

Durability of ancient lime mortars in humid environment

C. Borges [a](#), A. Santos Silva [b](#), R. Veiga [b](#)

^a Instituto Superior de Engenharia de Lisboa, Área Departamental de Engenharia Civil, Portugal

^b Laboratório Nacional de Engenharia Civil (LNEC), Lisboa, Portugal

Abstract

Historical buildings are important fingerprints of the history and culture of a region and its communities. Climatic and environmental conditions are often very severe for construction materials, namely in presence of high humidity or in direct contact with water and salts. However, some historical buildings have in our days a very good condition, probably due to careful construction and/or accurate materials selection and to a specific technology. The knowledge of old mortars composition has a fundamental role on the preservation of cultural heritage, allowing information about the used materials, their performance in their specific environment, conducting to adequate and compatible materials to conservation purposes. This article presents two case studies of historical buildings with important defense functions in Lisbon coast, in which ancient lime mortars were used under severe seaside environmental actions. Mortar samples from these two case studies are characterized and the relationship of their composition with the good performance and high durability observed is discussed.

Keywords:

Historical mortars, Air lime, Degradation/conservation, Durability, Humidity, Seaside