

CASE HISTORY

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**RECLAMATION & NOURISHMENT FOR DEVBAGH BEACH, AT DEVBAGH,
MALVAN, SINDHUDURG**
SINDHUDURG, MAHARASHTRA, INDIA



Coastal Protection

Client:	Products used:
PWD HARBOUR ENGINEER - SINDHUDURG, KUDAL	TECHTUBES
Main contractor:	Quantity supplied:
	44 NOS.
Manufacturer & Supplier:	Year of construction:
TECHFAB (INDIA) INDUSTRIES LTD.	MARCH 2013

Project description:

Devbagh is a small fishing village which sits on a thin strip of land with the Karli River backwaters on one side and the Arabian Sea on the other. Devbagh Beach is adjacent to Tarkarli Beach and ends at Devbagh Sangam. It is easily accessed via the Malvan-Tarkarli road. Devbagh beach is less crowded during the high tourist season and attracts tourists looking for peace and relaxation.

A point marks as the confluence of the Karli River flowing into the Arabian Sea, is the southernmost tip of the malvan taluka. An interesting geographical site, it is far more enchanting to see it atop the bridge built to cross over the river into Vengrula.



Overview of Devbagh beach

Solution:

Groynes are invented to slow down long shore waft and build up the beach. They are constructed at right angles to the shore with spacing about 50 - 100 meters apart so that they efficiently absorb the energy of the waves. Earlier days, they were typically made of tropical hardwoods or concrete. They are used to prevent coastal erosion by restricting the sediments, sand and debris from getting into contact with the shoreline. TechTubes are advanced and effective usages as Groynes for beach nourishment.



Typical Groynes

Salient features for the TechTube : Devbagh beach

Diameter of TechTube: 3.00 Meter

Length of TechTube: 20.00 Meter

Fill Port Diameter: 350.00 Millimeter

Fill Port Height: 500.00 Millimeter

Inlet Ports: 4.00 Nos.

Anchoring Loops: Every 3.00 Meter

Total Nos of TechTube: 44 Nos.

Total Length of TechTube: 880.00 Meter

TechTubes:

TechTubes are geotextile containment structures that have been used to encapsulate soil to enable their use as flexible, erosion resistant mass-gravity structures in hydraulic and marine applications. TechTubes are tubular containers that are formed on land or in water. TechTubes are laid out and filled onsite to their required geometrical form.



TechTubes At Devbagh Beach

Filling of TechTubes:

TechTubes are filled by hydraulically pumping fill into the tube. Hydraulic fill is pumped into the tube through filling ports (4 Nos.) located at specific intervals along the top of the geotextile tube. During filling, the geotextile tube, allows the excess water to pass through the geotextile while the retained fill attains a compacted, stable mass within the tube.

TechTube Material: (TFI-TT)

The Geotextile used to make the TechTube is engineered to have

- Tensile strength and stiffness to resist the mechanical stresses applied during filling and throughout the life of the structure
- Hydraulic properties to retain the sand fill and prevent erosion under a variety of hydraulic conditions
- Durability to remain intact over the design life of the units.

Fill Material:

Generally locally available sand is used as the fill material. The use of sand provides advantages such as attaining good density by hydraulic means, good internal shear strength and no consolidation affecting the filled shape of the TechTube. Once filled, the TechTube behaves as a mass-gravity unit. For Devbagh beach dredged material (Sandy soil) is used for filling TechTube.

Execution:

Construction for TechTube has been carried out with 3.0 meter diameter and 20.0 meter length of each tube. Techtube made from TFI-TT, being filled with the dredged material through filling ports, simultaneously to prevent higher pressure at each port. Anchoring loops are provided at every 3.0 meter. The construction for TechTube is designed as Groyne to prevent erosion and future beach nourishment.



TechTubes At Devbagh Beach

Conclusion:

The project was successfully completed in March 2013.

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