

# **SLOVENSKI STANDARD**

## **SIST EN 60950-1:2006**

**01-november-2006**

**Nadomešča:**

**SIST EN 60950-1:2003**

**SIST EN 60950-1:2003/A11:2005**

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**Oprema za informacijsko tehnologijo – Varnost – 1. del: Splošne zahteve (IEC 60950-1:2005, spremenjen)**

Information technology equipment - Safety -- Part 1: General requirements

Einrichtungen der Informationstechnik - Sicherheit -- Teil 1: Allgemeine Anforderungen  
(standards.iteh.ai)

Matériel de traitement de l'information - Sécurité -- Partie 1: Exigences générales  
SIST EN 60950-1:2006

<https://standards.iteh.ai/catalog/standards/sist/30af182c-55e4-4a25-88ef-3232f491ed07/sist-en-60950-1-2006>

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

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**ICS:**

35.020

Informacijska tehnika in  
tehnologija na splošno

Information technology (IT) in  
general

**SIST EN 60950-1:2006**

**en**

## **iTeh STANDARD PREVIEW** **(standards.iteh.ai)**

SIST EN 60950-1:2006

<https://standards.iteh.ai/catalog/standards/sist/30af182c-55e4-4a25-88ef-3232f491ed07/sist-en-60950-1-2006>

English version

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

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

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

**iTeh STANDARD PREVIEW**

This European Standard was approved by CENELEC on 2005-12-01. CENELEC 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 Central Secretariat or to any CENELEC 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 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, 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: rue de Stassart 35, B - 1050 Brussels**

## Foreword

The text of document 108/135A/FDIS, future edition 2 of IEC 60950-1, 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.

This text, together with a draft amendment, prepared by the Technical Committee CENELEC TC 108, Safety of electronic equipment within the fields of audio/video, information technology and communication technology, and submitted to the formal vote, was approved by CENELEC as EN 60950-1 on 2005-12-01.

This European Standard supersedes EN 60950-1:2001 + corrigendum April 2004 + A11:2004.

EN 60950-1 includes the basic requirements for the safety of information technology equipment.

Additional parts of EN 60950-1 will cover specific safety requirements for information technology equipment having limited applications or having special features as follows:

Part 21: Remote power feeding;

Part 22: Equipment installed outdoors;

Part 23: Large data storage equipment.

Except for notes, all text within a normative figure, or in a box under a normative table, is also normative. Text with a superscript reference is linked to a particular item in the table. Other text in a box under a table applies to the whole table.

Informative annexes and text beginning with the word "NOTE" are not normative. They are provided only to give additional information.

In this standard, the following print types are used:

- Requirements proper and normative annexes: roman type.
- *Compliance statements and test specifications: italic type.*
- Notes in the text and in tables: smaller roman type.
- Terms that are defined in 1.2: SMALL CAPITALS.

The following dates were fixed:

- |                                                                                                                                          |       |            |
|------------------------------------------------------------------------------------------------------------------------------------------|-------|------------|
| – latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2006-12-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn                                               | (dow) | 2010-12-01 |

Clauses, subclauses, notes, tables and figures which are additional to those in IEC 60950-1 are prefixed "Z".

Annexes ZA, ZB and ZC have been added by CENELEC.

## Endorsement notice

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

### COMMON MODIFICATIONS

**CONTENTS** **Add** the following annexes:

**Annex ZA** (normative) Normative references to international publications with their corresponding European publications

