

## Waterproofing

# PROMURAL SILICON

**Transparent, ready-to-use hydrophobising impregnating agent based on siloxane polymers dissolved in solvent, type H for PI, MC, IR according to EN 1504-2, for the protective treatment of absorbent mineral substrates.**



- Good penetration capacity
- Very high resistance to lime and cement (unlike silicone based impregnating agents that can be diluted with water that are rapidly degraded by cement substrates)
- Non-sticky after drying
- High permeability to water vapour
- Exceptionally waterproof (heavy rainfall pushed by winds at a speed of 100 km/h cannot penetrate the substrate)
- Unchanged effectiveness over time (proven effectiveness for a period of 15 years)



## APPLICATION AREAS

Impregnation of absorbent building materials such as:

- concrete, hydraulic lime and/or cementitious plasters
- aerated concretes
- bricks, cement tiles and brick tiles
- unglazed ceramic elements, e.g. Florentine terracotta, and porous natural stones, e.g. sandstone (in this case preliminary tests are necessary)

## FEATURES

Promural Silicon is a colourless, ready-to-use, hydrophobic impregnating agent based on silanes and siloxanes dissolved in solvents, which meets the requirements of EN 1504-2 for hydrophobic impregnation processes as a surface protection product. Promural Silicon protects façades and masonry against water infiltration from rain and strong winds. Hydrophobising is so strong that rainwater cannot penetrate even micro cracks (crazing) up to 0.3 mm wide. Promural Silicon protects façades against salt water in coastal areas and against aggressive

atmospheric agents dissolved in rainwater in urban and industrial areas. The inactivation of the substrate capillaries obtained with Promural Silicon occurs without reducing its breathability. Damp walls draining is therefore accelerated because the removal of moisture in the form of water vapour is not hindered, while water infiltration from outside to the substrate is prohibited, due to the strong water-repellent properties of Promural Silicon. At the same time, it avoids the growth of microorganisms, such as fungi and mosses, favoured by humid substrates.

Wet walls are good thermal conductors and therefore bad thermal insulators. A moisture content of 5% reduces the thermal resistivity (opposite of conductivity) of for example a 24 cm brick by approx. 50%. The water contained in the pores and capillaries of the building material increases the conductivity of the building material; moreover, the water itself can only be removed from the wall by evaporation, namely as water vapour. Turning water into vapour requires heat; a good impregnation with Promural Silicon therefore considerably improves the thermal insulation properties of walls and reduces heating costs. Exposed concretes, protected with Promural Silicon, maintain their aesthetic appearance unchanged over time. Façades treated with Promural Silicon become much less soiled than those not impregnated. Dirt cannot settle in hydrophobised pores and is easily washed away by rain.

Promural Silicon invisibly hydrophobises ceramic elements for indoor use, making them less sensitive to soiling by liquids. External ceramic coverings impregnated with Promural Silicon are not subject to salt efflorescence and are more resistant to frost. With Promural Silicon, efflorescence is permanently eliminated. Since the elution of soluble salts from cement-based or brick substrates often leads to the detachment of synthetic or plaster coverings, a primer coat based on Promural Silicon before applying water-based paints or cement-based coverings prevents the migration of salts to the surface and the resulting detachment of coverings. The impregnating agent Promural Silicon does not alter the appearance of the treated substrate in any way. In accordance with EN 1504-2, Promural Silicon is a product for surface protection by hydrophobic impregnation of concrete structures, referred to in principle 1 (protection against ingress), principle 2 (moisture control) and principle 8 (increased resistivity).

## **WARNINGS**

- Promural Silicon can only be used for the hydrophobic impregnation of buildings and structures above ground, not subject to hydrostatic pressure or prolonged water stagnation, and for the water-repellent treatment of the above mentioned building materials if they are not subject to rising damp containing salts.
- Promural Silicon contains flammable solvents. When storing, handling and applying the siloxane impregnating agent, the necessary precautions for flammable products must therefore be taken.
- Since Promural Silicon has no consolidating effect (it is not film-forming), crumbly and crumbling substrates are not suitable for this treatment.

