### W.2.2 Common return, isolated from earth

Connect all interconnection circuits to a common return point that is isolated from earth. (Such connections to a common point may in any case be necessary for functional reasons.) In this case the total current from all interconnection circuits will pass through an earthed human body that touches either wire of any interconnection circuit. This current can only be limited by controlling the values  $I_1$ ,  $I_2$ ,...  $I_n$  in relation to the number of ports on the PABX. However, the value of the total current will probably be less than  $I_1 + I_2 + ... + I_n$  due to harmonic and other effects.

### W.2.3 Common return, connected to protective earth

Connect all interconnection circuits to a common return point and connect that point to protective earth. The situation described in W.1.2 applies regardless of the number of ports. Since safety depends on the presence of the earth connection, it may be necessary to use high-integrity earthing arrangements, depending on the maximum value of the total current that could flow.

### Annex X (informative) Maximum heating effect in transformer tests (see Clause C.1)

Clause C.1 requires transformers to be loaded in such a way as to give the maximum heating effect. In this annex examples are given of various methods of producing this condition. Other methods are possible and compliance with Clause C.1 is not restricted to these examples.

### X.1 Determination of maximum input current

The value of the input current at rated load is established. This is  $I_r$ , see step A of Table X.1. The value may be established by test or from manufacturer's data.

A load is applied to the output winding or to the output of the switch mode power supply unit while measuring the input current. The load is adjusted as quickly as possible to provide the maximum value of input current that can be sustained for approximately 10 s of operation. This is  $I_m$ , see step B of Table X.1. The test is then repeated according to step C and, if necessary, steps D to J of Table X.1. The input current at each step is then noted and maintained until either:

a) the temperature of the transformer stabilizes without the operation of any component or protective device (inherent protection) in which case no further testing is conducted; or

b) a component or protective device operates, in which case the winding temperature is noted immediately and the test of Clause X.2 is then conducted depending on the type of protection.

If any component or protective device operates within 10 s after the application of the primary voltage,  $I_m$  is the value recorded just before the component or protective device operates.

In conducting the tests described in steps C to J of Table X.1, the variable load is adjusted to the required value as quickly as possible and readjusted, if necessary, 1 min after application of the primary voltage. The sequence of steps C to J may be reversed.

# Table X.1 – Test steps

Steps	Input current of the transformer or switch mode power supply unit
A	Input current at rated load = $I_r$
В	Maximum value of input current after 10 s of operation = $I_m$
С	$I_r + 0.75 (I_m - I_r)$
D	$I_r + 0,50 (I_m - I_r)$
E	$I_r + 0.25 (I_m - I_r)$
F	$I_r + 0,20 (I_m - I_r)$
G	$I_r + 0,15 (I_m - I_r)$
Н	$I_r + 0,10 (I_m - I_r)$
J	$I_r + 0.05 (I_m - I_r)$

# X.2 Overload test procedure

If the test of Clause X.1 results in condition X.1 b), the following applies depending on type of protection.

Electronic protection:	The current is either reduced in steps of 5 % from the current of condition X.1 b) or increased in steps of 5 % from the rated load to find the maximum overload at which the temperature stabilizes without the operation of any electronic protection.
Thermal protection:	An overload is applied such that the operating temperature remains a few degrees below the rated opening temperature of the thermal protection.
Overcurrent protection:	An overload is applied such that a current flows in accordance with the current versus time trip curves of the overcurrent protective device.

# Annex Y (normative) Ultraviolet light conditioning test (see 4.3.13.3)

### Y.1 Test apparatus

Samples are exposed to ultraviolet light by using one of the following apparatus:

– a twin enclosed carbon-arc, (see Y.3), with continuous exposure for a minimum of 720 h. The test apparatus shall operate with a black-panel temperature of 63 °C  $\pm$  3 °C in a relative humidity of (50  $\pm$  5) %; or

– a xenon-arc, (see Y.4) with continuous exposure for a minimum of 1 000 h. The test apparatus shall operate with a 6 500 W, water-cooled xenon-arc lamp, a spectral irradiance of 0,35 W/m<sup>2</sup> at 340 nm, a black-panel temperature of 63 °C  $\pm$  3 °C in a relative humidity of (50  $\pm$  5) %.

### Y.2 Mounting of test samples

The samples are mounted vertically on the inside of the cylinder of the light exposure apparatus, with the widest portion of the samples facing the arcs. They are mounted so that they do not touch each other.

