TKK
CEMENTOL EXPERT
SILIFOB II

CE

Silicone water-repellent impregnation for concrete

AREA OF USE

Silifob II is a colourless solvent-free silane-based liquid. It is intended for the final protection of concrete against atmospheric water, moisture, and soluble corrosive salts. Because of its high absorbency, it penetrates deep into the pores of the concrete and forms an invisible impregnation of the surface with no film formation.

Water-repellent impregnations are most effective on surfaces where water can drain, so they are most often used to protect vertical and sloping surfaces, or surfaces with a 3-5% slope. Protected surfaces retain their ability to "breathe" and remain vapour-permeable. The structure and appearance of the surfaces remain unchanged.

Water-repellent impregnations do not provide protection against pressured water, so they are ineffective for protecting swimming pools, reservoirs, and other similar structures. They do not glue poorly bonded parts or bridge cracks wider than capillary cracks.

Surfaces protected by hydrophobic impregnation do not absorb water and remain dry during rainfall, therefore:

- the transport of water-soluble salts is prevented, resulting in no material efflorescence,
- flaking of concrete is reduced,
- no damages or cracks due to cold temperatures and de-icing salts,
- there is no occurrence of framework corrosion in concrete,
- improved thermal insulation because it saves heat that would otherwise be used to dry a wet surface,
- there is less microorganism development, algae, mould, and fungi growth, and as a result, the surfaces remain clean for a longer period of time.

Silifob II is suitable for the protection of concrete surfaces and is used:

- in road construction for the protection of bridges, viaducts, concrete parapets, curbs, etc.
- for the protection of structures made of concrete, such as dams, supportive walls, concrete elements in the construction of commercial and residental buildings
- for the protection of artificial stone.

Before using Silifob II, it is recommended to perform surface protection on the sample.

TECHNICAL CHARACTERISTICS

Characteristic	Testing method	Declared value
Appearance	Visually	Colourless liquid
Density, 20 °C	EN ISO 2811-1	(0.80 ± 0.02) kg/L

Characteristic	Testing method	Standard requirements EN 1504-2	Achieved value
Depth of penetration	EN 1504-2, Table 3, pt. 19	Class I: < 10 mm Class II: ≥ 10 mm	Class I: 14 mm
Drying rate coefficient	EN 13579	Class I: > 30 % Class II: > 10 %	Class II
Water absorption and resistance to alkali	EN 13580	Absorption coefficient compared with the untreated specimen: < 7.5 %	Complies
		Absorption coefficient compared with the untreated specimen after immersion in alkali solution: < 10 %	Complies
Resistance to freeze-thaw-salt stress	EN 13581	The loss of mass of the impregnated surface may occur at least 20 cycles later than that of the unimpreganted test specimen (min Δ C ≥ 20)	Complies

COMPLIANCE

Silifob II – hydrophobic impregnation is in accordance with the requirements of the standard EN 1504-2: Products and systems for the protection and repair of concrete structures – Surface protection systems for concrete - hydrophobic impregnation, for the *hydrophobic impregnation method* according to the principles of:

1.1 – protection against ingress (IP)
2.1 – moisture control (MC)
8.1 – increasing resistivity (IR)

listed in the EN 1504-9 standard: Products and systems for the protection and repair of concrete structures - General principles for the use of products and systems.

INSTRUCTIONS FOR USE

Silifob II is prepared in a usable concentration and should not be diluted prior to use. The effectiveness and durability of hydrophobic impregnation are determined by the amount of agent used and, in particular, the depth of penetration of the product into the material to be protected. The best efficiency is achieved if the concrete surfaces are at least 28 days old before impregnation.
The packaging must always be tightly sealed, as water and atmospheric moisture react with the product and reduce its effectiveness.

Surface preparation
Silifob II must be applied to surfaces that are free of dust and greasy stains, dirt, salts, mosses, and mildew, as these can reduce product absorption. They must be compact and free of poorly bonded parts, damage, and cracks that cannot be repaired through impregnation.

Silifob II is applied to an air dry surface to ensure deep impregnation penetration. Hydrophobic impregnation must not be applied to a damp or wet surface!

Silifob II is intended for the final protection of concrete and other mineral materials. Non-absorbent surfaces such as glass, wood and plastic, as well as marble, are not suitable for impregnation with Silifob II. If Silifob II is applied to such a surface by accident, it will react with the moisture in the air, forming a greasy shiny resinous film that can be removed with ordinary cleaners (solvents) or alcohol.

Application

- Silifob II is applied until the pores are saturated. This is most easily achieved by slowly pouring onto the surface to be impregnated, allowing the liquid to absorb into the surface without applying pressure. Airless spray guns are preferred.
- The protected surface must be wet for at least a few seconds after impregnation in order for Silifob II to absorb effectively - the surface must have a wet lustre for at least a few seconds.
- Vertical surfaces are treated from the bottom to the top. Apply enough impregnation to run for about 30-50cm over the previously treated surface before being absorbed.
- If horizontal surfaces are to be protected, Silifob II must be applied in such a way that they appear wet for at least 3-5 seconds after application.

Work tools

All tools and work accessories must be dry before use.
After completing the work, clean them with a solvent – white spirit or thinner.

ADDITIONAL RECOMMENDATIONS AND WARNINGS

- The recommended application temperature is between +5 °C and +40 °C.
- The concretes we want to protect must be at least 28 days old.
- If there is a chance of rain or if the relative humidity is higher than 85%, do not use Silifob II.
- Silifob II is not to be applied in windy weather.
- We recommend performing a test on a test surface.
- Plants located in the vicinity of the surface that we want to protect with Silifob II must be protected beforehand.

We adhere to the following requirements and principles when designing and performing concrete structure protection and/or repair:

- EN 1504-9: Products and systems for the protection and repair of concrete structures: General principles for the use of products and systems and
- EN 1504-10: Products and systems for the protection and repair of concrete structures: Site application of products and systems and quality control of works.

CONSUMTION

Consumption depends on the type, porosity, and roughness of the surface to be protected and is usually:

from 0.2 to 0.5 kg per $1m^2$ of surface.

PACKAGING

cans 4 kg, drums 150 kg

STORAGE

- Silifob II should be stored in a tightly closed container at temperatures between -10 °C and +40 °C. The product must not come into contact with water or moisture.
- A properly stored product has a shelf life of at least 2 years after the date of manufacture.
- The product may still be used after the date of expiry, but the characteristics important for the intended use have to be examined.

HEALTH, SAFETY AND ECOLOGY

When working with Silifob II, wear protective gloves. Follow the general instructions for working with chemicals: take care of cleanliness, do not eat, drink or smoke while working. After finishing work, wash hands thoroughly with water.
More information on safe handling and disposal of the product is available in the safety data sheet, which is provided on request, and is also available from the dealer or distributor where you purchased the product.

WARNING

Instructions and recommendations are given based on examinations in our laboratories and experience to date. Due to specific conditions and work methods, preliminary tests are advised for each individual case of use.

Since we cannot influence the course of work, we cannot be held responsible for its quality!

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