

Advanced  
Construction  
Technologies

## Seal Leaks



### AP FILL 720

Water-Activated Semi-Rigid Polyurethane Foam Injection Resin

#### Product Identifier

*Product Name*

AP FILL 720

*AP Fill 720 is a single component, water-activated, hydrophobic, low viscosity, closed cell polyurethane injection resin.*

#### *Supplier Details*

Alchatek  
4508 Bibb Blvd  
Tucker, GA 30084  
T: (404) 618-0438

#### *Emergency Phone Numbers*

Call CHEMTREC  
Day or Night

1-800-424-9300  
+1 703-527-3887

#### Description

AP FILL 720 is a single component, water-activated, hydrophobic, low viscosity, closed cell polyurethane injection resin.

#### Uses

- Filling voids behind concrete structures.
- Cutting off high flow leaks.
- Cutting off underground water flows.
- Stabilizing soil.
- Seawall repair.

#### Advantages

- Very low viscosity.
- Water impermeable.
- Adjustable set time – as fast as 22 seconds.
- Injected as a single component.
- Phthalate free (more environmentally friendly).
- Certified by ALS Global to NSF/ANSI/CAN 61 (approved for contact with drinking water).

#### Application

Note: the following are a few typical application descriptions. In case of other jobsite parameters, please contact our technical department.

#### PRELIMINARY ANALYSIS

For void fill, soil stabilization, and all other forms of geotechnical grouting, it is advised to review soil reports from the job site. Take note of all structural

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elements and considerations and consult with geotechnical or structural engineers as needed. Locate all utilities prior to drilling or driving pipes into the ground. Dynamic cone penetrometer testing before and after application is recommended.

## PREPARATION OF THE SUBSTRATE

Soil probe spacing is most commonly 18" (45cm) apart in a series of 2-3 staggered rows across the surface of the substrate. Depths will vary from job to job but must be established before work is to begin. Injection Technician should always confirm clearances and paths to injection sites for large equipment and/or Alchatek mobile injection rigs.

## PREPARATION OF THE PRODUCT

Read the technical and safety data sheets prior to commencement of the injection work.

## PREPARATION OF THE EQUIPMENT

Pre-flush the pump with AS Pump Flush at the start of each day to ensure that there is no moisture in the pump and that the pump is primed.

## APPLICATION

A. Drive pipe to lowest depth to be injected.

1. Install a loose-fitting carriage bolt or expendable drive point in bottom of pipe or tubing to prevent soil from clogging pipe. Tape lightly as necessary to prevent tip from falling out.
2. Space pipes 4' to 6' o.c.
3. Drive pipes or tubing with an electric hammer drill with ground rod driver attachment or pneumatic post driver to ensure positive contact with surrounding soil and prevent foam from rising along the surface of the pipe or tube.
  - a. Water jetting pipes will not be permitted unless approved by the engineer.
  - b. Air jetting pipes will not be permitted unless approved by the engineer.
4. Pull the pipe up 1-2 inches to allow room for the carriage bolt to disengage from the pipe when pressurized.
5. Extract the pipe or tubing as it is being injected. Inject predetermined amount of resin at each depth per engineer's requirement. Do not stop or pause injection for more than 5 seconds or material will cure in the pipe or tubing.
6. Stop injection at approximately 3 feet from the surface to prevent foam from escaping to the surface.
7. Continuously monitor for movement of any slab, structure, or soil using appropriate monitoring device. STOP IMMEDIATELY when lift is over 1/8", or 1/16" as verification of void fill only.

B. If injecting through concrete:

1. Drill 5/8" injection holes. Spacing shall be determined on site and adjusted as necessary, but typically every 4' to 6' o.c.
2. Drive 1/2" tubing through drilled holes.
3. Set heater controllers for Part "A" and Part "B" and Hose Heat to temperatures as indicated on top of material drums.
4. Inject resin according to manufacturer's recommendations.

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5. Monitor movement of slabs. Do not lift more than 1/8" at a time per hole to avoid cracking the slab. Do not lift more than 1/16" to verify void fill. Holes can be re-drilled and re-injected several times.
  6. Ensure that all voids beneath the slab are filled. Drill 3/8" holes as necessary and inject through the slab using a 3/8" adapter for the injection gun (MixMaster ports).
- c. If injecting directly through the soil, follow instructions above with the exception that no holes will need to be drilled.
- d. Mixing: None required. Keep lid tightly sealed when not in use and avoid splashing water into material containers.
- e. Cured material is chemically inert and safe to dispose of in landfill. Cleanup any spilled liquid resin and place in a suitable sealed container. Dispose of in accordance to applicable environmental regulations.

