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STN	**Skúška opakovaného spekania peliet UO2, (U,Gd)O2 a (U,Pu)O2 (ISO 15646: 2014).**	**STN EN ISO 15646** 40 1002

Re-sintering test for UO2, (U,Gd)O2 and (U,Pu)O2 pellets (ISO 15646:2014)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/16

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 15646

April 2016

ICS 27.120.30

English Version

Re-sintering test for UO2, (U,Gd)O2 and (U,Pu)O2 pellets (ISO 15646:2014)

Test de refrittage pour pastilles UO2, (U,Gd)O2 et (U,Pu)O2 (ISO 15646:2014)

Nachsintertest für UO2-, (U,Gd)O2- und (U,Pu)O2-Pellets (ISO 15646:2014)

This European Standard was approved by CEN on 21 February 2016.

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

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European foreword

The text of ISO 15646:2014 has been prepared by Technical Committee ISO/TC 85 “Nuclear energy, nuclear technologies, and radiological protection” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 15646:2016 by Technical Committee CEN/TC 430 “Nuclear energy, nuclear technologies, and radiological protection” the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by October 2016, and conflicting national standards shall be withdrawn at the latest by October 2016.

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.

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Endorsement notice

The text of ISO 15646:2014 has been approved by CEN as EN ISO 15646:2016 without any modification.

INTERNATIONAL STANDARD

ISO 15646

First edition
2014-06-15

Re-sintering test for UO_2, $(U,Gd)O_2$ and $(U,Pu)O_2$ pellets

Test de refrittage pour pastilles UO_2, $(U,Gd)O_2$ et $(U,Pu)O_2$

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Foreword

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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).

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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 85, *Nuclear energy, nuclear technologies, and radiological protection*, Subcommittee SC 5, *Nuclear fuel cycle*.

INTERNATIONAL STANDARD ISO 15646:2014(E)

Re-sintering test for UO_2, $(U,Gd)O_2$ and $(U,Pu)O_2$ pellets

1 Scope

This International Standard describes a procedure for measuring the densification of UO_2, $(U,Gd)O_2$, and $(U,Pu)O_2$ pellets, achieved by heat treatment under defined conditions.

The densification of fuel in power operation is an important design feature. Essentially, it is dependent on structural parameters such as pore size, spatial pore distribution, grain size, and in the case of $(U,Gd)O_2$ and $(U,Pu)O_2$, oxide phase structure. A thermal re-sintering test can be used to characterize the dimensional behaviour of the pellets under high temperature. The results of this test are used by the fuel designer to predict dimensional behaviour in the reactor, because thermal densification in the reactor is also dependent on these structural parameters, albeit in a differing manner in terms of quantity.

On the assumption of the prediction, it is necessary to correlate the results of this test by some correlation rules, because the results of this test vastly depend on the re-sintering conditions (such as heat treatment temperature, treatment time, gas content, and partial oxygen pressure).