Report No. EN 83055 M0A0
MET Project No. 83055

Test Report issued under the responsibility of:

MET Laboratories, Inc.

TEST REPORT

EN 60950-1
Information technology equipment – Safety – Part 1: General requirements

Report Number. ..... :	83055
Date of issue ..... :	October 3, 2011
Total number of pages	80
CB Testing Laboratory..... :	MET Laboratories, Inc.
Address ..... :	914 West Patapsco Ave, Baltimore, MD 21230, USA
Applicant's name..... :	Ubiquiti Networks
Address ..... :	91 E. Tasman San Jose, CA 95134, U.S.A
Manufacturer's name……. :	Ubiquiti Networks
Address ..... :	91 E. Tasman San Jose, CA 95134, U.S.A
Test specification:	CE
Standard ..... :	EN 60950-1: 2006 + A1:2010
Test procedure ..... :	CE Scheme
Non-standard test method…….. :	N/A
Test Report Form No..... :	IEC60950_1B
Test Report Form(s) Originator..... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2010-04

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description .....:	Indoor/Outdoor Wireless Network Device.
Trade Mark ..... :	UBiQUiTi NETWORKS
Manufacturer ..... :	Ubiquiti Networks
Model/Type reference ..... :	PowerBridge M5 Carrier Class Air Max Bridge.
Ratings ..... :	Powered by Listed AC/DC Adaptor with an output of 24VDC, 1.0A

Testing procedure and testing location:			
☐	**CB Testing Laboratory**:	MET Laboratories, Inc.	
Testing location/ address .....:		914 West Patapsco Ave, Baltimore MD 21230, USA	
	Tested by (name + signature).....:		
	Approved by (name + signature).....:		
☒	**Associated CB Laboratory:**	MET Laboratories, Inc.	
Testing location/ address .....:		33439 Western Ave. Union City, CA 94587	
	Tested by (name + signature).....:	Shaima Adin	
	Approved by (name + signature).....:	Nader Tabesh	

List of Attachments:

Enclosure 1: Other Country National And Group Differences, pg 45

Enclosure 2: Photographs (Figures) and/or Illustrations, pg 66

Enclosure 3: EN 60950-22: 2006, pg 68

Summary of testing:

Tests performed (name of test and test clause):

1.7.13	Marking Durability Test
1.6.2	Input Current Test
4.5.1	Temperature Test
4.2.7	Stress Relief Test
5.2	Dielectric Test
6.2.2.2	Steady State Test
4.2.10	Pole Mounting Test
IPx2 per EN 60950-22	IPx2 Testing

Testing location:

33439 Western Ave.

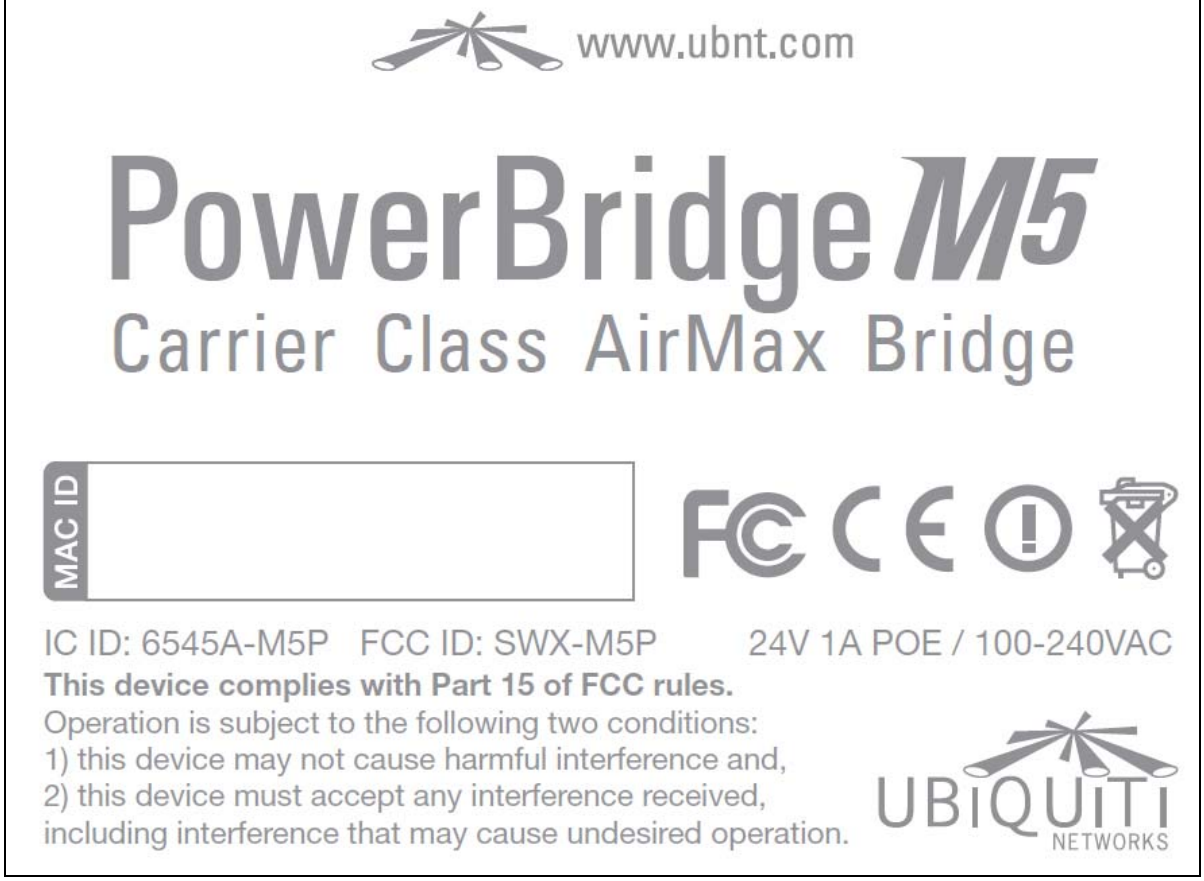
Union City, CA. 94587

Summary of compliance with National Differences

List of countries addressed: AT, BE, CH, CN, CZ, DE, DK, FI, GB, KR, JP, NL, NO, SE, SG, SL, & US.

Group Differences are applicable for CENELEC member countries: Austria, Belgium, Bulgaria, 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 and CENELEC affiliate member countries: Turkey.

Copy of marking plate:



Test item particulars.....	
Equipment mobility.....	Pole Mounted
Connection to the mains	Through external Listed AC/DC power supply adaptor
Operating condition.....	Continuous
Access location	Operator accessible
Over voltage category (OVC)	Other DC
Mains supply tolerance (%) or absolute mains supply values	-15% and +20%
Tested for IT power systems	No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	TNV-1
Considered current rating of protective device as part of the building installlation (A)	20A
Pollution degree (PD)	PD 2
IP protection class	IP II
Altitude during operation (m)	14
Altitude of test laboratory (m)	14
Mass of equipment (kg)	1 kg
Possible test case verdicts:	
- test case does not apply to the test object.....	: N/A (or N)
- test object does meet the requirement.....	: P (Pass)
- test object does not meet the requirement	: F (Fail)
Testing.....	:
Date of receipt of test item.....	: June 20, 2011
Date of performance of tests	: July 21, 2011

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 6.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....:	☐ Yes ☒ Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies)..... :	Ubiquiti Networks 91 E. Tasman San Jose, CA 95134, U.S.A
General product information:	

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL**		P
1.5	**Components**		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	Components certified to EN harmonized Standards and checked for correct application. Components not certified are used in accordance with their ratings and they comply with applicable parts of EN 60950 and the relevant component Standards.	P
1.5.3	Thermal controls	No thermal control	N/A
1.5.4	Transformers	Isolation transformer internal to the unit only intended to be used in application of this product.	P
1.5.5	Interconnecting cables	Addressed in the manual.	P
1.5.6	Capacitors bridging insulation	No capacitor bridging	N/A
1.5.7	Resistors bridging insulation	No resistor bridging	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	No resistor bridging	N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	No resistor bridging	N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No resistor bridging	N/A
1.5.8	Components in equipment for IT power systems	No such components	N/A
1.5.9	Surge suppressors	DC equipment. surge suppressor part of the external Listed AC/DC power supply	N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6	**Power interface**		P
1.6.1	AC power distribution systems	DC unit	N/A
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	Not hand-held unit.	N/A
1.6.4	Neutral conductor	Part of the external Listed AC/DC power supply	N/A

