

VK 2001 SW

Technical Data Sheet

Description

VK 2001 SW is an abrasion resistant, economical two-component epoxy coating with bionic corrosion inhibitor, which is especially suitable for corrosion protection of steel constructions for hydraulic engineering. VK 2001 SW is used as highly mechanical and chemical resistant/hard-wearing coating that offers excellent anticorrosion properties.

Composition

Free of heavy metals, benzyl alcohol, coal tar, anthracene oil and plasticizers.

Recommended Applications

- Steel hydraulic engineering
- Cooling water pipes
- Hydroelectric power plants
- Dam gates
- Sheet piles

Features

- Tough hard
- Impact resistant
- Excellent corrosion protection
- Very good adhesion strength
- Very high abrasion resistance
- Very high chemical resistance
- No shrinkage by migration of plasticizer
- Inert and harmless once cured
- Suitable for cathodic corrosion protection systems
- VOC < 2 %
EU Directive 2004/42 (Decopaint-Directive):
According to the EU Directive 2004/42, the maximum allowed content of VOC (Product category AII/j/type Ib) is 500 g/l (Limit 2010) for the ready to use product. This product is in accordance with the EU Directive 2010.
- In exposure to weathering VK 2001 SW tends to chalking and discolouring. In case of higher demand, we recommend to use topcoat.
- Certificate of Germanischer Lloyd
- **Approved in acc. with NORSOK M-501, Rev. 5**
- **Certificated IKS acc. to FAB03/FIN005 Rev. F, Pos 4.2.3 „Requirements for Chemical Curing Paint“**
- **Qualified by Siemens Coating Instruction ZTO 004-4931 and BEC 010-000001**

Resistance

Chemical

- Industrial and marine conditions
- Water, seawater, brackish water
- Oil, fat, lubricants and fuels
- Diluted acids
- Neutral salt solutions
- Alkalis
- Mineral oil
- aliphatic hydrocarbons

Due to the reason that the resistance of the coating can be affected by various factors (medium, temperature, concentration, layer thickness etc.) we recommend to consult us prior to the application.

Surface Preparation

Appropriate surface preparation is essential in order to obtain good results with this product. The exact requirements change according to kind of application, expected serviceable life and the original status of the surface.

During the surface preparation the dew point must be minimum +3 °C/3K (see dew point table).

Steel

Surface preparation by blasting according the DIN standard
DIN EN ISO 12944-3 and -4 as well as DIN EN 14879-1

Surface preparation methods

DIN EN ISO 8504-2 Abrasive blast cleaning

Preparation of steel substrates before application of paints and related products

DIN EN ISO 8501-1 Preparation grade Sa 2½

DIN EN ISO 8501-2 Visual assessment of surface cleanliness

DIN EN ISO 8501-3 Preparation of grade welds, edges, etc.,
table 1 P3

Test for the assessment of surface cleanliness

DIN EN ISO 8502-4 Dew Point

Optional:

DIN EN ISO 8502-3 Assessment of dust, quantity <2,
size <2

DIN EN ISO 8502-6 Bresle method

Surface roughness characteristics of blast-cleaned steel substrates

DIN EN ISO 8503-1 Ry5 (Rz) 40 - 100 µm

For the preparation of other surfaces, kindly contact us.

Technical Data			
Shore-D Hardness	ASTM D 2240, DIN EN ISO 868	84 82	+20 °C/12 Std. +30 °C/12 Std.
Density (+23 °C)	ASTM D 792	1.60	g/cm ³
Compressive strength	ASTM D 695	113,5	N/mm ²
Temperature stability	dry continuous dry short-term	+100* +150*	°C °C
Hot water	continuous short-term (1 h)	+50* +70*	°C °C
Solid content	volume	100	%
	weight	100	%

*Due to the fact that the resistance of the coating can be affected by various factors (medium, temperature, concentration, layer thickness, etc.) we recommend to consult us prior to application.

Preparation of Material

Important: Use only without thinner!

Airless spraying resp. brush/roller:
Stir up component A with an appropriate mechanical mixer (300-400 rpm), add component B completely and mix carefully by stirring at least another 3 minutes. Include bottom and rim. Put the mixed material into a clean container and mix again for at least 1 more minute.

