

Efficiency of Redispersible Polymer Powders in Mortars for Anchoring Application Based on Alkali Activated Portland Cements

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Abstract. Properties of dry mixes for anchoring application (increasing of mortars strength, adhesion, volume stability etc.) based on alkali activated Portland cement (AAPC) are influenced by different factors. One of them is application of chemical admixtures with different functionality. Adhesive properties are mainly achieved by redispersible polymer powders (RPP). The main problem in choice of RPP's type is destruction of their molecules with ester links due to alkaline hydrolysis.

The purpose of work was investigation of RPP's molecular structure influence on properties of mortar for anchoring application based on AAPC and determination of the most effective.

Efficiency of RPP based on copolymer of versatile acid ester was shown. The application of this RPP provides adhesion of 1.1 MPa and consistency of 190 mm. Positive effect of copolymer of ethylene and vinyl acetate was shown despite of partial destruction of RPP's molecule as a result of alkaline hydrolysis of vinyl acetate at early terms of hardening. Negative effect of RPP is in decreasing of mortar strength. Thus this problem solving is decreasing of powder content to values which provide necessary physical-mechanical properties (strength, adhesion).