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STRENGTH AND MICRO-STRUCTURAL CHARACTERISTICS OF SLAG-FLY ASH BASED CEMENTITIOUS MATERIALS

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Abstract

Slag-Fly Ash Based cementitious material materials with high volume of fly ash and slag and less cement clinker was prepared, with low water requirement, well fluidity and with high strength, and can be used to the preparation of High Performance Concrete (HPC). When the W/C is 0.36, the 28d compressive strength is 58.93 Mpa, 28d flexural strength is 14.26 Mpa. By X-Ray diffraction analysis (XRD) and Scanning Electron Microscope (SEM) analysis, the results show that main materials in grinded sample have well activated by mechanical force and chemical action, and more ettringite (Aft) have observed in 3 days hydration products, much C-S-H gel has continuously generated with the process of hydration time, therefore, the micro-structural characteristics of hydration products were investigated.

Key words: cementitious material, fly ash, hydration products, SEM, slag, XRD

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