



# 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 two-component fire rated, polyester, aliphatic, 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. Please use the correct product grade that complies with VOC regulations as per federal, state, county and city regulations/codes at the place of installation of product.

## 1.02 FEATURES

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

## 1.03 USES

- Concrete
- Heavy Pedestrian Traffic
- Plywood
- Vehicular Traffic Concrete Decks

## 1.04 COLOR

Light grey, medium grey, dark grey, tan, dark tan, brick red, white, and chocolate. Custom colors are also available for minimum orders of 100 gallons (380 liters).

## 1.05 PACKAGING

6-gallon kit: 6 gallon (22.68 liter) pail containing 1 gallon (3.78 liters) bag of Topshield® EST-FR Side-A powder and 5 gallon (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) mockup 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.

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 attained. Use caution not to whip too much air into the material as this may result in pinhole blisters or shortened pot life.

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.

When Topshield® EST-FR Side-A powder has been thoroughly blended into Topshield® EST-FR Side-B liquid, add the rest of the Topshield® EST-FR Side-B Liquid. Mix with mechanical mixer until uniform mixture is attained. 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 (1.89 liters) or more and mix into the next pail to prevent color variation. Likewise, with pre-tinted top coats, mix the last gallon or two from the previous batch into the new batch number. Box the last gallon of the last used batch numbers with the new batch number to prevent hue or shading variation.

## 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 PSI catalog or website 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 75°F (24°C) and 50% relative humidity, allow each coat to cure a minimum of 16 hours between each coat. Cure time will vary depending on temperature and humidity.

Allow 24 hours before permitting light pedestrian traffic and at least 72 hours before permitting heavy pedestrian or auto traffic onto the finished surface. If more than 48 hours passes between coats, reprime the surface with recommended PSI Primer before proceeding.

### 2.03 EQUIPMENT CLEANUP

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

## 2.04 SHELF LIFE AND STORAGE

Topshield® EST-FR has a shelf life of 12 months from date of manufacture in original, factory-sealed containers when stored indoors at a temperature between 60-95°F (15-35°C).

## 2.05 LIMITATIONS

- Surfaces must be dry, clean and free of foreign matter.
- Clear coating may turn opaque and cloudy due to moisture penetration, especially in exterior applications.
- Containers that have been opened must be used as soon as possible.
- Do not dilute under any circumstance.

The following conditions must not be coated with PSI deck coating systems or products:

1) On grade or below grade slabs, split slabs with buried membrane, sandwich slabs with insulation, slabs over unvented metal pan, suspended pool, swimming pool decks, or areas where hydrostatic pressure is or may be present, without the use of Enviro-Grip™ 404FC primer. PSI Deck Coating is not recommended over magnesite, gypsum lightweight and where chained or studded tires may be used.

2) Concrete must exhibit 3000 psi minimum strength. An ICRI CSP 2-3

surface or greater is required for concrete surfaces to be coated.

3) New concrete must be cured for 28 days unless otherwise approved by PSI in writing. New surfaces to be coated must be trowel finished in compliance with the American Concrete Institute (except that hand troweling is not required), followed by a fine hair brooming, left free of loose particles, and shall be without ridges, projections, voids and concrete droppings that would be mechanically detrimental to coating application or function. Light broom finished concrete should be power-washed before coating application.

4) Concrete cleaning (see General and Safety Guidelines). Surface preparation may be completed by shotblasting or the use of Poly-Tuff Profile and Etch (PE) cleaner. Peel and adhesion tests are recommended.

Topshield® EST-FR Clear is considered Dangerous Goods. DOT regulations classify it as: UN 1263, PAINT, Class 3, PG III, FLAMMABLE LIQUID.

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

TECHNICAL DATA: Topshield EST-FR 340 VOC. Based on draw down films.		TECHNICAL DATA: Topshield EST-FR (CAL) 250 VOC. Based on draw down films.		TECHNICAL DATA: Topshield EST-FR (SC) Pigmented 100 VOC. Based on draw down films.	
Theoretical Coverage Rate: 1 1/4 gallon/100 sqft (0.51 liters/sqm)		Theoretical Coverage Rate: 1 1/4 gallon/100 sqft (0.51 liters/sqm)		Theoretical Coverage Rate: 1 1/4 gallon/100 sqft (0.51 liters/sqm)	
Dry Film Thickness, Exclusive of Aggregate, Per Coat @ 1 gallon/100 sqft	11 ± 2 mils (279 ± 50 microns)	Dry Film Thickness, Exclusive of Aggregate, Per Coat @ 1 gallon/100 sqft	11 ± 2 mils (279 ± 50 microns)	Dry Film Thickness, Exclusive of Aggregate, Per Coat @ 1 gallon/100 sqft	13 ± 2 mils (330 ± 50 microns)
Hardness, ASTM D-2240 Shore A	95 ± 5	Hardness, ASTM D-2240 Shore A	95 ± 5	Hardness, ASTM D-2240 Shore A	95 ± 5
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
Specific Gravity	1.36 ± 0.1	Specific Gravity	1.42 ± 0.1	Specific Gravity	1.49 ± 0.1
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)

Please read all information in the General & Safety Guidelines, Technical Data Sheets, Guide Specifications and Safety Data Sheets (SDS) before applying material. PSI Products are for "Professional Use Only" and preferably applied by professionals who have prior experience with PSI Products or have undergone training in application of PSI Products. Published technical data and instructions are subject to change without notice. Contact your local PSI representative or visit our website for current technical data, instructions, and project specific recommendations.

### LIMITED WARRANTY

PSI warrants its products to be free of manufacturing defects and that they will meet PSI current published physical and chemical properties. Seller's sole responsibility shall be to replace that portion of the product which proves to be defective. There are no other warranties by PSI of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. PSI shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. PSI shall not be responsible for use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee is being issued with respect to appearance, color, fading, chalking, staining, shrinkage, peeling, normal wear and tear or improper application by the applicator. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. PSI reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.

### DISCLAIMER

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the user's responsibility to satisfy himself, by his own information and test, to determine suitability of the product for his own intended use, application and job situation and user assumes all risk and liability resulting from his use of the product. We do not suggest or guarantee that any hazard listed herein are the only ones which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether in writing or oral, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and PSI makes no claim that these tests or any other tests, accurately represent all environments.