

PolyLevel®

Project: Northwest Park

Location: Davenport, IA

Date: May 2017

Challenge:

The sidewalk surrounding the public restroom building at Northwest Park in Davenport, Iowa experienced differential settlement, evident by faulted slab sections at some of the joints. This vertical displacement was as much as three inches, creating trip hazards and potential liability claims. The Parks and Recreation Department placed a concrete “wedge” at the worst location to minimize risk, but decided to seek a more suitable, long-term solution. Removal and replacement of the concrete was not considered since it would involve constructing barriers and shutting off access to the building for several days to a week.

Solution:

MidAmerica Basement Systems proposed a slab stabilization and lift option using rigid polyurethane foam. Slab preparation included removing the concrete wedge and saw-cutting through the joints, where necessary, to prevent binding of the slabs during lift. PolyLevel 250 (PL250) was injected through penny-sized holes in the slabs strategically located on each side of the joints. PolyLevel is a rapidly setting, two-part liquid urethane that when combined expands in to a rigid foam used to fill voids, stabilize slabs and lift concrete. PL250 is extremely lightweight, with a typical in-place density of less than four pounds per cubic foot (pcf). Other void-filling or lifting materials can weigh upwards of 120 pcf, adding significant burden to supporting base materials and potentially contributing to further settlement. With a typical in-place compressive strength exceeding 5,000 pounds per square foot (psf), PL250 has more than enough strength to support residential and light commercial applications.

MidAmerica completed the entire job in just four hours using 126 pounds of PL250. The releveled sidewalk was returned to service immediately upon completion.

Project Summary

Installing Contractor: MidAmerica Basement Systems

Products Installed: PolyLevel 250 Polyurethane Foam



Sidewalk settlement at public restroom



Removing concrete “wedge” prior to installing PolyLevel



Three inches of differential settlement visible after concrete wedge removed



Faulted slab sections returned to original elevation