



AQUAFIN

Waterproof & Protective Coatings

Concrete Restoration

Moisture Vapor Mitigation

Self-Leveling Underlayments & Toppings

Injection Grouting

CHEMICAL GROUT HANDBOOK



www.aquafin.net

Chemical Grout Overview

HYDROPHILIC POLYURETHANES

Hydrophilic polyurethanes are water activated foams which begin to expand when in contact with water. Designed for sealing leaking cracks or joints in below grade concrete structures with continuous moisture exposure.

InjectProECO-Seal

Low viscosity, flexible hydrophilic polyurethane grout

InjectProECO-PolyGel

Flexible polyurethane gel

HYDROPHOBIC POLYURETHANES

Hydrophobic polyurethanes do not require water to initiate a reaction. The products all contain an "A" component (base resin) and a "B" component (accelerator). The "B" component is used by the applicator to adjust the set times for various job site specific conditions. As a result, hydrophobic polyurethanes are not subject to shrinkage due to wet/dry cycles.

InjectProECO-Cut

Rigid polyurethane grout for stopping active leaks in cracks and filling

InjectProECO-CombiGrout

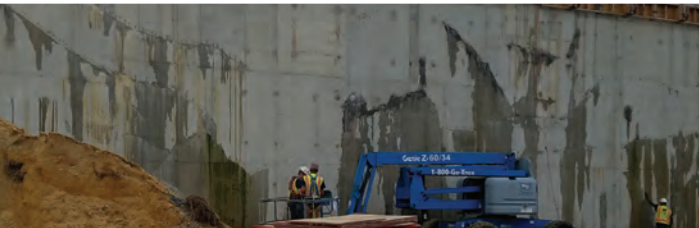
Slightly flexible polyurethane foam to accommodate differential movement

InjectProECO-LV

Flexible polyurethane grout for stopping active leaks in cracks and injection into the InjectPro-Hose System

InjectProECO-Soil

Ultra low viscosity polyurethane grout for stabilizing and waterproofing loose, granular soils



Chemical Grout Overview

DUAL-COMPONENT HYDROPHOBIC POLYURETHANES

Dual component polyurethanes are supplied in exact mixing ratios and do not require water to initiate a reaction. The products all contain an "A" component (base resin) and a "B" component (accelerator). Once both components are mixed they initiate the foaming reaction.

InjectPro-RockSolid

Two component, high density polyurethane foam

InjectPro-SuperFast

Fast reacting, two component, expansive polyurethane grout

HYDROPHILIC ACRYLATES

Hydrophilic acrylates are water activated gels with controlled, adjustable curing times. The ultra low viscosity allows for permeation into many types of soil and fine hairline cracks.

InjectProPM381 1-SoilStabilizer

Excellent penetration into various substrates and soil

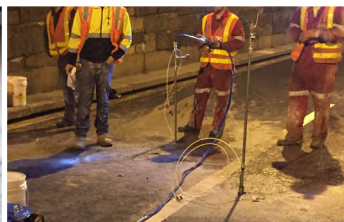
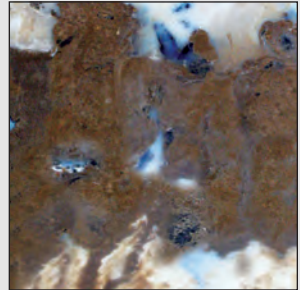
InjectProPM381 1-Flex

Elongation up to 250%, designed specifically for applications subject to movement

InjectProPM381 1-UltraSeal

Excellent for all crack injection applications. Perfect for areas subject to wetting/drying cycles, does not shrink in dry environments.

InjectPro-PM3811 Series of acrylates penetrate deep into soils to solidify the substrate and adjustable curing times allow for better control over depth of penetration.



InjectPro Chemical Grout Product Overview

	Expansion Rate	Viscosity (cps)	Properties	Limitations
ECO-Cut	25 x	~200	Hydrophobic, rigid, excellent for void filling. No harmful phthalates.	Not for moving cracks
ECO-LV	20 x	~400	Hydrophobic, flexible, excellent for crack injection. No harmful phthalates.	Not for void filling
ECO-CombiGrout	20 x	~325	Hydrophobic, slightly flexible combination between Cut and LV. No harmful phthalates.	
ECO-Seal	20 x	~300	Hydrophilic, flexible, excellent for sealing cracks. No harmful phthalates.	Not for areas prone to wetting/drying cycles. Requires constantly wet environment.
InjectPro-61	20 x	~550	Hydrophobic, polyurethane grout for use in potable water applications	
ECO-Soil	low	~25	Hydrophobic, polyurethane grout for stabilizing and waterproofing loose, granular soils. No harmful phthalates.	Must be pumped into soil, not good in voids.
PolyGel	low	~200	Hydrophilic grout that foams or gels and quickly cures to a flexible, impermeable mass.	
RockSolid	low	~200	Very high compressive strength.	
SuperFast	25 x	~400	Extremely fast reaction.	
PM3811-SoilStabilizer	minimal	~5	Extremely low viscosity for excellent penetration into soil.	Not for areas prone to wetting/drying cycles. Requires constantly wet environment.
PM3811-Flex	minimal	~5	Formulated for areas subject to movement with elongation of up to 250%	Not for areas prone to wetting/drying cycles. Requires constantly wet environment.
PM3811-Fast	minimal	~10	Very fast setting (20 secs - 5 mins) acrylate injection resin with superior sealing characteristics.	Not for areas prone to wetting/drying cycles. Requires constantly wet environment.
PM3811-UltraSeal	minimal	~10	Specifically formulated for crack injection as it is not subject to wetting and drying cycles	Not for void filling.

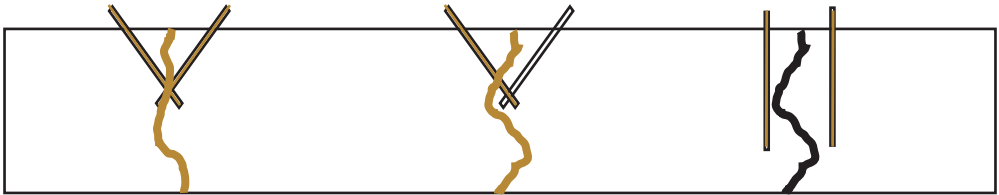
Crack Injection Drilling Guideline

Drill holes should always be drilled at a 45° angle, towards the crack. The drill distance should be 1/2 the thickness of the wall. For example, when injecting into a 12' wall, the holes should be drilled 6" from the surface of the crack. By drilling at an angle it allows the grout to intersect the crack closer to the center, so grout can travel in both directions. Further, if we were to drill straight into the concrete, it is more likely that the crack is completely missed and grout will have a hard time flowing into the crack.

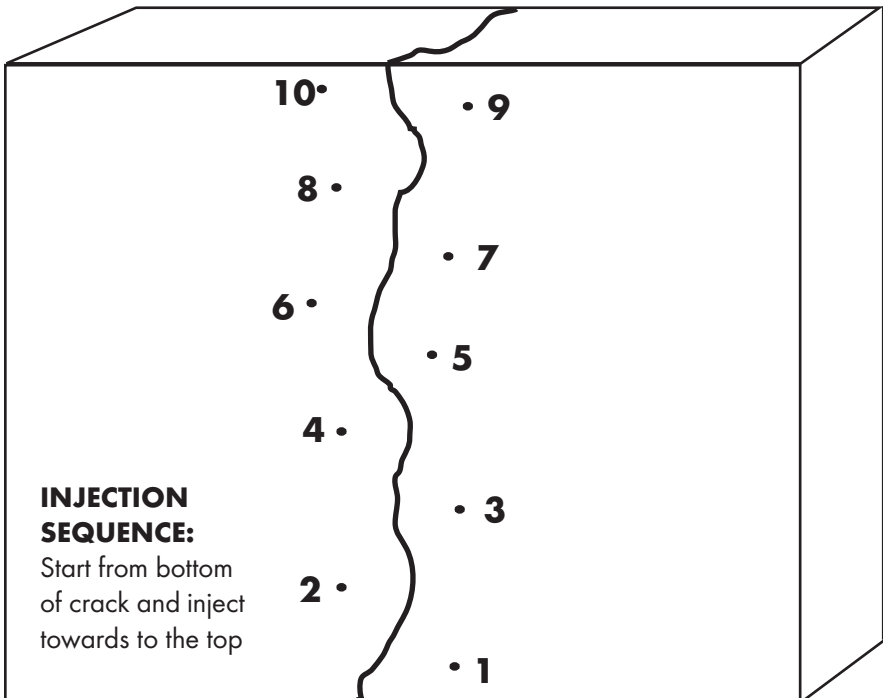
Proper drilling, crack intersected in center, good grout flow from both packers

Proper drilling, crack intersected in center, good grout flow from one packer.

