

Corrosion of metals and alloys - Aqueous corrosion testing of zirconium alloys for use in nuclear power reactors

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 10270:2008 sisaldab Euroopa standardi EN ISO 10270:2008 ingliskeelset teksti.</p> <p>Standard on kinnitatud Eesti Standardikeskuse 20.06.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 16.04.2008.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 10270:2008 consists of the English text of the European standard EN ISO 10270:2008.</p> <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 20.06.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> <p>Date of Availability of the European standard text 16.04.2008.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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ICS 27.120.10, 77.060

Võtmesõnad:

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Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
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EUROPEAN STANDARD

EN ISO 10270

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2008

ICS 77.060; 27.120.10

English Version

Corrosion of metals and alloys - Aqueous corrosion testing of zirconium alloys for use in nuclear power reactors (ISO 10270:1995, including Cor 1:1997)

Corrosion des métaux et alliages - Essais de corrosion aqueuse des alliages de zirconium utilisés dans les réacteurs nucléaires (ISO 10270:1995, Cor 1:1997 inclus)

Korrosion von Metallen und Legierungen - Korrosionsprüfung in wässrigen Lösungen für in Kernreaktoren angewendete Zirkoniumlegierungen (ISO 10270:1995, Cor 1:1997 einschließlich)

This European Standard was approved by CEN on 21 March 2008.

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 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 Management Centre has the same status as the official versions.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

The text of ISO 10270:1995, including Cor 1:1997 has been prepared by Technical Committee ISO/TC 156 "Corrosion of metals and alloys" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 10270:2008 by Technical Committee CEN/TC 262 "Metallic and other inorganic coatings" 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 October 2008, and conflicting national standards shall be withdrawn at the latest by October 2008.

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.

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

Endorsement notice

The text of ISO 10270:1995, including Cor 1:1997 has been approved by CEN as a EN ISO 10270:2008 without any modification.

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WARNING — This International Standard may involve the use of hazardous materials, operations and equipment (see clause 9). It is the responsibility of whoever uses this International Standard to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1 Scope

This International Standard specifies:

- a) the determination of mass gain;
- b) the surface inspection of products of zirconium and its alloys when corrosion tested in water at 360 °C or in steam at or above 400 °C;
- c) that the tests in steam shall be performed at 10,3 MPa (1 500 psi).

This International Standard is applicable to wrought products, castings, powder metallurgy products and weld metals.

This method has been widely used in the development of new alloys, heat treating practices and for the evaluation of welding techniques, and should be utilized in its entirety to the extent specified for a product acceptance test, rather than merely a means of assessing performance in service.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5813:1983, *Water quality — Determination of dissolved oxygen — Iodometric method.*

ISO 5814:1990, *Water quality — Determination of dissolved oxygen — Electrochemical probe method.*

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 etching: A process for removal of surface metal by action of acids in water.

3.2 control coupons: Zirconium alloy specimens of known performance used to monitor the validity of the test.

3.3 high mass gain coupons: Zirconium alloy specimens that have been specially heat-treated to produce a mass gain higher than the maximum given in materials acceptance specifications and which are used for verifying the severity of the test procedure.

4 Principle

Specimens of zirconium or its alloys are exposed to high-pressure water or steam at elevated temperatures for 72 h or 336 h. The corrosion is normally measured by the gain in mass of the specimens and