

Solvent based hydrophobic preparation

Preparation Description:

Hydrogard S is a single-component, colourlessly drying preparation based on silanes and siloxanes in a solvent-based system, applicable for waterproofing 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 S is used for surface hydrophobation of absorptive substrates such as concrete, reinforced concrete, mortar, cement and calcareous plaster, concrete and fibre-reinforced-cement slabs, unglazed bricks, natural stone and sandstone. The product can also be used for hydrophobation or priming underneath water-based or solvent-based paints and 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.

Key product qualities:

- Excellent hydrophobic properties
- Easily applicable – ready to use
- Waterproof within two hours after application
- Resistant to atmospheric impact
- Reduces water absorption
- Reduces penetration by harmful substances, incl. aqueous solutions of salts
- Limits appearance of streaks
- Limits moss overgrowth and stops micro-organisms from spreading
- Resistant to UV radiation
- Increases resistance to frost and substrate durability
- Penetrates concrete substrate well
- Does not block pores or capillaries
- Retains water vapour permeability
- Increases electrical resistance
- 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.

Technical Data:

Chemical base: a mixture of silanes and siloxanes in organic solvent.

Density: 0,79 g/cm³. (PN-EN ISO 12185:2002)

Kinematic viscosity at 20°C: 1,99 mm²/s. (PN-EN ISO 3104:2004)

Flash point: above 58°C.

Capillary absorption: $\leq 0,1 \text{ kg}\cdot\text{m}^{-2}\cdot\text{h}^{-0,5}$. (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: ≥ 57 .

(Testing procedure of the Road and Bridge Research Institute no. PB/TM-X5:2012)

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 S 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 emerging impurities 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 S is in the ready-to-use form. After opening the container stir the content thoroughly. Solvents or water MUST NOT be added.

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 hydrophobic properties after approx. 2 hrs, depending on the substrate type, 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 S can be applied by means of regular painting tools, such as paint roller, brush, or with airless or conventional spray to achieve a saturation level in which the preparation does not drip. On vertical surfaces the preparation should be applied from bottom to top. In order to obtain suitable, evenly-spread and

thorough protection, Hydrogard S 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. The preparation must be applied evenly and thoroughly; negligence may cause local deterioration of hydrophobic effect. Properly applied, Hydrogard S penetrates the substrate and waterproofs the surface thanks to a chemical reaction with the substrate.

Consumption:

Compact concrete: **3,3 m²/L** (0,3 L/m²) do **6,6 m²/L** (0,15 L/m²) jointly for two layers.

Porous concrete: **2,5 m²/L** (0,4 L/m²) do **5 m²/L** (0,2 L/m²) jointly for two layers.

To obtain an appropriate and sufficiently durable protection, apply two layers according to the “wet on wet” principle.

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:

Pails 5 L, 10 L, 20 L., barrels 200 L, pallet tank 1000 L.

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: the product is not classified as hazardous in transport.

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.