

VK 2001

Technical Data Sheet

Description

VK 2001 is an innovative epoxy resin coating with bionic inhibitor which is especially suitable for the protection of steel surfaces. VK 2001 is used as highly mechanical and chemical resistant/hard-wearing coating that offers excellent anticorrosion properties.

Composition

VK 2001 is free of benzyl alcohol and nonyl phenol.

Recommended Applications

- Tanks, offshore constructions in oil and gas industry
- Steel hydraulic engineering
- Flood gates, sheet pile walls, weir plants
- Cooling water pipes
- Condenser water boxes
- Condenser tube sheets

Features

- High abrasion resistance
- High chemical resistance
- Good adhesion strength
- Suitable for cathodic corrosion protection systems
- Solvent and tar-free
- Excellent corrosion protection
- Impact resistant
- Low viscosity
- With reactive anticorrosive pigments
- Inert and harmless once cured
- 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.
- **Approval acc. AVS D 6.1/50 Rev. A for using in nuclear areas**

Resistance

Chemical:

- Industrial and marine conditions
- River water, sea water, sewage, brackish water
- Oil, fat, lubricants and fuels
- Not oxidising, diluted acids
- Alkalis, lyes, neutral saline solutions
- Many solvents and detergents

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.

Prior to, during and after surface preparation, application and curing the substrate temperature must be minimum +3 °C/3K above the dew point (see dew point table).

Steel

Surface preparation by blasting according to 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 h +30 °C/12 h
Density (+23 °C)	ASTM D 792	1,55	g/cm ³
Compressive strength	ASTM D 695	113,5	N/mm ²
Temperature resistance	dry continuous	+100*	°C
	dry short term	+150*	°C
Warm water	continuous	+50*	°C
	short term (1 h)	+70*	°C
Volume solids	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:

The temperature of the components must be min. +20 and max. 30 °C. Stir the components thoroughly and mix in the correct ratio using a suitable low speed electric mixer (300 - 400 rpm) for at least 3 minutes or until a completely homogeneous mixture has been achieved. Put the mixed material into a clean container and mix again for at least 1 minute more.

Mixing ratio 9 : 1 part by weight
(Part A : B)

Application Instructions

Conditions of object:

Temperature of substrate and air +10 to +30 °C, relative air humidity max. 85 % (after 1st coating); temperature of the surface to be coated has to be at least +3 °C 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	minimum 1 : 68
Spray hose	max. 30 m $\frac{3}{8}$ " + 2 m $\frac{1}{4}$ "
Inlet pressure	6-8 bar
Nozzle size	0.43-0.48 mm
Spraying angle	40-70°
Flow heater	20-35 °C
We recommend to remove the high pressure filters and to pump the material directly without a siphon tube.	

Attention! To ensure a proper application at low temperatures a hose insulation and a flow heater have to be used.

Important:

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:

Mainly recommended for small areas, repairs or as a primer for edges, corners, penetrations etc.. If necessary additional applications have to be done to achieve the required film thickness.

If applied by roller a film thickness of 150-200 µm NDFT/WFT can be obtained per coat.

Pot life in minutes:

	+10 °C	+23 °C	+30 °C
17.5 kg	ca. 40 min.	ca. 25 min.	ca. 20 min.

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

Composition of Coating/ Material Consumption

**recommended nominal stratum thickness: 600-1500 µm,
maximum stratum thickness: triple nominal stratum thickness**

Theoretical consumption: ca. 1,0 kg/m² (600 µm NDFT),
practical consumption: ca. 1,3 g/m² (600 µm NDFT).

The information relating to practical consumption/coverage is calculated inclusive of 30 % loss.

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

Re-coating Intervals/Sequence Coatings

Temperature	min. hours	max. hours*
+10 °C	min. 7 hours	max. 48 hours*
+23 °C	min. 4 hours	max. 24 hours*
+30 °C	min. 2 hours	max. 12 hours*

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:	72 hours	48 hours	24 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.

Packing Units

The material is supplied in the following packing size:

17.5 kg (15.75 part A and 1.75 kg part B)

Delivery in colour mint turquoise, telegrey 2 and black*.

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, at temperatures < 15 °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.