Delayed Sulfate Formation On Concrete Structure

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Considering the degradation causes of cast-in-place concrete structure in which cracks are generated, possibility of Delayed Sulfate Formation (including Delayed Ettringite Formation: DEF) and Alkali-Silica Reaction (ASR) were examined. Delayed Sulfate Formation is possible to be formed in this structure because crabmeat-like products are found in cement paste and their constitution is similar to ettringite. Implementing transient thermal conduction simulation analysis for concrete structures, this concrete structure will reach the temperature necessary to generation of DEF by its own heat generation under some curing conditions. ASR can be also formed by this structure, but ASR is not the main cause of the cracks.