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

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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

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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.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, applications for a patent after opening to the public or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, applications for a patent after opening to the public or utility model rights.

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, *Rc*

amount of sodium hydroxide consumed by the reaction with aggregates