Incorrect drilling, crack intersected well, poor grout flow.



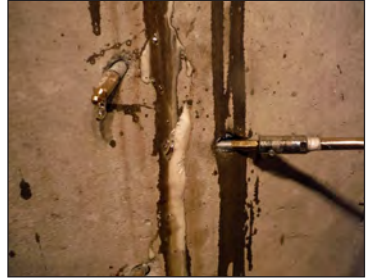
EXAMPLE: 12" wall thickness, packer holes drilled 6" off of crack



Step-by-Step Crack Injection Scenario



1. Drilling packer holes at a 45° angle towards the crack.



4. Pumping InjectPro urethane grout into the crack and watching for port-to-port travel.



2. Inserting packer into the drill hole and tighten.



5. Sealing packer holes with Aquafin PLUG-IC after grouting.



3. Flushing crack with water to ensure sufficient moisture is present for grout to properly react.

Contact your Aquafin representative for full detailed instructions and job-site specific advice.

Sealing of Annular Space Around Pipes or Conduits

For spaces approximately 1/4" or larger, up to 2" and sealing of non annular conduit openings. Using oakum or Open Cell Backer Rod saturated with polyurethane grouts

DESCRIPTION: A method of sealing leaking joints (annular space) 1/4" and larger up to 2" around concrete pipes, metal pipes or electrical conduits. Also internal conduit openings with wiring.

APPLICATION: When a pipe passes through a concrete structure and the annular space around the pipe is large, the saturated oakum or Open Cell Backer Rod technique can be used to seal off the water infiltration. This technique can be used alone to seal leaking cracks and joints. It can also be utilized to build a surface seal or "dam" behind which grout can be pumped. Where extremely active leaks flow, it can be advantageous to drill relief holes and place relief pipes to reduce water pressure. Activating the saturated oakum or Open Cell Backer Rod before placement can also be advantageous. These actions, along with the saturated oakum or Open Cell Backer Rod can help prevent the grout from being immediately washed out by the flow of water.

MATERIALS:

- InjectProECO-LV, or InjectProECO-Combi Chemical Grout available from Aquafin. InjectProEco-LV should be activated with 1% (1.3 oz. of Flex Accelerator to one gallon of ECO-LV). Combi can be activated with up to 5% ECO-Cut Accelerator.
- Rubber Gloves.
- Plastic bag or pail.
- Organic vapor respirator.
- Oil-free oakum or open cell backer rod, Meets Federal Specification HH-P-117.
- Blunt Instrument(s) for pushing oakum into small crevices.
- Fan for keeping the area well ventilated.

PROCEDURES:

1. Clean the crack or joint to be sealed of any loose debris and foreign material.
2. Cut the oakum or Open Cell Backer Rod in various lengths to fit the perimeter requirements of the pipe.
3. Place the oakum or Open Cell Backer Rod in heavy-duty bag or pail.
4. Pour the Aquafin InjectProEco grout into the plastic bag or pail. Pour enough to cover the oakum or Open Cell Backer Rod. Let the oakum or Open Cell Backer Rod soak long enough to get thoroughly saturated with the chemical grout. **MAKE SURE TO USE APPROPRIATE SAFETY AND VENTILATION GEAR.**
5. Remove the saturated oakum or Open Cell Backer Rod from the pail or bag. Carefully wipe excess grout from the oakum or open cell backer rod. Place in water for approximately 5 seconds. Hold the saturated oakum or open cell backer rod out of the water until the grout starts to foam.
6. Always start at the bottom of the area you are working in and place the oakum or open cell backer rod into the leaking crack, joint, or hole by stuffing it in. The tighter the fit the better the placement. Use a blunt instrument to drive the saturated oakum or open cell backer rod further into the leaking area. The water flow in the joint will continue to activate the grout that has been absorbed by the oakum or open cell backer rod.

If sealing dry joints or cracks, water should be sprayed into the joint or crack before and after the saturated oakum or open cell backer rod is inserted.

Sealing of Annular Space Around Pipes or Conduits

Injection behind saturated oakum or open cell backer rod with injection needles

After the space has been packed with saturated oakum or open cell backer rod, it may be desirable to inject liguid grout in back of the packing. This can be accomplished by using a 1/8" or 1/4" O.D. injection needle and an airless grout pump. The injection needle is attached to the end of the injection wand on the grease gun. Starting at the bottom of the pipe (6:00 o'clock) Insert needle through the Saturated Oakum or open cell backer rod packing and pump material into joint through the injection needle. Check migration of material by making holes in the Oakum or open cell backer rod around the circumference of the pipe above the area that is receiving the injection.

EQUIPMENT FOR INJECTION WITH INJECTION NEEDLES:

- 1-Airless sprayer pump for grout. Fitted with stainless injection needle. 1-Airless sprayer for water.
- Moisture resistant hose for grout side pump
- Injector Guns-(2)
- Aquafin Grout Out
- 3 - 4 clean, empty 5 gallon buckets with lids
- Injectors
- Aquafin Polyurethane Grouts

PUMP LOADING PROCEDURE:

1. Every morning use Aquafin Grout Out to purge grout side of a clean pump.
2. Pour two gallons, (4 inches to 5 inches) of Grout Out in bucket "A". Place suction hose in bucket "A" and pump through injector gun back into bucket "A". Cover bucket "A" and set aside. Then, immediately place suction hose into grout bucket "B". Pump into waste bucket "C" until grout emerges from gun.
3. After day's work, clean and purge the pump. Insert suction hose into Grout Out, bucket "A" and pump into waste bucket "C" until all grout is out of the system and Grout Out is seen flowing well. (Clean Grout Out can be left in system overnight only).

Always purge system with clean Grout Out when starting to grout with an unloaded pump.

Illustration Examples:

Fig 1. Front View - Pipe penetration through vertical concrete wall.

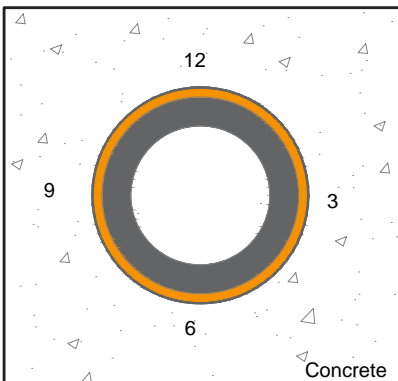
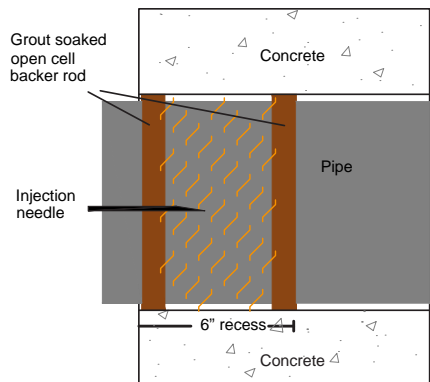


Fig. 2. Cross Section - Pipe penetration, annular space grouting.



Available Tools and Accessories

The following commonly used tools and accessories are readily available from Aquafin.

