

## Geotube® Shoreline Protection Helps Prevent Erosion At Upham Beach, Florida

**Geotube® containers help with “worst erosion problem on Florida’s West Coast” and provide long-term solution for long-term problem.**

The US Army Corps of Engineers maintains Upham Beach in Pinellas County has the worst erosion problem on Florida’s west coast.

Year after year, Upham Beach is literally “engulfed” by the Gulf of Mexico. Upham Beach has suffered serious erosion in the past, with heavy wave impact threatening seawalls, dunes and the buildings behind them. Over the past 30 years, more than \$10 million has been spent on renourishing Upham Beach. From 1975 to 2004, the Corps of Engineers renourished the beach six times with more than 1-million cubic yards of sand.

Each time the newly deposited sand would begin to erode with the next passing storm. To address this chronic problem, authorities turned to Geotube® containment technology for shoreline protection.

TenCate develops and produces materials that function to increase performance, reduce cost, and deliver measurable results by working with our customers to provide advanced solutions. For this project, TenCate Geotube shoreline protection provided the answer.

The county employed a coastal engineering firm to design a series of T-Head Groins to help stabilize the beach. The T-head acts as a breakwater dissipating wave energy that otherwise would start to push Upham Beach’s sand to the south while the perpendicular section acts like a jetty and catches the sand, resulting ideally in creating a scalloped shoreline.

Geotube® containers were selected to create the groins. The perpendicular section of the groins extend 100 to 200 feet into the gulf with 190-foot sections forming the “T,” which is parallel to the shoreline.



*T-groins using Geotube® containers were used at Upham Beach to control an ongoing beach erosion problem that had cost county officials more than \$10 million dollars. The T-groins began working immediately to stop erosion and allow the beach to renourish.*

For the installation, Geotube® containers 30 feet in circumference and up to 200 feet long were used. The containers are delivered rolled up, and are deployed on the job site. The containers are filled with sand using an offshore dredge, and sand from the beach was bulldozed around the filled units so they transitioned back into the beach.

Once the Geotube® containers were filled with sand, the exposed portions were coated with Polyurea. This coating protects the tubes from ultra violet rays as well as vandalism.

Results from the use of Geotube® containment technology were seen almost immediately. According to the county engineer, the T-groins have totally changed the environment and have made the beach usable. Sand, instead of disappearing with each storm event, is accumulating naturally between the T-head groins, and the beach is beginning to once again build up.

Residents of the Starlight Tower, a condominium building adjacent to the beach,

*(More)*

are pleased with the performance of the T-groins. "Before the installation of the T-groins, we would have 7-foot waves hitting our lobby door and salt water in the elevator shafts during storms such as Tropical Storm Alberto," noted one resident. Now, the accumulation of sand along the beach, along with the T-groins themselves, helps manage destructive wave action and prevent damage in case of major storms.

Beachgoers seem to have accepted the Geotube® containers as part of the beach environment. Residents and visitors walk along the containers themselves as they trek up and down the beach, using them as vantage points to get better views of the beach and the ocean.

To learn more, visit [www.geotube.com](http://www.geotube.com).



*Polyurea coating being applied.*



*Finished Geotube® containers in place.*



*With T-groins in place, sand accumulates.*



*Beachgoers at play around the Geotube® units.*



*Wave action is good for surfers, but is managed during storms.*



*T-groins as part of the landscape.*

Geotube® is a registered trademark of TenCate Geosynthetics North America

## Geotube® Geocontainment Technology Applications

Sand Dune Cores

Wetlands Creation

Breakwaters

Jetties

Underwater Structures

Diversion Dikes

Island Creation



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