

VS 2002 F

Technical Data Sheet

Description

VS 2002 F is an advanced composite for the repair and protection of all metal surfaces, which are subject to erosion, corrosion and chemical attack. VS 2002 F is normally applied at a thickness of 3 mm. It is non-shrinking and consists of 100 % solids.

VS 2002 F contains a high percentage of carbides for the application in extremely abrasive environments, which are subject to costly and expensive repairs. The material can either be used to rebuild worn metal surfaces or as a preventive coating which is often more durable and resistant to abrasion than the original metal. VS 2002 F can also be used instead of metal coatings, tiles, rubber casings, etc.

Composition

Matrix - A two component, modified epoxy resin which reacts with an aliphatic curing agent.

Reinforcement - A proprietary blend of aluminium oxide bead and silicon carbides.

Recommended Applications

- Pump casing
- Pneumatic conveyors
- Cyclones
- Pipe elbows
- Dust collecting systems
- Screw conveyors

Features

- Outstanding abrasion resistance
- The tough artificial resin structure resists to temperature stress and impact.
- Excellent adhesion ensures durability and prevents separations.
- Easy application reduces labour cost and stoppage times.
- Resists to chemical varying operation conditions when metals fail.
- Can easily be formed to each kind of metal surface.

Resistance

Tested at +21 °C. Samples cured for 7 days at +20 °C. Longer curing improves chemical resistance.

Acids:

10 % Hydrochloric acid	2
20 % Hydrochloric acid	3
36 % Hydrochloric acid	3
5 % Acetic acid	2
10 % Acetic acid	4
10 % Sulphuric acid	1
30 % Sulphuric acid	4
50 % Sulphuric acid	2
70 % Sulphuric acid	3

Other Compounds:

Bunker C	1
Diesel oil	1
Isopropylalcohol	1
Kerosene	1
Naphtha	1
Sewage	1
Salt water	1
Toluene	1
Xylene	1

Lyes and Bleaches:

10 % Potassium hydroxide	1	10 % Caustic soda lye	1
50 % Potassium hydroxide	1	30 % Caustic soda lye	1
28 % Caustic ammonia	1		

Legend:
 1 = resistant
 2 = short-term resistant
 3 = over-flow-resistant, immediate cleaning
 4 = not recommended for direct contact

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.

Technical Data			
Rockwell R hardness	ASTM D 785	100	
Density	ASTM D 792	1.96	g/ml
Volume Capacity		584	cc/kg
Compressive Strength	ASTM D 695	106.79	N/mm ²
Tensile Shear Adhesion	ASTM D 1002	148	kg/cm ²
Flexural Strength	ASTM D 790	420	kg/cm ²
Abrasion Resistance	ASTM D 4060	0.012 ml	per 1000 cycles
Corrosion Resistance	ASTM B 117	5000	hours
Temperature resistance	Full continuous immersion	+50*	°C
	Continuous dry heat	ASTM D2485	+120*

*Above these temperatures the product will start to soften, which may lead to failure dependent on the operating environment.

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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.

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.

Preparation of Material

The material is delivered in proper mixing ratio. Put the curing agent completely into the basic material and agitate carefully, preferably with a mechanical agitator. Be sure to contact also bottom and sides of the container. Only prepare as much material as you can handle within pot life.

Mixing ratio 4.4 : 1 part by weight
(Part A : B)

Application Instructions

Conditions of object:

Temperature of substrate and air no less than +15 °C, relative air humidity max. 80 % (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.

Minimum application temperature is +10 °C. Press the material in the surface with a plastic application tool. Once the material placed, it may be smoothed utilizing a variety of methods. If required, VS 2002 F can be ground using a fast wearing open type wheel. VS 2002 F can only be machined by diamond-tools.

Pot life in minutes:

+10 °C	+20 °C	+30 °C
60	30	15

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

Composition of Coating/ Material Consumption

VS 2002 F can be applied with a minimum stratum thickness of 3 mm.

Re-coating Intervals/Sequence Coatings

VS 2002 F is re-coatable with itself or with other polymer compounds after max. 24/16 h at +20/+30 °C. Surfaces have to be clean, dry, free from oil and grease. When exceeding the interval times, surfaces have to be roughened.

The re-coating interval shortens strongly through sun influence. Appropriate safety measures must be taken.

Curing Time

	20 °C
Dry to touch:	4 hours
Light load:	8 hours
Total load:	4 days
Immersion:	6 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 sizes:

1.5 kg (1.224 kg Part A and 0.276 kg Part B)

5.0 kg (4.08 kg Part A and 0.92 kg Part B)

Delivery in colour grey.

Cleaning

All tools should be cleaned using industrial solvents (acetone, xylene, alcohol, methylethylketone) before the material hardens. If the material is allowed to set, it can only be removed by mechanical means.

Storage

The material should ideally be stored in unopened original bins under cool and dry conditions, at temperatures between +15 and +30 °C, divergence during transport is acceptable. 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.