

# Protectosil® MH 50

## Water based emulsion for mass hydrophobation

### Technical Data

Properties and test methods	Value	Unit	Method
Flash point	72	°C	EN 22719
Viscosity (20 °C)	approx. 15	mPa·s	DIN 53015
pH-value (20 °C)	6 - 8	-	potentiometric
Chloride content	0,005	w%	DIN EN 480-10
total alkali (as Na <sub>2</sub> O)	0,06	w%	DIN EN 480-12
Density (20 °C)	approx. 0,94	g/cm <sup>3</sup>	DIN 51757
Appearance	white liquid	-	-

### Registration

#### Protectosil® MH 50

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

**Protectosil®** MH 50 is an aqueous emulsion based on a monomeric alkyltrialkoxysilane. It is used for the mass hydrophobization of cementitious based materials, especially shotcrete.

### Safety and Handling

Before considering the use of 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](http://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](mailto:sds-im@evonik.com).

### Packaging and Storage

**Protectosil®** MH 50 has a shelf life of 12 months if stored in originally sealed containers. **Protectosil®** MH 50 is not frost resistant and should be stored at temperatures between -3 °C and 40 °C. **Protectosil®** MH 50 is supplied in 25 l and 200 l drums and 1.000 l bulk containers.

## Properties and Use

### Product Characteristics

- water vapor permeable, colorless hydrophobation
- reduction of water absorption in cured concrete of > 80 %; in addition reduced uptake of harmful water soluble substances.
- no problems with penetration depth
- easy application and no dependence on weather conditions
- less shrinkage

The use of **Protectosil**® MH 50 causes a slight decrease of the viscosity and a slightly reduced concrete reaction. The pore volume and the density of the shotcrete are not influenced by the use of **Protectosil**® MH 50. A comparison with cured concrete where no hydrophobizing agent is used shows that the strength and the shrinkage are slightly reduced when **Protectosil**® MH 50 is applied. A reduction in water up-take of more than 80% can be obtained. This kind of hydrophobation was used in 2002 for the restructuring of the parking garage Gundeli in Bale (Switzerland). The C25/30 concrete used had a w/c value of 0,51. About 9,5 kg/m<sup>3</sup> of **Protectosil**® MH 50 were used related to a cement weight of 350 kg/m<sup>3</sup>.

### Instructions for Use

Due to its high water content the emulsion is sensitive to frost and, therefore, not applicable at sub-freezing temperatures. The water repellent effect develops during curing of the concrete. As soon as a constant rest humidity in the concrete is reached the hydrophobizing silane can fully crosslink and develop its full efficiency. Therefore, the concrete should have time to cure for 28 days.

**Protectosil**® MH 50 reacts with the boundary surfaces in pores and capillaries of the mineral surface and forms an invisible, water-repellent boundary surface compound.

### Product Consumption

The exact quantity and the optimum concentration to be applied should be determined by a trial application. In general an amount of 1-3 wt% related to the cement weight is already sufficient.

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