Test Report issued under the responsibility of:

TEST REPORT
UL 60335-1
Safety of household and similar electrical appliances

Report Number.....:	AOC250604001S
Date of issue.....:	2025-06-04
Total number of pages.....:	115
Name of Testing Laboratory preparing the Report.....:	Shenzhen AOCE Electronic Technology Service Co., Ltd Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China
Applicant's name.....:	Shenzhen Qianhe Technology Co., Ltd
Address.....:	208, Building G, No. 62 Puxia Road, Liuyue North Community, Henggang Street, Longgang District, Shenzhen
Test specification:	
Standard.....:	☒ UL 60335-1, Edition 6
Test procedure.....:	Test report
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC 60335_1X
Test Report Form(s) Originator.....:	Nemko AS
Master TRF.....:	Dated 2016-10

General disclaimer:

The test results presented in this report relate only to the object tested.
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Test item description.....:	Sonic Electric Toothbrush
Trade Mark.....:	CWX
Manufacturer.....:	Shenzhen Qianhe Technology Co., Ltd 208, Building G, No. 62 Puxia Road, Liuyue North Community, Henggang Street, Longgang District, Shenzhen
Model/Type reference.....:	N15, N10, N12, N16
Ratings.....:	Input: 5V, 1A, 5W Output: 3.7V, 0.5A, 2W

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**Testing Laboratory:**	Shenzhen AOCE Electronic Technology Service Co., Ltd	
Testing location/ address.....:		Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China	
Tested by (name, function, signature).....:		WanYang Ye Technical Engineer	Wanyang Ye
Approved by (name, function, signature)...:		Robin Liu Technical Manager	Robin Liu
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address.....:			
Tested by (name + signature).....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature)..:			
Approved by (name, function, signature)...:			
Supervised by (name, function, signature) :			

List of Attachments (including a total number of pages in each attachment):

Attachment No.1: US Differences And National Differences.
Attachment No.2: Photo document.

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
- UL 60335-1, Edition 6	Shenzhen AOCE Electronic Technology Service Co., Ltd Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China

Summary of compliance with National Differences (List of countries addressed):

US Differences And National Differences.

☒ The product fulfils the requirements of UL 60335-1, Edition 6

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

CWX

Sonic Electric Toothbrush
N15

Input: 5V, 1A, 5W

Output: 3.7V, 0.5A, 2W

Import: XXX
Address: XXX

Manufacturer: Shenzhen Qianhe Technology Co., Ltd

Address: 208, Building G, No. 62 Puxia Road, Liuyue North Community, Henggang Street, Longgang District, Shenzhen

Made in China

Test item particulars..... :	
Classification of installation and use.....:	Portable appliance and use indoor only
Supply Connection.....:	Supply cord with plug
.....:	
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.....:	2025-05-26
Date (s) of performance of tests.....:	2025-05-26 to 2025-06-04

General remarks:

The tested sample(s) and the sample information are provided by the client.

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.
Note: EN Group Differences together with National Differences and Special National Conditions, if any, are in the Appendix to the main body of this TRF.
Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

The test report only allows to be revised only within the report defined retention period unless standard or regulation was withdrawn or invalid.

When determining for test conclusion, measurement uncertainty of tests has been considered.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies)..... :	Same as applicant

General product information:

