

LIME-METAKAOLIN MORTARS FOR HISTORICAL BUILDINGS REPAIR: STUDY OF THE HARDENING REACTION

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ABSTRACT

Formulation of mortars with adequate durability and strength is nowadays one of the major challenges in historical buildings repair. Pozzolanic materials have been used during centuries in air lime mortars to improve their mechanic and durability characteristics.

This paper is part of an extensive work being developed in Portugal, aiming to characterize lime-metakaolin mortars to be employed for historical buildings conservation and repair.

This paper presents the results of hardening reaction study until 90 days of curing in humid conditions. The results show that in the adopted curing conditions, the hydration reaction occurs mostly for early ages of curing (28 days) while the carbonation reaction is mostly dominant for longer ages (90 days).

KEYWORDS: Metakaolin, XRD, TGA-DTA, masonry, air lime mortars, repair