Injection Packers:

- 3/8" x 4" Mechanical Steel Packers with Zerk Fitting
- 3/8" x 4" Mechanical Steel Packers with Button Head Fitting
- 1/2" x 4" Mechanical Steel Packers with Zerk Fitting
- 1/2" x 4" Mechanical Steel Packers with Button Head Fitting
- 1/2" Plastic Packers with Zerk Fitting
- High Pressure Packers available for special order



Packer Accessories:

- Button Head Connectors
- Hydraulic Zerk Connectors



Injection Pump Accessories:

- Grout Injection Needle
- High Pressure Ball Valve Assembly
- F-Assembly & E-Assembly
- Grout Injection Needle



Acrylate Injection Pump by Desoi:

- Stainless steel reciprocating pump with fixed 1:1 injection ratio.
- Minimum air requirement: 500 L/minute



Plural Component Mixing Head



Polyurethane Injection Pump by Graco:

- Stainless steel reciprocating pump with fixed 1:1 injection ratio.
- Minimum air requirement: 500 L/minute



Available Tools and Accessories

The following commonly used tools and accessories are readily available from Aquafin.

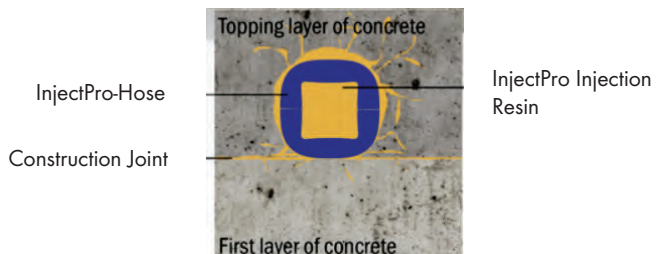
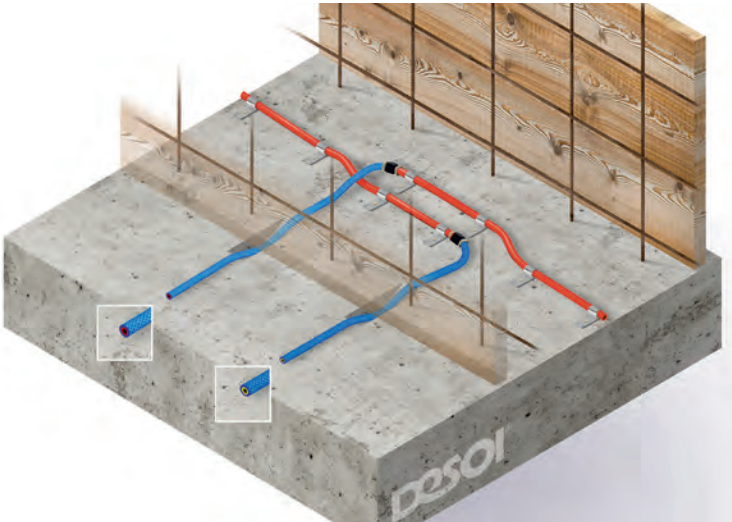
Additional Accessories:

- Oakum Rope. Used for sealing leaking joints and voids.



InjectPro-Hose System:

- Injectable hose and connectors. Used in new construction, the hoses are installed along construction joints. After concrete placement, the hoses can be injected with various InjectPro urethane and acrylate grouts to seal foundations and construction joints, providing a complete maintenance program if future leakage appears.



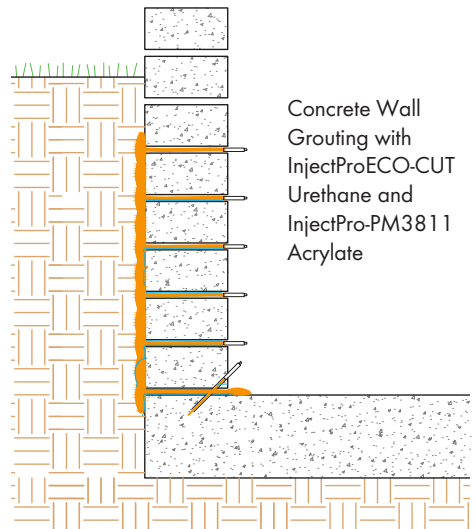
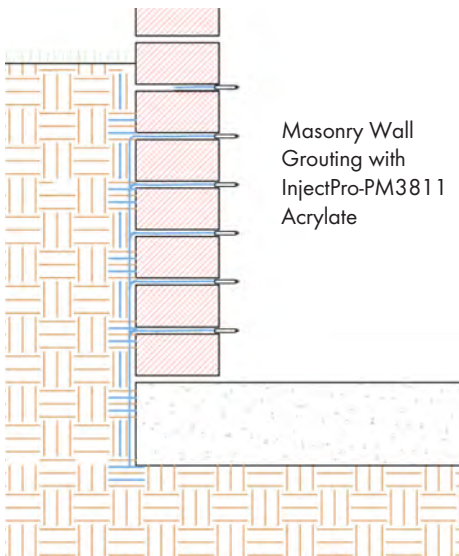
Curtain Wall Grouting

When doing curtain wall injections there are different options depending on the substrate.

When grouting masonry and brick walls, acrylates such as InjectPro-PM3811 are better suited than expanding urethanes. InjectPro-PM3811 acrylates have very low expansion, which makes them a better for use in masonry and weak concrete, as opposed to urethane grouts which typically have high expansion rates.

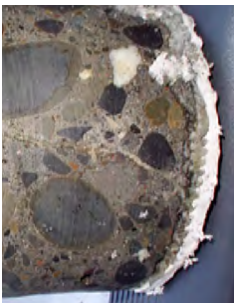
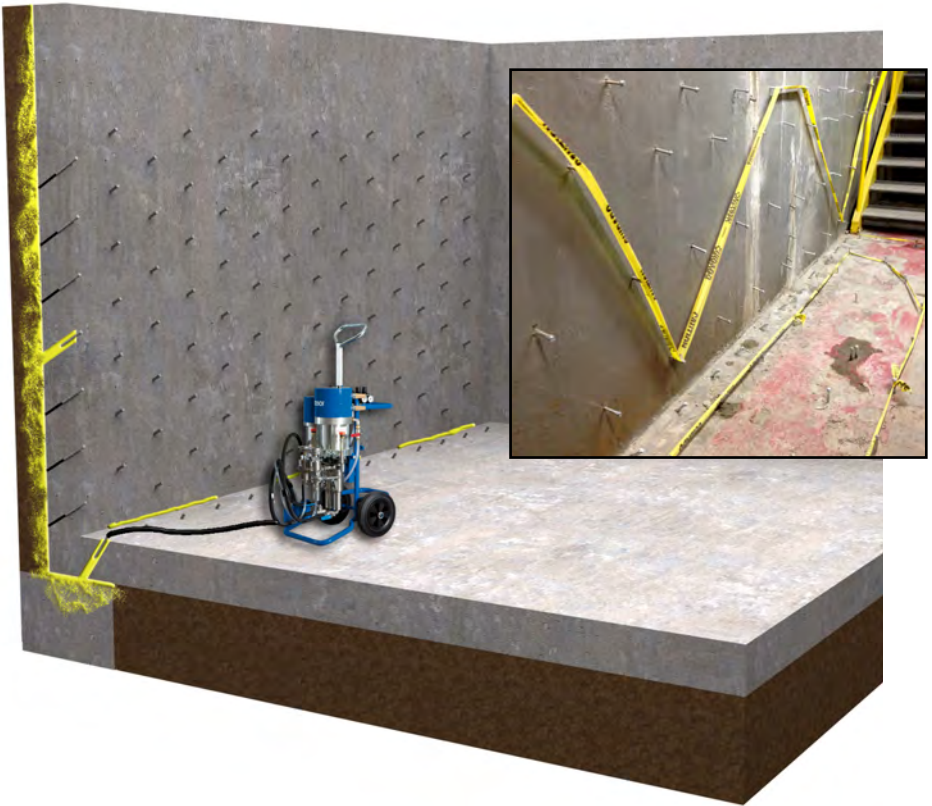
The higher expansion of InjectProECO urethane grouts are better suited for curtain wall injection of concrete structures, and are also ideal for filling voids commonly found during curtain wall grouting.

