



# E-TUFF® 100

A Single Component Solvent and TDI Free, Water-Catalyzed Base Membrane

## 1.01 DESCRIPTION

E-Tuff® 100 is a solvent free, TDI free, single component, liquid applied, water catalyzed, polyurethane elastomeric waterproofing base membrane. Based on patent technology for use on concrete, metal and plywood surfaces. E-Tuff® 100 can be applied in any thickness in a single coat application without gassing or blistering. Please use the correct 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

- E-Tuff® Thixo Can Be Used As An Additive For E-Tuff® 100 Base
- High Tensile
- Membrane For Vertical Surface Application
- Optional Fast Cure With Added Accelerator
- Proven Protection
- Seamless Waterproofing Membrane
- Solvent Free
- TDI Free

## 1.03 TYPICAL USES

- Auto Traffic
- Concrete Bridges and Overlays
- Concrete or Plywood Decks
- Concrete Repair
- Most Metal, Wood, or Masonry Surfaces
- Pedestrian Traffic
- Ship Deck Overlays

## 1.04 COLOR

White

## 1.05 PACKAGING

1 gallon (3.78 liters) can with a partial vial of catalyst  
5 gallon (18.9 liters) pail with a full vial of catalyst  
55-gallon drums - net fill 50 gallons (189 liters) with a 1/2 pint (0.24 liters) can of catalyst.

Contact Poly-Tuff International (PSI) for availability of 55 gallon (208 liters) drums

## 1.06 SURFACE PREPARATION

Refer to General and Safety Guidelines for complete information. Concrete surfaces require a medium sandpaper finish equal to or greater than an ICRI CSP #3. Surface preparation may be completed by shot blasting or the use of Poly-Tuff Profile and Etch cleaner. Peel and adhesion tests are recommended. Install a 100-200 sqft (9.30-18.58 sqm) mock up of the system to be installed and approve for aesthetics, color, slip resistance, actual coverage rates and functionality before proceeding.

## TECHNICAL DATA (Based on draw down films)

Specific Gravity	1.08 ± 0.1
Hardness ASTM D-2240 Shore A	60 ± 5
Tensile Strength, ASTM D-412	1350 ± 150 psi (9.3 ± 1 MPa)
Elongation, ASTM D-412	675 ± 100%
Tear, ASTM D-624	250 ± 25 pli (44 ± 5 kN/m)
Viscosity, at 75°F (24°C)	3500-4500 ± 500 cps
Total Solids by Weight, ASTM D-2369	95 ± 2%
Total Solids by Volume, ASTM D-2697	93 ± 2%
Volatile Organic Compounds ASTM D-2369-81	<0.5lbs/gal (<60 gm/liter)

## 1.07 MIXING

Before application, premix E-Tuff® 100 using a mechanical mixer (Jiffy mixer) at slow speed or if mixing by hand mix at least for 5 minutes or until a homogeneous mixture and color is obtained. Use care not to allow the entrapment of air into the mixture.

Optional: Add catalyst (one vial per 5 gallon or 18.9 liters pail) and mix thoroughly until a homogeneous mixture and color is obtained. Catalyst will reduce cure time for cold temperature applications. Depending upon environmental conditions up to 3 vial of catalyst per 5 gallons (18.9 liters) may be used.

Mix pre-accelerated E-Tuff® 100 with water at a volume ratio of 4:1 (4 gallons or 15.4 liters of E-Tuff® 100 with 1 gallon or 3.78 liter of water). For 5 gallons or 18.9 liters of E-Tuff® 100 add 1.25 gallon or 4.725 liters of water. Mix the material thoroughly until water is completely combined with E-Tuff® 100. Water catalyzed material is referred as mixed or water catalyzed material.

## 1.08 JOINTS, CRACKS, AND FLASHING

Apply a single or two component non-gassing polyurethane sealant over all joints, cracks and flashing.

Bridge the joints and cracks and flashing with 2.75-4" (7-10.14 cm) polyester or polyurethane foam tape pushing the tape into the 20

mil (508 microns) prestripe of the basecoat. Alternatively, joints and cracks 1/16" or larger may be sealed flush with PTS E-101 concealed with 4" (10 cm) Super Seal Tape. Note: Concrete must be primed first and allow to dry.

