Technical Data Sheet

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® KERAPLAN VE 540

Electrically dissipating anti-skid synthetic resin coating for floorings subjected to severe chemical and mechanical stress

Description
The anti-skid KERAPLAN VE 540 is a jointless glass fibre reinforced vinyl ester resin based coating containing mineral fillers. Complying with the specifications of DIN EN 1081 as well as the directive "Static Electricity" ZH1/200 issued by the General Council of the Industrial Trade Association this coating is able to dissipate electrostatic load. The layer thickness is approx. 3 mm.

Typical uses
KERAPLAN VE 540 is recommended as a surface protection system particularly for concrete and screed surfaces being exposed to high mechanical loads and where chemical attack through oxidising media and/or other highly aggressive substances is expected.
Its primary application spectrum is for floorings in chemical factories, galvanising plants, warehouses and workshop halls, workshops, loading and reloading areas as well as heavy traffic areas. In view of its dissipation ability for electrostatic load, it is also highly recommended for application in all areas where sparking due to potential risk of explosion needs to be avoided.

Properties
The flooring KERAPLAN VE 540 is fit for traffic and highly resistant to mechanical loads, which is also characterised by its excellent chemical resistance to acids, lyes, oxidising media and solvents.
This coating is particularly suitable for application in all areas that are temporarily subjected to liquids of the VbF-categories AI, AII and B (solvents, e.g. alcohol, hydrocarbons, ketones or esters) and hence are required to be electrically dissipating. The dark grey coloured KERAPLAN VE 540 is skid-proof. It may be applied without joints and hardens with a minimum of shrinkage.

Chemical resistance
Information on the chemical resistance properties will be provided on request.

Substrate
All concrete structures must satisfy the requirements given in DIN EN 14879-1.

Surface pre-treatment
If required, the concrete surface must be treated by means of blasting in such a way that it is free from cement slurries, cement skin, loose and brittle particles, defects and separating substances. The residual moisture of the concrete surface should be < 4%.

Application
KERAPLAN VE 540 is composed of a three-component Primer, a three-component electrically dissipating Laminate Layer into which a KCH mat 300 and a KCH fleece 30 are embedded, as well as a three-component, electrically dissipating Top Coat.

Mixing ratios	Parts by weight (kg)	Parts by volume (l)
Primer		
KCH VE solution 20	100	2.00
KCH UP accelerator 4	1.7	0.04
KCH UP hardener 1	2	0.04
Laminate Layer		
a) Laminating filler		
KCH VE solution 20	100	2.00
KCH UP accelerator 4	2	0.05
KCH UP hardener 1	2	0.04
CEILCOTE B-4 powder	100	2.90
b) Laminating solution		
KCH VE solution 20	100	2.00
KCH UP accelerator 4	1.7	0.04
KCH UP hardener 1	2	0.04
CEILCOTE B-4 powder	2	0.10
Top Coat		
KCH powder 5 or KCH powder 32L	sprinkle	sprinkle
KCH VE solution 2L dark grey	100	2.00
KCH UP hardener 4	2.5	0.06
KCH powder 51	35	0.60

Distribute Primer evenly onto the substrate by means of a roller. Install copper bands to provide a connection to ground potential. Next apply the laminating filler. Embed

the KCH mat 300 into the freshly applied filler layer, roll it down and saturate it with the laminating solution. Then roll in the KCH fleece 30, saturate it with the solution. Sprinkle either KCH powder 5 or KCH powder 32L liberal onto the wet Laminate Layer. When the layer has cured, remove any residual powder. Apply Top Coat with the aid of a roller. The overall coating thickness shall be approx. 3 mm.

Pot life

Temperature	Primer / Laminate filler / Laminate solution / Top Coat
15°C	~ 40 min.
20°C	~ 30 min.
30°C	~ 13 min.

Coverage

Primer:		approx. 0.4 kg/m²
Laminate Layer:	filler	approx. 1.2 kg/m²
	solution	approx. 1.0 kg/m²
Strewing material*:		approx. 0.8-1.3 kg/m²
Top Coat*:		approx. 1.0-1.5 kg/m²

(*depending on the desired anti-skid grade)

Packing

The following standard quantities are available:

KCH UP hardener 1	0.3, 0.4 kg
KCH VE solution 20	20 kg
KCH UP hardener 4	0.5 kg
KCH UP accelerator 4	10 kg
CELCOTE B-4 powder	22.7 kg
KCH conductive filler 1	1 kg
KCH powder 5	25 kg
KCH powder 32L	25 kg
KCH VE solution 2L dark grey	20 kg
KCH powder 51	25 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 UP hardener 1	6 months
KCH VE solution 20	5 months
KCH VE solution 20 < 15 °C	6 months
KCH UP hardener 4	6 months
KCH UP accelerator 4	6 months
CEILCOTE B-4 powder	24 months
KCH powder 5	24 months
KCH powder 32L	24 months
KCH VE solution 2L dark grey	3 months
KCH VE solution 2L dark grey < 15 °C	6 months
KCH powder 51	24 months
KCH conductive filler	24 months
KCH mat 300	24 months
KCH fleece 30	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/cm³	1.5
Compressive strength *)	DIN EN ISO 604	MPa	100
Tensile strength *)	DIN EN ISO 527	MPa	25
Elongation at break *)	DIN EN ISO 527	%	0.6
Flexural strength *)	DIN EN ISO 178	MPa	50
Modulus of elasticity (bend test) *)	DIN EN ISO 178	MPa	5,200
Adhesive strength to concrete / screed **)	DIN EN 24624	MPa	> inherent strength of substrate
Hardness	DIN 53505	Shore D	88
Dissipation Resistivity (to earth)	DIN EN ISO 1081	Ω	$< 10^6$
Coefficient of linear thermal expansion *)	DIN 53752	K^{-1}	$40 \cdot 10^{-6}$
Max. operating temperature		°C	100

*) values applicable to laminate layer **) compressive strength 25 MPa

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