A dual approach can also be used where both urethane and acrylates are used to achieve a water tight barrier. Holes are drilled through the structure in a diamond pattern as outlined on the opposite page. This allows for injection into the soil substrate behind the wall. As the urethane or acrylate cures, it forms an impermeable membrane, or “curtain” which prevents water from further penetrating into the structure.

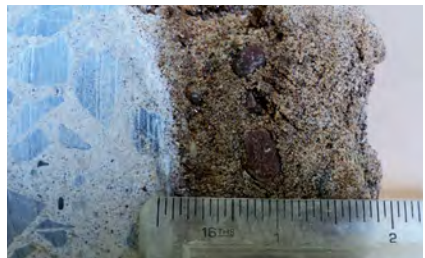


AQUAFIN InjectPro Grouting Guideline

Typical packer placement for curtain wall grouting.



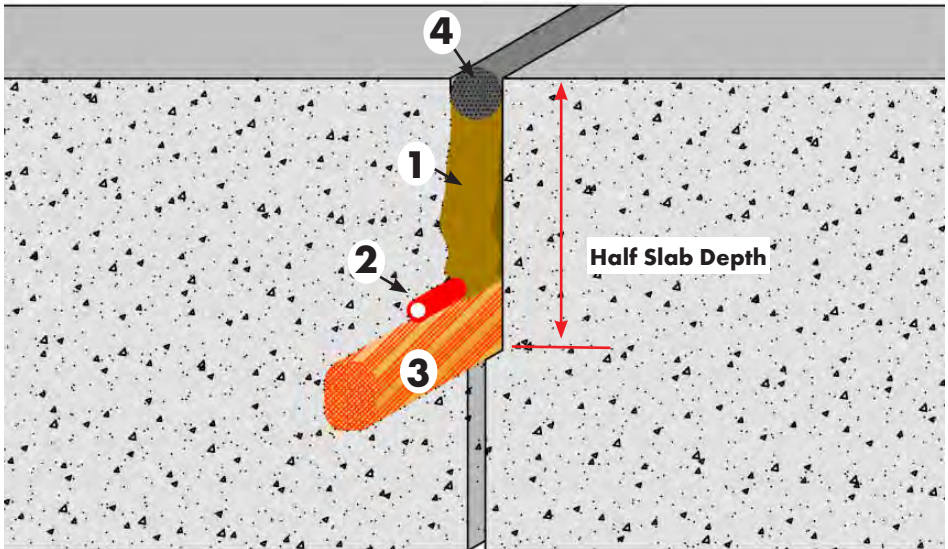
Cores taken after curtain grouting to verify and illustrate InjectPro Urethane curtain formation.



Cores taken after curtain grouting to verify and illustrate InjectPro-PM3811 soil solidification.

Grouting Floor Joints - Option 1

1. Area to be grouted
2. Aquafin InjectPro-Hose System
3. Saturated oakum
4. Closed cell backer rod (2.5 x joint width)

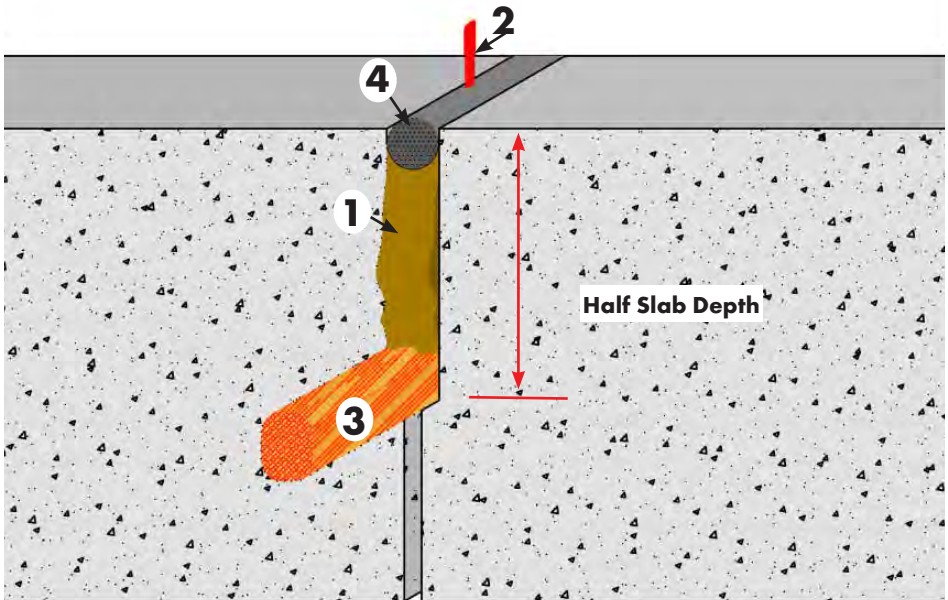


Suggested Procedure

1. Cut/rout joint to a fixed depth of $\frac{1}{2}$ (half) the thickness of the concrete slab.
2. Ensure joint width is $\frac{3}{8}$ " or larger.
3. Submerge Oakum Rope in InjectProECO-LV until fully saturated, then immediately submerge in water.
4. Immediately insert the saturated oakum rope into the cleaned joint at a depth of $\frac{1}{2}$ (half) the thickness of the slab.
5. Allow the InjectProECO-LV to cure for 40 minutes.
6. Place the Aquafin InjectPro-Hose directly on top of saturated oakum, running hose in maximum 25' lengths.
7. Place closed cell backer rod in joint.
8. Ensure InjectPRO-Hose system injection ends are sticking out through the closed cell backer rod.
9. Pump Aquafin InjectProECO-LV through the InjectPro-Hose system, under low pressure as required in the InjectPro Grouting Guidelines.

Grouting Floor Joints - Option 2

1. Area to be grouted
2. $\frac{1}{4}$ " Injection needle
3. Saturated oakum
4. Closed cell backer rod (2.5 x joint width)

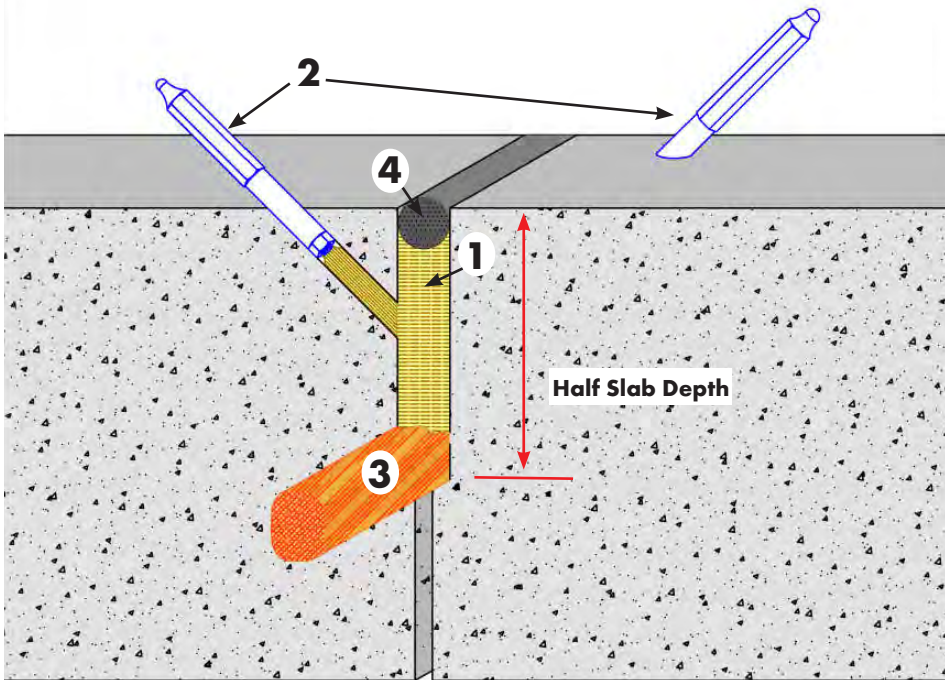


Suggested Procedure

1. Cut/rout joint to a fixed depth of $\frac{1}{2}$ (half) the thickness of the concrete slab.
2. Ensure joint width is $\frac{3}{8}$ " or larger.
3. Submerge Oakum Rope in InjectProECO-LV until fully saturated, then immediately submerge in water.
4. Immediately insert the saturated oakum rope into the cleaned joint at a depth of $\frac{1}{2}$ (half) the thickness of the slab.
5. Allow the InjectProECO-LV to cure for 40 minutes.
6. Place open cell backer rod soaked in InjectProECO-LV in joint.
7. Insert $\frac{1}{4}$ " injection needle through the upper backer rod seal.
8. Pump Aquafin InjectProECO-LV through the InjectPro-Hose system, under low pressure as required in the InjectPro Grouting Guidelines.

