



Corporate Offices
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PROTECTO-COAT 900FR/905FR
FIRE RETARDANT CLASS A
FLAKE FILLED, NOVOLAC
VINYL ESTER COATING,
30-40 MILS (1.0 mm)

FEATURES

Excellent Chemical Resistance
Conductive Version Available
Low Permeability
Fire Retardant Class A

RECOMMENDED APPLICATIONS

Structural Steel
Water Storage Towers
Plating Lines, Exterior
Pickling Lines, Exterior
Underground Tanks and Piping
Floors
Spent Carbon
Storage Tanks
Steel Pump Supports
Catwalks
Chemical Storage Tanks

CHEMICAL RESISTANCE

Organic Acids	Oils
Inorganic Acids	Salts
Alkali Solutions	
Solvents	

TEMPERATURE LIMITS (METAL APPLICATIONS)

Immersion up to 130° F
Dry - 300° F - Continuous
 350° F - Intermittent

COLORS: White and Gray

PHYSICAL PROPERTIES

Tensile Strength ASTM C-307	2,500-2,800 PSI
Flexural Strength ASTM C-580	5,000-5,200 PSI
Adhesion to Steel ASTM D-4541	2,000 PSI
Taber Abrasion ASTM D-4060	23 mg.
Flame Spread ASTM D-635	<5 mm
Flame Spread Index ASTM E84-09	10
Smoke Developed Index ASTM E84-09	160
WVT ASTM E-96	0.0022 perm.in.
Shore D Hardness ASTM D-2240	75-80

Protecto-Coat 905FR

Electrical Properties 1.5-2.0 Megaohms
ASTM F- 150; NFPA #99

SPECIFICATIONS

Protecto-Coat 900FR/905FR shall be 30-40 mils thick, flake filled novolac vinyl ester coatings, consisting of a basecoat and topcoat of 15-20 mils each, as manufactured by Dudick, Inc. Materials shall be brush, roller or spray applied in accordance with the manufacturer's recommended practices.

Protecto-Coat 900FR is a higher cross-link density coating and offers the best solvent and acid resistance.

Protecto-Coat 905FR provides improved protection against fluorides and higher caustic concentrations. Graphite fillers also provide conductive properties when required or specified.

PROTECTO-COAT 900FR/905FR SYSTEM

Protecto-Coat 900FR/905FR uses two layers of thermosetting, flake filled novolac vinyl ester resin to build up the protection that steel and concrete need in chemical manufacturing or processing operations. When fully cured, the separate elements lose their individual identity and become a single, monolithic coating.

Primer 27 is designed to prevent abrasive blasted steel from developing rust bloom prior to the application of **Protecto-Coat 900FR/905FR** systems. For maximum performance, all metal surfaces should be primed, but primer may not be needed for mild, non-immersion service. Concrete, cement board and gypsum board must always be primed to aid in the “wetting out” required for good bonding.

Primer 27C is designed for applications on concrete where spark testing is required or specified.

Basecoat/Topcoat: Protecto-Coat 900FR/905FR systems are filled with flakes or graphite flakes to reduce the coefficient of expansion, and provide a chemical resistant barrier. The overlapping leaf arrangement of flakes reduces water vapor permeation and permits chemical exposure at higher temperatures without increasing the thickness of the coating.

ESTIMATING QUANTITIES AND ORDER BILL OF MATERIAL

Note: Resins include 3 oz. hardener/gal. as standard

APPROXIMATE SQUARE FEET PER GALLON		
	CONCRETE	STEEL
PRIMER 27	150-200 ft. ²	250-300 ft. ²
PRIMER 27C	100-150 ft. ²	-----
P-Coat 900FR/905FR		
Actual 30-40 MIL DFT	30-35 ft. ²	30-35 ft. ²
Theoretical 30-40 MIL DFT	40 ft. ²	40 ft. ²
S-10 Solvent	500 ft. ²	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

Metal: Metal surfaces must be abrasive blasted to an appropriate finish.

Immersion and heavy spillage service: White Metal, SSPC SP 5 or NACE #1, minimum 3.0 mil profile. Heavy non-immersion service (i.e. fumes and spillage): Near white, SSPC SP 10 or NACE #2, minimum 2.0 mil profile. Atmospheric service: Commercial SSPC SP 6 or NACE #3, minimum 2.0 mil profile.

Concrete: Concrete must be prepared mechanically to remove surface laitance. Oils, grease or other contaminate 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 pea gravel exposed**. The prepared surface should have a tensile strength of 250 PSI per ASTM D-7234.

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.

