Construction

Sikafloor®-CureHard-24

Sodium silicate based transparent surface hardener, dustproofer, sealing and curing compound for concrete

Product Description

Sikafloor®-CureHard-24 is a high solids, one part, clear sodium silicate based liquid to cure, harden and seal fresh or hardened concrete.

Uses

- Horizontal old or new concrete surfaces, where a hard surface with light to moderate abrasion resistance is required e.g. warehouses, industrial plants, stores, shopping malls, parking structures, service stations, hangars etc.
- On concrete slabs where no specific curing efficiency or standards are required
- Suitable for interior or exterior applications
- Dust-proofing of prefabricated concrete elements.
- Suitable for protection against ingress (Principle 1, method 1.2 of EN 1504-9).
- Suitable for physical resistance (Principle 5, method 5.2 of EN 1504-9).

Characteristics / Advantages

- Ready to use
- Easy to apply
- Improved chemical and abrasion resistance compared to untreated concrete
- Reduced dusting of concrete floors
- Reduced loss of water of new concrete while setting
- Improves cleanability
- Non-yellowing
- Good penetration
- Solvent free
- Colourless and odourless

Tests

Approval / Standards

Conforms to the requirements of EN 1504-2, Principle Nr.1.2, 5.2.

Test report from the Institut Pro Testování a Certifikaci, a.s., Ref.Nº 412501368/01, dated November 19th, 2010.

Test report from GEOCISA Ref. P-02/01457 dated May 23rd, 2002.
Water retention according to ASTM C-156

Test report from GEOCISA Ref. P-02/01457-A Rev. 1 dated August 7th, 2002
Abrasion resistance according to UNE 48250-92, equivalent to ASTM D-4060

Product Data

Form

Appearance / Colours

Clear liquid

Packaging

20 l Jerrycans, 200 l metal drums.

Storage

Storage Conditions / Shelf Life

24 months from date of production, if stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +5℃ and

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+30℃. Protect from frost.

Technical Data

Chemical Base
Sodium silicate water dilution.

Density
~ 1.2 kg/l (at +20℃)

Curing Efficiency (ASTM C - 156)

	Loss of water g/100 cm²	Loss of water compared to ASTM C309 (100% = 5.5 g / 100 cm²)	Loss of water compared to untreated concrete (100% = 18.7 g / 100 cm²)
Sikafloor®-CureHard-24	10.92	198.5%	58.4 %

Solid Content
~ 24% (by weight)

Mechanical / Physical Properties

Abrasion Resistance
35% increase in abrasion resistance compared to **C25** concrete
(Taber Abraser, H-22 Wheel, 1000g / 1000 cycles) (ASTM D-4060)
Internal test

8,8% increase in abrasion resistance compared to **C35** concrete
(Taber Abraser, H-22 Wheel, 1000g / 1000cycles) (UNE 48250-92 / ASTM D-4060)
External test

250 mg or 81.8% increase in abrasion resistance compared to untreated sample (C(0,70) concrete according to EN 1766)
(Taber Abraser, H-22 Wheel, 1000g / 1000cycles) (EN 5470-1)

Capillary absorption and permeability to water
$w = 0.03\ kg/m^2xh^{0,5}$ (EN 1062-3)

Impact Resistance
60 Nm (class III: ≥ 20 Nm) (EN 6272-1)

Pull off test
4.84 N/mm^2 (EN 1542)

Depth of Penetration
5.5 mm (Table 3 contained in ČSN EN 1504-2)

System Information

System Structure
Curing compound 1 - 2 coats
Hardener / Sealer 1 - 2 coats

Application Details

Consumption / Dosage
0.15 - 0.25 l/m^2/coat (4 - 7 m^2/l coat).

This figure is theoretical and does not include for any additional material required due to surface porosity, surface profile, variations in level and wastage etc.

Substrate Quality
Fresh concrete:
Surface must be free of bleed water and of sufficient strength to withstand finishing operations.

Hardened / old concrete:
Surfaces must be sound, open textured, clean, free from frost, laitance, surface water, oils, grease, coatings, all loosely adhering particles and other surface contaminants.

If in doubt apply a test area first.

For best results, new concrete floors must be treated with Sikafloor® -CureHard-24 at least 7 - 14 days after their placement or after the cement has had sufficient time to hydrate.

