

Case Study: Jetty Construction and Slope Protection

Engineer: Technital, Italy Mattress Engineering: Proserve Contractor: GLF, USA 2014

A new piled jetty for container vessels is being constructed at Port au Prince following the 2010 earthquake, when the old jetty slipped into the sea due to liquefaction.

The new jetty is using an innovative construction technique. Steel shell piles are being driven by land based piling plant to save on marine piling costs and then the jetty berth and slope is dredged and excavated from land by long reach excavators working around the piles.

The steel shell piles are infilled to form RC piles. Vibro compaction with stone columns has been used to prevent future liquefaction of the ground and failure of the jetty slope principally by densification of the existing fill material.



Earthquake Damaged Crane and Jetty



Pile Seal Test

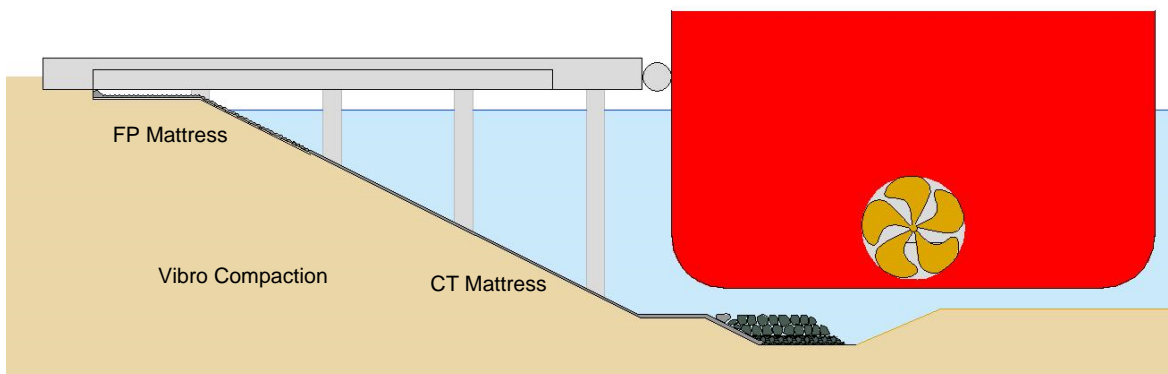
Concrete mattress protection is being used to the jetty slope around the piles. This proved to be more practical and cost effective than the use of rock.

Constant Thickness (CT) mattress is being used to the lower slopes which are subject to bow thruster and propeller action. Permeable Filter Point (FP) mattress is being used in the wave and tidal range. A rip rap falling apron is being constructed at the toe.

Proserve have provided support to the designer, Technital, and to the contractor, GLF on site for the installation of the system using divers.

The jetty deck is being formed in precast and insitu RC construction, and is 500 m long, with a dredge level of 11.5 m.

The project is important to help Haitians overcome the earthquake damage and aid the country's future development.



Typical Section