

Technical Data Sheet

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® KERAPLAN VE 113

Two-component, vinylester resin coating system for floorings exposed to extreme chemical attack

Description

KERAPLAN VE 113 is a pigmented, jointless, nonylphenol-free synthetic resin coating based on vinylester resins. Various systems can be formulated on site by adding aggregates to the mixed basic components (modular system). The film thickness is approx. 1.0 – 2.0 mm.

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- trowel-applied scratch coat (optional)
- self-leveling floor coating
- roller-applied coating
- slip-resistant top coat (R9-R10)
- broadcast coating R12

Typical use

KERAPLAN VE 113 is used as a colored finish coat applied to vinylester resin coatings as well as to concrete and screed surfaces.

This product is primarily applied as a flooring system in chemical process plants and electroplating plants, on storage surfaces for liquids that are hazardous to water, in production halls, workshops, loading and handling areas as well as traffic areas.

Properties

KERAPLAN VE 113 is a floor coating that is fit for vehicular traffic, can be exposed to mechanical loads and has a very broad chemical resistance spectrum.

Owing to the modular system design, it is possible to create various surface finishes, e.g. very dense, unstructured or structured as well as slip-resistant.

Chemical resistance

Information relative to the chemical resistance properties is available upon request.

Substrate

Concrete components must meet the requirements specified in DIN EN 14879-1. KERAPLAN VE 113 can also be applied onto vinylester resin laminate coatings.

Surface pretreatment

If required, the concrete surface must be prepared by abrasive blasting or other suitable mechanical methods to remove cement slurries, cement skin, loose or brittle particles, defects and parting compounds. The residual moisture of the concrete surface must be less than 4%.

VE-Laminate coating – The surface of the vinylester resin coating to be coated must be free from substances with a separating action as well as from impurities. If KERAPLAN VE 113 is applied within the allowed overcoat interval no further treatment is required. Coatings that have already been exposed to stress must be mechanically roughened (grinding, sandblasting) prior to application of the coating.

Surface tensile strength should exceed 1.5 N / mm² on average; the residual moisture of the concrete surface should be less than 4%.

Application

Primer for concrete surfaces

The primer is composed of 3 components.

Primer	Parts by weight (kg)	Parts by volume (l)
KCH UP solution 1	100	2.00
KCH UP solution 3	10	0.17
KCH UP hardener 2	3	1 bag (60 g)

Premix Solution 1 and 3, then add the hardener and mix thoroughly until the hardener has dissolved completely. Apply the mixed compound to the substrate and broadcast a scant amount of KCH powder 6 (particle size 0.4 to 0.7) evenly over the surface. It is important to ensure that no puddles form, that all pores are sealed and that a uniform surface is achieved.

Coverage: approx. 0.4 kg / m² (Compound)
KCH powder 6 approx. 0.1 kg / m²

Coverage will depend on the temperature, absorbency and roughness of the substrate.

Pot life

Temperature	Primer
15°C	approx. 45 minutes
20°C	approx. 35 minutes
30°C	approx. 15 minutes

Leveling coat / Scratch coat (optional)

If required, a leveling coat consisting of KERAPLAN VE 113 mixed with KCH powder 7 (silica sand, particle size 0.1 – 0.3 mm) can be trowel-applied to level uneven surfaces with voids and larger pores.

Film thicknesses in excess of 3mm must be carried out one layer at a time.

Leveling coat (wall)	Parts by weight (kg)	Parts by volume (l)
KCH VE sol. 23 RAL	100	2.00
KCH UP hardener 1	2	0.05
KCH thixotropic agent 1	2	1.00
KCH powder 7	70	1.43

Leveling coat (floor)	Parts by weight (kg)	Parts by volume (l)
KCH VE sol. 23 RAL	100	2.00
KCH UP hardener 1	2	0.05
KCH thixotropic agent 1	1	0.50
KCH powder 7	100	2.00

Coverage: approx. 1.85 kg / m² / mm
(Compound)

Broadcast coating (approx. R 12)

While the mixed KERAPLAN VE 113 coating material that has been applied in a film thickness of approx. 1 mm is still fresh, broadcast a liberal amount of KCH powder 5 (silica sand, particle size 0.7 – 1.2 mm) evenly over the wet surface.

Broadcast coating	Parts by weight (kg)	Parts by volume (l)
KCH VE sol. 23 RAL	100	2.00
KCH UP hardener 1	2	0.05

Coverage KERAPLAN VE 113: approx. 1.5 kg/m²
Coverage KCH powder 5: approx. 3.5 kg/m²
After removing any unbonded silica sand on the following day, apply the sealant coating uniformly using a rubber float or a roller.
Coverage top sealer: approx. 0.6 kg / m²
(Compound)

Sealer, roller-applied coating

Apply the compound carefully to the substrate by means of a roller (Perlon wool) or a rubber squeegee. Special care should be taken to avoid puddles/sagging and to ensure that all voids are filled.

Sealer, roller-applied coating	Parts by weight (kg)	Parts by volume (l)
KCH-VE-Sol. 23 RAL	100	2.00
KCH-UP-Hardener 1	2	0.05

Coverage per roll pass: approx. 0.4 kg / m²
(compound)

Self-leveling floor coating

Mix the pre-dosed components thoroughly until a homogenous compound is achieved.

