AS 1141.60.2:2014
(Incorporating Amendment No. 1)

Australian Standard®

AS 1141.60.2:2014

Methods for sampling and testing aggregates

Method 60.2: Potential alkali-silica reactivity—Concrete prism method

PREFACE

This Standard was prepared by Standards Australia Committee CE-012, Aggregates and Rock for Engineering Purposes.

This Standard incorporates Amendment No. 1 (April 2016). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

This test method for alkali-silica reaction is based on American Standard ASTM C1293-95, *Standard Test Method for Determination of Length Change of Concrete Due to Alkali-Silica Reaction*, and a review of Canadian Standard, CSA A23.2-09, *Test Methods And Standard Practices for Concrete, Section 14A*, *Test Methods for Potential Expansivity of Cement-Aggregate Combination (Concrete Prism Expansion Method)*, with modifications to suit Australian conditions. The principal modification is given to allow the use of cement with a lower alkali content as obtaining Australian cement with an alkali content of 0.9%, as used in the ASTM procedure, is difficult.

The term 'informative' has been used in this Standard to define the application of the appendix to which it applies. An 'informative' appendix is only for information and guidance.

WARNING: SOME OF THE CHEMICALS OR PROCEDURES SPECIFIED IN THIS STANDARD COULD LEAD TO A HAZARDOUS SITUATION IF CORRECT SAFETY MEASURES ARE NOT FOLLOWED. PERSONS USING THIS AUSTRALIAN STANDARD MUST BE FAMILIAR WITH NORMAL LABORATORY PRACTICE. THIS STANDARD DOES NOT ADDRESS THE SAFETY PROBLEMS, IF ANY, ASSOCIATED WITH ITS USE. IT IS THE RESPONSIBILITY OF THE LEGAL ENTITY USING THIS STANDARD TO ESTABLISH APPROPRIATE SAFETY AND HEALTH PRACTICES, TO ENSURE COMPLIANCE WITH ANY NATIONAL, STATE OR LOCAL REGULATORY REQUIREMENTS, AND TO INSTRUCT IN, AND ENFORCE COMPLIANCE OF, THE SAFETY AND HEALTH PRACTICES.

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(a) Paragraph 4 of Clause 1, *Scope*.

(b) Clause 4.9, *Storage container* (modified).

(c) Clause 4.10.1, *Storage environment—General* (modified).

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(d)	Clause 4.10.2, *Storage environment—Required environment*.
(e)	Clause 8.2, *Storage procedures* (modified).
(f)	Item (a) of Clause 9, *Calculation*.
(g)	Item (a) of Clause 11, *Test report*.

METHOD

1 SCOPE

This Standard sets out the procedure to classify aggregate according to its susceptibility to alkali attack leading to expansive reactions in concrete. This expansion is known as alkali-aggregate reaction (AAR) (see Note). The classification is determined from the measured increase in length of concrete prisms prepared using the aggregate under consideration, during storage of the prisms under the prescribed test conditions.

NOTE: The test is suitable for alkali-silica reactivity. It is not suitable for alkali-carbonate reactivity.

The method has been found to correlate well with field performance.

The method is suitable for both coarse and fine aggregates.

This method does not purport to address the safety concerns, if any, associated with its use. It is the responsibility of the user of this Standard to establish appropriate health and safety practices and determine the applicability of regulatory limitations prior to use.

NOTE: See Preface for copyright information about this Clause.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1012	Methods of testing concrete	
1012.2	Method 2:	Preparing concrete mixes in the laboratory
1012.3.1	Method 3.1:	Determination of properties related to the consistency of concrete—Slump test
1012.4.2	Method 4.2:	Determination of air content of freshly mixed concrete—Measuring reduction in air pressure in chamber above concrete
1012.5	Method 5:	Determination of mass per unit volume of freshly mixed concrete
A1 1012.8.4	Method 8.4:	Method for making and curing concrete—Drying shrinkage specimens prepared in the field or in the laboratory
1141	Methods for sampling and testing aggregates	
1141.1	Part 1:	Definitions
1141.3.1	Method 3.1:	Sampling—Aggregates
1141.3.2	Method 3.2:	Sampling—Rock spalls and boulders
1141.4	Method 4:	Bulk density of aggregate
1141.60.1	Method 60.1:	Potential alkali-silica reactivity—Accelerated mortar bar method
2350	Methods of testing portland, blended and masonry cements	
2350.12	Method 12:	Preparation of a standard mortar and moulding of specimens
2758	Aggregates and rock for engineering purposes	
2758.1	Part 1:	Concrete aggregates
3972	General purpose and blended cements	

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