Australian Standard®

Refractories and refractory materials—Physical test methods

Method 1: Determination of cold compressive strength

PREFACE

This Standard was prepared by the Standards Australia Committee on Refractories and Refractory Materials, under the direction of the Minerals Standards Board, to supersede AS 1774.1—1981, *Methods for physical testing of refractories and refractory materials*, Method 1: *The determination of cold compressive strength.*

Changes from the 1981 edition include—

(a) updating of referenced documents;

(b) modification of the type of packing pieces specified; and

(c) inclusion of a criterion for selection of the bearing faces.

METHOD

1 SCOPE This Standard sets out a method for determining the cold compressive strength of refractory bricks, insulating bricks, and castable and mouldable refractories.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS
1774 Refractories and refractory materials—Physical test methods
1774.4.1 Method 4.1: Preparation of test pieces—Castable refractories
2193 Methods for calibration and grading of force-measuring systems for testing machines
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 Cold compressive strength—the maximum load per unit area under specified conditions that a refractory will withstand at room temperature; it is technically identical with cold crushing strength.

3.2 Bearing faces—the plane and parallel faces of the test specimen through which the compressive force is to be applied.

4 PRINCIPLE A test specimen is subjected to a constant rate of increase of compressive stress at room temperature until failure occurs.

5 APPARATUS

5.1 Testing machine—any mechanical or hydraulic compression testing machine provided that it has a sensitivity not less than Grade B of AS 2193, and provided that the seating of one of the platens has been designed to give axial loading.

5.2 Measuring equipment—any convenient equipment capable of measuring the dimensions of the test specimen to an accuracy of ±0.1 mm.