



SIMPSON

Strong-Tie

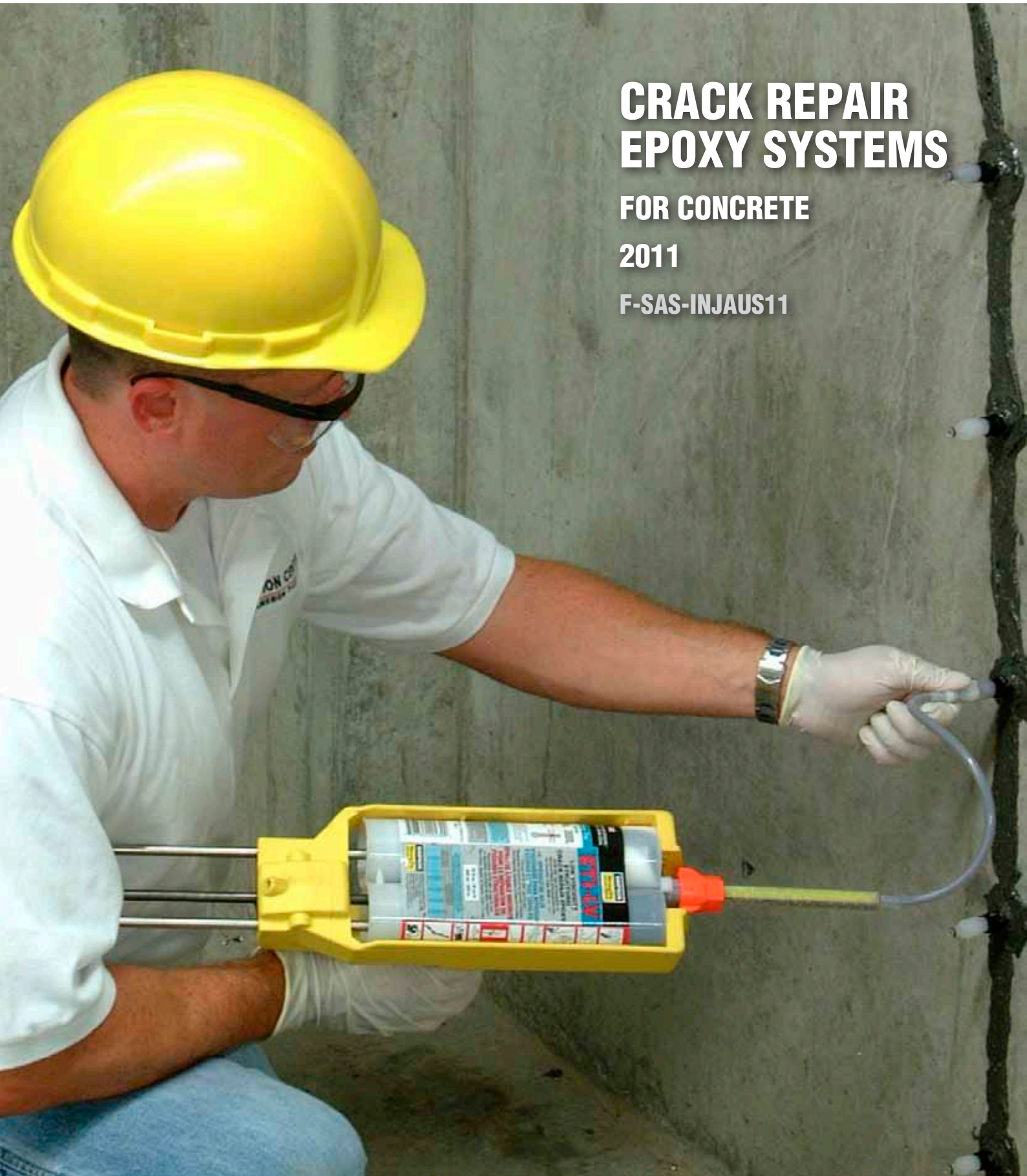
®

CRACK REPAIR EPOXY SYSTEMS

FOR CONCRETE

2011

F-SAS-INJAUS11



ETI Injection Epoxy

Crack Injection is a Sticky Business: Simpson Strong-Tie® Can Help!

