

DUDICK, INC.

Corporate Offices

1818 Miller Parkway

Streetsboro, OH 44241

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www.dudick.com

PROTECTO-LINE 100/105/100 AR

**100% SOLIDS, TROWEL APPLIED,
REINFORCED EPOXY LINING**

AND FLOOR TOPPING, 1/8" (3.17 mm)

FEATURES

- Meets all VOC Requirements
- Low Odor
- Conductive Version Available

RECOMMENDED APPLICATIONS

- Tank Linings
- Floors
- Trenches
- Piers
- Process Areas
- Containment Areas
- Clean Rooms

CHEMICAL RESISTANCE

- | | |
|------------------------|----------|
| Dilute Inorganic Acids | Oils |
| Alkali Solutions | Salts |
| Fluorides (105/100AR) | Solvents |

**TEMPERATURE LIMITS
(METAL APPLICATIONS)**

- Immersion up to 180°F
- Dry - 250°F Continuous
- 300°F Intermittent

PHYSICAL PROPERTIES

- | | |
|--|-----------------------------|
| Compressive Strength
ASTM C-579 | 14,000 PSI |
| Coefficient of Expansion
in./in.°F
ASTM D-696 | 12-15x10 ⁻⁶ |
| Tensile Strength
ASTM C-307 | 2,700 PSI |
| Taber Abrasion, CS-17 wheel
1000 cycles, 1000 gram load | 40 mg. (G-1)
20 mg. (AR) |
| Flame Spread
ASTM D-635 | ASTM D-4060
10 mm |
| WVT
ASTM E-96 | 0.0017 perm. in. |
| VOC
ASTM D 3960 | 0 |
| Protecto-Line 105
Electrical Properties
ASTM F- 150
NFPA #99 | 0-200,000 Ohms |

SPECIFICATIONS

Protecto-Line 100 shall be a nominal 1/8" thick, silica-filled epoxy lining, consisting of a penetrating primer, 1/16" basecoat, woven fiberglass roving and 1/16" topcoat as manufactured by Dudick, Inc. Materials shall be trowel applied in accordance with the manufacturer's recommended practices.

Protecto-Line 105 is identical to **Protecto-Line 100**, but utilizes a carbon filler and synthetic fabric in place of the silica filler and glass roving for resistance to fluorides and caustics. The carbon filler also provides conductivity.

Protecto-Line 100AR uses a penetrating primer, 1/16” silica filled basecoat, woven fiberglass roving and a 1/16” aluminum oxide filled topcoat. Inert aluminum oxide fillers are used to significantly increase resistance to abrasion, fluorides, and strong caustics. A synthetic fabric can be substituted for the glass woven roving for strong fluoride and caustic solutions.

THE PROTECTO-LINE 100 SYSTEM

Protecto-Line 100/105 uses several layers of amine cured, filled epoxy resin to build up the protection that metal and concrete need in chemical manufacturing or processing operations. When fully cured, the separate elements lose their individual identity and become a single, monolithic lining.

Primer 67 is designed to prevent abrasive blasted metal from developing rust bloom prior to the application of the **Protecto-Line 100**. For maximum performance, all metal surfaces should be primed. Concrete must be primed to aid in the “wetting out” required for good bonding.

Primer 67C is designed for applications on concrete where spark testing is required or specified.

Basecoat: Protecto-Line 100/105 epoxy resins are filled with graded silica or carbon powder depending on the chemical environment involved to reduce the coefficient of expansion and provide a thixotropic base on which to embed the fiberglass roving or synthetic fabric.

Reinforcement: A woven fiberglass roving or synthetic fabric is used to help bridge small

surface cracks and provides additional strength to resist thermal shock. It is applied to the wet basecoat and becomes an integral part of it, acting much the same as a reinforcing bar does in concrete.

Saturant: Catalyzed **Protecto-Line 100/105** liquid is used to wet out the reinforcement, thus providing a mechanical and chemical bond.

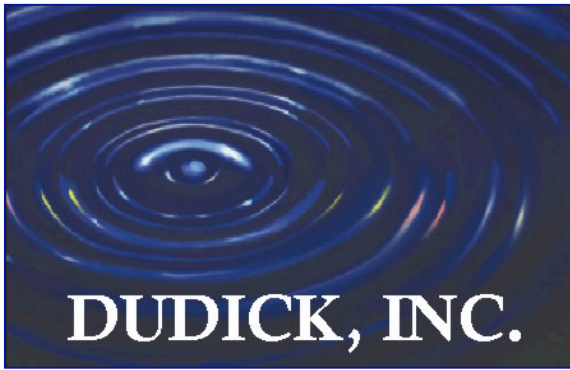
Topcoat: Protecto-Line 100/105/100AR systems are silica, carbon or aluminum oxide filled to provide an abrasion and chemical resistant barrier.

