

# HI-TECH Systems

## "HT-CIK"

### CRACK INJECTION KIT

**Product Description:**

The *HT-CIK* was designed for small scale repairs to cracked concrete and block. Use with a 10 oz. caulking tool, everything else is included in this kit. *HT-CIK* is a high strength two component 2:1 ratio adhesive binder with low viscosity for deeper penetration. It is an excellent adhesive for use in crack grouting by injection or gravity-feed. Multipurpose, solvent-free, moisture insensitive general purpose resin adhesive. *HT-CIK* conforms to ASTM C-881, Types I and IV, Grade 1, Classes B & C for epoxy resin adhesive.

**Applications:**

- ✓ Pressure-injection for cracks in structural concrete, masonry, wood, etc.
- ✓ Gravity-feed of cracks in horizontal concrete and masonry.
- ✓ Stops additional damage
- ✓ Used to "knit" cracked slabs

**Advantages:**

- ✓ Easy mix, convenient cartridge fits in any standard 10 oz. caulking tool
- ✓ Low viscosity.
- ✓ Insensitive to moisture before, during and after cure.
- ✓ Convenient ratio: 2 parts A, 1 part B.
- ✓ Unique, high-strength, structural adhesive for "can't dry" surfaces.
- ✓ Deep penetrating and tenacious bonding of cracks in structural concrete.
- ✓ High early strength developing adhesive.
- ✓ Excellent chemical resistance

**Approximate Coverage per Kit:**

4" wall: 1/16" crack      11.25 lineal feet  
 6" wall: 1/16" crack      7.50 lineal feet  
 8" wall: 1/16" crack      5.60 lineal feet

4" wall: 1/8" crack      5.60 lineal feet  
 6" wall: 1/8" crack      3.75 lineal feet  
 8" wall: 1/8" crack      2.85 lineal feet

Additional cartridges and accessories are available as needed for more cracks than the approximate coverage listed above. Each additional cartridge would approximately fill ½ of what is listed above since there are two cartridges in a kit.

**Kit Contents:**

- 2 9.4oz. *HT-CIK* Cartridges
- 2 Injection nozzles with port connectors
- 2 Flexible extension hoses
- 2 Cups of *HT Capping Gel*
- 4 Disposable capping trowels
- 12 Injection ports w/caps
- 1 Port placement nail
- 1 Pair of disposable gloves

**Physical Properties:**

Color (A+B)		Amber
Viscosity (mixed)		500 cps
Mix Ratio (by volume)		2:1
Pot Life 100 grams @ 77°F		30 mins
Linear Coefficient of Shrinkage		.0043
Absorption	ASTM D-570 24 hrs	0.84 %
Shrinkage	ASTM C-883	Passes
Gel Time	ASTM C-881	45 mins
Heat Deflection Temperature		
	ASTM D-648	120°F
Bond Strength	ASTM C-882 2 days	2,580 psi
	14 days	3,735 psi
Compressive Strength @73°F		
	ASTM D-695 7 days	12,385 psi
Tensile Strength @ 73°F	14 days	
	ASTM D-638	7,168 psi
Flexural Strength		
	ASTM D-790	8,700 psi
Shear Strength		
	ASTM D-732	8,500 psi

**Preparation:**

If the crack or surface is contaminated, they must be first cleaned of loose debris and contaminants such as dirt, salts, efflorescence, oil, loose materials, rubber, paint, grease, or other foreign material that would be detrimental to bond the *HT-CIK*. Do not use solvents and make sure the area is dry. Vacuum or blow off cement dust.

**Port Placement:**

Port spacing typically equals the thickness of the concrete ie; (4" spacing for 4" thick wall), closer spacing for very fine cracks, or where more open spots occur. Ports are only placed on one side of the wall. If you cannot access the other side to seal it, reduce port placement by 20%. Mark the port locations, and adhere the ports with the capping gel and port placement nail.

Mix equal small amounts of "A" and "B" of the Gel together, butter the bottom of each port, center ports on cracks using the point of the nail through the port. Once placed, pull the nail out and visually ensure the crack has not been covered with the Gel.

**Crack Sealing:**

Once all ports are glued to the wall, mix more Capping Gel and completely cover the base of each port and along the entire length of the crack – be sure there are no pinholes where the *HT-CIK* could leak. If the backside of the crack is visible, seal it as well. Let all of the capping gel completely dry before proceeding with injection (2-8 hours).

**Injection - Walls:**

First, become familiar with attaching and detaching the connector on the end of the hose to a port. Push the connector securely on to the port - to pull it off, push the inner ring that seats on the port up into the connector body, then pull it off. Next, shake cartridge for 30 seconds, remove cap, then attach mixing nozzle. Be sure all connections are securely attached to one another. Put cartridge in caulking tool, and dispense a small amount into a cup to ensure the product is on ratio. Attach flexible hose to nozzle, (the other end of the hose has the port connector). Attach port connector to the lowest port on the wall and dispense *HT-CIK*. Monitor all connections, ports, and wall for leaks. Once *HT-CIK* flows out of the port above, stop dispensing, remove connector from port, and cap the port. Continue up - port to port. Allow for complete cure of injection material before any finishing work.

**Gravity Feed - Floors:**

Prep the cartridge exactly as stated above except there is no need for the flexible hose and connector. Dispense *HT-CIK* into vee-notched crack. Continue placement until completely filled. Seal underside of slab prior to filling if cracks reflect through.

**Finishing:**

Once the *HT-CIK* has cured, ports and Capping Gel can be removed for aesthetic purposes. Knock ports and most of the Capping Gel off with a hammer and flat chisel, along with any runs or spills. Finish by grinding flush to the surface.

**Disposal And 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.

**Shelf Life/Storage Conditions:**

1 year in original unopened container. Store between 60°F - 85°F and keep out of direct sunlight.

**Chemical Resistance:**

Test Procedure; ASTM D-1308 @72°F

R=Recommend

RC=Recommend Conditional =some swelling or discoloration

N=Not Recommend

1=Some discoloration only

<u>Chemical</u>	<u>Result</u>
Acetic Acid 10 %	R
Acetone	RC
Battery Acid (Sulfuric Acid)	RC
Brake fluid	R
Chlorine (2,000 ppm in water)	R
Citric Acid	R
Gasoline	R
Hydraulic Oil	R-1
Methanol (5%) Gasoline	RC
Motor Oil	R-1
Toluene	RC
Vinegar	R
Water	R
Xylene	R

**Safety:**

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. Long sleeve overalls or disposable overalls, rubber gloves, splash shields, rubber of leather boots should be worn. Do use near high heat or open flame. Do not take internally. Keep out of the reach of children.

**Warranty:**

HI-TECH warrants its products to be free of manufacturing defects and that they 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.