1.7	**Marking and instructions**		P
1.7.1	Power rating and identification markings	Provided on the label	P
1.7.1.1	Power rating marking	Provided on the label	P
	Multiple mains supply connections.....:		P
	Rated voltage(s) or voltage range(s) (V) .....:	24VDC	P
	Symbol for nature of supply, for d.c. only.....:	Provided on the label	P
	Rated frequency or rated frequency range (Hz) ...:	DC equipment	N/A
	Rated current (mA or A) .....:	1A Provided on the label.	P
1.7.1.2	Identification markings	Equipment name and model number marked on the equipment.	P
	Manufacturer's name or trade-mark or identification mark .....:	Marked on the equipment	P
	Model identification or type reference .....:	Model type is provided on the equipment	P
	Symbol for Class II equipment only .....:		N/A
	Other markings and symbols .....:		N/A
1.7.2	Safety instructions and marking	provided in the manual	P
1.7.2.1	General	Provided in the manual	P
1.7.2.2	Disconnect devices	Addressed in the manual	P
1.7.2.3	Overcurrent protective device	Part of the external listed power supply	P
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool	No tool necessary. No operator access	N/A
1.2.7.6	Ozone	No ozone generated	N/A
1.7.3	Short duty cycles	Not intended for such application	N/A
1.7.4	Supply voltage adjustment .....:	Part of the external listed power supply	N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Methods and means of adjustment; reference to installation instructions .....:		N/A
1.7.5	Power outlets on the equipment .....:	No power outlets on equipment	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) .....:	No operator replaceable fuse	N/A
1.7.7	Wiring terminals	No wiring terminals	N/A
1.7.7.1	Protective earthing and bonding terminals .....:	No terminals on equipment. Protective earthing provided by external Listed AC/DC power supply Protective bonding is to installed external to the equipment according to National Electrical Code of the country. Addressed in the manual	N/A
1.7.7.2	Terminals for a.c. mains supply conductors	Part of the external power supply	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	No terminals	N/A
1.7.8	Controls and indicators	None	N/A
1.7.8.1	Identification, location and marking .....:		N/A
1.7.8.2	Colours .....:		N/A
1.7.8.3	Symbols according to IEC 60417.....:		N/A
1.7.8.4	Markings using figures .....:		N/A
1.7.9	Isolation of multiple power sources .....:	Single power source	N/A
1.7.10	Thermostats and other regulating devices .....:	None	N/A
1.7.11	Durability	Test performed. Marking legible after test	P
1.7.12	Removable parts	No removable parts	N/A
1.7.13	Replaceable batteries .....:	None	N/A
	Language(s) .....:		—
1.7.14	Equipment for restricted access locations .....:	Addressed in the manual	N/A

2	**PROTECTION FROM HAZARDS**		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts	No access to energized parts	P
	Test by inspection .....:		P

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test with test finger (Figure 2A) ..... :		N/A
	Test with test pin (Figure 2B) ..... :		N/A
	Test with test probe (Figure 2C) ..... :	No TNV-3 circuitry	N/A
2.1.1.2	Battery compartments	No battery compartment	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	No access to hazardous voltage	N/A
2.1.1.5	Energy hazards ..... :	No energy hazards	N/A
2.1.1.6	Manual controls	No manual controls	N/A
2.1.1.7	Discharge of capacitors in equipment	No discharge of capacitance. Not directly connected to mains	N/A
	Measured voltage (V); time-constant (s)..... :		—
2.1.1.8	Energy hazards – d.c. mains supply	Permanently connected equipment.	N/A
	a) Capacitor connected to the d.c. mains supply .. :		N/A
	b) Internal battery connected to the d.c. mains supply ..... :		N/A
2.1.1.9	Audio amplifiers ..... :	No audio amplifiers	N/A
2.1.2	Protection in service access areas	no service access area	N/A
2.1.3	Protection in restricted access locations	no energy hazards in restricted access area	N/A
2.2	**SELV circuits**		P
2.2.1	General requirements	Power provided by Listed LPS external AC/DC power supply	P
2.2.2	Voltages under normal conditions (V) ..... :	SELV	P
2.2.3	Voltages under fault conditions (V) ..... :	SELV	P
2.2.4	Connection of SELV circuits to other circuits ..... :	SELV to SELV	P
2.3	**TNV circuits**		P
2.3.1	Limits	Voltage level of the equipment does not exceed SELV and is subject to overvoltage.	P
	Type of TNV circuits..... :	TNV-1	—

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Clause	Requirement + Test	Result - Remark	Verdict
2.3.2	Separation from other circuits and from accessible parts	Basic insulation between TNV-1 and antenna (SELV)	P
2.3.2.1	General requirements	TNV-1 and antenna (SELV)	P
2.3.2.2	Protection by basic insulation	Basic insulation between TNV-1 and antenna (SELV)	P
2.3.2.3	Protection by earthing	Protective earthing provided by external Listed AC/DC power supply Protective bonding is to installed external to the equipment according to National Electrical Code of the country. Addressed in the manual	P
2.3.2.4	Protection by other constructions ..... :		N/A
2.3.3	Separation from hazardous voltages	No hazardous voltage levels.	N/A
	Insulation employed ..... :		—
2.3.4	Connection of TNV circuits to other circuits	TNV-1 to TNV-1	P
	Insulation employed ..... :	Basic insulation	—
2.3.5	Test for operating voltages generated externally	None	P
2.4	**Limited current circuits** **Not evaluated for limited current circuit**		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (Hz) ..... :		—
	Measured current (mA) ..... :		—
	Measured voltage (V) ..... :		—
	Measured circuit capacitance (nF or µF) ..... :		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	**Limited power sources**		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition	Covered by external LPS Listed AC/DC power supply	P
	d) Overcurrent protective device limited output		N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Max. output voltage (V), max. output current (A), max. apparent power (VA)..... :		—
	Current rating of overcurrent protective device (A) .:		—
	Use of integrated circuit (IC) current limiters		
2.6	**Provisions for earthing and bonding**		P
2.6.1	Protective earthing	Protective earthing provided by external Listed AC/DC power supply	P
2.6.2	Functional earthing	Not considered	N/A
2.6.3	Protective earthing and protective bonding conductors	Protective earthing provided by external Listed AC/DC power supply Protective bonding is to installed external to the equipment according to National Electrical Code of the country. Addressed in the manual	P
2.6.3.1	General	Protective earthing provided by external Listed AC/DC power supply Protective bonding is to installed external to the equipment according to National Electrical Code of the country. Addressed in the manual	P
2.6.3.2	Size of protective earthing conductors	Protective earthing provided by external Listed AC/DC power supply Protective bonding is to installed external to the equipment according to National Electrical Code of the country. Addressed in the manual	P
	Rated current (A), cross-sectional area (mm^2), AWG..... :		—
2.6.3.3	Size of protective bonding conductors	Protective bonding is to installed external to the equipment according to National Electrical Code of the country.	NA

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Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), cross-sectional area (mm^2), AWG..... :		—
	Protective current rating (A), cross-sectional area (mm^2), AWG..... :		
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)..... :	Covered by external Listed AC/DC power supply	N/A
2.6.3.5	Colour of insulation ..... :		N/A
2.6.4	Terminals	No terminals	N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals	No terminals. Part of the LAN wire.	N/A
	Rated current (A), type, nominal thread diameter (mm)..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	Protective earthing provided by external Listed AC/DC power supply Protective bonding is to installed external to the equipment according to National Electrical Code of the country. Addressed in the manual	P
2.6.5	Integrity of protective earthing	Protective earthing provided by external Listed AC/DC power supply	P
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No such components	N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator	No parts in equipment that can be removed by operator	N/A
2.6.5.5	Parts removed during servicing	No protective earthing on parts that can be removed by servicing	N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system	Protective earthing does not rely on telecommunication network or cable distribution system.	N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.7	**Overcurrent and earth fault protection in primary circuits**	**Not primary circuit**	N/A
2.7.1	Basic requirements		N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7		N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices ..... :		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel ..... :		N/A

2.8	**Safety interlocks**	**No safety interlocks**	N/A
2.8.1	General principles		N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) ..... :		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A

2.9	**Electrical insulation**		P
2.9.1	Properties of insulating materials	Natural rubber, materials containing asbestos and hygroscopic materials are not used as insulation	P
2.9.2	Humidity conditioning		N/A
	Relative humidity (%), temperature (°C) ..... :		—
2.9.3	Grade of insulation	Basic insulation: TNV-1 to antenna.	P

