

HydroBloc®SI 700

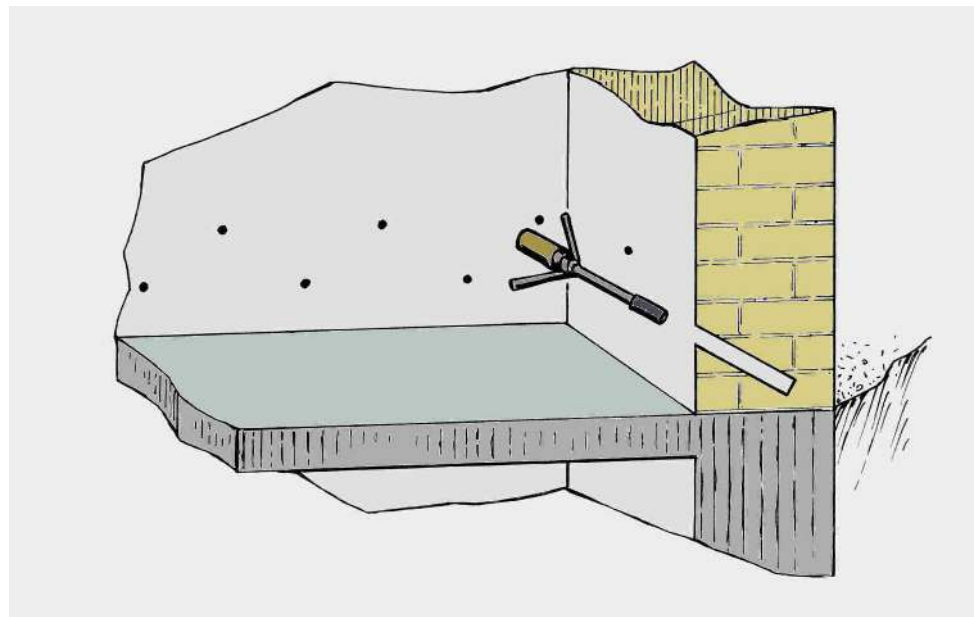
Horizontal barrier for borehole injection according to WTA

HydroBloc®SI 700 is a proven injection agent for the construction of capillary water barriers (horizontal barriers) in walls. It is installed by injection through boreholes, silicifies and hydrophobizes the capillaries, air and water pores and at the same time strengthens friable grout.

The basic formulation of HydroBloc®SI 700 has been tried and tested for many years in international monument conservation, in the conservation of the value of historical buildings. HydroBloc®SI 700 consists of a combination of metal silicates and organosilicon compounds (siliconates). HydroBloc®SI 700 has been optimised in terms of application technology and can be processed simply and easily.

The product is delivered ready for processing. Installation is simple, it can be carried out by all the usual methods - by pressure injection via injection lances or nozzles ("packers") and commercially available injection pumps or by the so-called borehole soaking or infusion method, via dropper bottles, receiver tanks, pressure vessels and similar systems. HydroBloc®SI 700 contains no solvents, no toxic ingredients and is absolutely environmentally neutral.

Holes for injection arranged in a grid



Properties

The injected HydroBloc®SI 700 first fills the pore structure in the building material with silica gel in a two-phase reaction. The silica gel is created by the reaction of the dissolved silicon hydroxide in the HydroBloc®SI 700 with the calcium ions which are always present in the building material. It is thereby fall out from the solution. The precipitated silica not only fills and closes the pores of the building material; it also acts as an additional, natural binder. Leached, crumbly joint mortars and stones are re-consolidated by the silicification.

In the second phase, the organic siliconate contained in HydroBloc®SI 700 slowly reacts (condenses) in the pores to form polymethyl silicic acid. It is strongly water-repellent (hydrophobic), occupies the (inner) surface of the pore walls and is fixed there.



Due to this internal hydrophobization with silicone, the mineral building material is no longer wettable with water. The capillary water transport in the pores of the building material is interrupted.

Secondary pores, which are inevitably formed in the (initially water-containing) polysilicic acid when the wall building materials dry off, are also hydrophobic throughout and therefore cannot transport water even afterwards*!

The wall can dry out, the inflow of water, triggered by the capillary suction of the pores of the building material, is effective and permanently prevented.

*) The reason for the long-term failure of the known silicification process with water glass!



The classic pressure injection, via filler necks ("packers") into holes arranged in a grid

HydroBloc®SI 700 is a product specially formulated to create highly effective horizontal barriers against rising damp in masonry or concrete and is designed to prevent water transport in building materials with an absorbent (capillary) structure.

