

**EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011**

**MEASUREMENT AND TEST REPORT**

For


**Shenzhen A-OK Technology Grand Development Co.,LTD**

3F, 4 Bldg, Chentian Industry Zone, Xixiang, Bao'an District Shenzhen, Guangdong, China

**Model: AC127, AC116, AC117, AC118, AC119, AC124,  
AC125, AC126, AC127, AC128, AC510, AC511, AC407**

**Apr 25, 2013**

<b>This Report Concerns:</b> <input checked="" type="checkbox"/> Original Report	<b>Equipment Type:</b> Hand-held Emitters
<b>Report Number:</b>	MTI130418001RS
<b>Test Engineer:</b>	<i>Steven Guan</i>
<b>Reviewed By:</b>	<i>Tony Xie</i>
<b>Approved &amp; Authorized By:</b>	<i>Hebe Lee</i>
<b>Test Date:</b>	Apr 21, 2013 - Apr 25, 2013
<b>Prepared By:</b>	<b>Shenzhen Microtest Technology Co.,Ltd.</b> 6F,Zhongbao Building,Xiaweyuan,Gushu,Bao'an District,Shenzhen,P.R.China. Tel: +86-755-8885 0135 Fax:+86-755-8885 0136



**Note:** This test report is limited to the above client company and the product model only. It may not be duplicated without prior written consent of MTI Technology Laboratory Ltd.

## TEST REPORT

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011

### Safety of information technology equipment Part 1: General requirements

Report reference No ..... : MTI130418001RS

Tested by (printed name and  
signature) ..... : Steven Guan

*Steven Guan*

Reviewed By (printed name and  
signature) ..... : Tony Xie

*Tony Xie*

Approved by (printed name and  
signature) ..... : Hebe Lee

*Hebe Lee*

Date of issue ..... : Apr 25, 2013

Testing Laboratory Name ..... : Shenzhen Microtest Technology Co.,Ltd.

Address ..... : 6F,Zhongbao Building,Xiaweyuan,Gushu,Bao'an  
District,Shenzhen,P.R.China.

Testing location ..... : As above

Applicant's Name ..... : Shenzhen A-OK Technology Grand Development Co.,LTD

Address ..... : 3F, 4 Bldg, Chentian Industry Zone, Xixiang, Bao'an District  
Shenzhen, Guangdong, China

#### Test specification

Standard..... : EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011

Test procedure ..... : LVD Scheme

Procedure deviation ..... : --

Non-standard test method ..... : Not applicable

Test Report Form No..... : IECEN60950A

Test item description ..... : Hand-held Emitters

Trademark ..... : A-OK

Manufacturer..... : Shenzhen A-OK Technology Grand Development Co.,LTD

Address ..... : 3F, 4 Bldg, Chentian Industry Zone, Xixiang, Bao'an District  
Shenzhen, Guangdong, China

Model and/or type reference ..... : AC127, AC116, AC117, AC118, AC119, AC124, AC125, AC126,  
AC127, AC128, AC510, AC511, AC407

Rating(s) ..... : Rated Voltage: 6V---

Rated Current: 1A max

Supply with battery

**Particulars: test item vs. test requirements**

Equipment mobility..... :  movable  hand-held  stationary  
 transportable  for building-in  direct plug-in

Operating condition.....:  continuous  short-time  intermittent

Access location..... operator accessible  
 restricted access location

Connection to the mains..... pluggable equipment  direct plug-in  
 permanent connection  for building-in  
 Other, DC power.

Over voltage category .....  OVC I  OVC II  OVC III  OVC IV

Mains supply tolerance (%): N/A

Test for IT power system.....: [ ] Yes [X ] No

IT testing, phase-phase voltage (V): N/A.

Pollution degree ..... PD 2  PD 3

Class of equipment .....  Class I  Class II  Class III  
 Not classified

Considered current rating of protective device as part of the building installation(A): N/A  
Suitable

Mass of equipment (g) .....: Approx.35g

Protection against ingress of water...: IPX0

**Test case verdicts:**

Test case does not apply to the test object .....: N(Not Applicable)

Test object does meet the requirement .....: P(ass)

Test object does not meet the requirement .....: F(ail)

**Testing**

Date of receipt of test item .....: Apr 21, 2013

Date(s) of performance of test .....: Apr 21, 2013 - Apr 25, 2013

**General remarks**

This report shall not be reproduced except in full without the written approval of the testing laboratory.  
The test results presented in this report relate only to the item tested.  
"(see remark #)" refers to a remark appended to the report.  
"(see Annex #)" refers to an annex appended to the report.  
Throughout this report a point is used as the decimal separator.  
This report shall not be altered, increase and deleted.  
The results relate only to the items tested.  
This report shall not be published as advertisement without the approval of MTI.  
This report shall not be copied partly without the written approval of MTI.

**General information:**

Factory Name and Location:

**Shenzhen A-OK Technology Grand Development Co.,LTD**

3F, 4 Bldg, Chentian Industry Zone, Xixiang, Bao'an District Shenzhen, Guangdong, China.

All models are same except different coding model of customer.

The test result complies with the requirements of the relevant standard.

**Copy of the marking plate**

**Hand-held Emitters**

**Model: AC127**

**Rated voltage: 6V<sub>---</sub>**

**Rated current: 1A max**



**Shenzhen A-OK Technology Grand Development Co.,LTD  
Made in China**

**EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011**

<b>Clause</b>	<b>Requirement - Test</b>	<b>Result</b>	<b>Verdict</b>
---------------	---------------------------	---------------	----------------

<b>1</b>	<b>GENERAL</b>		<b>P</b>
----------	----------------	--	----------

<b>1.5</b>	<b>Components</b>		<b>P</b>
------------	-------------------	--	----------

1.5.1	General	(See appended table 1.5.1 for details)	P
-------	---------	--	---

1.5.2	Evaluation and testing of components	Components which are certified to IEC/EN and/or national standards are used correctly within their ratings. Components not covered by IEC/EN standards are tested under the conditions present in the equipment.	P
-------	--------------------------------------	---	---

	Dimensions (mm) of mains plug for direct plug-in:		N
--	---	--	---

	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N)		N
--	--	--	---

1.5.3	Thermal controls	No thermal controls.	N
-------	------------------	----------------------	---

1.5.4	Transformers		N
-------	--------------	--	---

1.5.5	Interconnecting cables	The interconnecting cables contain only SELV.	P
-------	------------------------	---	---

1.5.6	Capacitors in primary circuits .....		N
-------	--------------------------------------	--	---

1.5.7	Double insulation or reinforced insulation bridged by components		N
-------	--	--	---

1.5.7.1	General		N
---------	---------	--	---

1.5.7.2	Bridging capacitors		N
---------	---------------------	--	---

1.5.7.3	Bridging resistors		N
---------	--------------------	--	---

1.5.7.4	Accessible parts		N
---------	------------------	--	---

1.5.8	Components in equipment for IT power systems		N
-------	--	--	---

1.5.9	Surge suppressors	No components connected between line and earth.	N
-------	-------------------	---	---

1.5.9.1	General	See below.	N
---------	---------	------------	---

1.5.9.2	Protection of VDRS	See below.	N
---------	--------------------	------------	---

1.5.9.3	Bridging of functional insulation by a VDR	No bridging of functional insulation by a VDR.	N
---------	--	--	---

1.5.9.4	Bridging of basic insulation by a VDR	No bridging of basic insulation by a VDR.	N
---------	---------------------------------------	---	---

