Water based hydrophobic preparation

Product description:

Hydrogard W is a single-component, colourlessly drying preparation in a water-based system and in concentrated form, applicable as hydrophobic impregnation of absorptive substrates of concrete, reinforced concrete, used in road and bridge constructions, railroads, hydraulic inland and marine engineering objects, and in general constructions, including commercial, industrial and housing constructions as well as sports arenas and airport apron areas.

NATIONAL TECHNICAL APPROVAL
Road and Bridge Research Institute No. IBDiM-KOT-2021/0749

Areas of Application:

Hydrogard W is used for surface hydrophobation of absorptive substrates such as concrete, reinforced concrete, mortar, cement and calcareous plaster, concrete slabs, sandstone, colourless silicate bricks. The product can also be used as additional, hydrophobic ingredient in plaster or concrete mass and may be also applied for drying walls by means of injections. It can also be used for hydrophobation or priming underneath suitable water-based or solvent-based paints as well as the KTX 07 anti-graffiti coating. Due to a wide range of available paints, it is recommended, before paint application, to conduct a trial upon the hydrophobised substrate. Do not use on granite, marble or ceramics.

Key product qualities:

- Supplied as concentrate – exceptional consumption efficiency of up to 240 m² per 1 kg of the concentrate
- Water-based – environmentally friendly
- Waterproof 2 hrs after application
- Resistant to weather conditions
- Reduces water absorption
- Reduces penetration by harmful substances, incl. aqueous solutions of salts
- Resistant to alkalis
- Limits appearance of streaks
- Limits moss overgrowth and stops micro-organisms from spreading
- Resistant to UV radiation
- Increases resistance to frost and substrate durability
- Retains water vapour permeability
- Improves consumption efficiency of surface coatings
- Increases paint adhesion to the substrate
- Usually does not change the look of the substrate
- Because of its properties, the product facilitates self-cleaning of dirt under the impact of precipitation, therefore the surface remains clean for a long time, which reduces the cost of cleaning and maintenance thus prolonging the time lapses between servicing the surfaces and ensuring the proper aesthetics.

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Technical Data:
Chemical base: silicones in water arrangement.
Density: 1,39 g/cm³. (PN-EN ISO 2811-1:2016-04)
Viscosity(viscosity cup ISO Φ4 at. 23°C): 27 s. (PN-EN ISO 2431:2019-07)
Capillary absorption: ≤ 0,1 kg•m^{-2}•$h^{-0,5}$. (PN-EN 1062-3:2008)
Concrete surface condition after hydrophobic treatment, after 200 frosting cycles in air and defrosting cycles in water at -18°C / +18°C: no changes.
(Testing procedure of the Road and Bridge Research Institute no. PB/TM-1/13:2009)
Water absorbability limitation indicator: ≥ 53.
(Testing procedure of the Road and Bridge Research Institute no. PB/TM-X5:2012)
pH value at 20°C: 13 -14.
Appearance: transparent, clear.

Substrate:
The substrate must be dry, free from any atmospheric impurities, dust, dirt, cement wash, harmful substances, oil and grease, old coatings as well as biological and organic streaks. The surface may be cleaned by means of sandblasting or high-pressure water cleaning. The residue of cleaning substances must be removed thoroughly as they may have adverse influence on Hydrogard W effectiveness. Substrate durability, checked by the „pull-off" method, should amount to at least 1.0 MPa. Construction parts which are not supposed to get into contact with the preparation should be protected (glass panes, wooden and metal elements; any stains or splashes must be cleaned off with a suitable solvent. Concrete substrate must be seasoned and the substrate age should be no less than 28 days while substrates repaired with PCC-type mortars should be at least 7 days old. Substrate humidity should be below 6%. Before application it is recommended to conduct a test in order to check the interaction between the product and the substrate as well as waterproofing efficiency.

