

Evaluation of the alkali-silica reactivity of rocks from Iran, ARAS region

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Abstract

This paper presents the results of a study on alkali silica reactivity of igneous rock deposits from ARAS region located at North-West of Iran which are going to be used in construction of ARAS dam and power plant.

While tremendous amount of research works have been carried out over the past few decades to develop quick and reliable test procedures for determining the potential alkali reactivity of concrete aggregates, few researches are available in Iranian concrete practices.

Petrographic studies, accelerated mortar bar test (AMBT) and concrete prism test (CPT) have been carried out in order to have better understanding of alkali reactivity of the deposits. On the other hand application of silica fume to reduce the risk of deleterious expansions has been investigated.

Results of different tests are discussed in a comparative base, from the view points of ASR potential, and the effect of SF to control the reactions.

Keywords: Alkali silica reaction, Expansion, Mortar bar, Prism, Petrography, Silica fume

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