

|  |   |
|--|---|
| <b>Test Report No.:</b> LD180814E04  |   |
| <b>Client</b>  |   |
| Name :   | Compex Systems Pte Ltd.   |
| Address :  | No. 9 Harrison Road, #05-01 Singapore 369651  |
| <b>Test Item :</b>   | Wireless M.2 Type A/E with BLE Module   |
| <b>Identification :</b>  | WLT674  |
| <b>Testing laboratory</b>  |   |
| Name :   | Bureau Veritas Consumer Products Services (H.K.) Ltd.,<br>Taoyuan Branch  |
| Address :  | No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei<br>City, Taiwan   |
| <b>Test specification</b>  |   |
| <b>Standard :</b>  | EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011+ A2:2013  |
| <b>Test Result :</b>   | The test item passed.   |
| <b>Prepared By :</b>   | <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <br/> <u>Signature</u><br/>           David Lin<br/>           Engineer         </div> <div style="text-align: center;"> <br/> <u>Date</u> </div> </div>       |
| <b>Approved By:</b>  | <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <br/> <u>Signature</u><br/>           Bill Lin<br/>           Senior Engineer         </div> <div style="text-align: center;"> <br/> <u>Date</u> </div> </div> |
| <p>This report should not be used by the client to claim product certification, approval, or endorsement by TAF, NVLAP, NIST or any government agencies.</p>   |   |
|    |   |
| <p>This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification</p> |   |



|  |  |
|--|--|
| <b>TEST REPORT</b>                                 |  |
| <b>EN 60950-1</b>                                  |  |
| <b>Information technology equipment – Safety –</b> |  |
| <b>Part 1: General requirements</b>                |  |
| <b>Report</b>                                      |  |
| Reference No.                                      | LD180814E04  |
| Compiled by (+ signature)                          | See cover sheet  |
| Approved by (+ signature)                          | See cover sheet  |
| Date of issue                                      | 2018-10-18   |
| Total number of pages                              | 65   |
| <b>Testing laboratory</b>                          |  |
| Name   | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch      |
| Address  | No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan |
| Testing location                                   | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch      |
| Address  | No. 19, Hwa Ya 2nd Rd, Kueishan Taoyuan, Taiwan                            |
| <b>Client</b>                                      |  |
| Name   | Compex Systems Pte Ltd.  |
| Address  | No. 9 Harrison Road, #05-01 Singapore 369651                               |
| <b>Test specification</b>                          |  |
| Standard   | EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013                  |
| Test procedure                                     | CE Marking service in LVD  |
| Non-standard test method                           | N/A.   |
| <b>Test Report Form/blank test report</b>          |  |
| Test Report Form No.                               | IEC60950_1E  |
| TRF originator.                                    | SGS Fimko Ltd  |
| Master TRF   | Dated 2013-07  |
| <b>Test item</b>                                   |  |
| Description  | Wireless M.2 Type A/E with BLE Module                                      |
| Trademark  | Compex   |
| Model and/or type reference                        | WLT674   |
| Manufacturer                                       | Compex Systems Pte. Ltd.   |
| Rating(s)  | Not required   |



Copy of marking plate and summary of test results (information/comments):



**This is a reference label. Final label shall be including the content of it.**



**Test item particulars**

|  |  |
|--|--|
| Equipment mobility   | <input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable<br><input type="checkbox"/> stationary <input checked="" type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in  |
| Connection to the mains                                    | <input type="checkbox"/> pluggable equipment <input type="checkbox"/> type A <input type="checkbox"/> type B<br><input type="checkbox"/> permanent connection<br><input type="checkbox"/> detachable power supply cord<br><input type="checkbox"/> non-detachable power supply cord<br><input checked="" type="checkbox"/> not directly connected to the mains |
| Operating condition  | <input checked="" type="checkbox"/> continuous<br><input type="checkbox"/> rated operating / resting time:   |
| Access location  | <input checked="" type="checkbox"/> operator accessible<br><input type="checkbox"/> restricted access location   |
| Over voltage category (OVC)                                | <input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV<br><input checked="" type="checkbox"/> other: DC Supply  |
| Mains supply tolerance (%) or absolute mains supply values | N/A  |
| Tested for IT power systems                                | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  |
| IT testing, phase-phase voltage (V)                        | N/A  |
| Class of equipment   | <input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III<br><input type="checkbox"/> Not classified  |
| Considered current rating (A)                              | N/A  |
| Pollution degree (PD)                                      | <input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3   |
| IP protection class  | N/A  |
| Altitude during operation (m)                              | < 2000m  |
| Altitude of test laboratory (m)                            | < 2000m  |
| Mass of equipment (kg)                                     | 0.002kg  |

**Possible test case verdicts:**

|   |          |
|---|----------|
| - test case does not apply to the test object | N/A      |
| - test object does meet the requirement       | P (Pass) |
| - test object does not meet the requirement   | F (Fail) |

**Testing**

|                                 |            |
|---------------------------------|------------|
| Date of receipt of test item    | 2015-01-30 |
| Date(s) of performance of tests | --         |

**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 point is used as the decimal separator.



**General product information:**

- 1) The equipment is a class III 802.11a/b/g/n/ac + BT 4.1 M.2 2230 Type Card.
- 2) The maximum ambient temperature is specified as 70 °C.
- 3) Dimension of EUT: 30.0 x 22.0 x 2.2 mm.
- 4) The heating test shall be evaluated with end product.
- 5) The EUT is a building-in equipment. It shall be supplied by SELV power source. The circuits shall be separated from primary circuit by double or reinforce insulation and have to be evaluated during the approval of the final system.

Report history:

LD180814E04 (Project No.: 180814E04)

|          |  |
|----------|--|
| Remark 1 | This report is to copy the Test Report Ref. No. LD150107E07, dated 2015-03-16.   |
| Remark 2 | The modification applied on this report are:<br>- To change applicant, address, product name, model name and brand name. |
| Remark 3 | For the above "Remark 2" described changes, no test was considered necessary.  |

**Test condition:**

Temperature: 25°C

Relative humidity: 60%

Air pressure: 950 mbar

The test sample was a pre-production sample without serial number.

| EN/IEC 60950-1 |                    |                 |         |
|----------------|--------------------|-----------------|---------|
| Clause         | Requirement + Test | Result - Remark | Verdict |
| <b>1</b>       | <b>GENERAL</b>     |                 | P       |

|            |  |   |     |
|------------|--|---|-----|
| <b>1.5</b> | <b>Components</b>  |   | P   |
| 1.5.1      | General  | Components, which were found to affect safety aspects, are complied with the requirements of this standard or within the safety aspects of the relevant IEC component standards.                            | P   |
|            | Comply with IEC 60950-1 or relevant component standard   | (See appended table 1.5.1)  | P   |
| 1.5.2      | Evaluation and testing of components   | Components which are certified to IEC and/or nation standards are used correctly within their ratings.<br>Components not covered by IEC standards are tested under the conditions present in the equipment. | P   |
| 1.5.3      | Thermal controls   | No Thermal controls.  | N/A |
| 1.5.4      | Transformers   |   | N/A |
| 1.5.5      | Interconnecting cables   |   | N/A |
| 1.5.6      | Capacitors bridging insulation   | No such component.  | N/A |
| 1.5.7      | Resistors bridging insulation  | No such component.  | N/A |
| 1.5.7.1    | Resistors bridging functional, basic or supplementary insulation                                   |   | N/A |
| 1.5.7.2    | Resistors bridging double or reinforced insulation between a.c. mains and other circuits           |   | N/A |
| 1.5.7.3    | Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable |   | N/A |
| 1.5.8      | Components in equipment for IT power systems   | No such component.  | N/A |
| 1.5.9      | Surge suppressors  | No such component.  | 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/IEC 60950-1 |                                      |   |         |
|----------------|--------------------------------------|---|---------|
| Clause         | Requirement + Test                   | Result - Remark   | Verdict |
| <b>1.6</b>     | <b>Power interface</b>               |   | N/A     |
| 1.6.1          | AC power distribution systems        | Equipment is not directly connected to the AC mains supply. | N/A     |
| 1.6.2          | Input current                        |   | N/A     |
| 1.6.3          | Voltage limit of hand-held equipment | This appliance is not a hand-held equipment.                | N/A     |
| 1.6.4          | Neutral conductor                    | Only SELV supply, no connection to mains.                   | N/A     |

|            |   |                              |     |
|------------|---|------------------------------|-----|
| <b>1.7</b> | <b>Marking and instructions</b>   |                              | P   |
| 1.7.1      | Power rating and identification markings                                      | See below                    | P   |
| 1.7.1.1    | Power rating marking  | Not required                 | N/A |
|            | Multiple mains supply connections.....:                                       |                              | N/A |
|            | Rated voltage(s) or voltage range(s) (V) .....                                |                              | N/A |
|            | Symbol for nature of supply, for d.c. only .....                              |                              | N/A |
|            | Rated frequency or rated frequency range (Hz) .....                           | DC input                     | N/A |
|            | Rated current (mA or A) .....   |                              | N/A |
| 1.7.1.2    | Identification markings   | See below                    | P   |
|            | Manufacturer's name or trade-mark or identification mark .....                | trade-mark: Compex           | P   |
|            | Model identification or type reference .....                                  | WLT674                       | P   |
|            | Symbol for Class II equipment only .....                                      | Class III equipment          | N/A |
|            | Other markings and symbols .....  | CE                           | P   |
| 1.7.1.3    | Use of graphical symbols  |                              | N/A |
| 1.7.2      | Safety instructions and marking   | Provided in the user manual. | P   |
| 1.7.2.1    | General   |                              | N/A |
| 1.7.2.2    | Disconnect devices  |                              | N/A |
| 1.7.2.3    | Overcurrent protective device   |                              | N/A |
| 1.7.2.4    | IT power distribution systems   |                              | N/A |
| 1.7.2.5    | Operator access with a tool   |                              | N/A |
| 1.7.2.6    | Ozone   |                              | N/A |
| 1.7.3      | Short duty cycles   |                              | N/A |
| 1.7.4      | Supply voltage adjustment .....   |                              | N/A |
|            | Methods and means of adjustment; reference to installation instructions ..... |                              | N/A |

