Penncoat™ 331/331 MR Lining

SELECTION & SPECIFICATION DATA

Type
Flake filled novolac vinyl ester lining

Description
Penncoat 331 Lining is a flake filled novolac vinyl ester lining system with excellent resistance to organic and inorganic acids and many aliphatic solvents. Penncoat 331 MR Lining incorporates a 1 oz. mat reinforcement into the primer layer to reduce crack transmission.

Features
- Broad resistance to most acids, alkalis and aliphatic solvents
- Flake filled for enhanced permeation resistance
- Chopped strand mat in the primer layer of Penncoat 331 MR Lining reduces potential for concrete crack transmission
- Installation by airless spray, roller or brush

Uses
- Tank linings
- Steel structures
- Chemical resistant floor coating
- Chemical splash and spill areas
- Secondary containment lining

Finish
Gloss

Typical Thickness
14 – 16 mils (356 – 406 microns) WFT per coat to yield 12 – 14 mils (279 – 305 microns) DFT without MR reinforcing layer.

Solids Content
100% reactive

SUBSTRATES & SURFACE PREPARATION

All
Substrates must be clean, dry and free of contaminants

Steel
Immersion: SSPC-SP 5 White Metal Blast with a minimum angular profile of 3 mils.

Non-immersion: SSPC-SP 6 Commercial Blast with a minimum angular profile of 3 mils. SSPC-SP 2 Hand Tool or SSPC-SP 3 Power Tool Cleaning are suitable for mild environments.

Self-priming on steel.

Concrete or Concrete Masonry Units (CMU)
Concrete must be cured 28 days at 75°F (24°C) and 50% relative humidity or equivalent. Prepare surfaces in accordance with SSPC-SP 13 Surface Preparation of Concrete. Voids in concrete may require filling. Mortar joints should be cured a minimum of 15 days. Prime with Penntrowel™ Vinyl Ester Primer.

MIXING & THINNING

Ratio
1 gallon Part A resin: 2 – 3 fl. oz. Part B hardener

Mixing
Mix Part A with a power mixer to combine the entire contents into a homogenous mixture. Add CHP Hardener to resin at a rate of 2-3 fl. oz. per gallon (1.5 to 2.25% by weight) and mix thoroughly using a power mixer. Do not thin.

Pot Life

50°F (10°C)	75°F (24°C)	90°F (32°C)
60 minutes	40 minutes	25 minutes

Pot life is shorter at higher temperatures. A larger volume of mixed material will have a shorter pot life than a smaller volume.

Cleanup
Methyl ethyl ketone or lacquer thinner

APPLICATION GUIDANCE

Installation Conditions
Penncoat 331 Lining is formulated for ideal handling at 70°F (21°C). Use when surface, air and material temperatures are between 50°F (10°C) and 110°F (43°C) and substrate temperature is at least 5°F (3°C) above the dew point.

Airless Spray
30:1 to 56:1 Pump
Tip range 0.027 – 0.033

Roller
Multiple coats may be required to achieve specified film thickness.

Brush
Multiple coats may be required to achieve specified film thickness.

Work Stoppages
Do not leave material in hoses, guns or spray equipment. Thoroughly flush all equipment with appropriate cleaner. Do not reseal mixed material. Continue work until all mixed material is consumed. Material that has begun to gel cannot be recovered by adding fresh material.

CURE TIME & RECOAT WINDOW

Substrate Temperature	Initial Set	Minimum Recoat	Maximum Recoat	Full Cure
50°F	5 hours	12 hours	7 days	48 hours
75°F	2 hours	4.5 hours	7 days	24 hours
90°F	1.5 hours	3 hours	3 days	8 hours

When surface temperatures exceed 95°F (35°C) or are exposed to direct sunlight, overcoating should take place as soon as the coating may be walked on or handled without marring in order to avoid intercoat adhesion issues.

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SAFETY

Safety

Mixes and applications of this product present a number of hazards. Read and follow the hazard information, precautions and first aid directions on the individual product labels and safety data sheets before using.

Ventilation

Provide thorough air circulation during and after application until the material has cured when used in enclosed areas.

PACKAGING & ESTIMATING

Product	Code	Packaging
Penncoat 331 Resin Gray	19578 21921	4.5 gal (46 lb) pail 4 x 1 gal cans/case (41.3 lb)
Penncoat 331 Resin Red	29635 29603	4.5 gal (47 lb) pail 4 x 1 gal cans/case (41.3 lb)
Penncoat 331 Resin Off White	19577 23099	4.5 gal (47 lb) pail 4 x 1 gal cans/case (41.3 lb)
CHP Hardener	19552 21922	11.2 fl. oz. (0.7 lb) bottle 1 gal (8.3 lb) can
1.0-oz Chopped Strand Glass Mat	19639	50-inch x 375-foot (1,500 square foot) roll
1.5-oz Chopped Strand Glass Mat	19640	50-inch x 264-foot (1,056 square foot) roll

Theoretical Coverage

100 –115 square feet per mixed gallon applied at 14 – 16 mils (356 – 406 microns) WFT per coat will yield 11 – 12 mils (279 – 305 microns) DFT. 2 coats required. Target is 23 mils (584 microns) DFT for 2 coats.

For Penncoat 331 MR Lining, allow 1 gallon of Penntrowel VE Primer per 50 square feet of Chopped Strand Glass Mat as saturant.

Storage & Shelf Life

Maintain products in original packaging and sealed until ready for use. Estimated shelf life of resin is 6 months, and hardener is 1 year when stored in a dry area at 70°F (21°C). Warmer resin storage conditions will dramatically reduce shelf life. Store resin between 55°F (13°C) and 65°F (18°C) for maximum shelf life. Actual shelf life may vary with storage conditions.

If there is any question with respect to the quality of the components, check reactivity prior to use. For assistance consult with ErgonArmor.

TYPICAL PHYSICAL PROPERTIES

Property	Typical Value
Wet density Gray Red Off White	 10.3 lb per gallon 10.3 lb per gallon 10.6 lb per gallon
Viscosity, mixed material	2,000-5,000 cps at 75°F (24°C)
VOC content by weight	0.12 lb/gal
Abrasion resistance, ASTM D4060	75 mg loss/1,000 cycles with 1,000-gram (CS-17) wheel
Moisture permeability, ASTM E96	0.0015 perm-inch
Maximum dry service temperature	280°F (137°C)

Temperature limitations will vary with chemical service. Consult ErgonArmor Technical Service for guidance.

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