#### Y.3 Carbon-arc light-exposure apparatus

The apparatus described in ISO 4892-4, or equivalent, is used in accordance with the procedures given in ISO 4892-1 and ISO 4892-4 using a type 1 filter, without water spray.

Materials tested with water spray are also considered acceptable.

#### Y.4 Xenon-arc light-exposure apparatus

The apparatus described in ISO 4892-2, or equivalent, is used in accordance with the procedures given in ISO 4892-1 and ISO 4892-2 using method A, without water spray.

Materials tested with water spray are also considered acceptable.

NOTE The wording "without water spray" indicates that the samples are not sprayed with water during the test. This should not be confused with water cooling which is necessary for operation of the apparatus.

### Annex Z (informative) Overvoltage categories (see 2.10.3.2 and Clause G.2)

The largest peak value of transient overvoltage likely to be experienced at the power input interface of equipment connected to a mains SUPPLY is known as the mains TRANSIENT VOLTAGE. In this standard, minimum CLEARANCES for insulation in PRIMARY CIRCUITS are based on the MAINS TRANSIENT VOLTAGE.

According to IEC 60664-1, the value of the MAINS TRANSIENT VOLTAGE of an AC MAINS SUPPLY depends on the AC MAINS SUPPLY voltage and the Overvoltage Category, I to IV, see also Table G.1.

The Overvoltage Category therefore has to be identified for each equipment intended to be connected to the AC MAINS SUPPLY.

The Overvoltage Category depends on the manner of connection of the equipment to the building power supply arrangements. It is normally considered to be as shown in Table Z.1. Where transient limiting measures are provided, such as external filters in the AC MAINS SUPPLY, the equipment can be used in a higher Overvoltage Category.

The term Overvoltage Category is not used in connection with DC MAINS SUPPLIES.

Overvoltage Category	Equipment and its point of connection to the AC MAINS SUPPLY	Examples of equipment
IV	Equipment that will be connected to the point where the AC MAINS SUPPLY enters the building	Electricity meters Communications information technology equipment for remote electricity metering
111	Equipment that will be an integral part of the building wiring	Socket-outlets, fuse panels and switch panels Power monitoring equipment
II	PLUGGABLE or PERMANENTLY CONNECTED EQUIPMENT that will be supplied from the building wiring	Household appliances, portable tools, home electronics Most information technology equipment used in the building
I	Equipment that will be connected to a special AC MAINS SUPPLY in which measures have been taken to reduce transients	Information technology equipment supplied via an external filter or a motor driven generator

### Table Z.1 – Overvoltage categories

Annex AA (normative) Mandrel test (see 2.10.5.8)

NOTE This test is based on IEC 61558-1 and will give the same results.

Three test samples, each individual sample consisting of three or more layers of non-separable thin sheet material forming REINFORCED INSULATION, are used. One sample at a time is fixed to the mandrel of the test fixture (Figure AA.1) as shown in Figure AA.2.



Figure AA.1 – Mandrel



Figure AA.2 – Initial position of mandrel



Figure AA.3 – Final position of mandrel

A downward force of 150 N  $\pm$  10 N is applied to the free end of the sample (see Figure AA.3), using an appropriate clamping device. The mandrel is rotated

- from the initial position (Figure AA.2) to the final position (Figure AA.3) and back;
- as above for a second time;
- from the initial position to the final position.

If a sample breaks during rotation where it is fixed to the mandrel or to the clamping device, this does not constitute a failure. If a sample breaks at any other place, the test has failed.

After the above test, a sheet of metal foil, 0,035 mm  $\pm$  0,005 mm thick, at least 200 mm long, is placed along the surface of the sample, hanging down on each side of the mandrel (see Figure AA.3). The surface of the foil in contact with the sample shall be conductive, not oxidized or otherwise insulated. The foil is positioned so that its edges are not less than 18 mm from the edges of the sample (see Figure AA.4). The foil is then tightened by two equal weights, one at each end, using appropriate clamping devices.





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### Figure AA.4 – Position of metal foil on insulating material

While the mandrel is in its final position, and within the 60 s following the final positioning, an electric strength test is applied between the mandrel and the metal foil in accordance with 5.2.2. The test voltage is 150 % of  $U_{test}$ , but not less than 5 kV.  $U_{test}$  is the test voltage specified in 5.2.2 for REINFORCED INSULATION.

