BUILDING TRUST

PRODUCT DATA SHEET

SikaCor® VEL TH

VINYLESTER RESIN BASED LAMINATE SYSTEM

DESCRIPTION

SikaCor® VEL TH is 2 part, vinyl-ester based coating and lining system with extended pot-life.

USES

SikaCor® VEL TH may only be used by experienced professionals.

- Especially designed for the use in a chemically stressed environment,where a high chemical resistance is mandatory
- Internal and external lining of chemical tanks
- Secondary containment lining in bund area
- Binder for GFR Laminate systems
- Lining of gutters in process and storage area

CHARACTERISTICS / ADVANTAGES

- High chemical resistance to acids, leaches, solvents and to oxidising agents
- Applicable on concrete and steel
- Fast curing
- Crack bridging properties as laminate layer
- Accessible
- Excellent bond strength
- Easy application
- For internal and external use
- Coloured Top coat available, details refers SikaCor® VE Solution grey

PRODUCT INFORMATION

Composition	Formulated Vinylester Resin + Organic Peroxide	
Packaging	SikaCor® VE solution TH	25 kg / drum
	SikaCor® VE hardener	1 kg / containers
	SikaCor® powder fine grey	25 kg / bag
Appearance / Colour	SikaCor® VE solution TH	Transparent
	SikaCor® VE hardener	Opaque
	SikaCor® powder fine grey	Grey
Shelf life	SikaCor® VE solution TH	6 months
	SikaCor® VE hardener	6 months
	SikaCor® powder fine grey	24 months
	from date of production if stored properly in original, unopened and undamaged sealed packaging.	
Storage conditions	Store in dry conditions at temperature between +5°C and +23°C. Protect from frost.	

Density

SikaCor® VE solution TH	~ 1.10 kg/L
SikaCor® VE hardener	~ 1.10 kg/L
SikaCor® powder fine grey	~ 1.40 kg/L (Bulk density)

TECHNICAL INFORMATION

Shore Hardness

Shore D Hardness : Approx. 80 (14 days / +23°C) (DIN EN ISO 868)

Tensile Strength

Approx. 70 N/mm² (ISO 527)

Tensile Adhesion Strength

> 1.5 N/mm² (failure in concrete) (EN 4624)

Chemical Resistance

According to 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 und 15a

Hydrochloric acid	≤ 37%
Sulphuric acid	≤ 70%
Nitric acid	≤ 30%
Aqueous sodium hypochlorite	12 % active chlorine
Hydrogen peroxide	≤ 30%
Chromic acid	≤ 20%

*Resistant to a wide range of chemicals, please ask for detailed chemical resistance list SikaCor® VEL TH.

Temperature Resistance

Exposure	Temperature
Permanent	+60°C
Short-term max. 7 d	+80°C
Short-term max. 12 h	+100°C

Short-term moist/wet heat up to +100°C, where exposure is only occasional (steam cleaning etc.).

SYSTEMS

Systems

SikaCor® VEL TH, Standard system
Primer or Levelling mortar : 1 x SikaCor® VEL TH
Laminate layer:

Imbedding	1 x SikaCor® VEL TH + 1 x Vetrotex M123 (300 g/m² glass fabric)
still wet	1 x SikaCor® VEL TH + 1 x Vetrotex M123 (300 g/m² glass fabric)
still wet	1 x SikaCor® VEL TH + 1 x surface matt (30 g/m²)
top coat:	Not Required

SikaCor® VEL TH, Economical system (i.e. secondary containment area)
Primer or Levelling mortar: 1 x SikaCor® VEL TH
Laminate layer:

Imbedding	1 x SikaCor® VEL TH + 1 x Vetrotex M123 (300 g/m² glass fabric)
still wet	1 x SikaCor® VEL TH + 1 x surface matt (30 g/m²)
top coat	Not Required

SikaCor® VEL TH, Heavy duty system (i.e. for loading areas)
Primer or Levelling mortar: 1 x SikaCor® VEL TH
Laminate layer:

