Australian Standard®

Methods for sampling and testing aggregates

Method 65: Alkali aggregate reactivity—Qualitative petrological screening for potential alkali-silica reaction

1 SCOPE

This Standard sets out the method for the petrographic examination of concrete aggregates or source rock that will identify those minerals and rock types that may react with alkali hydroxides in concrete pore solutions.

The method recognizes that most routine examinations are performed as an initial screening of materials and that all that is required is a qualitative indication of potential reaction. In limited instances, a more precise measure of the sample mineralogy may be warranted.

The method does not address the procedures for mineral or rock identification. It is assumed that the method will be used by a person who is trained and experienced in geology and petrography, with experience of materials used for concrete and with a good knowledge of alkali reactive aggregates and minerals.

The method is not applicable to alkali-carbonate reactive materials.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1141	Methods for sampling and testing aggregates
1141.1	Method 1: Definitions
1141.2	Method 2: Basic testing equipment
2758	Aggregates and rock for engineering purposes
2758.1	Method 1: Concrete aggregates

3 DEFINITIONS

For the purpose of this Standard, the definitions in AS 1141.1 and those below apply:

3.1 Alkali-aggregate reaction (AAR)

Chemical/physical expansive reaction in mortar or concrete between reactive mineral phases in aggregates and alkali hydroxide in the pore solution of the cement paste or from external sources. The reaction is divided in two types—

(a) alkali-silica reaction (ASR); and

(b) alkali-carbonate reaction (ACR).

NOTE: Worldwide, the occurrence of ASR is much more common than the occurrence of ACR.

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