Mixing ratio 10 : 1 part by weight
(Part A : B)

Application Instructions

Conditions of object:
Temperature of substrate and air no less than +10 °C to +40 °C, relative air humidity max. 85 % (after 1st coating); temperature of the surface to be coated has to be at least +3 °K over the respective dew-point. Low temperatures delay curing and aggravate treatment. Higher air humidity as well as falling below dew-point may result in formation of condense humidity on subsoil respectively coating surface, thus possibly causing severe impairment in adhesion. The conditions of object have to be observed during treatment and curing time. When close to these limits, the use of heaters or drying apparatus is recommended.

Efficient airless spray equipment	e. g. Graco King Xtreme
Pressure ratio	min. 1 : 68
Spray hose	approx. 30 m 3/8" + 2 m 1/4"
Inlet pressure	4-7 bar
Nozzle size	0.43-0.64 mm (0.017"-0.025")
Spraying angle	30-80°
We recommend to remove the high pressure filters and to pump the material directly without a siphon tube.	

Important:

To ensure a proper application at low temperatures a hose insulation and a flow heater have to be used.
N/B:

At low temperatures it is necessary to use insulated hoses and a flow heater! Please use a plural component airless spray equipment, if a longer spray hose distance (> 30 m) and an independent application time/pot life is required.

Brush/roller:

Recommended for small areas, repairs or to precoat edges, angles, diffusions etc.. Recoat until sufficient film thickness is obtained. Normally a film thickness of 250-300 µm NDFT/WFT can be obtained per coat.

Pot life in minutes:

	+20 °C	+23 °C	+30 °C
16.5 kg	ca. 40	ca. 30	ca. 20

This schedule states the practical curing time from beginning of mixing.

Composition of Coating/ Material Consumption

**recommended nominal stratum thickness: 600-1200 µm,
maximum stratum thickness: triple nominal stratum thickness.**

Theoretical consumption: approx. 1.0 kg/m² (at 600 microns NDFT)
practical consumption: approx. 1.3 kg/m² (at 600 microns NDFT)

The information relating to practical consumption/coverage is calculated on basis of 30 % material loss and additional consumption.

The practical consumption/coverage depends on the conditions of the substrate. We recommend to apply a test area.

Re-coating Intervals/Sequence Coatings

10 °C	7-48 hours	max. 3 months*
23 °C	4-48 hours	max. 3 months*
30 °C	2-24 hours	max. 3 months*

When exceeding the interval times, surfaces has to be grinded. The re-coating interval shortens strongly through sun influence. Appropriate safety measures must be taken.

*Note/overcoat:

Max. 3 months; the surface must be free from impurities and substances which could cause poor adhesion and not UV-contaminated. Otherwise the surface has to be cleaned by sweep blasting. Dust deposits must be removed with a suitable detergent (no water).

Curing Time

	+10 °C	+23 °C	+30 °C
Water load:		18 hours	12 hours
Light load:	24 hours	12 hours	6 hours
Mechanical load:	48 hours	24 hours	12 hours
Full chemical load:	7 days	5 days	3 days

The above mentioned values are standard values. Variations caused by practical requirements or conditions are possible.
N/B: The included bionic components form a microfilm on the surface, which can lead to a whitish bloom in combination with moisture. In case of a higher demand to colour stability we recommend to use a topcoat.

Packing Units

The material is supplied in the following packing sizes:
16.5 kg (15 kg part A and 1.5 kg part B).
Delivery in colour mint turquoise and telegrey 2.
Other colours on request.

Due to raw material variations and manufacturing techniques, a slight colour/batch difference may occur.

Cleaning

All tools should be cleaned with cleaning agent 999 immediately after use. If the material is allowed to set, it can only be removed by mechanical means.

To clean and flush the spray equipment/machine we recommend to use cleaning agent 999 with a temperature of approx. +30 to +40 °C.

Storage

The material should ideally be stored in unopened original bins under cool, dry and frost free conditions, at temperatures between +15 and +25 °C, divergence during transport is acceptable. At temperatures < +10 °C crystallisation is possible. Please observe the expiry date stated on the material.

Safety Instructions

For the handling of our products, the significant physical, safety-related, toxicological and ecological data according the substance-specific safety data sheet are to be extracted. The applicable rules and regulations, such as for example the Hazardous Substances Regulation, have to be observed.

A detailed safety data sheet will be delivered with the material or is available upon request.

Whilst all reasonable care is taken in compiling technical data on the company's products, all recommendations or suggestions regarding the use of such products are made without guarantee, since the conditions of use are beyond the control of the company. It is the responsibility of the customer to satisfy himself that each product is fit for the purpose for which he intends to use it, that the actual conditions of use are suitable, and that in the light of our continual research and development programme, the information relating to each product has not been superseded.

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