PRODUCT INFORMATION
COROFLAKE 27

PRODUCT DESCRIPTION
COROFLAKE 27 is a two-component; vapour diffusion resistant, inert flake filled polymer coating based on a chemical and thermal resistant, flexibilized vinyl ester resin, which has been designed especially for extreme loads with high rates of temperature change. 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** (steel) and at least two, generally three coats of the two-component **COROFLAKE 27** topcoat applied at approx. 400 - 600 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 2.0 mm. If **COROFLAKE 27** is applied to concrete, **COROFLAKE N PRIMER** or alternatively **COROFLAKE N PRIMER AS** must be used instead of **COROFLAKE S PRIMER**.

FIELDS OF APPLICATION
COROFLAKE 27 is used mainly for corrosion protection in mixing chambers, ducts and stacks of flue gas desulphurization plants, where frequent temperature changes may occur. **COROFLAKE 27** can also be used in other plant parts, where frequent temperature changes may occur.

FEATURES
- Excellent thermal shock resistance
- Excellent permeation resistance
- Excellent chemical resistance
- Outstanding adhesion to steel and concrete
- Application by spraying, brushing or rolling

CHEMICAL RESISTANCE
Information on the chemical resistance properties is available upon request.

SUBSTRATE
Substrates are components made of steel, concrete, screed or plaster. Components to be coated shall be designed and manufactured in accordance with EN 14879-1. For components made of concrete, screed or plaster DIN 1045 must also be observed.

SURFACE PRE-TREATMENT
C-STEEL
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 $R_z \geq 70$ µm 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 ≤ 40%.

CONCRETE
Appropriate action shall be taken to prepare the concrete surfaces; dry and free of dust and free of contaminants such as oil or grease. The concrete shall have minimum tensile strength of 1.5 N/mm² and minimum compressive strength of 25 N/mm². The residual moisture content must not exceed 4%.

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 N PRIMER, **COROFLAKE N PRIMER AS**, **COROFLAKE S PRIMER** and the **COROFLAKE 27** topcoats are applied to the substrate using an airless air spray system or by rolling or brushing.
In case **COROFLAKE 27** 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 premeasured 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 Concrete (non-conductive)	**Parts by Weight**	**Parts by Volume**
COROFLAKE N PRIMER	100	100
HARDENER No. 1 CLEAR	2	2

Primer Concrete (conductive)	**Parts by Weight**	**Parts by Volume**
COROFLAKE N PRIMER AS	100	100
COROFLAKE ACCELERATOR No. 1	1 - 2	1.1 – 2.1
HARDENER No. 1 CLEAR	2	2

Primer Steel	**Parts by Weight**	**Parts by Volume**
COROFLAKE S PRIMER	100	100
HARDENER No. 1 CLEAR	2	2.1

Coating	**Parts by Weight**	**Parts by Volume**
COROFLAKE 27	100	100
HARDENER No. 1 CLEAR	2	2.2

COROFLAKE 27

CONSUMPTION PER COAT

Product	Thickness [µm]	Coverage [g/m²]
COROFLAKE S PRIMER	covering	ca. 150 (steel)
COROFLAKE N PRIMER	covering	ca. 300 (concrete)
COROFLAKE 27	ca. 400 - 600	ca. 800 - 1000

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
COROFLAKE N PRIMER	ca. 60	ca. 40	ca. 20
COROFLAKE N PRIMER AS	ca. 60	ca. 35	ca. 10
COROFLAKE S PRIMER	ca. 60	ca. 40	ca. 20
COROFLAKE 27	ca. 90	ca. 60	ca. 30

RECOAT TIME (20°C)

Product	Min. [h]	Max. [Days]
COROFLAKE N PRIMER	ca. 8	ca. 14
COROFLAKE N PRIMER AS	ca. 4	ca. 14
COROFLAKE S PRIMER	ca. 6	ca. 7
COROFLAKE 27	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 27	5 kg	590 0730
COROFLAKE 27	20 kg	590 0740
COROFLAKE ACCELERATOR No. 1	0.4 kg	590 2985
COROFLAKE N PRIMER	5 kg	590 0480
COROFLAKE N PRIMER	20 kg	590 0040
COROFLAKE N PRIMER AS	5 kg	590 2983
COROFLAKE N PRIMER AS	20 kg	590 2990
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 27	5 - 20°C	6 Months
COROFLAKE ACCELERATOR No. 1	5 – 20°C	6 Months
COROFLAKE N PRIMER	≤ 10°C	9 Months
	≤ 20°C	6 Months
COROFLAKE N PRIMER AS	5 – 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.

COROFLAKE 27

Technical Data	Standard	Unit	Value
Abrasion	ASTM D4060	mg	92
Density (Mixture)	EN ISO 2811 (ASTM D1475)	g/cm³	1.16 ± 0.02
Modulus of Elasticity (Bend Test)	EN ISO 178 (ASTM D790)	N/mm²	3000 ± 500
Hardness Barcol	EN 59 (ASTM D2583)	-	≥ 30
Min. Adhesion Strength Concrete	EN ISO 4624 (ASTM D7234)	N/mm²	1.5*
Min. Adhesion Strength Steel	EN ISO 4624 (ASTM D4541)	N/mm²	7
Test Voltage (earliest after 24 hours)	EN 14879-2	kV / 100µm DFT	0.5 (steel)
Viscosity	EN ISO 2555 (ASTM D2196)	mPa·s	3000 ± 250
Linear Coefficient of Thermal Expansion	ISO 11359-2 (ASTM C531)	1/K	27-30 x 10^{-6}
Tensile Strength	EN ISO 527 (ASTM D638)	N/mm²	48
Max. Operating Temperature Liquids	-	°C	+70
Max. Operating Temperature Dry (Flue Gas)	-	°C	+180

* Depending on the concrete strength // **Note:** The indicated temperatures are dependent on the present load and may vary

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