| EN/IEC 60950-1 |  |  |         |
|----------------|--|--|---------|
| Clause         | Requirement + Test   | Result - Remark  | Verdict |
| 1.7.5          | Power outlets on the equipment .....   | No power outlets.  | N/A     |
| 1.7.6          | Fuse identification (marking, special fusing characteristics, cross-reference) ..... |  | N/A     |
| 1.7.7          | Wiring terminals   |  | N/A     |
| 1.7.7.1        | Protective earthing and bonding terminals .....                                      | Class III equipment.   | N/A     |
| 1.7.7.2        | Terminals for a.c. mains supply conductors   | Class III equipment.   | N/A     |
| 1.7.7.3        | Terminals for d.c. mains supply conductors   |  | N/A     |
| 1.7.8          | Controls and indicators  | No safety affecting controls and indicators  | 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 .....  |  | N/A     |
| 1.7.10         | Thermostats and other regulating devices .....                                       | No thermostat or other regulating devices.   | N/A     |
| 1.7.11         | Durability   | The label was subjected to the test for permanence of marking. The label was rubbed with cloth for 15s. And then rubbed by the cloth soaked with Naphtha for 15s. After this test there was no damage to the label. The marking on the label did not fade. There was no curling nor lifting on the label edge. | P       |
| 1.7.12         | Removable parts  | No removable parts.  | N/A     |
| 1.7.13         | Replaceable batteries .....  | No batteries provided.   | N/A     |
|                | Language(s) .....  |  | —       |
| 1.7.14         | Equipment for restricted access locations .....                                      | No restricted access location.   | N/A     |

| EN/IEC 60950-1 |                                |                 |         |
|----------------|--------------------------------|-----------------|---------|
| Clause         | Requirement + Test             | Result - Remark | Verdict |
| <b>2</b>       | <b>PROTECTION FROM HAZARDS</b> |                 | N/A     |

|            |   |   |     |
|------------|---|---|-----|
| <b>2.1</b> | <b>Protection from electric shock and energy hazards</b>                              |   | N/A |
| 2.1.1      | Protection in operator access areas   | Class III equipment.  | N/A |
| 2.1.1.1    | Access to energized parts   | Building-in equipment, shall be evaluated in the end product. | N/A |
|            | Test by inspection .....  |   | N/A |
|            | Test with test finger (Figure 2A) .....   |   | N/A |
|            | Test with test pin (Figure 2B) .....  |   | N/A |
|            | Test with test probe (Figure 2C) .....  |   | N/A |
| 2.1.1.2    | Battery compartments  |   | N/A |
| 2.1.1.3    | Access to ELV wiring  |   | N/A |
|            | Working voltage ( $V_{peak}$ or $V_{rms}$ ); minimum distance through insulation (mm) |   | —   |
| 2.1.1.4    | Access to hazardous voltage circuit wiring  |   | N/A |
| 2.1.1.5    | Energy hazards .....  |   | N/A |
| 2.1.1.6    | Manual controls   |   | N/A |
| 2.1.1.7    | Discharge of capacitors in equipment  |   | N/A |
|            | Measured voltage (V); time-constant (s) .....   |   | —   |
| 2.1.1.8    | Energy hazards – d.c. mains supply  |   | 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 .....  |   | N/A |
| 2.1.2      | Protection in service access areas  | No maintenance work in operation mode necessary.              | N/A |
| 2.1.3      | Protection in restricted access locations   | It is not intended to be used in restricted locations.        | N/A |

|            |   |  |     |
|------------|---|--|-----|
| <b>2.2</b> | <b>SELV circuits</b>                                |  | N/A |
| 2.2.1      | General requirements                                | Evaluated in end product.                                | N/A |
| 2.2.2      | Voltages under normal conditions (V) .....          |  | N/A |
| 2.2.3      | Voltages under fault conditions (V) .....           |  | N/A |
| 2.2.4      | Connection of SELV circuits to other circuits ..... | The SELV does not connected to Primary circuit directly. | N/A |

| EN/IEC 60950-1 |  |                                 |         |
|----------------|--|---------------------------------|---------|
| Clause         | Requirement + Test                                       | Result - Remark                 | Verdict |
| <b>2.3</b>     | <b>TNV circuits</b>                                      |                                 | N/A     |
| 2.3.1          | Limits   | No TNV circuits inside the EUT. | N/A     |
|                | Type of TNV circuits .....                               |                                 | —       |
| 2.3.2          | Separation from other circuits and from accessible parts |                                 | N/A     |
| 2.3.2.1        | General requirements                                     |                                 | N/A     |
| 2.3.2.2        | Protection by basic insulation                           |                                 | N/A     |
| 2.3.2.3        | Protection by earthing                                   |                                 | N/A     |
| 2.3.2.4        | Protection by other constructions .....                  |                                 | N/A     |
| 2.3.3          | Separation from hazardous voltages                       |                                 | N/A     |
|                | Insulation employed.....                                 |                                 | —       |
| 2.3.4          | Connection of TNV circuits to other circuits             |                                 | N/A     |
|                | Insulation employed.....                                 |                                 | —       |
| 2.3.5          | Test for operating voltages generated externally         |                                 | N/A     |

|            |  |                              |     |
|------------|--|------------------------------|-----|
| <b>2.4</b> | <b>Limited current circuits</b>                          |                              | N/A |
| 2.4.1      | General requirements                                     | No limited current circuits. | N/A |
| 2.4.2      | Limit values   |                              | N/A |
|            | Frequency (Hz) .....                                     |                              | —   |
|            | Measured current (mA).....                               |                              | —   |
|            | Measured voltage (V) .....                               |                              | —   |
|            | Measured circuit capacitance (nF or $\mu$ F) .....       |                              | —   |
| 2.4.3      | Connection of limited current circuits to other circuits |                              | N/A |

|            |  |                                  |     |
|------------|--|----------------------------------|-----|
| <b>2.5</b> | <b>Limited power sources</b>   |                                  | N/A |
|            | a) Inherently limited output   | No limited power sources inside. | N/A |
|            | b) Impedance limited output  |                                  | N/A |
|            | c) Regulating network limited output under normal operating and single fault condition |                                  | N/A |
|            | d) Overcurrent protective device limited output  |                                  | N/A |
|            | 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  |                                  | —   |

| EN/IEC 60950-1 |   |   |         |
|----------------|---|---|---------|
| Clause         | Requirement + Test  | Result - Remark                               | Verdict |
| <b>2.6</b>     | <b>Provisions for earthing and bonding</b>  |   | N/A     |
| 2.6.1          | Protective earthing   | Evaluated in end product.                     | N/A     |
| 2.6.2          | Functional earthing   |   | N/A     |
| 2.6.3          | Protective earthing and protective bonding conductors   |   | N/A     |
| 2.6.3.1        | General   |   | N/A     |
| 2.6.3.2        | Size of protective earthing conductors  |   | N/A     |
|                | Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....   |   | —       |
| 2.6.3.3        | Size of protective bonding conductors   |   | N/A     |
|                | Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG .....   |   | —       |
|                | Protective current rating (A), cross-sectional area (mm <sup>2</sup> ), AWG .....   |   | —       |
| 2.6.3.4        | Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)..... |   | N/A     |
| 2.6.3.5        | Colour of insulation .....  |   | N/A     |
| 2.6.4          | Terminals   |   | N/A     |
| 2.6.4.1        | General   |   | N/A     |
| 2.6.4.2        | Protective earthing and bonding terminals   |   | N/A     |
|                | Rated current (A), type, nominal thread diameter (mm) .....   |   | —       |
| 2.6.4.3        | Separation of the protective earthing conductor from protective bonding conductors  |   | N/A     |
| 2.6.5          | Integrity of protective earthing  |   | N/A     |
| 2.6.5.1        | Interconnection of equipment  | No any other of interconnection of equipment. | N/A     |
| 2.6.5.2        | Components in protective earthing conductors and protective bonding conductors  |   | N/A     |
| 2.6.5.3        | Disconnection of protective earth   |   | N/A     |
| 2.6.5.4        | Parts that can be removed by an operator  |   | N/A     |
| 2.6.5.5        | Parts removed during 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  |   | N/A     |

| EN/IEC 60950-1 |   |                      |         |
|----------------|---|----------------------|---------|
| Clause         | Requirement + Test  | Result - Remark      | Verdict |
| <b>2.7</b>     | <b>Overcurrent and earth fault protection in primary circuits</b> |                      | N/A     |
| 2.7.1          | Basic requirements  | Class III equipment. | 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     |

|            |   |                       |     |
|------------|---|-----------------------|-----|
| <b>2.8</b> | <b>Safety interlocks</b>  |                       | N/A |
| 2.8.1      | General principles  | No safety interlocks. | 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 |

|            |   |                      |     |
|------------|---|----------------------|-----|
| <b>2.9</b> | <b>Electrical insulation</b>                    |                      | N/A |
| 2.9.1      | Properties of insulating materials              | Class III equipment. | N/A |
| 2.9.2      | Humidity conditioning                           |                      | N/A |
|            | Relative humidity (%), temperature (°C) ..... : |                      | —   |
| 2.9.3      | Grade of insulation                             |                      | N/A |
| 2.9.4      | Separation from hazardous voltages              |                      | N/A |
|            | Method(s) used ..... :                          |                      | —   |