**Annex ZB** (normative) Special national conditions

**Annex ZC** (informative) A-deviations

**Delete** all the “country” notes in the reference document according to the following list:

1.4.8	Note 2	1.5.1	Note 2 & 3	1.5.7.1	Note
1.5.8	Note 2	1.5.9.4	Note	1.7.2.1	Note 4, 5 & 6
2.2.3	Note	2.2.4	Note	2.3.2	Note
2.3.2.1	Note 2	2.3.4	Note 2	2.6.3.3	Note 2 & 3
2.7.1	Note	2.10.3.2	Note 2	2.10.5.13	Note 3
3.2.1.1	Note	3.2.4	Note	3.2.5.1	Note 2
4.3.6	Note 1 & 2	4.7	Note 4	4.7.2.2	Note
4.7.3.1	Note 2	5.1.7.1	Note 3 & 4	5.3.7	Note 1
6	Note 2 & 5	6.1.2.1	Note 2	6.1.2.2	Note
6.2.2	Note	6.2.2.1	Note 2	6.2.2.2	Note
7.1	Note 3	7.2	Note	7.3	Note 1 & 2
G.2.1	Note 2	Annex H	Note 2		

For special national conditions, see Annex ZB.

**1.3.Z1** **Add** the following subclause:

#### **1.3.Z1 Exposure to excessive sound pressure**

The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones.

NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.

1.5.1 **Add** the following NOTE:

NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC

1.7.2.1 **Add** the following NOTE:

NOTE Z1 In addition, the instructions shall include, as far as applicable, a warning that excessive sound pressure from earphones and headphones can cause hearing loss

2.7.1 **Replace** the subclause as follows:

*Basic requirements*

To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):

- a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;
- b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;
- c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.

If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.

2.7.2 This subclause has been declared 'void'.

3.2.3 **Delete** the NOTE in Table 3A, and **delete** also in this table the conduit sizes in parentheses.

3.2.5.1 **Replace** "60245 IEC 53" by "H05 RR-F";  
 "60227 IEC 52" by "H03 VV-F or H03 VVH2-F";  
 "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2".

In Table 3B, **replace** the first four lines by the following:

Up to and including 6		0,75 <sup>a)</sup>	
Over 6 up to and including 10	(0,75) <sup>b)</sup>	1,0	
Over 10 up to and including 16	(1,0) <sup>c)</sup>	1,5	

In the conditions applicable to Table 3B **delete** the words "in some countries" in condition <sup>a)</sup>.

In NOTE 1, applicable to Table 3B, **delete** the second sentence.

3.3.4 In Table 3D, **delete** the fourth line: conductor sizes for 10 to 13 A, and **replace** with the following:

Over 10 up to and including 16		1,5 to 2,5		1,5 to 4	
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**Delete** the fifth line: conductor sizes for 13 to 16 A.

4.3.13.6 **Add** the following NOTE:

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. Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.

Annex H **Replace** the last paragraph of this annex by:

At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level.

**Replace** the notes as follows:

NOTE These values appear in Directive 96/29/Euratom.

**Delete** NOTE 2.

Bibliography **Add** the following standards:

EN 50332-1:2000, *Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment"*  
<https://standards.iteh.ai/catalog/standards/sist/30af182c-55e4-4a25-88ef-3232f491ed07/sist-en-60950-1-2006>  
 EN 50332-2:2003, *Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Matching of sets with headphones if either or both are offered separately*

**Add** the following notes for the standards indicated:

IEC 60127	NOTE	Harmonized in EN 60127 series (not modified).
IEC 60369-2-1	NOTE	Harmonized as HD 60369-2-1:2005 (modified).
IEC 60364-4-41	NOTE	Harmonized as HD 384.4.41 S2:1996 (modified).
IEC 60529	NOTE	Harmonized as EN 60529:1991 (not modified).
IEC 60664-4	NOTE	Harmonized as EN 60664-4:2006 (not modified).
IEC 60728-11	NOTE	Harmonized as EN 60728-11:2005 (modified).
IEC 60896-21	NOTE	Harmonized as EN 60896-21:2004 (not modified).
IEC 60896-22	NOTE	Harmonized as EN 60896-22:2004 (not modified).
IEC 61032	NOTE	Harmonized as EN 61032:1998 (not modified).
IEC 61140	NOTE	Harmonized as EN 61140:2002 (not modified).
IEC 61558-1	NOTE	Harmonized as EN 61558-1:2005 (not modified).
IEC 61643-21	NOTE	Harmonized as EN 61643-21:2001 (not modified).
IEC 61643-311	NOTE	Harmonized as EN 61643-311:2001 (not modified).
IEC 61643-321	NOTE	Harmonized as EN 61643-321:2002 (not modified).
IEC 61643-331	NOTE	Harmonized as EN 61643-331:2003 (not modified).
IEC 61965	NOTE	Harmonized as EN 61965:2003 (not modified).
ISO 4892	NOTE	Harmonized in EN ISO 4892 series (not modified).

