



POLY-TUFF SYSTEMS
INTERNATIONAL
HIGHWAY DIVISION

E-TUFF® DECK II

Epoxy Patching Mortar

1.01 DESCRIPTION

E-Tuff® Deck II epoxy patching is a three-component, 100% solids, multi-purpose, high strength epoxy patching mortar. The system combines a high-quality epoxy resin and curing agent with a pre-engineered blend of graded aggregates. **E-Tuff® Deck II** is specifically engineered to provide superior patching while demonstrating similar physical characteristics to the concrete substrate. VOC compliant in all states and provinces in North America.

1.02 USES

- Any Concrete Surface
- Columns and Beams
- Commercial Floors
- Highways, Roads, and Bridges
- Parking Decks and Ramps

1.03 FEATURES

- Allows Smaller, Non-Specialized Crews
- Bonds To Concrete, Aluminum, and Steel
- Chemically Bonds to Concrete
- Compatible with Epoxy Overlays
- Cures at Temperatures Down to 32°F (0°C)
- Excellent Weatherability
- High Tensile, Compressive and Early Strengths
- Low Modulus
- Pre-Proportioned, Easy to Mix and Install
- Provides Textured Bonding Profile
- Reduced Installation Costs
- Semi-Rigid for Shock Absorption
- User-Friendly and Easy Cleanup
- VOC Compliant and Environmentally Safe
- Withstand Freeze/Thaw Cycles

1.04 TECHNICAL DATA

Chemical resistance: ASTM D 471, 77°F (25°C) 24 hr:

- | | |
|---------------------------------|------|
| • Deicers | None |
| • Motor Oil | None |
| • Sodium Chloride Solution (5%) | None |
| • Hydraulic Brake Fluid | None |

1.05 COLOR

Concrete Gray

1.06 PACKAGING

0.5 cuft (.014 cum) kit: 1 gallon (3.79 liters) equal parts of Side-A and Side-B, one 55 lbs (24.9 kgs) bag Side-C aggregate

1.0 cuft (.028 cum) kit: 2 gallon (7.57 liters) equal parts of Side-A and Side-B, two 55 lbs (24.9 kgs) bag Side-C aggregate

5.0 cuft (.14 cum) kit: 10 gal (37.85 liters) equal parts of Side-A and Side-B, ten 55 lbs (24.9 kgs) bag Side-C aggregate

1.07 COVERAGE

0.5 cuft (.014 cum) kits, 1.0 cuft (.028 cum) kits, and 5.0 cuft (0.14 cum) kits.

1.08 PREPARATION

Saw cut approx. 2" (5.08 cm) deep around the perimeter of the area to be patched and remove all deteriorated and unsound concrete with chipping hammers not to exceed 30#. All surface contamination must be removed by mechanical means, creating a surface profile of exposed sound aggregate that will provide a strong bond surface for the **E-Tuff® Deck II**. The concrete must be a minimum of 30 days old, sound and free of all contaminants, including oil, grease, dust, laitance and other bond breaking materials. Mechanically abrade the concrete surface by grinding, abrasive blasting or shot blasting to an ICRI Guideline No. 310.2R, CSP 3 - 5. Thoroughly clean repair area and exposed reinforcing steel by sandblasting to white metal finish. Vacuum all dust and loose particles from the repair area. Apply **B-Tuff® Rust Check** rust converter to any exposed steel. Precondition material to 65°F - 85°F (18°C - 29°C) before using.

1.09 MIXING

E-Tuff® Deck II: is shipped in pre-measured 0.05 cuft (.014 cum), 1.0 cuft (.028 cum), or 5.0 cuft (0.14 cum) units. Mix these products ONLY in complete units. DO NOT THIN or add any solvents or other aggregates prior to or during mixing.

E-Tuff® Deck II 0.50 cuft (.014 cum) kit: Side A-Resin and Side-B Hardener are packaged in separate 1/2 gal (1.89 liter) containers. Pour both liquid components into the pail and slowly mix thoroughly for 3 minutes using either the PSI's Rapid Pail™ Mixer or a 1/2+ hp heavy-duty drill with the PSI Mortar Paddle™ utilizing the PSI's 1 Man Stand™.

NOTE: Keep mixer at bottom of pail to avoid introducing air. After liquid components are mixed well, slowly add Side-C aggregate (one 55 lbs [24.9 kgs] bag). Mix only until all aggregate is wetted out.

