Protecto-Coat 500

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	Solvent Free Aromatic Polyurethane Hybrid
Description	Plural-component applied coating used as a lining in the technology manufacturing facilities to protect the substrate from traffic and moderate chemical exposure. Provides protection against microbiologically induced corrosion (MIC) and hydrogen sulfide corrosion found in wastewater treatment service.
Features	• Complies with Greenbook • Passes ASTM G210 - Severe Wastewater Analysis Tests (SWAT) • Cold temperature cure • Fast cure and walk on time • Excellent barrier properties, low permeability • Single-coat application 20 to 125 mils • Bridges normal shrinkage cracks in concrete • Monolithic, protective film for protection of steel and concrete • Outstanding abrasion, impact and tear resistance • Commonly used for Waffle Decks, where it can be cut away when needed.
Color	0200 (Light Tan) and 0700 (Grey) are available by special order.
Finish	Gloss *The finish will dull with wear and abrasion
Primer	Steel: Self-priming Concrete: Apply 3-4 mils of Primer 67LV directly to the prepared concrete. Once tacky (6-8 hours), apply Protecto-Coat 500 to specified thickness. For projects with high moisture vapor transmission, Vapor Stop may be used with a full, 20/40 mesh, sand broadcast. When sand is broadcast into either primer the recoat window is not limited.
Dry Film Thickness	20 - 125 mils (508 - 3175 microns) Total DFT
Solids Content	By Volume 100% +/- 0%
Theoretical Coverage Rate	1604 ft²/gal at 1.0 mils (39.4 m²/l at 25 microns) 80 ft²/gal at 20.0 mils (2.0 m²/l at 500 microns) 13 ft²/gal at 125.0 mils (0.3 m²/l at 3125 microns) Allow for loss in mixing and application.
VOC Value(s)	No measurable VOC levels
Limitations	• Protecto-Coat 500 will to amber or darken in exterior UV exposure, although performance is unaffected. • Not recommended for exposure to concentrated acids, aromatic, ketone or chlorinated solvents • Dry temperature resistance from -20 to 180 °F (-29 to 82 °C)

SUBSTRATES & SURFACE PREPARATION

General	Surfaces must be properly cleaned. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating.
Steel	SSPC-SP10 with a 3.5 mil (89 micron) to 5 mil (127 microns) surface profile.

SUBSTRATES & SURFACE PREPARATION

Concrete	Concrete must be prepared mechanically to remove surface laitance. Oils, grease or other contaminants must be removed prior to surface preparation. Concrete must be free of curing compounds and form release agents. Surface texture should be similar to 40-60 grit sandpaper or the visual standard, or CSP-5 from the International Concrete Repair Institute with pea gravel exposed. The prepared surface should have a tensile strength of 250 PSI per ASTM D-7234. Eliminate leaks and infiltrations and remove standing water. Resurface areas with excessive cavities and bug holes by using a high-strength resurfacing product. Carbocrete 4010, 4020, or 510/510SG may be used. Before application, the surface must be free of dust, condensation and visible moisture. Protecto-Coat 500 must be applied to Primer 67 series primers under 24 hours after application unless a full, 20/40 mesh, sand broadcast is used. A full broadcast allows for an unlimited recoat window. If >3 lbs or RH >85% moisture vapor is present Vapor Stop with a full 20/40 mesh sand broadcast.

PERFORMANCE DATA

All test data was generated under laboratory conditions. Field testing results may vary.

Test Method	System	Results
ASTM 2794, Impact Direct and Reverse	1 ct. Protecto-Coat 500	160 inch-pounds
ASTM B117, Salt Fog Resistance for 1,000 hours	1 ct. Protecto-Coat 500	Plane No Blisters Scribe No Blisters & 1.7 mm UCC
ASTM D 624 Tear Strength	1 ct. Protecto-Coat 500	347 pli
ASTM D2240, Shore D Hardness	1 ct. Protecto-Coat 500	60-65
ASTM D2247, Humidity Resistance	1 ct. Protecto-Coat 500	1,000 hours with no effect
ASTM D4060 (1000 cycles with 1000g), Abrasion Resistance	1 ct. Protecto-Coat 500	37 mg loss,
ASTM D412 Tensile strength Elongation	1 ct. Protecto-Coat 500	2,000 to 3,000 psi 90 to 110%
ASTM D522, Flexibility Method B, 1/8 inches Cylinderical Mandrel Bend	1 ct. Protecto-Coat 500	Pass
ASTM D570 Water Absorption, Long Term Method	1 ct. Protecto-Coat 500	Less than 0.7%
ASTM E-96, Permance	1 ct. Protecto-Coat 500	0.23 Perms
ASTM E96, Water Vapor Transmission Rates	1 ct. Protecto-Coat 500	0.1 g/100 in²/24 hours
Membrane Bio-Reactor Lining, 20 cycles	1 ct. Protecto-Coat 500	Pass
Pickle Jar Test from Greenbook Section 210-2.3	1 ct. Protecto-Coat 500	Pass