Crack injection is a proven method to repair cracks in concrete. Unfortunately, it can be expensive and time consuming to acquire the right equipment and get it working properly.

*Simplification of the crack injection process and increased reliability were the goals behind development of the **Simpson Strong-Tie® Crack Repair Epoxy Systems**.*

Simpson Strong-Tie® ETI Injection Epoxies are specially designed formulations for the injection of cracks in concrete. ETI epoxies are two-component, 1:1 ratio, 100% epoxy solids formulations. They are available in 650ml side-by-side cartridges and are dispensed through a static mixing nozzle using a manual or pneumatic dispensing tool. ETI is available in two viscosities: ETI-LV (*low viscosity*) and ETI-GV (*gel viscosity*) to handle a wide range of crack widths. Properly applied, they provide a repair that is both waterproof and high strength (*structural*).

ETI SYSTEM FEATURES:

- Chemically bonds with the concrete to provide a structural repair (*meets the requirements of ASTM C-881 as a structural repair epoxy*).
- Seals the crack from moisture, protecting rebar in the concrete from corrosion and flooring from moisture damage.
- Both viscosities formulated for maximum penetration under pressure.
- Side-by-side cartridge dispensing provides reliable mixing and ratio control when used with the New Simpson Strong-Tie Opti-Mix™ static mixing nozzle.
- Eliminates the need for expensive bulk dispensing equipment. Either formulation can be dispensed using a manual or pneumatic dispensing tool (*ETI-LV requires the use of the Opti-Mix nozzle, model EMNO22, which is included with the cartridge*).
- Black and white components allow easier verification of mixing than systems utilizing same color components. The cured epoxy is gray for a better color match with the concrete in exposed conditions.
- Suitable for pressure injection or gravity-feed applications.
- Non-shrink material resistant to oils, salts and mild chemicals.



Suitable for pressure injection or gravity feed applications.

ETI-LV LOW VISCOSITY INJECTION EPOXY

- Low viscosity epoxy (*1790 cps*) for repair of fine to medium width cracks (Suggested width range: 0.4 - 6mm).
- Low surface tension allows the material to effectively penetrate narrow cracks.
- Meets the requirements of ASTM C-881 Type I, II, IV and V, Grade 1, Classes B and C. Suitable for structural repairs.
- Meets the requirements of NSF Standard 61 for contact with potable water (ETI-LV only).

ETI-GV GEL VISCOSITY INJECTION EPOXY

- Gel viscosity epoxy for repair of medium cracks (Suggested width range 2.4 - 6mm).
- Decreases in viscosity under pressure for increased flowability.
- Meets the requirements of ASTM C-881 Type I, II, IV and V, Grade 3, Classes B & C. Suitable for structural repairs.



ETI-LV



ETI-GV

ETI Product Data

Model No.	Capacity (ml)	Cartridge Type	Carton Qty.	Mixing Nozzle
ETILV22	650	Side-by-Side	10	EMNO22 (included)
ETIGV22				

The ETI-LV must be used with the Opti-Mix nozzle (EMNO22) for proper mixing. ETI-GV may also be used with the standard EMNO22 mixing nozzle for gravity feed applications in large cracks.

Crack Injection Accessories

OPTI-MIX™ MIXING NOZZLE: ELIMINATE POORLY MIXED EPOXY.

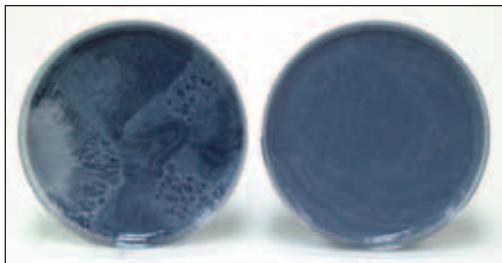
The Opti-Mix static mixing nozzle is specifically designed for crack injection epoxies and ensures thorough mixing of epoxy components.

- For use with both low viscosity and gel viscosity ETI formulations.
- Flow regulators force resin and hardener to flow through the nozzle at equal rates, ensuring thorough mixing. Testing shows that mixing with the Opti-Mix nozzle is 4 times more consistent than a standard spiral mixing nozzle.
- For use with both manual and pneumatic dispensing tools.
- Half the length of standard spiral mixing nozzles, allowing easy access in cramped conditions and reducing waste.
- Barbed end allows easy attachment to the E-Z-Click™ Injection Fitting.

