CASE HISTORY

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TECHFAB TECHTUBES FOR PROTECTION OF SHORELINE AND RESTORATION OF ERODED BEACH AT DAHANU IN MAHARASHTRA

DAHANU, MAHARASHTRA, INDIA

TECHFAB INDIA

Coastal Protection

Client:	Products used:
MAHARASHTRA COASTAL DEPARTMENT	TECHTUBE TT10, 20m IN LENGTH
Main contractor:	Quantity supplied:
GOHEL & COMPANY	
Manufacturer & Supplier:	Year of construction:
TECHFAB (INDIA) INDUSTRIES LTD.	2011

Problem:

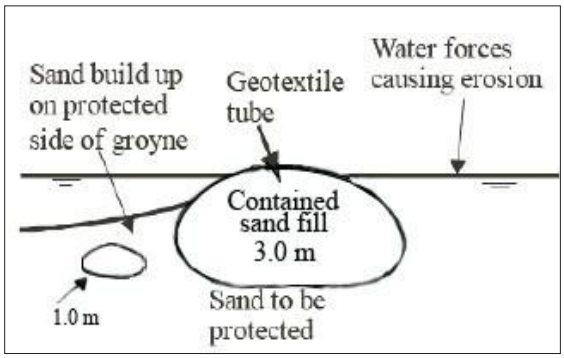
Dahanu is located on the western coast of India, facing Arabian Sea on the border of Maharashtra and Gujrat. The 1500m long beach is continuously eroding due to abrasive action of the sea waves. The increasing erosion of the beach has also endangered the adjoining structures and habitation near this location.

Solution:

The conventional methods for restoration of the beach and erosion control have been tried and found ineffective, the TECH-tubes made of engineered high strength woven fabric, have been thought of as an effective solution to the problem due to their capability of controlling the shore erosion caused by strong wave action on the one hand and facilitating the natural deposition of sand layer behind them in longer term. The geotextile tubes that have been proven worldwide as an effective alternative to conventional methods of shore protection, erosion control, and reclamation was proposed as a solution to the problem here. These systems have been successfully installed in various parts of the world for the construction of different type of marine and coastal structures. The schematic diagram of the proposed solution is shown here. The system has three components - a) Main tube (3.0m theoretical dia.) b) Anchor tube (1.0m theoretical dia.) and. c) Scour Apron made of high strength woven geotextile to prevent scouring of the base. The above system performs as erosion control mechanism for protection of shoreline and deposition of natural sand behind it. On the present project site the problem was that of continuous erosion of shoreline due to wave action.

To solve the problem a Groyne was proposed made of 3.0m theoretical diameter Tech-tube and an anchor tube of 1.0m theoretical diameter was installed in front of this as an anchor toe.

Installation of TechTube



schematic diagram of the proposed solution

Installation:

Submersible slurry pumps were deployed to fill the Tech-tubes. A sand slurry mix of 70% water and 30% sand was pumped through 10 BHP pumps. This mix was pumped from the excavated pits made specifically to pump the sand slurry. The slurry was pumped into the Tech-tubes through the inlet ports provided on top of the tubes. The pumping operation was conducted in stages and planned according to the tides. After each filling operation the Tech-tubes are left for expulsion of water from fabric and consolidation of sand.

During Installation of TechTube

TechTube At Dahanu Beach

Conclusion:

The Tech-tubes have been installed on part of the eroded beach line. The flexible groyne made up of Tech-tubes is 1.6m high after consolidation. This coastal structure is found to fulfill the desired objective in successful manner.

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