BUILDING TRUST

PRODUCT DATA SHEET

Sikagard®-705 L

Liquid passive corrosion inhibitor/hydrophobic impregnation for reinforced concrete

DESCRIPTION

Sikagard®-705 L is a one-component, low viscosity, solvent free, reactive passive corrosion inhibitor for concrete and cementitious substrates based on silane with 99 % active ingredient. Sikagard®-705 L complies with the highest requirements of EN 1504-2 for Hydrophobic Impregnation (penetration depth class II & resistance to freeze and thaw salt stresses).

USES

Sikagard®-705 L is used as water-repellent passive corrosion inhibitor (with hydrophobic characteristics) for absorbent, non watercontacted concrete in civil engineering structures or buildings subjected to heavy exposure to freeze/thaw cycles, carbonation, de-icing salts or chloride attack in marine environment:

- Suitable for protection against ingress (Principle 1, method 1.1 of EN 1504-9),
- Suitable for moisture control (Principle 2, method 2.1 of EN 1504-9)
- Suitable for increasing the resistivity (Principle 8, method 8.1 of EN 1504-9)

CHARACTERISTICS / ADVANTAGES

- Fast uptake even on dense concrete.
- Easy to use.
- Transparent.
- Excellent and deep penetration.
- Reduces corrosion even in cracked concrete.
- Mitigates corrosion rate of depassivated reinforcement bars.
- Prevents chloride migration to reinforcement bars.
- Effective against AAR.
- Can be used on new and corroding, and old, structures.
- Open to water vapour diffusion.
- Increases electrical resistivity in concrete.
- Increases the resistance of concrete to freeze and thaw cycles.
- Resistant to sea water.
- Low VOC content.
- Complies with Dutch guidelines (RWS NEN-EN 1504-2) on CEM III.
- Reduces capillary water absorption, protects against mist and splashing on vertical areas.
- Reduction of absorption of aggressive or deleterious agents dissolved in water (i.e. de-icing salts or chloride from marine environment).
- Ready to use.
- Long term durability.
- Reduced green growth.

APPROVALS / STANDARDS

- Conforms to the requirements of LPM: Suitability test to SIA 162/5, Report No. 1-21’699-6.
- Conforms to the requirement of the “Bro 2002” Swedish National Road Administration (SNRA) publication No. VV2002:47 Report ref: F507580 B rev.
- Evaluation of Conformity According to the Dutch RWS Directive (11-01-2011) and the European Standard EN 1504-2 – Sika MPL; Test Report No. 1203052 dated 09.04.2012.
- Conforms to the requirements of the EN 1504-2 class II – Polymer Institute report P 5634-E dated 5th April 2007.
- Active content - Polymer Institute Ref P5634-E dated 27th June 2008.
- Prevention of chloride ingress - NT Build 515, CBI Sweden, date February 2017.
- Department of Transportation of the State of California, Evaluation of silane penetrating sealer - NPE #14-09-005.
- Hydrophobic impregnation according to EN 1504-2, DoP 02 03 03 01 001 0 000004 1105; certified by Factory Production Control Body: 0921; certificate 0921-CPD-2050 and provided with the CE-mark.
- Report on corrosion testing - P 859/11-440-1, dated July 2011, ZAG, Slovenia.

PRODUCT INFORMATION

Composition	Alkoxy silanes (99 % active ingredient).
Packaging	18 kg pail and 180 kg drum.
Shelf Life	24 months from date of production if stored in unopened, undamaged and original sealed packaging.
Storage Conditions	Store in dry and cool conditions. Protect from moisture.
Appearance / Colour	Water-like liquid, colourless.
Density	~ 0.900 kg/l (at +25 °C)
Viscosity	~9 mm^2/s (at 25 °C)
Volatile organic compound (VOC) content	~327 g/l (ASTM D 3960)

