

Australian Standard[®] 2779—1985

REFRACTORY BRICKS AND SHAPES—SILICA



STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter



This Australian standard was prepared by Committee MN/7, Refractories and Refractory Materials. It was approved on behalf of the Council of the Standards Association of Australia on 17 December 1984 and published on 4 March 1985.

The following interests are represented on Committee MN/7:

Australasian Institute of Mining and Metallurgy
Bureau of Steel Manufacturers of Australia
Commonwealth Scientific and Industrial Research Organization
Electricity Supply Association of Australia
Institute of Australian Foundrymen (N.S.W. Division)
Institute of British Foundrymen (Australian Branch)
Refractories Manufacturers Association of Australia
University of New South Wales

Review of Australian Standards. To keep abreast of progress in industry, Australian standards are subject to periodic review and are kept up-to-date by the issue of amendments or new editions as necessary. It is important therefore that standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all SAA publications will be found in the Catalogue of SAA Publications; this information is supplemented each month by SAA's journal 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn standards.

Suggestions for improvements to Australian standards, addressed to the head office of the Association, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This standard was issued in draft form for comment as DR 82151.

AUSTRALIAN STANDARD

REFRACTORY BRICKS AND SHAPES—SILICA

AS 2779—1985

First published 1985

**PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA
STANDARDS HOUSE, 80 ARTHUR ST, NORTH SYDNEY, N.S.W.**



ISBN 0 7262 3671 3

PREFACE

This standard was prepared by the Association's Committee on Refractories and Refractory Materials under the direction of the Minerals Standards Board. It resulted from consideration of materials in use by the Australian industry.

The classification for silica bricks is in agreement with that of ISO 1109, Refractory Products— Classification of Dense Shaped Refractory Products, and the scheme for the tabulated data was derived from a proposed revision of SABS 35-1949, Standard Specification for Shaped Refractory Bricks, by the South African Bureau of Standards.

This standard attempts to align itself with and to be a companion standard to AS 2525, Basic Refractory Bricks— Magnesite, Chrome and AS 2778, Refractory Bricks and Shapes— High Alumina.

CONTENTS

SPECIFICATION	<i>Page</i>
1 Scope	3
2 Application	3
3 Referenced Documents	3
4 Definitions	3
5 Dimensions	3
6 Requirements	3
7 Sampling	3

©Copyright — STANDARDS ASSOCIATION OF AUSTRALIA 1985
 Users of standards are reminded that copyright subsists in all SAA publications. No part of this publication may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing of the Standards Association of Australia.

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
For
REFRACTORY BRICKS AND SHAPES—SILICA

1 SCOPE. This standard specifies requirements for refractory bricks and shapes with a maximum free quartz content of 5 percent by mass and produced essentially from silcrete, quartzite and ganister.

2 APPLICATION. The standard applies to machine-made silica refractory bricks and shapes used principally in the glass and steel industries.

3 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

- AS 1618 Preferred Sizes for Refractory Bricks
- AS 1619 Method for Determining the Dimensions of Refractory Bricks
- AS 1774 Methods for Physical Testing of Refractories and Refractory Materials
 - 1774.1— The Determination of Cold Compressive Strength
 - 1774.5— The Determination of Density, Porosity and Water Absorption
 - 1774.6— The Determination of True Density
 - 1774.12—Refractoriness Under Load
 - 1774.25—The Determination of Powder Density (Using Rees-Hugill Flask)
 - 1774.27—Modulus of Rupture at Elevated Temperatures
- AS 2497 Sampling Procedure for Acceptance Testing of Shaped Refractory Products
- AS 2503 Chemical Analysis of Refractories and Refractory Materials
 - Part 1—Silica Refractory Materials
- AS 2780 Refractories and Refractory Materials—Glossary of Terms

4 DEFINITIONS. For the purpose of this standard, the following definition applies. For other definitions reference should be made to AS 2780.

Silica refractory—a material that in the fired state contains not less than 93 percent of silica by mass.

5 DIMENSIONS. The bricks may be of any size and shape. The preferred dimensions of regular shapes are those specified in AS 1618.

6 REQUIREMENTS.

6.1 Chemical requirements. When determined in accordance with AS 2503.1, the composition shall conform to the value given in Table 1.

6.2 Physical requirements.

6.2.1 Texture and surface appearance. The bricks and shapes shall be compact and of homogeneous structure; they shall have full, firm corners and all arrises shall be firm and strong. The material shall be evenly burnt throughout and shall be free from injurious cracks, voids, laminations and other undesirable defects. When cut or broken, the bricks and shapes shall show an even texture and be free from defects.

6.2.2 General requirements. When determined in accordance with the appropriate methods, the physical properties shall conform to the values given in Table 1.

6.2.3 Dimensions.

6.2.3.1 Linear measurements. When determined in accordance with AS 1619, the measurements of any one of the group (A, B, C and D, as referred to in AS 1618) shall conform to the following limits, unless otherwise specified:

- (a) Where the nominal dimension is 150 mm or greater, the tolerance shall be ± 1.0 percent.
- (b) Where the nominal dimension is less than 150 mm, the tolerance shall be ± 1.5 mm.

6.2.3.2 Concavity. When determined in accordance with AS 1619, the concavity of the test specimens shall not exceed 0.5 percent.

6.2.3.3 Convexity. When determined in accordance with AS 1619, the convexity of the test specimens shall not exceed 0.5 percent.

7 SAMPLING. Unless otherwise specified, sampling shall be in accordance with AS 2497.

AQL levels for sampling and specification of physical properties shall be appropriate to the relevant application of the silica refractory bricks.