1.5.9.5	Bridging of supplementary, double or reinforced insulation by a DVR	No bridging of supplementary, double or reinforced insulation by a VDR.	N
---------	---	---	---

<b>1.6</b>	<b>Power interface</b>		<b>P</b>
------------	------------------------	--	----------

1.6.1	AC power distribution systems		N
-------	-------------------------------	--	---

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
1.6.2	Input current	Steady state input current of the equipment did not exceed the rated equipment by more than 10% under Maximum normal Load, See table 1.6.2 for details.	P
1.6.3	Voltage limit of hand-held equipment	Not exceed 250V.	P
1.6.4	Neutral conductor		N

<b>1.7</b>	Marking and instructions		<b>P</b>
1.7.1	Power rating	Required marking is located on the outside surface of the equipment.	P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections.....:		N
	Rated voltage(s) or voltage range(s) (V) .....	6V	P
	Symbol for nature of supply, for d.c. only.....:	==	P
	Rated frequency or rated frequency range (Hz) ..:		N
	Rated current (mA or A) .....	1A	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trademark or identification mark .....	See page2	P
	Type/model or type reference.....:	See page2	P
	Symbol for Class II equipment only .....	The equipment is Class III.	N
	Other symbols .....		P
	Certification marks .....	CE	P
1.7.2	Safety instructions and marking	Operating /safety instructions made available to the user.	P
1.7.2.1	General	See below	P
1.7.2.2	Disconnect devices		N
1.7.2.3	Overcurrent protective device		N
1.7.2.4	IT power distribution systems		N
1.7.2.5	Operator access with a tool	All areas containing hazard(s) are inaccessible to the operator.	P
1.7.2.6	Ozone		N
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N
1.7.4	Supply voltage adjustment .....		N
1.7.5	Power outlets on the equipment .....		N
1.7.6	Fuse identification .....		N
1.7.7	Wiring terminals		N

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
1.7.7.1	Protective earthing and bonding terminals .....		N
1.7.7.2	Terminals for a.c. mains supply conductors .....		N
1.7.7.3	Terminals for d.c. mains supply conductors.....		N
1.7.8	Controls and indicators.....	Refer below.	P
1.7.8.1	Identification, location and marking .....	The function of controls affecting safety is obvious without knowledge of language etc.	P
1.7.8.2	Colours .....	.	N
1.7.8.3	Symbols according to IEC 60417.....		N
	Markings using figures .....		N
1.7.9	Isolation of multiple power sources .....		N
1.7.10	Thermostats and other regulating devices.	No thermostats or similar regulating devices provided.	N
1.7.11	Durability	The marking withstands required tests.	P
1.7.12	Removable parts	Marking is not placed on removable parts.	N
1.7.13	Replaceable batteries	No replaceable batteries in the equipment.	N
	Language(s).....		N
1.7.14	Equipment for restricted access locations .....	Equipment not intended for installation in a restricted access location	N

<b>2</b>	<b>PROTECTION FROM HAZARDS</b>		<b>P</b>
<b>2.1</b>	<b>Protection from electric shock and energy hazards</b>		<b>P</b>
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts		P
	Test by inspection .....	No such circuit	N
	Test with test finger .....	No such circuit	N
	Test with test pin .....	No such circuit	N
	Test with test probe .....	No such circuit	N
2.1.1.2	Battery compartments .....		N
2.1.1.3	Access to ELV wiring		N
	Working voltage (V); minimum distance (mm) through insulation		N
2.1.1.5	Energy hazards .....		N
2.1.1.6	Manual controls		N
2.1.1.7	Discharge of capacitors in equipment		N

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
	Time constant (s); measured voltage (V)		N
2.1.1.8	Energy hazards - d.c. mains supplies		N
	a) Capacitor connected to the d.c. mains supply..		N
	b) Internal battery connected to the d.c. mains supply.....		N
2.1.1.9	Audio amplifiers in information technology equipment	No audio amplifiers	N
	Time-constant (s); measured voltage (V) .....		N
2.1.2	Protection in service access areas	Checked by inspection unintentional contact is unlikely during service operations.	P
2.1.3	Protection in restricted access locations		N

<b>2.2</b>	SELV circuits		<b>P</b>
2.2.1	General requirements		P
2.2.2	Voltages under normal conditions (V) .....	All accessible voltage are less than 42.4 Vpk or 60Vdc and are classified as SELV.	P
2.2.3	Voltages under fault conditions (V) .....	Under fault conditions voltages never exceed 71Vpk and 120 Vdc and do not exceed 42.4 Vpk or 60 Vdc for more than 0.3 second.	P
2.2.3.1	Separation by double insulation or reinforced insulation (method 1)		P
2.2.3.2	Separation by earthed screen (method 2)		N
2.2.3.3	Protection by earthing of the SELV circuit (method 3)		N
2.2.4	Connection of SELV circuits to other circuits .....		N

<b>2.3</b>	TNV circuits		<b>N</b>
2.3.1	Limits		N
	Type of TNV circuits .....		N
2.3.2	Separation from other circuits and from accessible parts		N
2.3.2.1	General requirements		N
2.3.2.2	Protection by basic insulation		N
2.3.2.3	Protection by earthing		N
2.3.2.4	Protection by other constructions.....		N
2.3.3	Separation from hazardous voltages		N
	Insulation employed.....		N



EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
2.3.4	Connection of TNV circuits to other circuits		N
	Insulation employed..... :		N
2.3.5	Test for operating voltages generated externally		N

<b>2.4</b>	<b>Limited current circuits</b>		<b>N</b>
2.4.1	General requirements		N
2.4.2	Limit values		N
	Frequency (Hz) ..... :		N
	Measured current (mA) ..... :		N
	Measured voltage (V) ..... :		N
	Measured capacitance ( $\mu$ F) ..... :		N
2.4.3	Connection of limited current circuits to other circuits		N

<b>2.5</b>	<b>Limited power sources</b>		<b>N</b>
	Inherently limited output		N
	Impedance limited output		N
	Overcurrent protective device limited output		N
	Regulating network limited output under normal operating and single fault condition		N
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		N
	Output voltage (V), output current (A), apparent power (VA) ..... :		N
	Current rating of overcurrent protective device (A)		N
	Use of integrated circuit(IC) current limiters		N

<b>2.6</b>	<b>Provisions for earthing and bonding</b>		<b>N</b>
2.6.1	Protective earthing		N
2.6.2	Functional earthing		N
2.6.3	Protective earthing and protective bonding conductors		N
2.6.3.1	General		N
2.6.3.2	Size of protective earthing conductors		N
	Rated current (A), cross-sectional area ( $\text{mm}^2$ ), AWG..... :		N
2.6.3.3	Size of protective bonding conductors		N
	Rated current (A), cross-sectional area ( $\text{mm}^2$ ), AWG..... :		N

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
	Protective current rating(A), cross-sectional area (mm <sup>2</sup> ), AWG.....		—
2.6.3.4	Resistance ( $\Omega$ ) of earthing conductors and their terminations, test current (A)..... :		N
2.6.3.5	Colour of insulation .....		N
2.6.4	Terminals		N
2.6.4.1	General		N
2.6.4.2	Protective earthing and bonding terminals		N
	Rated current (A), type and nominal thread diameter (mm)..... :		N
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N
2.6.5	Integrity of protective earthing		N
2.6.5.1	Interconnection of equipment		N
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N
2.6.5.3	Disconnection of protective earth		N
2.6.5.4	Parts that can be removed by an operator		N
2.6.5.5	Parts removed during servicing		N
2.6.5.6	Corrosion resistance		N
2.6.5.7	Screws for protective bonding		N
2.6.5.8	Reliance on telecommunication network or cable distribution system		N

