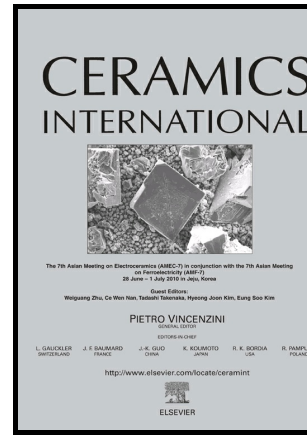


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Demirboğa



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Sulfate Resistance of Ferrochrome Slag Based Geopolymer Concrete

Mehmet Burhan KARAKOÇ^{1*}, İbrahim TÜRKMEN¹, Müslüm Murat MARAŞ²,

Fatih KANTARCI¹, Ramazan DEMİRBOĞA^{3,4}

¹Department of Civil Engineering, İnönü University, Malatya, Turkey

²Department of Civil Engineering, Kilis 7 Aralık University, Kilis, Turkey

³Department of Civil Engineering, Atatürk University, Erzurum, Turkey

⁴King Abdulaziz University, Engineering Fac., Civil Engineering Dep., Jeddah, Saudi Arabia

Abstract

This paper presents the study of the performance of a new geopolymer binding material exposed to sulfate attack. Geopolymer binding material was obtained by alkaline activating FS with chemical materials (NaOH and Na₂SiO₃). Geopolymer concrete samples were produced by mixing this binding material with river sand and crushed sand aggregates. Test specimens were immersed in magnesium sulphate solutions (by weight 3%, 5% and 7%) for various periods of time and the durability of geopolymer concrete was investigated. The residual compressive strength (90 and 180 days), change in weight and length of samples, pH variation of solution and visual appearance of these samples were obtained experimentally. It was concluded that compressive strength of both geopolymer and Ordinary Portland Cement (OPC) based concrete samples decreases with increasing in MgSO₄ content and exposure duration. After exposed to 7% MgSO₄ solution for 180 days, the minimum decrease in

* Corresponding author: M. Burhan Karakoç, +904223774880, mehmet.karakoc@inonu.edu.tr

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