

# Abstract

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## **Mega-Container Sand Fillings as an Environmental Sustainable Solution for Alexandria Coastal Protection**

Egyptian Mediterranean beaches had been suffered by several environmental impacts due to the inappropriate design of the conventional shore protection structures. Conventional breakwaters are high in cost and need a long executing duration in addition to their environmental impact and there visual problems. The main objective of this paper is to introduce an alternative shore protection and stabilization method (Geo-container Sand filling Artificial submerged reef) which provides friendly environmentally coastal solution with less executing cost and duration. Providing a comparative analysis study for executing cost and duration between the Conventional breakwaters and the Geo-containers sand filling submerged reef through a Case of Study for El-Mandarah Shore, Alexandria City, Egypt. The main conclusions of this study are as follows: • Geo-containers Artificial Submerged Reef provides a friendly environmental coastal solution and it often remains more aesthetically than other conventional structures. • The (Geo-containers Artificial Submerged Reef) is 49.4 % of the Conventional Breakwater Cost.