KLOKNERŮV ÚSTAV ČVUT V PRAZE

Abstract

Lime (primarily hydraulic) binders undergo a transformation process in the long term when the mineralogical composition and the pore system change due to the action of atmospheric CO2 and moisture. The determination of the initial binder quality of the historic mortar carried out within the survey before the restoration intervention is thus considerably more difficult. The presented dissertation summarizes experimental research aimed at monitoring changes in chemical-mineralogical and physical properties of lime mortar samples after exposure to accelerated aging. The theoretical part presents a research summary of the state of identification of historical lime binders. In the experimental part of the work, a set of six mortars with binders of different quality was tested in three modes of accelerated aging, including various concentrations of carbon dioxide and the effect of the presence of liquid water. After 30 and 180 days, the influence of individual regimes on mineralogical composition (TGA / MS, XRD, NMR, Raman spectroscopy), porous system (MIP, N2 physisorption), mechanical strength, and microstructure (SEM/EDS) was evaluated.

ŠOLÍNOVA 7
166 08 PRAHA 6
ČESKÁ REPUBLIKA

IČ 68407700 | DIČ CZ68407700
BANKOVNÍ SPOJENÍ KB PRAHA 6
Č. Ú. 19-5504300237/0100