Dudick inc.

Corporate Offices
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PROTECTO-FLEX 905

TROWEL APPLIED, GLASS REINFORCED, FLEXIBLE EPOXY LINING, WITH A GRAPHITE FILLED NOVOLAC VINYL ESTER TOPCOAT
100-110 MILS (2.2-2.4 mm)

FEATURES

Bridges Surface Cracks in Concrete
Flexible System
Can be Seeded for Anti-Skid

RECOMMENDED APPLICATIONS

Food Processing Floors
Laboratories
Aisleways
Secondary Containment

CHEMICAL RESISTANCE

Organic Acids
Inorganic Acids
Mineral Oils
Ammonium Hydroxide
Sodium Hydroxide
Brine Solutions
Solvents

COLORS: Color Chart available upon request.

TEMPERATURE LIMITS

Immersion up to 130°F
Splash & Spill to 180°F

PHYSICAL PROPERTIES

Compressive Strength ASTM C-579	6,000 PSI
Tensile Strength ASTM C-307	4,500-5,000 PSI
Tensile Elongation ASTM C-307	12-15%
Shore D Hardness ASTM D-2240	70-75
Tensile Bond Strength ASTM D-4541	Cohesive failure of concrete

SPECIFICATIONS

Protecto-Flex 905 shall be an epoxy lining consisting of a 1/16" trowel applied basecoat, one layer of saturated fiberglass mat reinforcement, and a graphite filled novolac vinyl ester epoxy topcoat as manufactured by Dudick, Inc. and applied in accordance with the manufacturer's recommended practices.

THE PROTECTO-FLEX 905 SYSTEM

Protecto-Flex 905 uses a moisture tolerant primer and 100-110 mils of fiberglass reinforced, silica filled epoxy basecoat and a novolac vinyl ester topcoat to protect concrete substrates. The added flexibility adds strength to bridge small surface cracks and increase resistance to thermal shock.

Primer 67 is designed to tolerate residual moisture within the concrete and deeply penetrate the surface to provide the "wetting out" required for good bonding.

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

Protecto-Flex 905 topcoat cannot be spark tested.

Basecoat: Protecto-Flex 905 uses flexibilized epoxy resin and silica fillers to reduce the coefficient of expansion and provide a thixotropic base on which to embed the reinforcement.

Reinforcement: One layer of one (1) ounce fiberglass mat is used to help bridge small surface cracks and isolate their movement to the basecoat. 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*:* Flexibilized epoxy resin is used to wet out and embed the fiberglass reinforcement thus providing a mechanical and chemical bond to the basecoat.

Intermediate Coat: A vinyl ester resin at 10-15 mils which utilizes graphite flake fillers to provide conductive properties and improve protection against fluorides and higher caustic concentrations while providing a bond between the epoxy basecoat and novolac vinyl ester topcoat.

Topcoat: The multifunctional novolac vinyl ester graphite filled resin of Protecto-Flex 905 topcoat at 15-20 mils provides the high temperature and chemical resistance needed in hot process flow applications.

ESTIMATING QUANTITIES AND ORDER BILL OF MATERIAL

SQUARE FEET PER GALLON	
CONCRETE	
PRIMER 67	150-200 ft.²
PRIMER 67C	100-150 ft.²
Protecto-Flex 905	
Basecoat & Saturant	25 ft.²
G-1 Filler	.5 lb./ ft.²
Reinforcement	Area + 10%
Intermediate Coat	65-70 ft.²
Topcoat	60-70 ft.²
S-10 Solvent	500 ft.²

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

During manufacturing, some air entrapment occurs in the more viscous lining systems. During storage and transportation, settling can occur when entrapped air escapes this mix indicating less than 100% volumetric fill. All products are priced and sold by weight and not necessarily by volume

APPLICATION INSTRUCTIONS

SURFACE PREPARATION

Concrete: Concrete must be prepared mechanically 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, SCP-5 from the International Concrete Repair Institute **with pea gravel exposed.** 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 of concrete must be between 50ºF and 110°F.

Relative humidity must not exceed 90%.

Substrate temperature must be 5ºF above the Dew Point.

PRIMER 67/67C MIX RATIOS (BY VOLUME)

Primer 67	Component A	1 gallon
Primer 67	Component B	1 gallon
Primer 67C	Component A	1 gallon
Primer 67C	Component B	29 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 67/67C POT LIFE

	Primer 67	**Primer 67C**
Temperature	**Pot Life**	**Pot Life**
50°F	90 min.	90 min.
75°F	60 min.	60 min.
90°F	30 min.	30 min.

PRIMING

Concrete: Concrete must always be primed to aid in the "wetting out" required for good bonding. Mix **Primer 67 or 67C 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 of the basecoat.

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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.

Pot life of the mixed **Protecto-Flex 905** will depend on the temperature. To prevent material waste, do not mix more than can be used according to the corresponding tables:

Protecto-Flex 905 Basecoat

TEMPERATURE	POT LIFE
50ºF	90 min.
75ºF	60 min.
90ºF	30 min.

