

# AP Fill 420

**TWO COMPONENT, HIGHLY EXPANSIVE POLYURETHANE FOAM.**



## DESCRIPTION

AP FILL 420 is a two component, high expansion, hydro insensitive polyurethane foam. Unconfined density is approximately 2 lbs/cubic foot (32 kg/cubic meter).

## ADVANTAGES

- 90% of full strength in 15 minutes.
- High expansion rate of 35x.
- Works in wet environments - displaces water.
- Bonds with soil and concrete.
- Closed cell.

## FIELD OF APPLICATION

- Filling abandoned pipes, mine shafts, etc.
- Filling voids.
- Floation foam.

## APPLICATION

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

### PRELIMINARY ANALYSIS

For slab lifting, soil stabilization, consolidation grouting, and all other forms of geotechnical grouting, it is advised to review soil reports from the job site. Take note of all structural elements and considerations and consult with geotechnical or structural engineers as needed. Locate all utilities prior to drilling or driving pipes into the ground.

### PREPARATION OF THE SUBSTRATE

Soil probe spacing is most commonly 4-5' on center and as needed 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 Alchemy-Spetec 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

Alchemy-Spetec proportioning equipment in Cart System or Rig configurations should be tested to confirm equal flow and pressures from both A and B lines. MixMaster Pro should always be thoroughly inspected for cross-contamination or foreign buildup of any kind prior to injection.

## APPLICATION

- Start the injection at the first probe and work way across grid pattern as needed taking note of travel of foam, connectivity to next hole location, and volumes used.
- Do not over pressurize while injecting; the correct injection pressure is the pressure that allows resin to penetrate the soils and/or fill the voids and keep the MixMaster Pro operating properly
- Take note of reaction time of material and be sure to purge injection gun regularly to prevent material curing in the gun.
- If lifting slabs, monitor lift with Alchemy-Spetec Dial Indicator Cranes to prevent over-lift.
- If stabilizing soil, pay attention to volume/vertical distance estimation and for material not penetrating and exiting around probe only.
- Clean the MixMaster gun thoroughly with Alchemy-Spetec pressure pot system, and cap supply lines.
- Run material through the pump as a maintenance step every 7-10 days.

## REQUIRED TOOLS

Proportioning pump with heated lines, drill bits, MixMaster Pro injection gun, ports, Alchemy-Spetec Flush, soil probes.

## CLEANING AND MAINTENANCE

After the injection, clean the pump with AP Flush 121. Conduct a full Alchemy-Spetec-recommended gun flush after every use. Material can remain in cleaned and capped lines. After injection, remove the packers from the concrete and fill the holes with a fast setting cement or any other appropriate filler material.

## COMPLIMENTARY PRODUCTS

½" hydraulic tubing, flush pot, dial indicator cranes, airless flush pump, air compressor, ports, AP Flush 121.

## ADVICE / FOCAL POINTS

Avoid injecting by temperatures below -4°F (-20°C). In extreme cold conditions it is recommended to warm both components to 60-80 degrees F (16 – 27 degrees C).

## TECHNICAL DATA

### APPEARANCE

Physical Properties - Cured (Unconfined)

AP FILL 420			
Compressive Strength	(ASTM D-1621)	22 p.s.i. or 3,168 p.s.f.	1,517 millibar
Expansion	(Unconfined)	35 times	-
Density	(ASTM-D 1622)	1.8 to 2.2 lb/ft3	28.83 to 35.24 kg/m3millibar
Shrinkage	(ASTM D-1042/D-756)	None	-

Closed Cell Content	(ASTM D-2856)	90%	-
Water Absorption	(ASTM D-2127)	1% by Volume	-
Exothermic Reaction Rate	-	Low	-

Properties will vary depending on application conditions.

## CONSUMPTION

Consumption has to be assessed on site and is influenced by the specific AP FILL product used, soil type, load to be lifted, amount of water in the substrate, soil compaction, and possible presence of voids.

## REACTION TIMES

Reaction Time @ 77° F / 25° C

Initial Reaction Time	15 seconds
Tack Free	125 seconds 90%
90% Full Strength	15 minutes

## PACKAGING

AP FILL 420 is supplied in 100 Gallon Units, 500 Gallon Units.

## SHELF LIFE AND STORAGE

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 [www.alchemy-spetec.com](http://www.alchemy-spetec.com)

When in doubt contact Alchemy-Spetec Technical Service.

FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION. READ MATERIAL SAFETY DATASHEET PRIOR TO EVERY USE.