

PolyLevel® 400 Hydrophobic

Project: I64 / IL-158 Underpass
Location: O'Fallon, IL
Date: 6/2/2016

Challenge:

Commuter complaints to the Illinois Department of Transportation (IDOT) reported uneven lanes and large “bumps” along westbound Interstate 64 as it passes under Illinois Route 158. The cause was determined to be water intrusion under the pavement that eroded base soils. Commuter safety and prevention of further damage required an immediate and economical resolution to this issue. Mudjacking and concrete replacement were both briefly considered but were deemed to be either too expensive, too time consuming or both.

Solution:

IDOT, having had a recent “Lunch and Learn” on slab settlement solutions, contacted Foundation Supportworks by Woods who immediately visited the site and identified a 30’ x 30’ section of highway had settled approximately two inches. To resolve this issue, Woods recommended undersealing the impacted slabs by installing PolyLevel 400 Hydrophobic (PL-400H) beneath the impacted areas. PolyLevel® is a two-part urethane that expands and cures in to a rigid foam used to fill voids, stabilize slabs and lift concrete. Once injected through small 5/8-inch drilled “ports” in a slab, a chemical reaction converts the liquid urethane components into a strong, rapidly-setting foam. In its foam state, PolyLevel® is extremely light, weighing 4 to 7 pounds per cubic-foot (pcf). Other void-filling or lifting materials can weigh upwards of 120 pcf, adding significant stress to supporting soils. With a minimum compressive strength of 80 pounds per square inch, PL-400H provides more than enough strength to support even heavy highway traffic loads.

The state of Illinois announced the closure of the impacted lanes and two ramps beginning at 7:00 AM with an anticipated completion time of 6:00 PM that evening. Foundation Supportworks by Woods arrived at the jobsite at 7:00 AM and began injecting PolyLevel® at approximately 8:00 AM. The impacted slabs required 600 pounds of PL-400H to return them to their original elevations. The entire project was completed and cleaned up by noon and the lanes and ramps were reopened to traffic.

Project Summary

Certified PolyLevel Installer: Chris Blickenstaff
Foundation Supportworks by Woods
Engineer: Joe Monroe IDOT Engineer
Products Installed: PolyLevel 400 Hydrophobic



Interstate 64 Illinois Route 158 Interchange



Impacted area of I64



PL-400H port and material installation



Traffic lanes remained open during installation