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The entire test procedure is repeated on the other two samples.

# Annex BB (informative) Changes in the second edition

# **BB.1** Numbering changes table

The following subclause, annex, figure and table numbers have changed since the first edition of IEC 60950-1.

1.2.2.3       deleted         new       1.2.2.3         1.2.2.4       deleted         1.2.2.5       deleted         new       1.2.5.3         1.2.5.3 to 5       renumbered       1.2.5.4 to 6         new       1.2.5.3 to 13       renumbered       1.2.8.3         1.2.8.3 to 13       renumbered       1.2.8.4 to 14         new       1.2.9.7       1.2.9.7         1.2.9.7 to 10       renumbered       1.2.9.8 to 11         new       1.2.10.4       new         1.2.9.7 to 10       renumbered       1.2.9.8 to 11         new       1.2.13.15       new         1.2.9.7 to 10       renumbered       1.5.13.15         new       1.2.13.16       new         1.5.7       replaced       1.5.6         1.5.7       replaced       1.5.6         1.5.7       replaced       1.5.9         new       1.7.2.1 to 3       1.7.10         1.7.10       renumbered       1.7.10         1.7.11       renumbered       1.7.10         1.7.12       deleted       1.7.11 to 13         1.7.13 to 15       renumbered       1.7.14         1.7.16       renumbered <th>First Edition</th> <th>Action</th> <th>This edition</th> <th></th>	First Edition	Action	This edition	
new         1.2.2.3           I.2.2.4         deleted           1.2.2.5         deleted           new         1.2.5.3           1.2.5.3 to 5         renumbered         1.2.5.4 to 6           new         1.2.8.3           1.2.5.3 to 5         renumbered         1.2.8.3           1.2.8.3 to 13         renumbered         1.2.8.4 to 14           new         1.2.9.7 to 10         renumbered           1.2.9.7 to 10         renumbered         1.2.9.8 to 11           new         1.2.10.4         new           1.2.9.7 to 10         renumbered         1.2.9.7 to 11           new         1.2.13.15         new         1.2.13.15           new         1.2.13.16         new         1.2.13.17           1.5.6, 1.5.7.2         replaced         1.5.7           new         1.5.7         new         1.5.9           new         1.7.2.1 to 3         1.7.10           new         1.7.2.4         1.7.10           1.7.10         renumbered         1.7.10           1.7.12         deleted         1.7.11           1.7.12         deleted         1.7.14           1.7.16         renumbered         1.7.14     <	1.2.2.3	deleted		
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1.2.8.3 to 13       renumbered       1.2.8.4 to 14         new       1.2.9.7         1.2.9.7 to 10       renumbered       1.2.9.8 to 11         new       1.2.10.4         new       1.2.13.15         new       1.2.13.16         new       1.2.13.16         new       1.2.13.17         1.5.6, 1.5.7.2       replaced         new       1.5.6         1.5.7       replaced         new       1.5.9         new       1.5.9         new       1.5.9         new       1.7.2.1 to 3         new       1.7.2.1 to 3         new       1.7.2.1 to 3         new       1.7.2.4         new       1.7.10         renumbered       1.7.10         renumbered       1.7.10         renumbered       1.7.10         1.7.12       deleted         1.7.13 to 15       renumbered       1.7.2.5         1.7.16       renumbered       1.7.14         new       1.7.2.6       1.1.8         new       2.1.1.8       1.9         new       2.1.1.9       1.1.9		new	1.2.8.3	
new         1.2.9.7           1.2.9.7 to 10         renumbered         1.2.9.8 to 11           new         1.2.10.4           new         1.2.13.15           new         1.2.13.16           new         1.2.13.16           new         1.2.13.17           1.5.6, 1.5.7.2         replaced         1.5.6           1.5.7         replaced         1.5.7           new         1.5.9         1.5.9           new         1.7.2.1 to 3         1.7.2.1 to 3           1.7.10         renumbered         1.7.2.4           1.7.11         renumbered         1.7.10           1.7.12         deleted         1.7.10           1.7.13 to 15         renumbered         1.7.11 to 13           1.7.16         renumbered         1.7.14           new         1.7.2.6         1.7.14           new         2.1.1.8         1.2.1.9           new         2.1.1.9         1.1.9	1.2.8.3 to 13	renumbered	1.2.8.4 to 14	
1.2.9.7 to 10       renumbered       1.2.9.8 to 11         new       1.2.10.4         new       1.2.13.15         new       1.2.13.16         new       1.2.13.16         new       1.2.13.17         1.5.6, 1.5.7.2       replaced       1.5.6         1.5.7       replaced       1.5.7         new       1.5.9       1.5.7         new       1.7.2.1 to 3       1.7.2.1 to 3         1.7.10       renumbered       1.7.2.4         1.7.11       renumbered       1.7.10         1.7.12       deleted       1.7.10         1.7.13 to 15       renumbered       1.7.14         1.7.16       renumbered       1.7.2.5         1.7.17       renumbered       1.7.2.6         new       2.1.1.8       new         1.7.19       new       2.1.1.9		new	1.2.9.7	
new         1.2.10.4           new         1.2.13.15           new         1.2.13.16           new         1.2.13.17           1.5.6, 1.5.7.2         replaced         1.5.6           1.5.7         replaced         1.5.7           new         1.5.9         1.5.9           new         1.7.2.1 to 3         1.7.2.1 to 3           new         1.7.2.1 to 3         1.7.10           renumbered         1.7.2.4         1.7.10           1.7.10         renumbered         1.7.10           1.7.11         renumbered         1.7.10           1.7.12         deleted         1.7.11           1.7.13 to 15         renumbered         1.7.2.5           1.7.17         renumbered         1.7.2.6           new         1.7.2.6         1.8           new         2.1.1.8         1.9           new         2.1.1.9         1.1.9	1.2.9.7 to 10	renumbered	1.2.9.8 to 11	
new         1.2.13.15           new         1.2.13.16           new         1.2.13.17           1.5.6, 1.5.7.2         replaced         1.5.6           1.5.7         replaced         1.5.7           new         1.5.9         1.5.9           new         1.7.2.1 to 3         1.7.2.1 to 3           1.7.10         renumbered         1.7.2.4           1.7.10         renumbered         1.7.10           1.7.11         renumbered         1.7.10           1.7.12         deleted         1.7.10           1.7.12         deleted         1.7.11 to 13           1.7.16         renumbered         1.7.2.5           1.7.17         renumbered         1.7.2.6           new         1.7.2.6         1.8           new         2.1.1.8         1.9		new	1.2.10.4	
new         1.2.13.16           new         1.2.13.17           1.5.6, 1.5.7.2         replaced         1.5.6           1.5.7         replaced         1.5.7           new         1.5.9           new         1.7.2.1 to 3           new         1.7.2.4           1.7.10         renumbered           1.7.11         renumbered           1.7.12         deleted           1.7.13 to 15         renumbered           1.7.16         renumbered           1.7.17         renumbered           1.7.18         new           1.7.19         new           1.7.11         new           1.7.12         deleted           1.7.13         renumbered           1.7.14         new           1.7.15         new           1.7.18         new           1.7.19         new           1.7.19         new		new	1.2.13.15	
