
Refractory materials — Determination of abrasion resistance at elevated temperature

*Matériaux réfractaires — Détermination de la résistance à l'abrasion
à température élevée*





COPYRIGHT PROTECTED DOCUMENT

© ISO 2015

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	1
5 Apparatus	1
6 Test pieces	5
6.1 General.....	5
6.2 Shaped refractories.....	5
6.3 Unshaped refractories.....	5
7 Procedure	5
8 Calculation	6
9 Test report	6
Annex A (informative) Determination of surface temperature of test pieces	7
Annex B (informative) The precision data of abrasion resistance	8

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 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: [Foreword — Supplementary information](#).

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

Refractory materials — Determination of abrasion resistance at elevated temperature

1 Scope

This International Standard specifies a method for determination of abrasion resistance of shaped and unshaped refractory materials at elevated temperature. The test temperature is not intended to exceed 1 300 °C.

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 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*

ISO 5017, *Dense shaped refractory products — Determination of bulk density, apparent porosity and true porosity*

ISO 16282:2007, *Methods of test for dense shaped refractory products — Determination of resistance to abrasion at ambient temperature*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

abrasion resistance at elevated temperature

ability of refractory test pieces to resist the surface wear caused by the mechanical action of moving solids with high speed at elevated temperature

4 Principle

The method determines the volume of material abraded from the flat surface of a test piece placed at right angles to a nozzle through which 1 000 g of size-graded silicon carbide is blasted by compressed air at 450 kPa at elevated temperature.

5 Apparatus

5.1 Abrasion tester, used for measuring the abrasion resistance of refractory test pieces at elevated temperature and consisting mainly of a blasting device, test furnace system, and other components (see [Figure 1](#)).

5.1.1 Blasting device.

The function of the venturi blast assembly and nozzle is the same as the expression of ISO 16282:2007, 5.1.1 and 5.1.2; the structure and parameters can be seen in ISO 16282:2007, Figure 1. The difference is that the glass tube of nozzle is replaced by alumina ceramic tube, and its length is 236 mm.