AS 1774.36:2019

Australian STANDARD

Monolithic refractory products

Method 36: Determination of resistance to explosive spalling (ISO 16334:2013, MOD)

STANDARDS Australia

AS 1774.36:2019

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Bureau of Steel Manufacturers of Australia
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Institute of Refractories Engineers
Refractories Manufacturers Association of Australia

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Preface

This Standard was prepared by the Standards Australia Committee MN-007, Refractories and Refractory Materials, to supersede AS 1774.36—2009, *Refractories and refractory materials — Physical test methods, Method 36: Determination of resistance to explosive spalling.*

The objective of this Standard is to specify a method for determining the resistance to explosive spalling of monolithic refractories.

This Standard is an adoption with national modifications, and has been reproduced from, ISO 16334:2013, *Monolithic refractory products — Determination of resistance to explosive spalling*. The modifications are additional requirements and are set out in Appendix ZZ, which has been added to the end of the source text.

Appendix ZZ lists the variations to ISO 16334:2013 for the application of this Standard in Australia.

As this document has been reproduced from an International Standard, the following applies:

(a) In the source text "this International Standard" should read "this Australian Standard".

(b) A full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms "normative" and "informative" are used in Standards to define the application of the appendices or annexes to which they apply. A "normative" appendix or annex is an integral part of a Standard, whereas an "informative" appendix or annex is only for information and guidance.

Contents

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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The committee responsible for this document is ISO/TC 33, *Refractories*.

Australian Standard®

Monolithic refractory products

Method 36: Determination of resistance to explosive spalling (ISO 16334:2013, MOD)

1 Scope

This International Standard specifies a method for determining the resistance to explosive spalling of monolithic refractories.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 836, *Terminology for refractories*

ISO 1927-5, *Monolithic (unshaped) refractory products — Part 5: Preparation and treatment of test pieces*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 836 and the following apply.

3.1
transition-point temperature
indication of the dewaterability of the castable

Note 1 to entry: A low transition-point temperature indicates high dewaterability and this directly relates to high explosion resistance. A castable having a high transition-point temperature indicates poor dewaterability and low explosion resistance. (See Annex A for further information.)

4 Principle

A test specimen is prepared by casting and allowed to cure. The specimen is then enclosed in an explosion-proof cage before being placed in a preheated kiln at a prescribed temperature.

NOTE The method has been developed as a practical way of measuring a property. It is not designed to form part of acceptance testing for monolithic products. Rather, it is more useful for comparative purposes. It is also useful for monolithic design purposes

5 Apparatus

5.1 Mould. A split cylindrical mould with internal dimensions of 80 mm height and 80 mm diameter and having a provision to allow for *in situ* casting of a thermocouple into the centre of the cast specimen.

5.2 Thermocouple. A thin wire thermocouple (preferably Type K). The thermocouple needs to be sufficiently insulated to withstand heating to test temperature inside and long enough to reach a temperature recorder located sufficient distance from the kiln to avoid damage.

5.3 Temperature recorder. Any instrument capable of recording the temperature of the thermocouple, either continuously or at short intervals to an accuracy of 1 °C.