

PolyLevel®

Project: Duplex Slab Support

Location: Oxford, IA

Date: March 2017

Challenge:

A ranch style, slab-on-grade duplex had a stable exterior foundation but poor slab support conditions on the interior. The worst slab settlement was measured at 2 ¾ inches near the center of one of the units. Evidence of the movement was visually obvious, including cracked floor tiles, gaps between partition walls and the ceiling, and interior doors that didn't open or close properly.

Solution:

MidAmerica Basement Systems proposed a solution to use PolyLevel 400 (PL400) rigid polyurethane foam to lift and support the settled areas of the duplex slab. PolyLevel is a two-component liquid urethane system that when combined expands in to a lightweight, rigid material used to fill voids, stabilize slabs and lift concrete. When installed, PL400 typically weighs only five to seven pounds per cubic foot (pcf). Other slab lifting materials can weigh upwards of 120 pcf, which can contribute to further slab settlement over time. With a compressive strength over 10,000 pounds per square foot (psf), PL400 has the strength to support residential and most commercial slab loading conditions.

PL400 was injected through small, 5/8-inch holes drilled in the slab, starting with the lowest areas. As the fill and lift operation continued, door function returned to normal and the visible gaps between partition walls and the ceiling closed dramatically. The area of slab that had settled as much as 2 ¾ inches was returned to within 1/8-inch of its original elevation. After observing the successful results, the customer asked the crew to expand the scope of work to other areas of the duplex. The project was completed in 11 hours using 470 pounds of material.

Project Summary

Installing Contractor: MidAmerica Basement Systems

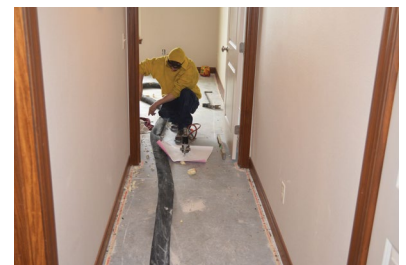
Products Installed: PolyLevel 400 Polyurethane Foam



PolyLevel rig at jobsite



Slab settlement caused visible gaps between partition walls and the ceiling



PolyLevel injected through the slab near the door frame, enabling the door to function properly



PolyLevel lifted the duplex slab to within 1/8" of its original elevation which dramatically reduced the gap between the ceiling and walls