## APPLICATION

### 2.01 APPLICATION BASICS

For best results use a squeegee or notched trowel. Airless sprayer or phenolic-resin-core roller may be used but extra care should be taken not to trap air which may result in bubbles.

Mix pre-accelerated E-Tuff® 100 with water at a ratio of (4:1). 5 gallons (18.9 liters) of E-Tuff® 100 and 1.25 gallons (4.73 liters) of water by volume. Mix thoroughly until water is completely combined with E-Tuff®100.

Spread E-Tuff® 100 mixture evenly over the entire deck. Application should not be stopped part way across an area. Each application should be done in one complete step. A continuous application will ensure a smooth and level coat with no lines or streaks to disfigure the deck coating.

When E-Tuff® 100 mixed material begins to gel (approximately 15 minutes after placement) broadcast 14-30 mesh (0.595-1.41 mm) rubber granules into the wet membrane to refusal. Normal usage is 20 lbs of rubber granules p/100 sqft (0.98 kg/sqm).

When broadcasting silica sand, allow membrane to thicken to a firm and sticky surface (approximately 30-45 min) when the sand will adhere but not sink into the base coat. The aggregate should be dry, washed, and rounded silica in the, 12-20, 16-30 or 20-40 mesh size (0.841-1.68 mm; 0.595-1.19 mm; 0.420-0.841 mm). A 6.5 Mohs scale minimum hardness as required by customer specifications or as specified in the system specifications. Time for thickening to a firm sticky condition is dependent on atmospheric environments especially temperature and humidity. Allow coating to cure 2-4 hours before proceeding to subsequent coats.

E-Tuff® 100 may be applied at any rate to achieve desired thickness. Theoretical coverage for 1 mil (25.4 microns) thickness is one gallon per 1488 sqft (138 sqm). Refer to individual Systems Description under System Specifications section of the Poly-Tuff Systems International (PSI) catalog or website for specific coverage rates.

### 2.02 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.

### 2.03 CURING

Allow each coat to cure (depending on environmental conditions, humidity and temperature) a minimum of 2-4 hours and a maximum of 24 hours. If more than 24 hours passes between coats, reprime the surfaces with recommended PSI Primer before proceeding.

E-Tuff® 100 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. After pail has been premixed proportioning of coating is acceptable if the precise amount of water

(25%) is mixed as required. Low temperature and/or low humidity extend the cure time. E-Tuff® 100 typically skins over within 45 minutes and cures throughly in 4 to 7 hours depending upon temperature, humidity and thickness. Lower temperatures and humidity prolong cure time. Higher temperatures accelerate cure time.

### 2.04 EQUIPMENT CLEANUP

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

### 2.05 SHELF LIFE AND STORAGE

E-Tuff® 100 has a shelf life of six (6) months from date of manufacture in original, factory-sealed containers when stored indoors at a temperature between 60-95°F (15-35°C).

### 2.06 LIMITATIONS

- E-Tuff® 100 should be used only as a base membrane. The components of E-Tuff® 100 are not UV stable and are not designed to withstand direct wear/abrasion without aggregate and topcoat.
- Ensure that the substrate is properly prepared prior to application. Surfaces to be coated with E-Tuff® 100 must be dry, clean, free of foreign matter, and primed with recommended PSI Primer. Primer is optional over new plywood.
- PSI recommends that an aggregate of washed, dry, rounded, crystal silica sand, 16-30 mesh (0.595-1.19 mm), with 6.5 Mohs minimum hardness or EPDM rubber granules 14-30 mesh (0.595-1.41 mm) size be used to aid in slip resistance. Applicator should determine mesh size based on job requirements. Whenever rubber aggregates are used two coats of topcoat are required to sufficiently provide a wearing surface.
- Any remaining material must be tightly sealed to protect it against curing in its container. Containers that have been opened must be used within 1 or 2 weeks since E-Tuff® 100 is a moisture reactive material that begins to cure when exposed to air.
- PSI does not recommend that E-Tuff®100 be diluted with solvents.

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 and asphalt surfaces, asphalt overlays without the express written consent of PSI. 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



# TECHNICAL DATA SHEET

## SECTION 3.2.2

preparation may be completed by shotblasting or the use of Poly-Tuff Profile and Etch (PE) cleaner. Peel and adhesion tests are recommended.

**WARNING: This product contains isocyanates.**

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 the 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.

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