



# TOPSHIELD® EST-FR/EST-FR (CAL)/EST-FR (SC)

A Two Component, Polyester, Aliphatic Topcoat for Fire-Rated Decking Systems

## 1.01 DESCRIPTION

Topshield® EST-FR is a fire-rated, polyester-aliphatic, two-components, liquid-applied, moisture-cured, urethane polyurea coating. Topshield® EST-FR is 340 VOC. Topshield® EST-FR (CAL) is 250 VOC. Topshield® EST-FR(SC) is 100 VOC. Be sure to use the right product grade that complies with VOC regulations as per federal, state, statutory bodies, county and city regulations/codes at the place of installation of product.

## 1.02 FEATURES

- Excellent Durability
- Fire Retardant
- Excellent Weatherability
- Excellent UV Resistance For Gloss Retention

## 1.03 TYPICAL USES

- Concrete
- Plywood
- Heavy Pedestrian Traffic
- Vehicular Traffic

## 1.04 COLOR

Light gray, medium gray, dark gray, tan, dark tan, brick red, white, and chocolate. Custom colors are also available. Minimum order of 100 gallons (380 liters).

## 1.05 PACKAGING

6-gallon kit: One 6 gallons (22.68 liter) pail containing 1 gallon (3.78 liters) bag of Topshield® EST-FR Side-A powder and one 5 gallons (18.9 liters) pail containing 5 gallons of Topshield® EST-FR Side-B liquid.

## 1.06 SURFACE PREPARATION

Refer to General and Safety Guidelines for complete information.

Install a 100-200 sqft (9.3-18.6 sqm) mock up of the system to be installed and approve for aesthetics, color, slip resistance, actual coverage rates and functionality before proceeding.

## 1.07 MIXING

The volume mixing ratio is 1 part Topshield® EST-FR Side-A Powder to 5 parts of Topshield® EST-FR Side-B Liquid.

- A. Mix the Topshield® EST-FR Side-B Liquid using a mechanical mixer (Jiffy Mixer) at slow speeds or by hand for at least 5 minutes until a homogeneous mixture and color is obtained. Use caution not to whip too much air into the material as this may result in pinhole blisters or shortened pot life.

- B. Remove plastic bag of Topshield® EST-FR Side-A powder from the 6 gallon (22.68 liter) pail and set aside. Fill this empty container half full with the premixed Topshield® EST-FR Side-B liquid. Slowly add Topshield® EST-FR Side-A powder, mixing with mechanical mixer. Ensure that all powder is transferred from the bag to the container. Continue mixing until no lumps are present, again being careful not to entrap air in the mixture.

- C. When Topshield® EST-FR Side-A powder has been thoroughly blended into Topshield® EST-FR Side-B liquid add the rest of Topshield® EST-FR Side-B Liquid. Mix with mechanical mixer until uniform mixture is obtained. Mixed material must be used within 2-4 hours of mixing the two components.

When using a color pack system, "boxing" from one mixed pail to the next is recommended. Always save 1 gallon (3.78 liters) or more and mix into the next pail to prevent color variation. Likewise, with pre-tinted topcoats, mix the last gallon or two from the previous batch into the new batch number.

## APPLICATION

### 2.01 APPLICATION BASICS

For best results, airless sprayer or phenolic-resin-core roller may be used but extra care should be taken not to cause air bubbles. Apply Topshield® EST-FR mixture evenly over the entire deck. Application should be continuous to ensure a smooth and level coat with no lines or streaks to disfigure the deck finish.

Refer to individual Systems Description under System Specifications Section of the Poly-Tuff Systems International (PSI) catalog or web site for specific coverage rates.

Coverage rates and cure times will vary depending on temperature, relative humidity, surface roughness and porosity, aggregate selection and embedment, and application technique. Coverage rates provided are optimal and are not guaranteed.

## 2.02 CURING

At 70°F (21°C) and 50% relative humidity, allow each coat to cure a minimum of 16 hours between each coat. If more than 48 hours passes between coats, reprime the surface with Enviro-Grip™ PUR#555 before proceeding.

Allow 24 hours before permitting light pedestrian traffic and at least 72 hours before permitting heavy pedestrian or vehicular traffic on the finished surface. Uncured Topshield® EST-FR is very sensitive to heat and moisture. Higher temperatures and/or high humidity will accelerate the cure time. Use caution in batch sizes and thickness of application. Low temperature and/or low humidity extend the cure time.

## 2.03 EQUIPMENT CLEANUP

Equipment should be cleaned with an environmentally-safe solvent, as permitted under local regulations, immediately after use.

## 2.04 STORAGE

Topshield® EST-FR has a shelf life of one (1) year from date of manufacture when stored indoors at a temperature between 60°F to 95°F (15°C to 35°C) in original, factory-sealed containers

## 2.05 LIMITATIONS

- Surfaces must be dry, clean and free of foreign matter.
- Containers that have been opened must be used as soon as possible.
- Do not dilute under any circumstance.
- Mix only materials that can be used within 2-4 hours.
- The following conditions must not be coated with PSI deck coating systems: On grade or below grade slabs, split slabs with buried membrane, sandwich slabs with insulation, slabs over unvented metal pans, suspended pool decks, swimming pools, magnesite, light weight concrete, asphalt, surfaces and asphalt overlays.

**WARNING: This product contains isocyanates and solvent.**

## TECHNICAL DATA

Topshield EST-FR 340 VOC. Based on draw down films.		Topshield EST-FR (CAL) 250 VOC. Based on draw down films.		Topshield EST-FR (SC) Pigmented 100 VOC. Based on draw down films.	
Coverage Rate, per 100 sqft	1 1/4 gallon (0.51 liters/m <sup>2</sup> )	Coverage Rate, per 100 sqft	1 1/4 gallon (0.51 liters/m <sup>2</sup> )	Coverage Rate, per 100 sqft	1 1/4 gallon (0.51 liters/m <sup>2</sup> )
Dry Film Thickness		Dry Film Thickness		Dry Film Thickness	
Per Coat @ 1 gal/100sqft	11 ± 2 dry mils 279 ± 50 microns	Per Coat @ 1 gal/100sqft	11 ± 2 dry mils 279 ± 50 microns	Per Coat @ 1 gal/100sqft	13 ± 2 dry mils 330 ± 50 microns
Hardness, ASTM D-2240	95 ± 5 Shore A	Hardness, ASTM D-2240	95 ± 5 Shore A	Hardness, ASTM D-2240	95 ± 5 Shore A
Specific Gravity	1.36 ± 0.1	Specific Gravity	1.42 ± 0.1	Specific Gravity	1.49 ± 0.1
Total Solids by Weight, ASTM D-2369	79 ± 2%	Total Solids by Weight, ASTM D-2369	79 ± 2%	Total Solids by Weight, ASTM D-2369	82 ± 2%
Total Solids by Volume, ASTM D-2697	68 ± 2%	Total Solids by Volume, ASTM D-2697	71 ± 2%	Total Solids by Volume, ASTM D-2697	77 ± 2%
Viscosity at 75°F (24°C)	2400 ± 500 cps	Viscosity at 75°F (24°C)	2700 ± 500 cps	Viscosity at 75°F (24°C)	3500 ± 500 cps
Volatile Organic Compounds, ASTM D-2369-81	2.33 lbs/gal 280 gm/liter	Volatile Organic Compounds, ASTM D-2369-81	1.67 lbs/gal 200 gm/liter	Volatile Organic Compounds, ASTM D-2369-81	0.70 lbs/gal 85 gm/liter

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