SLOVENSKI STANDARD
SIST EN 60950-1:2006/A1:2010

01-maj-2010

Oprema za informacijsko tehnologijo - Varnost - 1. del: Splošne zahteve (IEC 60950 -1:2005/A1:2009, spremenjen)

Information technology equipment - Safety - Part 1: General requirements (IEC 60950-1:2005/A1:2009, modified)

Einrichtungen der Informationstechnik - Sicherheit - Teil 1: Allgemeine Anforderungen (IEC 60950-1:2005/A1:2009, modifiziert)

Matériel de traitement de l'information - Sécurité - Partie 1: Exigences générales (CEI 60950-1:2005/A1:2009, modifiée)

Ta slovenski standard je istoveten z: **EN 60950-1:2006/A1:2010**

ICS:

35.020	Informacijska tehnika in tehnologija na splošno	Information technology (IT) in general

SIST EN 60950-1:2006/A1:2010 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60950-1/A1

March 2010

ICS 35.020; 35.260

English version

Information technology equipment - Safety - Part 1: General requirements

(IEC 60950-1:2005/A1:2009, modified)

Matériel de traitement de l'information - Sécurité - Partie 1: Exigences générales (CEI 60950-1:2005/A1:2009, modifié)

Einrichtungen der Informationstechnik - Sicherheit - Teil 1: Allgemeine Anforderungen (IEC 60950-1:2005/A1:2009, modifiziert)

This amendment A1 modifies the European Standard EN 60950-1:2006; it was approved by CENELEC on 2010-03-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 Central Secretariat or to any CENELEC member.

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

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

CENELEC

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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 108/350/FDIS, future amendment 1 to IEC 60950-1:2005, prepared by IEC TC 108, Safety of electronic equipment within the field of audio/video, information technology and communication technology, was submitted to the IEC-CENELEC parallel vote.

A draft amendment, prepared by the Technical Committee CENELEC TC 108X, Safety of electronic equipment within the fields of audio/video, information technology and communication technology, was submitted simultaneously to the formal vote.

The combined texts were approved by CENELEC as amendment A1 to EN 60950-1:2006 on 2010-03-01.

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

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2011-03-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2013-03-01

Subclauses, tables and figures which are additional to those in IEC 60950-1 are prefixed “Z”.

Annexes ZA and ZB have been added by CENELEC.

Endorsement notice

The text of amendment A1:2009 to the International Standard IEC 60950-1:2005 was approved by CENELEC as an amendment to the European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

In IEC 60950-1:2005/A1 **delete** all the “country” notes according to the following list:

- 1.5.7.1: Note
- 6.1.2.1: Note 2
- 6.2.2.1: Note 2
- EE.3: Note

For special national conditions, see Annex ZB.

1.1.1 **Replace** the text of NOTE 3 by the following

NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, *Guide on the safety of multimedia equipment*. For television sets EN 60065 applies.

1.2.3 **Add** the following definition:

1.2.3.Z1
PORTABLE SOUND SYSTEM
small battery powered audio equipment:
– whose prime purpose is to listen to recorded or broadcasted sound; and
– that uses headphones or earphones that can be worn in or on or around the ears; and
– that allows the user to walk around

NOTE Examples are mini-disk or CD players; MP3 audio players or similar equipment.

1.7.2.1 **Delete** NOTE Z1.

Add the following paragraph at the end of the subclause:

In addition, for a **PORTABLE SOUND SYSTEM**, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.

4.3.13.6 **Replace** the existing NOTE by the following:

NOTE Z1 Attention is drawn to :
1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and
2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation).
Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.

Bibliography **Add** the following note for the standard indicated:

IEC 60908 NOTE Harmonized as EN 60908.

