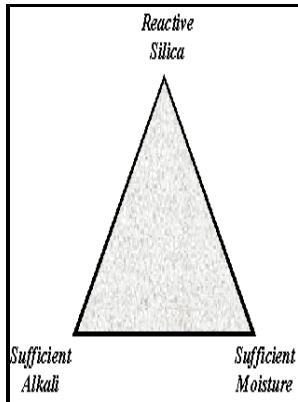


Cracking due to alkali-silica reaction and its effect on durability properties of concrete

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The effect of fly ash composition on the expansion of concrete due to alkali

The higher the slag and fly ash content, the less the quartz glass was corroded and the lower the expansion of mortar. In all cases, new water supply caused fast, large expansions. The relationships found for the concretes and the mortars overlap when normalised by the aggregate content.

The effect of fly ash composition on the expansion of concrete due to alkali

ASR is a chemical reaction that generates a secondary product, which induces expansive pressure within the reacting aggregate material and adjacent cement paste upon moisture uptake, leading to cracking, loss of material integrity, and functionality of the affected structure.

Relation of expansion due to alkali silica reaction to the degree of reaction measured by SEM image analysis (Journal Article)

The relative dynamic modulus of samples with expansion levels of 0. In plain concrete and in parts of reinforced concrete structures where there is little or no surface reinforcement, cracking tends to be irregular and maplike. Usually, SP are used when specific demands in regard to workability, strength or durability have to be met.

Influence of superplasticizers on pore solution composition and on expansion of concrete due to alkali

The data from this study provide further support for the use of the accelerated mortar bar test as a means for evaluating the efficacy of pozzolans in controlling expansion due to alkali—silica reaction ASR. The American Concrete Institute Founded in 1904 and headquartered in Farmington Hills, Michigan, USA, the American Concrete Institute is a leading authority and resource worldwide for the development, dissemination, and adoption of its consensus-based standards, technical resources, educational programs, and proven expertise for individuals and organizations involved in concrete design, construction, and materials, who share a commitment to pursuing the best use of concrete. This paper investigates the effect of different conditions on the development of concrete expansions due to alkali-silica reaction ASR , delayed ettringite formation DEF and their combination.

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