Do not attempt to store mixed material. Residual material should be properly disposed of at the end of each work period.

PROTECTO-FLEX 905 MIX RATIOS BY VOLUME

Basecoat and Saturant

Component A	1 gallon
Component B	1 gallon

Intermediate

Hardener Amt./Gal. Liquid	Substrate Temp.	Intermediate Coat
PH-1	50°-70°F	3-4 oz
PH-1	70°-90°F	2-3 oz

Topcoat

Component A	1 gallon
PH-1 Hardener	3-4 fl. oz.

BASECOAT

Add the correct amount of **Component B** to **Component A**. Mix thoroughly for 1-2 minutes. Add 18-25 lbs. of **G-1 Filler** to achieve a mortar like consistency. Mix well and apply a 1/16" thick basecoat to a smooth, even finish using a plasterer's trowel.

REINFORCEMENT AND SATURANT

Before the basecoat begins to cure, press one layer of 1 ounce chopped strand fiberglass mat into the wet basecoat. Lap all edges by 1 inch. Use a stiff, natural bristle brush or 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 fiberglass with the basecoat resin mixture, using a short nap paint roller. Roll vigorously until the mat has lost its white color and turns translucent. Use enough resin to "wet out" the mat, but do not allow the saturant to puddle. Immediately roll the wet fiberglass with a ribbed roller to remove any trapped air or wrinkles.

Allow the basecoat and reinforcement application to cure overnight*. Before applying the topcoat, examine the fiberglass for any air bubbles or blisters. If these are present, they must be cut out and repaired, using the procedure above. All overlapped seams should be sanded flat. The topcoat will emphasize any imperfections in the fiberglass. If excessive blistering of the basecoat reinforcement has occurred, it may have been caused by inadequate rolling with a ribbed roller. ***The Basecoat must be tack free prior to Intermediate Coat application.**

Mix the **Intermediate Coat** separately to redisperse pigments and fillers, which have settled. Then, add the correct amount of **PH- 1 Hardener** to the **Intermediate Coat** and mix thoroughly until a uniform color is achieved.

Apply at 10-15 mils WFT using a brush, spray or roller to an even, smooth finish. Allow the basecoat to cure until "firm" or slightly "tacky" before applying the topcoat.

Protecto-Flex 905 Topcoat

TEMPERATURE	POT LIFE
50ºF	60 min.
75ºF	40 min.
90ºF	25 min.

TOPCOAT

Mix the **Protecto-Flex 905 topcoat Component A** for 1-2 minutes to re-disperse pigments and fillers. Add the correct amount of **PH-1 Hardener to Component A** and mix thoroughly until a uniform color is achieved. Apply at 15-20 mils WFT using a brush, roller or spray to a smooth even finish.

Airless spray is recommended using a 30:1 pump equipped with a 60 mesh filter. The nozzle should be tungsten carbide with a 0.017-0.035-inch diameter opening and a 25º-60º fan. Suggested output pressure (depending on temperature) is 1,500 PSI.

Cure Cycle for Protecto-Flex 905 Topcoat

TEMPERATURE	Maximum Recoat Time	CURE TIME
50ºF	120 hrs.	96 hrs.
75ºF	96 hrs.	24 hrs.
90ºF	72 hrs.	10 hrs.

The Protecto-Flex 905 topcoat must be recoated within 6 hours when exposed to direct sunlight.

If these recoat times are exceeded, consult a Dudick representative. Sanding or abrasive blasting may be required before the next coat. Recoat times are dramatically reduced when the coating is exposed to direct sunlight.

Application of **Protecto-Flex 905** in direct sunlight may lead to blistering, pinholes, or wrinkling due to out-gassing 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-Flex 905** topcoat is limited to a visual inspection because the topcoat 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 27C** was used to prime the concrete.

Spark testing must be completed after application and cure of Protecto-Flex 905 basecoat and reinforcement. Protecto-Flex 905 topcoat cannot be spark tested.

CLEANING

Use **S-10 Cleaning Solvent** to clean tools and equipment. **DO NOT USE ACETONE.**

SHIPPING

Refer to Material Safety Data Sheets.

STORAGE

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

Store all products in a cool, dry area away from open flames, sparks or other hazards.

When stored in their original, unopened containers at 50°F-75°F, **Primer 67/67C and Protecto-Flex 905** basecoat components will have a six-month shelf life. **Protecto-Flex 905** topcoat has a three-month 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-Flex 905 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.

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If **Protecto-Flex 905** 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-Flex 905** liquid can be removed with **S-10 Cleaning Solvent**, MEK, or lacquer thinner. **DO NOT USE ACETONE.**
- 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 manufacture of its products by its employees or sub-contractors shall be performed in a workmanlike manner. Dudick's sole obligation under this warranty shall be to replace any material 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 MERCHANTABLE 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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