Superior Est. 1983

OUR NAME SAYS IT ALL.

KATOEN NATIE
HOUSTON, TX

CHALLENGE

Katoen Natie is an industrial complex near the Port of Houston, with multiple locations. The distribution facility is a 24 hour/7 day a week operation that has a high flow of heavy truck traffic over hundreds of thousands of square feet of concrete pavement. Built near the Port of Houston the water table is high, and the soil conditions are poor. When the concrete pavement was installed the subgrade was not stabilized adequately for the designed use. The continuous, heavy 18-wheeler truck traffic was causing the ground water to rise to the surface, pump through the expansion joints, which washes out the subgrade leaving voids and in turn creating slab deflection, settlement and eventual failure. Operational downtime was a significant factor as well.

SOLUTION

Superior was selected to perform the concrete remediation work utilizing the PolyLift procedure to stabilize, lift and realign the slabs back toward its original position. Small 5/8-inch drilled holes are laid out on a grid pattern in the affected areas. A two-part urethane is injected through the 5/8-inch drilled "ports" in the slab, chemical reaction converts the liquid urethane components to a strong, rapidly setting rigid foam material. In its foam state polyurethane is relatively light, weighing two to six pounds per cubic foot (pcf). Other void-filling or slab lifting material can weigh upwards of 130 pcf, adding significant weight to supporting soils or base materials and potentially contributing to further settlement issues. With a compressive strength of 100 pounds per square inch (psi), polyurethane can provide the necessary resistance to support heavy loads. Areas were sectioned off and repaired independently to allow continued traffic flow. Due to the quick-set nature of PolyLift, areas were reopened to traffic a mere 20 minutes after injection.

PROJECT SUMMARY

- Superior has repaired tens of thousands of square feet of concrete pavement at the KTN facilities.
- Products Installed: PL 400, High Density Polyurethane
- Tensile Strength, 69 psi Shear Strength, 19: 1 Expansion Rate, 6 pcf Typical in Place Density
- Product Characteristics (PL400): 100 psi Compressive Strength, 146 psi