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Study of Metakaolin-Based Geopolymer with Addition of Polymer Admixtures

Authors : Olesia Mikhailova, Pavel Rovnaník

Abstract : In the present work, metakaolin-based geopolymer including different polymer admixtures was studied. Different types of commercial polymer admixtures VINNAPAS® and polyethylene glycol of different relative molecular weight were used as polymer admixtures. The main objective of this work is to investigate the influence of different types of admixtures on the properties of metakaolin-based geopolymer mortars considering their different dosage. Mechanical properties, such as flexural and compressive strength were experimentally determined. Also, study of the microstructure of selected specimens by using a scanning electron microscope was performed. The results showed that the specimen with addition of 1.5% of VINNAPAS® 7016 F and 10% of polyethylene glycol 400 achieved maximum mechanical properties.

Keywords : geopolymer, mechanical properties, metakaolin, microstructure, polymer admixtures, porosity
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