



TECHNICAL DATASHEET – FLAKEREZ® VE-8304

Revised: 2/2017

DESCRIPTION

FlakeRez VE-8304, a two component, graphite flake-filled vinyl ester novolac resin coating for primary and secondary containment, resists higher concentrations of acids and solvents where most other coatings fail. FlakeRez coatings contain inert flake reinforcement for dependability in maintaining their overlapping structure. The flakes within the chemical resistant resin matrix provide an extremely low permeation rate, which greatly reduces passage of ions through the coating.

TYPICAL APPLICATION

PRIMER	PolySpec-Futura PE-310
DETAIL PREPARATION	Putty mortar made of PE-310 Primer and F-4 Powder
BASECOAT	FlakeRez VE-8304 @ 15-20 mils DFT
TOPCOAT	FlakeRez VE-8304 @ 15-20 mils DFT

PERFORMANCE DATA

TENSILE STRENGTH (ASTM C - 307)	3,500 psi
FLEXURAL STRENGTH (ASTM C - 580)	8,500 psi
HARDNESS, BARCOL (ASTM D - 2583)	35-40
ABRASION RESISTANCE (ASTM D - 4060)	25 mg
MOISTURE PERMEABILITY, PERM. IN. (ASTM E - 96)	0.002
OPERATING TEMPERATURE, MAXIMUM, DRY: WET:	392°F Dependent on chemical exposure
VOC	1.23 lb/gal; 148 gm/L

BENEFITS

- Excellent resistance to fluorides such as hydrofluoric and hydrofluosilicic acids
- Seamless, jointless barrier coating
- Long-term reliability due to extremely low permeation rate of overlapping flake technology
- Easy application in two 20-mil coats
- Ambient Temperature Cure
- Withstands high operating temperatures

RECOMMENDED USES

- Tank interior lining
- Process vessels
- Process floors
- Tank and effluent sump dikes

GENERIC DESCRIPTION:

Graphite Flake-Filled Vinyl Ester Novolac

STANDARD COLORS: Charcoal Gray

PACKAGING: 4.5-Gallon Unit
(HARDENER NOT INCLUDED)

MIX RATIO: 1 GAL R: 2 OZ H

COVERAGE: 25–30 ft² / gallon @ 35–40 mils DFT
(INCLUDES 2 COATS @ 15–20 MILS DFT EACH)

FLAKEREZ® VE-8304
CONCRETE & STEEL COATING,
GRAPHITE FLAKE-FILLED, FLUORIDE RESISTANT

STORAGE & INSTALLATION

STORAGE ENVIRONMENT	Dry enclosed area, 65-80°F
APPLICATION TEMPERATURE, AMBIENT	50-95°F
APPLICATION TEMPERATURE, SUBSTRATE	Minimum 5°F above dewpoint
SHELF LIFE <i>Provided storage environment guidelines are followed</i>	60 days
POT LIFE, @ 77°F	30 minutes
FULL SERVICE, @ 77°F	3-5 days
RECOAT, @ 77°F	Minimum: 4 hours, Maximum: 48 Hours

Material cures more slowly at cooler temperatures, and working time will be substantially reduced at higher temperatures. In hot weather, material should be cooled to 65°F to 80°F prior to mixing and application to improve workability and avoid shortened pot life. The data shown above reflects typical results based on laboratory testing under controlled conditions. Reasonable variations from the data shown above may result.

CONSIDERATIONS & LIMITATIONS

- For best results, work area should be humidity and temperature controlled.
- Work area must be well ventilated. Fresh air fed respirators are recommended when working with this product.
- Do not thin with solvents unless advised to do so by ITW Engineered Polymers.
- Confirm product performance in specific chemical environments with ITW Engineered Polymers prior to use.
- Prepare substrate according to "Surface Preparation" portion of this document.
- Do not apply to slabs on grade unless a heavy unruptured vapor barrier has been installed under the slab.
- Always use protective clothing, gloves and goggles consistent with OSHA regulations during use. Avoid eye and skin contact. Do not ingest or inhale. Refer to Material Safety Data Sheet for detailed safety precautions.
- For industrial/commercial use. Installation by trained personnel only.

