



HEREFORD INLET SEAWALL REPAIR PROJECT NORTH WILDWOOD, NEW JERSEY

Application: The project involved reconstructing the inlet shoreline seawall. Portions of the structure were being undermined by tidal scour and storm erosion. Complete failure of the seawall would have posed a long-term threat to a nearby church and other infrastructure.

The Challenge: Strong tidal currents, steep underwater slopes, and deep-water sections meant that traditional methods would have been difficult to implement.

Site Conditions: The seawall is located on New Jersey's eastern shore with maximum water depths of 60 feet. Underwater visibility is typically less than three feet. Strong tidal currents affect the construction zone.

Alternative Solution: A conventional solution would have involved installing an unsupported geotextile fabric to contain eroding soil particles. The fabric then would have been capped with bedding and armor stones to prevent the material from shifting and settling. The US Army Corps of Engineers concluded that this approach was impractical because of conditions at the site.

The Solution: Tensar designed a special, 4 inch thick Triton® Biaxial (BX) Marine Mattress to encapsulate and support the geotextile material. Overall, each unit measured 4 inches high by 6.5 feet wide by 20 feet long.

The design provided transverse compartments by specifying internal baffles at 2-foot intervals. Each compartment was lined with non-woven geotextile fabric and filled with 1.5- to 3-inch stones. Installation of a top panel completed the mattress assembly.

"This is our first experience with the Triton Marine Mattresses," says Rich Marzucco, project



Triton Marine Mattresses were installed along the New Jersey coastline to protect against future storm erosion.

PROJECT HIGHLIGHTS

Project:
Hereford Inlet Seawall Construction Project

Location:
North Wildwood, New Jersey

Installation:
January 2005 – November 2006

Product/System:
Triton Marine Mattresses

Quantity:
36,000 square yards

Owner/Developer:
City of North Wildwood, New Jersey

Engineer:
U.S. Army Corps of Engineers,
(Philadelphia District)

General Contractor:
Agate Construction Company, Inc.

Materials Supplier:
Tensar Earth Technologies, Inc.



manager for Agate Construction. "They are easy to work with and follow the contours that they are laid on."

Small stones in the mattress compartments helped anchor the geotextile until it could be lifted into place and secured with armor stone. Construction began in January 2005 and will be completed in late 2006.

Up to five mattresses were tied together to form a 20-foot by 32-foot unit. Ganging mattresses in this way enabled the installer to place more units with each lift.

Triton Marine Mattresses were ganged together for placement in deep waters.



The project crew used a four-point lifting frame and a combination of shore- and barge-mounted cranes to lift and place each unit. Because of murky conditions on the underwater sections, the lift operator used sighting aids to facilitate mattress placement.

By the time Agate Construction completes work, its crew will have placed over 2,900 units. Each unit will be anchored with armor stones weighing 500 to 800 pounds each.

"The system is ideal for the rough waters along the New Jersey coastline," says Jeff Fiske, Triton Coastal and Waterway Manager. "Traditional methods are much more challenging in these conditions."

The Army Corps is currently using the system on several other coastal projects, including the repair of the Townsend Inlet Seawall in Avalon, New Jersey.

The Triton Systems Advantage: The project owner and consultants selected Triton because they:

- Incorporated Tensar Uniaxial (UX) Geogrids, which had the strength and flexibility to accommodate the site's strong tidal currents;
- Provided scour protection well beyond the seawall footprint;
- Adapted readily to irregular bottom conditions;
- Were constructible even in difficult working conditions;
- And the armor units could be locally constructed and trucked to the job site.

Additional Information and Services: Tensar Earth Technologies, the leader in geosynthetic soil reinforcement, offers a number of integrated marine systems. Our products and technologies, backed by the most thorough quality assurance practices, are at the forefront of the industry. Highly adaptable, cost-effective and installation-friendly, they provide exceptional, long-term performance under the most demanding conditions. Our support services include site evaluation, design consulting and site construction assistance.

For innovative solutions to your engineering challenges, rely on the experience, resources and expertise that have set the industry standard for more than two decades.

For more information on the Triton Systems or other Tensar Systems, call **800-TENSAR-1**, e-mail info@tensarcorp.com or visit www.tensarcorp.com.



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