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.4	Separation from hazardous voltages	No hazardous voltage levels	N/A
	Method(s) used ..... :		—
2.10	**Clearances, creepage distances and distances through insulation** **Covered by external LPS listed adaptor**		P
2.10.1	General	Equipment powered at SELV only with no exposure to transient overvoltages – exclusion of 5.3.4b applied for functional insulation	P
2.10.1.1	Frequency ..... :	DC equipment	N/A
2.10.1.2	Pollution degrees ..... :	Pollution Degree II	N/A
2.10.1.3	Reduced values for functional insulation		N/A
2.10.1.4	Intervening unconnected conductive parts	No such parts	N/A
2.10.1.5	Insulation with varying dimensions	None	N/A
2.10.1.6	Special separation requirements	None	N/A
2.10.1.7	Insulation in circuits generating starting pulses	No such circuits	N/A
2.10.2	Determination of working voltage	24VDC	P
2.10.2.1	General	Rated DC voltage	P
2.10.2.2	RMS working voltage		N/A
2.10.2.3	Peak working voltage		N/A
2.10.3	Clearances	Part of Listed Power Adaptor	P
2.10.3.1	General	Functional	P
2.10.3.2	Mains transient voltages	No directly connected to mains. Covered by Listed Power Adaptor	N/A
	a) AC mains supply ..... :	Part of Listed Power Adaptor	N/A
	b) Earthed d.c. mains supplies ..... :		N/A
	c) Unearthed d.c. mains supplies ..... :		N/A
	d) Battery operation ..... :	No batteries	N/A
2.10.3.3	Clearances in primary circuits	Part of Listed Power Adaptor No primary circuitry	N/A
2.10.3.4	Clearances in secondary circuits	>0.1mm	P
2.10.3.5	Clearances in circuits having starting pulses	No such circuits	N/A
2.10.3.6	Transients from a.c. mains supply ..... :	Not directly connected to AC mains	N/A
2.10.3.7	Transients from d.c. mains supply ..... :	Part of Listed Power Adaptor	N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems ..... :	No such connections	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.9	Measurement of transient voltage levels	Part of Listed Power Adaptor	N/A
	a) Transients from a mains supply		
	For an a.c. mains supply ..... :		N/A
	For a d.c. mains supply ..... :		N/A
	b) Transients from a telecommunication network :		N/A
2.10.4	Creepage distances		P
2.10.4.1	General	Equipment powered at SELV only with no exposure to transient overvoltages – exclusion of 5.3.4b applied for functional insulation	P
2.10.4.2	Material group and comparative tracking index		P
	CTI tests ..... :	Material group IIIb is assumed to be used	—
2.10.4.3	Minimum creepage distances		P
2.10.5	**Solid insulation**	No solid insulation	N/A
2.10.5.1	General		N/A
2.10.5.2	Distances through insulation		N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5.	Cemented joints		N/A
2.10.5.6	Thin sheet material – General		N/A
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs)..... :		—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test		—
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage ..... :		N/A
	a) Basic insulation not under stress ..... :		N/A
	b) Basic, supplementary, reinforced insulation ..... :		N/A
	c) Compliance with Annex U ..... :		N/A
	Two wires in contact inside wound component; angle between 45° and 90° ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	Routine test		
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage .....:		N/A
	- Basic insulation not under stress .....:		N/A
	- Supplementary, reinforced insulation .....:		N/A
2.10.6	**Construction of printed boards**	No such boards	N/A
2.10.6.1	Uncoated printed boards		N/A
2.10.6.2	Coated printed boards		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs) .....:		N/A
2.10.7	**Component external terminations**		N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Part of Listed Power Adaptor	N/A
3.1.2	Protection against mechanical damage	Well routed wires and smooth edges, no sharp edges or corners	P
3.1.3	Securing of internal wiring	Well routed and secured	P

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.1.4	Insulation of conductors	Dielectric test performed. Refer to test data.	P
3.1.5	Beads and ceramic insulators	No Beads and ceramic insulators.	N/A
3.1.6	Screws for electrical contact pressure	No screws used.	N/A
3.1.7	Insulating materials in electrical connections	No electrical connections that rely on insulating material for adequate contact pressure.	N/A
3.1.8	Self-tapping and spaced thread screws	No such screws.	N/A
3.1.9	Termination of conductors	No terminations.	N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring	Sleeving is not used.	N/A
3.2	**Connection to a mains supply**		N/A
3.2.1	Means of connection	Not directly connected to mains. Power is provided to equipment through external LPS listed power supply	N/A
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm) .....:		—
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type .....:		—
	Rated current (A), cross-sectional area (mm^2), AWG .....:		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) .....:		—
	Longitudinal displacement (mm) .....:		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Radius of curvature of cord (mm) ..... :		—
3.2.9	Supply wiring space		N/A
3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2) ..... :		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm) ..... :		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	**Disconnection from the mains supply** **Part of the external LPS power supply**		P
3.4.1	General requirement	Part of the external Listed LPS power supply	P
3.4.2	Disconnect devices	Plug of external power supply Addressed in the manual	P
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized	No such parts	N/A
3.4.5	Switches in flexible cords	No switches	N/A
3.4.6	Number of poles - single-phase and d.c. equipment	Disconnect device not part of the equipment.	N/A
3.4.7	Number of poles - three-phase equipment	Not three phase equipment.	N/A
3.4.8	Switches as disconnect devices	No switch as disconnect device	N/A
3.4.9	Plugs as disconnect devices	Plug of external power supply Addressed in the manual	P
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources	Single power source	N/A
3.5	**Interconnection of equipment**		P

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Clause	Requirement + Test	Result - Remark	Verdict
3.5.1	General requirements	TNV-1 to TNV-1 SELV to SELV	P
3.5.2	Types of interconnection circuits ..... :	TNV-1 and SELV	P
3.5.3	ELV circuits as interconnection circuits	No ELV wiring	N/A
3.5.4	Data ports for additional equipment		N/A
4	**PHYSICAL REQUIREMENTS**		P
4.1	Stability		P
	Angle of 10°	Stationary equipment. poll mounted or wall mounted	N/A
	Test force (N) ..... :		N/A
4.2	**Mechanical strength**		P
4.2.1	General	Not rack mounted	P
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N		N/A
4.2.5	Impact test		N/A
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height (mm) ..... :	Not hand held	N/A
4.2.7	Stress relief test	Test performed. No reduction in spacing or damage to the enclosure that may result in a hazard.	P
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified ..... :	(see separate test report or attached certificate)	N/A
4.2.9	High pressure lamps	No high pressure lamps	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :	Pole mounted equipment Test performed	P
4.2.11	Rotating solid media		N/A
	Test to cover on the door……..:		N/A
4.3	**Design and construction**		P

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.1	Edges and corners	Edges and corners are rounded and smooth.	P
4.3.2	Handles and manual controls; force (N) ..... :	No handles.	N/A
4.3.3	Adjustable controls	No such controls.	N/A
4.3.4	Securing of parts	Unit is held together by screws and snap fit.	N/A
4.3.5	Connection by plugs and sockets	No such connections	N/A
4.3.6	Direct plug-in equipment	Not direct plug-in.	N/A
	Torque ..... :		—
	Compliance with the relevant mains plug standard ..... :		N/A
4.3.7	Heating elements in earthed equipment	No heating elements.	N/A
4.3.8	Batteries	No battery used	N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	No oil or grease is used	N/A
4.3.10	Dust, powders, liquids and gases	Equipment does not produce dust, no use of liquid or gases	N/A
4.3.11	Containers for liquids or gases	None used	N/A
4.3.12	Flammable liquids ..... :	None used	N/A
	Quantity of liquid (l) ..... :		N/A
	Flash point (°C) ..... :		N/A
4.3.13	Radiation	No radiation	N/A
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg) ..... :		—
	Measured high-voltage (kV) ..... :		—
	Measured focus voltage (kV) ..... :		—
	CRT markings ..... :		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No such lamps in equipment.	N/A
	Part, property, retention after test, flammability classification ..... :		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation ..... :	No UV	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.5	Lasers (including laser diodes) and LEDs		N/A
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class ..... :		—
4.3.13.5.2	Light emitting diodes (LEDs)		
4.3.13.6	Other types ..... :		N/A
4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General	No moving parts	N/A
4.4.2	Protection in operator access areas ..... :		N/A
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations ..... :		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades	No fans used	N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a)……..:		N/A
	Is considered to cause pain, not injury. b) ……:		N/A
	Considered to cause injury. c) ……:		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning ……:		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning ……:		N/A
4.5	**Thermal requirements**		P
4.5.1	General		P
4.5.2	Temperature tests	Test Conducted. Refer to test data. Annex L.7 applies. Operated in the most unfavourable way of operation given in the operation instructions until steady conditions established.	P
	Normal load condition per Annex L ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
4.5.3	Temperature limits for materials	Refer to test data	P
4.5.4	Touch temperature limits	Refer to test data	P
4.5.5	Resistance to abnormal heat ..... :	Refer to 4.2.7	P
4.6	**Openings in enclosures**		N/A
4.6.1	Top and side openings	No openings in enclosure	N/A
	Dimensions (mm) ..... :		—
4.6.2	Bottoms of fire enclosures		N/A
	Construction of the bottom, dimensions (mm) ..... :		—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm) ..... :		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metalized parts		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C), time (weeks) ..... :		—
4.7	**Resistance to fire**		P
4.7.1	Reducing the risk of ignition and spread of flame		P
	Method 1, selection and application of components wiring and materials		P
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure		N/A
4.7.2.1	Parts requiring a fire enclosure	Within	N/A
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		P
4.7.3.1	General	Polymeric Material.	P
4.7.3.2	Materials for fire enclosures	EUT powered up by external Listed Power Adaptor with SELV outputs.	N/A
4.7.3.3	Materials for components and other parts outside fire enclosures	No such components	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Components are mounted on a PCB rated 94V-0.	P
4.7.3.5	Materials for air filter assemblies	None	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3.6	Materials used in high-voltage components	No high-voltage components.	N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		**P**
5.1	**Touch current and protective conductor current**		
5.1.1	General	DC equipment	N/A
5.1.2	Configuration of equipment under test (EUT)		N/A
5.1.2.1	Single connection to an a.c. mains supply		N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Supply voltage (V) ..... :		—
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—
	Measured protective conductor current (mA) ..... :		—
	Max. allowed protective conductor current (mA) .. :		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General ..... :		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) ..... :		—
	Measured touch current (mA) ..... :		—
	Max. allowed touch current (mA) ..... :		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports ..... :		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5.2	**Electric strength**		P
5.2.1	General	Input to Ground: Functional Insulation Basic Insulation: TNV-1 to antenna	P
5.2.2	Test procedure		P