| EN/IEC 60950-1 |   |                           |         |
|----------------|---|---------------------------|---------|
| Clause         | Requirement + Test  | Result - Remark           | Verdict |
| <b>2.10</b>    | <b>Clearances, creepage distances and distances through insulation</b>          |                           | N/A     |
| 2.10.1         | General   | Class III equipment.      | N/A     |
| 2.10.1.1       | Frequency .....   |                           | N/A     |
| 2.10.1.2       | Pollution degrees .....   |                           | N/A     |
| 2.10.1.3       | Reduced values for functional insulation  |                           | N/A     |
| 2.10.1.4       | Intervening unconnected conductive parts  |                           | N/A     |
| 2.10.1.5       | Insulation with varying dimensions  |                           | N/A     |
| 2.10.1.6       | Special separation requirements   |                           | N/A     |
| 2.10.1.7       | Insulation in circuits generating starting pulses                               |                           | N/A     |
| 2.10.2         | Determination of working voltage  |                           | N/A     |
| 2.10.2.1       | General   |                           | N/A     |
| 2.10.2.2       | RMS working voltage   |                           | N/A     |
| 2.10.2.3       | Peak working voltage  |                           | N/A     |
| 2.10.3         | Clearances  |                           | N/A     |
| 2.10.3.1       | General   |                           | N/A     |
| 2.10.3.2       | Mains transient voltages  | Evaluated in end product. | N/A     |
|                | a) AC mains supply .....  |                           | N/A     |
|                | b) Earthed d.c. mains supplies .....  |                           | N/A     |
|                | c) Unearthed d.c. mains supplies .....  |                           | N/A     |
|                | d) Battery operation .....  |                           | N/A     |
| 2.10.3.3       | Clearances in primary circuits  | Evaluated in end product. | N/A     |
| 2.10.3.4       | Clearances in secondary circuits  | Evaluated in end product. | N/A     |
| 2.10.3.5       | Clearances in circuits having starting pulses                                   |                           | N/A     |
| 2.10.3.6       | Transients from a.c. mains supply .....   |                           | N/A     |
| 2.10.3.7       | Transients from d.c. mains supply .....   |                           | N/A     |
| 2.10.3.8       | Transients from telecommunication networks and cable distribution systems ..... |                           | N/A     |
| 2.10.3.9       | Measurement of transient voltage levels   |                           | 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     |
| 2.10.4         | Creepage distances  | Evaluated in end product. | N/A     |
| 2.10.4.1       | General   |                           | N/A     |
| 2.10.4.2       | Material group and comparative tracking index                                   |                           | N/A     |
|                | CTI tests .....   |                           | —       |

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| Clause         | Requirement + Test  | Result - Remark | Verdict |
| 2.10.4.3       | Minimum creepage distances  |                 | N/A     |
| 2.10.5         | 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;<br>angle between 45° and 90° ..... |                 | N/A     |
| 2.10.5.13      | Wire with solvent-based enamel in wound components                              |                 | N/A     |
|                | Electric strength test  |                 | —       |
|                | Routine test  |                 | N/A     |
| 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  |                 | 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     |



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| Clause         | Requirement + Test   | Result - Remark | Verdict |
| 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     |

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|----------------|---------------------------------------|-----------------|---------|
| Clause         | Requirement + Test                    | Result - Remark | Verdict |
| <b>3</b>       | <b>WIRING, CONNECTIONS AND SUPPLY</b> |                 | N/A     |

|            |  |                           |     |
|------------|--|---------------------------|-----|
| <b>3.1</b> | <b>General</b>                                 |                           | N/A |
| 3.1.1      | Current rating and overcurrent protection      | Evaluated in end product. | N/A |
| 3.1.2      | Protection against mechanical damage           |                           | N/A |
| 3.1.3      | Securing of internal wiring                    |                           | N/A |
| 3.1.4      | Insulation of conductors                       |                           | N/A |
| 3.1.5      | Beads and ceramic insulators                   |                           | N/A |
| 3.1.6      | Screws for electrical contact pressure         |                           | N/A |
| 3.1.7      | Insulating materials in electrical connections |                           | N/A |
| 3.1.8      | Self-tapping and spaced thread screws          |                           | N/A |
| 3.1.9      | Termination of conductors                      |                           | N/A |
|            | 10 N pull test                                 |                           | N/A |
| 3.1.10     | Sleeving on wiring                             |                           | N/A |

|            |   |                           |     |
|------------|---|---------------------------|-----|
| <b>3.2</b> | <b>Connection to a mains supply</b>                                   |                           | N/A |
| 3.2.1      | Means of connection   | Evaluated in end product. | 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 <sup>2</sup> ), 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 |

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|----------------|--|-----------------|---------|
| Clause         | Requirement + Test   | Result - Remark | Verdict |
| 3.2.8          | Cord guards  |                 | N/A     |
|                | Diameter or minor dimension D (mm); test mass (g)<br>..... : |                 | —       |
|                | Radius of curvature of cord (mm)..... :                      |                 | —       |
| 3.2.9          | Supply wiring space  |                 | N/A     |

| <b>3.3</b> | <b>Wiring terminals for connection of external conductors</b>                      |                           | N/A |
|------------|--|---------------------------|-----|
| 3.3.1      | Wiring terminals   | Evaluated in end product. | 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 <sup>2</sup> )..... : |                           | —   |
| 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 |

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



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| Clause         | Requirement + Test                        | Result - Remark           | Verdict |
| <b>3.5</b>     | <b>Interconnection of equipment</b>       |                           | N/A     |
| 3.5.1          | General requirements                      | Evaluated in end product. | N/A     |
| 3.5.2          | Types of interconnection circuits ..... : |                           | N/A     |
| 3.5.3          | ELV circuits as interconnection circuits  |                           | N/A     |
| 3.5.4          | Data ports for additional equipment       |                           | N/A     |

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|----------------|------------------------------|-----------------|---------|
| Clause         | Requirement + Test           | Result - Remark | Verdict |
| <b>4</b>       | <b>PHYSICAL REQUIREMENTS</b> |                 | N/A     |

|            |                      |                               |     |
|------------|----------------------|-------------------------------|-----|
| <b>4.1</b> | <b>Stability</b>     |                               | N/A |
|            | Angle of 10°         | Evaluated in end product.     | N/A |
|            | Test force (N) ..... | Not floor standing equipment. | N/A |

|            |  |                           |     |
|------------|--|---------------------------|-----|
| <b>4.2</b> | <b>Mechanical strength</b>                         |                           | N/A |
| 4.2.1      | General  | Evaluated in end product. | N/A |
|            | 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) .....                       |                           | N/A |
| 4.2.7      | Stress relief test                                 |                           | N/A |
| 4.2.8      | Cathode ray tubes                                  |                           | N/A |
|            | Picture tube separately certified .....            |                           | N/A |
| 4.2.9      | High pressure lamps                                |                           | N/A |
| 4.2.10     | Wall or ceiling mounted equipment; force (N) ..... |                           | N/A |

|            |  |                              |     |
|------------|--|------------------------------|-----|
| <b>4.3</b> | <b>Design and construction</b>                         |                              | N/A |
| 4.3.1      | Edges and corners                                      | Evaluated in end product.    | N/A |
| 4.3.2      | Handles and manual controls; force (N)..... :          |                              | N/A |
| 4.3.3      | Adjustable controls                                    |                              | N/A |
| 4.3.4      | Securing of parts                                      |                              | N/A |
| 4.3.5      | Connection by plugs and sockets                        |                              | N/A |
| 4.3.6      | Direct plug-in equipment                               | Not direct plug-in equipment | N/A |
|            | Torque .....   |                              | —   |
|            | Compliance with the relevant mains plug standard ..... |                              | N/A |
| 4.3.7      | Heating elements in earthed equipment                  | No heating element           | N/A |
| 4.3.8      | Batteries  | No batteries used.           | N/A |
|            | - Overcharging of a rechargeable battery               |                              | N/A |
|            | - Unintentional charging of a non-rechargeable battery |                              | N/A |

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| Clause         | Requirement + Test  | Result - Remark                        | Verdict |
|                | - 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 used.                 | N/A     |
| 4.3.10         | Dust, powders, liquids and gases  |  | N/A     |
| 4.3.11         | Containers for liquids or gases   |  | N/A     |
| 4.3.12         | Flammable liquids .....   |  | 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  | No flammable liquids in the equipment. | 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                       |  | N/A     |
|                | Part, property, retention after test, flammability classification ..... |  | N/A     |
| 4.3.13.4       | Human exposure to ultraviolet (UV) radiation .....                      | No UV radiation.                       | N/A     |
| 4.3.13.5       | Lasers (including laser diodes) and LEDs                                | No Lasers 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     |

|            |  |  |     |
|------------|--|--|-----|
| <b>4.4</b> | <b>Protection against hazardous moving parts</b>   |  | N/A |
| 4.4.1      | General  |  | N/A |
| 4.4.2      | Protection in operator access areas .....          | No hazardous moving part in operator access areas.   | N/A |
|            | Household and home/office document/media shredders |  | N/A |
| 4.4.3      | Protection in restricted access locations .....    | No hazardous moving part in restricted access areas. | N/A |
| 4.4.4      | Protection in service access areas                 |  | N/A |

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| Clause         | Requirement + Test                                | Result - Remark     | Verdict |
| 4.4.5          | Protection against moving fan blades              | No fan is provided. | 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     |

|            |   |                           |     |
|------------|---|---------------------------|-----|
| <b>4.5</b> | <b>Thermal requirements</b>             |                           | N/A |
| 4.5.1      | General                                 | Evaluated in end product. | N/A |
| 4.5.2      | Temperature tests                       |                           | N/A |
|            | Normal load condition per Annex L ..... |                           | —   |
| 4.5.3      | Temperature limits for materials        |                           | N/A |
| 4.5.4      | Touch temperature limits                |                           | N/A |
| 4.5.5      | Resistance to abnormal heat .....       |                           | N/A |

|            |   |                           |     |
|------------|---|---------------------------|-----|
| <b>4.6</b> | <b>Openings in enclosures</b>                     |                           | N/A |
| 4.6.1      | Top and side openings                             | Evaluated in end product. | 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) ..... |                           | —   |

|            |  |                           |     |
|------------|--|---------------------------|-----|
| <b>4.7</b> | <b>Resistance to fire</b>  |                           | N/A |
| 4.7.1      | Reducing the risk of ignition and spread of flame                      | Evaluated in end product. | N/A |
|            | Method 1, selection and application of components wiring and materials |                           | N/A |



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| Clause         | Requirement + Test   | Result - Remark           | Verdict |
|                | 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                                 | Evaluated in end product. | N/A     |
| 4.7.2.2        | Parts not requiring a fire enclosure                             | Evaluated in end product. | N/A     |
| 4.7.3          | Materials  |                           | N/A     |
| 4.7.3.1        | General  | Evaluated in end product. | N/A     |
| 4.7.3.2        | Materials for fire enclosures                                    |                           | N/A     |
| 4.7.3.3        | Materials for components and other parts outside fire enclosures |                           | N/A     |
| 4.7.3.4        | Materials for components and other parts inside fire enclosures  |                           | N/A     |
| 4.7.3.5        | Materials for air filter assemblies                              |                           | N/A     |
| 4.7.3.6        | Materials used in high-voltage components                        |                           | N/A     |

