

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS A 1146 : 2017

(JCI)

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

ICS 91.100.01

Reference number : JIS A 1146 : 2017 (E)

PROTECTED BY COPYRIGHT

7 5

A 1146 : 2017

Date of Establishment: 2001-03-12

Date of Revision: 2017-03-25

Date of Public Notice in Official Gazette: 2017-03-27

Investigated by: Japanese Industrial Standards Committee

Standards Board for ISO area

Technical Committee on Civil Engineering

JIS A 1146 : 2017, First English edition published in 2017-09

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

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

© JSA 2017

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

KK/HN

PROTECTED BY COPYRIGHT

Contents

		Page
1	Scope	1
2	Normative references	1
3	Sample	1
4	Test apparatus and instruments	2
4.1	Apparatus and instruments for sample preparation	2
4.2	Test apparatus and instruments	2
5	Temperature and humidity	2
5.1	Moulding room and measurement room	2
5.2	Storage container	2
6	Materials	3
6.1	Preparation and grade adjustment of aggregate	3
6.2	Cement	3
6.3	Sodium hydroxide	3
6.4	Water	4
7	Forming of specimen (mortar bar)	4
7.1	Number of specimens	4
7.2	Proportion of mortar	4
7.3	Weighing of materials	4
7.4	Mixing method	4
7.5	Moulding	4
8	Initial curing	5
9	Demoulding	5
10	Initial reading	5
11	Storage and measurement	5
12	Measuring method	5
13	Material age for measurement	6
14	Calculation of expansion coefficient	6
15	Accuracy	6
16	Judgement of alkali-silica reactivity of aggregates	6
17	Report	7
Annex A (informative) Comparison table between previous and current editions of this Standard on technically significant revisions		8

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 1146:2007** is replaced with this Standard.

This **JIS** document is protected by the Copyright Law.

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 mortar-bar method

1 Scope

This Japanese Industrial Standard specifies the test method (hereafter referred to as mortar-bar method) to judge the alkali-silica reactivity¹⁾ of aggregates by measuring the length change of mortar-bar. This Standard is not applicable to artificial lightweight aggregates (coarse or fine). In addition, the judgement in clause 16 is not applicable to aggregates taken from hardened concrete.

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

Note 1) The term and definition of alkali-silica reactivity (ASR) is specified in 3.1 of JIS A 1145.

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 1129-3 *Methods of measurement for length change of mortar and concrete — Part 3 : Method with dial gauge*

JIS A 1145 *Method of test for alkali-silica reactivity of aggregates by chemical method*

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

JIS K 8576 *Sodium hydroxide (Reagent)*

JIS R 5201 *Physical testing methods for cement*

JIS R 5210 *Portland cement*

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

3 Sample

The aggregates used for the test shall be the unused aggregates or aggregates in fresh concrete. For aggregates taken from fresh concrete, wash sufficiently to remove the cement paste, etc. Take approximately 40 kg of representative samples from coarse and fine aggregates.

When performing the mortar-bar method following the chemical method, use the samples which were taken simultaneously.