5.3	**Abnormal operating and fault conditions**		N/A
5.3.1	Protection against overload and abnormal operation		N/A
5.3.2	Motors		N/A
5.3.3	Transformers		N/A
5.3.4	Functional insulation ..... :		N/A
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE ..... :		N/A
5.3.7	Simulation of faults		N/A
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		N/A
5.3.9.1	During the tests		N/A
5.3.9.2	After the tests		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		P
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		P
6.1.1	Protection from hazardous voltages		P
6.1.2	Separation of the telecommunication network from earth		P
6.1.2.1	Requirements	Refer to exclusion in clause 6.1.2.2	N/A
	Supply voltage (V) ..... :		—
	Current in the test circuit (mA) ..... :		—
6.1.2.2	Exclusions ..... :	Equipment has a provision to for a permanently connected protective earthing.	P

6.2	**Protection of equipment users from overvoltages on telecommunication networks**		P
6.2.1	Separation requirements	Basic insulation: TNV-1 and antenna	P
6.2.2	Electric strength test procedure	Refer to appended table 5.2. 1000V (1414DC) between TNV-1 and antenna	P
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test	(see appended table 5.2)	P
6.2.2.3	Compliance criteria	No insulation breakdown	P

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

7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS** **No connection to cable distribution system**		N/A
7.1	General		N/A
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/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
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)		N/A
A.1.1	Samples ..... :		—
	Wall thickness (mm)..... :		—
A.1.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.1.3	Mounting of samples ..... :		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D ..... :		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	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)		N/A
A.2.1	Samples, material ..... :		—
	Wall thickness (mm)..... :		—
A.2.2	Conditioning of samples; temperature (°C) ..... :		N/A
A.2.3	Mounting of samples ..... :		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C ..... :		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)..... :		—
	Sample 2 burning time (s)..... :		—
	Sample 3 burning time (s)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	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
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS**		N/A
B.1	General requirements		N/A
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) ..... :		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) ..... :		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.10	Test for series motors		N/A
	Operating voltage (V) ..... :		—
C	**ANNEX C, TRANSFORMERS** **Isolation transformer used in equipment**		P
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
	Method of protection ..... :		—
C.1	Overload test		N/A
C.2	Insulation		N/A
	Protection from displacement of windings ..... :		N/A
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)** **DC equipment**		N/A
D.1	Measuring instrument		N/A
D.2	Alternative measuring instrument		N/A
E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**		N/A
F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G) - Covered by external listed power supply**		N/A
G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply ..... :		N/A
G.2.2	Earthed d.c. mains supplies ..... :		N/A
G.2.3	Unearthed d.c. mains supplies ..... :		N/A
G.2.4	Battery operation ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3	Determination of telecommunication network transient voltage (V) ..... :		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks .... :		N/A
G.4.2	Transients from telecommunication networks ..... :		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances ..... :		N/A
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS**		N/A
	Metal(s) used ..... :		—
K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)** **- No thermal controls**		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) ..... :		N/A
K.3	Thermostat endurance test; operating voltage (V) ..... :		N/A
K.4	Temperature limiter endurance; operating voltage (V) ..... :		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		N/A
L.1	Typewriters	Not a typewriter	N/A
L.2	Adding machines and cash registers	No such equipment	N/A
L.3	Erasers	No erasers	N/A
L.4	Pencil sharpeners	Not pencil sharpeners	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
L.5	Duplicators and copy machines	No such machines	N/A
L.6	Motor-operated files	No such files	N/A
L.7	Other business equipment		N/A
M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS - No connection to telephone lines**		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
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/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) ..... :		N/A
N	**ANNEX N, IMPULSE TEST GENERATORS**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	**ANNEX P, NORMATIVE REFERENCES**		—
Q	**ANNEX Q, Voltage dependent resistors (VDRs)**		N/A
	a) Preferred climatic categories ..... :		N/A
	b) Maximum continuous voltage ..... :		N/A
	c) Pulse current ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING**		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
			—
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		N/A
			—
V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS**		N/A
V.1	Introduction		N/A
V.2	TN power distribution systems		N/A
W	**ANNEX W, SUMMATION OF TOUCH CURRENTS - DC equipment**		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	**ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST**		N/A
Y.1	Test apparatus .....:		N/A
Y.2	Mounting of test samples .....:		N/A
Y.3	Carbon-arc light-exposure apparatus .....:		N/A
Y.4	Xenon-arc light exposure apparatus .....:		N/A
Z	**ANNEX Z, OVERVOLTAGE CATEGORIES**		N/A
AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**		N/A
BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**		—
CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters**		N/A
CC.1	General		N/A
CC.2	Test program 1……..:		N/A
CC.3	Test program 2……..:		N/A
DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment - Not rack mounted equipment**		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N……..:		N/A
DD.3	Mechanical strength test, 250N, including end stops……:		N/A
DD.4	Compliance……:		N/A
EE	**ANNEX EE, Household and home/office document/media shredders -Not such equipment**		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols……:		N/A
	Information of user instructions, maintenance and/or servicing instructions……:		N/A
EE.3	Inadvertent reactivation test……:		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Use of markings or symbols……:		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A) ……:		N/A
	Test with wedge probe (Figure EE1 and EE2) ……:		N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
NanoBridge M2					
Enclosure	Various	Various	Polymeric Materials	-	-
Transformer	Ubiquiti Networks	H16125MCG	Isolation Hi-Pot: 1500Vrms, 1mA 1 sec	Tested in application. Transformer intended to be used in the application of this product only	Tested in application. Transformer intended to be used in the application of this product only
Fuse	Littelfuse	SMCJ Series	Typical IR less than 1mA above 10V	ANSI/UL 497B, "Protectors for Data Communications and Fire-Alarm Circuits."	E128662
Listed AC/DC Power Supply	Ubiquiti Networks	Carrier POE Adaptor Model U BI-POE-24-5	Input: 100-240VAC, 50-60Hz, 0.3A Output: DC 15V, 0.8A. 39PW LPS	UL /CSA 60950-1 Listed	E325809
NanoBridge M5					
Enclosure	Various	Various	Polymeric Materials	-	-
Transformer	Ubiquiti Networks	H16125MCG	Isolation Hi-Pot: 1500Vrms, 1mA 1 sec	Tested in application. Transformer intended to be used in the application of this product only	Tested in application. Transformer intended to be used in the application of this product only
Fuse	Littelfuse	SMCJ Series	Typical IR less than 1mA above 10V	ANSI/UL 497B, "Protectors for Data Communications and Fire-Alarm Circuits."	E128662

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity[1])
Listed AC/DC Power Supply	Ubiquiti Networks	Carrier POE Adaptor Model U BI-POE-24-5	Input: 100-240VAC, 50-60Hz, 0.3A Output: DC 15V, 0.8A. 39PW LPS	UL /CSA 60950-1 Listed	E325809
Supplementary information: [1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: Opto Electronic Devices	N/A

Manufacturer ..... :

Type..... :

Separately tested ..... :
Bridging insulation ..... :
External creepage distance..... :

Internal creepage distance..... :

Distance through insulation..... :

Tested under the following conditions..... :

Input..... :
Output..... :

supplementary information

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
NanoBridge M2						
20V	0.150A	1	2.98W	-	-	Maximum load/normal
24V	0.126A	1	3.00W	-	-	Maximum load/Normal
28V	0.112A	1	3.05W	-	-	Maximum load normal
24.38V	0.123A	1	3.00W	-	-	Test EUT with its own listed P.S.
Supplementary information:						

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

2.1.1.5 c) 1)	TABLE: max. V, A, VA test	N/A

Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
supplementary information:				

2.1.1.5 c) 2)	TABLE: stored energy	N/A

Capacitance C (µF)	Voltage U (V)	Energy E (J)
supplementary information:		

2.2	TABLE: evaluation of voltage limiting components in SELV circuits	N/A

Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components
	V peak	V d.c.	

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
supplementary information:	

2.5	TABLE: limited power sources	N/A

Circuit output tested:				
Measured Uoc (V) with all load circuits disconnected:				
	I_{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
Normal condition				

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

supplementary information: Covered by External Listed LPS AC/DC power supply
Sc=Short circuit, Oc=Open circuit

2.10.2	Table: working voltage measurement		N/A
Location	RMS voltage (V)	Peak voltage (V)	Comments
supplementary information:			

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					N/A
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Functional:						
Basic/supplementary:						
Reinforced:						
Supplementary information: Covered by use Listed External AC/DC power supply						

2.10.5	TABLE: Distance through insulation measurements				N/A
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Supplementary information:					

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	TABLE: Batteries									N/A
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?										
	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										
Max. current during fault condition										
Test results:										Verdict
- Chemical leaks										
- Explosion of the battery										
- Emission of flame or expulsion of molten metal										
- Electric strength tests of equipment after completion of tests										
Supplementary information:										

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	TABLE: Batteries	N/A
Battery category ..... :	(Lithium, NiMh, NiCad, Lithium Ion …)	
Manufacturer ..... :		
Type / model..... :		
Voltage ..... :		
Capacity ..... :	mAh	
Tested and Certified by (incl. Ref. No.)..... :		
Circuit protection diagram:		

MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)	
Location of replaceable battery	
Language(s) ……..:	
Close to the battery ……..:	
In the servicing instructions ……..:	
In the operating instructions ……..:	

4.5	TABLE: Thermal requirements						P
	Supply voltage (V) .....:	20	DC				—
	Ambient T_{min} (°C) .....:	25.9					—
	Ambient T_{max} (°C) .....:	50					—
Maximum measured temperature T of part/at::		T (°C)					Allowed T_{max} (°C)
Ambient		25.9	50				50
Transformer		56.6	81				100
Enclosure top		44.1	68.2				95
Antenna		29.2	53.3				70
PWB near LAN input		44.7	68.8				80
Supplementary information: All temperatures have been normalized / corrected							

