



POLY-TUFF SYSTEMS
INTERNATIONAL
HIGHWAY DIVISION

TuffPlug™

Flexible Joint Plug System for Asphalt Overlaid Bridge and Parking Protective Topcoat

DESCRIPTION

TuffPlug™ is a 1:1 ratio, 100% solids, low-modulus, rapid-setting, low-viscosity binder and aggregate joint system providing minimal closure times. TuffPlug™ provides a smooth, flexible, watertight bridge joint, which will allow for ± 1" joint movement.

USES:

- Bridges, Parking Decks & Ramps
- Concrete & Asphalt Decks

FEATURES:

- Open to traffic in one hour
- No heated equipment required
- No special tools required
- Low dead load in suspended structures
- Extends the service life of decks
- Self priming
- Rapid strength development in any weather
- Good chemical resistance to icing solutions
- Long-term protection against automotive fluids
- Zero VOC
- 20 times more impermeable than asphalt

TECHNICAL DATA:

Exceeds the requirements of ASTM D-6297-01

EQUIPMENT:

- Small walk-behind dry cut saw
- Pneumatic compressor of 185 CFM capacity
- Torch for moisture
- Sandblasting equipment (if required)
- Safety clothing and equipment as required by OSHA

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 waterblasting. 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 **RustStop™** permanent rust converter

to any exposed steel. Deeply damaged areas can be repaired with **HighwayPatch™** or **BridgeCrete™** prior to the joint installation. All surfaces to be repaired should be in a dry condition with no standing water on the surfaces.

MIXING:

Condition material to 65°F - 85°F (18°C - 29°C) for ease of mixing and optimum flow prior to using. **TuffPlug™** is mixed at the nozzle and applied using a Dual Polymer Pump. Hand mix kits are available.

PLACEMENT:

- Surface and ambient temperature must be a minimum of 40°F (4°C).
1. After the joint area has been properly prepped, place two beads of the **PolyPlug™** binder on both sides of the joint opening. Embed the 6" wide x 10 gauge galvanized plate into the binder/sealant material centered over the joint opening.
 2. (Option) Apply the self adhering TPS JSM-8" (8" wide self adhering joint seal membrane) symmetrically across the plate and the joint opening.
 3. Fill the void with TPS Black Polymer Treated Aggregate flush to the cavities surface.
 4. Before the initial set begins broadcast TPS Black Polymer Topping Sand on the joint surface for a non slip finish.

NOTE: If adjacent asphalt surfaces have or have had excessive moisture, prime the joint interface with TuffPlug™ polymer, 10 minutes prior to the placement of the aggregates.

MINIMUM CLOSURE TIMES: Average Temperature in °F (°C):

85°F + (29 °C+)	1/2 Hour
75°F - 84°F (24°C - 29 °C)	3/4 Hours
65°F - 74°F (18°C - 23 °C)	1 Hour
55°F - 64°F (13°C - 18 °C)	1-1/2 Hours
45°F - 54°F (7°C - 13 °C)	2 Hours
*44- °F (7°C -)	3+ 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 prior to installation. At lower temperatures the resins can become difficult to remove pump and to mix properly.

CLEAN UP:

Tools and Equipment: Clean before the **TuffPlug™** sets up using **PSI Solvent 100™** or Acetone.

PACKAGING:

Available in 10 gallon pails, 30,100, 500 Gallon Tanks.
Black Polymer Treated Aggregates:
Available in 50 bags or 2,000 lb. totes

COLOR:

PHYSICALS:	
Gel Time (Tex-614-J)	10 minutes
Compressive Strength (ASTM C579, B)	
24 Hours	1710 psi
7 Days	1820 psi
28 Days	2140 psi
Compressive Stress at 0.1 in (Tex-618-J)	
7 Days	733 psi
Wet Bond Strength (Tex-618-J)	
7 Days	176 psi
Resilience (Tex-618-J)	92.7%
Thermal Compatibility	Pass
Tensile Adhesion ASTM D5329	700% minimum

Black

SHELF LIFE:

Shelf life of properly stored, unopened containers is 24 months. Excessive temperature differential and/or high humidity can shorten the shelf life expectancy. The material should be stored between 40°F - 95°F (4°C - 35°C) in a cool, dry area away from direct sunlight.

LIMITATIONS:

Surface and ambient temperature must be a minimum of 40°F (4°C). Do not thin with any solvents.

CAUTION:

READ SDS PRIOR TO USING PRODUCT

- 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.
- Cured Resins are Innocuous.

KEEP OUT OF THE REACH OF CHILDREN

WARRANTY:

Due to the use of this product beyond our control, we assume no liability for damages of any kind, and the user accepts the product "as is" and without warranties, expressed or implied, from either **PolyTuff Systems International** or its agents. The suitability of the product for an intended use shall be solely up to the user. Our only obligation shall be to replace or pay for any material proved defective, with our liability limited to the purchase price of materials supplied by us.

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.