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Some Aspects of Study the Leaching and Acid Corrosion of Concrete

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Abstract : Although properly made concrete is inherently a durable material, there are many physical and chemical forces in the environment which can contribute to its deterioration. This paper deals with two aspects of concrete durability in chemical aggressive environment: degradation effect of particular aggressive exposure and role of particular mineral additives. Results of the study of leaching and acid corrosion processes in samples prepared with specific dosage of microsilica and zeolite are given in the paper. Corrosion progress after 60-day exposition is manifested by increasing rate of both Ca and Si release, what is identified by XRF method. Kind and dosage of additions used in experiment was found to be helpful for stabilization of concrete microstructure. The lowest concentration of mean elements in leachates was observed for mixture V1 (microsilica only) unlike the V2 (microsilica + zeolite). It is surprising in the terms of recommendations of zeolite application for acid exposure. Using microsilica only seems to be more effective.

Keywords : sustainability, durability, concrete, acid corrosion, leaching
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