/

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

5	**GENERAL CONDITIONS FOR THE TESTS**		P
	Tests performed according to clause 5, e.g. nature of supply, sequence of testing, etc.		P
6	**CLASSIFICATION**		**P**
6.1	Protection against electric shock: Class 0, 0I, I, II, III..... .....:	Class I	P
	For a class III construction with a detachable power supply part the appliance is classified according to the detachable power supply part		N/A
6.2	Protection against harmful ingress of water		N/A
7	**MARKING AND INSTRUCTIONS**		**P**
7.1	Rated voltage or voltage range (V)..... .....:	100-220V	P
	Symbol for nature of supply, or..... .....:	~	P
	Rated frequency (Hz)..... .....:	50/60Hz	P
	Rated power input (W), or..... .....:	31W	P
	Rated current (A) ....:		N/A
	Manufacturer's or responsible vendor's name, trademark or identification mark..... .....:	See copy of marking plate	P
	Model or type reference..... .....:	See copy of marking plate	P
	Symbol IEC 60417-5172, for class II appliances		N/A
	IP number, other than IPX0..... .....:	IP X0	N/A
	Symbol IEC 60417-5180, for class III appliances, unless		N/A
	the appliance is operated by batteries only, or		N/A
	for appliances powered by rechargeable batteries recharged in the appliance		N/A
	Symbol IEC 60417-5018, for class II and class III appliances incorporating a functional earth		N/A
	Symbol IEC 60417-5036, for the enclosure of electrically-operated water valves in external hose-sets for connection of an appliance to the water mains, if the working voltage exceeds extra-low voltage		N/A
7.2	Warning for stationary appliances for multiple supply		N/A
	Warning placed in vicinity of terminal cover		N/A
7.3	Range of rated values marked with the lower and upper limits separated by a hyphen		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Different rated values marked with the values separated by an oblique stroke		N/A
7.4	Appliances adjustable for different rated voltages or rated frequencies, the voltage or the frequency setting is clearly discernible		N/A
	Requirement met if frequent changes are not required and the rated voltage or rated frequency to which the appliance is to be adjusted is determined from a wiring diagram		N/A
7.5	Appliances with more than one rated voltage or one or more rated voltage ranges, marked with rated input or rated current for each rated voltage or range, unless		N/A
	the power input or current are related to the arithmetic mean value of the rated voltage range		N/A
	Relation between marking for upper and lower limits of rated power input or rated current and voltage is clear		N/A
7.6	Correct symbols used		P
	Symbol for nature of supply placed next to rated voltage		P
	Symbol for class II appliances placed unlikely to be confused with other marking		N/A
	Units of physical quantities and their symbols according to international standardized system		P
7.7	Connection diagram fixed to appliances to be connected to more than two supply conductors and appliances for multiple supply, unless		N/A
	correct mode of connection is obvious		N/A
7.8	Except for type Z attachment, terminals for connection to the supply mains indicated as follows:		N/A
	- marking of terminals exclusively for the neutral conductor (letter N)		N/A
	- marking of protective earthing terminals (symbol IEC 60417-5019)		N/A
	- marking of functional earthing terminals (symbol IEC 60417-5018)		N/A
	- marking not placed on removable parts		N/A
7.9	Marking or placing of switches which may cause a hazard		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means.....:		N/A
	This applies also to switches which are part of a control		N/A
	If figures are used, the off position indicated by the figure 0		N/A
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		N/A
7.11	Indication for direction of adjustment of controls		N/A
7.12	Instructions for safe use provided		P
	Details concerning precautions during user maintenance		P
	The instructions state that:		P
	- the appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction		P
	- children being supervised not to play with the appliance		N/A
	For a part of class III construction supplied from a detachable power supply unit, the instructions state that the appliance is only to be used with the unit provided		N/A
	Instructions for class III appliances state that it must only be supplied at SELV, unless		N/A
	it is a battery-operated appliance, the battery being charged outside the appliance		N/A
	For appliances for altitudes exceeding 2000 m, the maximum altitude is stated.....:		N/A
	The instructions for appliances incorporating a functional earth states that the appliance incorporates an earth connection for functional purposes only		N/A
7.12.1	Sufficient details for installation supplied		P
	For an appliance intended to be permanently connected to the water mains and not connected by a hose-set, this is stated		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If different rated voltages or different rated frequencies are marked, the instructions state what action to be taken to adjust the appliance		N/A
7.12.2	Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules		N/A
7.12.3	Insulation of the fixed wiring in contact with parts exceeding 50 K during clause 11; instructions state that the fixed wiring must be protected		N/A
7.12.4	Instructions for built-in appliances:		N/A
	- dimensions of space		N/A
	- dimensions and position of supporting and fixing		N/A
	- minimum distances between parts and surrounding structure		N/A
	- minimum dimensions of ventilating openings and arrangement		N/A
	- connection to supply mains and interconnection of separate components		N/A
	- allow disconnection of the appliance after installation, by accessible plug or a switch in the fixed wiring, unless		N/A
	a switch complying with 24.3		N/A
7.12.5	Replacement cord instructions, type X attachment with a specially prepared cord		P
	Replacement cord instructions, type Y attachment		N/A
	Replacement cord instructions, type Z attachment		N/A
7.12.6	Caution in the instructions for appliances incorporating a non-self-resetting thermal cut-out that is reset by disconnection of the supply mains, if this cut-out is required to comply with the standard		N/A
7.12.7	Instructions for fixed appliances stating how the appliance is to be fixed		N/A
7.12.8	Instructions for appliances connected to the water mains:		N/A
	- max. inlet water pressure (Pa).....:		N/A
	- min. inlet water pressure, if necessary (Pa).....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructions concerning new and old hose-sets for appliances connected to the water mains by detachable hose-sets		N/A
7.12.9	Instructions specified in 7.12 and from 7.12.1 to 7.12.8 appear together before any other instructions supplied with the appliance		P
	These instructions may be supplied with the appliance separately from any functional use booklet		P
	They may follow the description of the appliance that identifies parts, or follow the drawings/sketches		P
	In addition, instructions are also available in an alternative format such as on a website or on request from the user in a format such as a DVD		P
	In addition, instructions are also available in an alternative format such as on a website or in a format such as a DVD..... .....:		P
7.13	Instructions and other texts in an official language		P
7.14	Markings clearly legible and durable:		P
	Signal words WARNING, CAUTION, DANGER in uppercase having a height as specified..... .....:		N/A
	Uppercase letter of the text explaining the signal word not smaller than 1,6 mm .....:		P
	Moulded in, engraved, or stamped markings either raised above or have a depth below the surface of at least 0,25 mm, unless		N/A
	contrasting colours are used		P
	Markings checked by inspection, measurement and rubbing test as specified		P
7.15	Markings on a main part		P
	Marking clearly discernible from the outside, if necessary after removal of a cover		N/A
	For portable appliances, cover can be removed or opened without a tool		P
	For stationary appliances, name, trademark or identification mark and model or type reference visible after installation		N/A
	For fixed appliances, name, trademark or identification mark and model or type reference visible after installation according to the instructions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Indications for switches and controls placed on or near the components. Marking not on parts which can be positioned or repositioned in such a way that the marking is misleading		N/A
	The symbol IEC 60417-5018 placed next to the symbol IEC 60417-5172 or IEC 60417-5180		P
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		N/A
8	**PROTECTION AGAINST ACCESS TO LIVE PARTS**		**P**
8.1	Adequate protection against accidental contact with live parts		P
8.1.1	Requirement applies for all positions, detachable parts removed		P
	Lamps behind a detachable cover not removed, if conditions met		N/A
	Insertion or removal of lamps, protection against contact with live parts of the lamp cap		N/A
	Use of test probe B of IEC 61032, with a force not exceeding 1 N: no contact with live parts		P
	Use of test probe B of IEC 61032 through openings, with a force of 20N: no contact with live parts		P
8.1.2	Use of test probe 13 of IEC 61032, with a force not exceeding 1 N, through openings in class 0 appliances and class II appliances/constructions: no contact with live parts		N/A
	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating: no contact with live parts		N/A
8.1.3	For appliances other than class II, use of test probe 41 of IEC 61032, with a force not exceeding 1 N: no contact with live parts of visible glowing heating elements or supporting parts		P
	For a single switching action obtained by a switching device, requirements as specified		P
	For appliances with a supply cord and without a switching device, the single switching action may be obtained by the withdrawal of the plug		N/A
8.1.4	Accessible part not considered live if:		N/A
	- safety extra-low a.c. voltage: peak value not exceeding 42.4 V		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- safety extra-low d.c. voltage: not exceeding 42.4 V		N/A
	- or separated from live parts by protective impedance		N/A
	If protective impedance: d.c. current not exceeding 2 mA, and		N/A
	a.c. peak value not exceeding 0.7 mA		N/A
	- for peak values over 42.4 V up to and including 450 V, capacitance not exceeding 0,1 μF		N/A
	- for peak values over 450 V up to and including 15 kV, discharge not exceeding 45 μC		N/A
	- for peak values over 15kV, the energy in the discharge not exceeding 350 mJ		N/A
8.1.5	Live parts protected at least by basic insulation before installation or assembly:		P
	- built-in appliances		N/A
	- fixed appliances		N/A
	- appliances delivered in separate units		P
8.2	Class II appliances and constructions constructed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only		N/A
	Only possible to touch parts separated from live parts by double or reinforced insulation		N/A
9	**STARTING OF MOTOR-OPERATED APPLIANCES**		N/A
	Requirements and tests are specified in part 2 when necessary		N/A
10	**POWER INPUT AND CURRENT**		**P**
10.1	Power input at normal operating temperature, rated voltage and normal operation not deviating from rated power input by more than shown in table 1. :	(see appended table)	P
	If the power input varies throughout the operating cycle and the maximum value of the power input exceeds, by a factor greater than two, the arithmetic mean value of the power input occurring during a representative period, the power input is the maximum value that is exceeded for more than 10 % of the representative period		N/A
	Otherwise the power input is the arithmetic mean value		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		P
	the rated power input is related to the arithmetic mean value		N/A
10.2	Current at normal operating temperature, rated voltage and normal operation not deviating from rated current by more than shown in table 2.....:	(see appended table)	N/A
	If the current varies throughout the operating cycle and the maximum value of the current exceeds, by a factor greater than two, the arithmetic mean value of the current occurring during a representative period, the current is the maximum value that is exceeded for more than 10 % of the representative period		N/A
	Otherwise the current is the arithmetic mean value		N/A
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		N/A
	the rated current is related to the arithmetic mean value of the range		N/A
11	**HEATING**		**P**
11.1	No excessive temperatures in normal use		P
11.2	The appliance is held, placed or fixed in position as described..... :		N/A
11.3	Temperature rises, other than of windings, determined by thermocouples		P
	Temperature rises of windings determined by resistance method, unless		N/A
	the windings are non-uniform or it is difficult to make the necessary connections		N/A
11.4	Heating appliances operated under normal operation at 1.15 times rated power input (W) ..... :		P
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V).....:		N/A
11.6	Combined appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V).....:		N/A
11.7	Operation duration corresponding to the most unfavourable conditions of normal use		P