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| Clause         | Requirement + Test   | Result - Remark | Verdict |
| <b>5</b>       | <b>ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS</b> |                 | N/A     |

|            |   |                           |     |
|------------|---|---------------------------|-----|
| <b>5.1</b> | <b>Touch current and protective conductor current</b>   |                           | N/A |
| 5.1.1      | General   | Evaluated in end product. | 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 |
| <b>5.2</b>     | <b>Electric strength</b> |                      | N/A     |
| 5.2.1          | General                  | Class III equipment. | N/A     |
| 5.2.2          | Test procedure           |                      | N/A     |

|            |   |                           |     |
|------------|---|---------------------------|-----|
| <b>5.3</b> | <b>Abnormal operating and fault conditions</b>                  |                           | N/A |
| 5.3.1      | Protection against overload and abnormal operation              | Evaluated in end product. | 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 |
| <b>6</b>       | <b>CONNECTION TO TELECOMMUNICATION NETWORKS</b> |                 | N/A     |

|            |  |                  |     |
|------------|--|------------------|-----|
| <b>6.1</b> | <b>Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment</b> |                  | N/A |
| 6.1.1      | Protection from hazardous voltages   |                  | N/A |
| 6.1.2      | Separation of the telecommunication network from earth   |                  | N/A |
| 6.1.2.1    | Requirements   | No TNV circuits. | N/A |
|            | Supply voltage (V) .....   |                  | —   |
|            | Current in the test circuit (mA) .....   |                  | —   |
| 6.1.2.2    | Exclusions .....   |                  | N/A |

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

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



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|----------------|---|---|---------|
| Clause         | Requirement + Test  | Result - Remark                               | Verdict |
| <b>7</b>       | <b>CONNECTION TO CABLE DISTRIBUTION SYSTEMS</b>   |   | N/A     |
| 7.1            | General   | Not connection to cable distribution systems. | 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     |
| 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     |

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|----------------|--|-----------------|---------|
| Clause         | Requirement + Test   | Result - Remark | Verdict |
| <b>A</b>       | <b>ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE</b>  |                 | 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) .....  |                 | —       |
| 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     |

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|----------------|---|-----------------|---------|
| Clause         | Requirement + Test  | Result - Remark | Verdict |
| <b>B</b>       | <b>ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)</b> |                 | 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     |
| B.10           | Test for series motors  |                 | N/A     |
|                | Operating voltage (V) .....   |                 | —       |

|          |  |  |     |
|----------|--|--|-----|
| <b>C</b> | <b>ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)</b> |  | N/A |
|          | Position .....                                     |  | —   |
|          | Manufacturer .....                                 |  | —   |
|          | Type .....   |  | —   |
|          | Rated values .....                                 |  | —   |
|          | Method of protection.....                          |  | —   |
| C.1      | Overload test                                      |  | N/A |

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|----------------|--|-----------------|---------|
| Clause         | Requirement + Test                             | Result - Remark | Verdict |
| C.2            | Insulation                                     |                 | N/A     |
|                | Protection from displacement of windings.....: |                 | N/A     |

|          |   |  |     |
|----------|---|--|-----|
| <b>D</b> | <b>ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS<br/>(see 5.1.4)</b> |  | N/A |
| D.1      | Measuring instrument  |  | N/A |
| D.2      | Alternative measuring instrument  |  | N/A |

|          |  |  |     |
|----------|--|--|-----|
| <b>E</b> | <b>ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)</b> |  | N/A |
|----------|--|--|-----|

|          |   |  |     |
|----------|---|--|-----|
| <b>F</b> | <b>ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES<br/>(see 2.10 and Annex G)</b> |  | N/A |
|----------|---|--|-----|

|          |  |  |     |
|----------|--|--|-----|
| <b>G</b> | <b>ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES</b>  |  | 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 |
| 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 |

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| Clause   | Requirement + Test                              | Result - Remark | Verdict |
|----------|---|-----------------|---------|
| <b>H</b> | <b>ANNEX H, IONIZING RADIATION (see 4.3.13)</b> |                 | N/A     |

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

|          |  |  |     |
|----------|--|--|-----|
| <b>K</b> | <b>ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)</b>     |  | 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 |

|          |  |  |     |
|----------|--|--|-----|
| <b>L</b> | <b>ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)</b> |  | N/A |
| L.1      | Typewriters  |  | N/A |
| L.2      | Adding machines and cash registers   |  | N/A |
| L.3      | Erasers  |  | N/A |
| L.4      | Pencil sharpeners  |  | N/A |
| L.5      | Duplicators and copy machines  |  | N/A |
| L.6      | Motor-operated files   |  | N/A |
| L.7      | Other business equipment   |  | N/A |

|          |  |  |     |
|----------|--|--|-----|
| <b>M</b> | <b>ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)</b> |  | N/A |
| M.1      | Introduction   |  | N/A |
| M.2      | Method A   |  | N/A |
| M.3      | Method B   |  | N/A |
| M.3.1    | Ringling 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 |

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| Clause         | Requirement + Test   | Result - Remark | Verdict |
| M.3.2.3        | Monitoring voltage (V) .....   |                 | N/A     |
| <b>N</b>       | <b>ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)</b> |                 | N/A     |
| N.1            | ITU-T impulse test generators  |                 | N/A     |
| N.2            | IEC 60065 impulse test generator   |                 | N/A     |
| <b>P</b>       | <b>ANNEX P, NORMATIVE REFERENCES</b>   |                 | —       |
| <b>Q</b>       | <b>ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)</b>   |                 | N/A     |
|                | a) Preferred climatic categories .....   |                 | N/A     |
|                | b) Maximum continuous voltage .....  |                 | N/A     |
|                | c) Pulse current .....   |                 | N/A     |
| <b>R</b>       | <b>ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES</b>  |                 | 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     |
| <b>S</b>       | <b>ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)</b>  |                 | N/A     |
| S.1            | Test equipment   |                 | N/A     |
| S.2            | Test procedure   |                 | N/A     |
| S.3            | Examples of waveforms during impulse testing   |                 | N/A     |
| <b>T</b>       | <b>ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)</b>                                    |                 | N/A     |
|                |  |                 | —       |
| <b>U</b>       | <b>ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)</b>                  |                 | N/A     |
|                |  |                 | —       |
| <b>V</b>       | <b>ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)</b>  |                 | N/A     |
| V.1            | Introduction   |                 | N/A     |
| V.2            | TN power distribution systems  |                 | N/A     |

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| Clause         | Requirement + Test   | Result - Remark | Verdict |
| <b>W</b>       | <b>ANNEX W, SUMMATION OF TOUCH CURRENTS</b>                                      |                 | 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     |
| <b>X</b>       | <b>ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS<br/>(see clause C.1)</b> |                 | N/A     |
| X.1            | Determination of maximum input current   |                 | N/A     |
| X.2            | Overload test procedure  |                 | N/A     |
| <b>Y</b>       | <b>ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)</b>               |                 | 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     |
| <b>Z</b>       | <b>ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)</b>             |                 | N/A     |
| <b>AA</b>      | <b>ANNEX AA, MANDREL TEST (see 2.10.5.8)</b>                                     |                 | N/A     |
| <b>BB</b>      | <b>ANNEX BB, CHANGES IN THE SECOND EDITION</b>                                   |                 | —       |
| <b>CC</b>      | <b>ANNEX CC, Evaluation of integrated circuit (IC) current limiters</b>          |                 | N/A     |
| CC.1           | General  |                 | N/A     |
| CC.2           | Test program 1.....  | :               | N/A     |
| CC.3           | Test program 2.....  | :               | N/A     |
| CC.4           | Test program 3.....  | :               | N/A     |
| CC.5           | Compliance.....  | :               | N/A     |



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| Clause         | Requirement + Test   | Result - Remark       | Verdict |
| <b>DD</b>      | <b>ANNEX DD, Requirements for the mounting means of rack-mounted equipment</b> |                       | 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.....:                      | No such construction. | N/A     |
| DD.4           | Compliance.....:   | No such construction. | N/A     |

|           |   |  |     |
|-----------|---|--|-----|
| <b>EE</b> | <b>ANNEX EE, Household and home/office document/media shredders</b>               |  | 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 |
|           | 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 |

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| Clause  | Requirement + Test  | Result - Remark | Verdict |
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| Clause  | Requirement + Test  | Result - Remark | Verdict |
| Contents  | Add the following annexes:<br>Annex ZA (normative) Normative references to international publications with their corresponding European publications<br>Annex ZB (normative) Special national conditions<br>Annex ZD (informative) IEC and CENELEC code designations for flexible cords   |                 | N/A     |
| General   | Delete all the “country” notes in the reference document according to the following list:<br>1.4.8 Note 2                      1.5.1 Note 2 & 3                      1.5.7.1 Note<br>1.5.8 Note 2                      1.5.9.4 Note                      1.7.2.1 Note 4, 5 & 6<br>2.2.3 Note                      2.2.4 Note                      2.3.2 Note<br>2.3.2.1 Note 2                      2.3.4 Note 2                      2.6.3.3 Note 2 & 3<br>2.7.1 Note                      2.10.3.2 Note 2                      2.10.5.13 Note 3<br>3.2.1.1 Note                      3.2.4 Note 3.                      2.5.1 Note 2<br>4.3.6 Note 1 & 2                      4.7 Note 4                      4.7.2.2 Note<br>4.7.3.1 Note 2                      5.1.7.1 Note 3 & 4                      5.3.7 Note 1<br>6 Note 2 & 5                      6.1.2.1 Note 2                      6.1.2.2 Note<br>6.2.2 Note 6.                      2.2.1 Note 2                      6.2.2.2 Note<br>7.1 Note 3                      7.2 Note                      7.3 Note 1 & 2<br>G.2.1 Note 2                      Annex H Note 2 |                 | N/A     |
| General (A1:2010)   | Delete all the “country” notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list:<br>1.5.7.1 Note                      6.1.2.1 Note 2<br>6.2.2.1 Note 2                      EE.3 Note   |                 | N/A     |
| General (A2:2013)   | Delete all the “country” notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list:<br>2.7.1 Note *                      2.10.3.1 Note 2<br>6.2.2. Note<br>* Note of secretary: Text of Common Modification remains unchanged.   |                 | N/A     |
| 1.1.1 (A1:2010)   | <b>Replace</b> the text of NOTE 3 by the following.<br>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     |