TECHNICAL INFORMATION

Penetration Depth	>10 mm	Class II	(EN 1504-2)
Capillary Absorption	Comply		(EN 13580)
Drying Rate Coefficient	Class I: > 30 %		(EN 13579)
Permeability to Water Vapour	40 × 10^3 s/m (Requirement of BRO 2002: < 200 × 10^3 s/m)		(EN ISO 12 572)
Chloride Ion Diffusion Resistance	Control (CEM II/A-LL 42.5 N; W/C = 0.53)	13.1 × 10^{-12} m^2/s	(SIA 262/1)
	Treated with Sikagard®-705 L	1.2 × 10^{-12} m^2/s	
	Control (CEM III/B 42.5 N; W/C = 0.45)	0.9 × 10^{-12} m^2/s	
	Treated with Sikagard®-705 L	0.6 × 10^{-12} m^2/s	
Resistance to Alkalinity	Comply		(EN 13580)
Freeze Thaw De-Icing Salt Resistance	Comply		(EN 13581)

SYSTEM INFORMATION

System Structure	2–3 coats either as stand alone or combined with surface applied corrosion inhibitor and/or protective coating.

APPLICATION INFORMATION

Consumption	Dependent on absorbency of the substrate as well as the required penetration depth: ~ 150 g/m^2 per coat.
Ambient Air Temperature	+5 °C min. / +35 °C max.
Dew Point	3 °C above dew point.
Substrate Temperature	+5 °C min. / +40 °C max.
Substrate Moisture Content	< 5–6 % when measured with Tramex.
Waiting Time / Overcoating	Can be overcoated with water and solvent based polymer paints - contact the proposed paint manufacturer for recommendations. Sikagard®-705 L can be used as a water repellent primer under many Sikagard® protective coatings inclusive of water based dispersion. Penetration of water is thus prevented at possible weak spots or in the event of

damage to the top coat, and the risk of consequential damages such as paint flaking can be reduced.
Waiting time: Minimum 5 hours, maximum 1 week.

BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

IMPORTANT CONSIDERATIONS

- Best results are achieved when Sikagard®-705 L is applied on 28 day old concrete – however, due to its high alkali resistance it is still possible to apply it at a very early stage. On precast concrete, the application can be done as early as 24 hours after casting (penetration depth may be reduced).
- It is adviced to carry out preliminary application tests to determine the consumption to be used in order to achieve the targeted penetration depth.
- As a guide, for marine structures (e.g. jetties, port, etc.) for corrosion mitigation, for ASR mitigation, it is recommended to achieve at least 5 mm penetration depth.
- Areas such as window frames which have yet to be painted must be securely covered to avoid contact with Sikagard®-705 L.
- Areas which are not to be impregnated, such as window panes, need to be protected from being accidentally contaminated with Sikagard®-705 L.
- Sikagard®-705 L can damage some coatings and bituminous products.
- Especially if applied on to damp concrete, Sikagard®-705 L can lead to darkening of concrete; apply to sample areas first.
- Cannot be overcoated with limewash or cement paint.
- Refer to the latest Method Statement for detailed information regarding surface preparation, preliminary test, application method, etc.

ECOLOGY, HEALTH AND SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

Substrates should be free of dust, dirt, oil, efflorescence and existing paint coatings, salt deposits or any contaminants that may affect the penetration of the chemical.
Cracks in concrete with width lower than 300 µm can be treated with the hydrophobic treatment at the normal consumption rate.
If the crack widths are wider than 300 µm but lower than 750 µm, they can still be treated with the hydrophobic treatment but increase consumption to achieve a specific penetration depth according to the crack width sizes - refer to the Method Statement for details.
Crack widths wider than 750 µm need to be repaired prior to the hydrophobic treatment.
Cleaning is best done with suitable detergents, water jetting or by light blast cleaning or steam cleaning.
Best results are obtained on dry, very absorbent substrates. The substrate must look dry with no damp patches (surface humidity lower than 5-6% using Tramex method).

MIXING

Sikagard®-705 L is supplied ready for use and must not be diluted.

APPLICATION

Sikagard®-705 L is applied using a low-pressure spray, brush or roller, in a single pass from bottom up taking care not to let the product run. Apply subsequent coats either “wet on wet” or when the surface is fully dry. On horizontal applications, avoid ponding on the surface.

CLEANING OF TOOLS

Clean all tools and application equipment with Colma Cleaner or suitable solvent, immediately after use. Hardened / cured material can only be mechanically removed.

LOCAL RESTRICTIONS

Please note that as a result of specific local regulations the performance of this product may vary from country to country. Please consult the local Product Data Sheet for the exact description of the application fields.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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