

Investigation on Hydration Mechanism of Eco-Friendly Concrete

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Abstract : The hydration process of a green concrete with differences on fly ash and the poly-lactic acid ratio was investigated using electrical resistivity measurement. The results show that the hydration process of proposed concrete was significantly different with concrete containing petroleum aggregate. Moreover, a microstructure analysis corresponding to each hydration stage is conducted with scanning microscope for poly-lactic acid and expanded polystyrene concrete. In addition, specific equations using the variables of this study were developed to understand and predict the relationship between setting time and resistivity development of proposed concrete containing eco-friendly aggregate.

Keywords : green concrete, SEM, hydration mechanism, eco-friendly aggregate

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