BUILDING TRUST

PRODUCT DATA SHEET

SikaCor® VEL (NZ)

Vinyl ester resin based laminate system

DESCRIPTION

SikaCor® VEL (NZ) is a 2 part, glass fabric reinforced, vinyl ester based coating and lining system.

USES

SikaCor® VEL (NZ) may only be used by experienced professionals.

- Especially designed for use in a chemically stressed environment, where high chemical resistance is essential
- Tank and bund lining
- Lining retention ponds
- Binder for laminate layers
- Binder for scratch coats and resin screeds
- For internal and external use

CHARACTERISTICS / ADVANTAGES

- High chemical resistance to acids, alkais, leachates, solvents and oxidizing agents
- Applicable on concrete and steel
- Fast curing
- Laminate system has good crack bridging properties
- Available as a conductive system
- Excellent bond strength
- Easy application

APPROVALS / STANDARDS

Approved as 'Secondary containment system' according to the principles of the DIBt, Germany, approval number Z-59. 12-69.

PRODUCT INFORMATION

Chemical Base	Vinylester resin + organic peroxide
Packaging	SikaCor® VEL (NZ) solution: 20 kg drum SikaCor® VEL (NZ) hardener: 500 ml container SikaCor Glass Fibre Matt 450 gsm 25 kg/roll SikaCor Glass Fibre Tissue (0.030 kg/m²) 100 m² roll
Shelf Life	SikaCor® VEL (NZ) solution: Three (3) months from date of manufacture when stored as stated. SikaCor® VEL (NZ) hardener: Six (6) months from date of manufacture when stored as stated.
Storage Conditions	Store properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between +5°C and +20°C. Protect from frost.
Appearance / Colour	SikaCor® VEL (NZ) solution and hardener: Opaque
Density	Solution: ~1.09 kg/litre Hardener: ~1.06 kg/litre

TECHNICAL INFORMATION

Tensile Strength	~ 73 N/mm²

Thermal Resistance

THERMAL RESISTANCE

EXPOSURE*	Temperature
Permanent	+80°C
Short Term, max. 12 hours	+100°C

Short term moist/wet heat* up to +120°C, where exposure is only occasional (steam cleaning etc.)

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, 8, 9, 9a, 10, 11, 12, 13, 14, 15 and 15a.
Additional building inspectorate approval for the following materials:

- Hydrochloric acid ≤ 37%
- Sulphuric acid ≤ 70%
- Nitric acid ≤ 65%
- Aqueous sodium hypochlorite (12% active chlorine)
- Hydrogen peroxide ≤ 30%
- Chromic acid ≤ 50%

Please ask the Sika Technical Department for a detailed chemical resistance list of SikaCor® VEL (NZ).

SYSTEM INFORMATION

Systems

System Structure:

SikaCor® VEL (NZ) smooth finish on concrete and steel:

Primer or Scratch Coat:	1 x SikaCor® VEL (NZ), +5% Styrene Monomer as a primer or scratch coat
Laminate Layer	
Imbedding	1 x SikaCor® VEL (NZ) Glass Fibre Matt (450gsm)
Still wet	1 x SikaCor® VEL (NZ) Glass Fibre Matt (450gsm)
Still wet	1 x SikaCor® VEL (NZ) Glass Fibre Tissue (30gsm)
Top coat	2 x SikaCor® VEL (NZ)

SikaCor® VEL (NZ), anti-slip on concrete and steel

Primer or scratch coat	1 x SikaCor® VEL (NZ), + 5% Styrene Monomer as a primer or scratch coat
Laminate Layer	
Imbedding	1 x SikaCor® VEL (NZ) Glass Fibre Matt (450gsm)
Still wet	1 x SikaCor® VEL (NZ) Glass Fibre Matt (450gsm)
Still wet	1 x SikaCor® VEL (NZ) Glass Fibre Tissue (30gsm)
Still wet	broadcast with silicon carbide
1st top coat	1 x SikaCor® VEL (NZ)
2nd top coat	1 x SikaCor® VEL (NZ)

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.

FURTHER DOCUMENTS

CURING
Applied Product Ready For Use

Temp.	Foot Traffic	Light Traffic	Full cure
+5°C	~ 8 hours	~ 2 days	~ 3 days
+20°C	~ 4 hours	~ 24 hours	~ 2 days
+30°C	~ 3 hours	~ 24 hours	~ 2 days

Note: Times are approximate and will be affected by changing ambient conditions.

