POLY-TUFF SYSTEMS INTERNATIONAL
HIGHWAY DIVISION

TuffDeck™ 7097

High Friction Overlay for Bridges & Decks

1.01 DESCRIPTION

TuffDeck™ 7097 is a 1:1 ratio, 100% solids, low modulus, low viscosity, moisture tolerant, rapid setting, low viscosity, epoxy binder and adhesive. It is formulated as a single and multi-layer, hi-friction, skid-resistant overlay providing minimal closure times. 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

- Bike Paths
- Bridge Decks
- Colored Bus Lanes
- Parking Garages
- Parking Ramps
- Roadways

1.03 FEATURES

- Light Weight Protective Overlay
- Long Term Protection To Icing Solutions
- Low Dead Load
- Raid Strength Development in all weather
- Reduced Closure Time
- Self Priming
- Zero VOC

1.04 TECHNICAL DATA

Meets AASHTO Task Force 34 Epoxy Polymer Concrete Bridge Deck Overlays, ACI 548 Type EM (Epoxy Multi-Layer) Polymer Overlay, AASHTO M235, Type III, Classes B & C specifications. ASTM C-881, Type III, Grade I, Classes B & C.

1.05 COLOR

Amber

1.06 PACKAGING

10-gallon kit: 5 gallon (18.9 liters) pail Side-A and 5 gallon (18.9 liters) pail Side-B

110-gallon kit: 55 gallon (104 liters) drum Side-A and 55 gallon (105 liters) pail Side-B

550-gallon kit: 275 gallon (520 liters) tote Side-A and 275 gallon (520 liters) tote Side-B

1.07 COVERAGE

SS-3037: using Automated Application Vehicle: Apply the binder resin at a rate of 3-4 gallons/100 sqft (1.21-1.63 liters/sqm) or 25-32 sqft/gallon giving an uniform thickness of 50-65 mils (1270-1574 microns). Apply the calcined bauxite within 3 ±1 seconds of the base resin binder application onto the pavement.

By Hand Or Spray Bar:

Layer 1: 2 1/2 gallons per 100 sqft (1 gallon /40 sqft or 1 liter/sqm)
Aggregate – 10 lbs/sqyd (0.5 kg/sqm)

Layer 2: 5 gallons per 100 sqft (1 gallon /20 sqft or 2.01 liters/sqm)
Aggregate – 14 lbs/ sqyd (0.75 kg/sqm)

1.08 PREPARATION

The concrete must be sound and free of all foreign material, including oil, grease, dust, laitance or other surface contaminants. Mechanically abrade the surface by grinding, abrasive blasting or water blasting. All concrete of poor quality that is in contact with any reinforcing steel should be removed. Remove rust from exposed reinforcing steel by brushing or sandblasting. Apply PSI's **RustCheck™** permanent rust converter to any exposed steel, prior to overlaying with patching or overlaying the **TuffDeck™ 7097**. Patches for spalls and repair areas greater than 1/2" (1.27 cm) in depth should be saw cut 1 1/2" (3.24 cm) deep depending on the depth of the repair and at least 2" (5.08 cm) beyond the perimeter of the repair area. USE CAUTION TO AVOID SAW CUTTING ANY STEEL. Deeply spalled areas can be repaired with **TuffMend™ DOT, TuffCRT™ II, or TuffCRT™ 6170** prior to the overlay. All surfaces to be repaired should be in a saturated-surface-dry (SSD) condition with no standing water on the surface.

1.09 MIXING

Condition material to 65–85°F (18–29°C) for ease of mixing and optimum flow prior to using. Premix each side for thirty seconds, then place 1 part by volume of Side A and 1 part by volume of Side B into a clean pail and mix for three minutes at a low speed using either the PSI's **Rapid Pail Mixer** "or" a 1/2+ hp heavy-duty drill with the PSI's **"Jiffy" Paddle** utilizing the PSI's **1 Man Stand**. Mix only what can be used within the pot life.

1.10 APPLICATION

Surface and ambient temperature must be a minimum of 50°F (10°C). Utilize one of the following methods for the application of **TuffDeck™ 7097** and aggregate wearing course, as applicable.

1) MECHANICAL MIXING AND APPLICATION: TuffDeck™ 7097 can be applied by a truck mounted application machine in accordance with SS-3037 onto the pavement section to be treated in varying widths at a uniform application thickness. Operations shall proceed in such a manner that will not allow the **TuffDeck™ 7097** to separate in the mixing lines, cure, dry, or otherwise impair retention bonding of the high friction surfacing aggregate. The mixed components shall be applied mechanically onto the prepared pavement surface at a minimum a rate of 3-4 gallons/100 sqft (1.21-1.63 liters/sqm) or 25-33 sqft/gallon for a one coat system. Immediately, spread the high friction surfacing aggregate onto

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the installed **TuffDeck™ 7097** epoxy base binder, at a minimum rate of 1-1.5 lb/sqft (0.454-0.68 kg/sqm).

