Product Data Sheet

RCC CORROSION CONTROL

COROFLAKE 23 NVE
Inert Flake Filled Novolac Vinyl Ester Coating

PRODUCT DESCRIPTION
COROFLAKE 23 NVE is a two-component, inert flake filled Novolac Vinyl Ester resin based coating/lining system. The inert flake fillers are oriented parallel to the substrate surface to form a high level of protection against permeation and ensure a long service life.

COATING LAYERS COMPOSITION
The coating system consists of a primer **(COROFLAKE N PRIMER U** or **COROFLAKE S PRIMER U)** and two coats of **COROFLAKE 23 NVE** applied at 15-20 mils (375-500 µm) DFT, target 18 mils (450 µm) DFT per coat. Total applied thickness is 30-40 mils (750-1000 µm) DFT with a target of 36 mils (900 µm) DFT. **COROFLAKE 23 NVE** can also be applied in three coats for specific industry applications. The **COROFLAKE 23 NVE** is available in standard beige and grey colors.

FIELDS OF APPLICATION
Due to its low water vapor permeation coefficient, high thermal resistance and excellent resistance to acids, alkalis and organic chemicals **COROFLAKE 23 NVE** is an ideal corrosion protection material for concrete and steel structures in process and storage areas. Applications include protection in tanks, vessels, trenches, pits, vaults, dikes and secondary containment at chemical plants, power plants and other industries where chemical processes exist.

FEATURES
- Dry temperature stability up to 350°F (177°C)
- Excellent permeation resistance
- Excellent chemical resistance
- Outstanding adhesion to steel and concrete
- 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.

SURFACE PRE-TREATMENT
Carbon steel

For immersion or frequent spillage conditions, abrasive blast to “White Metal” in accordance with SSPC SP-5, NACE Specification #1 or SA 3. For fumes or occasional spill exposure and dry environments, abrasive blast to “Near White” in accordance with SP-10, NACE #2 or SA 2 1/2. A minimum surface profile of 3 mils (75 µm) is required. Refer to specification, RCC TT-14. After blast cleaning the steel surface shall be primed or coated before the formation of any rust bloom. For direct to metal coating options consult RCC Corrosion Control.

Concrete

The concrete shall have a minimum compressive strength of 3500 psi (25 N/mm²) and a minimum surface strength of 200 psi (1.4 N/mm²) for coatings and 300 psi (2.1 N/mm²) for linings. The concrete must be thoroughly cured and dry at the time of application. The residual moisture content should not exceed 4%. ASTM D 4263 plastic sheet test method is recommended to ensure concrete is moisture free. If moisture is detected, repeat test until dry.

Abrasive blast or mechanically abrade surface to remove the weak laitance and surface contaminants. Refer to specification, RCC TT-3 for further detail.

APPLICATION
- The primer and coating can be applied by airless or conventional spray, roller or brush.
- The target thickness of **COROFLAKE 23 NVE** should be 18 mils (450 µm) DFT per coat with a range of 15-20 mils (375-500 µm) DFT. The total coating thickness for a two coat system should be approximately 36 mils (900 µm) DFT with a range of 30-40 mils (750-1000 µm) DFT.
- Thickness range for a three coat specification is 45-60 mils (1125-1500 µm) DFT with a target of 54 mils (1350 µm).
- Application by roller or brush may require additional coats to achieve the total recommended thickness.

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

MIX RATIO
Hardener No. 1 Clear is used for the primer as well as for the **COROFLAKE 23 NVE Resin**. The mixing ratio of hardener to resin for primer and coating is 1.5-2.5 oz. per gallon of resin.

The primer and coating components are supplied in premeasured units so that weighing or measuring of the components is kept to a minimum.

CONSUMPTION

Layer	Thickness mils (µm)	Coverage
PRIMER on steel	2-5 (50-125)	250-300 ft²/gal
PRIMER on concrete	2-5 (50-125)	160-200 ft²/gal
BASECOAT	15-20 (375-500)	50-70 ft²/gal
TOPCOAT	15-20 (375-500)	50-70 ft²/gal

WORKING TIME & RECOAT TIME

Temperature	Working Time	Min Recoat	Max Recoat
50°F (10°C)	approx. 90 min	12 hrs	7 days*
70°F (21°C)	approx. 60 min	6 hrs	7 days*
90°F (32°C)	approx. 30 min	3 hrs	3 days*

* Maximum when area is shaded. If exposed to direct or indirect sunlight, maximum recoat time is 4 hrs @ 70°F (21°C).

CURE TIME (to place in service)

Temperature	Minimum Cure time
50°F (10°C)	72 hrs
70°F (21°C)	48 hrs
90°F (32°C)	24 hrs

Generally **COROFLAKE 23 NVE** can be placed in service after the final cure time intervals have been achieved. Shorter or longer intervals may apply depending on service conditions. Consult RCC Corrosion Control for specific recommendations.

CLEANING: Cleaning Agent T-100

SAFETY MEASURES

The material safety data sheets of the individual components 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:

Description	Package Size
COROFLAKE N PRIMER U	1, 4, 50 gal kits
COROFLAKE S PRIMER U	1, 4, 50 gal kits
COROFLAKE 23 NVE	1, 4, 25 gal kits

STORAGE

The materials must be stored in a cool and dry place. At storage temperature of 70°F (21°C) the shelf life is as follows:

COROFLAKE N PRIMER U & S PRIMER U Resin 6 months
COROFLAKE 23 NVE Resin 6 months
Hardener No. 1 Clear 12 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.

Technical Data	Testing Standard	Unit	Value
Density	ASTM D1475	lbs/gal (kg/l)	9.89 ± 0.25 (1.19)
Viscosity (Brookfield)	ASTM D2196	cps (mPa·s)	3000 ± 250
Modulus of Elasticity (Bend Test)	ASTM D790	psi MPa	435 K – 580 K 3,000 – 4,000
Tensile Strength	ASTM D638	psi MPa	2500-3000 17-20
Abrasion Resistance	ASTM D4060	mg	90
Adhesion Strength - Concrete	ASTM D7234	Psi (N/mm²)	Exceeds concrete strength
Minimum Adhesion Strength - Steel	ASTM D4541	psi N/mm²	1000 7
Linear Coefficient of Thermal Expansion	ASTM C531	in/in°F cm/cm°C	14-17 x 10^{-6} 25-30 x 10^{-6}
Water Vapor Permeability	ASTM E-96, Procedure E	perm-inch	0.0016
Volatile Organic Compounds	EPA Method 24	g/L (lbs/gal)	164 (1.37)
Maximum Operating Temperature* Immersion Steel Immersion Concrete Splash/Spill Concrete Continuous Dry		 °F °C °F °C °F °C °F °C	 130 54 140 60 200 93 350 177

***Maximum operating temperature limits may vary depending on actual service conditions**

We warrant that our goods will conform to the description contained in the order and that we have good title to all goods sold. This Product Data Sheet is considered accurate and reliable to the best of our knowledge at the date of its publication, but are used as guides only. The user assumes all risks and liabilities in connection therewith regardless of any suggestion, we may give. We assume no liability for performance of the product or for any loss or damage resulting from its use. Our liability, in law and equity, shall be expressly limited to the replacement of non-conforming goods at our factory, or at our sole discretion, to repayment of the purchase price of the non-conforming goods.