on the customer’s request.

If required, coloured silica sands, granite, corundum or basalt can be used, according to the desired colour.

Special remarks

Formulated road marking or coating compounds based on our guide formulations must be modified and matched according to the local or national requirements. Silikal does not assume any responsibility for ready to use compounds, which are out of our influence. We only guarantee the product specification of our resins.

Further information is given in our “Technical Documentation” and “Material Safety Data Sheets”.

Hardener dosages (calculated on ready to use cold-plastic compound)

Temperature	Hardening powder % pbw.	Pot life (temperature of material) approx. min.	Hardening time (temperature of substrate) approx. min.
0 °C	2.0	14–18	50
+5 °C	2.0	12–15	40
+10 °C	1.5	12–15	35
+15 °C	1.5	10–12	30
+20 °C	1.0	10–12	30
+25 °C	0.5	10–12	25
+30 °C	0.4	9–11	25
+35 °C	0.3	8–10	20

Other applicable documents	Data sheet
SILIKAL® Hardening Powder	SILIKAL® Hardening Powder
General processing information	AVH
The substrate	DUG
Information on safety and protection	SUS
Storage and transport	LUT

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