When dispensing low viscosity epoxy using a standard spiral mixing nozzle and a manual dispensing tool, resin and hardener surge unevenly through the nozzle without being thoroughly combined. The result is poorly mixed epoxy that will not fully cure and will not result in an effective repair. The Opti-Mix nozzle corrects this problem utilizing unique mixing elements and a flow regulator that allows the use of a manual tool with low viscosity epoxy.



**Opti-Mix™
Nozzle**



This photo shows low viscosity epoxy mixed with a standard mixing nozzle (left) and with the Opti-Mix nozzle (right). Testing shows that epoxy mixed with the Opti-Mix nozzle has over 20% more strength than samples mixed with a standard mixing nozzle.

E-Z-CLICK™ PORT SYSTEM: ELIMINATE MESS AND WORK FASTER.

The E-Z-Click Injection System consists of a specially designed fitting and ports that take the mess out of your repair project while allowing you to work faster. The E-Z-Click Injection Fitting installs onto the end of the Opti-Mix mixing nozzle and clicks onto the E-Z-Click Ports during injection.

- Positive connection eliminates messy leakage, minimizing waste and clean-up.
- No drilling of ports: E-Z-Click Ports perform while pasted to the surface of the concrete. No drilling required which can force dust into the crack.
- Disconnect the fitting and the epoxy stops flowing, no leaky mess.
- After injecting, pull the head of the E-Z-Click Port out to close it and prevent leakage.
- One person can work faster without having to hold the tube on the port.



E-Z-Click ports in open position (left) and closed (right).



Injection Accessory Product Data

Description	Model No.	Pkg Qty	Ctn Qty (ea)
6 Opti-Mix Mixing Nozzles for ETI Epoxies (162mm long, 10mm square). Includes retaining nuts. ¹	EMN022-RP6	6	30 (5Pkgs)
20 E-Z-Click Flush Mount Injection Ports and 1 E-Z-Click Injection Fitting	EIP-EZKT	•	5 kits
100 E-Z-Click Flush Mount Injection Ports	EIP-EZA	•	100
20 E-Z-Click Corner Mount/Drilled-In Injection Ports ²	EIPX-EZ-RP20	20	100 (5 Pkgs)
20 E-Z-Click Corner Mount/Drilled-In Injection Ports and 1 E-Z-Click Injection Fitting ²	EIPX-EZKT	•	5 kits
E-Z-Click Injection Fitting	EIF-EZ	1	10
ETR Kit containing 1- 235ml oz. canister of resin and 1- 235ml. canister of hardener	ETR16	•	4 kits

1. Use only appropriate Simpson mixing nozzle in accordance with Simpson's instructions. Modification or improper use of mixing nozzle may impair epoxy performance.
2. EIPX intended for use as a surface mount port in corners and a drilled-in port on flat surfaces. All accessories compatible with ETI-LV and ETI-GV epoxies.

Epoxy-Tie® for Paste-Over

Simpson Strong-Tie® Epoxy-Tie® products are ideal for pasting over the surface of cracks and attaching ports for pressure injection. Their non-sag paste consistency enables paste-up on horizontal, vertical and overhead applications.

- ET Epoxy-Tie: Economical cartridge epoxy paste-over when fast cure time is not an issue (24 hour cure at 16°C) .
- CIP Paste Over: A fast-curing, two-part epoxy paste-over material. It is used to seal cracks and to secure injection ports over cracks prior to epoxy or urethane foam injection repair. CIP sets up hard and can either be left on the concrete or ground or chiseled off at the completion of a crack injection job.
- CIP-F Paste Over: A flexible, peelable and fast-curing polyurea paste-over material. It is used to temporarily seal cracks and to secure injection ports over cracks prior to epoxy or urethane-foam injection repair. CIP-F can be peeled off at the completion of a crack injection job by pulling on starter tabs placed under the lead edge surface at the time of application or by prying under the paste-over.
- ETR Epoxy-Tie: Fast cure epoxy for paste-over packaged in separate 8 ounce canisters, to be mixed manually.



