



## Stabilizing Deep Soil to Prevent a Garage from Breaking Away

A property owner in Montana contacted a local geotech contractor regarding a garage they had converted into a bedroom. The garage lacked effective rainwater drainage, thoroughly compacted supporting soil, and a proper foundation with a footing like the rest of the house. For these reasons, it had sunken several inches. Alarmingly, the “new bedroom” was now beginning to break away from the rest of the house. The property owner found cracks in the siding and wanted to make sure there would be no further movement.

### Powerful Polymers

The technicians planning this deep soil stabilization job chose AP Lift 430, a widely used favorite in the industry. This multi-use structural polymer is ideal for compacting soil, filling voids, and lifting slabs and structures.



### Physical Properties - Cured

AP LIFT 430			
Compressive Strength	(ASTM D-1621)	50 p.s.i. or 7,200 p.s.f.	3,447 millibar
Tensile Strength	(ASTM D-638)	88 p.s.i.	6,067 millibar
Expansion	(Unconfined)	22-26 times	-
Density	(ASTM-D 1622)	2.75 to 3.25 lb/ft3	44.05 to 52.06 kg/m3

Properties will vary depending on application conditions.

### Painless Procedure

Without the option of a structural polymer repair plan, a contractor would likely have had to dig around the garage, add a new foundation underneath, and then use helical piers to keep it in place. This would require the demolition of decking and surrounding structures. Heavy equipment (which often causes additional concrete surface and lawn damage) would be needed to get all of this done.

Fortunately, contractors can achieve soil stabilization and compaction on projects like this with the smallest footprint and the least amount of heavy equipment required. These technicians chose to implement the Deep Lock® process to stabilize the soil at all levels with minimal imposition or downtime to the property owner. First, the crew identified the exact parameters of all the unstable soil. Next, they installed a pair of injection tubes every three feet along the footing of the house in the affected area. This job required 17 of these dual-tube injection points. Next, they created a high-strength durable polyurethane footer with AP Lift 430, injecting the structural polymer to depths of both eight and four feet at each injection point. The technicians performed these injections until significant backpressure was reached to confirm full soil compaction.

### Rapid Result

This highly efficient “surgical strike” style job was executed by a crew of two within eight hours. No heavy equipment or messy excavation was needed. The structural polymer was cured in place within 30 minutes of injection. Water won’t erode it; insects cannot eat or bore into it. The property owner’s new bedroom is now sitting on stable soil.

### 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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