SILRES® BS CREME C

Silane Cremes

SILRES® BS CREME C is an aqueous, solventless, creamy, silane-based water repellent. It is a highquality specialty product for hydrophobic impregnating of both normal and reinforced concrete.

Properties

SILRES® BS CREME C is characterised by:

- excellent penetration
- solventless, aqueous and environmentally
- compatible
- low volatility
- high resistance to alkalis
- thixotropic and may so be applied without loss
- of material

Treated concrete will have the following permanent properties:

- greatly delays chloride and water absorption by concrete
- no loss in breathability
- improved durability against freeze-thaw de-icing salt stress
- enhanced durability
- provides good adhesion for paints

SILRES® BS CREME C is a unique impregnating agent because it is thixotropic. It has an outstanding ability to impregnate high-quality concrete and reinforced concrete. Unlike conventional liquid products, SILRES® BS CREME C can be applied in just one coat of the desired thickness (at the very most, two coats). The silane active ingredient penetrates the substrate within 30 minutes to several hours, the exact time depending on the porosity and thus quality of the concrete. On reaction with the substrate, it releases ethanol and is converted into a polymeric silicone resin. A creamy layer forms initially, but this then disappears completely. As the active ingredient is the same as in conventional liquid impregnating agents, impregnation with SILRES® BS CREME C does not clog the pores or capillaries, nor does it affect its ability to breathe. SILRES® BS CREME C is designed to penetrate deeply into concrete so as to afford optimum protection against absorption of water and pollutants as well as freeze / thaw cycles. This effect should not be confused with the "beading" effect imparted by impregnating agents that is often referred to as water repellency. Beading is only a surface effect, and it plays a secondary role in protecting the substrate. Concrete treated with SILRES® BS CREME C has initially only a moderate beading effect, but this increases after the surface has been wetted.

Technical data

General Characteristics

Property	Condition	Value	Method
Active substance	-	80.0 wt. %	-
Appearance	-	white or yellowish creme	-
Density	25 °C | 1013 hPa	approx. 0.9 g/cm^3	-
Flash point	-	64 °C	ISO 3679

These figures are only intended as a guide and should not be used in preparing specifications.

Applications

- Concrete
- Concrete Protection
- Construction Materials
- Hydrophobic Impregnation
- Infrastructure

Application details

The work performed (preparing the concrete surface<(>,<)> setting up a reference surface, application and quality control) must follow the applicable regulations (in Germany these are the DAfStb repair work guidelines and the ZTV-ING).
- Concrete should not be impregnated until at least four weeks after it has been produced so that the setting of the cement is not affected.
- New surfaces that are still unsoiled must be cleansed of coarse particles and dust deposits by sweeping or, if necessary, using compressed air. Surfaces already weathered, and those heavily soiled by oil, rubber residue, etc., must first be cleaned using superheated steam or high-pressure water before commencing treatment. It is imperative that the water used be siphoned off immediately to prevent saturation of the concrete.

- Impregnation should always be performed on superficially dry concrete, i.e., when the surface of the concrete appears evenly dry, no more damp patches are visible and the moisture content equilibrium is established. To this end, moisture in the surface zone of the concrete is measured using a suitable technique (CM method or other methods allowed under ZTV-ING). The surface-zone moisture content of the concrete (from the surface to a depth of 20 mm) should not exceed 4 wt%.
- SILRES® BS CREME C is best applied to the concrete by the airless technique, undiluted and in the desired thickness. Brushes, lambskin rollers or spatulas may be used for smaller areas.

Up to 400g/m^2 may be applied in one operation to vertical surfaces and roofs, without loss off material. The exact amount depends on the absorbency of the substrate. At higher application rates, the impregnating agent might liquefy at the top of the concrete and it might start to run off. A second coat of SILRES® BS CREME C may be applied at any time, but is usually unnecessary.

- In the event of unexpected rain, cover surfaces already impregnated and halt all further impregnation.

SILRES® BS CREME C should not get into direct contact with bitumen. The resistance of insulant against SILRES® BS CREME C has to be determined dependend on temperature.

SILRES® BS CREME C is recommended particularly for impregnating and priming concrete and reinforced concrete used in building bridges, roads and buildings. In principle, SILRES® BS CREME C may be used on any alkaline substrate that has been treated previously with concentrated or undiluted impregnating agents, such as alkoxysilanes.

Expert opinions:
The effectiveness of SILRES® BS CREME C is confirmed and documented in the following laboratory reports:
• Polymer Institut Dr. Stenner GmbH, Flörsheim, Germany
Test report P 4254-2.1, 09.08.2007; EN 1504-2
Test report P 5024-2.1, 09.08.2007; EN 1504-2
• Institut für Bauforschung der RWTH Aachen, Germany
Test report No. A 3299, 30.04.1998; TL/TP OS (version 1996) of ZTV-SIB 90“
• CBI Betonginstitutet AB, Boras, Sweden
Test report No. 2297577, 03.07.1998; BRO 94
Test report No. P701959 A, 07.12.2007; BRO 2004
Test report No. PX10706 A, 19.03.2012; TRVAMA Anläggning 10
Test report No. 6P00354 A, NT BUILD 515
• VTT Technical Research Center of Finland, Helsinki, Finland
Test report VTT-R-42523-11, Apr. 6, 2011; SILKO 2010
• TRL Ltd., Berkshire, UK
Report PR/CSS/34/03, Aug. 2003; BD43/03
Report PPR 362, Oct. 2009; BD 43/03
• CTL, Ltd, Skokie, Illinois, USA
Project No. 105849; 15.18.2000; AASHTO T259/T260
Project No. 105849; 20.10.1999; NCHRP 244
• AGRA Earth Ltd. Alberta, Canada
Project No. EA 14913; 21.06.2000; BT-001

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EN 1504-2:2004

Surface protection product – Hydrophobic Impregnation
EN 1504-2: ZA.1a

Depth of penetration	class II: ≥ 10 mm
Water adsorption and resistance to alkali:	absorption ratio < 7,5 % compared with the untreated specimen < 10 % after immersion in alkali solution
Drying rate for hydrophobic impregnation	class I: > 30 %
Loss of mass after freeze-thaw salt stress	fulfilled (weight loss at least 20 cycles later than untreated sample)
Release of dangerous substances	NPD

Packaging and storage

Storage

The 'Best use before end' date of each batch is shown on the product label. Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

Safety notes

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from WACKER subsidiaries or may be printed via WACKER web site http://www.wacker.com.

QR Code SILRES® BS CREME C

For technical, quality or product safety questions, please contact:

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