LIMITATIONS

- Do not apply on substrates with rising moisture.
- Do not apply on polymer modified cementitious mortars, or epoxy based repair materials
- Freshly applied SikaCor® VEL (NZ) and SikaCor® VEL (NZ) conductive should be protected from damp, condensation and water for at least 8 hours.
- Do not allow the imbedding resin to puddle on the surface.
- Ensure min. 5cm overlapping of the glass fabric.
- Construction joints require pre-treatment. Treat as follows: Static Cracks: fill and level with SikaCor® VEL (NZ) screed or paste (thickened using Sika Extender T. Dynamic cracks: cracks up to 0.2mm wide can be covered with the coating system; for cracks wider than 0.2mm design as a movement joint. The incorrect assessment and treatment of cracks may lead to a reduced service life and reflective cracking.
- During application the use of personal protective health & safety equipment is mandatory! Please refer to the latest SDS.
- Under certain conditions, floor heating or high ambient temperatures combined with high point loading, may lead to imprints in the resin.
- If heating is required do not use naked flame during the application of SikaCor® VEL (NZ). Gas, oil, paraffin or other fossil fuel heaters produce large quantities of both CO_2 and H_2O water vapour, which may adversely affect the finish. For heating use only flash protected warm air blower or heat pump.

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 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. Steel must be clean, dry, free of rust and all contaminants such as dirt, oil, grease, coatings and surface treatments etc. If in doubt, apply a test area first.
Substrate Temperature : +5ºC min. / +35ºC max.
Ambient Temperature: +5ºC min. / +35ºC max.
Substrate Moisture Content : < 4% pbw moisture content. Test method: Sika Tramex meter, CM – measurement or Oven-dry-method. No rising moisture according to ASTM D4263 (Polyethylene-sheet)
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.

MIXING

Primer: SikaCor® VEL (NZ) Resin : Styrene Monomer : SikaCor® VEL (NZ) Hardener = 100 : 5 : 1.5 (by weight)
Scratch coat: SikaCor® VEL (NZ)L Resin: Styrene Monomer : SikaCor® VEL (NZ) Hardener: Sika Aggregate-501 = 100 : 5 : 1.5 : 80 (by weight)
Laminate layer and top coat: SikaCor® VEL (NZ) Resin: SikaCor® VEL (NZ) Hardener = 100 : 1.5 (by weight)
Mixing Time
Primer / Scratch coat: Prior to mixing, stir SikaCor® VEL (NZ) Resin mechanically. Add Styrene Monomer and remix. Add SikaCor® VEL (NZ) Hardener and mix continuously for 1 - 2 minutes until a uniform mix has been achieved.
Laminate layer and top coat: Prior to mixing, stir SikaCor® VEL (NZ) Resin mechanically. Add SikaCor® VEL (NZ) Hardener and mix continuously for 1 - 2 minutes until and uniform mix has been achieved. Over mixing must be avoided to minimise air entrainment.
Mixing Tools
SikaCor® VEL (NZ) and SikaCor® VEL (NZ) conductive must be thoroughly mixed using a low speed flash protected electric stirrer (300 - 400 rpm) or other suitable equipment

APPLICATION

Pot Life

Temperature	Time
+5°C	~ 45 minutes
+20°C	~ 30 minutes
+30°C	~10 minutes

Waiting Time / Overcoating

Substrate Temperature	Minimum	Maximum
+5°C	~ 4 hours	~ 4 days
+20°C	~2 hours	~3 days
+30°C	~2 hours	~ 2 days

Prior to application, confirm substrate moisture content, relative humidity and dew point.
Primer:
Apply 1-2 primer coats of SikaCor® VEL (NZ) using brush or roller.
Scratch coat:
Rough surfaces need to be levelled first. Apply the scratch coat by trowel to the required thickness.
Laminate layer:
Apply the first layer of SikaCor® VEL (NZ) by roller, imbed the glass fabric, apply the second and the third layer in the same way, wet on wet. After application of the final glass fabric de-aerate and wet out the fibreglass mat using a laminating or a disk roller.
Top coat:
Apply SikaCor® VEL (NZ) by roller.
Notes:
1. During application a high air change rate has to be provided.
2. Water, even in the smallest amount, could affect the hardening and block the curing process. Tools and equipment have to be totally dry.

CLEANING OF TOOLS

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

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. It may be necessary to adapt the above disclaimer to specific local laws and regulations. Any changes to this disclaimer may only be implemented with permission of Sika® Corporate Legal in Baar.

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