

## Eroding Soil Could Lead to Cave In Underneath Busy Intersection

County inspectors found a depression in the road due to an underground sewer line that wasn't sealed at a heavily trafficked roadway intersection in Orange County, Florida. Water and eroding soil were infiltrating the sewer line causing the road to slowly settle. The resulting voids around the drainage structures had the potential to grow larger, eventually resulting in a complete cave-in of the roadway. In this particular case, there was a patch of asphalt 12' x 25' that was settling and officials feared a cave-in would occur. A point repair was done from within the leaky pipe to stop the infiltration but they feared it was only a matter of time before the road gave way. It was going to be very difficult and inconvenient to dig up this roadway, fill the void, re-compact, and re-pave due to the high volume of traffic, the adjoining rail crossing, as well as several major utilities running through the area. Not to mention that the area would have to be completely shut down to accommodate all of the equipment required for such a repair.

**POWERFUL POLYMERS  
PAINLESS PROCEDURES  
RAPID RESULTS**



They monitored the pipes while injecting material at a rate of 2 gallons per vertical foot through the open manhole to identify additional leaks that had been missed during the first point repair.

As expected when foam was observed coming in through a leaking joint it quickly sealed off the leak at the same time it was stabilizing the soil.

### POWERFUL POLYMER

Orange County approached Alchemy-Spetecs to see if we could come up with a powerful, painless and rapid solution using chemical grouting to fill the voids and stabilize the roadway. We devised a solution for them using the versatility of AP Fill 700 as both a permeation and void filling grout.

#### 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**

We advised their crew to lay out a grid on the settling asphalt area and set up injection points to drive pipes down to the 13' depth where leaking had occurred and where the loose soil zone was located. They monitored the pipes while injecting material at a rate of 2 gallons per vertical foot through the open manhole to identify additional leaks that had been missed during the first point repair. As expected when foam was observed coming in through a leaking joint it quickly sealed off the leak at the same time it was stabilizing the soil.

## **RAPID RESULT**

To keep the lane closure down to a bare minimum of time, the project was successfully completed on two separate Saturdays. The voids were filled, the loose soil was solidified, and now only minor asphalt patching will be required to make that area smooth for traffic again.

## **About Alchemy-Spetec**

### **The Leak Seal Division**

The Alchemy-Spetec Leak Seal Product Line combines a full-system offering of polymer chemical grouts and equipment with perhaps the most experienced technical team in the industry. For any concrete leak seal application, lean on the Alchemy-Spetec team for phone, field, or engineering support. Our growing network of Regional Managers, Independent Representation, and Nationwide Distribution offers industry professionals many levels of opportunity worth discussing with our team. Consultants at Alchemy-Spetec pride themselves on rapid, powerful, and painless scheduling of field and technical support. We invite you to inquire about our bi-annual factory training held at the Tucker, GA-based manufacturing facility where they can learn from the 20+ year average industry experience of our Regional Management and Technical Team.

### **The Geotech Division**

The Alchemy-Spetec Geotech Product Line offers industry-leading quality, full chemical grout lifting rig training and support, and unmatched contractor support in the field and with sales and marketing. Contact us today to learn about the tangible benefits of joining the Alchemy-Spetec network of geotech contractors. The Alchemy-Spetec MixMaster Pro Gun is a maintenance and production cost-saver for any lifting contractor, while the flagship lifting foams have helped many contractors reduce volume usage while eliminating call-backs. From the Polybadger machine that fits into a pickup truck, to custom boxtruck and trailer rig buildouts, Alchemy-Spetec is widely considered the premier geotechnical chemical grout & equipment supplier. With the additions of ground penetrating radar and penetrometer equipment and support, Alchemy-Spetec is truly on the cutting-edge of the chemical grouting industry.