## **INSTRUCTIONS FOR USE**

### **Preparation for use**

The substrate to be impregnated must be clean, solid and dry to ensure maximum penetration of Promural Silicon. Efflorescences, if any, must be carefully removed mechanically or with diluted hydrochloric acid: dilute 1 litre of commercial hydrochloric acid (muriatic acid) with 10 litres of water and vigorously wash the substrate with this solution. Then rinse repeatedly and let the washed substrate dry before treating it with Promural Silicon. Fissures greater than 0.3 mm and cracks must be adequately filled. Defective sealing and connections must be restored to perfection. Fresh cement-based substrates must harden for at least 3 weeks before applying the impregnating agent.

### **Instructions for use**

Promural Silicon is a ready-to-use product. It is applied by brush and pasting-brush, by spraying (low pressure, e.g. with sprayer pumps) or by immersion. The siloxane solution must be applied generously and uniformly until the substrate is completely saturated. For hydrophobic impregnation of large surfaces, spray application is recommended to ensure the entire surface is treated. The coats to be applied depend very much on the support absorption capacity and are normally at least two. The time interval between subsequent applications of impregnating agent can be freely chosen as long as the previous coat has been completely absorbed. Promural Silicon can be applied even at low temperatures, it is not washed away by the rain as soon as it is applied and develops its full water repellency a few hours after application.

To impregnate façades covered with ceramic elements that are not very absorbent, it is necessary to apply a large amount of impregnating product so that the joints between the tiles, which are permeable to water, can be saturated with Promural Silicon. After about 1 hour, the excess impregnating agent deposited on the tiles is cleaned with a cloth soaked in mineral spirit or other paint thinner.

## Cleaning

Work tools and materials or construction elements that may have been contaminated during the application of Promural Silicon can be cleaned with mineral spirit or similar solvents.

## TECHNICAL SPECIFICATIONS

Appearance	Liquid
Colour	transparent
Density	0.810 kg/l
Dry matter	6%
Penetration depth (EN 1504-2, table 3)	class I
Water absorption and resistance to alkali (EN 13580): absorption ratio compared to the untreated specimen (<7.5 %)	2.2%
Water absorption and resistance to alkali (EN 13580): absorption ratio after immersion in an alkaline solution (<10%)	4.7%
Drying speed (EN 13579)	class I
Viscosity at 23 °C (MIT 03 C)*	300 mPa*s
Film formation time at 23 °C (MIT 33)*	approx. 60 minutes
Application temperature	from +5 °C to +40 °C
Operating temperature	from -50 °C to +150 °C

\* Torggler's Internal Methods (MIT) are available on request.

Color	Transparent
Packaging	metal bucket
Packaging size	18x1 l, 20 l, 5 l
Pallet	24 cardboards, 33 metal buckets, 90 metal buckets

## CONSUMPTION

The consumption of Promural Silicon depends on the porosity of the substrate and varies from 0.2 to 1 l/m<sup>2</sup>. It is recommended to always carry out an impregnation test on a surface of approx. 1 m<sup>2</sup> to determine consumption and check the effectiveness of the product.

## STORAGE

Promural Silicon must be stored in a dry and cool place. It will keep for at least 24 months in its original packaging. **FLAMMABLE LIQUID AND VAPORS.**

The information contained in this document is reported on the basis of our experience and knowledge; therefore, any recommendations and suggestions made are without any guarantee and must be verified before using the product by those who intend to use it, who assume all responsibility that may result from its use since the conditions of use are not under our direct control. In case of doubt, it is always advisable to make preliminary tests and/or ask for the intervention of our technicians. Torggler reserves the right to modify, replace and/or delete the items, as well as to change the product data in this document without prior notice; in this case the indications given here may no longer be valid. Always refer to the latest version of the data sheet, available at [www.torggler.com](http://www.torggler.com). Version 09.02.2021.