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
Supplementary information:							

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5.5	TABLE: Ball pressure test of thermoplastic parts		N/A
	Allowed impression diameter (mm) .....:	≤ 2 mm	—

Part	Test temperature (°C)	Impression diameter (mm)
Supplementary information:		

4.7	TABLE: Resistance to fire				N/A
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
Supplementary information:					

5.1	TABLE: touch current measurement		N/A
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions
supplementary information:			

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests		
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Functional:			
Input to Ground	DC	707	No
Supplementary information:			

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests		P
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Basic/supplementary:			
TNV-1 Port to Antenna	DC	1414	No
Supplementary information:			

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.3	TABLE: Fault condition tests		N/A
	Ambient temperature (°C) .....:		—
	Power source for EUT: Manufacturer, model/type, output rating .....:		—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Supplementary information:						

C.2	TABLE: transformers						N/A
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
supplementary information:							

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

C.2	TABLE: transformers	N/A
Transformer		

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict

List of test equipment used:

Company Name: Ubiquiti Networks
Project # 83055
Model # of Unit: PowerBridge M5
Project Engineer: Shaima Adin
Date: July 26, 2011

Asset Number:	Equipment Type:	Manufacturer Name:	Model Number:	Calibration Date:	Calibration Due Date:
2U539	Temperature Chamber	Thermotron	F150-CHV-25-305-ECA	FVBU	FVBU
3U1002	AC/DC Current Probe	Tektronix	A622	02/15/11	02/15/12
3U1020	Digital Multimeter	Tektronix	TX3	02/28/11	02/28/12
3U1023	Digital Multimeter	Fluke	87	01/29/11	01/29/12
3U1043	Petroleum Spirit	Fisher Scientific	H292	NCR	NCR
3U1047	Digital DC Power Supply	XANTREX	XDC 80-75	FVBU	FVBU
3U1050	Hipot Tester	Biddle	AC/DC HIGH POT TESTER	03/25/11	03/25/12
3U1055	Bench top Temperature Meter	Omega	MDSSi8	07/13/10	07/13/11
3U1094	Ambient Monitor/Recorder	Omega	OM-CP-PRHTEMP2000	03/08/11	03/08/12
3U1101	Stopwatch	Fisher Scientific	14-649-9	04/19/11	04/19/13

*NCR = No Calibration Required.

*FVBU = Functional Verification Before Use. Instrument is used with calibrated instruments.

Enclosure 1: Other Country National And Group Differences

IEC60950_1B - ATTACHMENT EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
Information technology equipment – Safety –

PART 1: GENERAL REQUIREMENTS

Differences according to ..... :	EN 60950-1:2006/A11:2009/A1:2010
Attachment Form No. ..... :	EU_GD_IEC60950_1B
Attachment Originator ..... :	SGS Fimko Ltd
Master Attachment ..... :	Date (2010-04)

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

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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 (IEC 60950-1:2005) 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 4.7.3.1Note 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		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

Enclosure 1: Other Country National And Group Differences

IEC60950_1B - ATTACHMENT EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Not a portable sound system	N/A
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		N/A
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.	Not a portable sound system	N/A
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;		N/A

Enclosure 1: Other Country National And Group Differences

IEC60950_1B - ATTACHMENT EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	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.	Addressed in the manual	P
2.7.2	This subclause has been declared 'void'.		N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A
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 [a)] | Over 6 up to and including 10| (0,75) [b)] 1,0 | Over 10 up to and including 16| (1,0) [c)] 1,5 | In the conditions applicable to Table 3B delete the words "in some countries" in condition [a)]. 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/A
4.3.13.6 (A1:2010)	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/A

Enclosure 1: Other Country National And Group Differences

IEC60950_1B - ATTACHMENT EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
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.		N/A
Bibliography	Additional EN standards.		—
ZA	**NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS**		—

ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In **Denmark**, 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.	Not Class 1 equipment	N/A
1.2.13.14	In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex.		N/A
1.5.7.1	In **Finland, Norway** and **Sweden**, 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/A
1.5.8	In **Norway**, 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/A
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A

Enclosure 1: Other Country National And Group Differences

IEC60950_1B - ATTACHMENT EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1	In **Finland**, **Norway** and **Sweden**, 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" In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: “Apparaten skall anslutas till jordat uttag” In **Norway** and **Sweden**, 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. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. 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).”		N/A

Enclosure 1: Other Country National And Group Differences

IEC60950_1B - ATTACHMENT EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
	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. 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." 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."		N/A
1.7.5	In **Denmark**, 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.	No socket oultets on equipment	N/A
2.2.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	Exclusion applies	N/A
2.3.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	Exclusion applies	N/A
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	Exclusion applies	N/A
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.	Exclusion applies	N/A

Enclosure 1: Other Country National And Group Differences

IEC60950_1B - ATTACHMENT EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	In the **United Kingdom**, 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.	Not primary circuit	N/A
2.10.5.13	In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		P
3.2.1.1	In **Switzerland**, 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 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	Power supply cord part of the external listed power supply. Not part of this evaluation.	N/A

Enclosure 1: Other Country National And Group Differences

IEC60950_1B - ATTACHMENT EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. 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. 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.	Power supply cord part of the external listed power supply. Not part of this evaluation	N/A
3.2.1.1	In **Spain**, 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. 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. 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. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	Power supply cord part of the external listed power supply. Not part of this evaluation	N/A
3.2.1.1	In the **United Kingdom**, 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. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	Power supply cord part of the external listed power supply. Not part of this evaluation	N/A

Enclosure 1: Other Country National And Group Differences

IEC60950_1B - ATTACHMENT EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In **Ireland**, 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.	Power supply cord part of the external listed power supply. Not part of this evaluation	N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.	Power supply cord part of the external listed power supply. Not part of this evaluation	N/A
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.	Power supply cord part of the external listed power supply. Not part of this evaluation	N/A
3.3.4	In the **United Kingdom**, 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: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.	Power supply cord part of the external listed power supply. Not part of this evaluation	N/A
4.3.6	In the **United Kingdom**, 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.	Power supply cord part of the external listed power supply. Not part of this evaluation	N/A
4.3.6	In **Ireland**, 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/A

Enclosure 1: Other Country National And Group Differences

IEC60950_1B - ATTACHMENT EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.7.1	In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.	DC equipment	N/A
6.1.2.1 (A1:2010)	In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.	No solid insulation	N/A

Enclosure 1: Other Country National And Group Differences

IEC60950_1B - ATTACHMENT EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
ZB ANNEX (normative) **SPECIAL NATIONAL CONDITIONS (EN)**			
Clause	Requirement + Test	Result - Remark	Verdict
	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		N/A
6.1.2.2	In **Finland**, **Norway** and **Sweden**, 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.	Protective earthing part of the shielded LAN wire. Addressed in the manual	P
7.2	In **Finland**, **Norway** and **Sweden**, 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.	No cable distribution system. No connection by coaxial cable.	N/A
7.3	In **Norway** and **Sweden**, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A
7.3	In **Norway**, for installation conditions see EN 60728-11:2005.		N/A

Enclosure 1: Other Country National And Group Differences

ATTACHMENT TO TEST REPORT IEC 60950-1 **FINLAND NATIONAL DIFFERENCES** Information technology equipment – Safety – PART 1: GENERAL REQUIREMENTS
Differences according to .....: EN 60950-1:2006/A11:2009/A1:2010
Attachment Form No.....: FI_ND_IEC60950_1B **Attachment Originator**.....: SGS Fimko Ltd **Master Attachment**.....: Date (2010-04)

	National Differences		
General	See also Group Differences (EN 60950-1:2006/A11/A1)		
1.5.7.1	In **Finland** 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.	Not Class 1 equipment	N/A
1.5.9.4	In **Finland,** the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	In **Finland**, 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 Finland shall be as follows: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"	Not Class 1 equipment	N/A
2.3.2	In **Finland,** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		N/A
2.10.5.13	In **Finland,** there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N/A

Enclosure 1: Other Country National And Group Differences

5.1.7.1	In **Finland,** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that - is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and - has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and - is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.	DC equipment	N/A
6.1.2.1 (A1:2010)	In **Finland,** add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.	No solid insulation	N/A

Enclosure 1: Other Country National And Group Differences

	It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14:2005 which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14:2005; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14:2005, in the sequence of tests as described in EN 60384-14:2005.		N/A
6.1.2.2	In **Finland,** 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.	Protective earthing part of the shielded LAN wire. Needs to be addressed in the manual	P
7.2	In **Finland,** 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.	No cable distribution system. No connection by coaxial cable	N/A

Enclosure 1: Other Country National And Group Differences

GERMANY NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
	In IEC 60950-1:2005/A1 **delete** all the "country" notes according to the following list: - 1.5.7.1: Note - 6.1.2.1: Note 2 - 6.2.2.1: Note 2 - EE.3: Note		N/A
	For special national conditions, see Annex ZB.		N/A
1.1.1	**Replace** the text of NOTE 3 by the following NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, *Guide on the safety of multimedia equipment.* For television sets EN 60065 applies.		N/A
1.2.3	**Add** the following definition: **1.2.3.Z1** **PORTABLE SOUND SYSTEM** small battery powered audio equipment: –whose prime purpose is to listen to recorded or broadcasted sound; and –that uses headphones or earphones that can be worn in or on or around the ears; and –that allows the user to walk around NOTE Examples are mini-disk or CD players; MP3 audio players or similar equipment.	Not portable sound system	N/A
1.7.2.1	**Delete** NOTE Z1. **Add** the following paragraph at the end of the subclause: In addition, for a **PORTABLE SOUND SYSTEM**, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.	Not portable sound system	N/A
4.3.13.6	**Replace** the existing NOTE by the following: NOTE Z1 Attention is drawn to : 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artificial optical radiation). Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
Biblio-graphy	**Add** the following note for the standard indicated: IEC 60908 NOTE Harmonized as EN 60908.		N/A

Enclosure 1: Other Country National And Group Differences

GERMANY NATIONAL DIFFERENCES

Replace the entire Annex ZA by the following: **P**

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

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

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

1) The HD 21 series is related to, but not directly equivalent with the IEC 60227 series. Also EN 50363, EN 50395 and EN 50386 are to be taken into account.
2) The HD 22 series is related to, but not directly equivalent with the IEC 60245 series. Also EN 50363, EN 50395 and EN 50386 are to be taken into account.

