

Australian Standard[®]

**Refractories and refractory materials—
Physical test methods**

Method 7: Permeability to gases



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 October 2008.

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The following are represented on Committee MN-007:

- Australasian Institute of Mining and Metallurgy
 - Australian Aluminium Council
 - Australian Ceramic Society
 - Bureau of Steel Manufacturers of Australia
 - CSIRO Manufacturing & Materials Technology
 - Cement Industry Federation
 - Institute of Refractories Engineers
 - Refractories Manufacturers Association of Australia
 - The University of New South Wales
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Refractories and refractory materials— Physical test methods

Method 7: Permeability to gases

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PREFACE

This Standard was prepared by the Standards Australia Committee MN-007, Refractories and Refractory Materials, to supersede AS 1774.7—2001, *Refractories and refractory materials—Physical test methods, Method 7: Permeability to gases*.

The objective of this Standard is to provide the refractories industry with an internationally accepted method for the measurement of the permeability to gases of dense, shaped refractory products.

This Standard is identical with, and has been reproduced from ISO 8841:1991, *Dense, shaped refractory products—Determination of permeability to gases*.

As this Standard is reproduced from an international standard, the following applies:

- (a) Its number appears on the cover and title page while the international standard number appears only on the cover.
- (b) In the source text ‘this International Standard’ should read ‘this Australian Standard’.
- (c) Replace the text of Clause 9, Item c) with “a reference to this Australian Standard, i.e. ‘Determined in accordance with AS 1774.7’”.
- (d) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian Standards, as follows:

<i>Reference to International Standard</i>		<i>Australian Standard</i>	
ISO		AS	
5022	Shaped refractory products— Sampling and acceptance testing	2497	Procedures for acceptance testing of refractory products
		2497.1	Part 1: Batch procedure
6906	Vernier callipers reading to 0,02 mm	1984	Vernier callipers (metric series)

INTRODUCTION

The permeability of a solid to gases is a property that is related to the distribution of the pores in the material and is therefore sensitive to variations in texture. It is not directly related to the apparent porosity and it shows a much greater variation than does porosity, both within a test piece and between several pieces.

It should also be noted that unlike density and porosity, permeability is a property that varies according to the direction in which the measurement is made and also, on occasion, according to the direction in which the gas is flowing.

The apparatus should not be influenced by air currents or by other localised changes in temperature.