E-Tuff® Deck II 1.0 cuft (.028 cum) kit: Side-A & Side-B are packaged in 1 gallon (3.78 liters) jugs. Side-C aggregate is packaged in two 50 lbs (22.68 kgs) poly-lined bags. Pour Side B-Hardener into 5 gallon (18.89 liters) pail containing Side A-Resin. Mix material thoroughly for 3 minutes with a "Jiffy" mixer on a low-speed (300 rpm) drill motor until a uniform consistency is achieved. Mortar Mixer: Pour liquids

into mortar mixer, making sure to remove all resins from sides and bottom of pail with spatula or similar tool. Introduce first bag of Side-C aggregate prior to starting mixer. Start mixer and slowly add the remaining bags of Side-C aggregate. Extreme care should be taken to ensure that the aggregate is mixed uniformly from top to bottom in the bucket. Do not over mix.

APPLICATION

2.01 APPLICATION

The blended batch must be applied to the surface in 5-10 minutes. Once spread out, working time will be approximately 1/2 hour depending upon temperature. It is extremely important that the material be thoroughly compacted. Care should be taken to assure good compaction on the vertical face of the joint and along the side of the block out or form. Just smoothing the top with a steel float is not compacting the mortar. A small margin trowel, wood block, or other means, can be used for compaction.

2.02 CURING

At 70°F (21°C) (substrate & air temperature), the mortar will cure sufficiently to accept traffic in four (4) hours. Higher temperatures will shorten the cure while lower temperatures will lengthen the cure time. For temperatures in excess of 100°F (38°C) or lower than 60°F (15°C) contact PSI for recommended procedures and cure time.

TEMPERATURE	WORKING TIME	INITIAL CURE
60°F (15.6°C)	30 Minutes	8.5 Hours
65° (18.3°C)	25 Minutes	7.5 Hours
70° (21.1°C)	25 Minutes	6 Hours
75°F (23.9°C)	20 Minutes	5 Hours
80°F (26.7°C)	20 Minutes	4.5 Hours
85°F (29.4°C)	15 Minutes	3.5 Hours

Cold Temperature Formula Available Upon Request

2.05 CLEAN UP

All tools, other application or mixing equipment must be cleaned at frequent intervals and while **E-Tuff® Deck II** remains soft and uncured. Tools and Equipment: Clean with water or PSI's **EnviroClean™**, PSI's **Solvent 100™**, or locally approved solvent. Cured material can only be removed mechanically.

2.06 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. The shelf life of properly stored, unopened containers is 12 months from date of manufacture. An excessive temperature differential and/or high humidity can shorten the shelf life expectancy.

2.07 LIMITATIONS

- Gel Time - (60g mass): Neat - 30 min at 73 ± 2°F (23°C)
- Minimum substrate temperature is 50°F (5°C)
- Minimum age of hardened concrete for bonding should be 5-7 days.

PHYSICAL PROPERTIES AT 77°F (25°C) RESIN AND HARDENER	
Viscosity	1,000 cps
Gel Time (60 grams mass)	20 minutes
Tack Free Time	3-5 hours
Adhesion, ASTM D7234	300 psi (2 MPa)
Compression Strength, ASTM D695	5,000 psi (35 MPa)
Compressive Modulus, ASTM D695	110,000 psi (758 MPa)
Tensile Strength, ASTM D638	2,800 psi (19 MPa)
Tensile Elongation, ASTM D638	40%
Flexural Strength D790	3,000 psi (21 MPa)
Shrinkage on Cure, ASTM D2566	0.2%
Water Absorption (24 Hrs), ASTM D570	0.2%
Slant Shear (2 Day), ASTM C882	2,000 psi (14 MPa)
Slant Shear (7 Day), ASTM C882	2,800 psi (19 MPa)
Thermal Compatibility, ASTM C884	Pass
Chloride Ion Permeability, AASHTO T277	0.0 Coulomb

PHYSICAL PROPERTIES AT 77°F (25°C) RESIN AND HARDENER AND AGGREGATE		
Compressive Strength, ASTM C579	2 Hours	1,500 psi (10 MPa)
	24 Hours	5,000 psi (35 MPa)
	7 Days	5,200 psi (36 MPa)
	Tensile Strength, ASTM C307	2,900 psi (20 MPa)
Tensile Strength, ASTM C307		<1%

2.09 CAUTION

Do not take internally. In case of ingestion, seek medical help immediately. 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. Cured Resins are Innocuous.

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



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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