

### Polyurethane Foam Foundation Crack Repair Kit 30 ft. w/ Epoxy Paste Surface Sealer

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#### INSTRUCTIONS

The information for waterproofing cracks in poured concrete has been compiled from several professional sources as recommended guidelines. Due to the variability in poured wall conditions, the selection of the proper material for the intended application and installation is the sole responsibility of the applicator.

#### REPAIR KIT CONTENTS

Includes all of the materials and accessories for low-pressure injection and repair of approximately 30 linear feet of cracks.

- 3 dual cartridges CR302 Epoxy Paste Surface Sealer
- 3 dual cartridges CR301 Polyurethane Injection Foam
- 1 syringe 0.5 Fast port adhesive/blow hole repair
- 1 manual dispensing tool (included with purchase of full kit; not included with purchase of consumables kit)
- 4 ¼ x 24 element mixers & 4 retaining nuts (for use with CR301 Injection Foam)
- 6 crossover restrictors
- 50 surface ports & caps
- 10 corner ports & caps
- 4 hose assemblies
- 5 pair nitrile gloves
- 1 plastic trowel & 1 wire brush
- Safety glasses
- Tool box
- 1 squeeze bottle
- Instructional video (CD)

#### TOOLS REQUIRED

- Paper plate or scrap cardboard for mixing CR302 Epoxy Paste Surface Sealer.

#### CRACK PREPARATION

Clean the surface surrounding the crack using the wire brush. Remove loose or flaking concrete, efflorescence, paint or coating to approximately 1-2 inches on either side of the crack. Wipe the surface clean of dust after brushing. The surface must be dry for proper installation of injection ports and surface seal. For best results if the surface is wet, wait until dry or if necessary, use a hot air gun, hair drier, or oil free compressed air to dry.

#### SURFACE PORT PLACEMENT

Starting at a point closest to the floor (vertical cracks), mark port locations on the wall. Ports are placed apart the thickness of the concrete wall, usually about 8". Center ports over the crack (no drilling necessary).



# Polyurethane Foam Foundation Crack Repair Kit 30 ft. w/ Epoxy Paste Surface Sealer

## INSTRUCTIONS

### SURFACE PORT ATTACHMENT AND CRACK SEALING

1. Prepare CR302 Epoxy Paste Surface Sealer by dispensing (using the dispensing tool) a sufficient amount of the material onto a paper plate or scrap piece of cardboard, mix with the supplied trowel (repeat this step each time you run out of mixed material).
2. Remove the cap from the surface port, then apply a small amount of mixed material to the bottom of the port base. Place the first port starting at the bottom of the crack and repeat every 8 inches until the entire crack is ported. **NOTE! Do not allow material to block the bottom of the port opening or the crack beneath the port.**
3. The next step is to work the mixed material along the entire length of the crack using the plastic trowel. The recommended material application is 1/8" thick and 2" wide. Make sure to mound sufficient extra material around the base of the ports. Expect to use 20 ounces per 10- foot of crack. Do not work the material "into" the crack, just paste over the surface.
4. Let the surface seal and port adhesive material cure before beginning injection, about 20 minutes until fingernail hard. (Not recommended to wait overnight.)



### INJECTION PROCEDURE

1. Using the squeeze bottle, flush the crack with 1-2 cups of water poured into the top port. Water should come out of every port below the top port indicating that the crack is contiguous and that ports are not blocked by surface seal material. Water is also useful to flush the crack and aid in resin activation.
2. Place the CR301 Polyurethane Injection Foam dual cartridge into the dispensing tool. Remove the plastic cap and then twist and pull to remove the plastic seal. Replace seal with restrictor, place the 1/4 x 24 mixing nozzle on top of restrictor over the end of the cartridge attaching with the plastic nut.
3. Attach the flexible hose assembly (wide end) over the mixer tip by pushing firmly.
4. For vertical cracks, attach the small end of the hose assembly into the lowest port by pressing firmly. For horizontal cracks begin at either end if one is not lower than the other.
5. **Begin injecting slowly with low pressure allowing the polyurethane time to flow into and fill all small fissures until it begins to flow from the port above it.** Use the white plastic pinch valve on the hose assembly to turn off injection flow, plugging the first port with the cap provided, and move up to the next port. Repeat this procedure until the entire crack has been injected with CR301 Polyurethane Injection Foam.