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Clause	Requirement + Test	Result - Remark	Verdict
11.8	Temperature rises monitored continuously and not exceeding the values in table 3 .....:	(see appended table)	P
	If the temperature rise of a motor winding exceeds the value of table 3, or		N/A
	if there is doubt with regard to classification of insulation,		N/A
	tests of Annex C are carried out		N/A
	Sealing compound does not flow out		P
	Protective devices do not operate, except		P
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4		N/A
13	**LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE**		**P**
13.1	Leakage current not excessive and electric strength adequate		P
	Heating appliances operated at 1.15 times the rated power input (W).....:		P
	Motor-operated appliances and combined appliances supplied at 1.06 times the rated voltage (V)..... :		N/A
	Protective impedance and radio interference filters disconnected before carrying out the tests		N/A
13.2	The leakage current is measured by means of the circuit described in Figure 4 of IEC 60990:1999		P
	For class 0I appliances and class I appliances, except parts of class II construction, C may be replaced by a low impedance ammeter		P
	Leakage current measurements..... :	(see appended table)	P
13.3	The appliance is disconnected from the supply		P
	Electric strength tests according to table 4.....:	(see appended table)	P
	No breakdown during the tests		P
14	**TRANSIENT OVERVOLTAGES**		N/A
	Appliances withstand the transient over-voltages to which they may be subjected		N/A
	Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6..... :	(see appended table)	N/A
	No flashover during the test, unless		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	of functional insulation if the appliance complies with clause 19 with the clearance short-circuited		N/A
15	**MOISTURE RESISTANCE**		N/A
15.1	Enclosure provides the degree of moisture protection according to classification of the appliance		N/A
	Compliance checked as specified in 15.1.1, taking into account 15.1.2, followed by the electric strength test of 16.3		N/A
	No trace of water on insulation which can result in a reduction of clearances or creepage distances below values specified in clause 29		N/A
15.1.1	Appliances, other than IPX0, subjected to tests as specified in IEC 60529.....:	IP X0	N/A
	Water valves containing live parts in external hoses for connection of an appliance to the water mains tested as specified for IPX7 appliances		N/A
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test		N/A
	Built-in appliances installed according to the instructions		N/A
	Appliances placed or used on the floor or table placed on a horizontal unperforated support		N/A
	Appliances normally fixed to a wall and appliances with pins for insertion into socket-outlets are mounted on a wooden board		N/A
	For IPX3 appliances, the base of wall mounted appliances is placed at the same level as the pivot axis of the oscillating tube		N/A
	For IPX4 appliances, the horizontal centre line of the appliance is aligned with the pivot axis of the oscillating tube, and		N/A
	for appliances normally used on the floor or table, the movement is limited to two times 90° for a period of 5 min, the support being placed at the level of the pivot axis of the oscillating tube		N/A
	Wall-mounted appliances, take into account the distance to the floor stated in the instructions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Appliances normally fixed to a ceiling are mounted underneath a horizontal unperforated support, the pivot axis of the oscillating tube located at the level of the underside of the support, and		N/A
	for IPX4 appliances, the movement of the tube is limited to two times 90° from the vertical for a period of 5 min		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Detachable parts subjected to the relevant treatment with the main part		N/A
	However, if a part has to be removed for user maintenance and a tool is needed, this part is not removed		N/A
15.2	Spillage of liquid does not affect the electrical insulation		N/A
	Spillage solution comprising water containing approximately 1 % NaCl and 0,6 % rinsing agent		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Appliances incorporating an appliance inlet tested with or without an connector, whichever is most unfavourable		N/A
	Detachable parts are removed		N/A
	Overfilling test with additional amount of the solution, over a period of 1 min (l)..... :		N/A
	The appliance withstands the electric strength test of 16.3		N/A
	No trace of water on insulation that can result in a reduction of clearances or creepage distances below values specified in clause 29		N/A
15.3	Appliances proof against humid conditions		P
	Checked by test Cab: Damp heat steady state in IEC 60068-2-78		P
	Detachable parts removed and subjected, if necessary, to the humidity test with the main part		P
	Humidity test for 48 h in a humidity cabinet		P
	Reassembly of those parts that may have been removed		P
	The appliance withstands the tests of clause 16		P