Imbedding	1 x SikaCor® VEL TH + 1 x Vetrotex M123 (450 g/m² glass fabric)
still wet	1 x SikaCor® VEL TH + 1 x Vetrotex M123 (450 g/m² glass fabric)
still wet	1 x SikaCor® VEL TH + 1 x surface matt (30 g/m²)
top coat	Not Required

APPLICATION INFORMATION

Consumption

SikaCor® VEL TH, High Build Lining System (Not Crack Bridging)

Coating System	Product	Consumption
Primer	100 pbw SikaCor® VE Solution TH 1.5 ppw SikaCor® VE Hardener	~ 0.3-0.4 kg/m² (mixed)
1st coat (Scratch Coat)	100 ppw SikaCor® VE Solution TH	~ 0.4 kg/m² (mixed)
1st coat (Scratch Coat)	1.5 ppw SikaCor® VE Hardener + 200 pbw SikaCor® Power fine grey	~ 0.8 kg/m²
2nd coat (Top Coat self smoothening)	100 ppw SikaCor® VE Solution TH	~ 0.4 kg/m² (mixed)
2nd coat (Top Coat self smoothening)	1.5 ppw SikaCor® VE Hardener + 100 pbw SikaCor® Power fine grey	~ 0.4 kg/m²

SikaCor® VEL TH, Standard system

Coating System	Product	Consumption
Primer or Levelling mortar	100 pbw SikaCor® VE solution TH	~ 0.55 kg/m²
Primer or Levelling mortar	1.5 ppw SikaCor® VE hardener	~ 0.01 kg/m²
Primer or Levelling mortar	100-200 pbw SikaCor® powder fine grey	~ 0.55-1.10 kg/m²
Laminate layer	100 ppw SikaCor® VE solution TH 1.5 ppw SikaCor® VE hardener Vetrotex M123 (2 x 300 g/m²)	~ 1.8 kg/m² (mixed)
Surface matt	Surface matt (30 g/m²) 100 ppw SikaCor® VE solution TH 1.5 ppw SikaCor® VE hardener	~ 0.2 kg/m² (mixed)

SikaCor® VEL TH, Economical system

Coating System	Product	Consumption
Primer or Levelling mortar	100 pbw SikaCor® VE solution TH	~ 0.55 kg/m²
Primer or Levelling mortar	1.5 ppw SikaCor® VE hardener	~ 0.01 kg/m²
Primer or Levelling mortar	100-200 pbw SikaCor® powder fine grey	~ 0.55-1.10 kg/m²
Laminate layer	100 ppw SikaCor® VE solution TH 1.5 ppw SikaCor® VE hardener Vetrotex M123 (1 x 300 g/m²)	~ 0.9 kg/m² (mixed)
Surface matt	Surface matt (30 g/m²) 100 ppw SikaCor® VE solution TH 1.5 ppw SikaCor® VE hardener	~ 0.2 kg/m² (mixed)

SikaCor® VEL TH, Heavy duty system

Coating System	Product	Consumption
Primer or Levelling mortar	100 pbw SikaCor® VE solution TH	~ 0.55 kg/m²
Primer or Levelling mortar	1.5 ppw SikaCor® VE hardener	~ 0.01 kg/m²
Primer or Levelling mortar	100-200 pbw SikaCor® powder fine grey	~ 0.55-1.10 kg/m²
Laminate layer	100 ppw SikaCor® VE solution TH 1.5 ppw SikaCor® VE hardener Vetrotex M123 (2 x 450 g/m²)	~ 2.5 kg/m² (mixed)
Surface matt	Surface matt (30 g/m²) 100 ppw SikaCor® VE solution TH 1.5 ppw SikaCor® VE hardener	~ 0.2 kg/m² (mixed)

Anti-slip top coat (optional)

Coating System	Product	Consumption
1st Top coat	100 ppw SikaCor® VE solution TH 1.0 ppw SikaCor® VE hardener	~ 0.20 kg/m²
Broadcast	Silicuimcarbide (0.5mm)	~ 0.50 kg/m²
2nd Top coat	100 ppw SikaCor® VE solution TH 1.0 ppw SikaCor® VE hardener	~ 0.20 kg/m²