ET22 Paste-Over



CIP

CIP-F



ETR16

Paste-Over Epoxy Product Data

Model No.	Capacity (ml)	Container Type	Carton Qty.	Mixing Method
ET22	650	Side-by-Side Cartridge	10	EMN22 Mixing Nozzle (sold separately)
ETF22	650	Side-by-Side Cartridge	10	EMN22 Mixing Nozzle (sold separately)
ETR16	473	236ml Canisters	4 Kits	Manual
CIP	650	Side-by-Side Cartridge	10	EMN22
C P-F	650	Side-by-Side Cartridge	10	Included

DISPENSING TOOLS

Simpson Strong-Tie® dispensing tools are a vital part of the Simpson Strong-Tie Crack Injection System and have been designed and tested for use with all Epoxy-Tie® adhesive products.

MANUAL DISPENSING TOOL (MODEL EDT22S):

Ideal for small to medium-size repairs or applications where compressed air is not available. Features a durable steel carriage designed to deliver reliable performance under continuous use. The 26:1 thrust ratio deliver maximum manual dispensing power while the double gripping plates eliminate rod slippage to ensure continuous pressure. Cartridges snap into place for optimum alignment. Capable of generating 0.62 MPa of injection pressure.



EDT22S



EDT22AP

PNEUMATIC DISPENSING TOOL (MODEL EDT22AP):

The most efficient application method for all types of repairs. Just hold the trigger and let the tool do the work. Features an ergonomically designed nylon reinforced handle that includes a power adjustment dial and power piston return. All of these features in a tool that weighs just 4kg. Capable of generating 116 psi of injection pressure. Air supply attachment is 1/4-18 NPT (male) thread and recommended air pressure is between 80-100 psi (116 psi max.).

Crack-Pac® Single Tube Crack Injection Epoxy

INJECTION EPOXY THAT MIXES IN THE TUBE AND DISPENSES FROM A STANDARD CAULKING TOOL.

The Crack-Pac contains a two-part, low viscosity 100% epoxy solids crack injection formula. The resin is contained in the cartridge and the hardener is contained in the nozzle. Once mixed, the adhesive has the viscosity of a light oil and a low surface tension which allows it to penetrate fine to medium width cracks (Suggested width range: 0.4 - 6mm).

FEATURES:

- Chemically bonds with the concrete to restore strength: not just a crack filler.
- Seals cracks: protects flooring and rebar in the concrete from moisture and corrosion.
- Simple in-the-cartridge mixing: No worries about mixing ratios or extra tools.
- Totally portable: no external power source or expensive equipment needed.
- All accessories are disposable: no equipment to clean.
- Components are separate until mixed: longer shelf life with no barrier leakage.
- Non-shrink material resistant to oils, salts and mild chemicals.
- Meets the requirements of ASTM C-881, Type I & II, Grade 1, Classes B&C.



Crack-Pac

Crack-Pac Product Data

Model No.	Capacity (ml)	Container Type	Carton Qty.	Dispensing Tool	Required Nozzle
ETIPAC10	266	Single	12	Standard Caulking Tool	Included



Crack-Pac Kit

CRACK-PAC—® KIT: WE'VE GOT YOUR PROJECT WRAPPED UP IN A NICE, NEAT PACKAGE.

Crack-Pac is also available in the Crack-Pac Injection Kit (*Model ETIPAC10KT*). The kit includes everything needed to pressure inject approximately 2.4 lineal meters of cracks. All of the material and accessories needed are included complete with detailed crack injection instructions:

- 2 Crack-Pac Cartridge/Nozzle Sets
- 12 E-Z-Click™ Injection Ports
- 2 E-Z-Click Injection Fittings with 300mm Tubing
- 473ml of Paste-Over Epoxy (236ml of resin + 236ml of hardener)
- 4 Disposable Wood Paste-Over Tools
- 1 Pair of Latex Gloves
- Complete Instructions

All you need to supply is the caulking tool and the cracked concrete!



Crack-Pac Injection Kit

Model No.	Contents	Carton Qty.
ETIPAC10KT	2 Crack-Pac Cartridges, 12 E-Z-Click™ Ports, 2 E-Z-Click Injection Fittings, 1 Pint of Paste-Over Epoxy, 4 Disposable Paste-Over Tools, 1 Pair Latex Gloves	2 kits

Technical Information

CRACK SUITABILITY

ETI-LV for repair of fine to medium width cracks (Suggested width range: 0.4 - 6mm).
ETI-GV for repair of medium width cracks (Suggested width range: 2.4 - 6mm).
Crack-Pac for repair of fine to medium non-structural cracks (Suggested width range: 0.4 - 6mm).

