

STANDARDS AUSTRALIA

RECONFIRMATION
OF
AS 2350.2—2006
Methods of testing portland, blended and masonry cements
Method 2: Chemical composition

RECONFIRMATION NOTICE

Technical Committee BD-010 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Reconfirmed documents cannot be amended, but may be formally revised and a new edition published.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 24 February 2016.

The following are represented on Technical Committee BD-010:

AUSTROADS
Cement & Concrete Association of New Zealand
Cement Concrete & Aggregates Australia
Cement Concrete & Aggregates Australia – Cement
Cement Concrete & Aggregates Australia – Concrete
Concrete Institute of Australia
Concrete Masonry Association of Australia
Engineers Australia
Portland Cement Association

NOTES

Australian Standard®

AS 2350.2—2006

Methods of testing portland, blended and masonry cements**Method 2: Chemical composition****1 SCOPE**

This Standard sets out the method for determining, by proven chemical methods, the required composition of cement.

NOTES:

- 1 The testing procedure herein may involve the use of materials or equipment that require safety measures to be observed.
- 2 This Standard does not purport to address all of the safety concerns, if any, associated with its use.
- 3 The user of this Standard should establish appropriate safety and health practices, and determine the applicability of regulatory limitations prior to use.

2 APPLICATION

The method of analysis chosen shall be qualified by the procedures in Clause 4, excepting those for loss on ignition and insoluble residue for which methods are set out in Clauses 5.5.2 and 5.5.3.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

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| 2162 | Verification and use of volumetric apparatus |
| 2162.1 | Part 1: General—Volumetric glassware |
| 2162.2 | Part 2: Guide to the use of piston-operated volumetric apparatus (POVA) |
| 2706 | Numerical values—Rounding and interpretation of limiting values |
| 2830 | Good laboratory practice |
| 2830.1 | Part 1: Chemical analysis |

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| 2350 | Methods of testing portland, blended and masonry cements |
| 2350.1 | Method 1: Sampling |

4 QUALIFICATION OF CHOSEN METHOD**4.1 Principle**

The chemical composition of at least four internationally accredited cement standard reference materials (SRM) shall be determined on duplicate portions using the chosen test method. The difference between duplicate values for each component and the deviation of the mean of the values from the certified value shall be compared with the figures given in Table 1. Where possible, the SRM shall be selected to cover the expected range of component percentages.

Where SRMs have been used for calibration purposes, different SRMs shall be used for qualification.

The method of test for each component shall be qualified individually, as outlined in Clause 4.2, before use and after relocation or replacement of any instrument used.

4.2 Procedure

The chosen test method shall be fully documented and proven as follows:

- (a) Using the chosen test method, the duplicate portions of the four SRMs for the required constituents shall be analysed. The duplicate portions shall be tested on different days.
- (b) The difference between duplicate values for each constituent shall not exceed the maximum value given in Column 2 of Table 1 for at least three of the four SRMs and twice the maximum value for the fourth.
- (c) The arithmetic mean of duplicate determinations for each constituent shall not differ from the certified value by more than the maximum value shown in Column 3 of Table 1 for at least three of the four SRMs and by twice the maximum value for the fourth.
- (d) If more than one instrument or set of equipment is used in a laboratory for the same test method, each shall be qualified separately.
- (e) Provided that the method of test meets the requirements set down in Items (b) and (c), it may be used to determine the chemical composition of portland cement.
- (f) For the purpose of qualification only, all results determined by a chosen analytical method shall be fully documented, dated and recorded to the nearest 0.01% and identified by the analyst.

5 ANALYSIS OF PORTLAND CEMENT SAMPLES

5.1 General

Methods of analysis that have been qualified according to Clause 4.2 shall be used.

5.2 Analysis

5.2.1 General

The cement samples shall be analysed using the procedures in Clauses 5.5.2 and 5.5.3 for loss on ignition and insoluble residue respectively, and using the proven test method for the other constituents.

At least one appropriate reference material shall be analysed and recorded on each day that unknown samples are analysed.

Where the results for the reference analysis differ from the certified values by more than the amount shown in Column 4 of Table 1, the unknown analysis shall not be accepted.

NOTE: Depending upon the method of determining SO_3 , the sulfur contributed by the presence of sulfides, which can occur in some blended cements, may or may not be included in the result when expressed as SO_3 . For example, dissolution of the sample in dilute HCl will generally volatilize the sulfides as H_2S , but analysis by XRF will detect the total sulfur. In such cases, especially if there is a question of meeting a specification or when the most accurate results are desired, analytical test methods should be chosen so that sulfate and sulfide can be reported separately.

5.2.2 Results

No corrections shall be applied to the results of unknown analysis for any deviation of the analysis of the reference material from the accepted value.