Grouting Floor Joints - Option 3

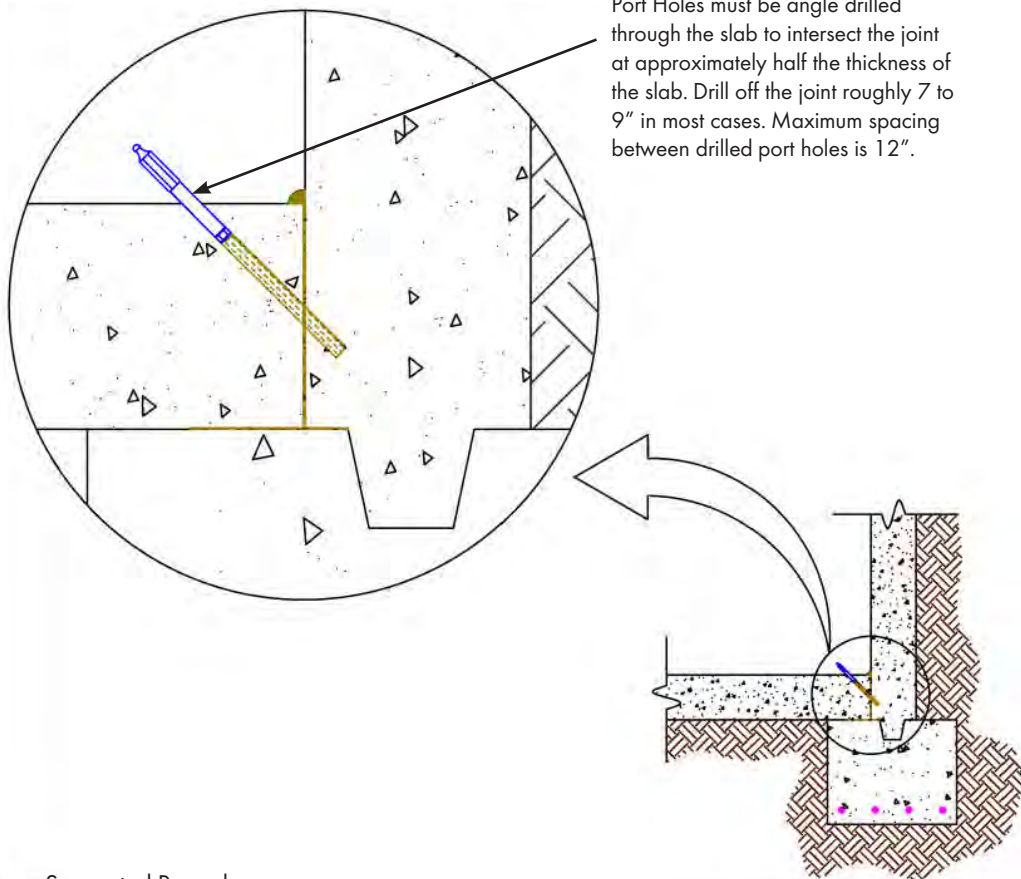
1. Area to be grouted
2. Injection packers
3. Saturated oakum
4. Closed cell backer rod (2.5 x joint width)



Suggested Procedure

1. Cut/rout joint to a fixed depth of $\frac{1}{2}$ (half) the thickness of the concrete slab.
2. Ensure joint width is $\frac{3}{8}$ " or larger.
3. Drill ($\frac{1}{2}$ " to $\frac{5}{8}$ " diameter holes - depending on packer size) through concrete at a 45° angle, towards the joint. Holes should be 6" - 8" off the joint and should alternate sides. Clean drill holes and insert packers.
4. Submerge Oakum Rope in InjectProECO-LV until fully saturated, then immediately submerge in water.
5. Immediately insert the saturated oakum rope into the cleaned joint at a depth of $\frac{1}{2}$ (half) the thickness of the slab.
6. Allow the InjectProECO-LV to cure for 40 minutes.
7. Place closed cell backer rod in joint approximately 6" above the InjectPro.
8. Insert $\frac{1}{4}$ " injection needle through the upper backer rod seal.
9. Pump Aquafin InjectProECO-LV through the InjectPro-Hose system, under low pressure as required in the InjectPro Grouting Guidelines.

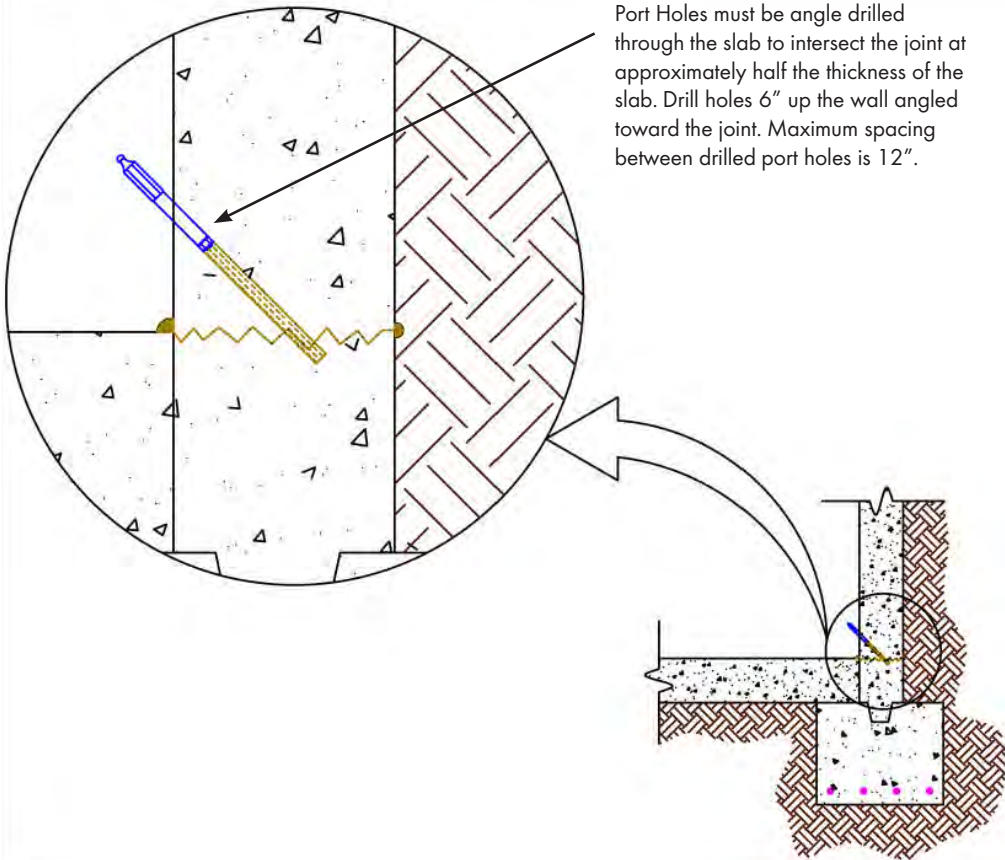
Grouting Floor to Wall Joints - Option 1



Suggested Procedure

1. At a minimum 45° angle drill 3/4 - 1/2" diameter drillholes through the concrete slab towards the joint. Holes should be a maximum of 9" off the joint and determined by slab thickness, midpoint intersection is desired.
2. Space drill holes maximum 12" apart. Spacing will vary depending on the joint width.
3. Insert appropriate sized packers into drill holes.
4. Pump potable water into each port to ensure moisture is present in joint for reactivity with grout.
5. Pump Aquafin InjectProECO-LV accelerated with InjectProECO-LV Accelerator under moderate pressure as required, taking into consideration the expansion factor of Aquafin InjectProECO-LV.
6. Watch for port to port travel to ensure full grout coverage.
7. Remove ports and repair drill holes using AQUAFIN-Plug, fast-setting patching mortar.