Simpson Strong-Tie does not recommend repair of structural cracks or cracks wider than 6mm unless a qualified engineer is consulted.

APPLICATION

Epoxy-Tie injection epoxies are suitable for repairing non-moving cracks in concrete walls, floors, slabs, columns and beams. They can be used to inject cracks in damp or wet conditions with excellent results (*water cannot be seeping from the crack during injection or cure*). Apply to concrete 5°C or above. For best results, warm epoxy to 15°C or above prior to application.

SHELF LIFE

2 years in unopened cartridge.

STORAGE CONDITIONS

For best results store between 7° - 32°C.

COLOR

ETI-LV / ETI-GV: Resin- white; Hardener- black. When properly mixed the adhesive will be a uniform gray color.

Crack-Pac® Injection Epoxy: Resin- Blue; Hardener- Clear Amber. When properly mixed the adhesive will be a clear amber color. During cure the material turns a blue color. After approximately two weeks it turns back to clear amber.

CLEAN-UP

Removal of Cured Adhesive: Chip or grind off surface. Uncured Adhesive: Wipe up with cotton cloths. If desired, scrub area with abrasive, water based cleaner and flush with water. If approved, solvents such as ketones (*MEK, acetone, etc.*), lacquer thinner, or adhesive remover can be used. **DO NOT USE SOLVENTS TO CLEAN ADHESIVE FROM SKIN.** Take appropriate precautions when handling flammable solvents. Solvents may damage surface to which they are applied.

CHEMICAL RESISTANCE

Very good to excellent against distilled water, inorganic acids and alkalis. Fair to good against organic acids and alkalis, and many organic solvents. Poor against ketones.

EPOXY-TIE INJECTION EPOXY TECHNICAL SPECIFICATIONS

- **ETI-LV:** Meets the requirements of ASTM C-881 Type I, II, IV and V, Grade 1, Classes B & C. Suitable for structural repairs. Also meets the requirements of NSF Standard 61 for contact with potable water.
- **ETI-GV:** Meets the requirements of ASTM C-881 Type I, II, IV and V, Grade 3, Classes B & C. Suitable for structural repairs.
- **Crack-Pac:** Meets the requirements of ASTM C-881 Type I & II, Grade 1, Classes B & C.

Property		Test Method	Result		
			ETI-LV	ETI-GV	CRACK-PAC
Viscosity		ASTM D2393	1,790 cps (24°C)	Non-Sag Gel	1,400 cps (22°C)
Bond Strength	2 Day Moist Cure	ASTM C882	17.24 mpa	7.65 mpa	13.86 mpa
	14 Day Moist Cure		17.44 mpa	27.54 mpa	26.41 mpa
Tensile Strength (7 days)		ASTM D638	51.50 mpa	—*	40.40 mpa
Tensile Elongation at Break		ASTM D638	9.4%	—*	14.1%
Compressive Yield Strength (7 days)		ASTM D695	86.04 mpa	79.73 mpa	77.70 mpa
Compressive Modulus		ASTM D695	2358 mpa	2779.96 mpa	2196.67 mpa
Deflection Temperature		ASTM D648	55°C	55°C	—**
Water Absorption (24 hours)		ASTM D570	0.76%	0.58%	0.82%
Linear Coefficient of Shrinkage		ASTM D2566	0.004	0.000	0.002
Gel Time (60 gram mass)		ASTM C881	120 minutes	135 minutes	120 hours
Initial Cure (22°C)		—	24 hours	24 hours	24 hours

*These ASTM C-881 tests do not apply to gel viscosity epoxy.

** This ASTM C-881 test is not required for Type I and II epoxy.

Epoxy-Tie Injection Guide

IMPORTANT: These instructions are intended as recommended guidelines. Due to the variability of field conditions, selection of the proper material for the intended application and installation are the sole responsibility of the applicator.