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| Clause                     | Requirement + Test  | Result - Remark | Verdict |
| 1.3.Z1                     | <p>Add the following subclause:</p> <p>1.3.Z1 Exposure to excessive sound pressure</p> <p>The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones.</p> <p>NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for "one package equipment", and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.</p> |                 | N/A     |
| (A12:2011)                 | <p>In EN 60950-1:2006/A12:2011</p> <p>Delete the addition of 1.3.Z1 / EN 60950-1:2006</p> <p>Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010</p>  |                 | N/A     |
| 1.5.1<br><br>(Added info*) | <p>Add the following NOTE:</p> <p>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC<br/>New Directive 2011/65/11 *</p>   |                 | N/A     |
| 1.7.2.1<br>(A1:2010)       | <p>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.</p>   |                 | N/A     |
| 1.7.2.1<br>(A12:2011)      | <p>In EN 60950-1:2006/A12:2011</p> <p>Delete NOTE Z1 and the addition for Portable Sound System.</p> <p>Add the following clause and annex to the existing standard and amendments.</p>   |                 | N/A     |



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| Clause         | Requirement + Test  | Result - Remark | Verdict |
|                | <b>Zx Protection against excessive sound pressure from personal music players</b>   |                 | N/A     |
|                | <p><b>Zx.1 General</b><br/>           This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players.<br/>           A personal music player is a portable equipment for personal use, which is designed to allow the user to listen to recorded or broadcast sound or video; and primarily uses headphones or earphones that can be worn in or on or around the ears; and allows the user to walk around while in use.<br/>           NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment.<br/>           A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause.<br/>           The requirements in this sub-clause are valid for music or video mode only.<br/>           The requirements do not apply: while the personal music player is connected to an external amplifier; or while the headphones or earphones are not used.<br/>           NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player.<br/>           The requirements do not apply to: hearing aid equipment and professional equipment;<br/>           NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.</p> |                 | N/A     |
|                | <p>Analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015.<br/>           NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.<br/>           For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.</p>   |                 |         |



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|----------------|--|-----------------|---------|
| Clause         | Requirement + Test   | Result - Remark | Verdict |
|                | <p><b>Zx.2 Equipment requirements</b></p> <p>No safety provision is required for equipment that complies with the following: equipment provided as a package (personal music player with its listening device), where the acoustic output <math>L_{Aeq,T}</math> is <math>\leq 85</math> dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is <math>\leq 27</math> mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1.</p> <p>NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level <math>L_{Aeq,T}</math> is meant. See also Zx.5 and Annex Zx.</p> <p>All other equipment shall:</p> <p>a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and</p> <p>b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and</p> |                 | N/A     |



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|----------------|---|-----------------|---------|
| Clause         | Requirement + Test  | Result - Remark | Verdict |
|                | <p>c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and</p> <p>NOTE 2 Examples of means include visual or audible signals. Action from the user is always required.</p> <p>NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off.</p> <p>d) have a warning as specified in Zx.3; and</p> <p>e) not exceed the following:</p> <ol style="list-style-type: none"> <li>1) equipment provided as a package (player with its listening device), the acoustic output shall be <math>\leq 100</math> dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and</li> <li>2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be <math>\leq 150</math> mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1.</li> </ol> <p>For music where the average sound pressure (long term <math>L_{Aeq,T}</math>) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song.</p> <p>NOTE 4 Classical music typically has an average sound pressure (long term <math>L_{Aeq,T}</math>) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA.</p> <p>For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.</p> |                 | N/A     |

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|----------------|---|-----------------|---------|
| Clause         | Requirement + Test  | Result - Remark | Verdict |
|                | <p><b>Zx.3 Warning</b></p> <p>The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: the symbol of Figure 1 with a minimum height of 5 mm; and the following wording, or similar:</p> <p>“To prevent possible hearing damage, do not listen at high volume levels for long periods.”</p>  <p><b>Figure 1 – Warning label (IEC 60417-6044)</b></p> <p>Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.</p> |                 | N/A     |
|                | <p><b>Zx.4 Requirements for listening devices (headphones and earphones)</b></p>  |                 | N/A     |
|                | <p><b>Zx.4.1 Wired listening devices with analogue input</b></p> <p>With 94 dBA sound pressure output <math>L_{Aeq,T}</math>, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be <math>\geq 75</math> mV.</p> <p>This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control).</p> <p>NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.</p>   |                 | N/A     |



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|----------------|---|-----------------|---------|
| Clause         | Requirement + Test  | Result - Remark | Verdict |
|                | <p><b>Zx.4.2 Wired listening devices with digital input</b><br/>           With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output <math>L_{Aeq,T}</math> of the listening device shall be <math>\leq 100</math> dBA.</p> <p>This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.).</p> <p>NOTE An example of a wired listening device with digital input is a USB headphone.</p>   |                 | N/A     |
|                | <p><b>Zx.4.3 Wireless listening devices</b><br/>           In wireless mode: with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above mentioned programme simulation noise, the acoustic output <math>L_{Aeq,T}</math> of the listening device shall be <math>\leq 100</math> dBA.</p> <p>NOTE An example of a wireless listening device is a Bluetooth headphone.</p> |                 | N/A     |
|                | <p><b>Zx.5 Measurement methods</b><br/>           Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s.</p> <p>NOTE Test method for wireless equipment provided without listening device should be defined.</p>   |                 | N/A     |



| EN/IEC 60950-1                 |  |                       |                    |                               |                          |                                |                         |  |     |
|--------------------------------|--|-----------------------|--------------------|-------------------------------|--------------------------|--------------------------------|-------------------------|--|-----|
| Clause                         | Requirement + Test   | Result - Remark       | Verdict            |                               |                          |                                |                         |  |     |
| 2.7.1                          | <p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;</p> <p>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;</p> |                       | N/A                |                               |                          |                                |                         |  |     |
|                                | <p>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.</p> <p>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.</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                        | <p>Replace "60245 IEC 53" by "H05 RR-F";</p> <p>"60227 IEC 52" by "H03 VV-F or H03 VVH2-F";</p> <p>"60227 IEC 53" by "H05 VV-F or H05 VVH2-F2".</p> <p>In Table 3B, replace the first four lines by the following:</p> <table border="0"> <tr> <td>Up to and including 6  </td> <td>0,75 <sup>a)</sup>  </td> </tr> <tr> <td>Over 6 up to and including 10  </td> <td>(0,75) <sup>b)</sup> 1,0  </td> </tr> <tr> <td>Over 10 up to and including 16  </td> <td>(1,0) <sup>c)</sup> 1,5  </td> </tr> </table> <p>In the conditions applicable to Table 3B delete the words "in some countries" in condition <sup>a)</sup>.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>  | Up to and including 6 | 0,75 <sup>a)</sup> | Over 6 up to and including 10 | (0,75) <sup>b)</sup> 1,0 | Over 10 up to and including 16 | (1,0) <sup>c)</sup> 1,5 |  | N/A |
| Up to and including 6          | 0,75 <sup>a)</sup>   |                       |                    |                               |                          |                                |                         |  |     |
| Over 6 up to and including 10  | (0,75) <sup>b)</sup> 1,0   |                       |                    |                               |                          |                                |                         |  |     |
| Over 10 up to and including 16 | (1,0) <sup>c)</sup> 1,5  |                       |                    |                               |                          |                                |                         |  |     |



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|-----------------------|--|-----------------|---------|
| Clause                | Requirement + Test   | Result - Remark | Verdict |
| 3.2.5.1<br>(A2:2013)  | NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD   |                 | N/A     |
| 3.3.4                 | In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:<br>Over 10 up to and including 16   1,5 to 2,5   1,5 to 4  <br>Delete the fifth line: conductor sizes for 13 to 16 A  |                 | N/A     |
| 4.3.13.6<br>(A1:2010) | Replace the existing NOTE by the following:<br>NOTE Z1 Attention is drawn to:<br>1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and<br>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     |
|                       | 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:<br>At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 $\mu$ Sv/h (0,1 mR/h) (see NOTE). Account is taken of the background level.<br>Replace the notes as follows:<br>NOTE These values appear in Directive 96/29/Euratom.<br>Delete NOTE 2.   |                 | N/A     |
| Bibliography          | Additional EN standards.   |                 | —       |



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|----------------|--|-----------------|---|-------------------------------|---|---------|
| Clause         | Requirement + Test   |                 |   | Result - Remark               |   | Verdict |
| <b>ZA</b>      | <b>NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS</b>   |                 |   |                               |   | —       |
|                | <u>Publication</u>   | <u>Year</u>     | <u>Title</u>  | <u>EN/HD</u>                  | <u>Year</u>                             | —       |
|                | IEC 60065 (mod)<br>A1  | 2001<br>2005    | Audio, video and similar electronic apparatus -<br>Safety requirements  | EN 60065<br>A1<br>+ A11<br>A2 | 2002<br>2006<br>2008<br>- <sup>1)</sup> |         |
|                | A2   | - <sup>1)</sup> |   |                               |   |         |
|                | IEC 60068-2-78   | - <sup>2)</sup> | Environmental testing<br>Part 2-78: Tests - Test Cab: Damp heat,<br>steady state  | EN 60068-2-78                 | 2001 <sup>3)</sup>                      |         |
|                | IEC 60073  | - <sup>2)</sup> | Basic and safety principles for man-machine<br>interface, marking and identification - Coding<br>principles for indication devices and actuators                | EN 60073                      | 2002 <sup>3)</sup>                      |         |
|                | IEC 60083  | - <sup>2)</sup> | Plugs and socket-outlets for domestic and<br>similar general use standardized in member<br>countries of IEC   | -                             | -                                       |         |
|                | IEC 60085  | 2004            | Electrical insulation - Thermal classification  | EN 60085                      | 2004                                    |         |
|                | IEC 60112  | - <sup>2)</sup> | Method for determining the proof and<br>comparative tracking indices of insulating<br>materials   | EN 60112                      | 2003 <sup>3)</sup>                      |         |
|                | IEC 60216-4-1  | - <sup>2)</sup> | Guide for the determination of thermal<br>endurance properties of electrical insulating<br>materials<br>Part 4: Ageing ovens<br>Section 1: Single-chamber ovens | EN 60216-4-1                  | 2006 <sup>3)</sup>                      |         |
|                | IEC 60227 (mod)  | Series          | Polyvinyl chloride insulated cables of rated<br>voltages up to and including 450/750V   | HD 21 <sup>4)</sup>           | Series                                  |         |
|                | IEC 60245 (mod)  | Series          | Rubber insulated cables of rated voltages up<br>to and including 450/750V   | HD 22 <sup>5)</sup>           | Series                                  |         |
|                | <sup>1)</sup> At draft stage.<br><sup>2)</sup> Undated reference.<br><sup>3)</sup> Valid edition at date of issue.<br><sup>4)</sup> The HD 21 series is related to, but not directly equivalent with the IEC 60227 series.<br><sup>5)</sup> The HD 22 series is related to, but not directly equivalent with the IEC 60245 series. |                 |   |                               |   |         |



