



Triton Mattresses chosen for ease of constructability, durability in challenging conditions

CLIENT CHALLENGE

Continuous scour protection was needed around each bascule pier of four bridges throughout the Kennedy Space Center's channel and fender system. Positioning and anchoring the mats were also significant challenges. "The Haulover Canal Bridge, in particular, has a narrow channel, which has high velocities and deep scour pockets," said Kim Rivera of Jones Edmunds & Associates, Inc.


The project involved installing the geosynthetic revetment system at depths of approximately 20 feet, amid high water velocities and with limited overhead clearance. Narrow channels, strong currents and deep scour pockets demanded dredge and fill maneuvers or anchoring systems for slopes greater than 2 to 1. "There is extremely low visibility at all bridges and high velocities. These bridges provide the only access into KSC and were required to remain open to vehicle traffic," said Rivera, who added that there were strict requirements regarding vessel closure times and channels depths.

TENSAR SOLUTION

After an extensive permitting process through the USACE and local municipalities, the Triton Marine Mattresses were selected for their constructability, adaptability and durability in a challenging, submarine environment. Also, the coastal and waterway revetment system was much more cost-effective than the alternatives. Jeff Fiske, Industrial Manager – Coastal and Waterway at Tensar Corp. stated, "Regarding constructability, trying to place material under water and get a specified thickness of material in adverse conditions is always difficult. Having a unit like Triton Marine Mattresses that goes in as a discreet size that can be positioned using GPS, actually gives the contractor and engineer assurances that what was specified is actually what was installed.

The owner and consulting engineer recognized several benefits of the mattress system, including the fact that the armor units could be locally constructed and customized on shore prior to installation. Also, they could provide the most efficient bridge scour protection at less than half the thickness of riprap. Another benefit was that they offered a one-foot profile that minimized transition from surrounding riprap grades. Finally, they were constructible even in difficult working conditions without concern for causing damage to the piers during installation.

Kennedy Space Center Bridge Scour Protection

 Cape Canaveral, Florida

Jones Edmunds & Associates,
Inc.

Design Engineer

Misener Marine
General Contractor

NASA
Owner

July 2010 - July 2011
Installation Date

Triton Marine Mattress
Product

Tensar[®]

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