



Void Fill to Save Retaining Wall at Luxury Residence

A retaining wall at a Georgia-based luxury residence was failing due to the pressure of the surrounding soil. A general contractor excavated the site around the wall and planned to install lightweight foam blocks as a replacement for the heavy soil that was removed. After doing a little more research, the contractor discovered that, due to the cost of shipping the blocks, liquid polyurethane foam installation by a local specialized contractor was a lot less expensive. Liquid polyurethane foam takes the shape of the void before curing to form a high-strength solid mass.

Powerful Polymers

The contractor used AP Fill 420 to fill the void. AP Fill 420 is a two-component, high expansion, hydro insensitive polyurethane foam. It's the top slab solution for polyurethane void fill. AP Fill 420 weighs 1.8 to 2.2 pounds per cubic foot.



Before



After

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)	Negligible	Negligible
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.

Painless Procedure

The contractor filled the entire void with AP Fill 420 foam. This material was faster to install, less expensive, and provided a more waterproof solution than the foam blocks.

Rapid Result

The entire void was filled with lightweight and extremely durable polyurethane foam. This material placed minimal pressure on the retaining wall, eliminating the danger of future damage. The property owner was extremely pleased with the results.

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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