

Geotextile tubes in groyne structure repair and riverbank protection

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Abstract

The rivers in Taiwan have these characters in common: steep slope with high flow velocity, significant difference in the volume of flow, strong erosion and high sediment concentration. These adverse situations erode the bank and damage the hydraulic structure.

This is one case introducing geotextile tube and concrete mattress applied for riverbank protection. Due to erosion problem, foundation soil loss and flood plain collapse were the urgent issues to be solved. In order to repair the structure efficiently, designer adopted geotextile tube solution – 4m circumference and 20m length of geotextile tubes filled with local river sand were placed under the groyne structure. For river bank protection, 3 layers of 12.9m circumference and 60m length of geotextile tubes were placed and covered by concrete mattress. Since geotextile tube has the advantages of simple installation process, short construction duration, lower cost...etc., it could be one of the adequate choices for hydraulic engineering application.

Keywords: Erosion, Groyne, Geotextile Tube, Concrete Mattress

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