2) HAND MIXING AND APPLICATION: The **TuffDeck™ 7097** components, Side A and Side B, shall be premixed and proportioned to the correct ratio, 1:1. Mix material using a low speed, high torque drill fitted with the PSI's "Jiffy" Paddle or a helical stirrer. This method shall be used where truck mounted application machines are not applicable to the specified locations because of logistics and restrictions. The mixed components shall be hand applied onto a prepared pavement surface at an application coverage rate of 2 1/2 gallon/100 sq/ft (1 liter/sqm) or 40 sqft/gallon. Hand applied base binder shall be uniformly spread onto the substrate surface by means of a (1/4) notched squeegee. Immediately, spread the high friction surfacing aggregate onto the epoxy at a minimum rate of 10 lbs/sqyd. After the initial cure of the first course, remove all excess aggregate and apply course #2, spreading the neat **TuffDeck™ 7097** at a coverage rate of 5 gallon/100 sqft (2.01 liter/sqm) or 20 sqft/gallon once again broadcasting the select aggregate to the point of rejection. After allowing the system to cure – 2.5 hrs for course #1 and 4 hrs for course #2 @ 70°F (22°C) and after all the aggregate has been removed it can be opened up to traffic.

1.11 CURING

Minimum Curing Times:

80 °F + (26.67 °C+)	3 Hours
75 °F (24 °C)	3 Hours
70 °F (21.1 °C)	4 Hours
65°F (18.3 °C)	5 Hours
60 °F (15.56 °C)	6 Hours

*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 be become difficult to remove from containers and to mix properly.

1.12 STORAGE & SHELF LIFE

The material should be stored between 40-95°F (5-35°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

Clean tools before the epoxy sets up using Xylene or PSI's **EnviroClean™**.

1.14 LIMITATIONS

Minimum substrate temperature is 50°F (10°C). Do not thin. Solvents will prevent proper cure. Use oven-dried aggregate. Material is a vapor barrier after cure. Do not place **TuffDeck™ 7097** on magnesium phosphate cement concrete.

1.15 SAFETY

Eyes: Hold eyelids apart and flush thoroughly with water for 15 minutes. *Skin:* Remove contaminated clothing. Wash skin thoroughly for 15 minutes with soap and water.

Inhalation: Remove person to fresh air.

Ingestion: Do not induce vomiting. In all cases, contact a physician immediately if symptoms persist. Obtain, read, and understand the Safety Data Sheet (SDS) before use of this or any other Poly-Tuff Systems International product.

1.16 CAUTION

Side A - irritant; Side B – corrosive product is a strong sensitizers. Use with adequate ventilation. Wear protective clothing, gloves and eye protection (goggles, safety glasses and/or face shield). Do not take internally. In case of ingestion, seek medical help immediately.

May cause skin irritation upon contact, especially prolonged or repeated. If skin contact occurs, wash immediately with soap and water and seek medical help as needed. If eye contact occurs, flush immediately with clean water and seek medical help as needed. Dispose of waste material in accordance with federal, state and local requirements.

READ SDS PRIOR TO USING PRODUCT. KEEP OUT OF THE REACH OF CHILDREN.

1.17 PHYSICALS	
Viscosity	2000 cps @ 77°F (25°C)
Gel Time (60 g mass)	25 minutes
Tack Free Time (73°F or 23°C)	3 to 5 hours
Tensile Properties (ASTM D638)	7 day cure
Tensile Strength	2800 psi (19.3 MPa)
Tensile Elongation	40%
Bond Strength (ASTM C882)	
2 day cure	2000 psi (13.8 MPa)
14 day cure	2800 psi (19.3 MPa)
Compressive Properties (ASTM D695)	7 day cure
Compressive Strength	5000 psi (34.5 MPa)
Compressive Modulus	110,000 psi (760 MPa)
Compressive Strength (ASTM C579)	
3 hour cure	1500 psi (10.3 MPa)
24 hour cure	5000 psi (34.5 MPa)
Bond Strength (ASTM C1583/ACI 503R)	300 psi (2.0 MPa)
Flexural Strength (ASTM D790)	3000 psi (20.9 MPa)
Shrinkage on Cure (ASTM D2566)	0.20%
Thermal Compatibility (ASTM C884)	Pass
Heat Deflection Temperature (ASTM D648)	120°F (49°C)
Water Absorption (ASTM D570)	0.2% (24 hr)
Chloride Ion Permeability (AASHTO T277)	0.0 coulomb

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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