Replace the entire Annex ZA by the following:

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

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
		Insulating, sheathing and covering materials for low-voltage energy cables	EN 50363	Series
		Electrical test methods for low voltage energy cables	EN 50395	2005
		Non electrical test methods for low voltage energy cables	EN 50396	2005
IEC 60065 (mod) A1	2001 2005	Audio, video and similar electronic apparatus – Safety requirements	EN 60065 A1 + A11	2002 2006 2008
A2	-		A2 + A12	-
IEC 60068-2-78	-	Environmental testing Part 2-78: Tests – Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC 60073	-	Basic and safety principles for man-machine interface, marking and identification – Coding principles for indication devices and actuators	EN 60073	-
IEC 60083	-	Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC	-	-
IEC 60085	2004	Electrical insulation – Thermal classification	EN 60085	2004
IEC 60112	-	Method for determining the proof and comparative tracking indices of insulating materials	EN 60112	-
IEC 60227 (mod)	Series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V	HD 21 [1)]	Series
IEC 60245 (mod)	Series	Rubber insulated cables of rated voltages up to and including 450/750V	HD 22 [2)]	Series

---

1) The HD 21 series is related to, but not directly equivalent with the IEC 60227 series. Also EN 50363, EN 50395 and EN 50386 are to be taken into account.

2) The HD 22 series is related to, but not directly equivalent with the IEC 60245 series. Also EN 50363, EN 50395 and EN 50386 are to be taken into account.

Publication	Year	Title	EN/HD	Year
IEC 60309	Series	Plugs, socket-outlets and couplers for industrial purposes	EN 60309	Series
IEC 60317	Series	Specifications for particular types of winding wires	EN 60317	Series
IEC 60317-43	-	Part 43: Aromatic polyimide tape wrapped round copper wire, class 240	EN 60317-43	-
IEC 60320 (mod)	Series	Appliance couplers for household and similar general purposes	EN 60320	Series
IEC 60364-1 (mod)	2001	Electrical installations of buildings Part 1: Fundamental principles, assessment of general characteristics, definitions	HD 384.1 S2	2001
IEC 60384-14 A1	1993 1995	Fixed capacitors for use in electronic equipment Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains	EN 60384-14	2005
IEC 60417	Data-base	Graphical symbols for use on equipment	-	-
IEC 60664-1 + A1 + A2	1992 2000 2002	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	EN 60664-1	2003
IEC 60695-2-11	-	Fire hazard testing Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products	EN 60695-2-11	-
IEC 60695-2-20	-	Part 2-20: Glowing/hot-wire based test methods – Hot-wire coil ignitability – Apparatus, test method and guidance	-	-
IEC 60695-10-2	-	Part 10-2: Guidance and test methods for the minimization of the effects of abnormal heat on electrotechnical products involved in fires – Method for testing products made from non-metallic materials for resistance to heat using the ball pressure test	EN 60695-10-2	-
IEC 60695-10-3	-	Fire hazard testing Part 10-3: Abnomal heat – Mould stress relief distortion test	EN 60695-10-03	-
IEC 60695-11-3	-	Part 11-3: Test flames – 500 W flames – Apparatus and conformational test methods	-	-
IEC 60695-11-4	-	Part 11-4: Test flames – 50 W flames – Apparatus and conformational test methods	-	-
IEC 60695-11-10 A1	-	Part 11-10: Test flames – 50 W horizontal and vertical flame test methods	EN 60695-11-10 A1	- -