ESTIMATING QUANTITIES AND ORDER BILL OF MATERIAL

	SQUARE FEET PER GALLON	
	CONCRETE	STEEL
PRIMER 67	150-200	250-300
PRIMER 67C	100-150	-----
	P-Line 100	P-Line
Basecoat Saturant & Topcoat	18	20
Roving/Fabric	Area + 10%	Area +
G-1 Filler (Silica)	1 lb./sq. ft.	-----
G-9 Filler (Carbon)	-----	0.7 lb./sq.
S-30 Liquid	150	150
S-10 Solvent	500	500

For **Protecto-Line 100AR** use **AR Filler** at .65 lbs./sq. ft. for topcoat.

Quantities shown are for estimating purposes only. Actual field usage may vary.



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APPLICATION INSTRUCTIONS

SURFACE PREPARATION

Metal: Abrasive blast to a white metal finish according to SSPC SP5 or NACE # 1 and a 3.0 mil minimum profile.

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 from the International Concrete Repair Institute **with exposed pea gravel**. The prepared surface should have a nominal tensile strength of 250 PSI per ASTM D-4541.

All concrete substrates must be checked for moisture prior to product application using the Plastic Sheet Test, ASTM D-4263.

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.

Mechanical preparation removes laitance, exposing honeycombs or voids beneath the surface which must be filled with **Scratch Coat 300**. (Refer to separate product bulletin)

APPLICATION SPECIFICATIONS

Substrate temperature for both concrete and metal must be between 50°F and 110°F.

Relative humidity must not exceed 90%.

Substrate temperature must be 5°F above the Dew Point.

PRIMER 67/67C MIX RATIOS

Primer 67 Component A	1 gal.
Primer 67 Component B	1 gal.
Primer 67C Component A	1 gal.
Primer 67C Component B	35 fl. oz.

Important: Primer 67C Component A must be mechanically mixed for 1-2 minutes prior to adding the correct amount of **Component B**.

Primer 67C must be roller applied. Use brush application for small touch-up or repair work only.

PRIMER 67/67 C POT LIFE

TEMPERATURE	PRIMER 67	PRIMER 67C
50°F	90 min.	110 min.
75°F	60 min.	90 min.
90°F	30 min.	50 min.

MIX RATIOS

Protecto-Line 100/105/100 AR BY VOLUME

Component A	1 gal.
Component B	17 fl. ozs.

PRIMING

Metal: Mix **Primer 67 Component A** with **Component B** for 2-3 minutes and apply with a roller, brush or spray at 3-4 mils WFT.

Concrete: Concrete must always be primed to aid in the “wetting out” required for good bonding. Mix **Primer 67 or 67 C Component A with Component B** for 2-3 minutes and apply with a brush, roller or spray. We recommend the basecoat be applied over tacky primer; do not allow the primer to puddle. If application is not expected over tacky primer a light sand broadcast will provide better trowelling properties.

Concrete applications of **Protecto-Line 100/100AR** that require spark testing must use **Primer 67C**. It can be applied by roller only; use brush application for touch up or repair work. **Primer 67C** should not be seeded.

Important - With all epoxies after priming and before each additional coat, examine the surface for amine blush (oily film). If present, remove by washing with warm water and detergent.

BASECOAT

Add the correct amount of **Component B** to 1 gallon of **Component A**. Mix thoroughly for 2-3 minutes. For **Protecto-Line 100/100AR**, add 18-25 lbs. of **G-1 Filler/gal**. For **Protecto-Line 105 Basecoat** add 10-15 lbs. of **G-9 Filler**, mix well and apply a 1/16” thick basecoat, using a plasterer’s trowel. Apply to an even finish.

REINFORCEMENT AND SATURANT

Press the reinforcement into the wet basecoat. Lap all edges by 1 inch. Saturate the reinforcement with catalyzed resin using a short nap paint roller. Roll vigorously until the reinforcement has lost its white color and turns translucent. Use enough resin to “wet out” the reinforcement but do not allow the saturant to drip or puddle. It is highly recommended, for good adhesion, that a clean dry sand be lightly broadcast into the wet saturant.

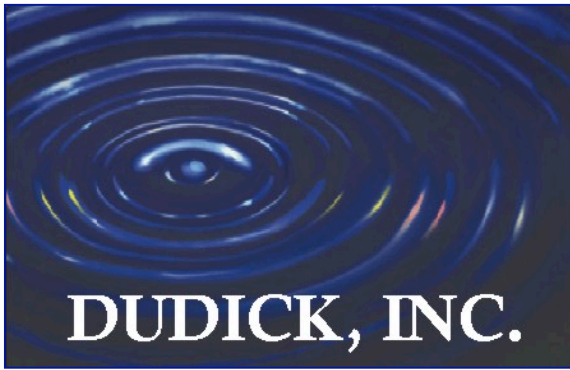
TOPCOAT

Before applying the topcoat, examine the surfaces for amine blush (oily film). If present, wash with a warm water detergent solution to remove it. Also, examine the overall application and grind any sharp glass protrusions and fill any voids with catalyzed saturant resin.