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Clause	Requirement + Test	Result - Remark	Verdict

16	**LEAKAGE CURRENT AND ELECTRIC STRENGTH**		**P**
16.1	Leakage current not excessive and electric strength adequate		P
	Protective impedance disconnected from live parts before carrying out the tests		N/A
	Tests carried out at room temperature and not connected to the supply		P
16.2	Single-phase appliances: test voltage 1.06 times rated voltage (V)..... :		P
	Three-phase appliances: test voltage 1.06 times rated voltage divided by √3 (V).....:		N/A
	Leakage current measurements..... :	(see appended table)	P
	Limit values doubled if:		P
	- all controls have an off position in all poles, or		P
	- the appliance has no control other than a thermal cut-out, or		N/A
	- all thermostats, temperature limiters and energy regulators do not have an off position, or		N/A
	- the appliance has radio interference filters		N/A
	With the radio interference filters disconnected, the leakage current do not exceed limits specified.....:	(see appended table)	N/A
16.3	Electric strength tests according to table 7.....:	(see appended table)	P
	Test voltage applied between the supply cord and inlet bushing and cord guard and cord anchorage as specified.....:	(see appended table)	P
	No breakdown during the tests		P
17	**OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS**		N/A
	No excessive temperatures in transformer or associated circuits in event of short- circuits likely to occur in normal use.....:	(see appended table)	N/A
	Appliance supplied with 1.06 or 0.94 times rated voltage under the most unfavourable short-circuit or overload likely to occur in normal use (V).....:		N/A
	Basic insulation is not short-circuited		N/A
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Temperature of the winding not exceeding the value specified in table 8		N/A
	However, limits do not apply to fail-safe transformers complying with sub-clause 15.5 of IEC 61558-1		N/A
18	**ENDURANCE**		N/A
	Requirements and tests are specified in part 2 when necessary		N/A
19	**ABNORMAL OPERATION**		**P**
19.1	The risk of fire, mechanical damage or electric shock under abnormal or careless operation obviated		P
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe .....:	(see appended table)	P
	Appliances incorporating heating elements subjected to the tests of 19.2 and 19.3, and		P
	if the appliance also has a control that limit the temperature during clause 11 it is subjected to the test of 19.4, and		P
	if applicable, to the test of 19.5		N/A
	Appliances incorporating PTC heating elements are also subjected to the test of 19.6		N/A
	Appliances incorporating motors subjected to the tests of 19.7 to 19.10, as applicable		N/A
	Appliances incorporating electronic circuits subjected to the tests of 19.11 and 19.12, as applicable		N/A
	Appliances incorporating contactors or relays subjected to the test of 19.14, being carried out before the tests of 19.11		N/A
	Appliances incorporating voltage selector switches subjected to the test of 19.15		N/A
	Unless otherwise specified, the tests are continued until a non-self-resetting thermal cut-out operates, or		N/A
	until steady conditions are established		P
	If a heating element or intentionally weak part becomes open-circuited, the relevant test is repeated on a second sample		N/A
19.2	Test of appliances with heating elements with restricted heat dissipation; test voltage (V), power input of 0.85 times rated power input (W).....:		P

