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RHEOLOGY OF MORTAR WITH PORTLAND-LIMESTONE CEMENT CEM II/A,B-LL IN RELATION TO PROPERTIES OF CEMENT

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Abstract

The paper presents the results of rheological research, conducted to examine how the properties and composition of cement affects the yield stress and plastic viscosity of Portland limestone cements. Portland limestone cements used in the research were obtained by mixing four Portland cements of various chemical and phase compositions with two limestones of different origin, in an amount of 6, 10, 20 and 30% of cement mass. The yield stress and plastic viscosity were determined using the Viskomat NT rheometer, after 5 and 60 minutes from combining the constituents. Obtained results indicate a significant effect of the C₃A content in cement on the rheological properties of mortars, mainly yield stress. The specific surface area of the tested cements has a lesser effect on the rheological properties of mortars with Portland limestone cements.

Keywords: Cement composition; Mortar rheology; Portland limestone cements; Rheology; Viscosity; Yield stress.