

# HI-TECH Systems

*"HT FS-Gel"*

## STRUCTURAL FAST SET NON-SAG EPOXY GEL

### Product Description:

A multipurpose, 2 component, 100% solids, solvent-free, moisture insensitive structural epoxy adhesive. **HI-TECH Structural Fast Set Gel** conforms to ASTM C-881, Type I, and IV, Grade 3, Classes B & C for "Epoxy Resin Adhesives."

### Applications:

**To anchor bolts Dowels and pins:** Annular space around bolt tested at 1/16 inch; depth of embedment is typically 10-15 times the bolt diameter. See cartridge for application instructions.

**To seal cracks for injection grouting:** Place the mixed material over the cracks to be pressure injected and around each injection port. Allow sufficient time to cure before pressure injecting.

**As a structural adhesive:** Apply the mixed HI-TECH Structural **Fast Setting** Epoxy to the mating or non-mating prepared substrates. Work in the substrate for positive adhesion. Secure the bonded unit firmly into place until the epoxy has cured.

### Advantages:

- ✓ Insensitive to moisture before, during and after cure.
- ✓ High-modulus, high-strength, structural gel adhesive.
- ✓ Excellent adhesion to concrete, masonry, metals, wood and most structural materials.
- ✓ Gel consistency ideal for vertical and overhead applications.
- ✓ Easy to mix 1:1 ratio between components.
- ✓ **Extremely Fast Setting** and high early strength-developing adhesive.

### Coverage:

22oz. cartridge yields 39 cu. in. of epoxy gel adhesive.

46oz. cartridge yields 82 cu. in. of epoxy gel adhesive.

### Available In:

Cartridges, (22 oz and 46 oz.) 2 Gallon Units, 10 gallon Units and 110 Gallon Units

### Performance Data:

Color (A+B)	Grey
Viscosity (mixed)	Gel
Mix Ratio (by volume)	1:1
Pot Life 100 grams at 77°F	5-10 min
Tack Free Thin Film at 77°	1-2 hrs
Shrinkage ASTM C-883	Passes
Absorption 24 hours	0.12 %
Heat Deflection Temperature ASTM D-648	129°F
Bond Strength, ASTM C-882 14 days	3,250 psi
Compressive Strength ASTM D-695 7 days	13,500 psi
Tensile Strength 73°F ASTM D-638 14 days	5,450 psi
Flexural Strength ASTM D-790	5,882 psi
Shear Strength ASTM D-732	4,900 psi

**Shelf Life:** 1 year in original unopened container.

**Storage Conditions:** Store at 40°F to 95° F.

**Consistency:** Non-sag gel, no flow.

**Pot Life:** Approx. 5-10 minutes. (100 gram mass.)

**Appearance:** Compound A = White B = Grey.

### Concrete Application Recommendations:

#### **Surface Preparation:**

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, grease, curing compounds, waxes, foreign particles and disintegrated materials.

#### **Preparation Work:**

Concrete: Sand blast or use other approved mechanical means.

Steel: Sandblast to white metal finish.

**Bulk Mixing:** For bulk mixing pre-mix each component thoroughly. Proportion equal parts by volume of Component "A" and Component "B" through appropriate metered epoxy mixing equipment as recommended by the manufacture. Mix only the quantity that can be used within its pot life and do not allow mixed material to reside in static mixing head or mixer for more than five minutes or nozzle blockage may result.

**Additional Performance Data:**

Ultimate Load Capacity Using Threaded Rod  
In 4000 Psi Concrete

BOLT DIAM.	HOLE DIAM	EMBED. DEPTH	TOTAL LOADS (LBS)	
			TENSION	SHEAR
1/2"	5/8"	6"	22,000	25,680
5/8"	3/4"	6-3/4"	36,750	42,575
3/4"	7/8"	7-1/2"	51,780	56,450
7/8"	1"	8-1/4"	64,650	66,890
1"	1-1/8"	9"	68,950	71,450
1-1/8"	1-1/4"	10-1/2"	94,750	97,460
1-1/4"	1-3/8"	12"	98,650	102,520

Ultimate Load Capacity Using Rebar In 4000 Psi Concrete

REBAR SIZE	HOLE DIAM.	EMBED. DEPTH	TOTAL LOADS (LBS)	
			TENSION	SHEAR
#4	5/8"	6"	14,730	19,200
#5	3/4"	6-3/4"	18,810	29,760
#6	7/8"	7-1/2"	27,640	42,240
#7	1-1/8"	8-1/4"	36,200	57,600
#8	1-1/4"	9"	64,000	75,840

HI-TECH Cartridge Capacity

BOLT DIA.	MINIMUM EMBEDMENT DEPTH	HOLES PER CARTRIDGE	
		22 oz.	46 oz.
3/8"	3-1/2"	107	223
1/2"	4-1/4"	59	122
5/8"	5"	41	85
3/4"	6-3/4"	25	52
7/8"	7-1/2"	19	39
1"	8-1/4"	15	31

Bolt-Up And Cure Schedule

TEMPERATURE (°F) (°C)		BOLTUP TIMES (HRS)	CURE TIME (HRS)
40-50	4-10	8	42
51-60	10-16	6	36
61-70	16-21	4	24
71-80	21-27	3	24
>80	>27	2	16

**Safety and Handling:**

MSDS will be mailed immediately upon receipt of a purchase order or upon request. All personnel should read and understand product Material Safety Data Sheets provided. Long sleeved overall or disposable overalls, rubber gloves, splash shields, rubber or leather boots should be worn. Do not use near high heat or open flame. Do not take internally. Keep out of the reach of children.

**Clean Up:**

Cured product may be disposed of without restrictions. Excess liquid 'A' and 'B' material should be mixed together and allowed to cure, then disposed of in the normal manner. Cured materials may be stripped or peeled from plastic tools and containers. It is recommended that metal tools be cleaned within one hour of use by cutting or peeling cured material from tool.

**First Aid:**

Remove any contaminated clothing. For eye contact, flush immediately with plenty of water for at least 15 minutes; contact physician immediately. For respiratory problems, remove person to fresh air. For skin contact, remove epoxy immediately with a dry cloth or paper towel. Wash area of contact thoroughly with soap and water. Solvents should not be used because they carry the irritant into the skin. Wash contaminated clothing prior to re-use. Cured products are innocuous.

**Warranty:**

HI-TECH warrants its products to be free of manufacturing defects will meet HI-TECH's current published physical properties when applied in accordance with HI-TECH's directions and tested in accordance with ASTM and HI-TECH's standards. There are no other warranties by HI-TECH of any nature whatsoever, expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. HI-TECH Corporation 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, including any warranty of merchantability or fitness for a particular purpose or from any other cause whatsoever.