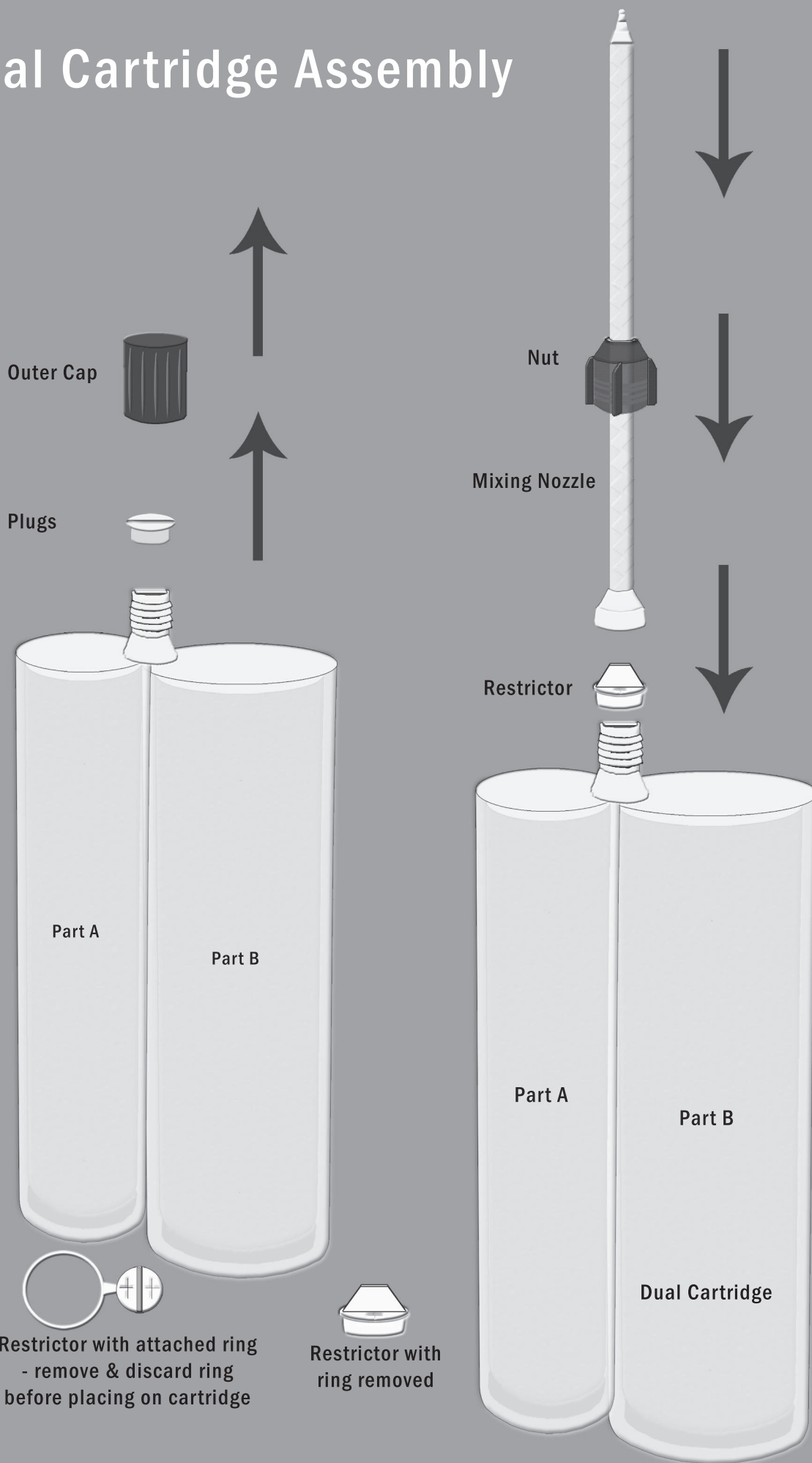
\* The ports can be removed by striking with a hammer after foaming is complete in about 3 or 4 hours. The surface seal material is paintable if desired.

**Hint:** To improve the ability to penetrate very small & hairline cracks, place the CR301 Polyurethane Injection Foam cartridges in a pail of hot tap water for 15-20 minutes. This temperature exposure should thin the material so that it can flow into the crack with less resistance.