Application:
Hydrogard W is offered in the form of concentrate.
After opening the container stir the content thoroughly and add water to dilute the solution in a suitable proportion by weight.
Surface hydrophobation 1:11 up to 1:15 depending on the substrate absorptiveness.
Waterproofing of airport concrete surfaces 1:11.
Hydrophobation in "mass": add approx. 2 kg of Hydrogard W for each 100 kg of cement used for production of concrete or plaster, reducing the amount of water added by 10% at the same time.
Dipping elements in the preparation for approx. 5 minutes.
Wall drying through injection: 1:9.
Surrounding temperature +5 to +30°C.
Substrate temperature +5 to +30°C.
Substrate humidity – below 6%.
Relative air humidity – up to 80%.
Drying time – from 4 to 12 hours, depending on type and absorptiveness of the substrate and temperature. Protect from rain at least for 3 hrs in temp 20°C.The substrate gains its initial hydrophobic properties after approx. 2 hrs, depending on the substrate type, its

absorptiveness, saturation and temperature. The substrate becomes fully hydrophobic after 12 hrs in temp + 20°C. Water and solvent-based paints as well as KTX 07 anti-graffiti coating can be applied after a minimum of 5 hrs after the application of the hydrophobic coating on condition that the substrate has dried completely. The preparation must not be used during rain. Hydrogard W can be applied by means of regular painting tools, such as paint roller, brush, or with airless or conventional spray to achieve saturation - do not exceed the recommended consumption values per m2. In such a case white spots may appear on the substrate surface. On vertical surfaces the preparation should be applied from bottom to top. In order to obtain suitable, evenly-spread and thorough protection, Hydrogard W should be applied in two layers in short intervals, according to the “wet on wet” principle, i.e, the second layer should be applied just before the first layer achieves the point of external dust-dryness within a single working cycle – the substrate should be still wet. In the case of little-absorptive substrates do not leave unabsorbed residue on the surface. The excess of the preparation should be removed after approx. 10 minutes of the application. The preparation must be applied evenly and thoroughly; negligence may cause local deterioration of the hydrophobic effect. Properly applied, Hydrogard W penetrates the substrate and waterproofs the surface thanks to a chemical reaction with the substrate.

Consumption:

a) concentrate:
1 kg of concentrate is sufficient to cover **120** to **240 m²** depending on dilution.
Dilute the formulation with water depending on the type/absorptivity of substrate at a ratio of 1:11 to 1:15 by weight (by volume: 0.71:11 to 0.71:15)

b) work solution:
1 kg of work solution ensures an efficiency of:
10 m² (100 g/m²) to **15 m²** (67 g/m²) for two layers in total.

To obtain an appropriate and sufficiently durable protection, apply two layers according to the “wet on wet” principle.
Use-by period of the work solution after water dilution: 12 hours.
Efficiency: the data are approximate values that indicate extreme consumption, which depends on individual case and use, including the conditions during application, method of application, type, quality, shape and roughness of the surface to be protected, substrate absorptivity, and losses during application.
Consumption should be established based on application trials.

Packaging:

Canisters: 6,5 kg, 13 kg, 26 kg, barrels 250 kg, pallet tank 1300 kg.

Storage:

In temperatures of +5 ÷ +30°C. Do not expose to direct sunlight.

Shelf life:

12 months from the date of manufacture, in an unopened, closed, original packaging.

Tools Cleaning:
Use a suitable solvent for cleaning painting tools.

Hazard and Safety Instructions::
Pay attention to immediate surrounding and follow the rules for working with chemicals. The preparation must be kept out of children's reach. Wear protective gloves, goggles and clothing during operation.

Marking:

DANGER

ADR/RID: UN 3267, Class 8, II.

Further Information:
Information regarding safety during transportation, storage, use and disposal as well as environmental protection is included in the product's Safety Data Sheet. The above information has been compiled in our production department according to our latest technological developments and application techniques. For the types and methods of application are beyond our supervision, no liability of the producer shall be derived from the contents of this information sheet.
Considering various circumstances and factors conditioning product application, users should not refrain from testing and should follow the regulations in force at one's own responsibility.

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Publication of this edition of Technical Data Sheet renders previous editions invalid.