Self-leveling floor coating	Parts by weight (kg)	Parts by volume (l)
KCH-VE-Sol. 23 RAL	100	2.00
KCH-UP-Hardener 1	2	0.05

Spread KERAPLAN VE 113 evenly onto the substrate using a notched smoothing trowel or a rake, in a film thickness of approx 1.5 – 1.8 mm. The freshly applied coating must be rolled crosswise with a spiked roller immediately to eliminate air bubbles.

Coverage: approx. 1.5 kg / m² / mm (compound)

KCH-finish to increase the scratch-resistance of the top coat

KCH-finish is applied thinly to the cured, clean top coat using a wet mop. Once the surface has completely cured, the finish can be buffed with a polishing machine if desired.

Coverage: approx. 1 liter / 25 m²
Fit for foot traffic after: 8 hours

Slip-resistant top coat (approx. R9- R10)

Add approx. 10 % in weight of KCH powder 7 to the KERAPLAN VE 113.

Slip-resistant top coat	Parts by weight (kg)	Parts by volume (l)
KCH VE sol. 23 RAL	100	2.00
KCH UP hardener 1	2	0.05
KCH powder 7	10	0.21

Roll the compound evenly over the already applied and cured KERAPLAN VE 113 coating. Stir the compound frequently to prevent the powder from settling.

Coverage: approx. 0.4 kg / m² (compound)

Pot life

Temperature	KERAPLAN VE 113
15°C	approx. 40 minutes
20°C	approx. 30 minutes
30°C	approx. 20 minutes

Packing

The products are shipped in the following standard packing units:

KCH VE solution 23 RAL	20 kg
KCH UP solution 1	5 kg
KCH UP solution 3	5 kg
KCH UP hardener 1	0.4 kg
KCH UP hardener 2	bag 60 g
KCH thixotropic agent 1	1 kg
KCH powder 5	25 kg
KCH powder 6	25 kg
KCH powder 7	25 kg
KCH thixotropic agent 1	1 kg

Storage

Store the products in a cool and dry location. The minimum shelf life for each component at a storage temperature of 23 °C is indicated below:

KCH VE solution 23 RAL	3 months
KCH VE solution 23 RAL < 15 °C	6 months
KCH UP solution 1	6 months
KCH UP solution 1 < 15 °C	9 months
KCH UP solution 3	6 months
KCH UP solution 3 < 15 °C	9 months
KCH UP hardener 1	6 months
KCH UP hardener 2	6 months
KCH thixotropic agent 1	24 months
KCH powder 5	24 months
KCH powder 6	24 months

KCH powder 7	24 months
KCH thixotropic agent 1	24 months

Higher temperatures will shorten the shelf life of these products. Keep the packing units tightly sealed and reseal each time materials have been removed.

Safety

Adequate ventilation is to be provided while work is in progress. Forced ventilation is compulsory for all work carried out in pits and enclosed areas.

All vapors produced while work is in progress must be continuously suctioned off at floor or bottom level.

Only such amounts of material as required for the uninterrupted execution of the works are to be stored at the work place.

All regulations relative to fire and explosion protection shall be complied with as required.

Special care shall be taken to ensure that no amounts of the individual components and/or the mixed compounds are released into the drainage systems.

All regulations for the prevention of accidents stipulated by the employer's liability insurance association, the pertinent accident prevention regulations prescribed at the site of application and the TRGS 507 "Surface Treatment in Rooms and Tanks" as well as the safety precautions listed on the packages (label) pursuant to the provisions of the Hazardous Materials Ordinance shall be adhered to. The operating instructions as specified in § 14 GefStoffV (Hazardous Materials Ordinance) as well as the EC Safety Data Sheets are to be complied with.

Technical Data	Test Specification	Unit	Parameter
Density	DIN EN ISO 1183-1	g/cm ³	1.46
Compressive strength	DIN EN ISO 604	MPa	107
Tensile strength	DIN EN ISO 527	MPa	30
Elongation at break	DIN EN ISO 527	%	0.6
Flexural strength	DIN EN ISO 178	MPa	56
Modulus of elasticity (flexural test)	DIN EN ISO 178	MPa	6,000
Adhesive strength to concrete/screed ^{*)}	DIN EN ISO 4624	MPa	> inherent strength of substrate
Hardness	DIN 53505	Shore D	80
Leakage resistance to earth	DIN EN ISO 1081	Ω	> 10 ⁹
Coefficient of linear thermal expansion	DIN 53752	K ⁻¹	60 · 10 ⁻⁶
Maximum service temperature		°C	100

^{*)} compressive strength 25 MPa

The data contained herein represent the current state of our product knowledge and are intended to furnish general information regarding our products and their application spectra. In view of the diversity and multitude of application possibilities, this information should be regarded as a guideline only, which does not guarantee any specific properties and/or suitability of these products for any particular application. Consequently, prior to placing an order for a product, we recommend that you provide us with the specific properties required for the intended application. Upon request, our technical service will immediately draw up a detailed property profile for that concrete application.

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شرکت کسری نماینده رسمی KCH آلمان