<b>2.7</b>	<b>Overcurrent and earth fault protection in primary circuits</b>		<b>N</b>
2.7.1	Basic requirements		N
	Instructions when protection relies on building installation		N
2.7.2	Faults not covered in 5.3		N
2.7.3	Short-circuit backup protection		N
2.7.4	Number and location of protective devices .....		N
2.7.5	Protection by several devices		N
2.7.6	Warning to service personnel:		N

<b>2.8</b>	<b>Safety interlocks</b>		<b>N</b>
2.8.1	General principles		N
2.8.2	Protection requirements		N
2.8.3	Inadvertent reactivation		N
2.8.4	Fail-safe operation		N

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
2.8.5	Moving parts		N
2.8.6	Overriding		N
2.8.7	Switches and relays		N
2.8.7.1	Contact gaps (mm) ..... :		N
2.8.7.2	Overload test		N
2.8.7.3	Endurance test		N
2.8.7.4	Electric strength test		N
2.8.8	Mechanical actuators		N

2.9	Electrical insulation		P
2.9.1	Properties of insulating materials		P
2.9.2	Humidity conditioning	Humidity treatment performed to 48 hours in condition below.	P
	Humidity (%)	93% R.H	P
	Temperature (°C)	25°C	P
2.9.3	Grade of insulation	Functional insulation	P
2.9.4	Separation from hazardous voltages		N
	Method(s) used:.....		N

2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General		P
2.10.1.1	Frequency		N
2.10.1.2	Pollution degrees		P
2.10.1.3	Reduced values for functional insulation		P
2.10.1.4	Intervening unconnected conductive parts		N
2.10.1.5	Insulation with varying dimensions		N
2.10.1.6	Special separation requirements	Not TNV equipment	N
2.10.1.7	Insulation in circuits generating starting pulses	No discharge lamp used.	N
2.10.2	Determination of working voltage		N
2.10.2.1	General		N
2.10.2.2	RMS working voltage		N
2.10.2.3	Peak working voltage		N
2.10.3	Clearances		N
2.10.3.1	General		N
2.10.3.2	Mains transient voltages		N
	a) AC mains supply.....		N
	b) Earthed d.c. mains supplies.....		N

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
	c) Unearthed d.c. mains supplies.....		N
	d) Battery operation.....		N
2.10.3.3	Clearances in primary circuits		N
2.10.3.4	Clearances in secondary circuits		N
2.10.3.5	Clearances in circuits having starting pulses		N
2.10.3.6	Transients from a.c. mains supply .....		N
2.10.3.7	Transients from d.c. mains supply.....		N
2.10.3.8	Transients from telecommunication networks and cable distribution systems.....		N
2.10.3.9	Measurement of transient voltage levels		N
	a) Transients from a mains supply		N
	For an a.c. mains supply.....		N
	For a d.c. mains supply .....		N
	b) Transients from a telecommunication network:		N
2.10.4	Creepage distances		N
2.10.4.1	General		N
2.10.4.2	Material group and comparative tracking index	See below.	N
	CTI tests..... :	Assume material group III b: $100 \leq CT1 < 175$	N
2.10.4.3	Minimum creepage distances		N
2.10.5	Solid insulation		N
2.10.5.1	General		N
2.10.5.2	Minimum distance through insulation		N
2.10.5.3	Insulating compound as solid insulation		N
2.10.5.4	Semiconductor devices		N
2.10.5.5	Cemented joints		N
2.10.5.6	Thin sheet material-General		N
2.10.5.7	Separable thin sheet material		N
	Number of layers (pcs)..... :		N
	Electric strength test		N
2.10.5.8	Non-separable thin sheet material		N
2.10.5.9	Thin sheet material-standard test procedure		N
	Electric strength test		N
2.10.5.10	Thin sheet material- alternative test procedure		N
	Electric strength test		N
2.10.5.11	Insulation in wound components		N
2.10.5.12	Wire in wound components		N

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
	Working voltage.....		N
	a) Basic insulation not under stress.....		N
	b) Basic, Supplementary, reinforced insulation....		N
	c) Compliance with Annex U.....		N
	Two wires in contact inside wound component, angle between 45° and 90°.....		N
2.10.5.13	Wire with solvent-based enamel in wound components		N
	Electric strength test		N
	Routine test		N
210.5.14	Additional insulation in wound components		N
	Working voltage.....		N
	- Basic insulation not under stress.....		N
	- Supplementary, reinforced insulation.....		N
2.10.6	Construction of printed boards		N
2.10.6.1	Uncoated printed boards		N
2.10.6.2	Coated printed boards		N
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N
2.10.6.4	Insulation between conductors on different layers of a printed board		N
	Distance through insulation		N
	Number of insulation layers (pcs).....		N
2.10.7	Component external terminations.....		N
2.10.8	Tests on coated printed boards and coated components		N
2.10.8.1	Sample preparation and preliminary inspection		N
2.10.8.2	Thermal conditioning		N
2.10.8.3	Electric strength test		N
2.10.8.4	Abrasion resistance test		N
2.10.9	Thermal cycling		N
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N
2.10.11	Tests for semiconductor devices and ceented joints		N
2.10.12	Enclosed and sealed parts		N

<b>3</b>	<b>WIRING, CONNECTIONS AND SUPPLY</b>	<b>P</b>
<b>3.1</b>	<b>General</b>	<b>P</b>

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring.	P
3.1.2	Protection against mechanical damage	Wireways are smooth and free from edges. Wires are adequately fixed to prevent excessive strain on wire and terminals and avoiding damage to the insulation of the conductors.	P
3.1.3	Securing of internal wiring	Internal wiring is secured against excessive strain, loosening of terminals and damage to the conductor insulation.	P
3.1.4	Insulation of conductors		P
3.1.5	Beads and ceramic insulators		N
3.1.6	Screws for electrical contact pressure		N
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	N
3.1.8	Self-tapping and spaced thread screws	Thread-cutting or space thread screws are not used for electrical connections.	N
3.1.9	Termination of conductors	All conductor are suitably secured	N
	10 N pull test	Ref. to 3.3.2	N
3.1.10	Sleeving on wiring		N

<b>3.2</b>	<b>Connection to an a.c. mains supply or a d.c. mains supply-</b>		<b>N</b>
3.2.1	Means of connection .....		N
3.2.1.1	Connection to an a.c. mains supply		N
3.2.1.2	Connection to a d.c. mains supply		N
3.2.2	Multiple supply connections		N
3.2.3	Permanently connected equipment		N
	Number of conductors, diameter (mm) of cable and conduits .....		N
3.2.4	Appliance inlets		N
3.2.5	Power supply cords		N
3.2.5.1	AC power supply cords		N
	Type.....		N
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG.....		N
3.2.5.2	DC power supply cords		N

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
3.2.6	Cord anchorages and strain relief		N
	Mass of equipment (kg), pull (N) .....		N
	Longitudinal displacement (mm) .....		N
3.2.7	Protection against mechanical damage		N
3.2.8	Cord guards		N
	D (mm); test mass (g) .....		N
	Radius of curvature of cord (mm).....		N
3.2.9	Supply wiring space		N

