AS 2503.3—2006
Reconfirmed 2017

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Australian Standard®

Refractories and refractory materials—Chemical analysis

Part 3: High alumina materials

This Australian Standard® was prepared by Committee MN-007, Refractories and Refractory Materials. It was approved on behalf of the Council of Standards Australia on 7 June 2006. This Standard was published on 30 June 2006.

The following are represented on Committee MN-007:

- Australasian Ceramic Society
- Australasian Institute of Mining and Metallurgy
- Bureau of Steel Manufacturers of Australia
- CSIRO Manufacturing and Infrastructure Technology
- Cement Industry Federation
- Institute of Refractories Engineers
- Refractories Manufacturers Association of Australia
- The University of New South Wales

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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through public comment period.

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STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 2503.3—2006
Refractories and refractory materials—Chemical analysis
Part 3: High alumina materials

RECONFIRMATION NOTICE

Technical Committee MN-007 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.

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The following are represented on Technical Committee MN-007:

Australian Ceramic Society
Bureau of Steel Manufacturers of Australia
Cement Industry Federation
CSIRO
Institute of Refractories Engineers
Refractories Manufacturers Association of Australia
The University of New South Wales

NOTES

Australian Standard®

Refractories and refractory materials—Chemical analysis

Part 3: High alumina materials

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PREFACE

This Standard was prepared by the Standards Australia Committee MN-007, Refractories and Refractory Materials, to supersede AS 2503.3—1985. It describes the chemical analysis of high alumina refractory materials.

Other parts of the Standard describing the chemical analysis of other refractory materials in the series as follows:

Part 1: Silica refractories

Part 2: Aluminosilicate refractories

Part 4: Dolomites and magnesites

Part 5: Chrome-bearing materials

In preparing this Standard, the Committee drew extensively upon the corresponding work of ISO/TC 33, Refractories, and the methods specified in BS 1902, *Methods of testing refractory materials*. The Committee also took into consideration the present practices of Australian industry and testing laboratories, details being established or verified, where necessary, by reference to the staff of refractories testing laboratories.

The objective of this revision is to bring the Standard into alignment with current style.

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.

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out methods for the sampling, preparation of sample and analysis of high alumina refractories and high alumina refractory materials. Procedures are described for determining—

(a) the loss on ignition; and

(b) the chemical composition, viz the amount of silicon, phosphorus, aluminium, iron, titanium, manganese, calcium, magnesium, sodium, potassium and lithium present, expressed as the oxides of these elements.

Table 1.1 illustrates the typical range of composition of high alumina refractories and the associated form of expression. This Standard applies to materials whose compositions are within that range.

TABLE 1.1

TYPICAL COMPOSITION OF HIGH ALUMINA REFRACTORY MATERIALS

Constituent	Range, percent
Aluminium oxide as Al_2O_3	≥ 46*
Silicon dioxide as SiO_2	≤ 55
Calcium oxide as CaO	≤ 5
Iron (I II) oxide as Fe_2O_3	≤ 5
Potassium oxide as K_2O	≤ 5
Titanium dioxide as T_iO_2	≤ 3
Magnesium oxide as MgO	≤ 3
Phosphorus pentoxide as P_2O_5	≤1.5
Manganese oxide as MnO	≤1.0
Sodium oxide as Na_2O	≤ 0.5
Lithium oxide as Li_2O	≤ 0.5

* To determine aluminium oxide contents of less than 46 percent (*m*/*m*) see AS 2503, Parts 1 and 2.