MIXING & THINNING

Mixing	Power mix Resin (Part A) with an air-driven agitator for 30 minutes just prior to use. Catalyst (Part B) requires no mixing before using.
Thinning	Do not thin.
Ratio	2:1 Ratio (A to B) by volume
Gel Time	4 to 6 minutes at 70 to 80°F (21 to 27°C)

APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

Plural Component Airless Spray

Heated plural airless will be a fixed-volume ratio 2A:1B. Standard equipment typically includes heated hoses, drum heaters, pressure feed from 50 gallon steel drums or heated hoppers, recirculation system, automatic high-pressure shut-off system. Please call Dudick Technical Service (800-322-1970) for complete pump, static mixer, whip hose and airless gun with tip set up recommendations. Applicator training is required and spray equipment must be approved by Dudick's Field Technical Service. Note: optimum material temperature should be 80° to 110°F (27° to 43°C).

Touch Up

For use on small areas only. Contact Technical Service for details.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	75°F (24°C)	35°F (2°C)	25°F (-4°C)	0%
Maximum	110°F (43°C)	140°F (60°C)	120°F (49°C)	95%

Application on substrate from 110 to 140°F will require special application techniques. Please consult Dudick's Technical Service for details. Substrate temperatures must be be 5°F (3°C) above the dew point and rising. This product limited moisture tolerance during, and immediately following application. Excessive material temperatures can reduce film build. See Protecto-Coat 500 Application Guide for more information on material temperatures.

CURING SCHEDULE

Surface Temp.	Cure for Most Immersion Services	Dry Time (Light Foot Traffic)	Dry to Touch	Maximum Recoat Time
38°F (3°C)	16 Hours	6 Hours	4 Hours	36 Hours
73°F (23°C)	2 Hours	1.5 Hours	1 Hour	18 Hours

*2 hour cure to immersion refers to water and wastewater sevice only.
If maximum recoat is exceeded, the surface must be abraded to roughen surface and cleaned of dust and debris and then solvent wiped with Thinner 76 (MEK) or Thinner 225E (acetone) prior to the application of additional coats. Maximum recoat time with itself: 4 hours in direct sunlight, 8 hours not in sunlight and 18 hours inside closed tank at 73 °F (23 °C).

CLEANUP & SAFETY

Cleanup

Use Thinner 2 (blend), Thinner 225E (acetone), or Thinner 76 (MEK). In case of spillage, absorb and dispose of in accordance with local applicable regulations.

Fill and seal up hoses and pumps with Carboline's Polyclad Line Stabilizer (plasticizer) when equipment will be stored for more than 1 week.

Safety

Read and follow all caution statements on this product data sheet and on the SDS for this product. Employ normal workmanlike safety precautions. Use adequate ventilation. Keep container closed when not in use.

Caution

This product does not contain any solvents; however, clean-up solvents that may be used do contain flammable solvents. Keep away from sparks and open flames. All electrical equipment and installations should be made and grounded in accordance with the National Electric Code. In areas where explosion hazards exist, workmen should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

PACKAGING, HANDLING & STORAGE

Shelf Life	Part A: Min. 24 months at 75°F (24°C) Part B: Min. 12 months at 75°F (24°C) When kept at recommended storage conditions and in original unopened containers
Storage Temperature & Humidity	40 to 120°F (4 to 49°C) 0 to 95% Humidity Store indoors and keep Dry. Do not place drums directly on concrete or earth. Store on top of wood slats or pallets. Blanket all partial drums with nitrogen gas to prevent moisture contamination. Avoid freezing. Do not open until ready to use. Rotate Resin (Part A) drums regularly if stored for the long term.
Shipping Weight (Approximate)	150 Gallon kit weighs 1400 lbs. (635 kg) 15 Gallon kit weighs 140 lbs.
Flash Point (Setaflash)	Part A: >300°F (148°C) Part B: 390°F (199°C)

WARRANTY

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