Epoxy injection is an economical method of repairing non-moving cracks in concrete walls, slabs, columns and piers and is capable of restoring the concrete to its pre-cracked strength. Prior to doing any injection it is necessary to determine the cause of the crack. If the source of cracking has not been determined and remedied, the concrete may crack again.

PREPARATION OF THE CRACK FOR INJECTION

Clean the crack and the surface surrounding it to allow the epoxy to bond to sound concrete. At a minimum, the surface to receive paste-over should be brushed with a wire brush. Oil, grease or other surface contaminants must be removed in order to allow the paste-over to bond properly. Take care not to impact any debris into the crack during cleaning. Using clean, oil free compressed air, blow out the crack to remove any dust, debris or standing water. Best results will be obtained if the crack is dry at the time of injection. If water is continually seeping from the crack, the flow must be stopped in order for epoxy injection to yield a suitable repair. Other materials such as polyurethane resins may be required to repair an actively leaking crack.

For many applications, additional preparation is necessary in order to seal the crack. Where a surfacing material has been removed using an acid or chemical solvent, prepare the crack as follows:

1. Using clean, compressed air, blow out any remaining debris and liquid.
2. Remove residue by high-pressure washing or steam cleaning.
3. Blow any remaining water from the crack with clean compressed air.

If a coating, sealant or paint has been applied to the concrete it must be removed before placing the paste-over epoxy. Under the pressure of injection these materials may lift and cause a leak. If the surface coating is covering the crack, it may be necessary to route out the opening of the crack in a "V" shape using a grinder in order to get past the surface contamination.

MATERIALS

- ETI-LV for repair of fine to medium width cracks (Suggested width range: 0.4 - 6mm).
- ETI-GV for repair of medium width cracks (Suggested width range: 2.4 - 6mm)
- Crack-Pac for repair of fine to medium non-structural cracks (Suggested width range: 0.4 - 6mm)
- ET, CIP, CIP-F or ETR for paste-over of crack surface and installation of injection ports.
- E-Z-Click™ Injection Ports, Fittings and other suitable accessories.

SEALING OF THE CRACK AND ATTACHMENT OF E-Z-CLICK INJECTION PORTS

1. To adhere the port to the concrete, apply a small amount of epoxy around the bottom of the port base. Place the port at one end of the crack and repeat until the entire crack is ported. As a rule of thumb, injection ports should be placed 200mm apart along the length of the crack. *Important: Do not allow epoxy to block the port or the crack under it, this is where epoxy must enter the crack.*



2. Using a putty knife or other paste-over tool, generously work epoxy along the entire length of the crack. Take care to mound the epoxy around the base of ports and to work out any holes in the material. It is recommended that the paste-over should be a minimum of 3mm thick and 25mm wide. Insufficient paste-over will result in leaks under the pressure of injection. If the crack passes completely through the concrete element, seal the back of the crack, if possible. If not, epoxy may be able to run out the back side of the crack, resulting in an ineffective repair.



3. Allow the paste-over to harden before beginning injection.

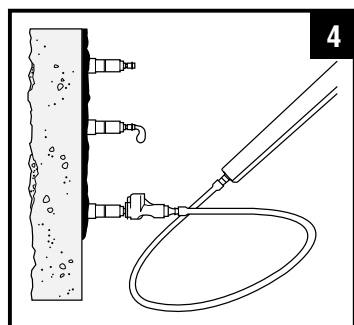
Note: ET, CIP, CIP-F and ETR may all be used to set injection ports and paste-over. ETR epoxy is a fast cure, manually mixed material and may harden prematurely if left in a mixed mass on the mixing surface while installing ports. Spreading ETR into a thin film (approximately 3mm) on the mixing surface will slow curing by allowing the heat from the reaction to dissipate.



Epoxy-Tie® Injection Guide (cont.)

INJECTION PROCEDURE FOR ETI-LV, ETI-GV AND CRACK-PAC

1. Follow cartridge preparation instructions on the cartridge label. Verify that the material flowing from the Opti-Mix mixing nozzle is a uniform gray color for ETI-LV and ETI-GV. For Crack-Pac verify that the mixed material in the cartridge is a clear amber color.
2. Attach the E-Z-Click™ fitting to the end of the nozzle by pushing the tubing over the barbs at the end of the nozzle. Make sure that all ports are pushed in to the open position.
3. Attach the E-Z-Click Injection Fitting to the first E-Z-Click Port until it clicks into place. Make sure that the heads of all the ports are pushed in to the open position. In vertical applications, begin injection at the lowest port and work your way up. In a horizontal application start at one end of the crack and work your way to the other end.



