SLOVENSKI STANDARD
SIST EN 61526:2013

01-junij-2013

Nadomešča:
SIST EN 61526:2007

Instrumenti za zaščito pred sevanjem - Merjenje osebnih ekvivalentnih doz Hp(10) in Hp(0,07) za rentgenska (X), gama, nevtronska in beta sevanja - Osebni dozimetri z neposrednim odbiranjem

Radiation protection instrumentation - Measurement of personal dose equivalents Hp(10) and Hp(0,07) for X, gamma, neutron and beta radiations - Direct reading personal dose equivalent meters

Strahlenschutz-Messgeräte - Messung der Tiefen- und der Oberflächen-Personendosis Hp(10) und Hp(0,07) für Röntgen-, Gamma-, Neutronen- und Betastrahlung - Direkt ablesbare Personendosimeter

Instrumentation pour la radioprotection - Mesure des équivalents de dose individuels Hp (10) et Hp(0,07) pour les rayonnements X, gamma, neutron et bêta - Appareils de mesure à lecture directe de l'équivalent de dose individuel

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EUROPEAN STANDARD

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EN 61526

March 2013

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English version

Radiation protection instrumentation - Measurement of personal dose equivalents Hp(10) and Hp(0,07) for X, gamma, neutron and beta radiations - Direct reading personal dose equivalent meters

(IEC 61526:2010, modified)

Instrumentation pour la radioprotection - Mesure des équivalents de dose individuels Hp(10) et Hp(0,07) pour les rayonnements X, gamma, neutron et bêta - Appareils de mesure à lecture directe de l'équivalent de dose individuel (CEI 61526:2010, modifiée)

Strahlenschutz-Messgeräte - Messung der Tiefen- und der Oberflächen-Personendosis Hp(10) und Hp(0,07) für Röntgen-, Gamma-, Neutronen- und Betastrahlung - Direkt ablesbare Personendosimeter (IEC 61526:2010, modifiziert)

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

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Foreword

This document (EN 61526:2013) consists of the text of IEC 61526:2010 prepared by IEC/SC 45B "Radiation protection instrumentation" of IEC/TC 45 "Nuclear instrumentation", together with the common modifications prepared by CLC/TC 45B "Radiation protection instrumentation".

The following dates are fixed:

• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2013-12-24
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2015-12-24

This document supersedes EN 61526:2007.

EN 61526:2013 includes the following significant technical changes with regard to the previous edition:

– inclusion of terms and definitions of ISO/IEC Guide 99:2007 (VIM:2008);

– full consistency with IEC/TR 62461:2006 "*Radiation protection instrumentation – Determination of uncertainty in measurement*";

– improved determination of constancy of the dose response and statistical fluctuations;

– abolition of classes of personal doses equivalent meters in relation to retention of stored information;

– inclusion of usage categories of personal dosemeters in Annex C.

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Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 61526:2010 are prefixed "Z".

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61526:2010 was approved by CENELEC as a European Standard with agreed common modifications.

COMMON MODIFICATIONS

Introduction

In the third paragraph, **add** “mean beta particle energy” after “0,8 MeV”.

1 Scope and object

Add “for the same radiations (for alarming purposes)” at the end of list item b).

3 Terms and definitions

In the term and in the definition of 3.31, **replace** 'assembly' by 'detector assembly'.

6 General characteristics

6.6 Effective range of measurement

In the first paragraph, **add** “at least” between “$H_p(10)$ and” and “from 1 mSv”.

6.9 Indication due to instrument artefacts

Replace the title by “Indication due to the intrinsic background of the instrument”.

In the first paragraph, **replace** “$H_p(10)$” by “$H_p(10)$ and $H_p(0,07)$”.

9 Radiation performance requirements and tests

9.3.5 Method of test for photon dosemeters using natural radiation

In list item b), second sentence, **add** “mean” in front of “background dose rate” and **delete** “and "constant"”.

9.3.6 Interpretation of the results of the test using natural radiation

In the first paragraph and in the note, **replace** “inequation” by “inequality” (this modification refers to the English version only).

9.5.1.2 Method of test

In the third paragraph, first line, **delete** “above” in front of “requirements” and **add** “with the above mentioned reference radiations” after “cannot be met”.

In the beginning of the list items a), b) and c), **add** “relative” between “If the” and “response for”.

9.9.1 General

In the first sentence, **replace** “performed separately for $H_p(10)$ or $\dot{H}_p(10)$ and for $H_p(0,07)$ or $\dot{H}_p(0,07)$” by “performed for $H_p(10)$, $\dot{H}_p(10)$, $H_p(0,07)$ and $\dot{H}_p(0,07)$”.

At the end of the first sentence, **delete** “category, see Annex C”.

Annexes

Add the following new annex.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60050-393	2003	International Electrotechnology Vocabulary - Part 393: Nuclear instrumentation - Physical phenomena and basic concepts	-	-
IEC 60050-394	2007	International Electrotechnical Vocabulary - Part 394: Nuclear instrumentation - Instruments, systems, equipment and detectors	-	-
IEC 60068-2-31	2008	Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens	EN 60068-2-31	2008
IEC 60086-1	2006	Primary batteries - Part 1: General	EN 60086-1[1)]	2007
IEC 60086-2 + corr. April	2006 2007	Primary batteries - Part 2: Physical and electrical specifications	EN 60086-2[2)]	2007
IEC 60359	2001	Electrical and electronic measurement equipment - Expression of performance	EN 60359	2002
IEC 60529 + A1	1989 1999	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May + A1	1991 1993 2000
IEC 61000-4-2	2008	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	2009
IEC 61000-4-3 + A1	2006 2007	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3 + A1	2006 2008
IEC 61000-4-4 + corr. June	2004 2007	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	2004

1) EN 60086-1 is superseded by EN 60086-1:2011, which is based on IEC 60086-1:2011.