**Note!** The secret to effective crack injection is patient low-pressure injection of the polyurethane foam. Small or hairline cracks will require 3 - 4 minutes at each port for proper filling to take place.



# Dual Cartridge Assembly



### CR301 Polyurethane Injection Foam Hydrophobic Polyurethane Foam

#### 1 GENERAL DESCRIPTION

CR301 INJECTION FOAM is a hydrophobic polyurethane liquid which is designed to stop water infiltration or exfiltration. When CR301 INJECTION FOAM meets water, it reacts with it and then repels any excess water forming a closed cell foam barrier which will not allow water to pass through it. It adheres tenaciously to practically all substrates, wet or dry.

CR301 INJECTION FOAM is typically used to stop water leaks coming through cracked or honeycombed concrete, voids between wall and floor, wall and ceilings, expansion joints, cold joints and pipe intrusions. It is used to repair concrete walls, ceilings and floors that are leaking. It is used in tunnel, manhole, sewer line, concrete dam and parking deck repairs.

CR301 INJECTION FOAM is designed to be used when greater than 20% movement (expansion and contraction) of the substrate is anticipated or where epoxy is not considered as necessary.

TEST TYPE	RESULTS	TEST METHOD
DENSITY (CORE)	FREE RISE 2.02 LBS/FT	ASTM D-1622
LOW TEMPERATURE		ASTM D-2126
AGING (-20f) (SHRINKAGE)	<4%	1 DAY
(SHRINKAGE)	<4%	7 DAYS
WATER ABSORPTION (VOLUME CONFINED)	<1%	ASTM D-2127
SHEAR STRENGTH	34 PSI	ASTM C-273
TENSILE STRENGTH	150 PSI	ASTM D-1623
ELONGATION	275%	ASTM D-1623
VISCOSITY	100-200 CPS	
% SOLID	100	
COLOR	AMBER	
TDI CONTENT	0%	

#### 2 PACKAGE

CR301 INJECTION FOAM is furnished in various packages. Most typically are 21+ ounces dual cartridges or in 5-gallon pails. The use of cartridges is suitable for low-pressure injection with manual tools, or up to 250 psi dispensing, utilizing pneumatic dispensing tools.

#### 3 APPLICATION

##### Quantity to Use

It is difficult to determine the amount of material to adequately seal a given crack. Experience in home foundation cracks (8' long with a wall thickness of 8-10") suggest the usage of 10-21 ounces of CR301 INJECTION FOAM per 8' crack (versus an average of 30-50 ounces of epoxy). Thus, while CR301 INJECTION FOAM can theoretically foam to 20 times its volume, more typical is 2-3 times its unfoamed volume for small cracks (1/32" - 1/4") as often found in foundation cracks.

# CR301 Polyurethane Injection Foam

## Hydrophobic Polyurethane Foam

### 3 APPLICATION (continued)

**Procedure:**

**Step 1 - Cleaning/Sealing Crack Surface** - When crack is contaminated on outside, it will be necessary to clean the crack surface, so the crack can be exactly located. If it is a wide crack or high water flows are encountered, it will be necessary to seal the surface of the crack with a surface sealing material (e.g., hydraulic cement; epoxy gel). The surface sealing can be done before or after drilling the injection holes (depending on the particular situation).

**Step 2 - Drilling the injection holes (for high pressure injection)** - There are different diameter, depths, and angles of injection holes. The standard is 1/2" or 5/8" diameter hole, the angle of drilling is 45 to the surface; and the depth of the hole will be 1/2 thickness of the concrete. Spacing of the injection ports depends on the width of the crack, but normally varies from 6" to 36". Injection holes should always be staggered from one side of the crack to the other (if possible).

**Step 3 - Install Injection Ports or Packers (for high pressure injection)** - Place the packer in the drilled 1/2" or 5/8" hole so that the top of the sleeve is just below the concrete surface. Tighten by a ratchet, socket or open-end wrench by turning clockwise as tightly as possible. Packers or injection ports are supplied with a one-way ball valve or check valve.

**Step 3A - Install Surface Ports (for low pressure injection)** - Space the surface ports the width of the concrete and place the surface ports directly over the crack. Bond with hydraulic cement or epoxy gel.

**Step 4 - Flush Crack** - It is sometimes necessary to flush the crack with water to remove debris and drill dust out of the cracks. Flushing will tell you how the crack will behave during grout injection and the water will prime the crack for the chemical reaction to occur. This is most necessary if crack is dry at time of repair.

