

## Model 288 Slab Piers and PolyLEVEL® 400

**Project:** Warehouse Floor Stabilization

**Location:** Ft. Walton Beach, FL

**Date:** February 2015

### Challenge:

The Boeing Company acquired an 80,000-square-foot warehouse from Edwin Watts Golf. Boeing planned to convert the commercial distribution warehouse into a military parts facility. However, a 12,000-square-foot portion of the concrete floor slab had settled as much as six inches and would have to be stabilized and lifted before renovations could begin.

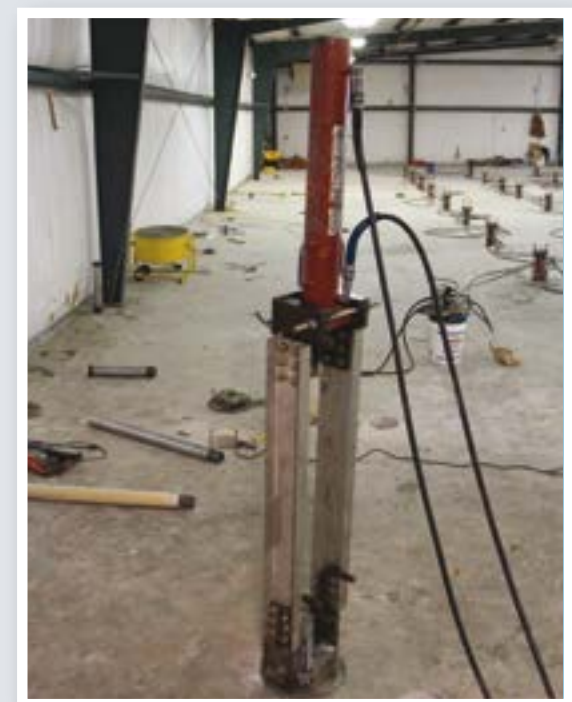
A geotechnical investigation, which included ground penetrating radar and soil borings, showed loose fill soils under the existing slab. Additionally, the original building design called for a six-inch floor slab; however, upon further inspection, the settled portion of the floor slab was found to average 14 inches thick. The cause of the settlement was determined to be a combination of the additional concrete weight and the weak, surficial bearing soils.

### Solution:

A system of hydraulically-driven push piers was selected to permanently stabilize and lift the settled slab. Slab pier locations were laid out in grid patterns with a maximum spacing generally less than eight feet. Eight-inch-diameter core holes were made through the floor to allow for bracket installation. One hundred twenty-two (122) Model 288 (2.875-inch OD by 0.165-inch wall) slab piers were installed to an average depth of 30 feet and an average drive pressure of 3,200 psi (drive force of 30 kips). The slab piers were connected in series with hydraulic cylinders to uniformly raise the floor back toward level. PolyLEVEL® polyurethane foam was then injected under the slab to fill voids. Once injected, the two liquid urethane components react to form a rapidly setting rigid foam with a compressive strength generally greater than 100 psi. Approximately 5,100 pounds of PL400 were injected below the slab.



String line indicating nearly six inches of settlement



Slab pier drive stand assembly



Lift cylinders fitted to installed slab piers



Void filling with PolyLEVEL®

## Project Summary

**Structural Engineer:** McCarthy Engineering, Inc.

**Geotechnical Engineer:** Southern Earth Sciences, Inc.

**Certified Installer:** Alpha Foundation Specialists, Inc.

**Products Installed:** (122) Foundation Supportworks® PP288 Slab Piers, Average Depth of 30 feet; PolyLEVEL® PL400, 100 psi Compressive Strength, 6 pcf Typical In-Place Density