

SILRES® BS SMK 1311

MASONRY WATER REPELLENTS

Product description

SILRES® BS SMK 1311 is a solventless silicone microemulsion concentrate based on silanes and siloxanes that is diluted with water to yield microemulsions. The dilute, aqueous solution of SILRES® BS SMK 1311 serves as a high-quality, general-purpose water repellent for impregnating and priming mineral and even alkaline substrates.

SILRES® BS SMK 1311 serve also as chemical damp proofing agent in diluted aqueous solution.

Special features

- water-free and solventless silicone concentrate
- spontaneously dilute with drinking water, i. e. without the need for sophisticated mixing devices
- silicone microemulsions which have been activated with water must be used on the day of preparation

Advantages over ready-to-use products:

- lower packaging costs
- fewer problems with empty containers
- disposal (15 times less packaging)
- lower storage and transport costs

The WTA certificate confirms the suitability of SILRES® BS SMK 1311 for this application.

Application

Diluted with water, SILRES® BS SMK 1311 is used as a general-purpose water repellent for absorbent, mineral and even alkaline substrates, such as natural stone, brick, concentrate and sand-lime brick, as well as for mineral paints and stuccos.

SILRES® BS SMK 1311 is also suitable as a primer for dispersion-based paints and plasters, silicone resin paints and plasters, concrete coatings, and as a water repellent for the in-plant treatment of lightweight aggregates and clay building materials, aerated concrete, sand-lime brick, fibrous cement and mineral fibers.

Diluted with water - we recommend pouring SILRES® BS SMK 1311 into water - SILRES® BS SMK 1311 is injected under the effects of pressure via drilled holes to combat rising damp in masonry. The aim is to

completely saturate the masonry in the injection zone. Pressure injection is usually preferred for high levels of damp.

Processing

Water repellent for impregnating and priming

SILRES® BS SMK 1311 which has been diluted with water should be used on the day of dilution, i. e. only dilute as much product as can be used on the same day.

The dilution should be liberally applied in at least two coats, wet on wet, to the surface of the building material. It should not be applied under pressure or as an aerosol. Application by flooding is especially recommended. The construction material to be treated should look dry.

Before applying SILRES® BS SMK 1311, be sure to cover windows and other non-absorbent surfaces properly because the product cures so quickly that it will be extremely difficult, if not impossible, to remove after a few days. Wipe off any splashes on window panes immediately using soapy water or, if necessary, an organic solvent.

Dilution

Drinking water is suitable for the dilution of SILRES® BS SMK 1311. When adding water to SILRES® BS SMK 1311, briefly stir the mixture. Fine-particle opalescent microemulsions will result, whose appearance will not change even after their pot life has expired.

In general, good results will be obtained if SILRES® BS SMK 1311 is used diluted with water in a ratio of 1:9 to 1:14. (i. e. 1pbw SILRES® BS SMK 1311 + 9 to 14pbw water).

Drill hole injection against rising damp

The ready-to-use dilution of SILRES® BS SMK 1311 is injected into the stone / brickwork via holes. The holes are usually drilled at ground level (outside) or at floor level (inside). The distance between the boreholes depends on the absorbency of the construction material.

10 to 12cm is usually sufficient for homogeneous masonry. All holes should be approx. 5cm shorter than the thickness of the masonry and they must be

cleaned of dust before injection.

Pressure injection is the best method of treating high levels of rising damp. Packers are inserted into the holes and the silicone microemulsion is forced through at a pressure of preferably 2 - 5bar. Cavities in inhomogeneous masonry should be filled with a cement slurry before.

Very high levels of damp may be treated by activating the silicone microemulsion with blends of alkaline products or pure siliconates after 1-2 days. The active agents (alkylsilicates) are deposited immediately and the result is faster, better build-up of the horizontal damp course.

The masonry in the injection zone must be completely saturated with the microemulsion in order for the damp course to be fully functional. This is achieved by allowing sufficient time for injection (5 to 10 minutes for pressure injection).

For injection, we recommend diluting SILRES® BS SMK 1311 with drinking water in the ratio 1 : 12. Only as much of the product as can be used on the same day should be prepared.

Storage

The containers must be protected against sunlight. Stir well before taking emulsion from drums.

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>.

Product data

Typical general characteristics	Inspection Method	Value
Appearance		clear
Color		yellowish to reddish
Silane / siloxane content		approx. 100 %
Density at 25 °C	DIN 51757	0,95 - 0,97 g/cm ³
Viscosity, dynamic at 25 °C	DIN 51562	1 - 10 mPa.s
Flash point		25 °C

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

Approvals

Hydrophobic Impregnation:

The efficacy of SILRES® BS SMK 1311 is confirmed in the following laboratory reports and test certificates:

Bureau Veritas, Gennevilliers, France
Test Report No. CN 53B950305E01, October 23, 1995:
„Test of masonry water repellent SILRES® BS SMK 1311 in 1 : 14 dilution“

The Paint Research Association, Teddington, England
Test Report No. 95/243/NP, November 14, 1995:
„Test of SILRES® BS SMK 1311 according to British Standard BS 6477“

In the USA, SILRES® BS SMK 1311 is sold under the trademark VEOCEAL® 1311.

The following tests were carried out:

DL Laboratories, New York, April 30, 1992
Product: VEOCEAL® 1311 (15 % in water, 125 ft²/gal.)
Federal Specification SS-W-110C „Water-Repellent, Colorless, Silicone Resin Base“
Result: Water absorption: 0.3 %

Construction Technology Laboratories, Inc. Skokie, Illinois, February 24, 1994
Product: MWR 898-184, Lot#988-160 (VEOCEAL® 1311, 10 % in water, 125 ft²/gal.)
ASTM E 514-86 „Standard Test Method for Water Penetration and Leakage through Masonry“
Result: Reduction of leakage rate: 86 %

DL Laboratories, New York, July 22, 1991
Product: VEOCEAL® 1311 (17.5 % in water)
ASTM 3960 „Standard Practice for Determining Volatile Organic Content (VOC) of Paints and Related Coatings“
Result: VOC = 318 g/l

Wiss, Janney, Elstner Associates, Inc., Northbrook, Illinois, April 29, 1992
Product: Code 865-149-6 (VEOCEAL® 1311, 17.5 % in water, 125 ft²/gal.)
NCHRP 244 Report „Concrete Sealers for the Protection of Bridge Structures“, Series II
Results: Reduction of water absorption: 80 %
Reduction of chloride ion content: 83 %
Water vapor transmission: > 100 %
Average penetration depth: 0.03 in.

Construction Technology Laboratories, Inc. Skokie, Illinois, December 31, 1991
Product: Code 865-184 (VEOCEAL® 1311, 17.5 % in water, 125 ft²/gal.)
NCHRP 244 Report „Concrete Sealers for the Protection of Bridge Structures“, Series IV (southern climate)
Results: Reduction of chloride ion content: 96 %

Construction Technology Laboratories, Inc. Skokie, Illinois, March 20, 1991
Product: VEOCEAL® 1311 (17.5 % in water, 125 ft²/gal.)
ASTM C 672 „Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals“
Result: No scaling observed

Damp Proofing:

The efficiency of SILRES® BS SMK 1311 is confirmed in the following laboratory report and test certificates:

RWTH Rheinisch-Westfälische Technische Hochschule Aachen (IBAC)
Investigation of the injection product SILRES® BS SMK 1311 according to WTA Guideline 4-4-04/D (M 1290/2).

The data presented in this leaflet are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the products for a particular purpose.

The management system has been certified according to DIN EN ISO 9001 and DIN EN ISO 14001

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