**Step 5 - Surface Seal Crack** - Sometimes it may be necessary to surface seal the crack to prevent the unreacted grout from flowing back out. Use fast-setting hydraulic cement or epoxy gel to form a surface seal on crack.

**Step 6 - Injection of CR301 INJECTION FOAM** - Begin the injection at the lowest packer (surface port) on a vertical crack, or at the first packer (surface port) flushed for a horizontal crack. During injection, you will notice that water is displaced from the crack by CR301 INJECTION FOAM. Keep injecting until material appears at the adjacent packer (surface port). Disconnect and start injection at adjacent packer (surface port). After injecting a few packers, come back to the first packer and inject all the ports for the second time. Some of the ports may take some grout, which will fill up and further densify the crack. Injection pressure will vary from 20psi to 250psi depending on the width of the crack, thickness of concrete and condition of concrete.

### 4 WARRANTY

Recommendations concerning the performance or use of this product are based upon independent test reports believed to be reliable. If the product is proven to be defective, at the option of the Manufacturer, it will be either replaced or the purchase price refunded. The Manufacturer will not be liable in excess of the purchase price. The user will be responsible for deciding if the product is suitable for his application and will assume all risk associated with the use of the product. This warranty is in lieu of any other warranty expressed or implied, including but not limited to an implied warranty of merchantability or an implied warranty of fitness for a particular use.

### CR302 Epoxy Paste Surface Sealer Epoxy Paste

#### 1 GENERAL DESCRIPTION

CR302 Epoxy Paste Surface Sealer is a high modulus epoxy gel designed to anchor dowel and tie bars into concrete pavement. It is also ideal for surface sealing of cracks prior to injection. It can also be used for bonding miscellaneous materials to concrete where a fast cure is required. CR302 Epoxy Paste Surface Sealer is moisture insensitive and will cure in damp environments. In addition to normal packaging, CR302 Epoxy Paste Surface Sealer can be supplied in dual component, quick mix cartridges.

#### 2 USES

- A) Surface sealing
- B) Setting parking bumpers
- C) Anchoring dowel and tie bars into concrete pavement

#### 3 AREAS OF APPLICATION

As with any epoxy adhesive, surface preparation is critical. Concrete surfaces should be cleaned by sandblasting, water blasting or other mechanical means. All loose or unsound material must be removed. If patching, the outer perimeter of the spall should be saw cut or chipped to near vertical. Surfaces should be dry and dust free to insure a superior bond. CR302 Epoxy Paste Surface Sealer will cure in the presence of moisture although application onto wet surfaces is not recommended.

#### 4 CLEAN UP

Use M.E.K. Xylene, or any other solvent. Clean equipment immediately after use.

#### 5 SAFETY PRECAUTIONS

This product can cause skin irritation. Always wear protective clothing. Wash contaminated area with soap and water, never solvent. In case of eye contact, flush with water for 15 minutes; immediately see a physician.

#### 6 TECHNICAL DATA

PROPERTIES	PART A	PART B	MIXED
Solids by Volume	100%	100%	_____
Color	White	Black	Grey
Shelf Life	2 year	2 year	_____
Weight by Gallon	9.9 - 10.1 lbs	9.9 - 10.1 lbs	9.9 - 10.1 lbs
Mix Ratio (Vol)	_____	_____	1:1

# CR302 Epoxy Paste Surface Sealer Epoxy Paste

## 6 TECHNICAL DATA (continued)

PROPERTIES	PART A	PART B	MIXED
Pot Life: (3 oz)	_____	_____	10-20 minutes
Gel Time (5 mil)	_____	_____	2-3 hours
Final Cure	_____	_____	1-3 days
Viscosity	_____	_____	Non sag gel
Hardness (Shore)	_____	_____	80-D
Ultimate Pull Out Strength (Concrete Failure)	_____	_____	18,000 lbs

## 7 PHYSICAL PROPERTIES

Tensile Strength	ASTM D-638	6,000 psi
Tensile Elongation	ASTM D-638	3-4%
Compressive Strength	ASTM D-695	13,500 psi
Bond Strength	ASTM C-321	2,400 psi
Flexural Strength	ASTM D-790	8,000 psi
Deflection temp	ASTM D-648	190°F

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