

Technical Data Sheet

33.06.700E – 07/06

® KERACID VE 520

Crack-bridging, electrically dissipating sealing system for highly chemically stressed concrete surfaces

General construction regulation approval No. Z-59.12-96

Description

KERACID VE 520 is a jointless glass fibre reinforced synthetic resin coating containing a laminated layer consisting of highly chemically resistant vinyl ester resin. Complying with the specifications of DIN EN ISO 1081 as well as the directive „Static Electricity“ ZH 1/200 issued by the General Council of the Industrial Trade Association this coating is able to dissipate electrostatic load. The layer thickness adds up to approx. 2.5 mm. In addition, the laminate coating may be combined with various top coats of different surface structure from KCH's product range.

Typical uses

KERACID VE 520 is recommended as a multi-functional sealing system for floor and wall surfaces, particularly in such cases where crack-bridging of the substrate as well as high tolerance to heavy mechanical loads together with a high chemical resistance are required.

The primary application spectrum is for the lining of storage rooms, collecting basins and retaining vessels utilised for the storage of water-polluting liquids in plants. Usually such plants are operated in the chemical industry or other industrial branches, which in Germany require a general construction regulation approval to be issued by the German Civil Engineering Institute („Allgemeine bauaufsichtliche Zulassung des DIBt“).

KERACID VE 520 is also highly suitable for application as a sealing layer underneath synthetic resin coatings and ceramic tiling as well as for the lining of tanks and pits. In view of its electric dissipation ability for electrostatic load KERACID VE 520 is also recommended for applications where spark occurrence needs to be avoided due to potential risk of explosion

Properties

KERACID VE 520 is characterised by its uncomplicated assembly. Its crack-bridging features with excellent chemical resistance properties.

KERACID VE 520 has been tested according to the construction and testing principles of the DIBt and it is approved for all test groups (1-15) as well as for other media. This provides a high degree of security ensuring the protection of our water supply.

The lining is fit for traffic and it is electrically dissipate. Hence it is particularly suitable for application in areas that are exposed to combustible liquids of the VbF-categories AI, AII and B, e.g. solvents.

Depending on the top coat selection, the surface may be executed non-skid or light colour shaded.

Chemical resistance

Stress level "high" according ZG of the DIBt		
1.	Fuels acc. DIN 51600 and DIN EN 228	•
2.	Aviation fuels	•
3.	Fuel oil EL acc. DIN 51603-1 and diesel oil acc. DIN EN 590, unused engine oils and unused automobile gear oils as well as mixtures of aliphatic and aromatic hydrocarbons containing ≤ 20% vol. aromatic compounds and having a flash-point of > 55°C	•
4.	All hydrocarbons incl. 2 and 3 except 4a and 4b as well as used engine oils and used automobile gear oils	•
4a.	Benzene and mixtures containing benzene (incl. 2-4b)	•
4b.	Raw oils	•
4c.	used combustion-engine oils and used motor vehicle gear oils with a flash-point of > 55°C	•
5.	All alcohols (up to 48% max. methanol) and glycol ethers	•
5a.5b.		•
6.	All halogenated hydrocarbons	•
6a.6b.		•
7.7a	All organic esters and ketones	•
8.8a.	Aliphatic aldehyds and their aqueous solutions	•
9. 9a.	Aqueous solutions of organic acids (carbon acids except formic acid >10%) as well as their salts (in aqueous solution)	•
10.	Mineral acids up to 20% as well as acid-hydrolysing, inorganic salts in aqueous solution (pH < 6), except hydrofluoric acid and oxidising acids and their salts	•
11.	Inorganic lyes as well as aqueous solutions (pH > 8) of alkaline-hydrolysing inorganic salts, except ammonia solutions and oxidising (salt) solutions (e.g. hypochlorite)	•
12.	Aqueous solutions of inorganic, non-oxidising salts of a pH-value ranging between 6 and 8	•
13.	Amines and their salts (in aqueous solution)	•
14.	Aqueous solutions of organic surfactants	•
15.	Cyclic and acyclic ethers	•
15a.		•

Additional tests	
Formic acid ≤ 100%	•
Ammonia solution ≤ 32%	•
Chromic acid ≤ 50%	•
Hydrofluoric acid ≤ 70%	•
Mixed acid (25% Nitric acid and 5% Hydrofluoric acid)	•
Sodium hypochlorite solution with 150 g/l CL ₂	•
Phenol (Technical product)	•
Phosphoric acid ≤ 85%	•
Nitric acid ≤ 65%	•
Hydrochloric acid ≤ 37%	•
Sulphuric acid ≤ 80%	•
Aqueous hydrogen peroxide solution ≤ 70%	•

Further information on the chemical resistance properties are available on request.

Substrate

The concrete structural components shall comply with the specifications given in DIN EN 14879-1 .

