Study on Aging Behavior of Incinerator Fly Ash Solidification

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ABSTRACT

The research focuses on the incinerator raw ash without complicated parts of pre-disposal technique and complexing agents. Incineration ash ’ s volume is real small, which could fill up the hole of concrete and has high percentage of calcium. Moreover, raw ash could cause the hydration with cement and water. Solidification with 20%、40%、60%、80% replacement of fine aggregates by fly ash were studied. The affection of heavy metal was examined by aging test and long-term static leach test. The results show that, at the initial stage, the strength of samples increase from 24.8 ~11.2kgf/cm2 to 160.5 ~117.1 kgf/cm2, then decrease to 50kgf/cm2. The TCLP leaching value of copper, lead and cadmium in the all samples are 70% belowr the standard. The maxium of static leaching value were 0.121 mg/L、2.266 mg/L、0.143mg/L respectively. Porosity increased with the ratio of raw ash. Finally, the simple linear regression method was used to analyze the relation among strength, porosity and leachates.

Keywords : Incineration fly ash ; Cement-based solidification ; Long-term leaching ; Porosity

Table of Contents

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