PHOSPHATE-BASED TREATEMENT FOR STONE CONSOLIDATION IN TEMPERATE AND COOL CLIMATIC CONDITIONS. A CASE STUDY OF RÖDBO GAMLA KYRKOGÅRD HISTORIC SITE IN SWEDEN

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ABSTRACT
This research presents the surface consolidation treatment completed in 2015 by di-ammonium hydrogen phosphate (DAP) performed in situ on the historic stone objects of Rödbo Gamla Kyrkogård (Sweden). The objectives of this research is to introduce the novel phosphate-based treatment which has already proven its effectiveness in mild climatic conditions (i.e. Italy, Cyprus, Turkey) to the preservation of surfaces localized in more severe climate (such as Sweden).
Significant differences of stone decay acceleration between mild and severe climatic regions are considered as a background of the presented research in order to highlight the differences of the primary conditions and their meaning in the further surface treatment and to indicate if or to what extent they influence the outcomes.
This paper presents the preliminary studies subjected to that matter indicating the first results of surface consolidation obtained directly after the treatment and in middle-term reference (2 years) in terms of visual examination and attempts to indicate further research opportunities.

Key-words: consolidation, cultural heritage, DAP, hydroxyapatite, surface preservation.