## 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 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60065 (mod) A1	2001 2005	Audio, video and similar electronic apparatus - Safety requirements	EN 60065 A1	2002 - <sup>1)</sup>
IEC 60068-2-78	- <sup>2)</sup>	Environmental testing Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	2001 <sup>3)</sup>
IEC 60073	- <sup>2)</sup>	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indication devices and actuators	EN 60073	2002 <sup>3)</sup>
IEC 60083	- <sup>2)</sup>	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	- <sup>2)</sup>	Method for determining the proof and comparative tracking indices of insulating materials	EN 60112	2003 <sup>3)</sup>
IEC 60216-4-1	- <sup>2)</sup>	Guide for the determination of thermal endurance properties of electrical insulating materials Part 4: Ageing ovens Section 1: Single-chamber ovens	EN 60216-4-1	- <sup>1)</sup>
IEC 60227 (mod)	Series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V	HD 21 <sup>4)</sup>	Series
IEC 60245 (mod)	Series	Rubber insulated cables of rated voltages up to and including 450/750V	HD 22 <sup>5)</sup>	Series

<sup>1)</sup> To be published.

<sup>2)</sup> Undated reference.

<sup>3)</sup> Valid edition at date of issue.

<sup>4)</sup> The HD 21 series is related to, but not directly equivalent with the IEC 60227 series.

<sup>5)</sup> The HD 22 series is related to, but not directly equivalent with the IEC 60245 series.



<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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	- <sup>2)</sup>	Part 43: Aromatic polyimide tape wrapped round copper wire, class 240	EN 60317-43	1997 <sup>3)</sup>
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 132400 <sup>6)</sup>	1994
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	- <sup>2)</sup>	Fire hazard testing Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products	EN 60695-2-11	2001 <sup>3)</sup>
IEC 60695-2-20	- <sup>2)</sup>	Part 2-20: Glowing/hot-wire based test methods - Hot-wire coil ignitability - Apparatus, test method and guidance	-	-
IEC 60695-10-2	- <sup>2)</sup>	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	2003 <sup>3)</sup>
IEC 60695-11-3	- <sup>2)</sup>	Part 11-3: Test flames - 500 W flames - Apparatus and confirmational test methods	-	-
IEC 60695-11-4	- <sup>2)</sup>	Part 11-4: Test flames - 50 W flames - Apparatus and confirmational test methods	-	-

