Australian Standard™

Prepared unshaped refractory materials

Part 1: Dense

Standards Australia

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 14 March 2003 and published on 25 March 2003.

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Australasian Ceramic Society

Australasian Institute of Mining and Metallurgy

Australian Aluminium Council

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Institute of Refractories Engineers

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This Standard was issued in draft form for comment as DR 02460.

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Originated as AS 4045.1—1993.
Second edition 2003.

Published by Standards Australia International Ltd
GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 5142 3

PREFACE

This Standard was prepared by Standards Australia Committee MN-007, Refractories and Refractory Materials to provide a classification of castable and mouldable refractories. It supersedes AS 4045.1—1993.

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1 SCOPE

This Standard provides a classification and designation of prepared unshaped dense refractory materials. It does not apply to refractory materials that have been crushed or granulated.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS
1152 Specification for test sieves

2780 Refractories and refractory materials—Glossary of terms

3 DEFINITIONS

For the purpose of this Standard, the definitions given in AS 2780 and those below apply.

3.1 Prepared unshaped refractory materials

Mixtures (see Note) that consist of an aggregate and bond or bonds, prepared ready for use either directly in the condition in which they are supplied or after the addition of one or more suitable liquids, and that satisfy the requirement on refractoriness given in AS 2780.

NOTE: These mixtures could be either dense or insulating. Insulating mixtures are those whose true porosity is not less than 45% when determined on a test specimen fired according to specified conditions.

3.2 Ceramic bond

The vitreous or crystalline bond that develops as a result of thermochemical reactions occurring when refractory materials are subjected to elevated temperatures.

3.3 Chemical bond

A bond that is achieved by chemical reaction and that imparts mechanical strength to refractories.

3.4 Hydraulic bond

A bond that causes setting and hydraulic hardening at ambient temperature.

3.5 Organic bond

A bond achieved by the addition of an organic material having binding or hardening characteristics.

NOTE: When several bonds are used conjointly, the bond is designated according to the nature of that bond that plays the principal part during the hardening.

3.6 Coatings

Mixtures of fine refractory aggregate and bonding agents.