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|----------------|--|----------------------|---|-------------------------|--|--|
| Clause         | Requirement + Test   |                      |   | Result - Remark         | Verdict                                  |  |
|                | <u>Publication</u>   | <u>Year</u>          | <u>Title</u>  | <u>EN/HD</u>            | <u>Year</u>                              |  |
|                | IEC 60309 (mod)  | Series               | Plugs, socket-outlets and couplers for industrial purposes  | EN 60309                | Series                                   |  |
|                | IEC 60317  | Series               | Specifications for particular types of winding wires  | EN 60317                | Series                                   |  |
|                | IEC 60317-43   | - <sup>2)</sup>      | Part 43: Aromatic polyimide tape wrapped round copper wire, class 240   | EN 60317-43             | 1997 <sup>3)</sup>                       |  |
|                | IEC 60320 (mod)  | Series               | Appliance couplers for household and similar general purposes   | EN 60320                | Series                                   |  |
|                | IEC 60364-1 (mod)  | 2001                 | Electrical installations of buildings Part 1: Fundamental principles, assessment of general characteristics, definitions  | HD 384.1 S2             | 2001                                     |  |
|                | IEC 60384-14 A1  | 1993<br>1995         | Fixed capacitors for use in electronic equipment Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains   | EN 132400 <sup>6)</sup> | 1994                                     |  |
|                | IEC 60417  | Data-base            | Graphical symbols for use on equipment  | -                       | -  |  |
|                | IEC 60664-1 + A1 + A2  | 1992<br>2000<br>2002 | Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests   | EN 60664-1              | 2003                                     |  |
|                | IEC 60695-2-11   | - <sup>2)</sup>      | Fire hazard testing Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products  | EN 60695-2-11           | 2001 <sup>3)</sup>                       |  |
|                | IEC 60695-2-20   | - <sup>2)</sup>      | Part 2-20: Glowing/hot-wire based test methods - Hot-wire coil ignitability - Apparatus, test method and guidance   | -                       | -  |  |
|                | IEC 60695-10-2   | - <sup>2)</sup>      | Part 10-2: Guidance and test methods for the minimization of the effects of abnormal heat on electrotechnical products involved in fires - Method for testing products made from non-metallic materials for resistance to heat using the ball pressure test | EN 60695-10-2           | 2003 <sup>3)</sup>                       |  |
|                | IEC 60695-11-3   | - <sup>2)</sup>      | Part 11-3: Test flames - 500 W flames - Apparatus and confirmational test methods   | -                       | -  |  |
|                | IEC 60695-11-4   | - <sup>2)</sup>      | Part 11-4: Test flames - 50 W flames - Apparatus and confirmational test methods  | -                       | -  |  |
|                | IEC 60695-11-10 A1   | - <sup>2)</sup>      | Part 11-10: Test flames - 50 W horizontal and vertical flame test methods   | EN 60695-11-10 A1       | 1999 <sup>3)</sup><br>2003 <sup>3)</sup> |  |
|                | <sup>6)</sup> EN 132400, Sectional Specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains (Assessment level D), and its amendments are related to, but not directly equivalent to IEC 60384-14. They are superseded by EN 60384-14:2005, which is based on IEC 60384-14:2005. |                      |   |                         |  |  |



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



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|----------------|---|-----------------|---|--------------------------|--------------------|
| Clause         | Requirement + Test  |                 |   | Result - Remark          | Verdict            |
|                | Publication   | Year            | Title   | EN/HD                    | Year               |
|                | IEC 61051-2   | 1991            | Varistors for use in electronic equipment<br>Part 2: Sectional specification for surge<br>suppression varistors                       | -                        | -                  |
|                | IEC 61058-1 (mod)   | 2000            | Switches for appliances<br>Part 1: General requirements   | EN 61058-1 <sup>7)</sup> | 2002               |
|                | ISO 178   | - <sup>2)</sup> | Plastics - Determination of flexural properties   | EN ISO 178               | 2003 <sup>3)</sup> |
|                | ISO 179   | Series          | Plastics - Determination of Charpy impact<br>strength   | EN ISO 179               | Series             |
|                | ISO 180   | - <sup>2)</sup> | Plastics - Determination of Izod impact<br>strength   | EN ISO 180               | 2000 <sup>3)</sup> |
|                | ISO 261   | - <sup>2)</sup> | ISO general-purpose metric screw threads -<br>General plan  | -                        | -                  |
|                | ISO 262   | - <sup>2)</sup> | ISO general-purpose metric screw threads -<br>Selected sizes for screws, bolts and nuts   | -                        | -                  |
|                | ISO 527   | Series          | Plastics - Determination of tensile properties  | EN ISO 527               | Series             |
|                | ISO 3864  | Series          | Safety colours and safety signs   | -                        | -                  |
|                | ISO 4892-1  | - <sup>2)</sup> | Plastics - Methods of exposure to laboratory<br>light sources<br>Part 1: General guidance   | EN ISO 4892-1            | 2000 <sup>3)</sup> |
|                | ISO 4892-2  | - <sup>2)</sup> | Part 2: Xenon-arc sources   | EN ISO 4892-2            | 2006 <sup>3)</sup> |
|                | ISO 4892-4  | - <sup>2)</sup> | Part 4: Open-flame carbon-arc lamps   | -                        | -                  |
|                | ISO 7000  | Data-<br>base   | Graphical symbols for use on equipment -<br>Index and synopsis  | -                        | -                  |
|                | ISO 8256  | - <sup>2)</sup> | Plastics - Determination of tensile-impact<br>strength  | EN ISO 8256              | 2004 <sup>3)</sup> |
|                | ISO 9772  | - <sup>2)</sup> | Cellular plastics - Determination of horizontal<br>burning characteristics of small specimens<br>subjected to a small flame           | -                        | -                  |
|                | ISO 9773  | - <sup>2)</sup> | Plastics - Determination of burning behaviour<br>of thin flexible vertical specimens in contact<br>with a small-flame ignition source | EN ISO 9773              | 1998 <sup>3)</sup> |
|                | ITU-T<br>Recommendation<br>K.44   | - <sup>2)</sup> | Resistibility tests for telecommunication<br>equipment exposed to overvoltages and<br>overcurrents - Basic Recommendation             | -                        | -                  |
|                | <hr/> <sup>7)</sup> EN 61058-1:2002 includes A1:2001 to IEC 61058-1:2000. |                 |   |                          |                    |



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|--|---|-----------------|---------|
| Clause   | Requirement + Test  | Result - Remark | Verdict |
| <b>ZB ANNEX (normative)</b><br><b>SPECIAL NATIONAL CONDITIONS (EN)</b> |   |                 |         |
| Clause   | Requirement + Test  | Result - Remark | Verdict |
| 1.2.4.1  | In <b>Denmark</b> , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.  |                 | N/A     |
| 1.2.13.14<br>(A11:2009)  | In <b>Norway</b> and <b>Sweden</b> , for requirements see 1.7.2.1 and 7.3 of this annex.  |                 | N/A     |
| 1.5.7.1<br>(A11:2009)  | In <b>Finland, Norway</b> and <b>Sweden</b> , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2. |                 | N/A     |
| 1.5.8  | In <b>Norway</b> , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).  |                 | N/A     |
| 1.5.9.4  | In <b>Finland, Norway</b> and <b>Sweden</b> , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.  |                 | N/A     |



| EN/IEC 60950-1                          |   |                 |         |
|---|---|-----------------|---------|
| Clause                                  | Requirement + Test  | Result - Remark | Verdict |
| <b>ZB ANNEX (normative)</b>             |   |                 |         |
| <b>SPECIAL NATIONAL CONDITIONS (EN)</b> |   |                 |         |
| Clause                                  | Requirement + Test  | Result - Remark | Verdict |
| 1.7.2.1                                 | <p>In <b>Finland, Norway and Sweden</b>, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p> <p>In <b>Norway and Sweden</b>, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system.</p> <p>It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>"Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)."</p> |                 | N/A     |

| EN/IEC 60950-1                          |  |                 |         |
|---|--|-----------------|---------|
| Clause                                  | Requirement + Test   | Result - Remark | Verdict |
| <b>ZB ANNEX (normative)</b>             |  |                 |         |
| <b>SPECIAL NATIONAL CONDITIONS (EN)</b> |  |                 |         |
| Clause                                  | Requirement + Test   | Result - Remark | Verdict |
|   | <p>NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplest utstyr – og er tilkoplest et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel-TV nettet.”</p> <p>Translation to Swedish:</p> <p>”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”</p> |                 | N/A     |
| 1.7.2.1<br>(A2:2013)                    | <p>In <b>Denmark</b>, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in <b>Denmark</b> shall be as follows:<br/>In <b>Denmark</b>: “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”</p>  |                 | N/A     |
| 1.7.5                                   | <p>In <b>Denmark</b>, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.</p> <p>For <b>CLASS II EQUIPMENT</b> the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.</p>   |                 | N/A     |

