

REHABILITATION OF SEA WALL AT MUKKACHERY, MANGALORE
MANGALORE, KARNATAKA, INDIA

Coastal Protection

Client:	Products used:
	TECHFAB NONWOVEN GEOTEXTILE BAG (SIZE - 1X1X0.3M)
Main contractor:	Quantity supplied:
	6985 NOS.
Manufacturer & Supplier:	Year of construction:
TECHFAB (INDIA) INDUSTRIES LTD.	2019 - 2020

Project description:

The coastal belt in Karnataka has been witnessing wind and high tides due to cyclonic depression, due to these many houses are facing threat due to rough sea waves.

Sea walls constructed at Mukkachery have been breached and several houses on the coast close to the sea were in danger. The district administration decided to take rehabilitation work of existing breached portion of sea wall by using tetra pods and sand filled geotextile bags, which will reduce the further erosion of the beach and provide indirect protection to the neighboring property which was damaging due to heavy wave action.



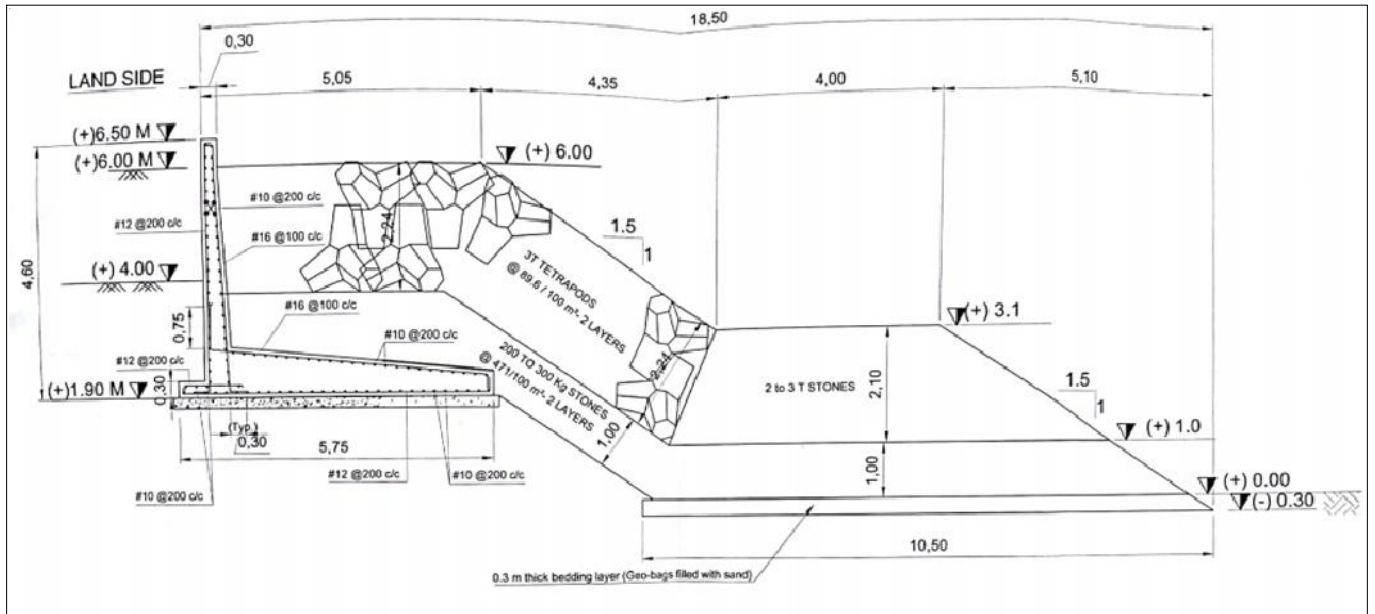
Project challenges:

Main challenge was timeline to install geotextile bags as wave action was deflected off the wall and concentrated on the sides and it was quickly eroding the shore line as well as damaging the neighbouring properties, so authority has suggested completing the work as early as possible in this difficult situation.

Solution:

The one of the major cause behind failure of rock sea wall was migrating of sand from the base. To prevent sand migration, it was suggested to use sand filled geotextile bag, which was laid at the base sea wall to make the base stable.

Construction of Sea wall by using Tetra pods and stones as structural elements was proposed. Tetrahedral shape allows dissipating the force of incoming waves by allowing water to flow around rather than against them and helps to reduce displacement by interlocking. Tetra pods protect coastline property from erosion by the sea.



Typical Cross section drawing

Why Geotextile bags are used:

- Geotextile bags are easy to install in any difficult situation as one can filled on onshore and installed under the water or in difficult location.
- Geotextile bags allow water to pass through it but retain the fine soil and it help to beach nourishment in long time.
- Also economical solution and easily repairable by replacing bags if damaged or dislocate from place.



Filled Geotextile bags



Stitching of geotextile bags by machine

Execution on Site:

- The geotextile bags were filled with existing beach sand.
- The geotextile bags were filled to dry weight as per the specifications and design drawings
- Proper filling arrangement was made to fill the Geotextile Bags to ensure the complete filling of Bags.
- To ensure the qualities of filling random samples were taken from the Filled bags and their weight were checked. Then filled bags were stitched by using hand held machine.
- The site / beach was leveled before installing the Geotextile bags the installation of Geotextile bags was carried out by using excavator.
- As per design and drawing, 1m thick layer of rocks weighing 200 to 300kg is dumped using excavator, followed by laying of 3T tetra pods.



Dumping of Geotextile bags in progress



Laying of Geotextile bags in progress

Conclusion:

Project was executed in 2019 - 2020. Client was happy with quality of Geotextile bags and completion of the product supply on time. Project is still under observation and will be observed through Defects Liability Period of

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