BUILDING TRUST

PRODUCT DATA SHEET

SikaCor® VEL

Conductive vinylester laminate system

DESCRIPTION

SikaCor® VEL is a glass fibre reinforced, 2-pack vinylester based coating system and an inert powder:
- SikaCor® VEL primary screeding
- SikaCor® VEL laminate
- SikaCor® VEL top coat

USES

SikaCor® VEL may only be used by experienced professionals.

SikaCor® VEL is suited for sealing reinforced concrete receiving vats and chambers, indoors or outdoors, or for steel tanks for the storage of aggressive liquids (e.g. concentrate acids, leaches and solvents).
SikaCor® VEL is also suitable as a coating system to be driven on directly by vehicles with pneumatic tyres or with tyres of solid rubber, Vulkollan or polyamide, e.g. in electroplating works, pickling plants, and in plants where oxidising materials are manufactured, treated or used.

CHARACTERISTICS / ADVANTAGES

- Wide ranging chemical resistance to acids, leaches, solvents and notably to oxidising and flammable substances
- Crack bridging
- Conductive
- Driveable
- Very fast hardening

APPROVALS / CERTIFICATES

- Satisfies the requirements of the ‘principles of Construction and Inspection for the Protection of Waters‘ (Bau- und Prüfgrundsätze für den Gewässerschutz) of the DIBt (Deutsches Institut für Bautechnik - German Institute of Building Technology) and is building inspectorate approved for concrete
- Coating based on vinylester for concrete protection according to EN 1504, DoP, with CE-mark.

PRODUCT INFORMATION

Composition	SikaCor® VE Lösung (solution)	Vinylester resin
	SikaCor® VE Härter (hardener)	Org. peroxide
	SikaCor® VEL Mehl (powder)	Carbon powder
Packaging	SikaCor® VE Lösung (solution)	25 kg net.
	SikaCor® VE Härter (hardener)	1 kg net.
	SikaCor® VEL Mehl (powder)	25 kg net.
	Glass fibre matting ‘Vetrotex M 113‘ or ‘Advantex M 113‘ (450 g/m²)	roll ~70 kg
	SikaCor® surface matting e.g. ‘Vlies T 1790 ECR‘ (~30 g/m²)	roll ~9 kg

Appearance / Colour	SikaCor® VE Lösung leitfähig (solution conductive), darkgrey	~RAL 7031
	SikaCor® VE Lösung (solution), pebble grey	~RAL 7032
	Laminate: SikaCor® VE Lösung (solution) yellow glaze + SikaCor® VE Härter (hardener)	Yellowish transparent
Shelf life	SikaCor® VE Lösung (solution)	3 months
	SikaCor® VE Härter (hardener)	6 months
	SikaCor® VEL Mehl (powder)	24 months
Storage conditions	In originally sealed containers in a cool and dry environment (at max. + 20°C).	
Density	SikaCor® VE Lösung (solution) yellowish transparent	~1.1 g/cm³
	SikaCor® VE Härter (hardener)	~1.1 g/cm³
	SikaCor® VEL Mehl (powder)	~0.54 g/cm³ (bulk density)
	SikaCor® VE Lösung leitfähig (solution conductive)	~1.26 g/cm³
	SikaCor® VE Lösung (solution) RAL 7032	~1.34 g/cm³

TECHNICAL INFORMATION

Tensile strain at break	Approx. 73 N/mm² (horizontally in the layer)	(According to ISO 527)
Crack bridging ability	Up to max. 0.2 mm	
Chemical resistance	According to the approval of the DIBt (German Institute of Building Technology), approval number Z-59.12-69 for test groups 1, 1a, 2, 3, 3a, 3b, 4, 4a, 4b, 4c, 5, 5a, 5b, 6, 6b, 7, 7a, 7b, 8, 9, 9a, 10, 11, 12, 13, 14, 15 and 15a Additional building inspectorate approval for the following materials: - hydrochloric acid ≤ 37 % - sulfuric acid ≤ 70 % - nitric acid ≤ 65 % - aqueos sodium hypochlorite (12 % active chlorine) - hydrogen peroxid ≤ 30 % - chromic acid ≤ 50 % Note: In particular cases a discoloration of media may occur. Nevertheless this does not effect the chemical resistance itself.	
Temperature resistance	Dry heat up to approx. + 100°C Damp heat depending on chemical exposure upon request	
Electrical resistance	≤ 1 x 10^8	

APPLICATION INFORMATION

Consumption

Coating system and consumption

Primary screeding:

1.000 kg SikaCor® VE Lösung yellowish transparent	(100 parts)
0.015 kg SikaCor® VE Härter (hardener)	(1.5 parts)
0.800 kg SikaCor® VEL Mehl (powder)	(80 parts)

1.815 kg = 1 l final mixture
consumption: approx. 0.7 - 1.5 kg/m²

Laminate:

1.074 kg SikaCor® VE Lösung yellowish transparent	(100 parts)
0.016 kg SikaCor® VE Härter (hardener)	(1.5 parts)

1.090 kg = 1 l final mixture
consumption: approx. 2.5 kg/m²

Top coat conductive (per layer):

1.200 kg SikaCor® VE Lösung leitfähig	(100 parts)
0.012 kg SikaCor® VE Härter (hardener)	(1 part)

1.212 kg = 1 l final mixture
consumption: approx. 0.3 kg/m²

Alternative (without DIBt approval):
Top coat non-conductive RAL 7032 (per layer):

1.300 kg SikaCor® VE Lösung (solution) RAL 7032	(100 parts)
0.013 kg SikaCor® VE Härter (hardener)	(1 part)

1.313 kg = 1 l final mixture
consumption: approx. 0.3 kg/m²

Layer thickness

~3 mm

Ambient air temperature

Min. + 5°C, max. + 30°C

Relative air humidity

Max. 80 % (temperature ≥ 3 K above the dew point)
Provide good and sufficient ventilation during application!
Water, even in minimal quantities, may damage the accelerating system and avoid the hardening process of the mortar.
Please keep tools and mixers absolutely dry.

Surface temperature

Min. + 5°C, max. + 30°C

Pot Life

~30 min

Drying time

Primary screeding:

Walkable	after 2 h at + 20°C
Overcoatable	after 16 h at + 20°C

Laminate:

Walkable and overcoatable	after 2 h at + 20°C
Walkable and overcoatable	after 12 h at + 10°C

Top Coats:

Walkable and overcoatable	after 2 h at + 20°C
Walkable and overcoatable	after 12 h at + 10°C

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.

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION

Concrete:
Cleaning of the surface by shot-blasting, pressure blasting or milling (after milling shot-blasting is necessary). The surface must be dry, firm, fine gripping, free from loose and friable particles, mortar laitance, dust and other contaminations. Residual moisture content not above 4 % acc. to CM. The average value of surface tensile strength should not be below 1.5 N/mm². When working on very dirty or highly chemically contaminated surfaces, additional adequate cleaning methods are necessary. Structures that are subject to the provisions of water resources law (Wasserhaushaltsgesetz - WHG) may only be coated by qualified coating firms possessing certificates of capability.

SURFACE PREPARATION

Steel:
Blast cleaning to Sa 2 ½ according to ISO 12944-4.
Free from dirt, oil and grease.

MIXING

Fill SikaCor® VE Lösung (solution) in a container and add SikaCor® VE Härter (hardener) at the specified mixing ratio. Stir thoroughly until a homogeneous compound is obtained. Then fill into a clean container to stir up again. Add powder according application and required mixing ratio. Mixing time should be at least 3 minutes.

APPLICATION

Troweling, laminating, rolling = undiluted

Primary screeding:
SikaCor® VEL primary screeding should be applied with smoothing trowel.

Laminate:
SikaCor® VEL binding material is first rolled onto the hardened SikaCor® VEL Primery screeding with a pile-fabric roller. Glass fibre matting (Vetrotex M 113 or Advantex M 113) with a mass per unit area of 450g/m² is then immediately laid on, pressed in with the roller and simultaneously saturated with SikaCor® VEL binding material.
A 2_{nd} layer of the same glass fibre matting is laid on top of the 1_{st} layer, thoroughly soaked, matting layer, pressed down in the same way with the roller, and saturated with SikaCor® VEL binding material.

Finally the 2_{nd} layer of glass fibre matting is covered by a layer of surface matting (approx. 30 g/m²) pressed in with a laminating roller and rolled out ensuring that any air that has become included is completely expelled.
Top coat:
In order to discharge static electricity, conductive tapes / braids are glued on to the SikaCor® laminating layer, joined to the equipotential connection, and covered with the top coat SikaCor® VE Lösung leitfähig (solution conductive). Repeat application after 3 - 5 hours after curing of the first top coat.

Alternatively to the conductive top coat you can apply SikaCor® VE Lösung RAL 7032 (solution RAL 7032) as non-conductive top coat.

Non slip characters:
To improve the non-slip characteristic the 2_{nd} coating may be broadcasted with carbon silicide (0.5 mm). Needed quantity is about 0.5 kg/m².

CLEANING OF EQUIPMENT

Acetone

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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