Grouting Floor to Wall Joints - Option 2

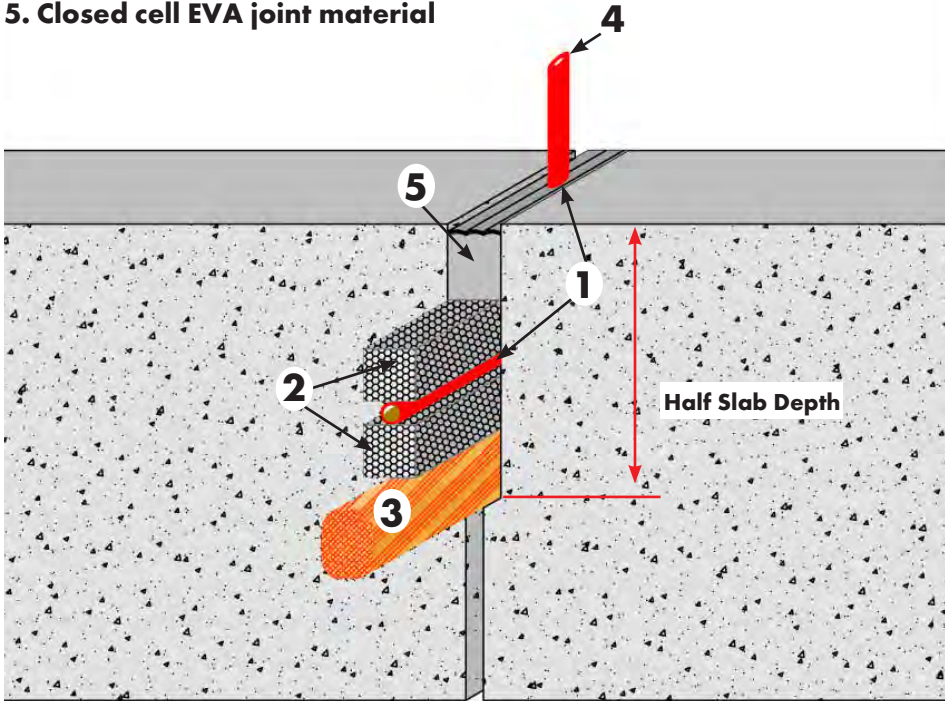


Suggested Procedure

1. At a minimum 45° angle drill $\frac{3}{4}$ - $\frac{1}{2}$ " diameter drillholes through the concrete slab towards the joint. Holes should be a maximum of 6" off the joint and determined by slab thickness, midpoint intersection is desired.
2. Space drill holes maximum 12" apart. Spacing will vary depending on the joint width.
3. Insert appropriate sized packers into drill holes.
4. Pump potable water into each port to ensure moisture is present in joint for reactivity with grout.
5. Pump Aquafin InjectProECO-LV accelerated with InjectProECO-LV Accelerator under moderate pressure as required, taking into consideration the expansion factor of Aquafin InjectProECO-LV.
6. Watch for port to port travel to ensure full grout coverage.
7. Remove ports and repair drill holes using AQUAFIN-Plug, fast-setting patching mortar.

Grouting Joints with Acrylate and Injectable Hoses

1. Aquafin InjectPro-Hose System
2. Reticulated foam
3. Saturated oakum
4. Injection Point of InjectPro-HOSE
5. Closed cell EVA joint material

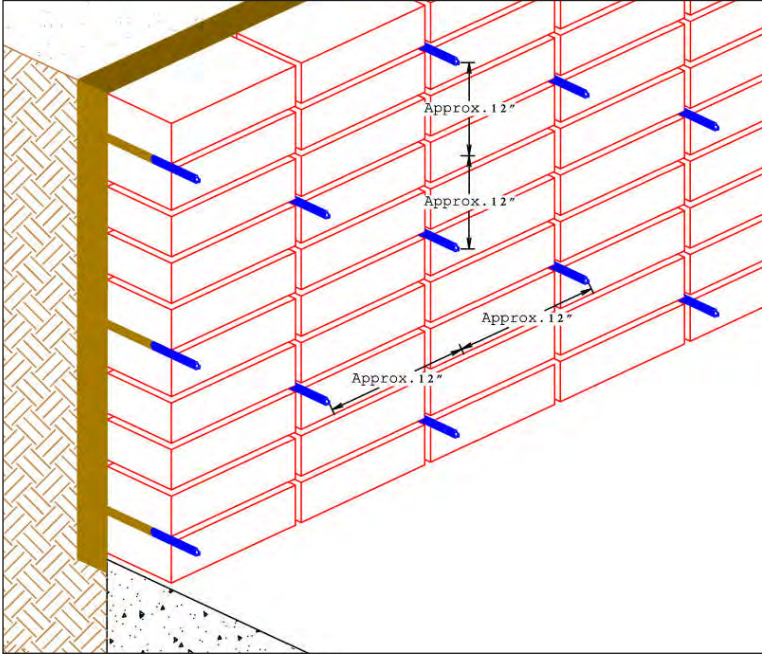


Suggested Procedure:

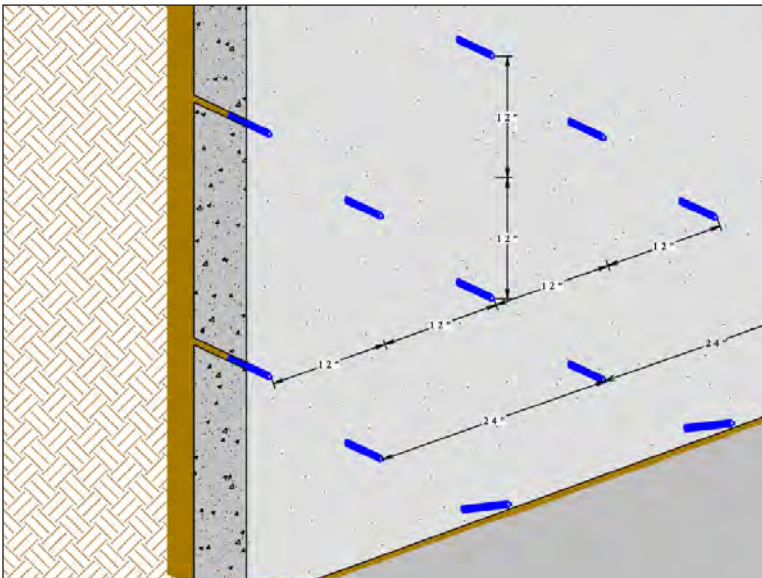
1. For joints $>1"$: Remove joint fillers and clean joint face to a minimum 3" depth. For joints $<1"$, clean to a minimum depth of 3 times the joint width.
2. Soak Oakum in InjectProECO-CUT or ECO-LV urethane and install in bottom of joint.
3. Place reticulated foam on top of Oakum.
4. Install InjectPro-HOSE on top of reticulated foam and top with additional layer of reticulated foam. Ensure injection ports for InjectPro-HOSE are placed vertically and left exposed.
5. Install Closed-Cell EVA Joint material such as willseal® Coresel
6. Injection process: Start by injecting a small amount of water through the InjectPro-HOSE.
7. Inject InjectPro-PM3811 through the hose. When grout appears at downstream hose outlet, crimp end of outlet and continue grout injection. As pump pressure increases 400-500 psi, move to next injection port and continue process. Take care not to lift the previously installed layers.

