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Obtaining the Hydraulic Concrete Resistant to the Aggressive Environment by Using Admixtures

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Abstract : The research aim is to study the physical and mechanical characteristics of hydraulic concrete in the surface active environment. The specific goal is to obtain high strength and low deformable concrete based on nano additives, resistant to the aggressive environment. As result of research, the alkali-silica reaction was improved (relative elongation 0,122 % of admixture instead of 0,126 % of basic concrete after 14 days). The aggressive environment impact on the strength of heavy concrete, fabricated on the basis of the hydraulic admixture with the penetrating waterproof additives also was improved (strength on compression R28=47,5 mPa of admixture instead of R28=35,8 mPa). Moreover, water absorption (W=0,59 % of admixture instead of W=1,41 %), water tightness (R14=37,9 mPa instead R14=28,7 mPa) and water-resistance (B=18 instead B=12). The basic parameters of concrete with admixture was improved in comparison with basic concrete.

Keywords : hydraulic concrete, alkali-silica reaction, water absorption, water-resistance
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