<b>3.3</b>	<b>Wiring terminals for connection of external conductors</b>		<b>N</b>
3.3.1	Wiring terminals		N
3.3.2	Connection of non-detachable power supply cords		N
3.3.3	Screw terminals		N
3.3.4	Conductor sizes to be connected		N
	Rated current (A), cord/cable type, cross-sectional area (mm <sup>2</sup> ).....		N
3.3.5	Wiring terminal sizes		N
	Rated current (A), type and nominal thread diameter (mm) .....		N
3.3.6	Wiring terminals design		N
3.3.7	Grouping of wiring terminals		N
3.3.8	Stranded wire		N

<b>3.4</b>	<b>Disconnection from the mains supply</b>		<b>N</b>
3.4.1	General requirement	See sub-clause 3.4.2	N
3.4.2	Disconnect devices		N
3.4.3	Permanently connected equipment		N
3.4.4	Parts which remain energized		N
3.4.5	Switches in flexible cords		N
3.4.6	Number of poles Single-phase equipment and d.c. equipment		N
3.4.7	Number of poles Three-phase equipment		N
3.4.8	Switches as disconnect devices		N
3.4.9	Plugs as disconnect devices		N
3.4.10	Interconnected equipment		N
3.4.11	Multiple power sources		N

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
<b>3.5</b>	<b>Interconnection of equipment</b>		<b>P</b>
3.5.1	General requirements	Considered	P
3.5.2	Types of interconnection circuits..... :	SELV circuits	P
3.5.3	ELV circuits as interconnection circuits		N
3.5.4	Data ports for additional equipment		P

<b>4</b>	<b>PHYSICAL REQUIREMENTS</b>		<b>P</b>
4.1	Stability		N
	Angle of 10°		N
	Test: force (N)..... :		N

<b>4.2</b>	<b>Mechanical strength</b>		<b>P</b>
4.2.1	General	See below	P
4.2.2	Steady force test, 10 N	10N were applied to components. No energy or other hazards.	P
4.2.3	Steady force test, 30 N		N
4.2.4	Steady force test, 250 N	Appliance inlet side tested. No hazards as a result of the 250N.	P
4.2.5	Impact test		P
	Fall test		P
	Swing test		N
4.2.6	Drop test	1m 3 times	P
4.2.7	Stress relief test	75°C	P
4.2.8	Cathode ray tubes		N
	Picture tube separately certified..... :		N
4.2.9	High pressure lamps		N
4.2.10	Wall or ceiling mounted equipment; force (N) .... :		N
4.2.11	Rotating solid media		N
	Test to cover on the door..... :		N

<b>4.3</b>	<b>Design and construction</b>		<b>P</b>
4.3.1	Edges and corners	All edges and corners are judged to be sufficiently well rounding so as not to constitute a hazard.	P
4.3.2	Handles and manual controls; force (N)..... :		N
4.3.3	Adjustable controls		N
4.3.4	Securing of parts		N



EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
4.3.5	Connection of plugs and sockets		N
4.3.6	Direct plug-in equipment		N
	Dimensions (mm) of mains plug for direct plug- in .....		N
	Torque and pull test of mains plug for direct plug- in; torque (Nm); pull (N).....		N
4.3.7	Heating elements in earthed equipment		N
4.3.8	Batteries	See appended table 4.3.8	P
	- Overcharging of a rechargeable battery		P
	- Unintentional charging of a non-rechargeable battery		P
	- Reverse charging of a rechargeable battery		P
	- Excessive discharging rate for any battery		P
4.3.9	Oil and grease	Not exposed to oil or grease	N
4.3.10	Dust, powders, liquids and gases	The equipment does not produce or employ powders, liquids, or gases.	N
4.3.11	Containers for liquids or gases		N
4.3.12	Flammable liquids.....		N
	Quantity of liquid (l).....		N
	Flash point (°C).....		N
4.3.13	Radiation; type of radiation .....		N
4.3.13.1	General		N
4.3.13.2	Ionizing radiation		N
	Measured radiation (pA/kg) .....		N
	Measured high-voltage (kV) .....		N
	Measured focus voltage (kV) .....		N
	CRT markings .....		N
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N
	Part, property, retention after test, flammability classification .....		N
4.3.13.4	Human exposure to ultraviolet (UV) radiation .....		N
4.3.13.5	Lasers (including laser diodes) and LEDs		N
4.3.13.5.1	Lasers (including laser diodes)		N
	Laser class .....		N
4.3.13.5.2	Light emitting diodes(LEDs)		N
4.3.13.6	Other types .....		N

<b>4.4</b>	<b>Protection against hazardous moving parts</b>	<b>P</b>
------------	--	----------

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
4.4.1	General	Adequate protection against risk of person injury.	P
4.4.2	Protection in operator access areas		N
	Household and home/office document/ media shredders		N
4.4.3	Protection in restricted access locations		N
4.4.4	Protection in service access areas		N
4.4.5	Protection against moving fan blades		N
4.4.5.1	General		N
	Not considered to cause pain or injury. a).....:		N
	Is considered to cause pain, not injury.b).....:		N
	Considered to cause injury c).....:		N
4.4.5.2	Protection for users		N
	Use of symbol or warning.....:		N
4.4.5.3	Protection for service persons		N
	Use of symbol or warning.....:		N

4.5	Thermal requirements		P
4.5.1	General	See below	P
4.5.2	Temperature tests	The equipment and its component parts did not attain excessive temperatures during normal operation. (See appended table 4.5.1 for details.)	P
	Normal load condition per annex L.....:	According to L.7	N
4.5.3	Temperature limits for materials	(See appended table 4.5.1 for details.)	P
4.5.4	touch temperature limits	(See appended table 4.5.1 for details.)	P
4.5.5	Resistance to abnormal heat	(see appended table 5.3 for details.)	P

4.6	Openings in enclosures		N
4.6.1	Top and side openings		N
	Dimensions (mm) .....		--
4.6.2	Bottoms of fire enclosures		N
	Construction of the bottom.....:		N
4.6.3	Doors or covers in fire enclosures		N

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
4.6.4	Openings in transportable equipment		N
4.6.5	Adhesives for constructional purposes		N
	Conditioning temperature (°C)/time (weeks).....:		N

4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	Method 1: Selection and application of components and materials, which minimize the possibility of ignition and spread of flame.	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests		N
4.7.2	Conditions for a fire enclosure		P
4.7.2.1	Parts requiring a fire enclosure		P
4.7.2.2	Parts not requiring a fire enclosure		N
4.7.3	Materials		P
4.7.3.1	General	See below	P
4.7.3.2	Materials for fire enclosures		P
4.7.3.3	Materials for components and other parts outside fire enclosures		N
4.7.3.4	Materials for components and other parts inside fire enclosures		P
4.7.3.5	Materials for air filter assemblies		N
4.7.3.6	Materials used in high-voltage components		N

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		N
5.1	Touch current and protective conductor current		N
5.1.1	General	Test conducted in accordance with 5.1.2 to 5.1.7	N
5.1.2	Configuration of Equipment under test (EUT)	See below	N
5.1.2.1	Single connection to an a.c. mains supply		N
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply.		N
5.1.3	Test circuit		N
5.1.4	Application of measuring instrument		N
5.1.5	Test procedure		N
5.1.6	Test measurements		N

