Hydration Behavior of Manufactured Ordinary Portland Cement Using Cement Paste Powder of the Waste Concrete

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In this study, hydration behavior of Manufactured Ordinary Portland cement using fine powder byproducts through treatment of waste concrete. The fine powder produced by heating and grinding of the waste concrete in the waste construction was utilized as substitution raw materials of SiO_2, CaO, and Al_2O_3 source for OPC clinker manufacture. In order to synthesize OPC clinker, limestone, shale, converter slag and fly ash were used as main raw materials. And the modulus was fixed LSF 91.0, SM 2.60, and IM 1.60. The main products of synthesized clinker in this study were C_3S, ß-C_2S, C_3A, C_4AF as OPC clinker at 1,450℃. As a result of TG-DTA and burnability (B.I) analysis of each raw mixtures, the formation temperature of clinker phases was similar and burnability of clinker synthesized was showed easy burning. And the manufactured OPC utilizing fine cement paste powder hydrated as similar to that of OPC.