



## **POLY-WALL URETHANE INJECTION HYDROPHOBIC URETHANE FOAM**

### **GENERAL DESCRIPTION**

Poly-Wall Urethane Injection is a hydrophobic polyurethane liquid which is designed to stop water infiltration or exfiltration. When Poly-Wall Urethane Injection meets water, it reacts with it and then repels it 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.

Poly-Wall Urethane Injection 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.

Poly-Wall Urethane Injection 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.

<b><u>TEST TYPE</u></b>	<b><u>RESULTS</u></b>	<b><u>TEST METHOD</u></b>
DENSITY (CORE)	FREE RISE 2.02 LBS/FT	ASTM D-1622
LOW TEMPERATURE AGING (-20f) (SHRINKAGE)	<0%	ASTM D-2126
(SHRINKAGE)	<0%	1 DAY
		7 DAYS
WATER ABSORPTION (VOLUME CONFINED)	<1%	ASTM D-2127
SHEAR STRENGTH	34PSI	ASTM C-273
TENSILE STRENGTH	31PSI	ASTM D-1623
ELONGATION	45%	ASTM D-1623
VISCOSITY	100-200 CPS	
% SOLID	100	
COLOR	AMBER	
TDI CONTENT	0%	

### **APPLICATIONS**

**Package:** Poly-Wall Urethane Injection 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.

**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 Poly-Wall Urethane Injection per 8' crack (versus an average of 30-50 ounces of epoxy). Thus, while Poly-Wall Urethane Injection 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.

### **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 Poly-Wall Urethane Injection** - 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 Poly-Wall Urethane Injection. 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.

### **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.