

Sikagard®-680 S

Protective coating for concrete

Product description

Sikagard® -680 S is a single-component coating based on methacrylic resins, weather-resistant, alkali and ageing, formulated for use in mineral surfaces, including concrete and mortar. Contains solvents.

Sikagard® -680 S protects the concrete from aggressive atmospheric agents and promotes a self-cleaning effect on treated surfaces. Does not change the texture characteristic of concrete.

Complies with norm NP EN 1504-2 as protective cover.

Uses

Sikagard® -680 S is used for the protection and decoration of concrete and mortars in infrastructures and other works of art.

Sikagard® -680 S is a concrete coating against carbonation, especially in harsh environments.

- Ingress protection (principle 1, method 1.3 of NP EN 1504-9).
- Moisture control (principle 2, method 2.3 of NP EN 1504-9).
- Increased resistivity (principle 8, method 8.3 of NP EN 1504-9).

Features/ Advantages

- Excellent resistance to environmental exposure, on the basis of a methacrylic resin with fast evaporating solvents.
- Due to its fast drying, coating is resistant to rain after a short period of time.
- Almost without changing the texture characteristic of concrete surface.
- Protects the concrete from aggressive atmospheric influences, which penetrate into the concrete in the form of salts or gases.
- High resistance to diffusion of CO₂, reducing the effect of carbonation.
- The permeability to water vapor is not affected.
- The coating reduces the deposition of dirt and favors the self-cleaning effect of the surfaces.
- Suitable for concrete flooring into works of art.

Certificates/ Test bulletins

Complies with the requirements of the NP EN 1504-2.

Test report No. 2216/C1, the IBAC Aachen, 1990.

Test report No. 3026/B2, the IBAC Aachen, 1996.

Test report No. 3132-1 P, Polymer Institute, 2003.

This system is registered in accordance with ZTV-ING, part 3, section 4.

Product data

Appearance/Color

As color catalog "protective and decorative Paints".
It is possible the manufacture of other colors (see).

Supply

Packages of 5 and 20 litres.

Storage and preservation

The product saves during 36 months from the date of manufacture, in the original packaging is not taken. Store in a dry place and away from direct sunlight.



Technical data

Chemical basis Acrylic resins in solvent.

Density Approx. 1.4 kg/dm³ (+20° C).

Solid content Approx. 45% (by volume).

Flashpoint +30° c.

Layer thickness Minimum dry film thickness to ensure complete durability characteristics (CO₂ diffusion, adhesion after thermal exposure, etc.) = 101 µm.
Maximum thickness of dry film thickness of air the equivalent of H₂O is not more than 5 m = 290 µm.

Diffusion coefficient of carbon dioxide (CO₂ µ)

Thickness of the dry film	d = 130 µm
Equivalent air layer thickness	S _D CO ₂ = 429 m
Diffusion coefficient (µ-CO ₂)	CO ₂ µ = 3.3 x 10 ⁶
Requirements for protection	S _D CO ₂ ≥ 50 m

Diffusion coefficient of water vapor (µH₂)

Thickness of the dry film	d = 140 µm
Equivalent air layer thickness	S _D H ₂ O = 2.4 m
Diffusion coefficient (µH ₂)	µH ₂ O = 1.8 x 10 ⁴
Requirements for vapour permeability	S _D H ₂ O ≤ 5 m

Information about the system

System structure

Normal conditions:

Finish: 2 x Sikagard® -680 S.

Bright colours (e.g. yellow, red):

Finish: Sikagard® -680 S x 3.

Aggressive environments:

Primary: 1 – 2 x Sikagard® -700 S.

2 x Sikagard® -680 S finish.

Details of application

Consumption/Production Approx. 0.2 kg/m²/coat (approx. 0.14 l/m²/coat).

Quality of the base

Concrete or plaster without covering:

The Foundation must be solid, dry and free from dirt, grease, demolding agents and debris particles in breakdown.

Appropriate methods of preparation: wash with steam, water jet (high pressure for concrete surfaces) or abrasive jet (only on concrete bases).

New concrete should be at least 28 days.

