

COROFLAKE 224AR VE Ceramic Filled Abrasion Resistant Vinyl Ester Coating

PRODUCT DESCRIPTION

COROFLAKE 224AR VE is a two-component, ceramic filled, abrasion resistant coating based on Vinyl Ester resin. It can be used as a one or two coat standalone coating/lining system or as a final abrasion resistant topcoat over compatible vinyl ester lining and coating systems from RCC Corrosion Control. **COROFLAKE 224AR VE** is designed to protect steel and concrete structures against a wide range of acids, alkalis, and bleach solutions, in highly abrasive environments.

COROFLAKE 224AR VE is UL certified for use in tanks ≥ 200 USG for products in direct potable water contact according to the following standards:



ANSI / NSF 61: Drinking water system components – Health effects

ANSI / NSF 61, Annex G: Drinking water system components – Health effects

NSF 372: Drinking water system components – Lead content

COATING LAYERS COMPOSITION

COROFLAKE 224AR VE is self-priming for direct to metal application in NSF service applications. For Non-NSF service a primer (**COROFLAKE N PRIMER U**) is optional for use on steel, and mandatory for application on concrete. **COROFLAKE 224AR VE** is designed for spray application in one or two coats to achieve a total system thickness of 40-50 mils (1000-1250 μm) DFT.

FIELDS OF APPLICATION

COROFLAKE 224AR VE is ideal in providing excellent corrosion and abrasion resistant protection for steel and concrete structures in various process and storage areas. Typical applications include lining of steel tanks, vessels, OTR trailers, various concrete tanks and pits at chemical plants, power plants, water and wastewater treatment facilities and other industries where abrasive processes exist.

FEATURES

- Meets NSF requirements for potable water contact
- Excellent abrasion resistance
- Excellent chemical resistance
- Outstanding adhesion to steel and concrete
- Easy to apply
- Can be applied direct to metal without primer

CHEMICAL RESISTANCE

Information on the chemical resistance properties is available upon request.

SURFACE PRE-TREATMENT

Carbon Steel

For immersion lining service conditions, abrasive blast to “White Metal” in accordance with SSPC SP-5, NACE Specification #1, or SA 3. 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 minimum concrete compressive strength should be 3500 psi (25 N/mm²). Ideally the minimum surface strength for application of linings should be 300 psi (2.1 N/mm²). 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 details.

APPLICATION

- When used, **COROFLAKE N PRIMER U** can be applied by roller, brush, or spray. Refer to the primer product data sheet for mixing and application details.
- **COROFLAKE 224AR VE** is designed for spray application. It can be applied using plural component spray equipment, single component conventional or airless equipment, as well as specially designed catalyst injection spray rigs. Consult RCC for additional information regarding spray equipment.
- Spray apply **COROFLAKE 224AR VE** at 50-60 mils (1250-1500 μm) WFT in one coat to achieve 40-50 mils (1000-1250 μm) DFT. For 2-coat applications each coat is applied at 25-30 mils (625-750 μm) WFT to achieve 20-25 mils (500-625 μm) DFT.
- Application by roller or brush should be limited to small areas and touch-up. Additional coats may be required to achieve the total specified thickness.

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

MIX RATIO

HARDENER 1 CLEAR to **COROFLAKE 224AR VE RESIN** mix ratio is **3 oz per gallon** by volume. Hardener can be adjusted from 2-4 oz/gal. Consult RCC for advice.

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CONSUMPTION

Coating / Lining	Total Thickness mils (mm)	Theoretical Coverage
COROFLAKE 224AR VE	40-50 (1.0-1.25)	26-33 ft ² /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 3 days @ 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

CURE SCHEDULE (NSF SERVICE)

COROFLAKE 224AR VE requires a minimum seven (7) day ambient cure at ≥ 70°F (21°C).

For certain aggressive service conditions, a post-cure at 160°F (71°C) for one (1) hour followed by seven (7) days ambient temperature may be used. Consult RCC for specific curing 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 224AR VE	1, 5 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 224AR VE RESIN	6 months
HARDENER 1 CLEAR	12 months

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

Technical Data	Testing Standard	Unit	Value
Generic Type			Vinyl Ester
Standard Color			Gray
Volume Solids		%	82 ± 3
Density	ASTM D1475	lbs/gal kg/l	10.2 ± 0.25 1.2
Tensile Strength	ASTM D2370	psi MPa	3100-3500 21-24
Tensile Elongation	ASTM D2370	%	0.3-0.6
Flexural Strength	ASTM D890	psi MPa	6500-7000 45-48
Minimum Adhesion Strength - Steel	ASTM D4541	psi N/mm ²	1000 7
Adhesion Strength - Concrete	ASTM D7234	psi N/mm ²	Exceeds concrete strength
Abrasion Resistance	CS17 Wheel, 1 kg load, 1000 cycles	mg (average loss)	10
Water Vapor Permeability	ASTM E-96, Procedure E	perm-inch	0.0022
Maximum Operating Temperature*			
Continuous Immersion		F °C	140 60
Continuous Dry		F °C	300 149

*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 is 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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