



POLY-TUFF SYSTEMS  
INTERNATIONAL  
HIGHWAY DIVISION

# TuffPoxy™ 3FS

## Doweling, Pasting, & Anchoring Epoxy

### DESCRIPTION

**TuffPoxy™ 3FS is a 2-component, high strength moisture insensitive, high modulus, multi-purpose, non-sag, structural epoxy system designed to offer exceptional strength in anchoring, pasting, and bonding applications.**

### USES:

- Setting injection ports & sealing cracks prior to epoxy injection
- Anchoring dowels, bolts, reinforcing steel and threaded rods
- Vertical and horizontal structural bonding and patching

### ADVANTAGES:

- Clean and easy to use and reuse
- 100% solids
- No Volatile Organic Compounds (VOC's)
- Non-sag gel consistency
- Friendly 1:1 mix ratio
- Excellent adhesion
- Fast setting, high strength, high modulus
- Easy dispensing
- Made in America
- Moisture Tolerant

### TECHNICAL DATA:

**TuffPoxy™ 3FS** meets the current ASTM C881 and AASHTO M235 Types I, II, IV & V Grade 3, Classes B & C specifications. It has passed 4 million cycles of simulated seismic tension test. It meets current ICC-ES AC308 for both uncracked and cracked concrete anchoring application in dry hole, damp hole, water-filled hole, and underwater.

### COVERAGE GUIDE:

Please see **TuffPoxy™ 3FS** application charts for doweling and pasting.

### PREPARATION:

**Surface Preparation** – Surfaces to be bonded must be clean and structurally sound. Remove all oil, grease, dirt, laitance, curing compounds, and any other foreign matter by sandblasting, mechanical abrasion or hydro blasting.

**Hole Preparation** – Bolts, rebar or threaded rod should be free of dirt, grease, oil or other foreign material. DRILL hole to specified diameter and depth; BLOW dust from the bottom of the hole with oil-free compressed air for at least four seconds; BRUSH clean with a nylon brush

removing all dust and loose material; BLOW again from the bottom of the hole for at least four seconds. REPEAT BRUSH and BLOW procedures when necessary.

### MIXING:

Insert the cartridge into the dispensing gun. Remove the plastic caps and dispense a small amount of material until an even flow of black and white material is achieved. Place the mixing nozzle onto the cartridge then slide the nut over the nozzle and thread the nut onto the cartridge. To achieve maximum flow, break off the tip of the mixing nozzle to the largest diameter that will fit into the hole or screen. Dispense into a disposable container until a uniform gray is achieved with no streaks.

### INSTALLATION:

**Bonding** – Apply the **TuffPoxy™ 3FS** neat and work into the substrate. The glue line should not exceed 1/8".

**Anchoring** – For dry or damp hole, fill the hole 1/2 to 2/3 full from bottom up with **TuffPoxy™ 3FS**. For water-filled hole, fill hole completely full from bottom up. Insert clean anchor turning slowly until the anchor contacts the bottom. DO NOT DISTURB anchor until **TuffPoxy™ 3FS** has fully cured. The hole depth should be approximately 9 times the bolt diameter. The hole diameter should be approximately 1/8" larger than the threaded rod diameter. Ensure the holes are properly prepared, (drilled, brushed and blown out) prior to preparing the epoxy cartridge.

**Into Concrete** – Dispense the material from the bottom of the hole. Fill approximately 5/8 of the hole depth while slowly withdrawing the nozzle. Insert the bolt, or dowel by turning it slowly during insertion. After insertion, the hole should be completely filled with **TuffPoxy™ 3FS** and devoid of all air pockets or voids. Do not disturb or bolt up until cured.

**Into Hollow Block** – The cartridge is prepared as for concrete. The mixing nozzle is inserted into the bottom of the screen. Completely fill the screen while withdrawing the nozzle. Insert the epoxy filled screen into the hole. Insert the threaded rod to the bottom of the screen while turning slightly clockwise. Do not disturb or bolt up until **TuffPoxy™ 3FS** and devoid of all air pockets or voids. Do not disturb or bolt up until cured.

**CURING/DRYING TIME:**

Please refer to typical properties.

**CLEAN UP:**

Uncured **TuffPoxy™ 3FS** can be removed from tools and equipment with **PSI EnviroClean™** or Isopropyl alcohol, xylene, or mineral spirits.

**PACKAGING:**

- 250 ml uni-cartridge
- 600 ml side-by-side cartridge
- 1500 ml side-by-side cartridge

**COLOR:**

Concrete Gray

**STORAGE:**

The material should be stored between 40°F - 95°F (4°C - 35°C) in a cool, dry area away from direct sunlight.

**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.

**LIMITATIONS:**

Minimum substrate temperature is 40°F (5°C). Precondition **TuffPoxy™ 3FS** to 65°F - 95°F (18°C - 35°C) for easy-dispersing. Always test a small amount of **TuffPoxy™ 3FS** to verify that the product has been thoroughly mixed and will harden properly before proceeding. Do not thin with any solvent.

**DO NOT EXPOSE TO OR APPLY NEAR FIRE OR FLAMES.  
FOR WELL VENTILATED OR EXTERIOR USE ONLY!**

**CAUTION:**

Avoid breathing of vapors. Forced local exhaust is recommended to effectively minimize the exposure. NIOSH approved, organic vapor respirators and forced exhaust are recommended in confined areas, or when conditions (such as heated polymer, sanding, etc.) may cause high vapor concentrations. Do not weld on, burn or torch the **TuffPoxy™ 3FS** or any epoxy material. Hazardous vapor is released when an epoxy is burned.

Avoid skin or eye contact. Wash skin with soap and water if contact occurs. If eye contact occurs flush with water for 15 minutes and obtain medical attention. Read and understand all caution on can labels and safety data sheets (SDS) before using this material.

**KEEP OUT OF 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.

| TYPICAL PROPERTIES:                     |                      |
|---|----------------------|
| Mix Ratio                               | 1:1                  |
| Mixed Color                             | Gray                 |
| Viscosity                               | Gel/Paste            |
| Gel Time (ASTM 881)                     | 12 Minutes           |
| TYPICAL CURED PROPERTIES                |                      |
| Initial Cure Time (73°F or 23°C)        | 2 to 3 hours         |
| Final Cure                              | 3 Days               |
| Compressive Strength (ASTM D-695)       | 12,250 psi           |
| Compressive Modulus (ASTM D-695)        | 300,000 psi          |
| Bond Strength at 1 Day (ASTM 882)       | 1,925 psi            |
| Bond Strength at 7 Days (ASTM 882)      | 2,850 psi            |
| Elongation (ASTM D-638)                 | 1.58%                |
| Water Absorption (ASTM D-570)           | 0.1%                 |
| Heat Deflection (ASTM D-648)            | 140°F                |
| Viscosity                               | 1/4 inch no-sag gel  |
| Gel Time (60 g mass)                    | 10 minutes           |
| Tensile Strength                        | 7,559 psi (51.7 MPa) |
| Tensile Elongation:                     | 1.59%                |
| Shear Strength (ASTM D732)              | 2,800 psi (19.3 MPa) |
| Shrinkage on Cure (ASTM D2566)          | 0.001                |
| Thermal Compatibility (ASTM C884)       | Pass                 |
| Heat Deflection Temperature (ASTM D648) | 140°F (60°C)         |