

## PRODUCT INFORMATION

### COROFLAKE 23

#### PRODUCT DESCRIPTION

**COROFLAKE 23** is a two-component; vapour diffusion resistant, inert flake filled polymer coating based on a chemical and thermal resistant Novolac vinyl ester resin, which has been designed especially for flue gas desulphurization systems.

**COROFLAKE 23** is the ideal corrosion protection if high chemical resistance is required at high medium temperatures. The parallel to the substrate oriented inert flakes provide an excellent diffusion barrier and thus ensure a long service life.

#### COATING LAYERS CONSUMPTION

The coating system consists of the two-component **COROFLAKE S PRIMER** and at least two, generally three coats of the two-component **COROFLAKE 23** topcoat applied at approx. 500 - 700 µm DFT per coat, alternating in beige and pink colours. The total applied DFT is based on the chemical and thermal load present and can be up to 2.5 mm.

#### FIELDS OF APPLICATION

**COROFLAKE 23** is used mainly in raw gas and clean gas ducts, gas pre-heater, heat exchangers, flue gas scrubbers, wet electric filters and stacks of flue gas desulphurization plants. Furthermore it is also used in other plant components which are exposed to acid fumes and gases. **COROFLAKE 23** is also suitable as corrosion protection for storage and process tanks, wastewater treatment plants, stack gas scrubbers, waste incineration plants and biogas plants.

#### APPROVALS

**COROFLAKE 23** is approved (**Z-59.13-283**) by the German Institute of Construction Technology (DIBt) for steel storage vessels.

#### FEATURES

- High temperature stability up to +180°C
- Excellent permeation resistance
- Excellent chemical resistance to inorganic and organic acids, lye and organic solvents
- Outstanding adhesion to steel
- Application by spraying, brushing or rolling
- Can be exposed to process conditions shortly after application

#### CHEMICAL RESISTANCE

Information on the chemical resistance properties is available upon request.

#### SUBSTRATE

Substrates are steel components. Components to be coated shall be designed and manufactured in accordance with EN 14879-1.

#### SURFACE PRE-TREATMENT

Surfaces to be coated must be clean, dry and free of contaminants. All contaminants, including non-visible detectable contaminants, must be removed in accordance with DIN TR 55684 and EN ISO 8502.

Non-alloyed steel surfaces shall be abrasive blasted to "Near White Metal" in accordance with EN ISO 12944-4. A surface

preparation degree of SA 2½ (SSPC-SP 10; NACE No. 2) as specified in EN ISO 8501-1 and a "medium (G)" roughness degree as specified in EN ISO 8503-2 must be achieved. A minimum surface profile of  $R_z \geq 70 \mu\text{m}$  is required.

To prevent flash rust, the primer must be applied immediately after the blasting and cleaning of the substrate or the component must be air conditioned to a relative humidity of  $\leq 40\%$ .

#### ENVIRONMENTAL CONDITIONS

Throughout the coating process, the temperatures of the substrate and coating materials shall be maintained within the range specified by TIP TOP. All surfaces shall be maintained at a temperature at least 3K above the dew point in order to prevent condensation.

#### APPLICATION

During the application of the product, the application instruction must always be observed.

**COROFLAKE S PRIMER** and each **COROFLAKE 23** topcoat are applied to the substrate using an airless air spray system or by rolling or brushing.

In case **COROFLAKE 23** is applied by brushing or rolling, additional coats may be required to achieve the required total DFT. Grinded surfaces must generally be cleaned with **SOLVENT F12**.

**Note:** During application, the lined surface should be shaded from direct or indirect sunlight whenever possible.

#### MIXING RATIO

The primer and coating components are supplied in pre-measured units so that weighing or measuring of the components is kept to a minimum. After the unit has been mixed it shall be used within the specified pot life.

Primer	Parts by Weight	Parts by Volume
<b>COROFLAKE S PRIMER</b>	100	100
<b>HARDENER No. 1 CLEAR</b>	2	2.1

Coating	Parts by Weight	Parts by Volume
<b>COROFLAKE 23</b>	100	100
<b>HARDENER No. 1 CLEAR / RED</b>	2	2.3

#### CONSUMPTION PER COAT

Product	Thickness [µm]	Coverage [g/m²]
<b>COROFLAKE S PRIMER</b>	covering	ca. 150
<b>COROFLAKE 23</b>	ca. 500 - 700	ca. 900 - 1100

The information about coverage is an average for spray applications. Actual coverage depends on the object geometry and the method of application. It can vary.