new       1.2.13.17         1.5.6, 1.5.7.2       replaced       1.5.6         1.5.7       replaced       1.5.7         new       1.5.9         new       1.7.2.1 to 3         new       1.7.2.1 to 3         1.7.10       renumbered         1.7.10       renumbered         1.7.11       renumbered         1.7.12       deleted         1.7.13 to 15       renumbered         1.7.16       renumbered         1.7.17       renumbered         1.7.18       new         1.7.19       2.1.1.8         1.7.10       new         1.7.11       new         1.7.12       deleted         1.7.13       renumbered         1.7.16       renumbered         1.7.17       renumbered         1.7.18       new         1.7.19       1.7.14         1.7.10       1.7.14         1.7.11       1.7.2.6         1.7.19       1.1.9		new	1.2.13.16	
1.5.6, 1.5.7.2       replaced       1.5.6         1.5.7       replaced       1.5.7         new       1.5.9         new       1.7.2.1 to 3         new       1.7.2.1 to 3         1.7.10       renumbered         1.7.10       renumbered         1.7.11       renumbered         1.7.12       deleted         1.7.13 to 15       renumbered         1.7.16       renumbered         1.7.17       renumbered         1.7.16       renumbered         1.7.16       new         1.7.17       renumbered         1.7.18       new         1.7.19       1.7.14		new	1.2.13.17	
1.5.7       replaced       1.5.7         new       1.5.9         new       1.7.2.1 to 3         new       1.7.2.1 to 3         1.7.10       renumbered         1.7.10       renumbered         1.7.11       renumbered         1.7.12       deleted         1.7.13 to 15       renumbered       1.7.2.5         1.7.16       renumbered       1.7.14         1.7.17       renumbered       1.7.2.6         new       2.1.1.8       new         2.1.1.9       intervent       2.1.1.9	1.5.6, 1.5.7.2	replaced	1.5.6	
new       1.5.9         new       1.7.2.1 to 3         I.7.10       I.7.2.4         1.7.10       renumbered       1.7.2.4         1.7.11       renumbered       1.7.10         1.7.12       deleted       I.7.11 to 13         1.7.13 to 15       renumbered       1.7.11 to 13         1.7.16       renumbered       1.7.2.5         1.7.17       renumbered       1.7.2.6         new       1.7.2.6       new         1.7.19       new       2.1.1.8         new       2.1.1.9       I.1.1         I.1.10       I.1.1       I.1.1         I.1.10       I.1.1       I.1.1         I.1.11       I.1.1	1.5.7	replaced	1.5.7	
new       1.7.2.1 to 3         Interpretent       Interpretent         1.7.10       renumbered       Interpretent         1.7.11       renumbered       Interpretent         1.7.11       renumbered       Interpretent         1.7.12       deleted       Interpretent         1.7.13 to 15       renumbered       Interpretent         1.7.16       renumbered       Interpretent         1.7.17       renumbered       Interpretent         1.7.16       renumbered       Interpretent         1.7.16       renumbered       Interpretent         1.7.16       new       Interpretent         1.7.17       renumbered       Interpretent         1.7.18       new       Interpretent         1.7.19       renumbered       Interpretent         1.7.10       renumbered       Interpretent         1.7.11       renumbered       Interpretent         1.7.12       new       Interpretent         1.7.14       new       Interpretent         1.7.19       new       Interpretent         1.1.9       Interpretent       Interpretent         Interpretent       Interpretent       Interpretent		new	1.5.9	
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Image: marked system       Image: marked system       Image: marked system         1.7.10       renumbered       1.7.2.4         1.7.11       renumbered       1.7.10         1.7.12       deleted       Image: marked system         1.7.13 to 15       renumbered       1.7.11 to 13         1.7.16       renumbered       1.7.2.5         1.7.17       renumbered       1.7.14         new       1.7.2.6       Image: marked system         new       2.1.1.8       Image: marked system         Image: marked system       Image: marked system       Image: marked system         Image: marked system       Image: marked system       Image: marked system         Image: marked system       Image: marked system       Image: marked system         Image: marked system       Image: marked system       Image: marked system         Image: marked system       Image: marked system       Image: marked system         Image: marked system       Image: marked system       Image: marked system         Image: marked system       Image: marked system       Image: marked system         Image: marked system       Image: marked system       Image: marked system         Image: marked system       Image: marked system       Image: marked system				
1.7.10       renumbered       1.7.2.4         1.7.11       renumbered       1.7.10         1.7.12       deleted				
1.7.11       renumbered       1.7.10         1.7.11       renumbered       1.7.10         1.7.12       deleted	1.7.10	renumbered	1.7.2.4	
1.7.11       renumbered       1.7.10         1.7.11       renumbered       1.7.10         1.7.12       deleted				
1.7.11       renumbered       1.7.10         1.7.12       deleted				
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1.7.12       deleted         1.7.13 to 15       renumbered       1.7.11 to 13         1.7.16       renumbered       1.7.2.5         1.7.17       renumbered       1.7.14         new       1.7.2.6       1.1.8         new       2.1.1.8       1.9         I.1.10       I.1.10       I.1.10         I.1.10       I.1.10       II.10         I.1.10       II.10       II.10			+	
1.7.12       deleted         1.7.12       deleted         1.7.13 to 15       renumbered       1.7.11 to 13         1.7.16       renumbered       1.7.2.5         1.7.17       renumbered       1.7.14         new       1.7.2.6         new       2.1.1.8         new       2.1.1.9         Image: Second Sec				
1.7.13 to 15       renumbered       1.7.11 to 13         1.7.16       renumbered       1.7.2.5         1.7.17       renumbered       1.7.14         new       1.7.2.6         new       2.1.1.8         new       2.1.1.9	1 7 12	deleted	+	
1.7.13 to 15       renumbered       1.7.11 to 13         1.7.16       renumbered       1.7.2.5         1.7.17       renumbered       1.7.14         new       1.7.2.6         new       2.1.1.8         new       2.1.1.9         Image: Second Secon				
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1.7.16       renumbered       1.7.2.5         1.7.17       renumbered       1.7.14         new       1.7.2.6         new       2.1.1.8         new       2.1.1.9         Image: Second S				
1.7.17       renumbered       1.7.14         new       1.7.2.6         new       2.1.1.8         new       2.1.1.9         Image: Second	1.7.16	renumbered	1.7.2.5	
new         1.7.2.6           new         2.1.1.8           new         2.1.1.9	1.7.17	renumbered	1.7.14	
new 2.1.1.8 new 2.1.1.9		new	1.7.2.6	
new 2.1.1.9		new	2.1.1.8	
		new	2.1.1.9	