Concrete or mortar previously coated:

Rehearse the adhesion to the base of the existing coating (medium grip > 1.0 N/mm² no values below 0.7 N/mm²).

If the existing paint is water based should always be removed prior to application of Sikagard® -680 S.

Preparation of the base

Concrete or plaster without covering:

If necessary, apply a regularization or sealing of pores with mortars of Sika® MonoTop range®, Icoment®, SikaTop®, etc. The drying period of cementitious bases must be at least 4 days before the start of the painting. Exceptional cases must be validated in advance by the technical department Sika.

Concrete or mortar previously coated:

Insufficient adhesion of the antique finish:

Remove the entire coating through appropriate methods and the basis get introduced and are strong enough so that it can be coated as indicated above.

Enough of the old coating adhesion:

Clean the entire surface thoroughly through washing with steam or water jet. Usually not required the application of primary. Sikagard® -680 S has good adhesion to the base.

If in doubt make adhesion tests prior to repainting.

Note: Ancient water-based finishes, even if very well attached to the base, must be entirely removed before applying Sikagard® -680 S.

Conditions/limitations

Base temperature

Minima: +5° c. Maximum: +35/° c.

Room temperature

Minima: +5° c. Maximum: +35/° c.

Relative air humidity

< 85%.

Dew point

The base temperature must be at least 3° C above the dew point, to reduce the risk of condensation or the formation of bubbles in the final finish.

Application instructions

Mix

Sikagard® -680 S is supplied ready to be applied.
Homogenize the product on the packaging before application.

Application

On very dense bases the Sikagard primer® -680 S can be diluted with up to 2 wt.% C diluent.
On very porous or absorbent bases, apply as primary 1 Sikagard® -700 S coat of to consolidate and standardize the absorption base, avoiding an irregular-looking finish.
Sikagard® -680 S can be applied with brush, brush, short-haired roller or by projection, with *airless* spray gun: 150 bar pressure, 0.38-0.66 mm nozzle, angle of projection of 50-80.

Cleaning of tools

Clean all tools and equipment with paint thinner C immediately after use.
Cured/hardened Material can only be removed mechanically.

Interval between layers/ Coating

Temperature	Waiting time
+10° C	Approx. 8:0
+20° C	Approx. 5:0
+30° C	Approx. 3:0

Any subsequent renewal of the Sikagard® -680 S painting without primary does not raise problems, since the old layer is firmly attached to the base and is very well cleaned.

**Notes on application/
Limitations**

- Ensure that in the same area is only applied to material from the same manufacturing batch. Different manufacturing lots may show slight differences of color.
- Do not apply in the following situations:
 - When rain is required.
 - Relative air humidity 85% >.
 - At temperatures below +5° C and/or below the dew point.
- On display or if the concrete surface is exposed to de-icing salts should be used if Sikagard® -700 S as primary.
- In porous or prefabricated elements, without prior buses (e.g. Sikagard® -720 EpoCem®), you can check the appearance of bubbles, when application is made during the period of temperature increase.
- Sikagard® -680 S is resistant to normal environmental exposure, rain, etc.
- Water containing de-icing salts and sea water may cause loss of brightness and tonal variation. These facts do not change the coating performance in terms of protection.

Cure

Sikagard® -680 S doesn't need any special healing treatment, but should be protected from rain for at least 1:0, +20° c.
The coat is dry to dust after aprox. 30 min. (+20° C).

**The product ready
for use**

Full cure: aprox. 5 days, +20° c.

Value base

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

**Health and Safety
Information**

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.

"Manufacturers civil responsibility is covered by insurance policy n° CH00003018LI05A with XL Insurance Switzerland "

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

CE Marking

The harmonised European standard EN 1504-2 "Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and evaluation of conformity – Part 2 Surface protection system for concrete" specifies the requirements for coatings to be used to protect concrete structures (either building or civil engineering structures). Products which fall under this specification need to be CE-labelled as per Annex ZA, table ZA.1d & 1e, conformity 2+ and 4 and fulfil the requirements of the given mandate of the Construction Product Directives (89/106/EEC).



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Na fábrica de Ovar