Publication	Year	Title	EN/HD	Year
IEC 60695-11-20 A1	-	Part 11-20: Test flames – 500 W flame test methods	EN 60695-11-20 A1	- -
IEC 60730-1 (mod) A1	1999 2003	Automatic electrical controls for household and similar use - Part 1: General requirements	EN 60730-1 A1 + A12 + A13 + A14 + A15 + A16	2000 2004 2003 2004 2005 2007 2007
A2	2007		A2	2008
IEC 60747-5-5	2007	Semiconductor devices – Discrete devices Part 5-5: Optoelectronic devices – Photocouplers	EN 60747-5-5	-
IEC 60825-1	-	Safety of laser products Part 1: Equipment classification, requirements and user's guide	EN 60825-1	-
IEC 60825-2	-	Part 2: Safety of optical fibre communication systems	EN 60825-2 A1	- -
IEC/TR 60825-9	-	Part 9: Compilation of maximum permissible exposure to incoherent optical radiation	-	-
IEC 60825-12	-	Part 12: Safety of free space optical communication systems used for transmission of information	EN 60825-12	-
IEC 60851-3 A1	1996 1997	Winding wires – Test methods Part 3: Mechanical properties	EN 60851-3 A1	1996 1997
IEC 60851-5 A1 A2	1996 1997 2004	Part 5: Electrical properties	EN 60851-5 A1 A2	1996 1997 2004
IEC 60851-6	1996	Part 6: Thermal properties	EN 60851-6	1996
IEC 60885-1	1987	Electrical test methods for electric cables Part 1: Electrical tests for cables, cords and wires for voltages up to and including 450/750 V	-	-
IEC 60906-1	-	IEC System of plugs and socket-outlet for household and similar purposes Part 1: Plugs and socket-outlets 16 A 250 V a.c.	-	-
IEC 60906-2	-	Part 2: Plugs and socket-outlets 15 A 125 V a.c.	-	-
IEC 60947-1	2004	Low voltage switchgear and control gear Part 1: General rules	EN 60947-1	2004
IEC 60990	1999	Methods of measurement of touch current and protective conductor current	EN 60990	1999

Publication	Year	Title	EN/HD	Year
IEC 61051-2	1991	Varistors for use in electronic equipment Part 2: Sectional specification for surge suppression varistors	-	-
IEC 61058-1 (mod)	2000	Switches for appliances Part 1: General requirements	EN 61058-1 [3)]	2002
IEC 62471 (mod)	-	Photobiological safety of lamps and lamp systems	EN 62471	-
ISO 178	-	Plastics - Determination of flexural properties	EN ISO 178	2003
ISO 179	Series	Plastics - Determination of Charpy impact strength	EN ISO 179	Series
ISO 180	-	Plastics - Determination of Izod impact strength	EN ISO 180	-
ISO 261	-	ISO general-purpose metric screw threads - General plan	-	-
ISO 262	-	ISO general-purpose metric screw threads - Selected sizes for screws, bolts and nuts		-
ISO 527	Series	Plastics - Determination of tensile properties	EN ISO 527	Series
ISO 3864	Series	Safety colours and safety signs	-	-
ISO 4892-1	-	Plastics - Methods of exposure to laboratory light sources Part 1: General guidance	EN ISO 4892-1	-
ISO 4892-2	-	Part 2: Xenon-arc sources	EN ISO 4892-2	-
ISO 4892-4	-	Part 4: Open-flame carbon-arc lamps	-	-
ISO 7000	Data-base	Graphical symbols for use on equipment - Index and synopsis	-	-
ISO 8256	-	Plastics - Determination of tensile-impact strength	EN ISO 8256	-
ISO 9772	-	Cellular plastics - Determination of horizontal burning characteristics of small specimens subjected to a small flame	-	-
ISO 9773	-	Plastics - Determination of burning behaviour of thin flexible vertical specimens in contact with a small-flame ignition source	EN ISO 9773	-
ITU-T Recommendation K.44	-	Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents - Basic Recommendation	-	-

---

[3)] EN 61058-1:2002 includes A1:2001 to IEC 61058-1:2000.

Annex ZB
(normative)

Special National Conditions

Special national condition: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions. If it affects harmonization, it forms part of the European Standard or Harmonization Document.

For the countries in which the relevant special national apply these provisions are normative, for other countries they are informative.

Add the following special national condition:

Clause	Special national condition
1.5.7.1	In **Finland, Norway** and **Sweden** No changes needed - Correction of SNC already Part of A11.
6.1.2.1	In **Finland, Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.

IEC 60950-1

Edition 2.0 2009-12

INTERNATIONAL STANDARD

colour inside

AMENDMENT 1

Information technology equipment – Safety – Part 1: General requirements

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PRICE CODE W

ICS 35.020; 35.260

ISBN 2-8318-1068-7

FOREWORD

This amendment has been prepared by IEC technical committee 108: Safety of electronic equipment within the field of audio/video, information technology and communication technology.

