



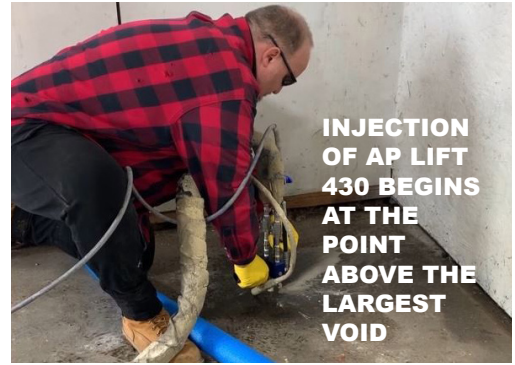
CASE STUDY
LEVELING SUNKEN
SLABS IN A
POLE BARN

Leveling Sunken Slabs in a Pole Barn

A 25' x 40' residential pole barn in Carbondale, Illinois was built on a 6" floating concrete slab on grade. The concrete was poured into four 10'x 25' sections. Each section had multiple cracks and breaks throughout, and in some cases the broken sections had a drop of up to 3". ETRU Spray Foam and Coatings was hired to stabilize the ground and level as much of the concrete as they could. During the inspection, it was discovered that the pole barn 4 corner beams were driven into the ground and the concrete poured around them. The front of the property was pitched towards the pole barn and it showed no signs of ever having gutters and downspouts attached. After drilling an injection hole, the crew inserted a probe to check the depth of the void and the stability of the ground. In some areas the void was 6" and the probe was hand driven to a depth of 3' before hitting hard ground. The homeowner planned to utilize the space as a game room.

Powerful Polymers

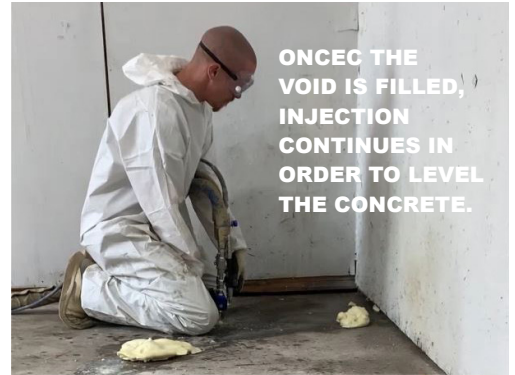
Among the most dependable products for geotech applications, AP Lift 430 structural foam provides an exceptional DOT grade solution for these types of situations. This 3 lb. density, high-strength, hydro-insensitive structural polyurethane foam is perfect for densifying soil and lifting concrete slabs.



INJECTION OF AP LIFT 430 BEGINS AT THE POINT ABOVE THE LARGEST VOID



THE DIAL INDICATOR MEASURES SLAB LIFT MOVEMENT BY 1/100 OF AN INCH.



ONCE THE VOID IS FILLED, INJECTION CONTINUES IN ORDER TO LEVEL THE CONCRETE.

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/ft ³	44.05 to 52.06 kg/m ³

Properties will vary depending on application conditions.



Painless Procedure

The ETRU crew and an Alchemy-Spetec consultant walked the project with the property owners. We pointed out how waterlogged the ground was and that they needed to add gutters and downspouts, as well as pitch the ground water away from the pole barn. We also talked about possible blowout from under the slab during the injection process and how to handle it. The Alchemy-Spetec consultant worked with ETRU to draw up a plan, indicating exactly where the injection points would be located (knowing that the plan might change due to the ground moisture and the number of voids to be filled). All injections were completed from inside the pole barn with a crew member on the outside to alert the others when product broke through the ground. First, they injected in the back corner which had the 3" drop. The plan was to establish a base slab height on the side with the most soil problems and then level everything else to that slab. Spacing between injection points was approximately 3-4 feet, with 38 total injection locations.

Rapid Result

The ETRU Spray Foam and Coatings crew achieved a three-inch lift and was able to bring all the other slabs within 1/8" from the adjoining slab. The customer was extremely happy 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.

Tech Support:
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