Monolithic (unshaped) refractory products - Part 8: ap, con.

The second se Determination of complementary properties (ISO 1927-8:2012)



#### **EESTI STANDARDI EESSÕNA**

#### **NATIONAL FOREWORD**

See Eesti standard EVS-EN ISO 1927-8:2012		
sisaldab Euroopa standardi EN ISO 1927-8:2012	consists of the English text of the European standard	
ingliskeelset teksti.	EN ISO 1927-8:2012.	
S		
Standard on jõustunud sellekohase teate	This standard has been endorsed with a notification	
avaldamisega EVS Teatajas.	published in the official bulletin of the Estonian Centre for Standardisation.	
Euroopa standardimisorganisatsioonid on teinud	Date of Availability of the European standard is	
,	01.12.2012.	
kättesaadavaks 01.12.2012.	01.12.2012.	
National VI.IZ.ZUIZ.		
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for	
	Standardisation.	

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile <u>standardiosakond@evs.ee</u>.

ICS 81.080

#### Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega: Aru 10, 10317 Tallinn, Eesti; <a href="www.evs.ee">www.evs.ee</a>; telefon 605 5050; e-post <a href="mailto:info@evs.ee">info@evs.ee</a>

#### The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation: Aru 10, 10317 Tallinn, Estonia; www.evs.ee; phone 605 5050; e-mail info@evs.ee

## EUROPEAN STANDARD

### **EN ISO 1927-8**

# NORME EUROPÉENNE EUROPÄISCHE NORM

December 2012

ICS 81.080

Supersedes EN 1402-8:2003

#### **English Version**

# Monolithic (unshaped) refractory products - Part 8: Determination of complementary properties (ISO 1927-8:2012)

Produits réfractaires monolithiques (non façonnés) - Partie 8: Détermination des caractéristiques complémentaires (ISO 1927-8:2012) Ungeformte (monolithische) feuerfeste Erzeugnisse - Teil 8: Bestimmung zusätzlicher Eigenschaften (ISO 1927-8:2012)

This European Standard was approved by CEN on 30 November 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

#### **Foreword**

This document (EN ISO 1927-8:2012) has been prepared by Technical Committee ISO/TC 33 "Refractories" in collaboration with Technical Committee CEN/TC 187 "Refractory products and materials" the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2013, and conflicting national standards shall be withdrawn at the latest by June 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1402-8:2003.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

#### **Endorsement notice**

TEN as a The text of ISO 1927-8:2012 has been approved by CEN as a EN ISO 1927-8:2012 without any modification.

Cor	ntents	Page
Fore	eword	iv
1	Scope	1
2	Normative references	1
3	Principle	1
4	Determination of permeability to gases 4.1 Principle	2 2
5	Determination of the resistance to thermal shock 5.1 Principle	2 2
6	Determination of thermal conductivity 6.1 Principle 6.2 Test pieces 6.3 Procedure	3 3
7	Determination of sulfuric acid resistance 7.1 Principle 7.2 Test pieces 7.3 Procedure	3 3
8	Tests for products containing carbon  8.1 Principle  8.2 Test pieces  8.3 Procedure	3 4
9	Determination of the resistance to carbon monoxide	4
10	Determination of resistance to abrasion at ambient temperature	4
11	Test report	

## Monolithic (unshaped) refractory products —

## Part 8:

## **Determination of complementary properties**

#### 1 Scope

This part of ISO 1927 specifies methods for the determination of the properties of unshaped refractory materials from test pieces prepared and stored in accordance with ISO 1927-5. The methods complement those described in ISO 1927-6.

The methods have been adapted from standards for shaped refractory products to make them applicable to dense and insulating castables, and ramming materials as defined in ISO 1927-1, before and after firing.

#### 2 Normative references

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

ISO 8841, Dense, shaped refractory products — Determination of permeability to gases

ISO 1927-1, Monolithic (unshaped) refractory products — Part 1: Introduction and classification

ISO 1927-2, Monolithic (unshaped) refractory products — Part 2: Sampling for testing

ISO 1927-3, Monolithic (unshaped) refractory products — Part 3: Characterization as received

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

ISO 1927-6, Monolithic (unshaped) refractory products — Part 6: Measurement of physical properties

ISO 8894-1, Refractory materials — Determination of thermal conductivity — Part 1: Hot-wire methods (cross-array and resistance thermometer)

ISO 8894-2, Refractory materials — Determination of thermal conductivity — Part 2: Hot-wire method (parallel)

ISO 8890, Dense shaped refractory products — Determination of resistance to sulfuric acid

ISO 10060, Dense, shaped refractory products — Test methods for products containing carbon

ISO 12676, Refractory products — Determination of resistance to carbon monoxide

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

EN 993-11:2007, Methods of test for dense shaped refractory products — Part 11: Determination of resistance to thermal shock

#### 3 Principle

The complementary properties of unshaped refractory products are determined by the procedures given in ISO 8890, ISO 8841, ISO 8894-1, ISO 8894-2, ISO 10060, ISO 16282, ISO 1927-1, ISO 1927-2, ISO 1927-3, ISO 1927-5, ISO 1927-6, ISO 12676 and EN 993-11.