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
	Test voltage (V) .....		N
	Measured touch current (mA) .....		N
	Max. allowed touch current (mA) .....		N
5.1.7	Equipment with touch current exceeding 3.5 mA .....		N
5.1.7.1	General		N
5.1.7.2	Simultaneous multiple connections to the supply		N
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks		N
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		N
	Test voltage (V) .....		N
	Measured touch current (mA) .....		N
	Max. allowed touch current (mA) .....		N
5.1.8.2	Summation of touch currents from telecommunication networks.....		N
	a) EUT with earthed telecommunication ports:		N
	b) EUT whose telecommunication ports have no reference to protective earth		N

<b>5.2</b>	<b>Electric strength</b>		<b>N</b>
5.2.1	General		N
5.2.2	Test procedure	No insulation breakdown detected during the test. (See appended table 5.2)	N

<b>5.3</b>	<b>Abnormal operating and fault conditions</b>		<b>N</b>
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	N
5.3.2	Motors		N
5.3.3	Transformers		N
5.3.4	Functional insulation.....		N
5.3.5	Electromechanical components		N
5.3.6	Audio amplifiers in ITE.....		N
5.3.7	Simulation of faults		N
5.3.8	Unattended equipment		N
5.3.9	Compliance criteria for abnormal operating and fault conditions		N
5.3.9.1	During the tests		N

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
5.3.9.2	After the tests		N

<b>6</b>	<b>CONNECTION TO TELECOMMUNICATION NETWORKS</b>		<b>N</b>
----------	---	--	----------

<b>6.1</b>	<b>Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment</b>		<b>N</b>
6.1.1	Protection from hazardous voltages		N
6.1.2	Separation of the telecommunication network from earth		N
6.1.2.1	Requirements		N
	Test voltage (V) .....		N
	Current in the test circuit (mA) .....		N
6.1.2.2	Exclusions.....		N

<b>6.2</b>	<b>Protection of equipment users from overvoltages on telecommunication networks</b>		<b>N</b>
6.2.1	Separation requirements		N
6.2.2	Electric strength test procedure		N
6.2.2.1	Impulse test		N
6.2.2.2	Steady-state test		N
6.2.2.3	Compliance criteria		N

<b>6.3</b>	<b>Protection of the telecommunication wiring system from overheating</b>		<b>N</b>
	Max. output current (A).....		—
	Current limiting method.....		—

<b>7</b>	<b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>		<b>N</b>
7.1	General	Not connected to a cable distribution system	N
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N
7.3	Protection of equipment users from overvoltages on the cable distribution system		N
7.4	Insulation between primary circuits and cable distribution systems		N
7.4.1	General		N
7.4.2	Voltage surge test	(see appended table 5.2)	N
7.4.3	Impulse test	(see appended table 5.2)	N

**EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011**

<b>Clause</b>	<b>Requirement - Test</b>	<b>Result</b>	<b>Verdict</b>
<b>A</b>	<b>ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		<b>N</b>
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		--
A.1.1	Samples .....		—
	Wall thickness (mm) .....		—
A.1.2	Conditioning of samples; temperature (°C).....		N
A.1.3	Mounting of samples.....		N
A.1.4	Test flame		N
A.1.5	Test procedure		N
A.1.6	Compliance criteria		N
	Sample 1 burning time (s).....		—
	Sample 2 burning time (s).....		—
	Sample 3 burning time (s).....		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		--
A.2.1	Samples, material.....		—
	Wall thickness (mm).....		—
A.2.2	Conditioning of samples		N
A.2.3	Mounting of samples		N
A.2.4	Test flame		N
A.2.5	Test procedure		N
A.2.6	Compliance criteria		N
	Sample 1 burning time (s).....		—
	Sample 2 burning time (s).....		—
	Sample 3 burning time (s).....		—
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4, 8		N
	Sample 1 burning time (s).....		—
	Sample 2 burning time (s).....		—
	Sample 3 burning time (s).....		—
A.3	Hot flaming oil test (see 4.6.2)		N
A.3.1	Mounting of samples		N
A.3.2	Test procedure		N
A.3.3	Compliance criterion		N

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
<b>B</b>	<b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b>		<b>N</b>
B.1	General requirements		N
	Position .....		—
	Manufacturer .....		—
	Type .....		—
	Rated values .....		—
B.2	Test conditions		N
B.3	Maximum temperatures		N
B.4	Running overload test		N
B.5	Locked-rotor overload test		N
	Test duration (days) .....		—
	Electric strength test: test voltage (V) .....		—
B.6	Running overload test for d.c. motors in secondary circuits		N
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N
B.7.1	Test procedure		N
B.7.2	Alternative test procedure; test time (h).....		N
B.7.3	Electric strength test		N
B.8	Test for motors with capacitors		N
B.9	Test for three-phase motors		N
B.10	Test for series motors		N
	Operating voltage (V) .....		—

<b>C</b>	<b>ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b>		<b>N</b>
	Position .....		—
	Manufacturer .....		—
	Type .....		—
	Rated values .....		—
	Method of protection.....		—
	Thermal cut-out		N
C.1	Overload test		N
C.2	Insulation		N
	Protection from displacement of windings.....		N

<b>D</b>	<b>ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS</b>		<b>N</b>
D.1	Measuring instrument	Figure D.1 used.	N
D.2	Alternative measuring instrument	Measuring instrument D1 is	N

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
		used.	

<b>E</b>	<b>ANNEX E, TEMPERATURE RISE OF A WINDING</b>		--
----------	---	--	----

<b>F</b>	<b>ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)</b>		--
----------	---	--	----

<b>G</b>	<b>ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>		--
G.1	Summary of the procedure for determining minimum clearances		N
G.2	Determination of mains transient voltage (V).....:		N
G.2.1	AC mains supply		N
G.2.2	DC mains supply		N
G.3	Determination of telecommunication network transient voltage (V).....:		N
G.4	Determination of required withstand voltage (V).:		N
G.5	Measurement of transient levels (V).....:		N
G.6	Determination of minimum clearances.....:		N

<b>H</b>	<b>ANNEX H, IONIZING RADIATION (see 4.3.13)</b>		--
----------	---	--	----

<b>J</b>	<b>ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)</b>		--
	Metal used .....		—

<b>K</b>	<b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)</b>		<b>N</b>
K.1	Making and breaking capacity		N
K.2	Thermostat reliability; operating voltage (V).....:		N
K.3	Thermostat endurance test; operating voltage (V) .....		N
K.4	Temperature limiter endurance; operating voltage (V) .....		N
K.5	Thermal cut-out reliability		N
K.6	Stability of operation		N

<b>L</b>	<b>ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1)</b>		<b>P</b>
L.1	Typewriters	Not used	N
L.2	Adding machines and cash registers		N
L.3	Erasers		N



EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
L.4	Pencil sharpeners		N
L.5	Duplicators and copy machines		N
L.6	Motor-operated files		N
L.7	Other business equipment	Considered	P

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		--
M.1	Introduction		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringling signal		N
M.3.1.1	Frequency (Hz) .....		—
M.3.1.2	Voltage (V) .....		—
M.3.1.3	Cadence; time (s), voltage (V) .....		—
M.3.1.4	Single fault current (mA).....		—
M.3.2	Tripping device and monitoring voltage.....		N
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N
M.3.2.2	Tripping device		N
M.3.2.3	Monitoring voltage (V).....		N

N	ANNEX N, IMPULSE TEST GENERATORS (see 2.10.3.4, 6.2.2.1, 7.3.2 and clause G.5)		--
N.1	ITU-T impulse test generators		N
N.2	IEC 60065 impulse test generator		N