IEC 60309	Series	Plugs, socket-outlets and couplers for industrial purposes	EN 60309	Series
IEC 60317	Series	Specifications for particular types of winding wires	EN 60317	Series
IEC 60317-43	-	Part 43: Aromatic polyimide tape wrapped round copper wire, class 240	EN 60317-43	-
IEC 60320 (mod)	Series	Appliance couplers for household and similar general purposes	EN 60320	Series
IEC 60364-1 (mod)	2001	Electrical installations of buildings Part 1: Fundamental principles, assessment of general characteristics, definitions	HD 384.1 S2	2001
IEC 60384-14 A1	1993 1995	Fixed capacitors for use in electronic equipment	EN 60384-14	2005

Enclosure 1: Other Country National And Group Differences

GERMANY NATIONAL DIFFERENCES				
		Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains		
IEC 60417	Data-base	Graphical symbols for use on equipment	-	-
IEC 60664-1 + A1 + A2	1992 2000 2002	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	EN 60664-1	2003
IEC 60695-2-11	-	Fire hazard testing Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products	EN 60695-2-11	-
IEC 60695-2-20	-	Part 2-20: Glowing/hot-wire based test methods – Hot-wire coil ignitability – Apparatus, test method and guidance	-	-
IEC 60695-10-2	-	Part 10-2: Guidance and test methods for the minimization of the effects of abnormal heat on electrotechnical products involved in fires – Method for testing products made from non-metallic materials for resistance to heat using the ball pressure test	EN 60695-10-2	-
IEC 60695-10-3		Fire hazard testing Part 10-3: Abnormal heat – Mould stress relief distortion test	EN 60695-10-03	-
		IEC 60695-11-3 – Part 11-3: Test flames – 500 W flames – Apparatus and conformational test methods	-	-
IEC 60695-11-4	-	Part 11-4: Test flames – 50 W flames – Apparatus and conformational test methods	-	-
IEC 60695-11-10 A1	-	Part 11-10: Test flames – 50 W horizontal and vertical flame test methods	EN 60695-11-10	A1
IEC 60695-11-20 A1	-	Part 11-20: Test flames – 500 W flame test methods	EN 60695-11-20 A1	- -
IEC 60730-1 (mod) A1	1999 2003	Automatic electrical controls for household and similar use – Part 1: General requirements	EN 60730-1 A1 + A12 + A13 + A14 + A15 + A16	2000 2004 2003 2004 2005 2007 2007
A2	2007		A2	2008
IEC 60747-5-5	2007	Semiconductor devices – Discrete devices Part 5-5: Optoelectronic devices – Photocouplers	EN 60747-5-5	-
IEC 60825-1	-	Safety of laser products Part 1: Equipment classification, requirements and user's guide	EN 60825-1	
IEC 60825-2	-	Part 2: Safety of optical fiber communication systems	EN 60825-2 A1	- -
IEC/TR 60825-9	-	Part 9: Compilation of maximum permissible exposure to incoherent optical radiation	-	-
IEC 60825-12	-	Part 12: Safety of free space optical communication systems used for transmission of information	EN 60825-12	-
IEC 60851-3	1996	Winding wires – Test methods	EN 60851-3	1996

Enclosure 1: Other Country National And Group Differences

GERMANY NATIONAL DIFFERENCES				
A1 IEC 60851-5 A1 A2	1997 1996 1997 2004	Part 3: Mechanical properties Part 5: Electrical properties	A1 EN 60851-5 A1 A2	1997 1996 1997 2004
IEC 60851-6	1996	Part 6: Thermal properties	EN 60851-6	1996
IEC 60885-1	1987	Electrical test methods for electric cables Part 1: Electrical tests for cables, cords and wires for voltages up to and including 450/750 V	-	-
IEC 60906-1	-	IEC System of plugs and socket-outlet for household and similar purposes Part 1: Plugs and socket-outlets 16 A 250 V a.c.	-	-
IEC 60906-2	-	Part 2: Plugs and socket-outlets 15 A 125 V a.c.	-	-
IEC 60947-1	2004	Low voltage switchgear and control gear Part 1: General rules	EN 60947-1	2004
IEC 60990	1999	Methods of measurement of touch current and protective conductor current	EN 60990	1999
IEC 61051-2	1991	Varistors for use in electronic equipment Part 2: Sectional specification for surge suppression varistors	-	-
IEC 61058-1 (mod)	2000	Switches for appliances Part 1: General requirements	EN 61058-1 3)	2002
IEC 62471 (mod)	-	Photobiological safety of lamps and lamp systems	EN 62471	-
ISO 178	-	Plastics – Determination of flexural properties	EN ISO 178	2003
ISO 179	Series	Plastics – Determination of Charpy impact strength	EN ISO 179	Series
ISO 180	-	Plastics – Determination of Izod impact strength	EN ISO 180	-
ISO 261	-	ISO general-purpose metric screw threads - General plan	-	-
ISO 262	-	ISO general-purpose metric screw threads - Selected sizes for screws, bolts and nuts	-	-
ISO 527	Series	Plastics – Determination of tensile properties	EN ISO 527	Series
ISO 3864	Series	Safety colors and safety signs	-	-
ISO 4892-1	-	Plastics – Methods of exposure to laboratory light sources Part 1: General guidance	EN ISO 4892-1	-
ISO 4892-2	-	Part 2: Xenon-arc sources	EN ISO 4892-2	-
ISO 4892-4	-	Part 4: Open-flame carbon-arc lamps	-	-
ISO 7000	Data-base	Graphical symbols for use on equipment – Index and synopsis	-	-
ISO 8256	-	Plastics – Determination of tensile-impact strength	EN ISO 8256	-
ISO 9772	-	Cellular plastics – Determination of horizontal burning characteristics of small specimens subjected to a small flame	-	-
ISO 9773	-	Plastics – Determination of burning behavior of thin flexible vertical specimens in contact with a small-flame ignition source	EN ISO 9773	-
ITU-T Recommendation K.44	-	Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents – Basic Recommendation	-	-

Enclosure 1: Other Country National And Group Differences

GERMANY NATIONAL DIFFERENCES
3) EN 61058-1:2002 includes A1:2001 to IEC 61058-1:2000.

GERMANY NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result – Remark	Verdict
Annex ZB (normative) **Special National Conditions** **Special national condition**: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions. If it affects harmonization, it forms part of the European Standard or Harmonization Document. For the countries in which the relevant special national apply these provisions are normative, for other countries they are informative. **Add** the following special national condition:			
1.5.7.1	In **Finland, Norway** and **Sweden** No changes needed – Correction of SNC already Part of A11.		N/A
6.1.2.1	In **Finland, Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.	No solid insulation	N/A

Enclosure 1: Other Country National And Group Differences

GERMANY NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result – Remark	Verdict
	A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		

KOREA NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.101	Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirement (KSC 8305).		N/A
8 : EMC	The apparatus shall comply with the relevant CISPR standards		N/A

UNITED KINGDOM NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
2.7.1	In the **United Kingdom**, 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/A
3.2.1.1	In the **United Kingdom**, 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. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved	Power supply cord part of the external listed power supply. Not part of this evaluation	N/A

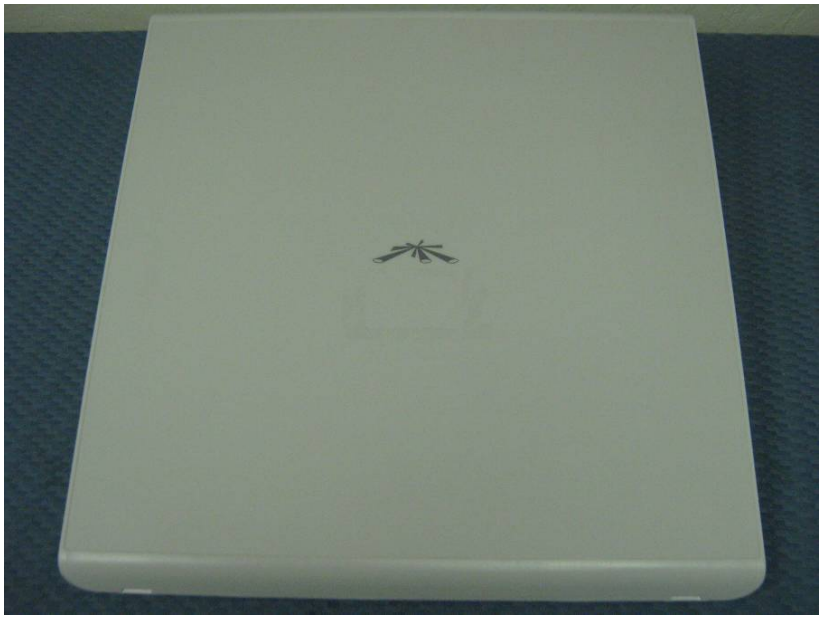
Enclosure 1: Other Country National And Group Differences