First Edition	Action	This edition	
	new	7.1	
7.1 to 7.2	renumbered	7.2 to 7.3	
7.3.1 to 7.3.3	renumbered	7.4.1 to 7.4.3	
	new	B.6.1 to 4	
	new	B.7.1	
B.7.1 to B.7.3	renumbered	B.7.2 to B.7.4	
	new	G.1.1	
G.1	renumbered	G.1.2	
	new	G.2.3	
	new	G.2.4	
G.4 a)	renumbered	G.4.1	
G.4 b)	renumbered	G.4.2	
G.4 c)	renumbered	G.4.3	
G.4 d)	renumbered	G.4.4	
	new	Annex Q	
Annex Q	renamed	Bibliography	
	new	Annex Z	
	new	Annex AA	
	new	Annex BB	
	new	Figure 2D	
	new	Figure 2E.1 and Figure 2E.2	
Figure 2D to Figure 2H	renumbered	Figure 2F to Figure 2K	
Figure F.12	split and renumbered	Figures 2D and F.12	
	new	Figure F.14 to F.18	
	new	Figure AA.1 to AA.4	
	new	Table 1B	
	new	Table 1C	
	new	Table 1D	
	new	Table 2E	
Table 2E to Table 2G	renumbered	Table 2F to Table 2H	
	new	Table 2J	

