

CASE STUDY



Vortex I & I Guard®-SSF Stops Soil Erosion and Preserves Seawall

FLORIDA-BASED ENGINEERING SERVICES COMPANY, SPECIALIZING IN GEOTECHNICAL SOLUTIONS SAVES OCEAN-FRONT CUSTOMERS CONDO OWNERS AN AVERAGE OF \$35,000-\$40,000. SOIL STABILIZATION FOAM PROVES TO BE EXCELLENT EROSION AND PERMANENT SHORING SOLUTION FOR COASTAL COMMUNITIES.



QUICK, NON-INVASIVE REPAIR

Only one day required to stabilize eroding soil conditions and fill voids behind seawall. No need for large, invasive excavation equipment.



EXTENDED SEAWALL DESIGN LIFE

By using I & I Guard-SSF, seawall did not have to be replaced, and useful life extended an additional 10 years.



OWNERS SAVE MONEY

Combination of quick rehabilitation solution and avoidance of replacement costs saves owners thousands of dollars.



Injection port, to install I & I Guard-SSF, identified along condo property seawall, will fill voids caused by erosion and prevent seawall from collapse.



As technician injects I&I Guard - SSF into void behind seawall, signs of soil erosion were evident.

PROJECT SNAPSHOT

Project

Tampa Area Condominiums & Townhomes

Problem

Several oceanfront condominium seawalls exhibited erosion and multiple depressions due to age and environment.

Overview

Condominium owners choose soil stabilization foam solution for fast permanent repair. Average project savings of \$35,000-\$40,000 compared to replacement.

Vortex Products Used

- I & I Guard®-SSF

THE CHALLENGE

Water front condominiums offer residents extraordinary views, and a seawall that protects the community. However, a coastal living environment can subject a seawall to significant soil erosion that threatens its structural integrity as well as the viability of the dwellings behind it. Soil erosion can also create dangerous holes across lawn areas.

Several Clearwater waterfront townhomes and condominiums are protected by a seawall that was nearing the end of its useful life. In place for more than 30 years, the seawall demonstrated evidence that it was succumbing to the long-term effects of soil erosion. Maintenance crews backfilled multiple depressions outside of the seawall cap for years, but the soil erosion continued.

With the cost of constructing a new seawall averaging \$45,000 per property, condo owners were seeking a more cost-effective and reliable alternative.

THE SOLUTION

Relying on its deep expertise, Vortex Companies advised the contractor on the project to apply I & I Guard®-SSF two-part chemical grout to prolong the seawall's life and prevent further soil erosion.

The chemical grout was not only used to fill depressions and voids, but also to compact the ground – an important step that creates a protective barrier behind the seawall to prevent soil migration into the ocean.

I & I Guard-SSF's low viscosity and hydro-insensitive nature allows for permeation grouting, undersealing concrete and stabilizing soil while also mitigating inflow and infiltration.

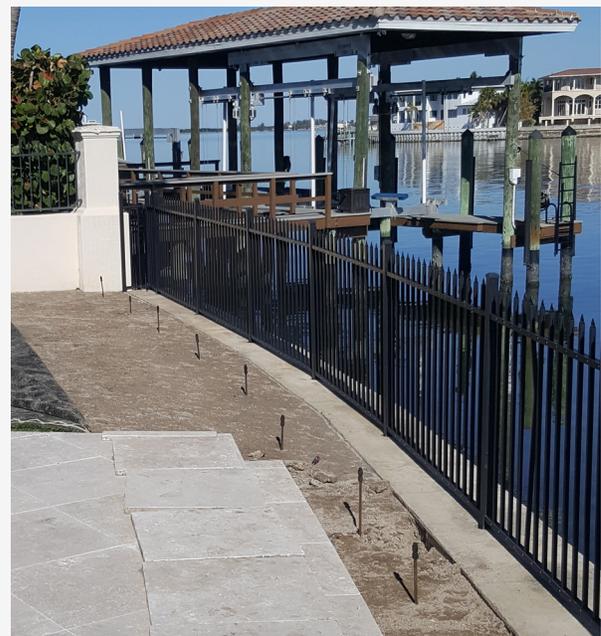
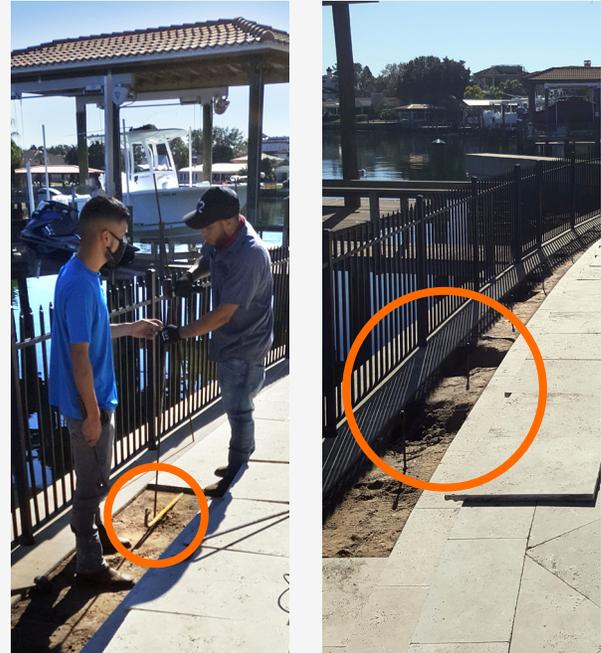
THE RESULTS

Applying I & I Guard-SSF stabilizes the condo property seawall and adds 10 years of useful life. The chemical grout solution stops soil erosion and is saving condo owners an average of \$35,000 to \$40,000, as it eliminates the need to construct a new seawall. Most projects are completed in one day.

THE INNOVATION

I & I Guard-SSF is a high-density, high-strength, structural, closed-cell, two-part polyurethane grout that stabilizes soil, fills voids and sinkholes created by erosion, relevels concrete slabs, and other various types of geotechnical grouting. Water-insensitive and environmentally safe, it enables a quick return to service to avoid community disruption.

Vortex's deep knowledge and consultative approach enables it to provide the correct solution, tailored for each project's unique needs, faster than competitive custom options.



Pilot holes are drilled along top and sides of seawall, where I & I Guard-SSF will be applied. No digging or replacement of backfill of seawall was required.