P	ANNEX P, NORMATIVE REFERENCES		--
---	-------------------------------	--	----

Q	ANNEX Q, BIBLIOGRAPHY		--
---	-----------------------	--	----

R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		--
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6)		N
R.2	Reduced clearances (see 2.10.3)		N

S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		--
S.1	Test equipment		N
S.2	Test procedure		N
S.3	Examples of waveforms during impulse testing		N

EN 60950-1:2006+ A11:2009+ A1:2010+ A12:2011			
Clause	Requirement - Test	Result	Verdict
<b>T</b>	<b>ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>		--
<b>U</b>	<b>ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>		<b>N</b>
	Separate test report	Approved magnetic wire used	N
<b>V</b>	<b>ANNEX V, AC POWER DISTRIBUTION SYSTEM (see 1.6.1)</b>		<b>N</b>
V.1	Instruction	TN and IT for Norway.	N
V.2	TN power distribution systems		N
V.3	TT power systems		N
V.4	IT power systems		N
<b>W</b>	<b>ANNEX W, SUMMATION OF TOUCH CURRENTS</b>		<b>N</b>
W.1	Touch current from electronic circuits		N
W.1.2	Earthed circuits		N
W.2	Interconnection of several equipments		N
W.2.1	Isolation		N
W.2.2	Common return, isolated from earth		N
W.2.3	Common return, connected to protective earth		N
<b>X</b>	<b>ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause c.1)</b>		<b>N</b>
X.1	Determination of maximum input current		N
X.2	Overload test procedure		N
<b>Y</b>	<b>ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)</b>		<b>N</b>
Y.1	Test apparatus		N
Y.2	Mounting of test samples		N
Y.3	Carbon-arc light-exposure apparatus		N
Y.4	Xenon-arc light exposure apparatus		N
<b>Z</b>	<b>ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)</b>		<b>P</b>
<b>AA</b>	<b>ANNEX AA, MANDREL TEST (see 2.10.5.8)</b>		<b>N</b>

<b>BB</b>	<b>ANNEX BB, CHANGES IN THE SECOND EDITION</b>	<b>N</b>
<b>CC</b>	<b>ANNEX CC, Evaluation of integrated circuit(IC) current limited</b>	<b>N</b>
CC.1	General	N
CC.2	Test program 1.....:	N
CC.3	Test program 2.....:	N
<b>DD</b>	<b>ANNEX DD, Requirement for the mounting means of rack-mounted equipment</b>	<b>N</b>
DD.1	General	N
DD.2	Mechanical strength test, variable N.....:	N
DD.3	Mechanical strenght test, 250N, Including end stops:	N
DD.4	Compliance.....:	N
<b>EE</b>	<b>ANNEX EE, Household and home/office document/media shredders</b>	<b>N</b>
EE.1	General	N
EE.2	Marking and instructions	N
	Use of marking or symbols.....:	N
	Information of user instructions, maintenance and/or servicing instructions.....:	N
EE.3	Inadvertent reactivation test.....:	N
EE.4	Disconnection of power to hazardous movig parts:	N
	Use of marking or symbols.....:	N
EE.5	Protection against hazardous moving parts	N
	Test with test finger(Figure 2A).....:	N
	Test with wedge probe(Figure EE1 and EE2).....:	N

**ATTACHMENT TO TEST REPORT IEC 60950-1**  
**EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES**  
Information technology equipment – Safety –  
**Part 1: General requirements**

<b>Differences according to</b> ..... :	EN 60950-1:2006+A11:2009+A1:2010+A12:2011
<b>Attachment Form No</b> ..... :	EU_GD_IEC60950_1B_II
<b>Attachment Originator</b> ..... :	SGS Fimko Ltd
<b>Master Attachment</b> ..... :	Date (2011-08)
<b>Copyright © 2009 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.</b>	


**EN 60950-1:2006/A11:2009/A1:2010/A12:2011 – CENELEC COMMON MODIFICATIONS**

<b>IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications (EN))</b>			
Clause	Requirement + Test	Result - Remark	Verdict
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions		P
General	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. 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		P
General (A1:2010)	Delete all the “country” notes in the reference document(IEC 60950-1:2005/A1:2010) 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		P

1.3.Z1	<p>Add the following subclause:</p> <p>1.3.Z1 Exposure to excessive sound pressure</p> <p>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.</p> <p>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.</p>		N
(A12: 2011)	<p>In EN 60950-1:2006/A12:2011</p> <p>Delete the addition of 1.3.Z1/ EN60950-1:2006</p> <p>Delete the definition 1.2.3.Z1/ EN60950-1:2006/A1:2010</p>		P
1.5.1	<p>Add the following NOTE:</p> <p>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC</p>		P
1.7.2.1	<p>Add the following NOTE:</p> <p>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</p>		N
1.7.2.1 (A12:2011)	<p>In EN 60950-1:2006/A12:2011</p> <p>Delete NOTE Z1 and the addition for portable sound system.</p> <p>Add the following clause and annex to the existing standard and amendments</p>		N
	<p>ZX Protection against excessive sound pressure from personal music player</p>		N

	<p>Zx.1 General</p> <p>This sub-clause specifies equipments for protection against excessive sound pressure from personal music player that are closely coupled to the ear, It also specifies equipments for earphones and headphones intended for use with personal music player.</p> <p>A personal music player is portable equipment for personal use, that,</p> <ul style="list-style-type: none"> <li>-is designed to allow the user to listen to recorded or broadcast sound or video; and</li> <li>-primarily uses headphones or earphones that can be worn in or on or around the ears; and</li> <li>-allows the user to walk around while in use.</li> </ul> <p>NOTE 1 examples are hand-held or body-worn portable CD players, MP3 audio player, mobile phone with MP3 type features, PDA's or similar equipment.</p> <p>A personal music player and earphones or headphones intended to be used with personal music player shall comply with the requirements of this sub-clause.</p> <p>The requirements in this sub-clause are valid for music or video mode only.</p> <p>The requirements do not apply:</p> <ul style="list-style-type: none"> <li>-while the personal music player is connected to an external amplifier; or</li> <li>-while the headphones or earphones are not used.</li> </ul> <p>NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to music as a standalone music player.</p>		N
	<p>The requirements do not apply to :</p> <ul style="list-style-type: none"> <li>-hearing aid equipment and professional equipment;</li> </ul> <p>NOTE 3 Professional equipment is equipment sold through special sales channels, all products sold through normal electronics stores are considered not to be professional equipment.</p> <ul style="list-style-type: none"> <li>-analogue personal music player (personal music player without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015.</li> </ul> <p>NOTE 4 this exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist, This exemption will not be extended to other technologies.</p> <p>For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>		