| EN/IEC 60950-1                          |  |                 |         |
|---|--|-----------------|---------|
| Clause                                  | Requirement + Test   | Result - Remark | Verdict |
| <b>ZB ANNEX (normative)</b>             |  |                 |         |
| <b>SPECIAL NATIONAL CONDITIONS (EN)</b> |  |                 |         |
| Clause                                  | Requirement + Test   | Result - Remark | Verdict |
| 1.7.5<br>(A2:2013)                      | <p>In <b>Denmark</b>, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011.</p> <p>For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a.</p> <p>Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b.</p> <p>Justification the Heavy Current Regulations, 6c</p> |                 | N/A     |
| 2.2.4                                   | In <b>Norway</b> , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.  |                 | N/A     |
| 2.3.2                                   | In <b>Finland, Norway and Sweden</b> there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.  |                 | N/A     |
| 2.3.4                                   | In <b>Norway</b> , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.  |                 | N/A     |
| 2.6.3.3                                 | In the <b>United Kingdom</b> , the current rating of the circuit shall be taken as 13 A, not 16 A.   |                 | N/A     |
| 2.7.1                                   | In the <b>United Kingdom</b> , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.  |                 | N/A     |
| 2.10.5.13                               | In <b>Finland, Norway and Sweden</b> , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.  |                 | N/A     |

| EN/IEC 60950-1                          |  |                 |         |
|---|--|-----------------|---------|
| Clause                                  | Requirement + Test   | Result - Remark | Verdict |
| <b>ZB ANNEX (normative)</b>             |  |                 |         |
| <b>SPECIAL NATIONAL CONDITIONS (EN)</b> |  |                 |         |
| Clause                                  | Requirement + Test   | Result - Remark | Verdict |
| 3.2.1.1                                 | <p>In <b>Switzerland</b>, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <p>SEV 6532-2.1991 Plug Type 15 3P+N+PE<br/>250/400 V, 10 A</p> <p>SEV 6533-2.1991 Plug Type 11 L+N<br/>250 V, 10 A</p> <p>SEV 6534-2.1991 Plug Type 12 L+N+PE<br/>250 V, 10 A</p> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <p>SEV 5932-2.1998: Plug Type 25 , 3L+N+PE<br/>230/400 V, 16 A</p> <p>SEV 5933-2.1998: Plug Type 21, L+N, 250 V, 16A</p> <p>SEV 5934-2.1998: Plug Type 23, L+N+PE .250 V, 16 A</p> |                 | N/A     |
| 3.2.1.1                                 | <p>In <b>Denmark</b>, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>  |                 | N/A     |



| EN/IEC 60950-1                          |   |                 |         |
|---|---|-----------------|---------|
| Clause                                  | Requirement + Test  | Result - Remark | Verdict |
| <b>ZB ANNEX (normative)</b>             |   |                 |         |
| <b>SPECIAL NATIONAL CONDITIONS (EN)</b> |   |                 |         |
| Clause                                  | Requirement + Test  | Result - Remark | Verdict |
| 3.2.1.1<br>(A2:2013)                    | <p>In <b>Denmark</b>, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Justification the Heavy Current Regulations, 6c</p> |                 |         |
| 3.2.1.1                                 | <p>In <b>Spain</b>, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>                              |                 | N/A     |
| 3.2.1.1                                 | <p>In the <b>United Kingdom</b>, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>   |                 | N/A     |

| EN/IEC 60950-1                          |  |                 |         |
|---|--|-----------------|---------|
| Clause                                  | Requirement + Test   | Result - Remark | Verdict |
| <b>ZB ANNEX (normative)</b>             |  |                 |         |
| <b>SPECIAL NATIONAL CONDITIONS (EN)</b> |  |                 |         |
| Clause                                  | Requirement + Test   | Result - Remark | Verdict |
| 3.2.1.1                                 | In <b>Ireland</b> , apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.  |                 | N/A     |
| 3.2.4                                   | In <b>Switzerland</b> , for requirements see 3.2.1.1 of this annex.  |                 | N/A     |
| 3.2.5.1                                 | In the <b>United Kingdom</b> , a power supply cord with conductor of 1,25 mm <sup>2</sup> is allowed for equipment with a rated current over 10 A and up to and including 13 A.  |                 | N/A     |
| 3.3.4                                   | In the <b>United Kingdom</b> , the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is:<br><br>• 1,25 mm <sup>2</sup> to 1,5 mm <sup>2</sup> nominal cross-sectional area.  |                 | N/A     |
| 4.3.6                                   | In the <b>United Kingdom</b> , the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply. |                 | N/A     |
| 4.3.6                                   | In <b>Ireland</b> , DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.  |                 | N/A     |

| EN/IEC 60950-1                          |  |                 |         |
|---|--|-----------------|---------|
| Clause                                  | Requirement + Test   | Result - Remark | Verdict |
| <b>ZB ANNEX (normative)</b>             |  |                 |         |
| <b>SPECIAL NATIONAL CONDITIONS (EN)</b> |  |                 |         |
| Clause                                  | Requirement + Test   | Result - Remark | Verdict |
| 5.1.7.1                                 | <p>In <b>Finland, Norway and Sweden</b> TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE A that 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;</li> <li>• STATIONARY PLUGGABLE EQUIPMENT TYPE B;</li> <li>• STATIONARY PERMANENTLY CONNECTED EQUIPMENT.</li> </ul>  |                 | N/A     |
| 6.1.2.1<br>(A1:2010)                    | <p>In <b>Finland, Norway and Sweden</b>, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>- two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>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</p> <ul style="list-style-type: none"> <li>- passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and</li> <li>- is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul> |                 | N/A     |

| EN/IEC 60950-1                          |  |                 |         |
|---|--|-----------------|---------|
| Clause                                  | Requirement + Test   | Result - Remark | Verdict |
| <b>ZB ANNEX (normative)</b>             |  |                 |         |
| <b>SPECIAL NATIONAL CONDITIONS (EN)</b> |  |                 |         |
| Clause                                  | Requirement + Test   | Result - Remark | Verdict |
|   | <p>It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b).</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>- the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 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;</li> <li>- the additional testing shall be performed on all the test specimens as described in EN 60384-14;</li> <li>- 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.</li> </ul> |                 | N/A     |
| 6.1.2.2                                 | <p>In <b>Finland, Norway and Sweden</b>, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.</p>   |                 | N/A     |
| 7.2                                     | <p>In <b>Finland, Norway and Sweden</b>, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.</p> <p>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>  |                 | N/A     |
| 7.3<br>(A11:2009)                       | <p>In <b>Norway and Sweden</b>, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.</p>  |                 | N/A     |



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

**Annex ZD  
(informative)**

**IEC and CENELEC code designations for flexible cords**

| Type of flexible cord                              | Code designations |                      |
|--|-------------------|----------------------|
|  | IEC               | CENELEC              |
| <b>PVC insulated cords</b>                         |                   |                      |
| Flat twin tinsel cord                              | 60227 IEC 41      | H03VH-Y              |
| Light polyvinyl chloride sheathed flexible cord    | 60227 IEC 52      | H03VV-F<br>H03VVH2-F |
| Ordinary polyvinyl chloride sheathed flexible cord | 60277 IEC 53      | H05VV-F<br>H05VVH2-F |
| <b>Rubber insulated cords</b>                      |                   |                      |
| Braided cord                                       | 60245 IEC 51      | H03RT-F              |
| Ordinary tough rubber sheathed flexible cord       | 60245 IEC 53      | H05RR-F              |
| Ordinary polychloroprene sheathed flexible cord    | 60245 IEC 57      | H05RN-F              |
| Heavy polychloroprene sheathed flexible cord       | 60245 IEC 66      | H07RN-F              |
| <b>Cords having high flexibility</b>               |                   |                      |
| Rubber insulated and sheathed cord                 | 60245 IEC 86      | H03RR-H              |
| Rubber insulated, crosslinked PVC sheathed cord    | 60245 IEC 87      | H03RV4-H             |
| Crosslinked PVC insulated and sheathed cord        | 60245 IEC 88      | H03V4V4-H            |



| EN/IEC 60950-1   |   |                 |                              |                              |  |
|--|---|-----------------|------------------------------|------------------------------|--|
| Clause   | Requirement + Test                        |                 |                              | Result - Remark              | Verdict                                |
| <b>1.5.1</b>   | <b>TABLE: List of critical components</b> |                 |                              |                              | <b>P</b>                               |
| Object/part No.  | Manufacturer/<br>trademark                | Type/model      | Technical data               | Standard<br>(Edition / year) | Mark(s) of<br>conformity <sup>1)</sup> |
| PWB  | Interchangeable                           | Interchangeable | V-1 or better,<br>105°C min. | UL 796                       | UL                                     |
| 1) An asterisk indicates a mark which assures the agreed level of surveillance |   |                 |                              |                              |  |
| Supplementary information:   |   |                 |                              |                              |  |

| EN/IEC 60950-1             |  |                        |       |        |                       |                  |         |
|----------------------------|--|------------------------|-------|--------|-----------------------|------------------|---------|
| Clause                     | Requirement + Test                                   |                        |       |        |                       | Result - Remark  | Verdict |
| <b>1.6.2</b>               | <b>TABLE: Electrical data (in normal conditions)</b> |                        |       |        |                       |                  | N/A     |
| U (V)                      | I (A)  | I <sub>rated</sub> (A) | P (W) | Fuse # | I <sub>fuse</sub> (A) | Condition/status |         |
| --                         | --   | --                     | --    | --     | --                    | --               |         |
| Supplementary information: |  |                        |       |        |                       |                  |         |

| <b>2.1.1.5 c) 1)</b>       | <b>TABLE: max. V, A, VA test</b> |                       |                       |                   |  | N/A |
|----------------------------|----------------------------------|-----------------------|-----------------------|-------------------|--|-----|
| Voltage (rated)<br>(V)     | Current (rated)<br>(A)           | Voltage (max.)<br>(V) | Current (max.)<br>(A) | VA (max.)<br>(VA) |  |     |
| --                         | --                               | --                    | --                    | --                |  |     |
| supplementary information: |                                  |                       |                       |                   |  |     |

