AS 2503.1—2006
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Australian Standard®

Refractories and refractory materials—Chemical analysis

Part 1: Silica refractories

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

This Standard was issued in draft form for comment as DR 06085.

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 2503.1—2006

Refractories and refractory materials—Chemical analysis

Part 1: Silica refractories

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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Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 19 August 2015.

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 1: Silica refractories

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PREFACE

This Standard was prepared by the Standards Australia Committee MN-007, Refractories and Refractory Materials, as a revision of AS 2503.1—1996, *Refractories and refractory materials—Chemical analysis*, Part 1: *Silica refractories*. It deals with the chemical analysis of silica refractory materials.

Other parts of this Standard dealing with the chemical analysis of the other refractory materials, are as follows:

Part 2: Aluminosilicate refractories

Part 3: High alumina materials

Part 4: Dolomites and magnesites

Part 5: Chrome-bearing materials

The Committee acknowledges the documented work of ISO/TC 33, Refractories, and the reference Standard BS 1902, *Methods of testing refractory materials*, which were used as source materials in the development of this Standard.

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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Part 1: Silica refractories

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard sets out methods for the sampling, preparation of samples and analysis of silica refractories and 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 composition of silica refractories and the associated form of expression.

NOTE: A schematic presentation of the analytical procedures in this Standard is given in Appendix A.

TABLE 1.1

COMPOSITION OF SILICA REFRACTORY MATERIALS

Constituent	Expressed as	Range, percent
Silicon dioxide	SiO_2	≥93
Aluminium oxide	Al_2O_3	0 to 5
Calcium oxide	CaO	0 to 4
Iron(III) oxide	Fe_2O_3	0 to 3
Potassium oxide	K_2O	0 to 0.25
Titanium(IV) dioxide	TiO_2	0 to 2
Magnesium oxide	MgO	0 to 0.5
Phosphorus pentoxide	P_2O_5	0 to 0.25
Manganese(II) oxide	MnO	0 to 0.25
Sodium oxide	Na_2O	0 to 0.25
Lithium oxide	Li_2O	0 to 0.25

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS
1152 Specification for test sieves

