

COROFLAKE 23C MR Fabric Reinforced Graphite Flake Novolac Vinyl Ester Lining

PRODUCT DESCRIPTION

COROFLAKE is a fabric reinforced, chemical resistant lining based on Novolac Vinyl Ester Resin and incorporating a graphite flake filled topcoat.

LINING LAYERS COMPOSITION

The lining system consists of **COROFLAKE N PRIMER U**, a trowel applied basecoat of **TOPLINE 665 NVE RESIN** and filler mixture (silica based **F-1 Filler** or carbon based **C-1 Filler**), a reinforcement layer of 1.5 oz. fiberglass mat or synthetic K Cloth (Kevlar), and a graphite flake filled topcoat of **COROFLAKE 23C NVE**. The applied thickness range of the lining system is 80-120 mils (2.0-3.0 mm) DFT.

FIELDS OF APPLICATION

COROFLAKE 23C MR exhibits excellent resistance to organic and inorganic acids including HF, caustic solutions, as well as aromatic and aliphatic solvents. It is ideal for the protection of concrete process floors, trenches, sumps, and secondary containment structures. It can also be designed for use in explosion-proofed rooms and facilities.

FEATURES

- Excellent chemical resistance
- Excellent permeation resistance
- Fabric reinforcement provides structural support
- Outstanding adhesion to concrete
- Long term service

CHEMICAL RESISTANCE

Information on the chemical resistance properties is available upon request.

SURFACE PRE-TREATMENT

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 details.

APPLICATION

- Prime the substrate with **COROFLAKE N PRIMER U** and allow the primer to cure.
- Trowel apply the Basecoat mixture of **TOPLINE 665 NVE Resin, Hardener No. 1 Clear** and **F-1** or **C-1 Filler** in a uniform layer at 60 mils (1500 µm) WFT. If **C-1 Filler** is used, add 3 oz. of **Hardener No. 1 Clear** per gallon of resin.
- Immediately upon placement of the Basecoat (while it is still wet), the 1.5 oz. fiberglass mat or K Cloth is pressed onto the surface, then saturated and rolled with the mixed **TOPLINE 665 NVE Resin** and **Hardener No. 1 Clear**. A ribbed roller is used to remove entrapped air. Allow the fabric layer to cure.
- Spray or roller apply the topcoat mixture of **COROFLAKE 23C NVE Resin** and **Hardener No.1 Clear**. One or two topcoats may be specified.

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

MIX RATIO

HARDENER No. 1 Clear is used with all Resins at 1.5-2.5 oz. per gallon of resin by volume, except when **C-1 Filler** is used. When using **C-1 Filler**, add 3 oz. of **Hardener No. 1 Clear** per gallon of **TOPLINE 665 NVE Resin**.

CONSUMPTION

Layer	Thickness mils (µm)	Coverage (Mix Ratio)
PRIMER	2-5 (50-125)	160-200 ft ² /gal
BASECOAT TOPLINE 665 NVE Resin & Hardener No.1 Clear C-1 Filler	60 (1500)	45-50 ft ² /gal (3 oz/gal of Resin) 120ft ² /50 lb. bag (13-18 lb/gal of Resin)
TOPLINE 665 NVE Resin & Hardener No.1 Clear F-1 Filler		45-50 ft ² /gal (1.5-2.5 oz/gal of Resin) 100ft ² /50 lb. bag (20-25 lb/gal of Resin)
REINFORCEMENT TOPLINE 665 NVE Resin & Hardener No.1 Clear 1½ oz. Mat	35 (875)	34-38 ft ² /gal (1.5-2.5 oz/gal of Resin) 1.1 x surface area
TOPCOAT COROFLAKE 23C NVE Resin & Hardener No. 1 Clear	18 (450)	50-70 ft ² /gal (1.5-2.5 oz/gal of Resin)

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 hours @ 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 23C MR** 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
TOPLINE 665 NVE	1, 4, 50 gal kits
1.5 oz Fiberglass Mat, K Cloth	Sq. ft.
F-1 Filler, C-1 Filler	50 # bag
COROFLAKE 23C 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 Resin	6 months
TOPLINE 665 NVE Resin	6 months
COROFLAKE 23C NVE Resin	4 months
Hardener No. 1 Clear	12 months
F-1 & C-1 Filler	Indefinite, if kept dry
1.5 oz. Mat, K Cloth	Indefinite, if kept dry

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 - Basecoat	ASTM D1475	lbs/gal kg/l	8.7±0.25 1.04
Density - Topcoat	ASTM D1475	lbs/gal kg/l	9.98±0.25 1.2
Viscosity (Brookfield) - Topcoat	ASTM D2196	cps (mPa·s)	3000 ± 250
Modulus of Elasticity (Bend Test)	ASTM D790	psi MPa	500K – 551K 3500 – 3800
Tensile Strength – Reinforcement Layer	ASTM D638	psi MPa	10,800 75
Compressive Strength	ASTM C579	psi	7800
Adhesion Strength - Concrete	ASTM D7234	psi N/mm ²	Exceeds concrete strength
Electrical Properties	ASTM F150	ohms	5,000-250,000
Linear Coefficient of Thermal Expansion	ASTM C531	in/in°F cm/cm°C	14-17 x 10 ⁻⁶ 25-30 x 10 ⁻⁶
Volatile Organic Compounds (Basecoat – TOPLINE 665 NVE)	EPA Method 24	g/L (lbs/gal)	106 (0.88)
Volatile Organic Compounds (Topcoat – COROFLAKE 23C NVE)	EPA Method 24	g/L (lbs/gal)	96 (0.8)
Maximum Operating Temperature*	Immersion Concrete Splash/Spill Concrete	°F °C °F °C	180 82 200 93

*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.

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