| <b>2.1.1.5 c) 2)</b>       | <b>TABLE: stored energy</b> |  |              |  |  | N/A |
|----------------------------|-----------------------------|--|--------------|--|--|-----|
| Capacitance C (μF)         | Voltage U (V)               |  | Energy E (J) |  |  |     |
| --                         | --                          |  | --           |  |  |     |
| supplementary information: |                             |  |              |  |  |     |

| <b>2.1.1.7</b>             | <b>TABLE: discharge test</b> |                |                   |          |  | N/A |
|----------------------------|------------------------------|----------------|-------------------|----------|--|-----|
| Condition                  | τ calculated (s)             | τ measured (s) | t <sub>u→0V</sub> | Comments |  |     |
| --                         | --                           | --             | --                | --       |  |     |
| Supplementary information: |                              |                |                   |          |  |     |

| <b>2.2</b>  | <b>TABLE: evaluation of voltage limiting components in SELV circuits</b> |        |                             |  |  | N/A |
|---|--|--------|-----------------------------|--|--|-----|
| Component (measured between)                        | max. voltage (V)<br>(normal operation)                                   |        | Voltage Limiting Components |  |  |     |
|   | V peak   | V d.c. |                             |  |  |     |
| --  | --   | --     | --                          |  |  |     |
| Fault test performed on voltage limiting components | Voltage measured (V) in SELV circuits<br>(V peak or V d.c.)              |        |                             |  |  |     |
| --  | --   |        |                             |  |  |     |
| supplementary information:                          |  |        |                             |  |  |     |

| EN/IEC 60950-1             |                                     |                            |       |                   |               |
|----------------------------|-------------------------------------|----------------------------|-------|-------------------|---------------|
| Clause                     | Requirement + Test                  |                            |       | Result - Remark   | Verdict       |
| <b>2.2.2</b>               | <b>TABLE: SELV reliability test</b> |                            |       |                   | N/A           |
| Accessible Part            |                                     | Voltage Limiting Component | Fault | Maximum V pk / dc | Duration (ms) |
| From                       | To                                  |                            |       |                   |               |
| --                         | --                                  | --                         | --    | --                | --            |
| Supplementary information: |                                     |                            |       |                   |               |

| <b>2.4</b>                 | <b>TABLE: limited current circuit measurement</b> |              |          | N/A |
|----------------------------|---|--------------|----------|-----|
| Location                   | Voltage (V)                                       | Current (mA) | Comments |     |
| --                         | --  | --           | --       |     |
| Supplementary information: |   |              |          |     |

| <b>2.5</b>  | <b>TABLE: Limited power sources</b> |         |         |       | N/A   |       |
|---|-------------------------------------|---------|---------|-------|-------|-------|
| Circuit output tested:                                      |                                     |         |         |       |       |       |
| Note: Measured Uoc (V) with all load circuits disconnected: |                                     |         |         |       |       |       |
| Components  | Sample No.                          | Uoc (V) | Isc (A) |       | VA    |       |
|   |                                     |         | Meas.   | Limit | Meas. | Limit |
| --  | --                                  | --      | --      | --    | --    | --    |
| supplementary information:                                  |                                     |         |         |       |       |       |
| Sc=Short circuit, Oc=Open circuit                           |                                     |         |         |       |       |       |

| <b>2.6.3.4 and 2.6.1</b>   | <b>TABLE: ground continue test</b> |  |          | N/A |
|----------------------------|------------------------------------|--|----------|-----|
| Location                   | resistant measures (Ω)             |  | comments |     |
| --                         | --                                 |  | --       |     |
| Supplementary information: |                                    |  |          |     |

| <b>2.10.2</b>              | <b>TABLE: working voltage measurement test</b> |                  |          | N/A |
|----------------------------|--|------------------|----------|-----|
| Location                   | RMS voltage (V)                                | Peak voltage (V) | Comments |     |
| --                         | --   | --               | --       |     |
| Supplementary information: |  |                  |          |     |



| EN/IEC 60950-1   |  |                 |                  |         |                  |         |         |
|--|--|-----------------|------------------|---------|------------------|---------|---------|
| Clause   | Requirement + Test   | Result - Remark |                  |         |                  |         | Verdict |
| <b>2.10.3 and 2.10.4</b>                                 | <b>TABLE: Clearance and creepage distance measurements</b> |                 |                  |         |                  |         | 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:                               |  |                 |                  |         |                  |         |         |

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

|   |                            |               |                         |                        |               |               |               |                   |               |
|---|----------------------------|---------------|-------------------------|------------------------|---------------|---------------|---------------|-------------------|---------------|
| <b>4.3.8</b>  | <b>TABLE: Batteries</b>    |               |                         |                        |               |               |               |                   | 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   | --                         | --            | --                      | --                     | --            | --            | --            | --                | --            |



| EN/IEC 60950-1   |                         |                 |         |
|--|-------------------------|-----------------|---------|
| Clause   | Requirement + Test      | Result - Remark | Verdict |
| Test results:  |                         | --              | Verdict |
| - Chemical leaks   |                         | --              | N/A     |
| - Explosion of the battery                                       |                         | --              | N/A     |
| - Emission of flame or expulsion of molten metal                 |                         | --              | N/A     |
| - Electric strength tests of equipment after completion of tests |                         | --              | N/A     |
| Supplementary information:                                       |                         |                 |         |
| <b>4.3.8</b>   | <b>TABLE: Batteries</b> |                 | N/A     |
| Battery category .....   |                         | --              |         |
| Manufacturer .....   |                         | --              |         |
| Type / model .....   |                         | --              |         |
| Voltage .....  |                         | --              |         |
| Capacity .....   |                         | --              |         |
| Tested and Certified by (incl. Ref. No.) .....                   |                         | --              |         |
| Circuit protection diagram:                                      |                         | --              |         |
| <b>MARKINGS AND INSTRUCTIONS (1.7.13 )</b>                       |                         |                 |         |
| Location of replaceable battery                                  |                         | --              |         |
| Language(s) .....  |                         | --              |         |
| Close to the battery .....                                       |                         | --              |         |
| In the servicing instructions .....                              |                         | --              |         |
| In the operating instructions .....                              |                         | --              |         |

| <b>4.5</b>                                 | <b>TABLE: Thermal requirements</b>  |                    |                     |                    |        |                               | N/A                           |
|--|-------------------------------------|--------------------|---------------------|--------------------|--------|-------------------------------|-------------------------------|
|  | Supply voltage (V) .....            | --                 | --                  | --                 | --     | --                            | —                             |
|  | Ambient T <sub>min</sub> (°C) ..... | --                 | --                  | --                 | --     | --                            | —                             |
|  | Ambient T <sub>max</sub> (°C) ..... | --                 | --                  | --                 | --     | --                            | —                             |
| Maximum measured temperature T of part/at: |                                     | T (°C)             |                     |                    |        |                               | Allowed T <sub>max</sub> (°C) |
| --   |                                     | --                 | --                  | --                 | --     | --                            | --                            |
| Temperature T of winding:                  | t <sub>1</sub> (°C)                 | R <sub>1</sub> (Ω) | t <sub>2</sub> (°C) | R <sub>2</sub> (Ω) | T (°C) | Allowed T <sub>max</sub> (°C) | Insulation class              |
| --   | --                                  | --                 | --                  | --                 | --     | --                            | --                            |
| Supplementary information:                 |                                     |                    |                     |                    |        |                               |                               |

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|----------------------------|---|--------------------------|---------|
| Clause                     | Requirement + Test                                      | Result - Remark          | Verdict |
| <b>4.5.5</b>               | <b>TABLE: Ball pressure test of thermoplastic parts</b> |                          | N/A     |
|                            | Allowed impression diameter (mm) .....: ≤ 2 mm          |                          | —       |
| Part                       | Test temperature (°C)                                   | Impression diameter (mm) |         |
| --                         | --  | --                       |         |
| Supplementary information: |   |                          |         |

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

| <b>5.1</b>                 | <b>TABLE: touch current measurement</b> |            |                     | N/A |
|----------------------------|---|------------|---------------------|-----|
| Measured between:          | Measured (mA)                           | Limit (mA) | Comments/conditions |     |
| --                         | --                                      | --         | --                  |     |
| supplementary information: |   |            |                     |     |

| <b>5.2</b>                    | <b>TABLE: Electric strength tests, impulse tests and voltage surge tests</b> |                  |                    | N/A |
|-------------------------------|--|------------------|--------------------|-----|
| Test voltage applied between: | Voltage shape (AC, DC, impulse, surge)                                       | Test voltage (V) | Breakdown Yes / No |     |
| Functional:                   |  |                  |                    |     |
| --                            | --   | --               | --                 |     |
| Basic/supplementary:          |  |                  |                    |     |
| --                            | --   | --               | --                 |     |
| Reinforced:                   |  |                  |                    |     |
| --                            | --   | --               | --                 |     |
| Supplementary information:    |  |                  |                    |     |



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|----------------------------|---|--------------------|-----------|--------|------------------|-----------------|---------|
| Clause                     | Requirement + Test  |                    |           |        |                  | Result - Remark | Verdict |
| <b>5.3</b>                 | <b>TABLE: Fault condition tests</b>                                 |                    |           |        |                  |                 | 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: |   |                    |           |        |                  |                 |         |

| <b>C.2</b>                 | <b>TABLE: transformers</b> |                          |                         |                            |                         |                                 |  | N/A |
|----------------------------|----------------------------|--------------------------|-------------------------|----------------------------|-------------------------|---------------------------------|--|-----|
| Loc.                       | Tested insulation          | Working voltage peak / V | Working voltage rms / V | Required electric strength | Required clearance / mm | Required creepage distance / mm | Required distance thr. insul.                        |     |
|                            |                            | (2.10.2)                 | (2.10.2)                | (5.2)                      | (2.10.3)                | (2.10.4)                        | (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: |                            |                          |                         |                            |                         |                                 |  |     |
|                            |                            |                          |                         |                            |                         |                                 |  |     |

| <b>C.2</b>  | <b>TABLE: transformers</b> |  |  |  |  |  | N/A |
|-------------|----------------------------|--|--|--|--|--|-----|
| Transformer |                            |  |  |  |  |  |     |

Photos:



