



# E-TUFF® HS

## Bridge and Parking Deck Penetrating Sealer

### 1.01 DESCRIPTION

**E-Tuff® HS** is a two-component 100% solids epoxy designed as a very low viscosity, high strength sealer for hairline cracks in concrete substrates. 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 USES

- Concrete Crack Repair Without Injection Equipment
- Protection of Deck Rebar From Corrosion
- Repair of New Concrete Decks with Curing Cracks
- Restoration of Older Concrete Pavement Decks

### 1.03 FEATURES

- Chemical Resistant Bonding
- Extremely Durable Bonds
- Fast Setting
- High Strength
- Minimal Shrinkage Upon Cure
- Pre-Measured Packaging of Components.
- Substantial Cost Savings Over New Concrete
- Very Low Viscosity

### 1.04 TECHNICAL DATA

AASHTO Task Force 34 Epoxy Polymer Concrete Bridge Deck Overlays, ACI 548 Type EM (Epoxy Multi-Layer) Polymer Overlay, ASTM C881, Type III, Grade I, Classes B & C.

### 1.05 COLOR

Clear

### 1.06 PACKAGING

4-gallon kits: 3 gallons (11.34 liters) container of Side A and 1 gallon (3.78 liters) container of Side B

### 1.07 COVERAGE

The coverage rate is 2/3-1 1/2 (0.27-0.61 liters/sqm) gallons/sqft or 75-150 sqft/gallon depending on substrate. All coverage rates are approximate. Coverage rates will vary with the texture and the porosity of the concrete.

### 1.08 PREPARATION

New Concrete: Surface should be well cured (28 day minimum) using water, wet burlap, polyethylene curing paper, or dissipating resin based curing compound. Old Concrete- Remove any previously applied sealers, dust, dirt, tar, oil, etc. with pressure wash and PSI's **EnviroClean™**, Citrus Cleaner or use other appropriate measures to properly prepare the substrate. Membranes of any kind must be removed.

### 1.09 MIXING

Pre-mix each component. Mix 3 parts by volume of Side A Resin to 1

part Side B Hardner. Always add **E-Tuff® HS** Side A to the Side B. Mix using either PSI's **Rapid Pail Mixer** or a low-speed (400-600 rpm) drill using the PSI's **Jiffy Paddle** utilizing the PSI's **1 Man Stand**. Mix until uniform in color. Only mix what can be applied within 25 minutes.

### 1.10 APPLICATION

Mix 3 part by volume of **E-Tuff® HS** Side A Resin to 1 part of Side B Hardner as packaged by PSI. A mechanical agitator should be used, such as an electric drill with a mixing paddle attached. After mixing thoroughly for at least three minutes, the epoxy may then be applied immediately by pouring onto the concrete deck or substrate. The mixed epoxy should be allowed to pool over the visible cracks, and then spread progressively thinner over the entire surface to be sealed with a squeegee or stiff bristle push broom. Soon after applying the epoxy to the substrate (within 30 minutes) depending upon ambient temperature and tackiness, mechanically broadcast kiln dried, medium coarse sand evenly onto the wet epoxy surface at a rate of 20-40 pounds/100 sqft of sand (1-2 kg/sqm) of epoxy sealed substrate. This is to promote an anti-skid surface. It is imperative to apply this sand into the epoxy film before it cures, or the sand will not adhere to the epoxy and a dangerously slick road surface could result. The final cured surface appearance should be dull and not glossy. Application of the epoxy should be restricted to an ambient and surface temperature range of 50-85°F (10-29°F) range. Epoxy pot life decreases significantly as temperature increases. Therefore, working times for mixed epoxy are significantly shortened at elevated temperatures.

### 1.11 CURING/DRYING TIME

Minimum Closure Times : Weather Average Temperature of Deck, Epoxy, and Aggregate Components in °F (°C)

| TEMPERATURE         | WORKING TIME |
|---------------------|--------------|
| 85 °F + (29 °C+)    | 1 Hour       |
| 84-75 °F (29-24 °C) | 1 3/4 Hours  |
| 74-65 °F (23-18 °C) | 2 Hour       |
| 64-55 °F (18-13 °C) | 2 1/4 Hours  |
| 54-45 °F (12-7 °C)  | 2 3/4 Hours  |
| *44. °F (7°C -)     | 4+ Hours     |

NOTE: It is highly recommended that all components be conditioned in advance of use to 75°F (24°C). This may take 48 hrs. It is to the contractors benefit to maintain the components at elevated temperatures. At lower temperatures the resin will become difficult to remove from containers and to mix properly.

### 1.12 STORAGE AND SHELF LIFE

The material should be stored between 40–95°F (4–35°C) in a cool, dry area away from direct sunlight. Shelf life of properly stored, unopened containers is 24 months. Excessive temperature differential and/ or high humidity can shorten the shelf life expectancy.

### 1.13 CLEAN UP

Tools and Equipment: Clean with Xylene or PSI's **GreenClean™**. Uncured material can be removed with PSI's **Solvent100™** or approved solvent. Cured material can only be removed mechanically. Dispose of in accordance with current applicable local, state and federal regulations. Cured Resins are Innocuous.

### 1.14 LIMITATIONS

- Color may alter due to variations in lighting and/or UV exposure.
- Do not apply over wet, glistening surface.
- Do not apply to porous surfaces exhibiting moisture-vapor transmission during the application.
- Do not thin with solvents.
- Material is a vapor barrier after cure.
- Minimum substrate and ambient temperature for application is 50°F (10°C).
- Minimum age of concrete prior to application is 21-28 days, depending on curing and drying conditions.
- Not an aesthetic product.
- Use oven-dried aggregate only.

### 1.15 CAUTION

Not suitable for asphaltic surfaces. Do not use over a curing membrane. Do not apply if precipitation is expected within four hours. **E-Tuff® HS** is not formulated for below grade waterproofing. Do not dilute. Wear protective gloves and goggles. Avoid prolonged skin contact.

**READ SDS PRIOR TO USING PRODUCT. FOR PROFESSIONAL USE ONLY. KEEP OUT OF REACH OF CHILDREN. MADE IN THE USA.**

| PHYSICALS                                       |                                      |
|---|--------------------------------------|
| Mixing ratio by volume (A:B)                    | 3:1                                  |
| Viscosity                                       | 100 centipoises max                  |
| Pot life (1 Lb mass @ 77°F [25°C])              | 50 minutes                           |
| Practical Field Pot Life (4 gals. @85°F [29°C]) | 15 min                               |
| Tack free time (77°F [25°C]) ASTM 01640)        | 6.5 hrs                              |
| Initial cure (thin film @ 77°F [25°C])          | 8 hours                              |
| Full cure                                       | 7 days                               |
| Compressive strength (DMS-6100)                 | 9000 psi (62.10 MPa)                 |
| Concrete Wet Bond Strength                      | (DMS-6100)>400psi (2.76 MPa)         |
| Coverage  | 75-150 sqft/gallon (1.85-3.68 sqm/l) |
| Water gain (ASTM D-570-57T)                     | 0.2% max                             |

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