	<p>Zx.2 Equipment requirements</p> <p>No safety provision is required for equipment that complies with the following:</p> <ul style="list-style-type: none"> <li>- equipment provision as a package(personal music player with its listening device), where the acoustic output <math>L_{ABq,T}</math> is <math>\leq 85</math> Dba measured while playing the fixed” programme simulation noise” as described in EN 50332-1; and</li> <li>- a personal music player provided with an analogue electrical output socket for a listening devicem where the electrical output is <math>\leq 27</math> mV measured as described in EN 50332-2, while playing the fixed” programme simulation noise” as described in EN 50332-1</li> </ul> <p>All other equipment shall:</p> <ul style="list-style-type: none"> <li>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and</li> <li>b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and</li> </ul>		N
	<ul style="list-style-type: none"> <li>c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above, any means used shall be acknowledged by the user before activating a mode of operating which allows for an acoustic output exceeding those mentioned above, the acknowledgement does not need to be repeated more than once every 20h of cumulative listening time; and</li> </ul>		
	<p>NOTE 2 examples of means include visual or audible signals. Action from the user is always required</p> <p>NOTE 3 the 20h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <ul style="list-style-type: none"> <li>d) have a warning as specified in Zx.3; and</li> <li>e) not exceeding the following: <ul style="list-style-type: none"> <li>1)equipment provided as a package(player with Its listening device), the acoustic output shall be <math>\leq 100</math> dBA measured while playing the fixed” programme simulation noise” as described in EN 50332-1; and</li> <li>2) a personal music player provided with an analogue electrical output socket for a listening devicem,the electrical output shall be <math>\leq 150</math> mV measured as described in EN 50332-2, while playing the fixed ” programme simulation noise” as described in EN 50332-1,</li> </ul> </li> </ul> <p>For music where the average sound pressure(long term <math>L_{Aq,T}</math>) measured over the duration of the song is lower than the average</p>		

	<p>produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has average sound pressure(long term <math>L_{Aq,T}</math>)which is much lower than the average programme simulation noise, therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA.</p> <p>For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.</p>		
	<p>Zx.3 Warning</p> <p>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following:</p> <ul style="list-style-type: none"> <li>-the symbol of figure 1 with a minimum height of 5mm; and</li> <li>-the following wordingm, or similar:  “ To prevent possible hearing damage, do not listen at high volume levels for long periods.”</li> </ul> <div style="text-align: center;">  </div> <p>Figure 1-Warning label(IEC 60417-6044)</p> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p>		N
	Zx.4 Requirements for listening devices( headphones and earphones)		N
	<p>Zx.4.1 Wired listening devices with analogue input</p> <p>With 94 dBA sound pressure output <math>L_{Aq,T}</math>, the input voltage of the fixed " programme simulation noise" as described in EN 50332-2 shall be <math>\geq 75</math> mV.</p> <p>This requirement is applicable in any mode where the headphones can operate(active or passive), including any available setting(for example built-in volume level control).</p> <p>NOTE The values of 94 dBA -75mV correspond with 85 dBA -27mV and 100 dBA -150mV.</p>		N



	<p>Zx.4.2 Wire listening devices with digital input</p> <p>With any playing devices playing the fixed” programme simulation noise” as described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output <math>L_{Aq,T}</math> of the listening device shall be <math>\leq 100</math> dBA.</p>		N
	<p>The requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.).</p> <p>NOTE an example of a wired listening device with digital input is a USB headphone.</p>		
	<p>Zx.4.3 Wireless listening devices</p> <p>In wireless mode:</p> <ul style="list-style-type: none"> <li>-with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and</li> <li>- respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and</li> <li>-with volume and sound setting in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output <math>L_{Aq,T}</math> of the listening device shall be <math>\leq 100</math> dBA.</li> </ul> <p>NOTE An example of a wireless listening devices is a bluetooth headphone.</p>		N
	<p>Zx.5 Measurement methods</p> <p>Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable.</p> <p>Unless stated otherwise, the time interval T shall be 30 s.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p>		N
2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>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):</p> <p>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;</p>		P

2.7.1	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;		N
	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.		N
2.7.2	This subclause has been declared 'void'.		N
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N
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.		P
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    Delete the fifth line: conductor sizes for 13 to 16 A		N
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)		N
	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 $\mu$ Sv/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.		N
Bibliography	Additional EN standards.		—

<b>ZA</b>	<b>NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS</b>		—
-----------	--	--	---

<b>ZB</b>	<b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>		—
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.		N
1.2.13.14	In <b>Norway</b> and <b>Sweden</b> , for requirements see 1.7.2.1 and 7.3 of this annex.		N
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 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N
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).		N
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.		N
1.7.2.1	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. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"		N

	<p>In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: “Apparaten skall anslutas till jordat uttag” In <b>Norway</b> and <b>Sweden</b>, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an Projector or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11).”</p> <p>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p>		N
	<p>Translation to Norwegian (the Swedish text will also be accepted in Norway): “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.”</p> <p>Translation to Swedish: ”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”</p>		N

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.  For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.		N
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.		N
2.3.2	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.		N
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.		N
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.		N
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.		N
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.		N
3.2.1.1	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: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A		N
	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  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: 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, 16A SEV 5934-2.1998: Plug Type 23, L+N+PE .250 V, 16 A		N

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>		N
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>		N
	<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>		N
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>		N
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>		N

3.2.4	In <b>Switzerland</b> , for requirements see 3.2.1.1 of this annex.		N
3.2.5.1	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.		N
3.3.4	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: <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>		N
4.3.6	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.		N
4.3.6	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.		N
5.1.7.1	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: <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>		N

6.1.2.1	<p>In <b>Finland, Norway and 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> </ul>		N
6.1.2.1	<ul style="list-style-type: none"> <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>		N
6.1.2.1	<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>		N



6.1.2.2	In <b>Finland, Norway and 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.		N
7.2	In <b>Finland, Norway and 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.		N
7.3	In <b>Norway and Sweden</b> , for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N
7.3	In <b>Norway</b> , for installation conditions see EN 60728-11:2005.		N

**Note: Before placing the products in the different countries, the manufacturer must ensure that:**

1. Operating Instructions, Ratings Labels and Warnings Labels written in an Accepted or Official Language of the county in question.
2. The equipment complies with the National Standards and/or Electrical Codes of the country in question.

1.5.1 TABLE: list of critical components				P
object/part No.	manufacturer/ trademark	type/model	technical data	mark(s) of conformity <sup>1)</sup>
Enclosure	Sabic Innovative Plastics Us L L C	945	Min. 120°C, V-0 or better Min. thick. 2.0 mm	UL
PCB	Various	Various	V-0 or better, 130°C	VDE UL
Battery	Shenzhen Hengwang Power Technology Co.,LTD	CR2032*2	3V, 800mAh	CE mark

<sup>1)</sup> an asterisk indicates a mark which assures the agreed level of surveillance

1.6.2 TABLE: electrical data (under normal conditions)						P
fuse #	I <sub>rated</sub> (A)	U (V)	P (W)	I (A)	I <sub>fuse</sub> (A)	condition/status
--	1.0	6	4.3	0.7	--	Supply from battery

Note: Average/Max. value

2.10.5 TABLE: distance through insulation measurements				N
distance through insulation di at/of:	U r.m.s. (V)	test voltage (V)	required di (mm)	di (mm)
---	---	---	---	---

Supplementary information:

4.3.8	TABLE: Batteries								<b>P</b>	
The tests of 4.3.8 are applicable only when appropriate battery data is not available									-	
Is it possible to install the battery in a reverse polarity position?							It can't possible to install the battery in a reverse polarity position.		-	
Non-rechargeable batteries			Rechargeable batteries							
Discharging		Un-intentional charging	Charging		Discharging		Reversed charging			
Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.		
Max. current during normal condition	--	-	-	160mA	160mA	160mA	160mA	-	-	
Max. current during fault condition	--	-	-	160mA	160mA	160mA	160mA	-	-	
Test results:									Verdict	
- Chemical leaks							After the test, no chemical leaks.		P	
- Explosion of the battery							No explosion.		P	
- Emission of flame or expulsion of molten metal							No emission of flame or molten metal		P	
- Electric strength tests of equipment after completion of tests							No breakdown		P	
Supplementary information: N/A										

<b>4.5</b>	<b>TABLE: temperature rise measurements</b>								<b>P</b>	
Test voltage (V) .....			6V					—		
t1 (°C) .....			25.1°C					—		
t2 (°C) .....			25.3°C					—		
temperature rise Dt of part/at:			T(°C)				allowed T (°C)			
PCB			57.6				130			
Enclosure			28.9				95			
Button			27.9				--			
Note:N/A.										

