

Protectosil® WS 405

Aqueous emulsion based on organofunctional silanes for the water repellent impregnation of absorbent, mineral substrates

Technical Data

Properties and test methods	Value	Unit	Method
Density (20 °C)	approx. 0,94	g/cm ³	DIN 51757
Appearance	white liquid	-	-
Flash point	72	°C	EN 22719
Viscosity (20 °C)	approx. 15	mPa·s	DIN 53015
pH-value (20 °C)	6 - 8	-	-

Registration

Protectosil® WS 405

EINECS/ELINCS (EU):	Yes
AICS (Australia):	No
DSL/NDSL (Canada):	No
PICCS (Philippines):	Yes
TSCA (USA):	No
IECSC (P.R. China):	Yes
ENCS (Japan):	No
ECL (South Korea):	*
* = available on request	

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Safety and Handling

Before considering the use of Dynasylan® and Protectosil® products please read its Material Safety Data sheet (MSDS) thoroughly for safety and toxicological data as well as for information on proper transportation, storage and use. The Material Safety Data Sheet is available after registration on our website www.dynasylan.com or upon request from your local representative, customer service or from Evonik Industries AG, Product Safety Department, E-MAIL sds-im@evonik.com.

Packaging and Storage

Protectosil® WS 405 has a shelf life of 12 months when stored in originally sealed containers.

Storage temperatures are between 3 °C and 40 °C.

Protectosil® WS 405 is available in 25 l and 210 l drums and 1.000 l containers.

Properties and Use

Protectosil® WS 405

- is suited for the water repellent impregnation of porous, mineral substrates
- shows very high reactivity and resistance against alkali
- penetrates deeply in porous, mineral substrates
- shows no formation of sticky silicone films
- gives invisible and water vapor permeable protection
- reduces significantly the uptake of water
- reduces the uptake of water soluble pollutants (e.g. chlorides)
- effective on micro cracks up to 0,3 mm
- may be further diluted with water

For most applications a concentration of from 5% (1 part **Protectosil® WS 405** 9 parts of water) to 20% (1 part of **Protectosil® WS 405** 1,5 parts of water) of the active ingredient in demineralized water is recommended. The amount of **Protectosil® WS 405** to be applied and the concentration to be used are highly depending on the absorbance of the substrate and the desired penetration depth. Very absorbent substrates may require up to 1 l/m² of **Protectosil® WS 405**.

The substrates to be treated should be dry and clean. Acceptable surface cleaning methods include sandblasting and water blasting.

During application outside temperatures and surfaces temperatures should be between 5 °C and 40 °C. **Protectosil® WS 405** should not be applied during strong wind or rain.

Protectosil® WS 405 should be applied by wet-on-wet flow coating to the saturation point. The solution should be applied in 2 - 3 coats without drying between the coats. On vertical surfaces the solution should run down in the form of a clearly visible descending wet curtain. This is achieved by allowing the solution to flow against the surface of the building material without pressure. Most liquid delivery devices e.g. airless pumping equipment are suitable. The material should not be atomized or applied with a brush.

The water repellent effect of **Protectosil® WS 405** can develop within minutes or require up to several days depending on the substrate and weather conditions. Therefore, the impregnation should be applied continuously and without a break to avoid overlapping.

The impregnation of delaminations should not be done with **Protectosil® WS 405**. **Protectosil® BHN** or **Protectosil® 40 S** are better suited for this purpose. A substrate which has already been made waterrepellent no longer allows a penetration of any reapplied aqueous silane/siloxane emulsion.

Non-absorbent substrates such as window frames, window sills, plastic fittings, window glass, etc., should be covered before application. Surfaces which accidentally come into contact with **Protectosil® WS 405** can be cleaned with alcohol (spirit) or aqueous soap solution. Cleaning should be carried out as quickly as possible (within a few hours), otherwise formation of a silicone resin film can make cleaning more difficult. Silicone resin films are best removed using ethanol (or spirit). Plant life should be protected from overspray.

Protectosil® WS 405 reacts with the interfaces in pores and capillaries of the mineral surface and forms invisible, waterrepellent interfacial compounds. To determine the exact amount to be applied and to check whether previous or following treatments are compatible with the **Protectosil® WS 405** treatment it is recommended to do a small test patch first.

International Labeling



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