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Clause	Requirement + Test	Result - Remark	Verdict
19.3	Test of 19.2 repeated; test voltage (V), power input of 1.24 times rated power input (W)..... :		P
19.4	Test conditions as in clause 11, any control limiting the temperature during tests of clause 11 short- circuited		P
19.5	Test of 19.4 repeated on Class 0I and I appliances with tubular sheathed or embedded heating elements. No short-circuiting, but one end of the element connected to the sheath		N/A
	The test repeated with reversed polarity and the other end of the heating element connected to the sheath		N/A
	The test is not carried out on appliances intended to be permanently connected to fixed wiring and on appliances where an all-pole disconnection occurs during the test of 19.4		N/A
19.6	Appliances with PTC heating elements tested at rated voltage, establishing steady conditions		N/A
	The working voltage of the PTC heating element is increased by 5% and the appliance is operated until steady conditions are re-established. The voltage is then increased in similar steps until 1.5 times working voltage or until the PTC heating element ruptures (V).....:		N/A
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque, or		N/A
	locking moving parts of other appliances		N/A
	Locked rotor, capacitors open-circuited one at a time		N/A
	Test repeated with capacitors short-circuited one at a time, unless		N/A
	the capacitor is of class S2 or S3 of IEC 60252-1		N/A
	Appliances with timer or programmer supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed..... :		N/A
	An electronic timer or programmer that operates to ensure compliance with the test before the maximum period under the conditions of Clause 11 is reached, is a protective electronic circuit		N/A
	Other appliances supplied with rated voltage for a period as specified..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Winding temperatures not exceeding values specified in table 8.....:	(see appended table)	N/A
19.8	Multi- phase motors operated at rated voltage with one phase disconnected		N/A
19.9	Running overload test on appliances incorporating motors intended to be remotely or automatically controlled or liable to be operated continuously		N/A
	Motor-operated and combined appliances for which 30.2.3 is applicable and that use overload protective devices relying on electronic circuits to protect the motor windings, are also subjected to the test		N/A
	Winding temperatures not exceeding values as specified.....:	(see appended table)	N/A
19.10	Series motor operated at 1.3 times rated voltage for 1 min (V).....:		N/A
	During the test, parts not being ejected from the appliance		N/A
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless		N/A
	they comply with the conditions specified in 19.11.1		N/A
	Appliances incorporating an electronic circuit that relies upon a programmable component to function correctly, subjected to the test of 19.11.4.8, unless		N/A
	restarting does not result in a hazard		N/A
	Appliances having a device with an off position obtained by electronic disconnection, or a device placing the appliance in a stand-by mode, subjected to the tests of 19.11.4		N/A
	If the safety of the appliance under any of the fault conditions depends on the operation of a miniature fuse-link complying with IEC 60127, the test of 19.12 is carried out		N/A
	During and after each test the following is checked:		N/A
	- the temperature of the windings do not exceed the values specified in table 8		N/A
	- the appliance complies with the conditions specified in 19.13		N/A
	- any current flowing through protective impedance not exceeding the limits specified in 8.1.4		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If a conductor of a printed board becomes open-circuited, the appliance is considered to have withstood the particular test, provided both of the following conditions are met:		N/A
	- the base material of the printed circuit board withstands the test of Annex E		N/A
	- any loosened conductor does not reduce clearance or creepage distances between live parts and accessible metal parts below the values specified in clause 29		N/A
19.11.1	Fault conditions a) to g) in 19.11.2 are not applied to circuits or parts of circuits meeting both of the following conditions:		N/A
	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15 W according to the tests specified		N/A
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction of other parts of the appliance does not rely on the correct functioning of the electronic circuit		N/A
19.11.2	Fault conditions applied one at a time, the appliance operating under conditions specified in clause 11, but supplied at rated voltage, duration of the tests as specified:		N/A
	a) short circuit of functional insulation if clearances or creepage distances are less than the values specified in clause 29		N/A
	b) open circuit at the terminals of any component		N/A
	c) short circuit of capacitors, unless		N/A
	they comply with IEC 60384-14		N/A
	d) short circuit of any two terminals of an electronic component, other than integrated circuits		N/A
	This fault condition is not applied between the two circuits of an optocoupler		N/A
	e) failure of triacs in the diode mode		N/A
	f) failure of microprocessors and integrated circuits		N/A
	g) failure of an electronic power switching device		N/A
	Each low power circuit is short-circuited by connecting the low-power point to the pole of the supply source from which the measurements were made		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
19.11.3	If the appliance incorporates a protective electronic circuit that operates to ensure compliance with clause 19, the appliance is tested as specified		N/A
19.11.4	Appliances having a device with an off position obtained by electronic disconnection, or		N/A
	a device that can be placed in the stand-by mode,		N/A
	subjected to the tests of 19.11.4.1 to 19.11.4.7, the device being set in the off position or in the stand-by mode		N/A
	Appliances incorporating a protective electronic circuit subjected to the tests of 19.11.4.1 to 19.11.4.7, the tests being carried out after the protective electronic circuit has operated, except that		N/A
	appliances operated for 30 s or 5 min during the test of 19.7 are not subjected to the tests for electromagnetic phenomena.		N/A
	Surge protective devices disconnected, unless		N/A
	They incorporate spark gaps		N/A
19.11.4.1	The appliance is subjected to electrostatic discharges in accordance with IEC 61000-4-2, test level 4		N/A
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, at frequency ranges specified		N/A
19.11.4.3	The appliance is subjected to fast transient bursts in accordance with IEC 61000-4-4, test level 3 or 4 as specified		N/A
19.11.4.4	The power supply terminals of the appliance subjected to voltage surges in accordance with IEC 61000-4-5, test level 3 or 4 as specified		N/A
	An open circuit test voltage of 2 kV is applicable for the line-to-line coupling mode		N/A
	An open circuit test voltage of 4 kV is applicable for the line-to-earth coupling		N/A
	Earthed heating elements in class I appliances disconnected		N/A
19.11.4.5	The appliance is subjected to injected currents in accordance with IEC 61000-4-6, test level 3		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
19.11.4.6	Appliances having a rated current not exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-11		N/A
	Appliances having a rated current exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-34		N/A
19.11.4.7	The appliance is subjected to mains signals in accordance with IEC 61000-4-13, test level class 2		N/A
19.11.4.8	The appliance is supplied at rated voltage and operated under normal operation. After 60s the power supply is reduced to a level such that the appliance ceases to respond or parts controlled by the programmable component cease to operate		N/A
	The appliance continues to operate normally, or		N/A
	requires a manual operation to restart		N/A
19.12	If the safety of the appliance for any of the fault conditions specified in 19.11.2 depends on the operation of a miniature fuse-link complying with IEC 60127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A)..... :		P
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts		P
	Temperature rises not exceeding the values shown in table 9.....:	(see appended table)	P
	Compliance with clause 8 not impaired		P
	If the appliance can still be operated it complies with 20.2		N/A
	Insulation, other than of class III appliances or class III constructions that do not contain live parts, withstands the electric strength test of 16.3, the test voltage as specified in table 4:		P
	- basic insulation (V).....:	1000	P
	- supplementary insulation (V).....:		N/A
	- reinforced insulation (V).....:		N/A
	After operation or interruption of a control, clearances and creepage distances across the functional insulation withstand the electric strength test of 16.3, the test voltage being twice the working voltage		P