Not for sealing of cracks and joints and also not against pressing water

○ **HydroBloc®SI 700 meets all WTA* requirements for injection systems!**

Sealing against pressing/flowing water or the sealing of cracks, gaps or damaged joints is not possible with this product. For the repair of such damages we recommend the targeted injection into the damaged area with our water-swellable HydroBloc®-PU or acrylate injection resins or - in case of extensive damages - the installation of external waterproofing membranes by injection with our HydroBloc®-Polygel products into the interface between building structure and soil (so-called "gel curtain").

*WTA: Wissenschaftlich-technischer Arbeitskreis für Denkmalspflege e. V. i.e. Scientific and Technical Working Group for Monument Conservation e. V

Processing

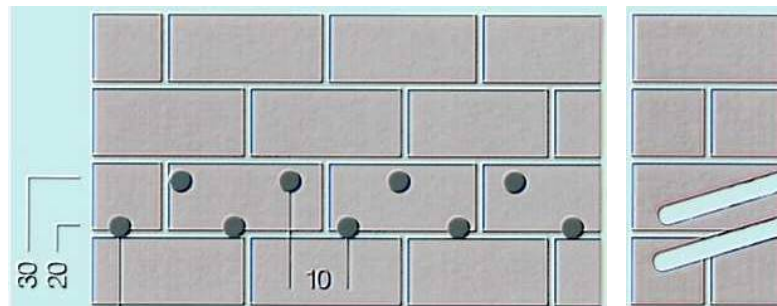
HydroBloc®SI 700 is ready for processing in the supplied form and is inserted into the wall via boreholes arranged in a grid in such a way that the injection solution spreading cylindrically around the boreholes in the wall overlaps and creates a continuous barrier layer.

The injection itself can be carried out in accordance with all the usual procedures - in a pressurised process using injection pumps, pressure vessels or pressureless via storage tanks. The arrangement of the boreholes and the necessary flanking measures depend on the individual structural situation.

The technical principles for the installation of horizontal barriers are defined in the "Application guidelines for chemical injections against rising damp" of the WTA. We recommend using these guidelines as a technical reference when installing HydroBloc®SI 700.

The consumption strongly depends of course on the nature of the building material, the pore volume, the absorbency and the wall thickness and can only be determined reliably by a test injection.

Typical arrangement of the holes for a Horizontal barrier



HydroBloc®SI 700 is highly alkaline (ph >12). The product attacks glazed ceramics, glass and aluminium when exposed to it for a longer period of time. Stains caused by this process are no longer or only very difficult to remove. Most lacquers and oil paints are also attacked and partially destroyed by HydroBloc®SI 700 by prolonged contact.

We therefore recommend to protect adjacent components when working with HydroBloc®SI 700 by masking / covering them with foil and to remove dirt immediately by washing with plenty of clean water.

Properties

Delivered product	:	Ready to use aqueous solution
Processing time	:	Not applicable
Density	:	Approx. 1,40 gr/ml (20 °C)
Colour and appearance	:	Blue, transparent liquid
Odour	:	Very faint smell, typical, soap-like
Solvent content	:	It contains no organic solvents

Work safety Storage



HydroBloc®SI 700 does not contain toxic ingredients or solvents. However, the product is alkaline and has a corrosive effect on skin and mucous membrane. Similar to lime and cement, there is therefore a risk of permanent damage if the product comes into contact with the eyes! Protective gloves and goggles must therefore be worn during application. As a precautionary measure, we recommend keeping an eye rinsing bottle with water during processing.

In the original containers and tightly closed, the product can be stored for at least 12 months after delivery. Opened containers should be used within 4 weeks. The product may only be stored in plastic containers (e.g. PE) or containers made of iron (black plate) or stainless steel. They must be tightly closed. The product attacks zinc sheet and aluminum. Equipment and machines can be rinsed/cleaned with water. HydroBloc®SI 700 contains water and is conditionally sensitive to frost.



The product must be stored in such a way that it is not accessible to unauthorised persons, especially children. Material filled into foreign containers must be adequately labelled and provided with warnings (CORROSIVE).

A safety data sheet (MSDS) is available for the product. It contains all relevant information on the handling of the product and its disposal, which is valid on the day of delivery. It is recommended that this MSDS be made available to all those who handle the product.

These technical information describe the present-day state of knowledge these product. They should only inform about the possibilities of application and could not release the applicator of his commitment to check the possibility to use the product for the required application. Information for processing can be found in processing instructions of our product. Information about safe handling can be found in our current safety data sheet.

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ARCAN Waterproof

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