



E-TUFF® TBA

Traffic Marker Adhesive

1.01 DESCRIPTION

E-Tuff® TBA is an AASHTO M237 certified two-part epoxy, standard set adhesive system. It was specifically designed for the bonding of traffic markers, delineators, safety posts. 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

- Delineators
- Safety Posts
- Traffic Markers

1.03 FEATURES

- Excellent for Bonding Plastics, Steel, and Concrete to Concrete
- Fast Setting
- Convenient 1:1 Mix Ratio

1.04 TECHNICAL DATA

TuffPoxy™ 2 complies with AASHTO M 237-96 (2009) Epoxy Resin Adhesives for Bonding Traffic Markers to Hardened Portland Cement and Asphalt, Arizona 706.5, WSDOT 9-26.2

1.05 PACKAGING

20 oz (600 ml) side-by-side cartridge

1-gallon kit: 1/2 gallon (1.89 liters) of Side A and 1/2 gallon (1.89 liters) of Side B

2-gallon kit: 1 gallon (3.78 liters) of Side A and 1 gallon (3.78 liters) of Side B

10-gallon kit: 5 gallons (18.9 liters) of Side A and 5 gallons (18.9 liters) of Side B

1.06 COLOR

Side A Resin: Tan

Side B Converter: Dark Gray Combined

Side A and Side B: Concrete Gray

1.07 COVERAGE

2 1/2" x 4 1/2" (6.35 cm x 11.43 cm) Rect. Marker – 100 per gallon (3.78 liters)

4" (10.16 cm) Round/Square – 50 per gallon (3.78 liters)

6" (15.24 cm) Round – 25 per gallon (3.78 liters)

8" (20.32 cm) Delineator or Pole Base – 15 per gallon (3.78 liters)

Bondline Thickness 45 mils (1143 microns)

1.08 PREPARATION

Remove all dirt, oil, and loose or foreign material. Any metal in contact with grout must be free of rust, oil, grease, and other foreign matter which would limit bond. Remove all excess water before placement of epoxy. It is recommended to roughen bonding surfaces with abrasive media appropriate for the materials being bonded (such as medium grit emery paper, abrasive disks, grit blasting, wire brushes, etc.). Abrasion

should always be followed by degreasing to remove contaminants and loose particles.

1.09 MIXING

Combine and mix **E-Tuff® TBA** just prior to anchoring the markers. Automatic dispensing equipment is recommended. Hand mixing should be limited to very small projects. When using **E-Tuff® TBA** epoxy, combine equal parts of Side A and Side B. Mix thoroughly. Properly mixed, the epoxy will be uniform gray, without visible streaks.

1.10 SET TIMES

TEMPERATURE	SET TIME HOURS
50°F (10°C)	7
60°F (15.5°C)	4
77°F (25°C)	2
95°F (27°C)	1

1.10 APPLICATION

Apply mixed material immediately. With a trowel or spatula, spread a thin film over the surface to be bonded. Press into place and maintain light pressure during cure for optimum bonding.

1.12 CLEANUP

Uncured epoxy may be cleaned off of tools with Methyl Ethyl Ketone (MEK), Toluene, or solvent blends. Caution: These solvents may damage plastics.

1.13 STORAGE AND SHELF LIFE

Store in a horizontal position to prevent moisture accumulation on the drum head. 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 is 12 months from the date of manufacture. An excessive temperature differential and/or high humidity can shorten the shelf life expectancy.

1.14 LIMITATIONS

- At low temperatures, water requirement should be field tested.
- Avoid hazards by following all precautions found in the Safety Data Sheets (SDS), product labels, and technical literature. Contact PSI Technical Services for complete application instructions and limitations.

- DO NOT add cement, sand, or admixtures.
- DO NOT over water; this can cause bleeding or separation. DO NOT retemper.
- DO NOT place at temperatures below 40°F (5°C) unless special provisions are followed.
- When nearby equipment causes vibration of the grout, during the set, such equipment should be shut down for a period of 24 hours. DO NOT mix over 5 minutes.

1.15 CAUTION

Do not dilute. Wear protective gloves and goggles. Avoid prolonged skin contact.

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

ADHESIVE PROPERTIES		
Substrate	Cure Schedule	Tensile Strength
Aluminum Alloy 2024T3, acid etched	1 hour 77°F (25°C)	100 psi (0.689 MPa)
	2 hours 77°F (25°C)	370 psi (2.55 MPa)
	4 hours 77°F (25°C)	760 psi (5.24 MPa)
	24 hours 77°F (25°C)	2800 psi (19.3 MPa)
	1 day 77°F (25°C) followed by 2 hours at 212°F (100°C)	4000 psi (27.6MPa)
	7 days at 77°F (25°C) followed by 7 days water soak	3300 psi (22.75 MPa)
Cold-rolled Steel, solvent-wiped	1 day at 77°F (25°C) followed by 2 hours at 212°F (100°C)	1600 psi (11.03 MPa)
Impact Strength, Ft-lb (N-m)		> 6.5 ft/lb > 9.0 N-m

PHYSICALS	
Compressive Properties (ASTM D695)	
Pounds/Gallon (Kilograms/Liters)	
Side A	12.47 lbs/gal (1.50 kg/l)
Side B	11.45 lbs/gal (1.37 kg/l)
Side A and B	11.97 lbs/gal (1.43 kg/l)
Gel Time at 77°F (25°C) 100-gram mass	7 minutes
Viscosity	
7 day cure	
Side A Resin	5 rpm 10 rpm
Side B Converter	5 rpm 10 rpm
Difference in Viscosity Between the 2 Sides	< 15%
Stability: % increase in Viscosity After 14-day heat aging @ 120°F (49°C)	< 20%
Thixotropy @ 120°F (49°C) (sag on test panel)	< 2 mm
Bondline Thickness	45 mils (1143 microns)

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 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.