



HYDROSTOP-REPAIR

Reprofiling PCC mortar with polypropylene fiber



PRODUCT PROPERTIES

- **Highly thixotropic,**
- **Low shrinkage and reduced elastic modulus,**
- **Highly adhesive,**
- **Water-impermeable and freeze-resistant,**
- Concrete-compatible.

ZASTOSOWANIE

Hydrostop-Repair is used for renovating corroded reinforced-concrete structures. It is also used for corrections on structures under construction in case of voids, backward slopes, form-work-related defects and exposed reinforcement with supplementary use of Hydrostop-Passivating. Typically the product is used when the core structural parts and the strength of the structure are not at risk. In other cases it is necessary to get an expert opinion concerning the safety and stability of the structure. The product is used in residential, industrial, public utility as well as road and bridge construction both on the inside and on the outside of structures. It is inflammable.

WORKING PRINCIPLE

Hydrostop-Repair is an enhanced PCC composite - resistant to freezing, with reduced shrinkage, faster curing and polypropylene fiber for even distribution of stresses in the process. Reper is in the form of uniform mortar with fiber as shown in Fig. 1..



Fot. 1. The appearance of dry Hydrostop-Repair with visible polypropylene fiber.

Reper together with the Hydrostop-Passivating mixing liquid ensures strong passivation of steel surfaces and is therefore suitable for filling defects with reinforcement rods exposed.

PREPARATION OF THE SUBSTRATE

The concrete substrate should be at least grade B15. Concrete subject to freezing should be at least F100. The substrate needs to be cleaned of corroded concrete in the first place. The thickness of the layer being removed should be chosen such as to expose healthy concrete with a bond strength of over 2MPa determined by a pull-off test. Repair layers can also be applied onto weak concrete with a bond strength of at least 1MPa, but the properties of the repair materials will not be utilized in full in such cases. The surface should also be cleaned of any dirt, oils, paint coatings and weakly adhesive layers. Water leaks (e.g. leaking cracks or streams) should be stopped with the Hydrostop-Fix fast-setting cement. If there

are defects at the surface or the reinforcement is not protected properly, the protection should be repaired with Hydrostop-Repair mortars. If there is efflorescence from mineral salts on the surface of the concrete, it should be removed using tools appropriate for the kind of work, e.g. a hand or power wire brush, pressure washer (200 bars) with a rotary head, sandblasting or hydrosandblasting machine. The glassy surface of the concrete or steel should at least be abraded by hydrosandblasting and rinsed. The rods' thin concrete protection should be well soaked with Hydrostop-Passivating. Hydrostop-Repair can also be applied onto masonry walls made from bricks, concrete blocks or clay blocks. It is most often used for filling grooves not wider than 40cm and not deeper than 5cm that have appeared along partially corroded reinforcement. In case of strips wider than 40cm being covered with a layer of 1.5cm and thicker, the surface being reprofiled should have corrugated-wire mesh mounted onto it to prevent cumulation of shrinkage. The grid parameters should be allowed based on the following guidelines: Layers about 1.5cm thick are to be reinforced with approx. 4mm-wire mesh with 15cm spacings, layers around 2cm to 6cm thick are to be reinforced with 6mm to 8mm wire with 10cm spacings. The mesh should be anchored using rods set in a strong substrate.

MIXING WITH WATER

The ingredients for the mixture should not be warmer than 20°C before mixing. Pour 25kgs of the product into 3.15 to approx. 3.3kgs of water while mixing at 300 rpm. Keep mixing until the compound is uniform (about 4 minutes). The consistency of the mixture should be such that when applied by hand it bonds well with the wall and does not flow down at a thickness of 5cm. The mixture should be utilized within 30 minutes of mixing the product with water.

APPLYING THE MORTAR

At least 3 days after pouring concrete Hydrostop-Repair can be applied manually or mechanically. The ambient temperature during the work should not exceed 30°C. In temperatures above 20°C, it is advised that Reper stored in a cool area be used with cool water drawn directly from a well or with Hydrostop-Passivating from a refrigerator.

CARE

The binding layer of Reper should be kept moist, preferably covered with transparent PE sheeting. In order to prevent water from evaporating out of the Reper it may be necessary to water-spray the mortar several times per day; however, pouring water directly onto the mortar is not advised.

ADDITIONAL NOTES

The coating may not adhere well if: the substrate was poorly cleaned, the time for application of a mixed product was exceeded, a layer over 2cm thick was put over a width of over 40cm without mesh, the product was applied onto concrete not resistant but subjected to freezing, or the layers became dry while binding or directly afterwards.

FINISHING WORK

The reprofiling layer can be covered with such coatings and materials as those used on concrete, but it is advised that a 3mm to 5mm layer of **Hydrostop-Filler** be used. The latter product has good weather resistance, makes the surface uniform and stops further carbonation of reinforced-concrete structures.

SAFETY PRECAUTIONS

Hydrostop-Repair contains cement clinker, which can cause drying and irritation of the skin and mucous membranes. A safety sheet and health attestation can be provided upon request

TECHNICAL DATA

Nazwa: **Hydrostop-Repair 423**
Product type: reprofiling mortar with polypropylene fiber
Recommended substrate characteristics: concrete $\geq B15$, F100 for outdoor applications, bond strength recommended $\geq 2\text{MPa}$ (acceptable $\geq 1\text{MPa}$), concrete blocks, bricks, reinforced reprofiling layers (product properties will not be fully utilized with worse substrate characteristics)
Packaging size: 25kgs
Approximate yield: 2kgs/liter and 20kgs/1m² per 10mm of thickness
Water amount: 3.3 to 3.7kg/25kgs
Dry weight: 1.50kgs/dm³ $\pm 10\%$
Mortar density: 2.15kgs/dm³ $\pm 10\%$
Layer thickness in crack up to 40cm wide: up to 5cm
Layer thickness for larger areas: up to 1.5cm without steel mesh, up to 6cm with wire mesh over corroded surface
Bending strength after 3 days: $\geq 4\text{MPa}$
Compressive strength after 3 days: $\geq 25\text{MPa}$
Ambient temperature for application: 2°C to 30°C
SCHEDULING:
From pouring concrete to repairs: ≥ 3 days
Time of retaining working properties: approx 30min,
Storage time at 95% humidity: ≥ 5 days,
Use before: 1 year from production (full package).
Reference documents:
technical approval ITB AT-157242/2007, health attestation PZH HK/B/1581/01/2008, safety sheet.
Document updates at www.hydrostop.eu

HYDROSTOP®

HYDROSTOP Zakład Wytwarzania Materiałów Izolacyjnych.

Information, sales and support:

ul. Brzewska 10, 03-046 Warszawa, www.hydrostop.pl

tel. 22-8110895, tel/fax 22-6142666, tel. 602-616556

Sales include courier delivery or in-store pick-up. The manufacturer guarantees product quality whereas the buyer is responsible for the selection of the product as well as its application and conditions of use. Hydrostop is a trademark protected by the Patent Office. The use of Hydrostop means the Delivery Terms have been accepted. This information is subject to change without notice. Last updated on 20 September 2013.