



TuffCRT™ II

Polymeric Nosing & Deck Patching System

1.01 DESCRIPTION

TuffCRT™ II is a unique three component, rapid curing, non-shrink, hybridized, epoxy-urethane based elastomeric concrete. It cures to a dense, semi-flexible, weather, abrasion and impact resistant polymer mortar for the construction or repair of expansion and construction joints on bridges and parking decks. The combined A & B polymers when mixed with its Side C, TuffCRT™ II blended aggregate forms a mortar with excellent long-term installation properties for joint, nosing repair, or deep patches. Please use the right product grade that complies with VOC regulations as per federal, state, statutory bodies, county and city regulations/codes at the place of installation of the product. 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

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

1.03 FEATURES

- Chemical and Impact Resistant
- Exceeds ASTM C881 Type III (Mortar)
- Excellent Water Repellency
- High-Load Bearing Capacity
- New as well as Old Concrete Surfaces
- Outstanding Anti-Spalling Properties
- Resists the Effects of Freeze-Thaw Cycling

1.04 TECHNICAL DATA

- ASTM C881 (Type III - Resin)
- FAA specification for patching item P-501.19
- VOC compliant, 0 g/L

1.05 PACKAGING

0.5 cuft (.014 cum) kit: 1 gallon (3.78 liters, partial fill) jug of Side A and 1 gallon (3.78 liters, partial fill) jug of Side B, one 50 lbs (22.68 kgs) bag Side C

2.0 cuft (.057 cum) kit: 5 gallons (18.9 liters, partial fill) pail of Side A and 2 gallons (7.57 liters, partial fill) of Side B liquid, ten 50 lbs (22.68 kgs) bags Side C

1.06 COLOR

Side A - Gray

Side B - Amber

Combined - Gray

Also available in Black

1.07 PREPARATION

Concrete shall have reached its design strength. 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 TuffCRT™ II. It is recommended to profile surface according to ICRI Guide 03732 to a minimum of CSP 3 by abrasive blasting. Apply PSI's RustCheck™ permanent rust converter to any exposed steel. Precondition the TuffCRT™ II and the HCB Aggregate to ideally 72°F (22.2°C) for 24 hours before use. TuffCRT™ 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).

1.08 MIXING

TuffCRT™ II is shipped in pre-measured 0.5 cuft (.014 cum or 2.0 cuft (.057 cum) units. Mix these products ONLY in complete units. DO NOT THIN or add any solvents or other aggregates prior to mixing.

TuffCRT™ II 0.5 cuft (.014 cum) kit: Side A-Resin, and Side B-Hardener are packaged in separate partially filled 1 gallon (3.79 liter) cans. 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's 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 50 lbs (22.68 kgs) bag). Mix only until all aggregate is wetted out.

TuffCRT™ II 2.0 cuft (.057 cum) kit: Side A & B are packaged in partially filled 5 and 2 gallon (18.93 and 7.57 liters) pails respectfully. Side C- aggregate is packaged in four 50 lbs (22.68 kgs) bags. Pour Side B-Hardener into 5 gallon (18.93 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. Pour liquids into mortar mixer, making sure to remove all resins from sides and bottom of the pail with a spatula or similar tool. Introduce the first bag of Side C aggregate prior to starting the mixer. Start mixer

and slowly add the remaining bag 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.

1.09 APPLICATION

Prime patch area with mixed Side A and Side B using a brush or roller. Immediately place the patch. Set screeds or float to the desired level, strike off, thoroughly compact and finish the surface. 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. Do not over finish, as this will cause the resin to float, leaving the patch slick and potentially weaker on the surface. When using **TuffCRT™ II** as an expansion-joint header, care should be taken to ensure 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 hand-held grinder with a diamond cup wheel.

1.10 CURING/DRYING TIME

Use the table below to determine minimum cure times based on the temperature of the materials and the substrate. 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.

TEMP	WORKING TIME	INITIAL CURE TIME*
60-64°F (15-17.8°C)	30 min	8.5 hrs
65-69°F (18.3-20.5°C)	25 min	7.5 hrs
70-74°F (21.1-23.3°C)	25 min	6 hrs
75-79°F (23.87-26.1°C)	20 min	5 hrs
80-84°F (26.7-28.9°C)	20 min	4.5 hrs
85°F+ (29.4°C)	15 min	3.5 hrs

1.11 CLEAN UP

Equipment: Uncured material can be removed with PSI's **Enviro-Clean™** or locally approved solvent. Cured material can only be removed mechanically.

Material: Collect with absorbent material. Flush area with water. Dis-

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.

pose of in accordance with local, state and federal disposal regulations.

1.12 STORAGE AND SHELF LIFE

The material should be stored between 40-90°F (4-33°C) in a cool, dry area away from direct sunlight. The shelf life is 24 months from the date of manufacture.

1.13 LIMITATIONS

- Compressed air equipment must have an oil/air separator.
- Consult PSI representative when mixing or placing outside of the temperature recommendations listed.
- Contact PSI representative before applying as a repair mortar if concrete is less than 28 days old.
- Do not thin with solvents
- For professional use only
- Substrate temperature should be a minimum of 65°F (18.3°C).
- TuffCRT™ II** is a vapor barrier after curing.

1.14 CAUTION

Wear protective gloves and goggles. Avoid prolonged skin contact. May cause eye, skin or lung injury. Side A is an irritant, and Side B is corrosive. Use in well-ventilated areas and avoid breathing in vapors. Use of NIOSH/MSHA organic vapor respirator is recommended if ventilation is inadequate. Avoid skin contact.

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

1.15 PHYSICALS

Combined Liquid Components*

Mixing Ratio	1:1 by Volume
Tensile Strength - Min. ASTM D 638#	1961 psi (13.52 MPa)
Gel Time (100 grams @ 77°F)	34 min
Tensile Elongation (Type IV, 7 Day Cure @ 77°F)	51.4%
Compressive Strength min @ 24 hrs. (Method B) 3000 Min ASTM C 579	2122 psi (14.63 MPa)
Compressive Stress @ 0.1 in. (7 Day cure @ 77°F)	2170 psi (14.96 MPa)
Resilience, %v Tex-618-J	94.7
Wet Bond Strength Tex-618-J	352 Avg