Add the correct amount of **Component B** to 1 gallon of **Component A**. Mix thoroughly for 2-3 minutes. For **Protecto-Line 100**, add 18-25 lbs. **G-1 filler/gal**. For **Protecto-Line 105**, add 10-15 lbs. **G-9 carbon filler/gal**. For **Protecto-Line 100AR**, add 25-30 lbs. **AR filler/gal**. Mix well and apply a 1/16” thick topcoat, using a plasterer’s trowel. Apply to an even finish.

SMOOTHING

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.



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Pot Life and Cure Cycle

TEMPERATURE	POT LIFE	CURE CYCLE
50°F	60 min.	96 hrs.
75°F	40 min.	48 hrs.
90°F	25 min.	24 hrs.

Application of **Protecto-Line 100** systems in direct sunlight may lead to blistering, pinholes, or wrinkling due to outgassing of air in the concrete and high substrate temperatures. Double priming shading, or evening application may be required. Consult a Dudick representative.

TESTING

Metal: Allow the total system to cure overnight. Spark test the lining with a 20,000 Volt AC spark tester. Mark and repair all pinholes using the topcoat material. Retest only the repairs. Testing of **Protecto-Line 105** is limited to a visual inspection because the lining is conductive.

Concrete: Allow the total system to cure overnight. Visually inspect the topcoat for any pinholes and repair them. The lining can be spark tested at 20,000 volts provided **Primer 67C** was used to prime the concrete.

CLEANING

Use **S-10 Cleaning Solvent** to clean tools and equipment.

SHIPPING

Refer to Material Safety Data Sheets.

STORAGE

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

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

When properly stored in their original, unopened containers at 50°F-75°F, **Primer 67/67C** and **Protecto-Line 100** components have a one year shelf life. Storage in direct sunlight or excessive heat will reduce working time and shelf life.

SAFETY

M.S.D.S: Material Safety Data Sheets must always be read before using products. **Protecto-Line 100** systems are intended for application by experienced, professional personnel. Dudick, Inc. can supply supervision to help determine that the surface has been properly prepared, the ingredients correctly mixed, and the materials properly and safely applied.

If **Protecto-Line 100** materials are to be applied by your own personnel or by a third party contractor, please be sure that they are aware of the following safety precautions:

- Exposure to resins and hardeners through direct skin contact and/or inhalation may cause severe dermatitis reactions in some people. Cleanliness of the skin and clothing is critical and must be of paramount concern.
- Fumes are flammable and heavier than air. Proper ventilation should be maintained to minimize breathing of concentrated fumes.
- Suitable respirators should be used during application.
- Safety glasses, gloves, and suitable protective clothing must be worn at all times during application.
- If contact with hardeners occurs, remove any clothing involved and flush the skin with flowing water. Discard the clothing. Do not attempt to wash and reuse it. **Protecto-Line 100** liquid can be removed with S-10 Cleaning Solvent, MEK, or lacquer thinner.
- Keep open flames and sparks away from the area where materials are being mixed and applied.
- If a rash occurs, remove the individual from the work area and seek a physician's care for dermatitis.
- In case of eye contact, flush with water for at least 15 minutes and consult a physician.
- If swallowed, do not induce vomiting; call a physician immediately.

NOTE: Dudick, Inc. ("Dudick") warrants all goods of its manufacture to be as represented in its catalogs and that the application of its products by its employees or sub-contractors shall be performed in a workmanlike manner.

Dudick's obligation under this warranty shall be the repair to and replacement of any applications which its examination shall disclose to be defective. Dudick makes no warranty concerning the suitability of its product for application to any surface, it being understood that the goods have been selected and the application ordered by the purchaser. DUDICK, INC. MAKES NO WARRANTY, EXPRESS OR IMPLIED, THAT THE GOODS SHALL BE MERCHANTABILITY OR THAT THE GOODS ARE FIT FOR ANY PARTICULAR PURPOSE. THE WARRANTY OF REPAIR OR REPLACEMENT SET FORTH HEREIN IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES ARISING BY LAW OR OTHERWISE, AND DUDICK, INC. SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOST PROFITS, DOWN TIME, DAMAGES TO PROPERTY OF THE PURCHASER OR OTHER PERSONS, OR DAMAGES FOR WHICH THE PURCHASER MAY BE LIABLE TO OTHER PERSONS WHETHER OR NOT OCCASIONED BY DUDICK'S NEGLIGENCE. This warranty shall not be extended, altered or varied except by written instrument signed by Dudick and Purchaser.

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