POLY-TUFF SYSTEMS INTERNATIONAL
HIGHWAY DIVISION

P-TUFF® SP

Rapid Setting Mortar for Concrete Repair

1.01 DESCRIPTION

P-Tuff® SP is a three component, rapid curing, polyurethane based concrete repair mortar. The systems combine a high-quality polyurethane resin binder with a pre-engineered blend of proprietary graded aggregates. Formulated to create a long lasting, resilient, dense, semi-flexible, weather, abrasion and impact resistant concrete repair. Repair roadways, bridges, elevated highways, airport runways and aprons, parking decks and other concrete elements. VOC compliant in all States and Providences in North America.

1.02 USES

- Airfield and Highway Pavement Repairs
- Bridges and Ramps
- Concrete and Masonry Surfaces
- Parking Structures
- Pavements and Marine Platforms

1.03 FEATURES

- Chemical and Impact Resistant
- Dries Tack-Free and Skid Resistant
- Excellent Bond and Compressive Strength
- Fast Return to Service
- High-Load Bearing Capacity
- New and Old Concrete Surfaces
- Outstanding Anti-Spalling Properties
- Resists the Effects of Freeze-Thaw Cycling

1.04 TECHNICAL DATA

Meets: TX DOT DMS- 6170 Type I Polymeric Materials for Patching Spalls in Concrete Pavement.

1.05 COLOR

Concrete Gray

1.06 OPTIONAL PRIMERS

Enviro-Grip™ #555 is a three component specially formulated polyurethane primer designed to enhance bond of P-Tuff® SP to concrete that is damp (saturated surface dry - SSD). Mix Side-A and Side-B for one minute then add the Side-C (accelerator) and mix for an additional one minute.

Enviro-Grip™ AP is a rapid cure, two component, 1:1 by volume mix ratio, specially formulated polyaspartic designed to enhance bond of P-Tuff® SP to concrete that is damp (saturated surface dry - SSD). Mix Side-A and Side-B two minute, immediately apply primer and mortar mix.

1.07 PACKAGING

0.50 cuft kit (0.014 cum): ½ gallon (1.893 liters) container of Side-A, one ½ gallon (1.893 liters) container of Side-B and one 55 lbs (24.9 kgs) bag Side-C aggregate. Packaged in a 5-gallon pail.

1.0 cuft kit (0.028 cum): 1 gallon (3.785 liters) jug of Side-A, and 1-gallon (3.785 liters) jug Side-B and two 55lbs (24.9 kgs) bag Side-C aggregate.

Bulk Utility, 5.00 cuft kit (0.1415 cum): one 5-gallon pail (18.925 liters) Side-A and one 5-gallon (18.925 liters) Side-B and ten 55lbs (24.9 kgs) bag of Side-C aggregate.

1.08 COVERAGE GUIDE

0.50 cu. ft. (0.0142 cum) pail kit
1.0 cu. ft. (.028 cum) kit
5.0 cu. ft. (0.1415 c m) bulk utility kit

1.09 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 **P-Tuff® SP**. It is recommended to profile surface according to International Concrete Repair Institute, Guideline No. 310.2R Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair to a minimum of Concrete Surface Profile (CSP) 3 to 4 by abrasive blasting or diamond grinding. Apply **B-Tuff® Rust Check** permanent rust converter to any exposed steel. Precondition the **P-Tuff® SP** and the aggregate to 72°F (22.2°C) for 24 hours before use. **P-Tuff® SP** can be heated up to 100°F (38°C) to speed cure at colder temperatures. Condition all components when the temperature is below 50°F (10°C).

1.10 MIXING

P-Tuff® SP is shipped in pre-measured 0.5 cuft, 1.0 cuft, or 5.0 cuft kits. Mix these products ONLY in complete kits. DO NOT THIN or add any solvents or other aggregates prior to mixing.

P-Tuff® SP 0.5 cuft (.014 cum) kit: Side A-Resin and Side B-Hardener are packaged in separate ½ gallon (1.89 liter) containers. Pour both liquid components into 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 (1- 55 lbs or 22.68 kgs bag). Mix only until all aggregate is wetted out.

P-Tuff® SP 1.0 cuft (.028 cum) kit: Side-A and Side-B are packaged in 1-gallon (3.78 liters) jugs. Side-C Aggregate is packaged in two 55 lbs (24.9 kgs) poly-lined bags. Pour Side B-Hardener into 5-gallon (18.9

Poly-Tuff Systems International Corp.
8550 West Desert Inn Road | Suite 102-451
Las Vegas, NV 89117 | T: (866) 977-8833 | F: (800) 804-0182

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 pail with spatula or similar tool. Introduce first bag of Side-C aggregate prior to starting 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.

P-Tuff® SP 5.0 cuft (.1415 cum) kit: Side-A & Side-B are packaged in 5-gallon (18.925 liters) pails. Side-C Aggregate is packaged in two 55-lbs (24.9 kg) poly-lined bags. Pour Side B-Hardener into a mortar mixer containing Side-A Resin. Mix material thoroughly 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 bag of Side-C aggregate prior to starting 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.

1.11 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.

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.

1.12 CLEAN UP

All tools, other application or mixing equipment must be cleaned at frequent intervals and while **P-Tuff® SP** remains soft and uncured. Tools and Equipment: Clean with water or PSI's **EnviroClean™**, local approved solvent.

1.13 STORAGE AND SHELF LIFE

The material should be stored between 40-90°F (5–33°C) in a cool, dry area away from direct sunlight. For best results, condition material to 65–85°F (18–29°C) before using. Shelf life of properly stored, unopened containers is 24 months.

1.14 CAUTION

Use with adequate ventilation. Wear protective clothing, gloves, and eye protection (goggles, safety glasses and/or face shield). Keep out of the reach of children. 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. 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.

CHEMICAL RESISTANCE	
Deicers	None
Motor Oil	None
Sodium Chloride Solution (5%)	None
Hydraulic Brake Fluid	None

PHYSICALS	
Gel Time (Tex-614-J)	6 minutes
Specific Gravity	1.84
Absorption %	0.33%
Compressive Strength (ASTM C579, B)	
24 hours	1600 psi (11.79 MPa)
7 days	1820 psi (12.55 MPa)
Flexural Strength (ASTM C580)	
24 hours	740 psi (5.10 MPa)
28 days	1180 psi (8.14 MPa)
Bond Strength (ASTM C1583)	
24 hours	203 psi (1.40 MPa)
28 days	355 psi (2.44 MPa)
Flexural Modulus	
24 hours	12270 psi (84.60 MPa)
28 days	23641 psi (162.99 MPa)
Wet Bond (Tex-618-J) 7 days	350 psi (1.20 MPa)
Compressive Stress at 0.1" (Tex-618-J) 7 days	1500 psi (5.05 MPa)
Thermal Compatibility (ASTM C884) 7 days	Pass
Resilience % (Tex-618-J) 7 Days	95%

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.

POLY-TUFF SYSTEMS
INTERNATIONAL
HIGHWAY DIVISION

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.

Poly-Tuff Systems International Corp.
8550 West Desert Inn Road | Suite 102-451
Las Vegas, NV 89117 | T: (866) 977-8833 | F: (800) 804-0182