4. Inject epoxy into the first port until it will no longer flow into the crack. If epoxy shows at the next port and the first port still accepts material, close the second port and continue to inject into the first port until it accepts no more epoxy. Continue closing ports where epoxy appears until the first port refuses epoxy. When the first port reaches the point of refusal, brace the base of the port and pull out gently on the head of the port to close it. Pulling too hard may dislodge the port from the surface of the concrete, causing a leak. Depress the metal tab on the head of the E-Z-Click Fitting and remove it from the port.
5. Go to the last port where epoxy appeared while injecting the first port, open it, and continue injection at this port. If the epoxy has set up and the port is bonded closed, move to the next clean port and repeat the process until every portion of the crack has refused epoxy.



While this method may appear to leave some ports uninjected, it provides maximum pressure to force the epoxy into the smaller areas of the crack. Moving to the next port as soon as epoxy appears will allow the epoxy to travel along the wider parts of the crack to the next ports rather than force it into the crack before it travels to the next ports.

INJECTION TIPS

- If using a pneumatic dispensing tool, set the tool at a low setting when beginning injection and increase pressure if necessary to get the epoxy to flow.
- For narrow cracks it may be necessary to increase the pressure gradually until the epoxy begins to flow. It may also be necessary to wait a few minutes for the epoxy to fill the crack and travel to the next port.
- If desired, once the injection epoxy has cured, remove the injection ports and paste-over epoxy. The epoxy can be removed with a chisel, scraper, or grinder. Using a heat gun to soften the epoxy is recommended when using a chisel or scraper.
- Mixing nozzles can be used for multiple cartridges as long as the epoxy does not harden in the nozzle.

TROUBLESHOOTING

Epoxy is flowing into the crack, but not showing up at the next port.

This can indicate that either the crack expands and/or branches off under the surface of the concrete. Continue to inject and fill these voids. In situations where the crack penetrates completely through the concrete element and the backside of the concrete element cannot be sealed (*e.g. basement walls, or footings with backfill*) longer injection time may not force the epoxy to the next port. This most likely indicates that epoxy is running out of the unsealed back side of the crack. In this case the application may not be suitable for epoxy injection repair without excavation and sealing of the back side of the crack.

Back pressure is preventing epoxy from flowing.

This can indicate several situations:

- The crack is not continuous and the portion being injected is full (*see above instructions about injection after the port has reached refusal*).
- The port is not aligned over the crack properly.
- The crack is blocked by debris.
- If the mixing nozzle has been allowed to sit for a few minutes full of epoxy, the material may have hardened in the nozzle. Attach the E-Z-Click fitting to a port at another un-injected location on the crack and attempt to inject. If the epoxy still won't flow, chances are the epoxy has hardened in the nozzle.

Epoxy-Tie® Injection Guide (cont.)

TROUBLESHOOTING (cont.)

Epoxy is leaking from the pasted-over crack or around injection ports.

Stop injecting. If using a fast cure paste-over material (*ETF, CIP, CIP-F or ETR*), wipe off the leaking injection epoxy with a cotton cloth and re-apply the paste over material. Wait a approximately 10-15 minutes to allow the epoxy to begin to harden. If the leak is large (*e.g. the port broke off of the concrete surface*) it is a good idea to wait approximately 30 minutes, or longer as necessary, to allow the paste over to cure more completely. Check to see that the epoxy is hard before reinjecting or the paste-over or ports may leak. Another option for small leaks is to clean off the injection epoxy and use paraffin or crayon to seal the holes.

More epoxy is being used than estimated.

This may indicate that the crack either expands or branches off below the surface. Continue to inject and fill these voids. This may also indicate that epoxy is running out of the back side of the crack. If the crack penetrates completely through the concrete element and cannot be sealed, the application may not be suitable for injection repair.

Less epoxy is being used than estimated.

