HIDROIZOL S

Water impermeable coating

EN 1504-2: covering/coating

PROPERTIES

HydroBlocker Hidroizol S is a dry mixture of cement, flint sands and special admixtures to increase water impermeability, resistance to chemicals, flexibility and adhesion to the surface.
Once the coating has been cured, it is firm yet flexible, and has good adhesion and is as such an excellent protection for concrete, other mineral substrates and metals.

FIELD OF APPLICATION

HydroBlocker Hidroizol S protects against water or damp penetration and is as such used for sealing or repairing:
- balconies and terraces,
- walls affected by damp,
- cellars,
- water tanks (also for drinking water),
- tunnels, etc.

Due to increased resistance to chemicals it can also be used for the protection of (1):
- gathering shafts and fuel pools,
- concrete silos,

Etc.

ADVANTAGES

Fresh coating:
- ready-to-use mixture: only the required amount of water is to be added at the construction site,
- excellent workability: from plastic to cast workability depending on the amount of water added,
- easy application: brush, trowel.

Hardened coating:
- cement-based: excellent compatibility with substrate and high alkaline reinforcement protection,
- vapour-permeable,
- low capillary absorption – water impermeable,
- excellent adhesion to concrete, metal, brick, etc.,
- strong resistance to:
  - changes in temperature,
  - the effects of freeze-thaw cycles and salt,
- high compressive strength - suitable also for walking surfaces and less loaded traffic surfaces,
- increased resistance to chemicals (1),
- safety: safe coating, suitable also for the protection of drinking water tanks,
- durability.

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TECHNICAL DATA

Property	Test	Unit	Standard requirement EN 1504-2	Declared
Dry mixture				
Colour and appearance	Visual	-	-	Grey powder
Maximum size of aggregate particles	-	mm	-	1,0
Recommended total application thickness (mm)	-	mm	-	2-3
Fresh mixture				
Mixing water	-	l	-	approx. 5.6 – 6.4 per 25 kg, depending on the desired workability
Workability	EN 13395-2	mm	-	600 ± 15 %
Workability time	-	min	-	approx. 30 – 60, depending on the quantity of mixing water and the temperature
Working temperature: mortar, substrate, environment	-	°C	-	+ 5°C to + 30°C, optimal: + 15°C to + 25°C

Property	Test	Standard requirement EN 1504-2	Declared
Hardened coating			
Compressive strength, 28 days	EN 12190	Class I: ≥ 35 MPa (for traffic with polyamide wheels)	≥ 35 MPa
Permeability to water vapour	EN ISO 7783-1	Class I: SD < 5 m	S_D < 5 m
Capillary absorption and permeability to water	EN 1062-3	< 0,1 kg/m^{2}h$^{1/2}$	< 0,1 kg/m^{2}h$^{1/2}$
Adhesion, 28 days	EN 1542	Rigid system, with trafficking ≥ 2,0 MPa (the lowest accepted value: ≥ 1,5 MPa)	≥ 2,0 MPa

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Resistant to severe chemical attack (1)	EN 13529 6 for test liquids	Class II Reduction in hardness Shore D < 50 %	Reduction in hardness Shore D < 50 %
Thermal compatibility, Part 1: Adhesion after freeze-thaw cycling with de-icing immersion (50 cycles) (2)	SIST EN 13687-1 (derogation from standard requirement EN 1504-2)	Rigid system, without trafficking: ≥ 1,0 MPa (the lowest accepted value: 0,7 MPa)	≥ 1,0 MPa

(1) **HydroBlocker Hidroizol S** offers excellent protection against occasional, short-term exposure to known test chemicals (heating oil, diesel fuel, diluted solution of organic acids and alkali, NaCl solution, surface active agents, etc.) in the event of leakage. **HydroBlocker Hidroizol S** does not offer protection against constant, long-term exposure and cannot be used as a replacement for adequate protection required for individual casesof exposures to chemicals!
(2) Adhesion after 50 cycles of freezing-thawing in the presence of salt WITHOUT 10 preliminary thunder shower cycles required by EN 1504-2.

APPLICATION GUIDELINES

• SUBSTRATE PREPARATION

Surface to be protected must be free of dust, greasy spots, mould other impurities and loose materials. In cases when the substrate is extremely contaminated, extremely smooth or has cement milk present on its surface, a preliminary mechanical cleaning, grit blasting or water blasting is needed.
Before **HydroBlocker Hidroizol S** is applied to seriously damaged areas, these should be repaired either with **Tekamal MSM, Tekamal Silika MSM** or **Tekamal Alteks** which are the most suitable repair mortars in the range of TKK products.
Well cleaned substrate should be thoroughly soaked with water - water saturated -, but without any standing water or water film which would prevent HydroBlocker Hidroizol S to adhere well to theold substrate.

Highly porous substrates and substrates with an uneven absorption can be primed with a solution of **Cementol Elastosil 34** diluted with water in proportion: 1 part of **Cementol Elastosil 34** and 3-4 parts of water.