Suggested Packer Placement - Curtain Wall

Masonry and Brick Substrates



Concrete Substrates



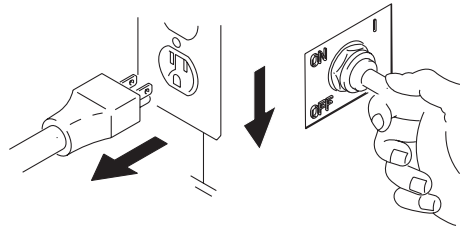
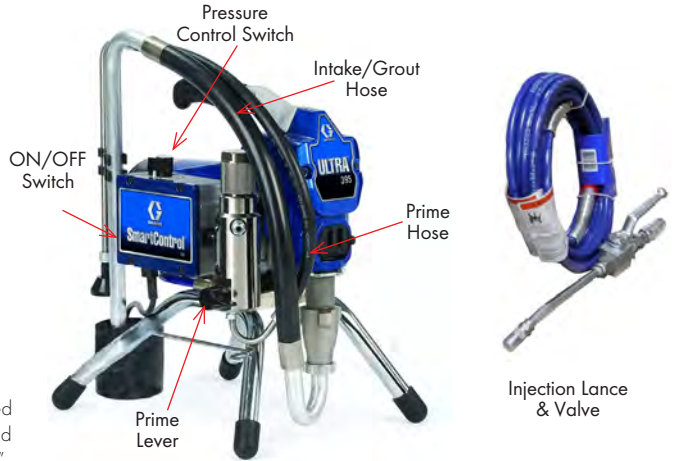
Urethane Pump Guide - START UP

Required Tools and Equipment:

Proper PPE according to jobsite conditions including safety glasses and/or face shield. Latex or rubber gloves. Clean 5 gallon pails for InjectPro-Grout Out and InjectPro Resin and 5 gallon pails labeled for "Waste".

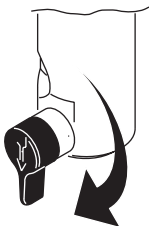
PRIOR TO STARTING:

- Put on proper PPE including safety glasses/face shield
- Ensure Injection Valve is closed
- Ensure pump is unplugged and On/Off Switch is in the "OFF" position.
- Turn Pressure Switch to the lowest position
- Plug pump into an outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not use an adapter.

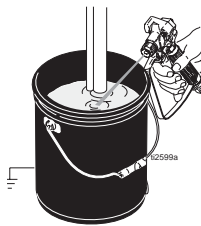


Priming the Pump:

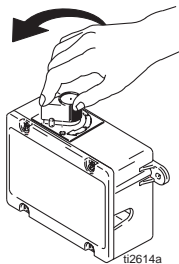
1. Turn the Priming Lever downwards.
2. Detach the Priming Hose from its holder and place it in the pail labeled for "Waste."
3. Pour approx. 1 gallon of InjectPro-Grout Out into a clean 5 gallon pail and submerge the Intake Hose in the InjectPro-Grout Out.
4. Turn the On/Off switch to the "ON" position.
(With Pressure Control switch at the lowest setting the pump should not run)
6. Slowly advance the Pressure Control switch until the pump begins to run and purge all oil or solvent that had been stored in the pump into the Waste pail.
8. Once the fluid coming out of the Priming Hose is pure InjectPro-Grout Out, lower the Pressure Control switch to the lowest setting to stop the pump.
9. Move the Priming Lever to point toward the outlet hose.
10. Return the Priming Hose to its holder alongside the Intake Hose.



Priming Lever



Waste Pail



Pressure Switch

Urethane Pump Guide - START UP

Purging the Injection Hose:

1. Follow all steps for "Priming the Pump" before purging or charging the Injection Hose.
2. Hold the Injection Valve with the open end pointed into the Waste pail.
3. Always use caution when opening the Injection Valve; always assume it is under pressure.
4. Slowly and gently open the Injection Valve.
5. Once the pressure is relieved, slowly advance the Pressure Switch until the pump runs.
6. Purge all oil or solvent that had been stored in the Injection Hose into the Waste pail.
7. Once the fluid coming out the Injection Valve is pure InjectPro-Grout Out, lower the Pressure Switch to the lowest setting to stop the pump and close the Injection Valve.

Charging the System:

1. Pour approximately 2 gallons of InjectPro injection resin into a clean, dry 5 gallon pail (Add accelerator if required). Stir resin slowly for 2 minutes to mix.
2. Move the Intake Hose from the pail with InjectPro-Grout Out and submerge it in the InjectPro injection resin pail. (A small amount of InjectPro-Grout Out may leak out of the Intake Hose during transfer, this will not adversely affect the InjectPro resin.)
3. Detach the Priming Hose from its holder on the side of the Intake Hose and place it over the InjectPro-Grout Out pail.
4. Move the Priming Lever to point toward the Priming Hose.
5. Advance the Pressure Switch and slowly purge the InjectPro-Grout Out from the Priming Line into the InjectPro-Grout Out pail. A small amount of InjectPro resin will not adversely affect the InjectPro-Grout Out. Once the fluid coming out the Priming Hose is pure InjectPro resin, lower the Pressure Switch to the lowest setting to stop the pump.
6. Move the Priming Lever to point toward the outlet hose.
7. Return the Priming Hose to its holder alongside the Intake Hose.
8. Place the Injection Valve over the InjectPro-Grout Out pail.
9. Gently open the Injection Valve to release any built up pressure.
10. Advance the Pressure Switch and slowly purge the InjectPro-Grout Out from the Injection Hose into the InjectPro-Grout Out pail.
11. Save the InjectPro-Grout Out liquid to use in Pump clean out at the end of the day.
12. Close the Injection Valve and allow the pump to build up to the desired injection pressure.

Urethane Pump Guide - CLEAN UP

Required Tools and Equipment:

Proper PPE according to jobsite conditions including safety glasses and/or face shield. Latex or rubber gloves. One unit of InjectPro Grout Out. The 5 gallon pail used for the InjectPro Resin during the injection process. A trash pail/can. Vegetable oil or other suitable oil for pump storage.

PRIOR TO STARTING:

- Put on proper PPE including safety glasses/face shield
- Ensure Injection Valve is closed
- Ensure pump is unplugged and On/Off Switch is in the "OFF" position.
- Turn Pressure Switch to the lowest position
- Plug pump into an outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not use an adapter.

Purging the Priming Hose:

1. For the first flush of the pump you may reuse the InjectPro-Grout Out used to prime the pump.
2. Set Priming Lever to point toward Priming Hose. This will release pump pressure back into injection resin pail.
3. Move Intake Hose from InjectPro Resin to InjectPro-Grout Out pail.
4. Detach Priming Hose from its holder on the side of Intake Hose and place it in injection resin pail.
(Note: Purged injection resin may be reacted with water and disposed of in a landfill. Used InjectPro-Grout Out should be collected and disposed of as per local codes, refer to SDS for chemical information.)
5. Slowly advance Pressure Switch until pump begins to run.
6. Purge all the injection resin from Priming Hose into the injection resin pail.
7. Once the fluid coming out Priming Hose is pure InjectPro-Grout Out, lower Pressure Switch to lowest setting to stop pump.
8. Return Priming Hose to holder alongside Intake Hose.

Purging the Injection Hose:

1. Complete all steps in the "Clean Up" procedures before purging Injection Hose.
2. Hold Injection Valve with the open end pointed into injection resin pail.
3. Always use caution when opening the Injection Valve; always assume it is under pressure.
4. Gently open Injection Valve.
5. Once the pressure is relieved, slowly advance Pressure Switch until the pump runs.
6. Purge all the injection resin from Injection Hose into the injection resin pail.