Surface pre treatment

If required, the concrete surface shall be treated by means of to ensure that it is free of laitance, cement skin, loose or brittle particles, structural flaws and any substances that may act as separating agents. The residual moisture of the concrete surface should measure < 4%.

Application

KERACID VE 520 is composed of a two-component primer, a two-component intermediate layer as well as a two-component dissipating Laminate Layer into which two KCH-mats 300 as well as a KCH-fibrous web 20L are embedded.

Mixing ratios	Parts by weight (kg)	Parts by volume (l)
<u>Primer</u>		
KCH VE solution 8	100	2.00
KCH UP hardener 1	2	0.04
<u>Intermediate Layer</u>		
KCH VE solution 1	100	2.00
KCH UP hardener 1	2	0.04
<u>Top Layer</u>		
KCH VE solution 8	100	2.00
KCH UP hardener 1	2	0.04

The primer is spread onto the substrate by means of a roller. The Intermediate Layer is then applied on the tack-free primer in a thickness of approx. 1.2 mm utilising a smoothing tool. The first KCH mat 300 is laid on the fresh Intermediate Layer, rolled down and soaked with the Top Layer compound. Then the second KCH mat 300 is laid onto this fresh layer, also rolled down and soaked with the Top Layer compound.

Copper bands or carbon cords are then installed to provide a connection to the earth potential. Finally, the KCH-Fleece 20L is applied and rolled down. The total coating thickness should come up to 2.5 mm.

Pot life

Temperature	Primer / Intermediate Layer / Top Layer
15 °C	~ 40 min.
20 °C	~ 30 min.
30 °C	~ 15 min.

Coverage

Primer:	approx. 0.3 kg/m ²
Intermediate Layer:	approx. 1.5 kg/m ²
Top Layer:	approx. 2.0 kg/m ²

Packing

The following standard quantities are available:

KCH VE solution 1	20 kg
KCH UP hardener 1	0.4 kg
KCH VE solution 8	20 kg

Storage

The products shall be stored in a cool and dry place. With a storage temperature of 23 °C the minimum shelf life is as follows:

KCH VE solution 1	3 months
KCH VE solution 1 < 15 °C	9 months
KCH VE solution 8	3 months
KCH VE solution 8 < 15 °C	6 months
KCH UP hardener 1	6 months
KCH mat 300	24 months
KCH fleece 20L	24 months
Carbon cords	24 months
Copper bands	24 months

Higher temperatures will shorten the shelf life of this products. Packaging drums are to be kept tightly shut and are to be resealed each time material has been removed. All liquid products must be stored frost-free.

Safety

Adequate ventilation is to be provided while work is in progress. Ventilation is compulsory for all work carried out in pits and closed rooms. All vapours that are produced while work is in progress must be continuously suctioned off at floor or bottom level.

Only the amount of material effectively required to continue work is to be stored at the working place. The instructions for the prevention of fire and explosion are to be observed if required.

Please note and ensure that even the smallest quantities of the individual components and/or prepared mixtures are not allowed to reach the sewerage.

All regulations for the prevention of accidents stipulated by the employer's liability assurance association, the regulations for the prevention of accidents 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 packing (label) required by the provisions of the Hazardous Materials Ordinance shall be adhered to. The operating instructions pursuant to § 14 GefStoffV 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	1.5
Tensile strength ^{*)}	DIN EN ISO 527	MPa	85
E-module (tensile test) ^{*)}	DIN EN ISO 527	MPa	8,000
Flexing strength ^{*)}	DIN EN ISO 178	MPa	95
Crack-bridging	DIBt-ZG	mm	0.3
Adhesiveness to concrete/screed ^{**)}	DIN EN 24624	MPa	> inherent strength substrate
Barcol-Hardness	DIN EN 59		35
Dissipation Resistivity (to ground)	DIN EN ISO 1081	Ω	< 10 ⁶
Linear thermal expansion coefficient ^{*)}	DIN 53752	K ⁻¹	30 · 10 ⁻⁶
Max. operational temperature		°C	100

^{*)} values applicable to laminate layer

^{**)} compressive strength 25 MPa

The technical data contained herein represents the current state of our product knowledge and is intended to furnish general information regarding our products and their application spectrum. In view of the diversity and multitude of application possibilities, this data should be regarded solely as general information, which does not guarantee any specific properties and/or suitability of these products for each concrete case of application. Consequently, when ordering a product, please contact us for detailed information relative to the properties required for a specific application. Our technical service will, upon request, furnish a profile of characteristics for the concrete application without delay.

KCH GROUP GmbH

P.O. Box 11 63, D-56425 Siershahn

Phone: +49 (0) 2623-600-0 / Fax: +49 (0) 2623-600-433 / eMail: info@kch-group.com

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