UNITED KINGDOM NATIONAL DIFFERENCES			
Clause	Requirement + Test	Result - Remark	Verdict
	conversion plug.		
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm^2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.	Power supply cord part of the external listed power supply. Not part of this evaluation	N/A
3.3.4	In the **United Kingdom**, 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: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.	Power supply cord part of the external listed power supply. Not part of this evaluation	N/A
4.3.6	In the **United Kingdom**, 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.	Power supply cord part of the external listed power supply. Not part of this evaluation	N/A

Enclosure 2: Photographs (Figures)

FIGURES

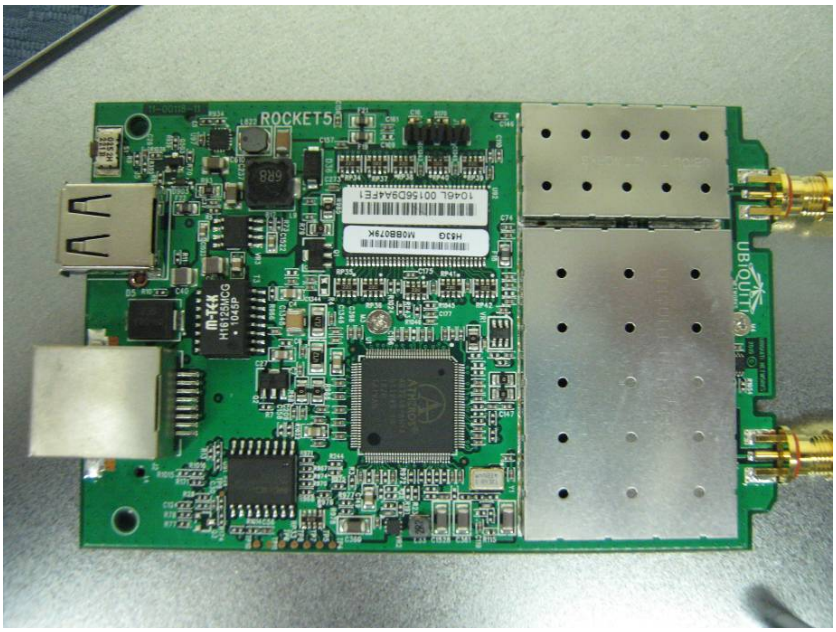
Figure 1: Overall view of PowerBridge M5

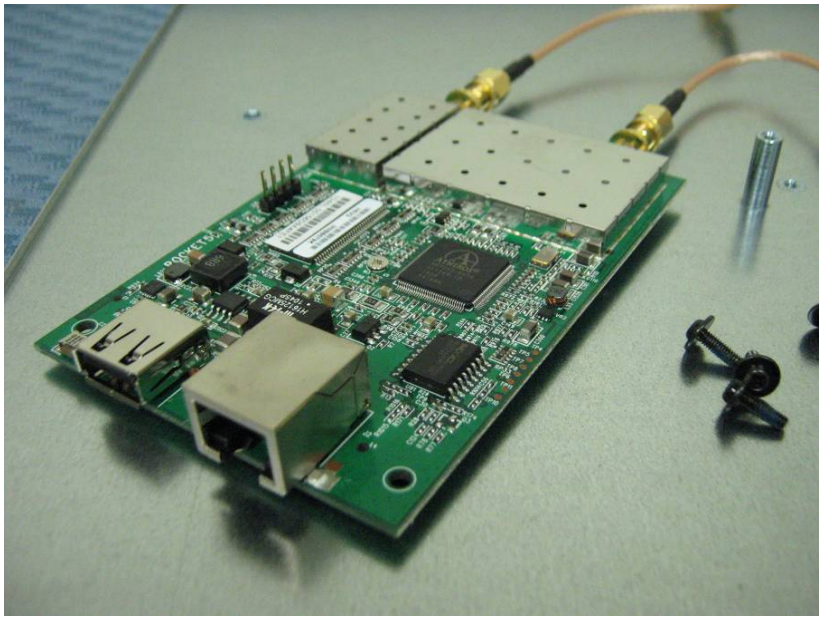


Enclosure 2: Photographs (Figures)

FIGURES (Continued)

Figure 2: Overall view of Internal Module in PowerBridge M5





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4	CONDITIONS FOR OUTDOOR EQUIPMENT		P
4.1	Ambient air temperature		P
	Suitability for use at any temperature in the range specified by the manufacturer. If not specified by the manufacturer, the range is taken as -33°C to +75°C	The manufacturer has not specified it. range taken as -33 to 75°C	
4.2	AC mains supply		N/A
	Suitability for the highest Overvoltage Category expected in the installation location	Not an AC unit	N/A
	Components used to reduce the Overvoltage Category comply with IEC 61643-series		N/A
	Reference to installation instructions .....:		N/A
4.3	Rise of earth potential		P
	Special earthing conditions	Installation instruction provided	P
	Reference to installation instructions .....:	Installation instruction provided	P

5	MARKING AND INSTRUCTIONS		P
	Special installation features for protection from conditions in the OUTDOOR LOCATION (see 1.7.2 of IEC 60950-1)	IP22	P
	OUTDOOR ENCLOSURE classification according to IEC 60529 (IP Code)	IP22	P

6	PROTECTION FROM ELECTRICAL SHOCK IN AN OUTDOOR LOCATION		P
6.1	Voltage limits of user-accessible parts in OUTDOOR LOCATIONS (2.2.2 and 2.2.3 of IEC 60950-1 with voltage limits of IEC60950-22)		P
	Voltages under normal conditions (V).....:	SELV covered by use of Listed AC/DC LPS adaptor	P
	Voltages under fault conditions (V) .....:	SELV covered by use of Listed AC/DC LPS adaptor	P
6.2	Limited current circuits in outdoor locations		N/A
	The requirements of 2.4 of IEC60950-1 apply without change	Not evaluated for limited current circuit	N/A

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7	WIRING TERMINALS FOR CONNECTION OF EXTERNAL CONDUCTORS		N/A
	The mains supply terminations powered via the normal building installation wiring are as specified in 3.3 of IEC 60950-1	No wiring terminals provided. equipment is powered through POE from listed AC/DC power supply	N/A
	The mains supply terminations powered directly from the mains distribution system are as specified in IEC 60364	No wiring terminals provided. equipment is powered through POE from listed AC/DC power supply	N/A

8	CONSTRUCTION REQUIREMENTS FOR OURDOOR ENCLOSURES		P
8.1	General		P
	Protection against corrosion by use of suitable materials or by application of a protective coating	Nonmetallic enclosure	N/A
	Parts serving as a functional part of an OUTDOOR ENCLOSURE (e.g., dials, connectors, etc.) comply with the same environmental protection requirements as for the OUTDOOR ENCLOSURE	Complies	P
	Use of OUTDOOR ENCLOSURE to carry current during normal operation	Not carrying current.	N/A
	Connection of a conductive part of an OUTDOOR ENCLOSURE to protective earth for carrying fault currents (see 2.6 of IEC 60950-1 and 8.3 of this standard)		N/A
8.2	Resistance to ultra-violet radiation		N/A
	Resistance of non-metallic parts of an OUTDOOR ENCLOSURE to degradation by ultra-violet (UV) radiation		N/A
	Parts providing mechanical support:		N/A
	Tensile strength test (ISO 527)		N/A
	Flexural strength test (ISO 178)		N/A
	Parts providing impact resistance:		N/A
	Charpy impact test (ISO 179)		N/A
	Izod impact test (ISO 180)		N/A
	Tensile impact test (ISO 8256)		N/A
	All parts:		N/A
	Flammability classification (1.2.12 and annex A of IEC 60950-1)		N/A
8.3	Resistance to corrosion		N/A
8.3.1	General	Non metallic enclosure	N/A
	Resistance of metallic parts of an OUTDOOR ENCLOSURE to the effects of water-borne contaminants		N/A

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	Alternate method for 8.3.2-8.3.4 (IEC 61587-1)		N/A
8.3.2	Test apparatus		N/A
	Salt-spray test (IEC 60068-2-11)		N/A
	Test in a water-saturated sulphur dioxide atmosphere (water-saturated sulphur dioxide atmosphere as described in Annex A; chamber as described in ISO 3231)		N/A
8.3.3	Test procedure		N/A
8.3.4	Compliance criteria		N/A
8.4	Bottoms of FIRE ENCLOSURES		N/A
	Comply with 4.6.2 of IEC 60950-1		P
	Bottom of FIRE ENCLOSURE of OUTDOOR EQUIPMENT mounted directly and permanently on a non-combustible surface (e.g., concrete or metal)	Wall mounted	P
8.5	Gaskets		N/A
	If gaskets are used as the method for protection against the ingress of potential contaminants, requirements of 8.5.1 through 8.5.3 apply	No gaskets used	N/A
8.5.1	General		N/A
8.5.2	Oil resistance		N/A
8.5.3	Securing means		N/A

