

Evaluation of various cellulose ethers effect on open time of ceramic tile adhesive mortars: rheological approach

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Ten cellulose-ethers (CE) were selected and tested in a cement based ceramic tile adhesive (CTA) formulation designed to highlight the effect of the CE on the end-use values of the mortars. Results showed that the open time and sag resistance values are strongly influenced by the latex-powder / CE choice. This is due to the competitive adsorption between these two components; in the fresh state, it affects the CE concentration in the pore solution and hence the viscosity of the mortar and setting time. Skinning and open time are also strongly related to the Latex powder – CE competitive adsorption, leading to thick skinning by CE film or drying of the upper layer of the CTA mortar. These effects were highlighted using rheological measurements. Test results showed that CTA formulations should be thought of in terms of the CE / latex-powder couple, since interactions between this couple and the cement, strongly influence end-use values of the mortar.