



POLY-TUFF SYSTEMS  
INTERNATIONAL  
HIGHWAY DIVISION

# TuffCrete™ II

## Polymeric Nosing & Deck Patching System

### DESCRIPTION

**TuffCrete™ II is a unique three-component rapid curing, non-shrink, hybridized epoxy urethane based elastomeric concrete that cures to a dense, semi-flexible, weather, abrasion and impact resistant polymer mortar for the construction or repair of expansion and construction joints on bridge and parking decks. The combined A & B polymers when mixed with its part C, TuffCrete™ II blended aggregate forms a mortar with excellent long-term installation properties for joint, nosing repair, or deep patches.**

### USES:

- Bridge Headers and Concrete Nosing's
- Concrete & Masonry Surfaces
- Parking Structures & Ramps
- Pavements & Marine Platforms
- Airfield & Highway Pavement Repairs

### FEATURES:

- New as well as old concrete surfaces
- Outstanding anti-spalling properties
- High-load bearing capacity
- Excellent water repellency
- Chemical & Impact Resistant
- Resists the effects of freeze-thaw cycling
- Exceeds ASTM C881 Type III (Mortar)

### COVERAGE GUIDE:

0.5 cu ft. Kit (.014 cu m) 1 gal liquid, 1 bag Part C - 3.74 mixed gallons  
1.0 cu ft. Kit (.028 cu m) 2 gal liquid, 2 bags Part C - 7.48 mixed gallons  
5.0 cu ft. Kit (.140 cu m) 10 gal liquid, 10 bags Part C blended aggregate

### PREPARATION:

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 **TuffCrete™ II**. It is recommended to profile surface according to ICRI Guide 03732 to a minimum of CSP 3 by abrasive blasting. Apply **PSI RustCheck™** permanent rust converter to any exposed steel. Precondition the **TuffCrete™ II** and the HCB Aggregate to ideally 72 degrees for 24 hours before use. **TuffCrete™ II** can be heated up to 100°F (38°C) to speed cure at colder temperatures. It is recommended to condition all components when the temperature is below 50°F (10°C).

### MIXING:

**TuffCrete™ II** is shipped in pre-measured .5 cu ft., 1.0 cu ft., or 5.0 cu ft. units. Mix these products ONLY in complete units. DO NOT THIN or add

any solvents or other aggregates prior to mixing.

**TuffCrete™ II** .5 cu ft. /.014m<sup>3</sup> Kit: Components A-Resin, and B-Hardener are packaged in separate 1/2 gal containers. Pour both liquid components into pail and slowly mix thoroughly for 3 minutes using either the **PSI Rapid Pail™** Mixer or a 1/2+ hp heavy-duty drill with the **PSI Mortar Paddle™** utilizing the **PSI 1 Man Stand™**.

*NOTE: Keep mixer at bottom of pail to avoid introducing air. After liquid components are mixed well, slowly add component C-Aggregate (1- 50 lb. bag). Mix only until all aggregate is wetted out.*

**TuffCrete™ II** 1.0 cu ft. /.028 m<sup>3</sup> Kit: Component A & B are packaged in 1 gal jugs. Component C-Aggregate is packaged in (2) 50 lb poly-lined bags. Pour component B-Hardener into 5 gal/18.8L pail containing component 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. Pour liquids into mortar mixer, making sure to remove all resins from sides and bottom of pail with spatula or similar tool. Introduce first (1) bag of Part C aggregate prior to starting mixer. Start mixer and slowly add the remaining four (4) bags of Part C aggregate. Extreme care should be taken to insure that the aggregate is mixed uniformly from top to bottom in the bucket. Do not over mix.

### PLACEMENT:

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. When using **TuffCrete™ II** as an expansion joint header, care should be taken to insure the mortar is even with the plane of the bridge deck or a fraction lower. Leaving the mortar higher than the plane of the bridge

deck can subject it to snowplow or other impact damage. If after removal of the forming material the mortar is found to be higher than the adjacent bridge deck or overlay, it may be re-profiled using a handheld grinder with a diamond cup wheel.

**CURING/DRYING TIME:**

At 21°C. (70°F.) (Substrate & air temperature), the mortar will cure sufficiently to accept traffic in (4) four 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.

**CLEAN UP:**

All tools, other application or mixing equipment must be cleaned at frequent intervals and while **TuffCrete™ II** remains soft and uncured. Tools and Equipment: Clean with water or **PSI EnviroClean™**, **PSI Solvent 100™**, or local approved solvent.

**PACKAGING:**

0.5 cu ft., 1.0 cu ft., 5.0 cu ft. kits.

TEMP	WORKING TIME	INITIAL CURE TIME*
50°F	40 min	10 hrs
60°F	30 min	7 hrs
70°F	25 min	4 hrs
80°F	20 min	3 hrs
90°F	15 min	2 hrs
100°F	10 min	1 hrs

**COLOR:**

Black or Gray

**STORAGE:**

The material should be stored between 40°F – 90°F (5°C – 33°C) in a cool, dry area away from direct sunlight. For best results, condition material to 65°F – 85°F (18°C – 29°C) before using.

**SHELF LIFE:**

Shelf life of properly stored, unopened containers is 24 months.

**CAUTION:**

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 if prolonged or repeated exposure. 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. Cured resins are Innocuous. Dispose of waste material in accordance with federal, state and local requirements. Read SDS before using this product.

**KEEP OUT OF THE REACH OF CHILDREN.**

PHYSICALS:	
Combined Liquid Components*	
Mixing Ratio	1:1 by Volume
Tensile Strength – Min. ASTM D 638#	2000 psi
Shore D Hardness @ 25° C. ASTM D 2240 (77° F.)	65-75
Viscosity – (Spindle No. 2, ASTM D 2393 30 RPM, 25° C. ±2°)	15-25 Poises
Gel Time min. AASHTO M-200-73	15-25
Elongation percent ASTM D 638#	45-65
*Test Method Type 1, Molded Specimens,	6.4 mm (.25 in) Thickness
Cured Mortar:	
Compressive Strength min @ 24 hrs. (Method B) 3000 Min ASTM C 579	3500 psi
Abrasion Resistance	1.0 Max
Wear Index (Taber H-22) ASTM C 501	
Resilience, %v Tex-618-J	75 min
Wet Bond Strength Tex-618-J	350 min
Bond Strength Min ASTM C 882	PSI 2000 psi

\*Compressive strength reaches approx. 1000 psi.

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 properties. PSI warrants that its products, when properly installed by a state licensed waterproofing contractor according to PSI guide specifications and product data sheets over a sound, properly prepared substrate, will not allow water migration for a period of 12 months. 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 users 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.