<sup>6)</sup> EN 132400, *Sectional Specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (Assessment level D)*, and its amendments are related to, but not directly equivalent to IEC 60384-14. They are superseded by EN 60384-14:2005, which is based on IEC 60384-14:2005.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60695-11-10	- <sup>2)</sup>	Part 11-10: Test flames - 50 W horizontal and vertical flame test methods	EN 60695-11-10	1999 <sup>3)</sup>
IEC 60695-11-20	- <sup>2)</sup>	Part 11-20: Test flames - 500 W flame test methods	EN 60695-11-20	1999 <sup>3)</sup>
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	2000 2004 2003 2004 2005
IEC 60747-5-5	- <sup>1)</sup>	Semiconductor devices - Discrete devices Part 5-5: Optoelectronic devices - Photocouplers	-	-
IEC 60825-1	- <sup>2)</sup>	Safety of laser products Part 1: Equipment classification, requirements and user's guide	EN 60825-1 + corr. February + A11	1994 <sup>3)</sup> 1995 1996
IEC 60825-2	- <sup>2)</sup>	Part 2: Safety of optical fibre communication systems	EN 60825-2	2004 <sup>3)</sup>
IEC/TR 60825-9	- <sup>2)</sup>	Part 9: Compilation of maximum permissible exposure to incoherent optical radiation	-	-
IEC 60825-12	- <sup>2)</sup>	Part 12: Safety of free space optical communication systems used for transmission of information	EN 60825-12	2004 <sup>3)</sup>
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	- <sup>2)</sup>	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	- <sup>2)</sup>	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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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 <sup>7)</sup>	2002
ISO 178	- <sup>2)</sup>	Plastics - Determination of flexural properties	EN ISO 178	2003
ISO 179	Series	Plastics - Determination of Charpy impact strength	EN ISO 179	Series
ISO 180	- <sup>2)</sup>	Plastics - Determination of Izod impact strength	EN ISO 180	2000 <sup>3)</sup>
ISO 261	- <sup>2)</sup>	ISO general-purpose metric screw threads - General plan	-	-
ISO 262	- <sup>2)</sup>	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	- <sup>2)</sup>	Plastics - Methods of exposure to laboratory light sources Part 1: General guidance	EN ISO 4892-1	2000
ISO 4892-2	- <sup>2)</sup>	Part 2: Xenon-arc sources	EN ISO 4892-2	1999
ISO 4892-4	- <sup>2)</sup>	Part 4: Open-flame carbon-arc lamps	-	-
ISO 7000	Data- base	Graphical symbols for use on equipment - Index and synopsis	-	-
ISO 8256	- <sup>2)</sup>	Plastics - Determination of tensile-impact strength	EN ISO 8256	2004
ISO 9772	- <sup>2)</sup>	Cellular plastics - Determination of horizontal burning characteristics of small specimens subjected to a small flame	-	-
ISO 9773	- <sup>2)</sup>	Plastics - Determination of burning behaviour of thin flexible vertical specimens in contact with a small-flame ignition source	EN ISO 9773	1998 <sup>3)</sup>
ITU-T Recommendation K.44	- <sup>2)</sup>	Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents - Basic Recommendation	-	-

<sup>7)</sup> 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.

NOTE If it affects harmonization, it forms part of the European Standard / Harmonization Document.

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

Clause	Special national condition
1.2.4.1	In <b>Denmark</b> , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.
1.5.7.1	In <b>Finland, Norway</b> and <b>Sweden</b> , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2.
1.5.8	In <b>Norway</b> , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).
1.5.9.4	In <b>Finland, Norway</b> and <b>Sweden</b> , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.
1.7.2.1	<p>In <b>Finland, Norway</b> and <b>Sweden</b>, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In <b>Finland</b>: "Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan"</p> <p>In <b>Norway</b>: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In <b>Sweden</b>: "Apparaten skall anslutas till jordat uttag"</p>
1.7.5	In <b>Denmark</b> , socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.
2.2.4	In <b>Norway</b> , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.
2.3.2	In <b>Finland, Norway</b> and <b>Sweden</b> there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.
2.3.4	In <b>Norway</b> , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.
2.6.3.3	In the <b>United Kingdom</b> , the current rating of the circuit shall be taken as 13 A, not 16 A.

