Australian Standard®

Refractories and refractory materials—Physical test methods

Method 27: Modulus of rupture at elevated temperatures

PREFACE

This Standard was prepared by the Standards Australia Committee on Refractories and Refractory Materials, to supersede AS 1774.27—1984, *Methods for physical testing of refractories and refractory materials*, Method 27: *Modulus of rupture at elevated temperatures*. The Standard is part of a series of Australian Standards for the physical testing of refractories.

METHOD

1 SCOPE This Standard sets out the method for determining the modulus of rupture of refractories at elevated temperatures.

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

AS
1337 Eye protectors for industrial applications

1338 Filters for eye protectors

1774 Refractories and refractory materials—Physical test methods
1774.4.1 Method 4.1: Preparation of test pieces—Castable refractories
1774.28 Method 28: Preparation of test pieces—Mouldable refractories

2243 Safety in laboratories

2780 Refractories and refractory materials—Glossary of terms

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

3.1 Modulus of rupture—the maximum transverse stress, applied under specified conditions, that a refractory will withstand without rupturing.

4 PRINCIPLE A test specimen is heated to the test temperature at a specified rate and is maintained at that temperature. A load is then applied through a three-point system at a constant rate of increase of transverse stress until failure occurs.

5 SAFETY As relatively high temperatures are used in this test, heat-resistant gloves and appropriate eye protection (see AS 1337 and AS 1338) are recommended. Reference should also be made to the relevant parts of AS 2243.

6 APPARATUS

6.1 Furnace—either a batch type or a continuous type capable of the following:

(a) Complying with the requirements for temperature control specified in Clause 8 (c), when the test temperatures are measured at a point not greater than 10 mm above the top surface of the test specimen and as close as practicable to the mid span position.