Notes:

- In case SikaCor® VE TH is applied as primer SikaCor® powder fine grey does not have to be added
- These figures are theoretical and do allow for additional material required due to surface porosity,surface profile,variations in level, wastage.
- Vetrotex M123 is the recommended glass fabric.However equivalent alternative glass fabrics can be used.Please refer to your Sika partner for advise.
- The amount of SikaCor® VE hardener can be reduced to 1% in case of application temperature above 30 °C

Ambient Air Temperature	+5°C min. / +35°C max.
Relative Air Humidity	80% r.h. max.
Dew Point	Beware of condensation! The substrate and uncured floor must be at least 3°C above the dew point to reduce the risk of condensation or blooming on the floor finish.
Substrate Temperature	+5°C min. / +35°C max.
Substrate Moisture Content	< 4% pbw moisture content. Test method: Sika®-Tramex meter, CM - measurement or Oven-drymethod. No rising moisture according to ASTM (Polyethylene-sheet).

APPLICATION INSTRUCTIONS

EQUIPMENT

SikaCor® VEL TH must be thoroughly mixed using a low speed electric stirrer (300 - 400 rpm) or other suitable equipment.

SUBSTRATE PREPARATION

Substrates must be sound and of sufficient compressive strength (minimum 25 N/mm²) with a minimum pull off strength of 1.5 N/mm². The substrate must be clean, dry and free of all contaminants such as dirt, oil, grease, coatings and surface treatments, etc.If in doubt, apply a test area first.

Concrete

Substrates must be prepared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and achieve an open textured surface.
Weak concrete must be removed and surface defects such as blowholes and voids must be fully exposed.
Repairs to the substrate, filling of blowholes/voids and surface levelling must be carried out using appropriate products from the Sikafloor® , Sikagard® Sikadur® or Sika® MonoTop® range of materials.
The concrete or screed substrate has to be primed or levelled in order to achieve an even surface.High spots must be removed by e.g.grinding.
All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and/or vacuum.

Steel

Surfaces must be prepared mechanically using abrasive blast cleaning.The level SSPC-SP 10 “near white metal blast cleaned” or level Sa 2 ½ according to ISO EN 12944-4 has to be achieved. Welds and joints have to be prepared according to EN 14879, part 1.
After blast cleaning remove all dust dirt and blasting material. In order to maintain the surface conditions after blast cleaning air-conditioning is recommended.

MIXING

Mixing

Levelling mortar	Part A : part B 100 : 1.5 : 100-200 (by weight)
Laminate layer and top coat	Part A : part B 100 : 1.0 - 1.5 (by weight)

Mixing Time

Levelling mortar: Prior to mixing, stir part A mechanically. When all of part B has been added to part A, mix continuously for 1–2 minutes until a uniform mix has been achieved. Add, while stirring slowly the total amount of SikaCor® VEL powder

Laminate layer and top coat: Prior to mixing, stir part A mechanically. When all of part B has been added to part A, mix continuously for 1–2 minutes until a uniform mix has been achieved.Over mixing must be avoided to minimise air entrainment.

APPLICATION

Prior to application, confirm substrate moisture content, relative humidity and dew point.
If > 4% pbw moisture content, substrate has to be dried or Sikagard® 75 EpoCem has to be used as TMB (temporary moisture barrier).

Levelling mortar
Rough surfaces need to be levelled first. Apply the levelling mortar by squeegee/trowel to the required thickness.

Laminate layer

Apply the first layer of SikaCor® VE TH by roller, imbed the glass fabric, apply the second and the third layer in the same way, wet in wet. After application of the final glass fabric de-aerate with a disc roller.

CLEANING OF EQUIPMENT

Clean all tools and application equipment with acetone immediately after use.Hardened and/or cured material can only be removed mechanically.
Attention: Acetone is a flammable liquid, please handle with care, use all equipment for your personal protection required.

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.

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.

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 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.

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