

Application of Geotextile Tube on Offshore Submerged Breakwater and Its Carbon Reduction Benefit - A Case Study of Taichung Harbor Breakwater Foundation Protection Project

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Abstract

This paper presents a case study to use geotextile tube successfully eliminate the foundation instability of a submerged breakwater in Taichung Harbor, Taiwan. The foundation of the breakwater had been eroding for years and the harbor channel also had siltation problem. Considering the requirements of sustainability for environment and ecology, budget, engineering performance and safety, geotextile tube was adopted. It directly acquired local soils for construction without the hassles of transport fill materials in and out of the site. It also demonstrated the advantages of faster construction, lower carbon consumption, lesser environmental impact, and lower cost. Geotextile tubes presented herein can be used as a valuable alternative solution in considering energy saving and carbon reduction for coastal engineering constructions.

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