9	PROTECTION OF EQUIPMENT WITHIN AN OUTDOOR ENCLOSURE		P
9.1	Protection from moisture (see Table 2)	Test performed	P
9.2	Protection from plants and vermin	No such hazard exists	N/A
9.3	Protection from excessive dust	Dust tight.	N/A

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10	MECHANICAL STRENGTH OF ENCLOSURES		N/A
10.1	General		N/A
10.2	Impact test (4.2.5 of IEC 60950-1)		N/A
	Compliance criteria:		N/A
	- after test the level of protection remains in accordance with 9.1of this standard		N/A
	- after test the requirements of 4.2.1 of IEC 60950-1 are met		N/A

11	OUTDOOR EQUIPMENT CONTAINING VENTED BATTERIES		N/A
	Adequate ventilation in the compartment housing a vented battery, where gassing is possible during normal usage or over-charging	No batteries	N/A
	Protection against the risk of ignition of local concentrations of hydrogen and oxygen in a compartment containing both a battery and electrical components		N/A
	Hydrogen gas concentration measurement test		N/A
	Measured hydrogen gas concentration (% by volume) .....:		—
	Max. allowed gas concentration for the mixture location in proximity to an ignition source (% by volume) .....:		—
	Max. allowed gas concentration for the mixture location not in proximity to an ignition source (% by volume) .....:		—
	Overcharging of rechargeable battery (see 4.3.8 of IEC 60950-1)		N/A

A	ANNEX A, WATER-SATURATED SULPHUR DIOXIDE ATMOSPHERE (see 8.3.2 and 8.3.3)	N/A

B	ANNEX B, WATER SPRAY TEST (see 9.1)	N/A

C	ANNEX C, ULTRAVIOLET LIGHT CONDITIONING TEST (see 8.2)		N/A
C.1	Test apparatus .....:		N/A
C.2	Mounting of test samples.....:		N/A
C.3	Carbon-arc light-exposure apparatus .....:		N/A
C.4	Xenon-arc light-exposure apparatus .....:		N/A

D	ANNEX D, GASKET TESTS (see 8.5)		N/A
D.1	Gasket tests		N/A

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D.2	Tensile strength and elongation tests (for gaskets that can stretch)		N/A
	Tensile strength (%) ..... :		N/A
	Elongation (%) ..... :		N/A
	Visible deterioration, deformation, melting, cracking or hardening of the material..... :		N/A
D.3	Compression test (for gaskets with closed cell construction)		N/A
	Initial thickness of the specimen (mm) ..... :		N/A
	Thickness of the specimen after test a) (mm), compression set after test a) (%) ..... :		N/A
	Thickness of the specimen after test b) (mm), compression set after test b) (%) ..... :		N/A
	Thickness of the specimen after test c) (mm), compression set after test c) (%)..... :		N/A
	Visible cracks or deterioration ..... :		N/A
D.4	Oil immersion test		N/A
	Swelling (%) ..... :		N/A
	Shrinking (%)..... :		N/A

E	ANNEX E, RATIONALE		—
E.1	General		—
E.2	Electric shock		—
E.3	Energy related hazards		—
E.4	Fire		—
E.5	Mechanical hazards		—
E.6	Heat related hazards		—
E.7	Radiation		—
E.8	Chemical hazards		—
E.9	Biological hazards		—
E.10	Explosion hazards		—

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IEC 60950-22:2005 – 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	P
General	Delete all the "country" notes in the reference document according to the following list: 4.1 Note 3 4.3 Note 8.5 Note 10.2 Note D.3 Note D.4 Note	P
	Bibliography Add the following notes for the standards indicated: IEC 60364-1 NOTE Harmonized as HD 384.1 S2:2001 (modified). IEC 60364-4-44 NOTE Partly harmonized as HD 60364-4-443:2006 (modified), HD 384.4.442 S1:1997 (related) and R064-004:1999 (IEC 60364-4-444:1996, modified). IEC 60439-5 NOTE Harmonized as EN 60439-5:1996 + A1:1998 (not modified). IEC 60664-1 NOTE Harmonized as EN 60664-1:2003 (not modified). IEC 60721-3-4 NOTE Harmonized as EN 60721-3-4:1995 (not modified). IEC 61587-1 NOTE Harmonized as EN 61587-1:1999 (not modified). IEC 61969-3 NOTE Harmonized as EN 61969-3:2001 (not modified).	P

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—

ZB	SPECIAL NATIONAL CONDITIONS		N/A
	Finland, Norway and Sweden There are no special national conditions for this European Standard.		N/A

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8.2	**TABLE: Resistance to ultra-violet radiation**			
8.2a)	Tensile strength test (ISO 527)			N/A
Material identification (manufacturer, type designation) .....:				—
Shape and dimensions of test samples.....:				—
Conditioning for Set 1 of samples.....:				—
Conditioning for Set 2 of samples (including Annex C).....:				—
Test conditions (T °C, RH %).....:				—
Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)		
Test sample #	Tensile strength (MPa)	Test sample #	Tensile strength (MPa)	
Arithmetic mean for Set 1 (MPa) ..... :				
Arithmetic mean for Set 2 (MPa) ..... :				
Retention (%) ..... :				
Supplementary information:				

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8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2b)	Flexural strength test (ISO 178)	N/A
Material identification (manufacturer, type designation) .....:		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C).....:		—
Test conditions (T °C, RH %).....:		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Flexural strength (MPa)	Test sample #	Flexural strength (MPa)
Arithmetic mean for Set 1 (MPa) ..... :			
Arithmetic mean for Set 2 (MPa) ..... :			
Retention (%) ..... :			

Supplementary information:

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8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2c)	Charpy impact test (ISO 179) - unnotched	N/A
Material identification (manufacturer, type designation) .....:		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C).....:		—
Test method (according to Tables 2 and 3 of ISO 179) .....:		—
Test conditions (T °C, RH %).....:		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Charpy impact strength (kJ/m^2)	Test sample #	Charpy impact strength (kJ/m^2)
Arithmetic mean for Set 1 (kJ/m^2).....:			
Arithmetic mean for Set 2 (kJ/m^2).....:			
Retention (%).....:			

Supplementary information:

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8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2d)	Charpy impact test (ISO 179) - notched	N/A
Material identification (manufacturer, type designation) .....:		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C).....:		—
Test method (according to Tables 2 and 3 of ISO 179) .....:		—
Test conditions (T °C, RH %).....:		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Charpy impact strength (kJ/m^2)	Test sample #	Charpy impact strength (kJ/m^2)
Arithmetic mean for Set 1 (kJ/m^2).....:			
Arithmetic mean for Set 2 (kJ/m^2).....:			
Retention (%).....:			
Supplementary information:			

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8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2e)	Izod impact test (ISO 180) - unnotched	N/A
Material identification (manufacturer, type designation) .....:		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C).....:		—
Test method (according to Table 1 of ISO 180) .....:		—
Test conditions (T °C, RH %).....:		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Izod impact strength (kJ/m^2)	Test sample #	Izod impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2).....:	
Arithmetic mean for Set 2 (kJ/m^2).....:	
Retention (%).....:	

Supplementary information:

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2f)	Izod impact test (ISO 180) - notched	N/A
Material identification (manufacturer, type designation) .....:		—
Shape and dimensions of test samples.....:		—
Conditioning for Set 1 of samples.....:		—
Conditioning for Set 2 of samples (including Annex C).....:		—
Test method (according to Table 1 of ISO 180) .....:		—
Test conditions (T °C, RH %).....:		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Izod impact strength (kJ/m^2)	Test sample #	Izod impact strength (kJ/m^2)

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Arithmetic mean for Set 1 (kJ/m^2) ..... :	
Arithmetic mean for Set 2 (kJ/m^2) ..... :	
Retention (%) ..... :	
Supplementary information:	

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2g)	Tensile impact test (ISO 8256) - unnotched	N/A
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples ..... :		—
Conditioning for Set 1 of samples ..... :		—
Conditioning for Set 2 of samples (including Annex C) ..... :		—
Test method (A or B)		—
Test conditions (T °C, RH %) ..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile impact strength (kJ/m^2)	Test sample #	Tensile impact strength (kJ/m^2)
Arithmetic mean for Set 1 (kJ/m^2) ..... :			
Arithmetic mean for Set 2 (kJ/m^2) ..... :			
Retention (%) ..... :			
Supplementary information:			

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2h)	Tensile impact test (ISO 8256) - notched	N/A
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples ..... :		—
Conditioning for Set 1 of samples ..... :		—
Conditioning for Set 2 of samples (including Annex C) ..... :		—
Test method (A or B)		—
Test conditions (T °C, RH %) ..... :		—

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Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile impact strength (kJ/m^2)	Test sample #	Tensile impact strength (kJ/m^2)
Arithmetic mean for Set 1 (kJ/m^2) ..... :			
Arithmetic mean for Set 2 (kJ/m^2) ..... :			
Retention (%) ..... :			
Supplementary information:			