Cleaning and Oiling the Pump:

1. Remove zerk or button head connector from the end of Injection Valve.
2. Place Injection Valve in the InjectPro-Grout Out pail.
3. Advance Pressure Switch until the pump runs at a steady rate.
4. Allow InjectPro-Grout Out to recirculate for approximately 5-10 minutes. Periodically shift Prime Lever from Priming Hose to Injection Hose to clean both hoses.
5. Turn Pressure Switch down until pump stops.
6. Move Injection Valve to the trash pail.
7. Advance the Pressure Switch until Washing Agent from the InjectPro-Grout Out pail is transferred ("pumped") into the trash pail.
8. Once the InjectPro-Grout Out pail is empty, add an additional ½ gallon of fresh InjectPro-Grout Out.
9. Allow the fresh InjectPro-Grout Out to recirculate for an additional 5 minutes.
10. Turn the Pressure Switch down until the pump stops.
11. Place the Intake Hose in a pail of vegetable oil (or other suitable oil).
12. Advance the Pressure Switch and slowly purge the InjectPro-Grout Out from the Injection Hose and Priming Hose into waste pail.
13. Leave the pump full of vegetable oil.
14. Dispose of InjectPro-Grout Out properly per local regulation (refer to SDS for chemical information).

Select Project References

Project Name/Location	Type *	Grout Type	Project Size
<u>2009</u>			
Gardiner High School Gardiner, ME	CW	PM3811	200 SF
<u>2010</u>			
Holstein Association Brattleboro, VT	CJ	PM3811	400 LF
World Trade Center - Tower 4 Manhattan, NY	CW	PM3811	100 LF
Amtrack Metro North Norwalk, CT	SS / WI	PM3811	100 SF
44 Canal Center Plaza Alexandria, VA	CJ	PM3811	857 F
ConEdison - Hellgate Substation Bronx, NY	CJ	PM3811	
<u>2011</u>			
Denver Zoo - Asian Tropics Denver, CO	CW	PM3811	134 GAL
Witherby Street - Drain Pipe Overflow San Diego, CA	CJ	PM3811	400 GAL
<u>2012</u>			
Citgo Lemont Refinery Lemont, IL	CW	PM3811	680 GAL
U.S. Naval Academy Annapolis, MD	CJ	PM3811	
Pullman Project Detroit, MI	CJ	PM3811	50 GAL
<u>2013</u>			
Sheepshead Bay High School Brooklyn, NY	CW	PM3811	2350 GAL
Railroad Bridge Rowayton, CT	CJ	PM3811	30 GAL
Stratcom Anchor Heads Offutt AFB, NE	WI	PM3811	600 GAL
MI Mine Project Michigan	WI	Inject Pro-CUT	850 GAL

Select Project References

Project Name/Location	Type*	Grout Type	Project Size
Harvard University - Student Dormitories Boston, MA	CW	PM3811	850 GAL
Manatee County Manhole Rehabilitation Bradenton, Palmetto, FL	CJ	PM3811/RapidFlex	850 GAL
PS 79 - Horan School New York, NY	CW	PM3811	8,300 SF
JHS117 - Joseph H. Wade Academies Bronx, NY	CW	PM3811	1,200 SF
PS380 - John Wayne Elementary Brooklyn, NY	CW	PM3811	12,000 SF
Harvard University Steam Tunnel Leak Repair Boston, MA	CJ	PM3811	
<u>2014</u>			
Millstone Nuclear Power Station Waterford, CT	CJ	PM3811	360 GAL
Metropolitan Corporate Academy H.S. No. 530 Brooklyn, NY	CW	PM3811-FLEX	450 GAL
Bronx Junior High School PS 117 Bronx, NY	CW	PM3811-FLEX	180 GAL
PS 56 X Norwood Heights Bronx, NY	CW	PM3811-FLEX	400 GAL
PS 53 X Basheem Quisim - Flood Elimination Bronx, NY	CJ	PM3811-FLEX	5,000 SF
PS 13 R (Public School) Staten Island, NY	CW	PM3811	50 GAL
711 5th Ave. (Private Customer) New York, NY	CJ	PM3811-FLEX	180 GAL
39th St. and 9th Ave. New York, NY	CJ	PM3811-FLEX	180 GAL
Philipps 66 Refinery Lake Charles, LA	SS / WI	PM3811	150 GAL
Tavern on the Green, Central Park West New York, NY	CW	PM3811-FLEX	80 GAL
<u>2015</u>			
Townsend Harris High School Renovation Queens, NY	CJ	Inject Pro-LV & CUT	70 GAL
Shenandoah Water Treatment Facility Shenandoah, IA	CJ	PM3811-FLEX	680 GAL
WSSC Patuxent Water Treatment Plant Laurel, MD	CJ	InjectPro-LV + SLV	120 GAL

Select Project References

Project Name/Location	Type*	Grout Type	Project Size
<u>2016</u>			
Suncor Refinery - Cooling Tower Leak Mitigation Traverse City, CO	WI	PM3811 + Flex+ Fast	1,360 GAL
Queens - Midtown Tunnel - QMT Project New York, NY	WI / CW	PM3811-FLEX	5,000 GAL
P.S. 377 Brooklyn, NY	CJ	PM3811-FLEX	11 GAL
<u>2017</u>			
P.S. 90K Brooklyn, NY	CJ	PM3811-FLEX	250 GAL
P.S. 276K Brooklyn, NY	CW	PM3811-FLEX	210 GAL
P.S. 162Q Brooklyn, NY	CW	PM3811-FLEX	180 GAL
P.S. 72M Manhattan, NY	CW	PM3811-FLEX	15 GAL
P.S. 244 Brooklyn, NY	CW	PM3811-FLEX	195 GAL
P.S. 160K Brooklyn, NY	CW	PM3811-FLEX	195 GAL
<u>2018</u>			
P.S. 151 Queens, NY	CW	PM3811-FLEX	160 GAL
Bascom Palmer Eye Institute, University of Miami Miami, FL	CJ	InjectProECO-CUT & LV	3,200 SF
Conference Center, South Tunnel, LDS Church Salt Lake City, UT	CJ	PM3811-FLEX	2,800 SQ
City Creek Parking, City Center Salt Lake City, UT	CJ	PM3811-FLEX,, VOID Filler	140 GAL
Ritz Carlton Hotel - Phase I New Orleans, LA	CW	PM3811-Ultra Seal	125 GAL
Century Hills HOA Los Angeles, CA	CJ	InjectPro-ECO-Seal 300 gal.	300 GAL
P.S. 162Q Brooklyn, NY	SS	InjectPro-ECO-CombiGrout	150 GAL
	CJ	PM3811-FLEX	180 GAL

AQUAFIN Technical Support

All documentation and additional information can be found on the Aquafin website.

For detailed information contact Aquafin Technical Support directly:

www.aquafin.net
1-866-AQUAFIN (278-2346)

Aquafin Technical Support provides:

- CAD drawings
- Specifications
- Technical Datasheets
- Assistance with Grout Usage Estimations
- Product Recommendations
- Product Training

Copyright 2018 by Aquafin Inc. Consult the Aquafin website for the latest version of Technical Datasheets, CAD Drawings and any technical information. Only the current version is legally binding and only for the intended market. In cases of uncertainty contact the Aquafin Technical Department for further information before starting any applications. Proper application is the responsibility of the user. Field visits by AQUAFIN personnel are for the purpose of making technical recommendations and not for supervising or providing quality control on-site.



AQUAFIN, Inc.
Triumph Industrial Park
505 Blue Ball Rd., #160
Elkton, MD 21921

Toll Free: 1-866-AQUAFIN
web: www.aquafin.net



Aquafin, Inc. is a member
of the **SCHOMBURG** Group