<b>4.5.5</b>	<b>TABLE: ball pressure test or thermoplastic parts</b>		<b>N</b>
	Allowed impression diameter (mm)	$\leq 2.0\text{mm}$	
	Part	Test temperature (°C)	Impression diameter (mm)
Note: N/A.			

<b>5.1</b>	<b>TABLE: touch current and protective conductor current</b>		<b>N</b>
Location	Measured Touch Current (mA)	Limits(mA)	
-	-	-	
Note:-			

<b>5.2</b>	<b>TABLE: electric strength tests and impulse tests</b>		<b>N</b>
test voltage applied between:		test voltage (V)	breakdown Yes / No
Note: N/A.			

<b>5.3</b>	<b>TABLE: fault condition tests</b>		<b>N</b>
	ambient temperature (°C) .....		—
	model/type of power supply .....		—
	manufacturer of power supply .....		—
	rated markings of power supply .....		—

component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
<i>Supplementary information:</i>						
<i>S = short circuit, O = open circuit, O/L = overload</i>						

<b>A.6.5</b>	<b>TABLE: flammability test for classifying materials V-0, V-1 or V-2</b>		<b>N</b>
sample No. / ref.	afterflame time (s) $t_1$ or $t_2$	afterflame + afterglow (s) after 2nd flame application $t_2 + t_3$	
1/A			
2/A			
3/A			
4/A			
5/A			
6/B			

7/B		
8/B		
9/B		
10/B		
supplementary information:		
Total afterflame time (s) for any condition set $t_1 + t_2$ for five (5) specimens:		
Conditioning "A" designates 7 days at $70\text{ °C} \pm 1\text{ °C}$ followed by 4 h minimum in calcium chloride desiccator.		
Conditioning "B" designates 48 h at $23\text{ °C} \pm 2\text{ °C}$ and relative humidity between 45 % and 55 %.		

<b>A.6.6</b>	<b>TABLE: flammability re-test for classifying materials V-0, V-1 or V-2</b>	<b>N</b>
sample No.	After flame time (s) $t_1$ or $t_2$	afterflame + afterglow (s) after 2nd flame application $t_2 + t_3$
11		
12		
13		
14		
15		
supplementary information:		
Total after flame time (s) for any condition set $t_1 + t_2$ for five (5) specimens:		

<b>A.7.4, A.7.5, A.7.6 and A.7.7</b>	<b>TABLE: flammability test for classifying foam materials HF-1, HF-2 or HBF</b>			<b>N</b>
sample No. / ref.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment (for A.7.7 burning rate mm/min)
1/A				
2/A				
3/A				
4/A				
5/A				
6/B				
7/B				
8/B				
9/B				
10/B				
supplementary information:				

Conditioning "A" designates 7 days at 70 °C ± 1 °C followed by 4 h minimum in calcium chloride desiccator.

Conditioning "B" designates 48 h at 23 °C ± 2 °C and relative humidity between 45 % and 55 %.

A.7.8	TABLE: flammability re-test for classifying foam materials HF-1 or HF-2			N
sample No.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment
11				
12				
13				
14				
15				
supplementary information:				

A.7.9	TABLE: flammability re-test for classifying foam materials HBF			N
sample No.	flame time (s)	glow time (s)	flaming/glowing distance from the end (mm)	comment (for A.7.7 burning rate mm/min)
11				
12				
13				
14				
15				
supplementary information:				

A.8.5	TABLE: flammability test for classifying materials HB		N
sample No.	flaming/glowing rate mm/min	flaming/glowing distance from reference mark (mm)	
1			
2			
3			
supplementary information:			

A.8.6	TABLE: flammability re-test for classifying materials HB		N
sample No.	flaming/glowing rate mm/min	flaming/glowing distance from reference mark (mm)	
4			
5			
6			
supplementary information:			

sample No.	flaming/glowing rate mm/min	flaming/glowing distance from reference mark (mm)

<b>A.9.6</b>	<b>TABLE: flammability test for classifying materials 5V</b>					<b>N</b>
sample	test bars			test plaques		
No./ref.	flaming + glowing time (s)	burning distance (mm)	position	flaming + glowing time (s)	burning distance (mm)	
1/A			A			
2/A			B			
3/A			C			
4/A			D			
5/A			—	—	—	
6/B			A			
7/B			B			
8/B			C			
9/B			D			
10/B			—	—	—	
supplementary information:						
Conditioning "A" designates 7 days at 70 °C ± 1 °C followed by 4 h minimum in calcium chloride desiccator.						
Conditioning "B" designates 48 h at 23 °C ± 2 °C and relative humidity between 45 % and 55 %.						

<b>A.9.7</b>	<b>TABLE: flammability re-test for classifying materials 5V</b>					<b>N</b>
sample No.	test bars			test plaques		
	flaming + glowing time (s)	burning distance (mm)	position	flaming + glowing time (s)	burning distance (mm)	
11			A			
12			B			
13			C			
14			D			
15			—	—	—	
supplementary information:						

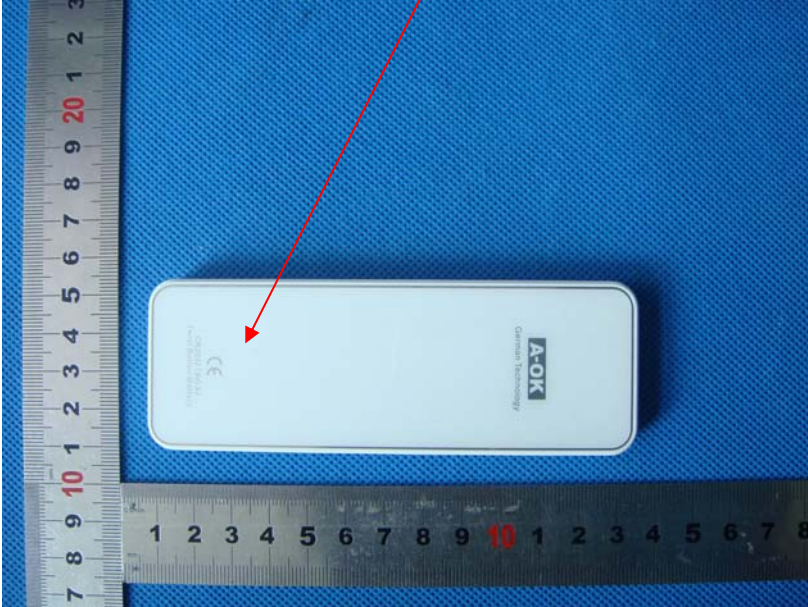
# Attachment A - CE Mark Label Specification



**Specifications:** Labels are printed in indelible ink on permanent adhesive backing or silk-screened onto the EUT.

## Location of Label on EUT

EUT Rear View/Proposed CE marking Location





## Attachment B – EUT’s Photos

EUT –Top View



EUT – Back View



**EUT – Side View**



**\*\*\*\*\*End of Test Report\*\*\*\*\***