Protecto-Line 800

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	Trowel applied vinyl ester lining
Description	A high-performance, highly chemical resistant lining that uses several layers of thermosetting, filled vinyl ester resin to build up protection on metal and concrete. It is well suited for chemical manufacturing or processing operations. Blended with different fillers and used as a component of a system with woven roving, the separate elements lose their individual identity and become a single, monolithic lining.
Features	• Exceptional resistance to inorganic and organic acids • Excellent caustic and alkaline solution resistance • Excellent abrasion resistance and hardness • FDA compliant • Low permeability
Typical Uses	• Plating room floors • Food processing • Concentrated acid spills • Acid neutralization • Caustic handling areas
Color	Clear (0000)
Primer	Primer 27 series Primer 27 is designed to prevent abrasive blasted metal form developing rust bloom prior to the application of the Protecto-Line 800. Primer 27C is designed for applications on concrete where spark testing is required or specified.
Application Thickness	~60 mils (1524 microns) per lift **Protecto-Line 800 system** For estimating purposes approximately 16sq. ft. per gallon of resin and 1 lbs per sq. ft. of G-1 Filler will provide coverage for the combined trowelable basecoat and saturant layers. **Protecto-Line 800AR system** For estimating purposes approximately 16sq. ft. per gallon of resin and .67 lbs per sq. ft. of AR Filler will provide coverage for the combined trowelable basecoat and saturant layers. It is common practice to increase the area to be coated 10% in order to account for waste and fiberglass mat overlaps.
Solids Content	By Volume 74%
Dry Temp. Resistance	Continuous: 200°F (93°C) Non-Continuous: 250°F (121°C)
Chemical Resistance	• Inorganic Acids • Organic Acids • Alkali Solutions • Oils • Salts
Application	For maximum performance, all metal surfaces should be primed. Concrete must be primed to aid in the “wetting out” required for good bonding.

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SUBSTRATES & SURFACE PREPARATION

Concrete	Concrete must be mechanically prepared to remove surface laitance. Oils, grease or other contaminant 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, CSP-5 or higher from the International Concrete Repair Institute with exposed pea gravel. The prepared surface should have a nominal tensile strength of 250 PSI per ASTM D4541. All concrete substrates must be checked for moisture prior to product application using the Plastic Sheet Test, ASTM D4263. Additional surface preparation will be required if a 40-60 grit texture with exposed pea gravel is not achieved and the surface laitance not completely removed with the first mechanical preparation procedure.
Ferrous Metal	**Primer 27 is recommended to be used to promote better adhesion or as a holding primer in immersion service.** Immersion and heavy spillage service: White Metal, SSPC SP 5 or NACE No.1, minimum 3.0 mil profile. Heavy non-immersion service (i.e. fumes and spillage): Near white, SSPC SP 10 or NACE No.2, minimum 2.0 mil profile. Atmospheric service: Commercial SSPC SP 6 or NACE No.3, minimum 2.0 mil profile
Non-Ferrous Metals	**Must be primed with Primer 27 for immersion service.** Prepare by abrasive blasting to SSPC-SP 17 Thorough Abrasive Blast to a minimum of 3 mils (75 microns) dense angular anchor profile.

PERFORMANCE DATA

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

Test Method	Results
Coefficient of Expansion ASTM C531	12-15 x 10^{-6} in./in./ºF
Compressive Strength ASTM C579	12,500 PSI
Flame Spread ASTM D635	<5 mm
Flexural Strength ASTM C580	8,600 PSI
Shore D Hardness ASTM D2240	85-90
Taber Abrasion, CS-17 wheel, 1000 cycles, 1000 gram load ASTM D4060	40 mg. (G-1), 20 mg. (AR)
Tensile Bond Strength ASTM D7234	Cohesive failure of concrete
Tensile Strength ASTM C307	2,400 PSI
Tensile Strength ASTM D638	3,400 PSI
WVT ASTM E96	0.0017 perm. in.

Tested as a full system.

MIXING & THINNING

Mixing	Add the correct amount of PH- 1 Hardener to the Part A. Mix thoroughly for 2-3 minutes. **For Protecto-Line 800:** Add 18-25 lbs. of G-1 Filler per gallon. Mix well and apply a 1/16” thick basecoat, using a plasterer’s trowel. **For Protecto-Line 800AR:** Add 25-30 lbs. of AR Filler/gallon. Mix well and apply a 1/16” thick basecoat, using a plasterer’s trowel.

MIXING & THINNING

Ratio

Protecto-Line 800 and 800AR PH-1 Hardener Ratio:
3-3.5 oz/gal of PH-1 @ 60°F-70°F (15°C-21°C)
2-3 oz/gal of PH-1 @ 70°F-90°F (21°C-32°C)

Pot Life

60 minutes @ 50°F (10°C)
40 minutes @ 75°F (21°C)
25 minutes @ 90°F (32°C)

APPLICATION PROCEDURES

Trowel

After mixing the Part A, Part B, and the appropriate filler per the mixing instructions, apply approximately 1/16” (~60 mils) thick basecoat to a smooth, even finish using a trowel.