#### POT LIFE / WORKING TIME [min]

Product	15°C	20°C	30°C
<b>COROFLAKE S PRIMER</b>	ca. 60	ca. 40	ca. 20
<b>COROFLAKE 23</b>	ca. 90	ca. 60	ca. 30

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### RECOAT TIME (20°C)

Product	Min. [h]	Max. [Days]
COROFLAKE S PRIMER	ca. 6	ca. 7
COROFLAKE 23	ca. 4	ca. 3

### CLEANING

Clean all equipment with **SOLVENT T-200** immediately after use. Frequency of cleaning will depend upon amount applied, temperature and elapsed time, including any delays.

### SAFETY MEASURES

The material safety data sheets of the individual components, the safety instructions on the packing (label) as well as the legal requirements for handling hazardous materials must be observed.

### PACKING UNITS

The products are supplied in the following standard package sizes:

Product	Size	Article No.
COROFLAKE 23	5 kg	590 0514
COROFLAKE 23	20 kg	590 0057
COROFLAKE S PRIMER	5 kg	590 0167
COROFLAKE S PRIMER	20 kg	590 0033
HARDENER No. 1 CLEAR	0.1 kg	590 0181
HARDENER No. 1 CLEAR	0.4 kg	590 0019
HARDENER No. 1 RED	0.1 kg	590 0356
HARDENER No. 1 RED	0.4 kg	590 0112
SOLVENT F12	4 kg	590 0095
SOLVENT T-200	4 kg	590 0610
SOLVENT T-200	8 kg	590 0611

### STORAGE

The products must be stored in a cool and dry place, away from direct sunlight. At the specified storage temperatures a shelf life of the products is given of at least for the following periods:

Product	Temperature	Shelf Life
COROFLAKE 23	≤ 10°C	9 Months
	≤ 20°C	6 Months
COROFLAKE S PRIMER	≤ 10°C	9 Months
	≤ 20°C	6 Months
HARDENER No. 1 CLEAR	5 - 20°C	12 Months
HARDENER No. 1 RED	5 - 20°C	12 Months
SOLVENT F12	5 - 20°C	12 Months
SOLVENT T-200	5 - 25°C	60 Months

If the storage time is exceeded, the materials must be tested before use. Higher storage and transport temperatures will reduce the shelf life. The containers must be kept tightly closed. Liquid products must be stored frost-proof. In addition, the DIN 7716 must be observed.

Technical Data	Standard	Unit	Value
Abrasion	ASTM D4060	mg	90
Density (Mixture)	EN ISO 2811 (ASTM D1475)	g/cm <sup>3</sup>	1.19 ± 0.03
Modulus of Elasticity (Bend Test)	EN ISO 178 (ASTM D790)	N/mm <sup>2</sup>	3500 ± 500
Hardness Barcol	EN 59 (ASTM D2583)	-	≥ 35
Min. Adhesion Strength Steel	EN ISO 4624 (ASTM D4541)	N/mm <sup>2</sup>	7
Test Voltage (earliest after 24 hours)	EN 14879-2	kV / 100µm DFT	0.5
Viscosity	EN ISO 2555 (ASTM D2196)	mPa·s	3000 ± 250
Tensile Strength	EN ISO 527 (ASTM D638)	N/mm <sup>2</sup>	20
Max. Operating Temperature Liquids	-	°C	+75
Max. Operating Temperature Dry (Flue Gas)	-	°C	+180
Short-term Operating Temperature Dry (Flue Gas)	-	°C	+220

**Note:** The indicated temperatures are dependent on the present load and may vary

Information given in the fact sheet above corresponds to the current knowledge available to us regarding our products at the time of its drafting and is intended as a guideline for informational purposes. However, because of the multiple possibilities regarding possible applications, processing and on site conditions, any information given in the fact sheet above is not legally binding, in particular, without being limited to, such information shall not be interpreted as a warranty of merchantability or of fitness for a particular purpose. Customer therefore is advised to conduct its own testing or make an inquiry with our technical department before ordering. We reserve the right to change the product at any time, in particular, without being limited to, minor changes because of advancements in technology. If by way of exception, the information given in the fact sheet above is incorporated by reference into any contract concluded with us under German Law, such information, shall only be interpreted as determining the specific requirements of the contractual products as set out in § 434 BGB (German Civil Code) and shall not be interpreted as constituting a guarantee of condition.

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