### REQUIRED TOOLS AND ACCESSORIES

- Pump (airless sprayer or double diaphragm pump)
- 1/2" Galvanized Steel Injection Tubing (10'/3m or 20'/6m lengths available) or 3/8" NPT pipe.
- 1/4" x any length carriage bolts (for 1/2" tubing)
- 5/8" Ground Rod Driver with SDS or SDS Plus Shank
- Painters tape or electrical tape - holds bolt in place
- Pipe cutting wheel or angle grinder with cutoff blade
- Pipe pulling apparatus - JackJaw for example
- Viton Gloves
- Safety Goggles

### CLEANING AND MAINTENANCE

After the injection at the end of the day, flush the pump with AS Pump Flush. If the pump will not be used for several days, flush the AS Pump Flush out of the pump with lightweight motor oil or hydraulic fluid and leave it there until the next usage. Never rinse the pump with water.

### COMPLIMENTARY PRODUCTS

AS Pump Flush, AP Soak 130 (softens cured resin on metal parts), GEN CAT or GEN CAT Fast accelerator, 1/2" Tubing Injection Assembly for use with 1/2" steel tubing (consists of Nut, Ferrule, and Button Head Adapter), Pagani DPM 30-20 (dynamic cone penetrometer).

### ADVICE / FOCAL POINTS

Avoid injecting when temperatures are below -4°F (-20°C). In extreme cold conditions it is recommended to warm the resin and catalyst. Since AP FILL 720 is hydro active, liquid water should be present.

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## Technical Data

### APPEARANCE

AP FILL 720 Cured		
Tensile Strength	(ASTM D-1623)	43psi (2965 mb)
Tensile Elongation	(ASTM D-1623)	3.8%
Shrinkage	(ASTM D-1042/D-756)	Negligible
Compressive Strength (with Fine Sand)	(ASTM C-39)	1803 psi (124313 mb)

GEN CAT Accelerator (Appearance: yellow - orange liquid)		
Viscosity at 77°F (25°C)	(ASTM D4878-98)	± 215 cP (± 215 mPa.s)
Density	(ASTM D3505-96 [2000])	± 65.9 lbs/ft <sup>3</sup> (± 1.12 kg/dm <sup>3</sup> )

AP FILL 720 Uncured (Appearance brown liquid)		
Viscosity at 77°F (25°C)	(ASTM D4878-98)	± 75 cP (± 75 mPa.s)
Flash point	(ASTM D1310-86)	313°F (156°C)
Density	(ASTM D3505-96 [2000])	± 65.5 lbs/ft <sup>3</sup> (± 1.05 kg/dm <sup>3</sup> )

GEN CAT Fast Accelerator (Appearance: yellow - orange liquid)		
Viscosity at 77°F (25°C)	(ASTM D4878-98)	± 70 cP (± 70 mPa.s)
Flash point	(ASTM D1310-86)	313°F (156°C)
Density	(ASTM D3505-96 [2000])	± 65.5 lbs/ft <sup>3</sup> (± 1.05 kg/dm <sup>3</sup> )

### APPEARANCE

Up to 50x expansion (free foam)

### REACTION TIMES

GEN CAT	41°F (5°C)			59°F (15°C)			77°F (25°C)		
	Start	End		Start	End		Start	End	
5	18 sec.	95 sec.	40X	18 sec.	78 sec.	40X	14 sec.	55 sec.	49X
8	15 sec.	60 sec.	42X	14 sec.	51 sec.	42X	10 sec.	43 sec.	49X
10	15 sec.	48 sec.	42X	11 sec.	41 sec.	42X	8 sec.	35 sec.	49X

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GEN CAT Fast	41°F (5°C)			59°F (15°C)			77°F (25°C)		
	Start	End		Start	End		Start	End	
5	19 sec.	75 sec.	42X	14 sec.	57 sec.	45X	9 sec.	43 sec.	49X
8	15 sec.	40 sec.	42X	10 sec.	35 sec.	45X	7 sec.	30 sec.	49X
10	10 sec.	35 sec.	42X	8 sec.	28 sec.	45X	5 sec.	22 sec.	49X

Properties will vary depending on application conditions.

## Estimating Quantities

Consumption has to be assessed on site and is influenced by the amount of water leaking, thickness of the concrete slab or wall, presence of voids in and around the concrete, etc.

## Packaging

AP Fill 720 is supplied in 5 Gallon Pails, 50 Gallon Drums, 250 Gallon Totes (18.9 Liter Pails, 189.2 Liter Drums, 946.3 Liter Totes)

## Storage and Shelf Life

Store between 50° - 80° F (10° - 26° C).

## Safety Precautions

Avoid contact with eyes and skin, always use personal protective equipment in compliance with local regulations. Read the relevant Safety Data Sheet before use. Safety Data Sheets are available on [Alchatek.com](http://Alchatek.com). When in doubt contact Alchatek Technical Service.