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Adding reinforcement and saturant:
Before the basecoat begins to cure, press one layer of woven fiberglass roving mat into the wet basecoat. Overlap all edges by 1 inch. Use a stiff, natural bristle brush or short nap roller and press the mat firmly into the basecoat, using a technique similar to hanging wallpaper, to remove all air pockets and wrinkles.
Saturate the reinforcement by mixing Part A and B only, do not add the filler, to make a neat resin mixture. Using a short nap roller, roll vigorously until the mat has lost its white color and turns translucent, paying special attention to overlaps and corners. Use enough resin to wet out the mat, but do not allow the saturant to puddle. If needed, roll the wet reinforcement with a ribbed roller to remove any trapped air or wrinkles. Allow the basecoat and reinforcement application to dry.

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Topcoat Application:
Before applying the topcoat, the troweled basecoat, woven fiberglass roving, and saturant layers must dry thoroughly to allow for the surface to be ground to provide profile for successive coats and remove any high spots or protrusions. Grinding must draw dust. Use caution not to grind through the reinforcing layer, then solvent wipe the entire surface.
Examine the reinforcement for any air bubbles or blisters. If these are present, they must be cut out and repaired, using the procedure above. Rough overlaps and protruding reinforcement strands must be abraded and smoothed. The topcoat will emphasize any imperfections in the reinforcement. Excessive blistering of the basecoat reinforcement may indicate inadequate rolling or too little saturant. Apply the topcoat at approximately 1/16" (~60 mils). Immediately after the trowel application and before the topcoat has cured, dampen a natural bristle brush (thick bristle 4” wide) or roller with S-30 Smoothing Liquid. Lightly brush or roll the wet topcoat to remove trowel marks and pinholes. Never allow S-30 Smoothing Liquid to puddle on the topcoat.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	60°F (16°C)	50°F (10°C)	50°F (10°C)	0%
Maximum	80°F (27°C)	110°F (43°C)	110°F (43°C)	90%

Substrate temperature must be 5°F (3°C) above the dew point.

CURING SCHEDULE

Surface Temp.	Minimum Recoat Time	Chemical Service	Maximum Recoat Time
50°F (10°C)	12 Hours	4 Days	5 Days
75°F (24°C)	4 Hours	24 Hours	4 Days
90°F (32°C)	3 Hours	20 Hours	3 Days

CLEANUP & SAFETY

Cleanup | Use S-10 Cleaning Solvent or Carboline Thinner 2 to clean tools and equipment.

Safety | Read and follow all caution statements on this product data sheet and on the SDS. Employ normal safety precautions. Keep container closed when not in use.

Ventilation | Ventilation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. Use MSHA/NIOSH approved air respirators as needed.

Caution | Fire and explosion hazards: This product contains less than 1% volatile components, however, vapors are heavier than air and can travel long distances, ignite and flash back. Eliminate all Ignitions sources. 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, workers should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

PACKAGING, HANDLING & STORAGE

Packaging

1 Gallon Kits:
Part A: 0.99 Gallons (in a 3.5 gal pail)
PH-1 Hardener: 4 oz (in a plastic bottle)

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5 Gallon Kits:
Part A: 4.96 Gallons (in a 5 gal pail)
PH-1 Hardener: 16 oz (in a plastic bottle)

Filler and Roving(Ordered Separately)
G-1 or AR Filler - 50lb bag (22.68 kg)
9.8oz Woven Roving (2000sf roll) - 146 lbs (66 kg)

Shelf Life

6 months, when properly stored in original, unopened containers at 50°F-75°F (10°C-24°C). Exposure to heat in excess of this temperature may cause premature gelling, reduced working time and shortened shelf life.
G-1 Filler and AR Filler: 36 months

Material can not be returned after purchase.

Storage

All Dudick products classified by DOT with either white, yellow or red labels must not be mixed or stored together as an explosive reaction can occur.

All products should be stored in a cool, dry area, away from open flames, sparks, or other hazards.

Shipping Weight (Approximate)

1 gallon kit: 12.1 lbs
5 gallon kit: 47 lbs

WARRANTY

To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. Carboline warrants our products to be free of manufacturing defects in accord with applicable Carboline quality control procedures. THIS WARRANTY IS NOT VALID WHEN THE PRODUCT IS NOT: (1) APPLIED IN ACCORDANCE WITH CARBOLINE'S SPECIFICATIONS, AND/OR (2) PROPERLY STORED, CURED, AND USED UNDER NORMAL OPERATING CONDITIONS. Carboline assumes no responsibility for coverage, performance, injuries, or damages resulting from use of the product. If this product is found not to perform as specified upon inspection by a Carboline representative during the warranty period, Carboline's sole obligation, if any, is to replace the Carboline product(s) proven to be defective or refund the purchase price thereof, at Carboline's sole option. Carboline shall not be liable for any other losses or damages. This warranty excludes (1) labor and costs of labor for the application or removal of any product, and (2) any incidental or consequential damages, whether based on breach of express or implied warranty, negligence, strict liability or any other legal theory. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated. The whole text of this Product Data Sheet, as well as the documents derived from it, have been written in English, and for legal purposes the English version shall prevail.