2) EN 60086-2 is superseded by EN 60086-2:2011, which is based on IEC 60086-2:2011.

IEC 61000-4-5 + corr. October	2005 2009	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	2006
IEC 61000-4-6	2008	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	2009
IEC 61000-4-8	2009	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	EN 61000-4-8	2010
IEC 61000-4-11	2004	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	2004
IEC 61000-6-2	2005	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments	EN 61000-6-2 + corr. September	2005 2005
IEC 61187 (mod)	1993	Electrical and electronic measuring equipment - Documentation	EN 61187 + corr. March	1994 1995
IEC/TR 62461	2006	Radiation protection instrumentation - Determination of uncertainty in measurement	-	-
ISO/IEC Guide 98-3	2008	Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)	-	-
ISO/IEC Guide 98-3 Suppl.1	2008 2008	Propagation of distributions using a Monte Carlo method and Corr.1 (2009)	-	-
ISO 4037-1	1996	X and gamma reference radiation for calibrating dosemeters and doserate meters and for determining their response as a function of photon energy - Part 1: Radiation characteristics and production methods	-	-
ISO 4037-2	1997	X and gamma reference radiation for calibrating dosemeters and doserate meters and for determining their response as a function of photon energy - Part 2: Dosimetry for radiation protection over the energy ranges from 8 keV to 1,3 MeV and 4 MeV to 9 MeV	-	-
ISO 4037-3	1999	X and gamma reference radiation for calibrating dosemeters and doserate meters and for determining their response as a function of photon energy - Part 3: Calibration of area and personal dosemeters and the measurement of their response as a function of energy and angle of incidence	-	-

ISO 4037-4	2004	X and gamma reference radiation for calibrating dosemeters and doserate meters and for determining their response as a function of photon energy - Part 4: Calibration of area and personal dosemeters in low energy X reference radiation fields	-	-
ISO 6980-1	2006	Nuclear energy - Reference beta-particle radiation - Part 1: Methods of production	-	-
ISO 6980-2	2004	Nuclear energy - Reference beta-particle radiation - Part 2: Calibration fundamentals related to basic quantities characterizing the radiation field	-	-
ISO 6980-3	2006	Nuclear energy - Reference beta-particle radiation - Part 3: Calibration of area and personal dosemeters and the determination of their response as a function of beta radiation energy and angle of incidence	-	-
ISO 8529-1	2001	Reference neutron radiations - Part 1: Characteristics and methods of production	-	-
ISO 8529-2	2000	Reference neutron radiations - Part 2: Calibration fundamentals of radiation protection devices related to the basic quantities characterizing the radiation field	-	-
ISO 8529-3	1998	Reference neutron radiations - Part 3: Calibration of area and personal dosimeters and determination of response as a function of energy and angle of incidence	-	-
ISO 12789-1	2008	Reference radiation fields - Simulated workplace neutron fields - Part 1: Characteristics and methods of production	-	-
ISO 12789-2	2008	Reference radiation fields - Simulated workplace neutron fields - Part 2: Calibration fundamentals related to the basic quantities	-	-
ICRU Report 51	1993	Quantities and units in radiation protection dosimetry	-	-

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Radiation protection instrumentation – Measurement of personal dose equivalents $H_p(10)$ and $H_p(0,07)$ for X, gamma, neutron and beta radiations – Direct reading personal dose equivalent meters

Instrumentation pour la radioprotection – Mesure des équivalents de dose individuels $H_p(10)$ et $H_p(0,07)$ pour les rayonnements X, gamma, neutron et bêta – Appareils de mesure à lecture directe de l'équivalent de dose individuel

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

RADIATION PROTECTION INSTRUMENTATION – MEASUREMENT OF PERSONAL DOSE EQUIVALENTS $H_p(10)$ AND $H_p(0,07)$ for X, GAMMA, NEUTRON AND BETA RADIATIONS – DIRECT READING PERSONAL DOSE EQUIVALENT METERS

FOREWORD

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International Standard IEC 61526 has been prepared by subcommittee 45B: Radiation protection instrumentation, of IEC technical committee 45: Nuclear instrumentation.

This third edition cancels and replaces the second edition published in 2005. This edition constitutes a technical revision. This edition includes the following significant technical changes with regard to the previous edition:

– Inclusion of terms and definitions from ISO/IEC Guide 99:2007 (VIM:2008).
– Full consistency with IEC/TR 62461:2006 "*Radiation protection instrumentation – Determination of uncertainty in measurement*".
– Improved determination of constancy of the dose response and statistical fluctuations.
– Abolition of classes of personal dose equivalent meters in relation to retention of stored information.
– Inclusion of usage categories of personal dosemeters in Annex C.

The text of this standard is based on the following documents:

FDIS	Report on voting
45B/648/FDIS	45B/666/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.