

ANCIENT MORTARS UNDER ACTION OF MARINE ENVIRONMENT: A PHYSICO-CHEMICAL CHARACTERIZATION

C. Borges¹, A. Santos Silva² and R. Veiga²

¹ Instituto Superior de Engenharia de Lisboa, Departamento de Engenharia Civil, Portugal, cristinaborges@dec.isel.ipl.pt

² Laboratório Nacional de Engenharia Civil, Lisboa, Portugal, ssilva@lnec.pt, rveiga@lnec.pt

Abstract Climatic and environmental conditions are often very severe for construction materials, namely in the presence of high humidity or in direct contact with water. However, some historical buildings currently are in very good condition due to careful construction and/or accurate materials selection and probably to a specific construction technology. This article presents the results of historical mortars characterization from two monuments: the Santa Marta Fortress in Cascais, near the Atlantic coast, and the Defence Wall of Lisbon town, in which lime mortars were used under severe environmental conditions. Historical buildings are important fingerprints of the history and culture of a region and its communities. The understanding of old mortar composition, based on integrated physico-chemical techniques, plays a fundamental role in the preservation of cultural heritage, allowing for information about the used materials, their performance in its environment, and the development of adequate and compatible materials for conservation.