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(JCI)

**Method of test for alkali-silica reactivity of
aggregates by chemical method**

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Land, Infrastructure, Transport and Tourism through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Concrete Institute (JCI) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14. Consequently **JIS A 1145:2007** is replaced with this Standard.

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Method of test for alkali-silica reactivity of aggregates by chemical method

1 Scope

This Japanese Industrial Standard specifies the chemical test method (hereafter referred to as chemical method) to judge, relatively promptly, the reactivity of alkali-silica of aggregates to be used for concrete. This Standard is not applicable to artificial lightweight aggregates (coarse or fine). In addition, the judgement in clause 11 is not applicable to aggregates taken from hardened concrete.

This test method is intended to judge alkali-silica reactivity; aggregates which could show other types of reaction need to be subject to petrographic examination.

The comparison table between previous and current editions of this Standard on technically significant revisions is given in Annex A.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS A 0203 *Concrete terminology*

JIS A 1158 *Method for reducing samples of aggregate to testing size*

JIS K 0115 *General rules for molecular absorptiometric analysis*

JIS K 0121 *General rules for atomic absorption spectrometry*

JIS K 8001 *General rule for test methods of reagents*

JIS P 3801 *Filter paper (for chemical analysis)*

JIS Z 8801-1 *Test sieves — Part 1 : Test sieves of metal wire cloth*

3 Terms and definitions

For the purposes of this Standard, the terms and definitions given in JIS A 0203 and the following apply.

3.1 alkali-silica reaction, ASR

the phenomenon in which a product, produced by reaction between reactive silica (silicon dioxide, SiO_2) in aggregates and alkali (Na^+ , K^+ , etc.) in concrete, absorbs water and swells, causing cracks or the like in concrete

3.2 reduction in alkalinity, R_c

amount of sodium hydroxide consumed by the reaction with aggregates