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Clause	Requirement + Test	Result - Remark	Verdict
	The appliance does not undergo a dangerous malfunction, and		N/A
	no failure of protective electronic circuits, if the appliance is still operable		N/A
	Appliances tested with an electronic switch in the off position, or in the stand-by mode:		N/A
	- do not become operational, or		N/A
	- if they become operational, do not result in a dangerous malfunction during or after the tests of 19.11.4		N/A
	If the appliance contains lids or doors that are controlled by one or more interlocks, one of the interlocks may be released provided that:		N/A
	- the lid or door does not move automatically to an open position when the interlock is released, and		N/A
	- the appliance does not start after the cycle in which the interlock was released		N/A
19.14	Appliances operated under the conditions of clause 11, any contactor or relay contact operating under the conditions of clause 11 being short-circuited		N/A
	For a relay or contactor with more than one contact, all contacts are short-circuited at the same time		N/A
	A relay or contactor operating only to ensure the appliance is energized for normal use is not short-circuited		N/A
	If more than one relay or contactor operates in clause 11, they are short-circuited in turn		N/A
19.15	For appliances with a mains voltage selector switch, the switch is set to the lowest rated voltage position and the highest value of rated voltage is applied		N/A
20	**STABILITY AND MECHANICAL HAZARDS**		N/A
20.1	Appliances having adequate stability		N/A
	Tilting test through an angle of 10°, appliance placed on an inclined plane/horizontal support, not connected to the supply mains; appliance does not overturn		N/A
	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15°		N/A
	Possible heating test in overturned position; temperature rise does not exceed values shown in table 9		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury		N/A
	Protective enclosures, guards and similar parts are non-detachable, and		N/A
	have adequate mechanical strength		N/A
	Enclosures that can be opened by overriding an interlock are considered to be detachable parts		N/A
	Self- resetting thermal cut- outs and overcurrent protective devices not causing a hazard by unexpected closure		N/A
	Not possible to touch dangerous moving parts with the test probe described		N/A
21	**MECHANICAL STRENGTH**		**P**
21.1	Appliance has adequate mechanical strength and is constructed as to withstand rough handling		P
	Checked by applying 3 blows to every point of the enclosure like to be weak, in accordance with test Ehb of IEC 60068-2-75, spring hammer test, with an impact energy of 0,5 J	(see appended table)	P
	The appliance shows no damage impairing compliance with this standard, and		P
	compliance with 8.1, 15.1 and clause 29 not impaired		P
	If doubt, supplementary or reinforced insulation subjected to the electric strength test of 16.3		N/A
	If necessary, repetition of groups of three blows on a new sample		N/A
21.2	Accessible parts of solid insulation having strength to prevent penetration by sharp implements		P
	Test not applicable if the thickness of supplementary insulation is at least 1 mm and reinforced insulation at least 2 mm		N/A
	The insulation is tested as specified, and does withstand the electric strength test of 16.3		P
22	**CONSTRUCTION**		**P**
22.1	Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled		N/A
22.2	Stationary appliance: means to ensure all-pole disconnection from the supply being provided:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- a supply cord fitted with a plug, or		N/A
	- a switch complying with 24.3, or		N/A
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided, or		N/A
	- an appliance inlet		N/A
	Singe-pole switches and single-pole protective devices for the disconnection of heating elements in single-phase, permanently connected class 01 and class I appliances, connected to the phase conductor		N/A
22.3	Appliance provided with pins: no undue strain on socket-outlets		N/A
	Applied torque not exceeding 0.25 Nm		N/A
	Pull force of 50N to each pin after the appliance has being placed in the heating cabinet; when cooled to room temperature the pins are not displaced by more than 1mm		N/A
	Each pin subjected to a torque of 0.4Nm; the pins are not rotating, unless		N/A
	rotating does not impair compliance with this standard		N/A
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for insertion into socket-outlets		N/A
22.5	No risk of electric shock when touching pins, for appliances having a capacitor with rated capacitance equal to or greater than 0,1μF, the appliance being disconnected from the supply at the instant of voltage peak		P
	Voltage not exceeding 34 V (V)..... :	0.88	P
	If compliance relies on the operation of an electronic circuit, the electromagnetic phenomena tests of 19.11.4.3 and 19.11.4.4 are applied		N/A
	The discharge test is then repeated three times, voltage not exceeding 34 V (V)..... :		N/A
22.6	Electrical insulation not affected by condensing water or leaking liquid		P
	Electrical insulation of Class II appliances not affected if a hose ruptures or seal leaks		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	In case of doubt, test as described		N/A
22.7	Adequate safeguards against the risk of excessive pressure in appliances containing liquid or gases or having steam-producing devices		N/A
22.8	Electrical connections not subject to pulling during cleaning of compartments to which access can be gained without the aid of a tool, and that are likely to be cleaned in normal use		N/A
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances, unless		P
	the substance has adequate insulating properties		N/A
22.10	Not possible to reset voltage-maintained non-self-resetting thermal cut-outs by the operation of an automatic switching device incorporated within the appliance, if:		N/A
	- a non-self-resetting thermal cut-out is required by the standard, and		N/A
	- a voltage maintained non-self-resetting thermal cut-out is used to meet it		N/A
	Non-self-resetting thermal motor protectors have a trip-free action, unless		N/A
	they are voltage maintained		N/A
	Reset buttons of non-self-resetting controls so located or protected that accidental resetting is unlikely		N/A
22.11	Reliable fixing of non-detachable parts that provide the necessary degree of protection against electric shock, moisture or contact with moving parts		N/A
	Obvious locked position of snap-in devices used for fixing such parts		N/A
	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing		N/A
	Tests as described		N/A
22.12	Handles, knobs etc. fixed in a reliable manner, if loosening result in a hazard		P
	Removing or fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible, if resulting in a hazard		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	A choking hazard does not apply to appliances for commercial use		P
	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied		P
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied		N/A
	If the part is removed and can be contained within the small parts cylinder, it is considered to be a choking hazard		N/A
22.13	Unlikely that handles, when gripped as in normal use, make the operator's hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only		P
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance		P
	No exposed pointed ends of self-tapping screws or other fasteners, likely to be touched by the user in normal use or during user maintenance		P
22.15	Storage hooks and the like for flexible cords smooth and well rounded		N/A
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands and no undue wear of contacts		N/A
	Cord reel tested with 6000 operations, as specified		N/A
	Electric strength test of 16.3, voltage of 1000 V applied		N/A
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner		N/A
22.18	Current-carrying parts and other metal parts resistant to corrosion		P
22.19	Driving belts not relied upon to provide the required level of insulation, unless		N/A
	constructed to prevent inappropriate replacement		N/A
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless		P
	material used is non-corrosive, non-hygroscopic and non-combustible		N/A
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless		P