• COATING PREPARATION

The most appropriate way of preparing the coating is by adding dry mixture into water during constant mixing. Pour the smallest recommended amount of water and add dry mixture during constant mixing. Mix for 1-2 minutes; scrape any unmixed dry mixture from the sides of mixing drum and mix for another 2-3 minutes until a completely uniform mixture is obtained. Try to entrain as little air as possible. Leave the coating to rest for approx. 10-15 minutes, depending on the desired
workability add more water if needed, then remix and apply. The quantity of mixing water depends on the type of application (brush, trowel), surface position (horizontal, oblique, vertical) and on the absorption properties of the substrate. Workability time is 30-60 minutes; it depends on the quantity of mixing water used, the workability of the obtained mixture and temperature. Remix the mixture several times.

• APPLICATION

HydroBlocker Hidroizol S is applied in two or three layers at right angles. The subsequent layer should be applied when the previous one is stable but not fully set. The time interval between two subsequent layers is approx. 6-24 hours depending on the thickness of the previous layer, quantity of mixing water, temperature and damp in the environment. The final layer should always be applied in the direction of water outflow. The coating (all layers included) should be at least 2-3 mm thick.

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In order to ensure good contact with the substrate it is recommended that the first coating has such workability, which enables for the coating to be thoroughly pressed onto the substrate (brush, toothed trowel, etc.). Since in this case the coating applied cannot be approx. 1mm thick, smaller amount of water is added in the preparation of the second mixture. In this way workability is reduced allowing for the coating to be applied with a trowel in a thicker layer. When protecting horizontal surfaces, two layers must be applied to achieve 2 mm thickness, while the same thickness on vertical surfaces is achieved by applying three thinner layers.

When repairing or applying additional protection onto balconies, terraces and alike, dilatation, working and border joints should be taken into account. To seal dilatation joints, the use of TKKpermanent elastic sealants (**Tioelast KVZ, Tioelast KOS, Tekasil Neutral PROFI** and **Tekaflex MS 15**) is recommended.

Surfaces repaired with **HydroBlocker Hidroizol S** can be easily coated with dispersion- or polymer-based protective coatings (acrylic, epoxy etc.) However, be careful the repaired surfaces are sufficiently dry. In any case, we recommend you consult the coating producer.

• CURING

Freshly applied coating should by all means be protected against excessive evaporation (sun, wind, draught), rain and freezing. When protection is applied onto water tanks it is recommended the coating be left to cure in the air at least 7-10 days prior to filling the tank with water. In case the coating is applied onto drinking water tanks, after this time the tank should be filled with water and leave it to rest for 3 weeks. After that the tank should be emptied, rinsed and refilled with water.

• CLEANING THE TOOLS AND OTHER ACCESSORIES

Tools and other accessories used during work should be thoroughly cleaned immediately after use!

ADDITIONAL RECOMMENDATIONS AND WARNINGS

• Do not apply the coating at temperatures below +5°C and above +35°C!
• Temperature affects workability, setting and hardening time. To achieve optimal results it is recommended the temperature of the substrate before and during the application and 48 hours after the application be 15-25°C.
• Low temperatures (below +10°C) prolong the setting and hardening time. Thus, it is recommended to store the coating in heated places, to use warm mixing water (approx. 20-40°C) and to execute works during the warmest time of a day.
• High temperatures (above +30°C) shorten the setting time. Thus, it is recommended to store the coating in cooled places, to use cold mixing water and to execute works in the coldest part of a day.
• Use only originally packed, closed, non-damaged and adequately stored packs of coating!
• Do not apply coating onto a smooth and dirty surface!
• Never apply coating onto dry substrates!
• Never add water or dry coating to over thickened mixture. Such coating should be thrown away!
• During works follow the requirements of standard EN 1504-10: Products and systems for the protection and repair of concrete structures – Part 10: Site application of products and systems and quality control of the works.
• **HydroBlocker Hidroizol S** is not a decorative coating! If freshly applied coating is exposed to rain, high humidity and/or low temperatures, white spots may form on its surface. This does not affect the quality of the coating, but does affect the appearance and should be taken into account when using the coating to protect visible concrete elements.
• For any additional information and explanations please contact our technical service.

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CONSUMPTION

• approx. 1.8 kg/m2/mm

PACKAING

• 25 kg sacks, 7 kg pails

STORAGE

• **HydroBlocker Hidroizol S** should be stored tightly closed package in a dry and well ventilated space in order to protect it against potential damage and damp.
• If stored in a dry place, in tightly closed and undamaged packaging the shelf life of the product is min. 1 year from the production date.
• The product may still be used after the date of expiry, but the characteristics important for the intended use have to be examined.

SAFETY PRECAUTIONS

Due to cement content, the powdery component irritates the eyes and the skin. In contact with the skin, it may cause allergic reactions, which is why protection gloves must be worn when working with plaster and eye contact must be prevented (protection goggles). Inhaling the powder must also be avoided. During constant work with the mentioned material, breathing protection should be worn.
See Material Safety Data Sheet.

WARNING

Instructions are given on the basis of examinations and technical experience of the firm. However, due to specific conditions and work methods, preliminary tests are advised for every type of use.
Since we cannot influence the course of work, we cannot be held responsible for its quality.

HydroBlocker Hidroizol S complies with the requirements of standard EN 1504-2: Products and systems for the protection and repair of concrete structures – Part 2: Surface protection systems
for concrete; covering/coating (for methods based on principles: 2.2, 6.1, 8.2).

This technical information amends and supersedes all previous issues (06/17).