

## Application Story

**PROJECT** | CANCUN, MEXICO  
**Product** | Geotube® Marine Structures Technology  
**Application** | Breakwaters

**Location** | Cancun, Mexico  
**Installation** | 2006-2007

### The Challenge:

The Yucatan Peninsula of Mexico suffered greatly from the destructive forces of Hurricane Wilma in October 2005. Cancun's beaches were eroded, sea walls were devastated, and many resorts suffered extensive structural damage and flooding [photos 1-2]. Serious beach restoration efforts were needed to repair the resort community.

### The Solution:

The Geotube® team developed a three-step restoration plan involving property protection, beach restoration, and sand bar repair.

*Step One:* The plan began with the installation of Geotube® units in front of the damaged properties [photo 3]. Over 1.2 miles of containers were installed for emergency protection during the summer.

*Step Two:* Sand was hydraulically dredged from 13 miles out in the gulf. It was pumped onto the shore to begin the renourishment of 19 kilometers of shoreline.

*Step Three:* In addition to the beach damage, Wilma also destroyed the natural sand bar (600 feet offshore). The waves posed a continuous threat to the beaches. A permanent four-section breakwater was built using submerged Geotube® units. [The location is indicated by the red lines in photo 5.] GPS technology was used to identify the precise location of each Geotube® unit's placement

### The Results:

The rebuilt beaches now range from 60 to 100 feet wide [photos 4 and 7]. They are much better prepared for future hurricane seasons.

Only weeks after the Geotube® breakwaters were installed, Cancun was hit by Category 5 Hurricane Dean in late August 2007. Not one Geotube® unit was damaged at the breakwaters. And sand deposits were noted in front of the structures following Dean.



### Contact Information:

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