

SILRES[®] BS SMK 2101



Silane-Siloxane mixtures

SILRES[®] BS SMK 2101 is a solventless silicone microemulsion concentrate based on silanes and siloxanes that is diluted with water to yield a microemulsion. Dilute, aqueous solutions of SILRES[®] BS SMK 2101 are high-quality, specialty water repellents for hydrophobic impregnation and priming normal and reinforced concrete as well as water resisting admixtures for non-load bearing manufactured concrete products.

Properties

SILRES[®] BS SMK 2101 is characterised by:

- good depth of penetration
- dilutable with water, and free of solvents
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- low volatility

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

In the construction material SILRES[®] BS SMK 2101 reacts with atmospheric moisture and / or the water in the building material's pores, eliminating alcohol. The active thus substance formed greatly reduces the concrete's absorbency in the active zone (penetration depth after post treatment), but without blocking any pores or capillaries. The impregnated building material retains very high water-vapor permeability.

Technical data

General Characteristics

Property	Condition	Value	Method
Appearance	-	clear, yellowish	ASTM D 412
Density	25 °C	0.900 - 1.000 g/cm ³	DIN 51757
Viscosity, dynamic	25 °C	1 - 10 mPa·s	DIN 51562
Flash point	-	25 °C	DIN 53213
Silane content	-	approx. 100.0 wt. %	-

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

All the information provided is in accordance with the present state of our knowledge. Nonetheless, we disclaim any warranty or liability whatsoever and reserve the right, at any time, to effect technical alterations. The information provided, as well as the product's fitness for an intended application, should be checked by the buyer in preliminary trials. Contractual terms and conditions always take precedence. This disclaimer of warranty and liability also applies particularly in foreign countries with respect to third parties' rights.

Applications

- Construction Materials
- Concrete Protection
- Hydrophobic Impregnation
- Concrete
- Silicone Primers

Application details

Processing as a Hydrophobic Impregnating Agent for Concrete: 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%.
- Evenly apply the impregnating agent to the building material in two coats, wet-on-wet. The two coats are absolutely essential to prevent the formation of defects in the impregnated surface. Do not allow puddles to form. The impregnating agent is applied by flow coating at reduced pressure (1-2 bar). A lambskin roller may be used afterward for more even coverage.
- In the event of unexpected rain, cover surfaces already impregnated and halt all further impregnation.

Processing as a Concrete Admixture (Water Resisting Admixture) The recommended admixture range of a 1:9 dilution of SILRES® BS SMK 2101 is 1.0% to 5.0 % of the cement content. A significant reduction in water uptake can already be achieved at a concentration of 1.0 % of the cement. SILRES® BS SMK 2101 is added either simultaneously with or immediately after the mixing water – it should never be added along with other additives. To keep a constant w/c value the total mixing water is reduced by amount required earlier for dilution. We recommend testing compatibility with other concrete admixtures separately. A longer mixing time will thoroughly distribute the product within the overall system, which in turn will make it highly effective.

When used in concrete goods or similar concrete products according to EN 1338, 1339 or EN 1340, an initial-type test (cf. section 6.2 of the respective standard) is recommended.

SILRES® BS SMK 2101 is recommended as a hydrophobic impregnation agent and primer for normal and reinforced concrete for bridges, roads and buildings as well as water resisting admixtures for non-load bearing manufactured concrete products. SILRES® BS SMK 2101 forms dilute solutions immediately on being poured into drinking water. Ready-to-use silicone microemulsions activated in this way must be used up on the day of preparation. The recommended dilution ratio is 1:3 to 1:14 (1 pbw SILRES® BS SMK 2101 + 3 to 14 pbw water). For the hydrophobic impregnation of high-grade, load bearing concrete, a dilution ratio of 1 part SILRES® BS SMK 2101 and 3 parts of water is required, as the product has been approved according to EN 1504-2 in that for dilution rate.

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 SMK 2101



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

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