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CHEMICAL LEACHING IN NANOPOROUS STRUCTURAL CERAMICS

J. Calabria A., R.S.C. Magalhães, W.L. Vasconcelos - UFMG, Rua Espírito Santo, 35 - Centro - BH - Brasil; M.P. Ferreira - CDTN

In this work we studied the effects of leaching in the nanostructure of raw earth bricks (adobes) and fired bricks used as building materials. As leaching media we used deionized water and a solution containing $\text{Na}_2\text{S}_2\text{O}_5$ in order to simulate acid rain. The composition of the water was evaluated using a neutron activation technique. We carried out the leaching experiments using exposition times varying from one day to 100 days. The chemical composition of the residual liquid, after the leaching experiments, was measured using high performance liquid chromatography (HPLC). We followed the changes in Na^+ and K^+ contents with the time of leaching. Chemical groups present on the surfaces of the ceramics were evaluated using Fourier transform infrared spectroscopy (FTIR). We observed the presence of larger amounts of OH groups on the surface of the adobe.