



## CASE STUDY GROUT WALL INSTALLATION

### Protecting Drinking Water from Potential Flood Contamination

Planners at Washington D.C.'s water utility, D.C. Water, decided to take proactive measures against potential flooding of their facility. Located right next to the Potomac, their facility could've been at risk in the event of an out-of-the-ordinary natural disaster. Determining that the main risk to the water supply in such a case would be permeation through sub-surface soil, they began installing a metal sheet pile wall deep into the substrate between the riverbank and the facility. However, in some spots they were not able to drive a sheet pile panel into the ground because of underground utility lines or rocky substrate. The planners called in a geotech contractor to create sub-surface grout walls in those spots to fill in the gaps.

#### Powerful Polymers

The crew "constructed" these sections of the underground wall by injecting AP Fill 700. This is a single component, water-activated, hydrophobic, low viscosity, closed-cell polyurethane injection resin. This grout was used because it permeates the soil, fills small voids in the soil, and cuts off water flow.



#### Physical Properties - Cured

AP FILL 700		
Tensile Strength	(ASTM D-1623)	45 psi (3,102 mb)
Tensile Elongation	(ASTM D-1623)	2.9%
Shrinkage	(ASTM D-1042/D-756)	Negligible
Compressive Strength (with fine sand)	(ASTM C-39)	2,050 psi (141,343 mb)
Pre-activated mix viscosity	110 -130 cP	

Properties will vary depending on application conditions.

### **Painless Procedure**

The crew used a Geoprobe to drive injection pipes into the ground (up to 33 feet in some locations). They then injected one gallon per foot using upward staging. The next injection point was 18 inches away from the first one. This process was repeated until a grout wall formed, filling the gap between the two adjacent underground sheet piles. For a large-scale job like this, they used the PolyShark single component grout pump.

### **Rapid Result**

With solid, impermeable grout walls filling in the gaps, a sub-surface barrier between the riverbank and the drinking water facility was now in place. The planners at D.C. Water were very satisfied with this solution.

### **About Alchatek**

Alchatek is an international leader in the manufacture and supply of chemical grouts and construction products for Geotechnical, Leak Seal, and Seawall Repair applications. Providing solutions from its headquarters in Tucker, Georgia and its manufacturing facility in Reno, Nevada, Alchatek specializes in advanced construction technologies for sealing leaks, stabilizing soils, lifting concrete, and protecting infrastructure and seawall structures. To best serve its customers, Alchatek is organized onto three divisions:

**The Leak Seal Division** combines a full system offering of polymer chemical grouts and equipment with perhaps the most experienced technical team in the industry. It specializes in preventing water ingress through concrete infrastructure including parking garages, culverts, basements and foundations, and sewer manholes.

**The Geotechnical Division** offers a complete line of single component products for soil stabilization as well as two component polyurethane foams for concrete lifting, void filling, and stabilization of infrastructure. This includes lifting sunken structures such as warehouse floors, back into place.

**Seawall Repair Network®** is the only national network of certified contractors in the repair, preservation, and protection of Seawalls waterfront barriers. Its proprietary methods and materials are environmentally friendly and safe for use in all marine environments and provide a non-destructive solution for seawall repair at 80% less than the cost of replacement.

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