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Using the Triple Mixture of Methylcellulose, Carboxymethylcellulose and Nano-Micro Calcium Hydroxide Particles for Paper Conservation

Abstract

This research reports the results of tests on the use of a three-component mixture containing optimal combinations of methyl cellulose, carboxymethyl cellulose and nano-micro particles of calcium hydroxide in the conservation of papers remoistened and aged in different ways. The application procedure was investigated by applying the three-component mixture on papers remoistened with water, alcohol and a water-alcohol mixture. Thermal and chemical artificially accelerated aged Whatman Nr. 1 filter paper and original newsprint of a newspaper published in 1924 were used as sample models for examination of the different methods.

The reaction on the paper samples was analysed by measuring tensile strength, folding endurance and whiteness and Scanning Electron Microscopy. The paper acidity was analysed by measuring alkaline reserve, surface pH and cold-water extract pH.