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

FDIS	Report on voting
108/350/FDIS	108/357/RVD

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

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the maintenance result 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.

IMPORTANT – The "colour inside" logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this publication using a colour printer.

CONTENTS

Add the titles of the new annexes as follows:

Add the titles of the new figures as follows:

1.2 Definitions

Add after "RATING, PROTECTIVE CURRENT.....1.2.13.17" *in the list of* "Definitions in alphabetical order of nouns" *the following new entry:*

SHREDDER (DOCUMENT/MEDIA, HOUSEHOLD AND HOME/OFFICE) 1.2.13.18

Add, after the existing definition 1.2.13.17*, the following new definition:*

1.2.13.18
(HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA) SHREDDER
equipment with a plug configuration associated with PLUGGABLE EQUIPMENT TYPE A, or battery operated equipment, designed to shred paper or other forms of media as instructed by the manufacturer

NOTE 1 Examples of other forms of media include but are not limited to digital video disks, compact disks, flash memory, magnetic strip cards, or magnetic disks, or the like.

NOTE 2 HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS are typically identified as either strip-cut type or cross-cut type. A strip-cut HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDER shreds the paper into long strips using a motor-based shredding mechanism. A cross-cut DOCUMENT/MEDIA SHREDDER shreds paper two or more ways into tiny particles, typically using a more powerful motor and more complex shredding mechanism.

NOTE 3 A document/media shredder is considered to be non-household or non-home/office type if the document/media shredder is provided with a plug configuration associated with PLUGGABLE EQUIPMENT TYPE B, or is PERMANENTLY CONNECTED EQUIPMENT.

Table 1C – Capacitor ratings according to IEC 60384-14

Replace the existing rule 3 *of this table by the following:*

3 For a single capacitor bridging FUNCTIONAL INSULATION, BASIC INSULATION or SUPPLEMENTARY INSULATION, the peak test voltage of the capacitor shall be at least equal to the peak value of the test voltage (not the r.m.s. voltage) of Table 5B, or the peak value of the test voltage of Table 5C, as applicable, and the r.m.s. test voltage shall be not less than the required r.m.s. test voltage of Table 5B, or the equivalent r.m.s. test voltage (not the peak voltage) of Table 5C, as applicable.

Replace the existing rule 4 of this table by the following:

4 For a single capacitor bridging DOUBLE INSULATION or REINFORCED INSULATION, the peak test voltage of the capacitor shall be not less than the peak value of the test voltage (not the r.m.s. voltage) of Table 5B, or the peak value of the test voltage of Table 5C, as applicable; and the r.m.s. test voltage shall be not less than the required r.m.s. test voltage of Table 5B, or the equivalent r.m.s. test voltage (not the peak voltage) of Table 5C, as applicable.

Replace the existing rule 7 *of this table by the following:*

7 If two or more capacitors are used in series, all of the following apply:

- under single fault conditions, the voltage on each of the remaining individual capacitors shall not exceed the voltage rating of the relevant individual capacitor;
- for BASIC INSULATION or SUPPLEMENTARY INSULATION, the sum of the peak impulse test voltages of all capacitors shall be not less than the peak value of the test voltage (not the r.m.s. voltage) of Table 5B, or the peak value of the test voltage of Table 5C, as applicable;
- for BASIC INSULATION or SUPPLEMENTARY INSULATION, the sum of the r.m.s. test voltages of all capacitors shall be not less than the required r.m.s. test voltage of Table 5B, or the equivalent r.m.s. test voltage (not the peak voltage) of Table 5C, as applicable;
- for REINFORCED INSULATION, the sum of the peak impulse test voltages of all capacitors shall be not less than the peak value of the test voltage (not the r.m.s. voltage) of Table 5B, or the peak value of the test voltage of Table 5C, as applicable;
- for REINFORCED INSULATION, the sum of the r.m.s. test voltages of all capacitors shall be not less than the required r.m.s. test voltage of Table 5B, or the equivalent r.m.s. test voltage (not the peak voltage) of Table 5C, as applicable;
- they shall comply with the other rules above.