

Scale Model Tests of the Rehabilitation Works of the South Breakwater of Praia da Vitória Harbour - Azores: Stability and Overtopping

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ABSTRACT

Rubble-mound breakwaters are coastal structures for which some monitoring and repair works are assumed. Unfortunately, sometimes expensive rehabilitation works are required. This paper will briefly describe the storm which badly damaged the South breakwater of Praia da Vitória harbour and the proposed repairing solution, as well as the scale model tests performed at LNEC to infer on the efficiency of this solution.

KEY WORDS: Scale model tests; Stability and overtopping; Rehabilitation works; Breakwater

1. INTRODUCTION

Storms with strong winds and high wave heights are very common in the Azores archipelago and many times are responsible for serious damage in coastal structures. Usually, those damage require urgent measures and a prompt action for permanent or temporary rehabilitation is required, in order to prevent a major damage to the structure. Being rehabilitation works very expensive, it is urgent to achieve simple, safe and cost effective repairing solutions in order to simplify and minimize the costs of the re-establishment of a harbour operability.

This paper describes the two-dimensional scale model tests of the rehabilitation works of the South breakwater of Praia da Vitória harbour, in the Azores Islands. The goal of these tests was to study the stability of the inner and outer slopes and overtopping of the cross-section proposed for the rehabilitation works (Lemos and Silva, 2004). The works aim to achieve a simple and cost effective repairing solution.

2. THE SOUTH BREAKWATER OF PRAIA DA VITÓRIA HARBOUR, IN AZORES

Praia da Vitória harbour is located in Terceira island, in the central group of the Azores archipelago (Fig. 1). It is sheltered by the North and the South breakwaters.

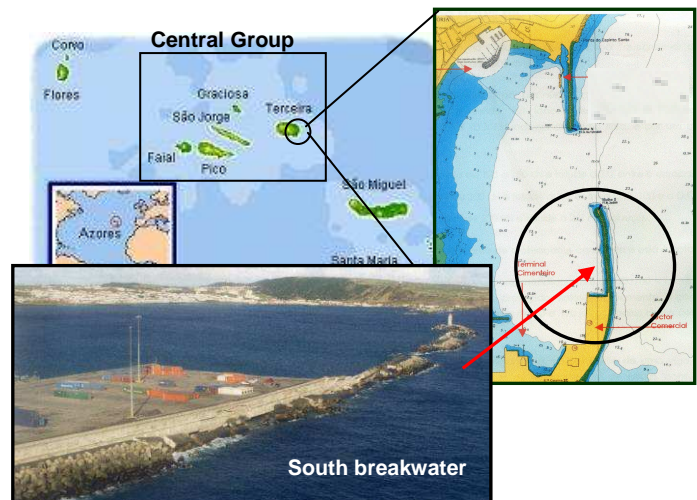


Fig. 1 - Location of Praia da Vitória harbour. South breakwater