Mechanical preparation removes laitance, exposing honeycombs or voids beneath the surface which must be filled with **Scratch Coat 800**. (Refer to separate product bulletin)

Cement Board: All new cement board must be properly cured before application of the primer. Patch all voids with **Scratch Coat 800** (Refer to separate product bulletin), or other approved Dudick materials. Clean the surface to remove any dirt, dust, grease, mildew, oil, wax, or other contaminants.

Gypsum Board: Allow new drywall finishes to dry before application of primer. Patch all voids with **Scratch Coat 800** (Refer to separate product bulletin), or other approved Dudick materials. Clean the surface to remove any dirt, dust, grease, oil, wax, mildew and other contaminants.



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of metal may be omitted. The basecoat must be applied before rust bloom occurs.

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.

Hardener amt./gal. liquid	Substrate Temp.	Primer 27/27C		Protecto- Coat 900FR/905 FR
		oz.	oz.	
PH-1	50°-70°F	3-4 oz.	4-5 oz.	3-4 oz.
PH-1	70°-90°F	2-3 oz.	3-4 oz.	2-3 oz.
PH-2C	60°-70°F	----- -----		2-3 oz.
PH-2C	70°-90°F	----- -----		1-1/2 oz.

Pot life of the mixed **Protecto-Coat 900FR/905FR** will depend on the temperature. To prevent material waste and avoid damage to equipment, do not mix more material than can be used according to the following table:

TEMPERATURE	POT LIFE
50°F	60 min.
75°F	40 min.
90°F	25 min.

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

PRIMING

Metal: For maximum performance, prime all metal surfaces with **Primer 27**, mixed with the correct amount of **PH-1 Hardener**. Apply at 3-4 mils WFT with a brush, spray or roller. For mild non-immersion service, priming

Concrete surfaces must be thoroughly dry before the application of the primer. All concrete must be primed with either **Primer 27 or 27C** at 3-4mils WFT. Do not allow the primer to puddle.

Primer 27C must be mechanically mixed for 1-2 minutes prior to adding the correct amount of **PH- 1 Hardener**; apply using roller only. Use brush application for touch-up or repair.

BASECOAT / TOPCOAT

Mix the **Protecto-Coat 900FR/905FR** separately to re-disperse pigments and fillers which have settled. Then, add the correct amount of **PH-1 Hardener** to the **Protecto-Coat 900FR/905FR** and mix thoroughly until a uniform color is achieved. Apply at 15-20 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.

In order to prevent curing problems with styrenated products, air movement and/or ventilation must be maintained not only during application but also after application until the system has totally cured. This will prevent high concentration of styrene inhibiting/retarding the cure of the system.

SPRAY SPECIFICATIONS

Plural Component Binks B8-D 37:1 Pump
Gun: Binks Century Vinyl Ester with 108-9 tips
Pump: Binks B8
Slave/Catalyst Ratio: Catalyst ratios of 0.5% - 3.5%
Flow(GPM) @ 60c/m: 3.4 GPM (12.9 l/m) at 60 cycles/min of resin
Max Output Fluid Pr.: 2960 psi (204 bar)

Brush or roller application may require additional coats to meet the specified dry film thickness.

Protecto-Coat 900FR/905FR Cure Cycle

TEMPERATURE	RECOAT TIME		CURE TIME
	MIN.	MAX.	
50°F	12 hrs.	120 hrs.	96 hrs.
75°F	4 hrs.	96 hrs.	24 hrs.
90°F	3 hrs.	72 hrs.	10 hrs.

Protecto-Coat 900FR/905FR 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-Coat 900FR/905FR** 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

If spark testing is required, use a DC spark/holiday tester set to the appropriate voltage to achieve a minimum 100 volts per mil of applied coating. An AC tester can be used but is not as effective as a DC tester. Mark and repair all pinholes, using **Protecto-Coat 900FR**. Retest only the repairs.

Protecto-Coat 905 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 may occur.

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

Exposure to direct sunlight or excessive heat may reduce working time.

When properly stored in their original, unopened containers at 50°F-75°F **Primer 27** and **Protecto-Coat 900FR/905FR** components will have a shelf life of three-months or less, at temperatures above 75°F, two-months or less. **Primer 27C** will have a thirty-day shelf life. **PH-1 Hardener** has a shelf life of six months at 50°F-75°F.

SAFETY

M.S.D.S: Material Safety Data Sheets must always be read before using products. **Protecto-Coat 900/905** 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.

If **Protecto-Coat 900FR/905FR** 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-Coat 900FR/905FR** liquids 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.



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- 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.

10/9/19