Substrate Preparation	*Fresh concrete:* The concrete must be prepared by suitable power or manual floating/tamping techniques. *Hardened / old concrete:* The substrate must be prepared by suitable mechanical preparation techniques such as high pressure water and allowed to dry or abrasive blast cleaning equipment. All dust, dirt, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and / or vacuum.
Application Conditions / Limitations	
Substrate Temperature	+5℃ min, +35℃ max.
Ambient Temperature	+5℃ min, +35℃ max.
Substrate Moisture Content	Can be applied on green concrete, without any bleed water.
Relative Air Humidity	100% max.
Application Instructions	
Mixing	Product is supplied ready to use.
Application Method / Tools	*Fresh Concrete:* Apply in a continuous film using a high volume low pressure spray unit as soon as the surface is firm enough to walk on and in sufficient quantity to keep the surface damp for at least 30 minutes. After ~ 30 to 45 minutes, the material begins to gel and becomes slippery. Wet the material lightly with a water spray to reduce slipperiness and rework into the surface for 10 - 20 minutes with a soft bristle broom or floor-scrubbing machine. After about 20 minutes, the material will return to a gel. Rinse the floor and remove any excess material using a squeegee, wet vacuum or mop. *Hardened Concrete:* Apply in a continuous film using a high volume low pressure spray unit. To ensure maximum penetration, scrub material into the surface with a soft bristle broom or floor-scrubbing machine (min. 30 minutes), until material begins to gel and become slippery. Wet the material lightly with a water spray and rework it into the surface for another 10 - 20 minutes. After this process, rinse the floor and remove any excess material using a squeegee, wet vacuum or mop. On porous, rough-textured or broom-finished surfaces, a second coat may be required. For large surfaces and greater placing rates, mechanical equipment such as ride-on cleaning machines can be also used to place, brush in and remove the excess material from the surface.
Cleaning of Tools	Clean all tools and application equipment with water immediately after use. Hardened / cured material can only be mechanically removed. Do not use sprayers that were used for spraying silicones or release agents (oils).
Waiting Time / Overcoating	Where 2 coats are required to ensure maximum densification the second coat can be installed 2 - 4 hours following the first. Allow previous coats to become tack free before applying additional coats.

Temperature	Time
+5℃	~ 4 hours
+10℃	~ 3.5 hours
+20℃	~ 3 hours
+25℃	~ 2 hours

Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity.

Drying Time	The surface is touch-dry after 2 hours at +20 ℃. Maximum sealing and hardening effect achieved after ca 7 days at +20 ℃.

Notes on Application / Limitations

In hot weather (above +25℃) store Sikafloor®-CureHard-24 in a cool place prior to use.

In low temperatures (below +10℃) the product may t hicken and be difficult to spray.

Do not use sprayers, which have been used to spray silicones or release agents.

Do not mix differing formulations of Sika® or other curing membranes.

Ensure spraying equipment is cleaned thoroughly before use and residues of previous membranes are removed.

Sikafloor®-CureHard-24 must be treated mechanically (from light to heavy shot blasting depending on the depth of the penetration) prior to the application of a coating system.

Sikafloor®-CureHard-24 will increase abrasion resistance compared to untreated concrete of the same type.

Immediately wash over-spray from glass, aluminium or highly polished surfaces with water to avoid etching of surfaces.

Do not use on substrates treated previously with curing agents, membrane forming sealers or asphalt until these layers have been removed completely.

Only use as curing compound for unregulated specification application.

Gelification time may be increased at low temperatures (below +10℃), high humidity (from 80% to 100%) or wind free conditions.

In hot weather conditions (above +25℃), gelificati on may occur before material has penetrated sufficiently. In such case, apply additional Sikafloor®-CureHard-24 to keep the surface wet for the recommended 30 minutes.

When applying, leave no dry spots in order to have homogenous performance. Touch up where necessary.

For both old and new concrete, thoroughly wash and remove off residue or excess material. This is important as it is difficult to do so if allowed to dry and may result in unsightly white stains. This residue solution is non toxic and can be emptied into a sanitary sewer.

Performance enhancement of the substrates will vary greatly depending on the age, cement content, humidity content, porosity and penetration of the product into the substrate.

Sikafloor®-CureHard-24 will not compensate for poor substrates with low cement content. It is not intended for substrates which are lightweight or extremely porous or have worn (aggregate exposed) surfaces.

Sikafloor®-CureHard-24 will not hide serious staining or excessive wear.

Curing Details

Applied Product ready for use

Substrate temperature	+10℃	+20℃	+30℃
Fully serviceable	~ 6 hours	~ 5 hours	~ 4 hours

Note: Times are approximate and will be affected by changing ambient and substrate conditions.

Cleaning / Maintenance

Methods

To maintain the appearance of the floor after application, Sikafloor®-CureHard-24 must have all spillages removed immediately and must be regularly cleaned using rotary brushes, mechanical scrubbers, scrubber dryers, high pressure washers, wash and vacuum techniques, etc., using suitable detergents and waxes.

The frequency and intensity of the wet cleaning will directly influence the how soon and how deep the glossy anti-dust surface develops.

Value Base

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.

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.

Construction

Health and Safety Information	For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Material Safety Data Sheet containing physical, ecological, toxicological and other safety-related data.
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.
EU Regulation 2004/42 **VOC - Decopaint Directive**	According to the EU-Directive 2004/42, the maximum allowed content of VOC Product category IIA / **h** type **wb**) is 30 g/l (Limit 2010), for the ready to use product. The maximum content of **Sikafloor®-CureHard-24** is < 30 g/l VOC for the ready to use product.

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