Clause	Special national condition																								
2.7.1	In the <b>United Kingdom</b> , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.																								
2.10.5.13	In <b>Finland, Norway and Sweden</b> , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.																								
3.2.1.1	<p>In <b>Switzerland</b>, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <table><tr><td>SEV 6532-2.1991</td><td>Plug Type 15</td><td>3P+N+PE</td><td>250/400 V, 10 A</td></tr><tr><td>SEV 6533-2.1991</td><td>Plug Type 11</td><td>L+N</td><td>250 V, 10 A</td></tr><tr><td>SEV 6534-2.1991</td><td>Plug Type 12</td><td>L+N+PE</td><td>250 V, 10 A</td></tr></table> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <table><tr><td>SEV 5932-2.1998</td><td>Plug Type 25</td><td>3L+N+PE</td><td>230/400 V, 16 A</td></tr><tr><td>SEV 5933-2.1998</td><td>Plug Type 21</td><td>L+N</td><td>250 V, 16 A</td></tr><tr><td>SEV 5934-2.1998</td><td>Plug Type 23</td><td>L+N+PE</td><td>250 V, 16 A</td></tr></table>	SEV 6532-2.1991	Plug Type 15	3P+N+PE	250/400 V, 10 A	SEV 6533-2.1991	Plug Type 11	L+N	250 V, 10 A	SEV 6534-2.1991	Plug Type 12	L+N+PE	250 V, 10 A	SEV 5932-2.1998	Plug Type 25	3L+N+PE	230/400 V, 16 A	SEV 5933-2.1998	Plug Type 21	L+N	250 V, 16 A	SEV 5934-2.1998	Plug Type 23	L+N+PE	250 V, 16 A
SEV 6532-2.1991	Plug Type 15	3P+N+PE	250/400 V, 10 A																						
SEV 6533-2.1991	Plug Type 11	L+N	250 V, 10 A																						
SEV 6534-2.1991	Plug Type 12	L+N+PE	250 V, 10 A																						
SEV 5932-2.1998	Plug Type 25	3L+N+PE	230/400 V, 16 A																						
SEV 5933-2.1998	Plug Type 21	L+N	250 V, 16 A																						
SEV 5934-2.1998	Plug Type 23	L+N+PE	250 V, 16 A																						
3.2.1.1	<p>In <b>Denmark</b>, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>																								
3.2.1.1	<p>In <b>Spain</b>, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>																								

Clause	Special national condition
3.2.1.1	<p>In the <b>United Kingdom</b>, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>
3.2.1.1	<p>In <b>Ireland</b>, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.</p>
3.2.4	<p>In <b>Switzerland</b>, for requirements see 3.2.1.1 of this annex.</p>
3.2.5.1	<p>In the <b>United Kingdom</b>, a power supply cord with conductor of 1,25 mm<sup>2</sup> is allowed for equipment with a rated current over 10 A and up to and including 13 A.</p>
3.3.4	<p>In the <b>United Kingdom</b>, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is:</p> <ul style="list-style-type: none"> <li>1,25 mm<sup>2</sup> to 1,5 mm<sup>2</sup> nominal cross-sectional area.</li> </ul>
4.3.6	<p>In the <b>United Kingdom</b>, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1: 1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.</p>
4.3.6	<p>In <b>Ireland</b>, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.</p>
5.1.7.1	<p>In <b>Finland, Norway and Sweden</b> TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"> <li>STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> <li>is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and</li> <li>has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and</li> <li>is provided with instructions for the installation of that conductor by a SERVICE PERSON;</li> </ul> </li> <li>STATIONARY PLUGGABLE EQUIPMENT TYPE B;</li> <li>STATIONARY PERMANENTLY CONNECTED EQUIPMENT.</li> </ul>

Clause	Special national condition
6.1.2.1	<p>In <b>Finland, Norway</b> and <b>Sweden</b>, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), 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</p> <ul style="list-style-type: none"> <li>- 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</li> <li>- is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul> <p>It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, 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;</li> <li>- the additional testing shall be performed on all the test specimens as described in EN 132400;</li> <li>- the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400.</li> </ul>
6.1.2.2	<p>In <b>Finland, Norway</b> and <b>Sweden</b>, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.</p>
7.2	<p>In <b>Finland, Norway</b> and <b>Sweden</b>, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>
7.3	<p>In <b>Norway</b> and <b>Sweden</b>, there are many buildings where the screen of the coaxial cable is normally not connected to the earth in the building installation.</p>
7.3	<p>In <b>Norway</b>, for installation conditions see EN 60728-11:2005.</p>