

Australian Standard 2525—1982

BASIC REFRACTORY BRICKS— MAGNESITE, CHROME



STANDARDS ASSOCIATION OF AUSTRALIA
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Australasian Institute of Mining and Metallurgy
Bureau of Steel Manufacturers of Australia
Cement and Concrete Association of Australia
Commonwealth Scientific and Industrial Research Organization
Electricity Supply Association of Australia
Institute of Australian Foundrymen, (NSW Division)
Institute of British Foundrymen (Australian Branch)
The Refractories Manufacturers Association of Australia
University of New South Wales

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BASIC REFRACTORY BRICKS— MAGNESITE, CHROME

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PREFACE

This standard was prepared by the Association's Committee on Refractories initially under the direction of the Chemical Standards Board but as a result of the formation of the Mineral Standards Committee it was finalized under that committee. It is based on ASTM C 455 but was extensively modified on the basis of additional information obtained from a survey of Australian refractories and available raw materials.

This standard requires reference to the following Australian standards:

- 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
Part 13—The Determination of Permanent Dimensional Change after Heating
- AS 2497 Sampling Procedures for Acceptance Testing of Shaped Refractory Products
- AS R27* Glossary of Terms Used in the Refractory Industry

*In course of revision.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

BASIC REFRACTORY BRICKS—MAGNESITE, CHROME

1 SCOPE. This standard specifies requirements for machine-made, basic refractory bricks.

The specified requirements deal with—

- (a) classification in terms of composition and type of bonding;
- (b) dimensional tolerances;
- (c) texture and surface appearance; and
- (d) permanent dimensional change after heating.

2 DEFINITIONS. For the purpose of this standard, the definitions given in AS R27 apply.

3 MATERIAL. The bricks shall be produced from dead burned magnesite, chrome ore or mixtures of dead burned magnesite and chrome ore.

4 CLASSIFICATION.

4.1 Chemical Constitution. Bricks shall be classified according to their chemical constitution in accordance with Clause 3 and the following:

- (a) *Magnesite brick*—having a magnesia content of not less than 80 percent.
- (b) *Magnesite-chrome brick*—having a magnesia content of not less than 55 percent but less than 80 percent.
- (c) *Chrome-magnesite brick*—having a magnesia content of not less than 25 percent but less than 55 percent.
- (d) *Chrome brick*—having a chromic oxide content of not less than 25 percent and a magnesia content of less than 25 percent.

4.2 Bonding. Bricks shall be sub-classified according to the type of bonding as follows:

- (a) *Silicate bonded brick*—a fired brick in which the bond is formed during firing by the silicates present in the mixture.
- (b) *Direct bonded brick*—a fired brick in which the bond is essentially formed by the solid state reaction between grains.
- (c) *Chemically bonded brick*—an unfired brick in which the bond is formed by the use of chemical binding agents.
- (d) *Tar or pitch bonded brick*—an unfired brick in which the bond is formed by the use of tar and/or pitch.

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

6 PHYSICAL REQUIREMENTS.

6.1 Texture and Surface Appearance. The bricks 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 shall show an even texture and be free from defects.

6.2 Dimensional Tolerances.

6.2.1 Linear measurements. When sampled in accordance with AS 2497 and measured 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 100 mm or greater, the tolerance shall be ± 1.5 percent.
- (b) Where the nominal dimension is less than 100 mm, the tolerance shall be ± 1.5 mm.