SURFACE PREPARATION

CONCRETE: Apply only to clean, dry and sound concrete substrates that are free of all coatings, sealers, curing compounds, oils, greases or any other contaminants.

- New concrete should be cured a minimum of 28 days.
- Concrete that has been contaminated with chemicals or other foreign matter must be neutralized or removed.
- Remove any laitance or weak surface layers.
- Concrete should have a minimum surface tensile strength of at least 300 PSI per ASTM D-4541.
- Surface profile shall be CSP-3 to CSP-5 meeting ICRI (International Concrete Repair Institute) standard guideline#03732 for coating concrete, producing a profile equal to 60-grit sandpaper or coarser. Prepare surface by mechanical means to achieve this desired profile.
- Moisture vapor transmission should be 3 pounds or less per 1,000 square feet over a 24 hour time period, as confirmed through a calcium chloride test, as per ASTM E-1907. Quantitative relative humidity (RH) testing, ASTM F-2170, should confirm concrete RH results <75%.
- All surface irregularities, cracks, expansion joints and control joints should be properly addressed prior to application.
- Outgassing may occur due to the porosity of some concrete surfaces. To reduce the effect of outgassing, the primer and coating should be applied when the temperature of the concrete substrate is dropping. This usually occurs in the evening; however, the concrete substrate temperature should be measured with a surface thermometer for verification. Double priming will greatly reduce the effects of outgassing by additionally filling the pores in the concrete.

STEEL: For immersion service, "White Metal" abrasive blast with an anchor profile of 2-4 mils in accordance with Steel Structures Painting Council

Specification SP-5-63 or NACE No. 1 is required. For splash and spillage exposure, "Near White" SP-10-63 or NACE No. 2 is required. **Refer to PolySpec Surface Preparation Guidelines for more details.**

INSTALLATION STEPS

- Prime surface with PolySpec-Futura PE-310 Primer. See data sheet for application details.
- Use a mortar/mud mixture of PolySpec-Futura PE-310 mixed with F-4 Powder, (approximately 4-parts powder to 1-part mixed resin), to round the corner radius of vertical to horizontal transitions, to smooth weld seams, and to patch holes and irregularities. See data sheet for application details.
- Weld seams should be ground smooth prior to coating application. It may be necessary to apply a precoat of FlakeRez VE-8304 to all seam areas.
- Prepare FlakeRez VE-8304 according to the instructions outlined below:

MIX CHART FOR FLAKEREZ VE-8304 COATING, SPRAY/PLURAL

TEMPERATURE	45°F	55°F	65°F	75°F	85°F
HARDENER #1 (MEKP)	2.8%	2.1%	1.4%	1.0%	1.0%

MIX CHART FOR FLAKEREZ VE-8304 COATING, HOT POT/AIRLESS

TEMPERATURE	45°F	55°F	65°F	75°F	85°F
HARDENER #1 (MEKP)	3.5 oz.	2.5 oz.	2 oz.	2 oz.	2 oz.

- Apply first coating at 15-20 dry mils:
 - Spray Application: Plural Component, Conventional or Airless Spray** Detail all edges prior to spray application. When applying by spray, apply in a cross hatch pattern, taking care to avoid excessive build-up of coating.
 - Brush or Roller Application** Brush or roll onto substrate.
- Allow product to cure for 2-4 hours @ 75°F. Apply second coat.

NOTE: Add 3oz. wax solution per gallon to the topcoat to minimize surface tack or topcoat with VE 8330.

NOTE: Two 15-20 dry mil coats are adequate for most jobs.

NOTE: If coating is allowed to cure for over 12 hours prior to recoating, check bond by rubbing surface with PolySpec® Smoothing Liquid #1. If coating becomes slightly tacky, then surface is ready for second coat. If surface is unaffected, sand lightly before recoating.
- After coating is completed, allow 3-5 days for curing. Random sample checks using a Barcol Hardness gauge should indicate a minimum reading of 30.
- Before placing into service, pinhole test the entire surface using 100 volts/mil. All pinhole areas should be recoated and retested.
- Always wear gloves when using this product.

1 GAL R: 2 OZ H / DOC frve-8304-TDS

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