

Estimation of Opc, Fly Ash and Slag Contents in Blended and Composite Cements by Selective Dissolution Method

Authors : Suresh Palla

Abstract : This research paper presents the results of the study on the estimation of fly ash, slag and cement contents in blended and composite cements by novel selective dissolution method. Types of cement samples investigated include OPC with fly ash as performance improver, OPC with slag as performance improver, PPC, PSC and Composite cement confirming to respective Indian Standards. Slag and OPC contents in PSC were estimated by selectively dissolving OPC in stage 1 and selectively dissolving slag in stage 2. In the case of composite cement sample, the percentage of cement, slag and fly ash were estimated systematically by selective dissolution of cement, slag and fly ash in three stages. In the first stage, cement dissolved and separated by leaving the residue of slag and fly ash, designated as R1. The second stage involves gravimetric estimation of fractions of OPC, residue and selective dissolution of fly ash and slag contents. Fly ash content, R2 was estimated through gravimetric analysis. Thereafter, the difference between the R1 and R2 is considered as slag content. The obtained results of cement, fly ash and slag using selective dissolution method showed 10% of standard deviation with the corresponding percentage of respective constituents. The results suggest that this novel selective dissolution method can be successfully used for estimation of OPC and SCMs contents in different types of cements.

Keywords : selective dissolution method , fly ash, ggbfs slag, edta

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