

Airport Stabilizes Ditch Embankment

At Newark Liberty International Airport in New Jersey, a tidal ditch embankment needed restoration and effective erosion control. The tidal ditch, a conduit for storm water, runs roughly parallel to one of the airport's active runways. The embankment's proximity to the runway limited access and space for project workers and materials. Because the runway remained active during the project, it was important to minimize onsite staging. In addition, the water in the tidal ditch was brackish and could quickly corrode structures containing metal components.

A loose riprap installation was considered; however, such an installation would increase the embankment slope's thickness due to large stone requirements. It also could restrict the cross-sectional area of the ditch, resulting in accelerated velocity and scour, or introduce loose stones on the runway.

The project team chose the Triton Marine mattress system to permanently protect and restore the site. The system was ideal because of its proven performance in high-velocity water flow, quick and easy installation, adaptability, and nonmetallic, non-corrosive and weather-resistant properties. There was little onsite staging because

the mattresses were assembled off site, then brought in by truck and lifted directly onto the embankment.

GeoSyn Products Inc. preassembled 114 mattresses (7,463 sq ft) off site, filling the mattresses with AASHTO 1 stone (1 to 4 in.). While the majority of the mattresses were rectangular and 10 to 15 ft in length, GeoSyn specially fabricated two trapezoidal mattresses to accommodate irregular formations at the site. Once delivered, the mattresses were lifted directly from the trucks and set in place by a six-person crew from Ritacco Construction Inc.



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