This may indicate that the crack is shallower than originally thought, or the epoxy is not penetrating the crack sufficiently before moving to the next port. Reinject some ports with a lower viscosity epoxy to see if the crack will take more epoxy. Another option is to heat the epoxy to a temperature of 25 - 35°C which will reduce its viscosity and allow it to penetrate into small cracks easier. The epoxy should be heated uniformly, do not overheat cartridge.

GRAVITY-FEED PROCEDURE

Some horizontal applications where complete penetration is not a requirement can be repaired using the gravity feed method.

1. Follow cartridge preparation instructions on the cartridge label. Verify that the material flowing from the Opti-Mix™ mixing nozzle is a uniform gray color for ETI-LV and ETI-GV. For Crack-Pac injection epoxy verify that the mixed material in the cartridge is a clear amber color.
2. Starting at one end of the crack, slowly dispense epoxy into the crack, moving along the crack as it fills. It will probably be necessary to do multiple passes in order to fill the crack. It is possible that the epoxy will take some time to run into the crack, and the crack may appear empty several hours after the initial application. Reapply the epoxy until the crack is filled. In situations where the crack completely penetrates the member (*e.g. concrete slab*) the material may continue to run through the crack into the subgrade. In these cases epoxy repair may not provide an effective repair.

Tip: For narrow cracks, run a bead of caulk along each side of the crack approximately 3mm from the edge of the crack. This will form a reservoir into which epoxy can be dispensed. Alternatively, use a grinder to route the crack opening into a "V" shape. Take care to clean the crack with compressed air afterwards as grinding can impact dust and debris into the crack and prevent proper flow of the epoxy.



ESTIMATING GUIDE FOR EPOXY CRACK INJECTION

Width of Crack (mm)	Concrete Thickness (mm)	Approximate Coverage per 650ml (lin metre)	Approximate Coverage per 265ml (lin metre)	Width of Crack (mm)	Concrete Thickness (mm)	Approximate Coverage per 650ml (lin metre)
0.4	100	14	5.6	6	100	0.9
	150	9.6	3.7		150	0.6
	200	7.2	2.8		200	0.45
	250	5.8	2.2		250	0.4
0.8	100	7.2	2.8	8	100	0.7
	150	4.8	1.8		150	0.5
	200	3.6	1.4		200	0.4
	250	2.9	1.1		250	0.3
1.5	100	3.6	1.4	10	100	0.6
	150	2.4	0.9		150	0.4
	200	1.8	0.7		200	0.3
	250	1.4	0.6		250	0.2
3	100	1.8	0.7	11	100	0.5
	150	1.2	0.4		150	0.3
	200	0.9	0.3		200	0.25
	250	0.7	0.2		250	0.2
5	100	1.2	0.45	12	100	0.45
	150	0.8	0.3		150	0.3
	200	0.6	0.24		200	0.2
	250	0.5	0.18		250	0.18

These calculations are only estimates and to be used as a guide only.

System Guide

ETI INJECTION SYSTEM

CARTRIDGE

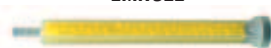
ETI-LV

ETI-GV



MIXING NOZZLE

EMN022



DISPENSING TOOL

EDT22S

EDT22AP (Pneumatic)



PORTS / FITTINGS



EIP-EZA
Flush Mount Port



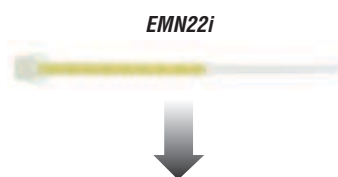
EIPX-EZ
Corner Mount/Drilled-In Port

PASTE-OVER SYSTEMS

CARTRIDGE



MIXING NOZZLE



DISPENSING TOOL



*ETR16 is also ideal for paste-over.
ETR does not require a mixing nozzle or dispensing tool.*



ETR16



A FULL LINE OF ANCHORS AND FASTENERS FOR CONCRETE AND MASONRY

Simpson Strong-Tie offers a complete line of adhesive, mechanical, gas and powder-actuated fastening systems and carbide for concrete and masonry. We are committed to providing industry professionals with the service and technical support they need. For more information, please visit www.strongtie.com.au.



MECHANICAL ANCHORS



ADHESIVES



POWDER-ACTUATED FASTENING

SIMPSON STRONG-TIE® AUSTRALIA PTY. LIMITED

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