



## CASE STUDY SOIL STABILIZATION

### Apartment Complex Slope Stabilization

The owner of an apartment complex overlooking Stephen Foster Creek in Gainesville, Florida, faced a critical issue. The embankment below showed signs of erosion, creeping dangerously close to the structures. With each passing day, the unstable ground crept ever closer to the foundations of the residential structures, posing a significant threat to both the buildings and the safety of their inhabitants. The situation demanded immediate attention and a robust, long-term solution to safeguard the property and ensure the well-being of its residents. The predominantly sandy composition of the local soil posed a challenge for stabilization. Consequently, a geotech firm was called in to address this pressing concern.

#### Powerful Polymers

After conducting a thorough site assessment and carefully evaluating various potential solutions, the technicians identified AP Soil 600 as the optimal polymer for this challenging project. This choice was strategic. AP Soil 600 features low viscosity, a crucial characteristic that allows it to effectively penetrate and permeate sandy soil. Moreover, its impressive strength after curing promised long-lasting stability for the embankment.

#### Physical Properties - Cured

AP SOIL 600			
Tensile Strength	(ASTM D-3574)	175 p.s.i.	12,066 millibar
Shrinkage	(ASTM D-1042/D-756)	Negligible	Negligible
Compressive Strength (with fine sand)	(ASTM D-575/D695)	2,085 p.s.i.	143,756 millibar
Pre-activated mix viscosity	37 - 39 Centipose		

Properties will vary depending on application conditions.

#### Painless Procedures

Injection points were established in a zigzag pattern, spaced 18 inches apart. The team drilled 10 feet below grade to reach the optimal depth for soil reinforcement. Low-pressure injection was key to the operation's success. This approach prevented the chemical from fracturing the soil or moving in unintended directions. The injection rod was slowly extracted, allowing for precise distribution of the polymer. One gallon was applied every five minutes and every vertical foot. In total, a 240-foot row of soil stabilization resin was installed.

#### Rapid Results

The impact of this intervention was immediately apparent. During a subsequent heavy rain event, surrounding areas suffered minor washouts, while the stabilized soil remained completely unaffected. The stark contrast in performance served as a powerful testament to the effectiveness of the AP Soil 600 polymer and the precision of its application. The apartment buildings, once precariously positioned near the eroding embankment, now stand secure and protected, their foundations no longer at risk from the relentless forces of erosion.



### 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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