Table Continued on Next Page

First Edition	Action	This edition	First Ed
2.2.3.1	deleted		Table 2
			Table 2
2.2.3.2	deleted		
2.2.3.3	deleted		Table 2
	new	2.3.2.1 to 4	Table 2
2.6.1 c)	combined with		Table 4
	2.6.1 b)		1
2.6.1 d) to g)	renumbered	2.6.1 c) to f)	Table 4
			2
	new	2.9.4	Table 4
2.10	replaced	2.10	Table 4
	new	3.5.4	
	new	4.5.1	
4.5.1	renumbered	4.5.2	
4.5.2	renumbered	4.5.5	
	new	4.5.3	
	new	4.5.4	
	new	4.6.4.1 to 3	
	new	5.1.2.1 to 3	
	new	5.1.7.1 to 2	
	new	5.3.6	
5.3.6 to 5.3.8.2	renumbered	5.3.7 to 5.3.9.2	

# **Table Continued**

#### dition Action This edition Table 2K to H to renumbered Table 2N Table 2P new Table 2R Μ renumbered Ν renumbered Table 2Q B part renumbered Table 4B B part renumbered Table 4C С Table 4D renumbered Table 4E D renumbered Table 5C new Table 5D new Table Z.1 new

# BB.2 Changes to this edition

The principal changes in this edition as compared with the first edition of IEC 60950-1 are as follows. Minor changes are not listed.

Audio amplifiers, requirements added for consistency with IEC 60065 (2.1.1.9, 4.5.1).

Ball pressure test, test procedure corrected, different at high ambients (4.5.5).

Batteries, requirements enhanced (4.3.8).

Bibliography moved to a new section after the Annexes

CABLE DISTRIBUTION SYSTEMS, voltage tests clarified (7.4.2, 7.4.3).

Cathode ray tubes, requirements aligned with IEC 60065 (4.2.8).

Connectors, lower minimum clearances and creepage distances (2.10.3.1, 2.10.4.3, G.6).

Data ports for additional equipment, requirements added to limit power output (3.5.4)

Definitions added:

- CHEESECLOTH (1.2.13.15);

- EQUIPMENT, PLUGGABLE (1.2.5.3);