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Clause	Requirement + Test	Result - Remark	Verdict
	impregnated		N/A
	This requirement does not apply to magnesium oxide and mineral ceramic fibres used for the electrical insulation of heating elements		N/A
22.22	Appliances not containing asbestos		P
22.23	Oils containing polychlorinated biphenyl (PCB) not used		P
22.24	Bare heating elements, except in class III appliances or class III constructions that do not contain live parts, adequately supported		N/A
	In case of rupture, the heating conductor is unlikely to come in contact with accessible metal parts		N/A
22.25	Sagging heating conductors, except in class III appliances or class III constructions that do not contain live parts, cannot come into contact with accessible metal parts		N/A
22.26	For class III constructions the insulation between parts operating at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation		N/A
22.27	Parts connected by protective impedance separated by double or reinforced insulation		N/A
22.28	Metal parts of Class II appliances conductively connected to gas pipes or in contact with water, separated from live parts by double or reinforced insulation		N/A
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of access to live parts is maintained after installation		N/A
22.30	Parts serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or		N/A
	so constructed that they cannot be replaced in an incorrect position, and so that if they are omitted, the appliance is rendered inoperable or manifestly incomplete		N/A
22.31	Neither clearances nor creepage distances over supplementary and reinforced insulation reduced below values specified in clause 29 as a result of wear		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Neither clearances nor creepage distances between live parts and accessible parts reduced below values for supplementary insulation if wires, screws etc. become loose		N/A
22.32	Supplementary and reinforced insulation constructed or protected against pollution so that clearances or creepage distances are not reduced below the values in clause 29		N/A
	Supplementary insulation of natural or synthetic rubber resistant to ageing, or arranged and dimensioned so that creepage distances are not reduced below values specified in 29.2		N/A
	Ceramic material not tightly sintered, similar materials or beads alone not used as supplementary or reinforced insulation		N/A
	Ceramic and similar porous material in which heating conductors are embedded is considered to be basic insulation, not reinforced insulation		N/A
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature		N/A
22.33	Conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts are not in direct contact with live parts, or		N/A
	unearthed metal parts separated from live parts by basic insulation only		N/A
	Electrodes not used for heating liquids		N/A
	For class II constructions, conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts, not in direct contact with basic or reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	For class II constructions, conductive liquids which are in contact with live parts, not in direct contact with reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	An air layer not used as basic or supplementary insulation in a double insulation system if likely to be bridged by leaking liquid		N/A
22.34	Shafts of operating knobs, handles, levers etc. not live, unless		P

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Clause	Requirement + Test	Result - Remark	Verdict
	the shaft is not accessible when the part is removed		N/A
22.35	For other than class III constructions, handles, levers and knobs, held or actuated in normal use, not becoming live in the event of a failure of basic insulation		P
	Such parts being of metal, and their shafts or fixings are likely to become live in the event of a failure of basic insulation, are either adequately covered by insulation material or their accessible parts are separated from their shafts or fixings by supplementary insulation		N/A
	This requirement does not apply to handles, levers and knobs on stationary appliances and cordless appliances, other than those of electrical components, provided they are reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal		N/A
	Insulating material covering metal handles, levers and knobs withstand the electric strength test of 16.3 for supplementary insulation		N/A
22.36	For appliances other than class III, handles continuously held in the hand in normal use so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless		N/A
	they are separated from live parts by double or reinforced insulation		P
22.37	Capacitors in Class II appliances not connected to accessible metal parts and their casings, if of metal, separated from accessible metal parts by supplementary insulation, unless		N/A
	the capacitors comply with 22.42		N/A
22.38	Capacitors not connected between the contacts of a thermal cut-out		P
22.39	Lamp holders used only for the connection of lamps		N/A
22.40	Motor-operated appliances and combined appliances intended to be moved while in operation, or having accessible moving parts, fitted with a switch to control the motor. The actuating member of the switch being easily visible and accessible		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	If the appliance cannot operate continuously, automatically or remotely without giving rise to a hazard, appliances for remote operation being fitted with a switch for stopping the operation. The actuating member of the switch being easily visible and accessible		N/A
22.41	No components, other than lamps, containing mercury		P
22.42	Protective impedance consisting of at least two separate components		N/A
	Values specified in 8.1.4 not exceeded if any one of the components are short-circuited or open-circuited		N/A
	Resistors checked by the test of 14.1 a) in IEC 60065		N/A
	Capacitors checked by the tests for class Y capacitors in IEC 60384-14		N/A
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur		N/A
22.44	Appliances not having an enclosure that is shaped or decorated like a toy		P
22.45	When air is used as reinforced insulation, clearances not reduced below the values specified in 29.1.3 due to deformation as a result of an external force applied to the enclosure		P
22.46	For programmable protective electronic circuits used to ensure compliance with the standard, the software contains measures to control the fault/error conditions in table R.1		N/A
	Software that contains measures to control the fault/error conditions specified in table R.2 is to be specified in parts 2 for particular constructions or to address specific hazards		N/A
	These requirements are not applicable to software used for functional purpose or compliance with clause 11		N/A
22.47	Appliances connected to the water mains withstand the water pressure expected in normal use		N/A
	No leakage from any part, including any inlet water hose		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
22.48	Appliances connected to the water mains constructed to prevent backsiphonage of non-potable water		N/A
22.49	For remote operation, the duration of operation is to be set before the appliance can be started, unless		N/A
	the appliance switches off automatically or can operate continuously without hazard		N/A
22.50	Controls incorporated in the appliance take priority over controls actuated by remote operation		N/A
22.51	There is a control on the appliance manually adjusted to the setting for remote operation before the appliance can be operated in this mode		N/A
	There is a visual indication showing that the appliance is adjusted for remote operation		N/A
	These requirements not necessary on appliances that can operate as follows, without giving rise to a hazard:		N/A
	- continuously, or		N/A
	- automatically, or		N/A
	- remotely		N/A
22.52	Socket-outlets on appliances accessible to the user in accordance with the socket-outlet system used in the country in which the appliance is sold		P
22.53	Class II appliances and class III appliances that incorporate functionally earthed parts have at least double insulation or reinforced insulation between live parts and the functionally earthed parts		N/A
22.54	Button cells and batteries designated R1 not accessible without the aid of a tool, unless		N/A
	the cover of their compartment can only be opened after at least two independent movements have been applied simultaneously		N/A
22.55	Devices operated to stop the intended function of the appliance, if any, are be distinguished from other manual devices by means of shape, size, surface texture or position .....:		P
	The requirement concerning position does not preclude use of a push on push off switch		N/A
	An indication when the device has been operated is given by:		N/A
	– tactile feedback from the actuator or from the appliance, or		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	– reduction in heat output; or		N/A
	– audible and visible feedback		N/A
22.56	Detachable power supply part provided with the part of class III construction		N/A
22.57	The properties of non-metallic materials do not degrade from exposure to UV-C radiation, as specified in Annex T		N/A
	This requirement does not apply to glass, ceramics or similar materials		N/A
23	**INTERNAL WIRING**		**P**
23.1	Wireways smooth and free from sharp edges		P
	Wires protected against contact with burrs, cooling fins etc.		P
	Wire holes in metal well-rounded or provided with bushings		P
	Wiring effectively prevented from coming into contact with moving parts		P
23.2	Beads etc. on live wires cannot change their position, and are not resting on sharp edges		N/A
	Beads inside flexible metal conduits contained within an insulating sleeve		N/A
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress		P
	Flexible metallic tubes not causing damage to insulation of conductors		N/A
	Open-coil springs not used		P
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		N/A
	No damage after 10 000 flexings for conductors flexed during normal use, or		N/A
	100 flexings for conductors flexed during user maintenance		N/A
	Electric strength test of 16.3, 1000 V between live parts and accessible metal parts		N/A
	Not more than 10% of the strands of any conductor broken, and		N/A
	not more than 30% for wiring supplying circuits that consume no more than 15W		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
23.4	Bare internal wiring sufficiently rigid and fixed		N/A
23.5	The insulation of internal wiring subjected to the supply mains voltage withstanding the electrical stress likely to occur in normal use		P
	Basic insulation electrically equivalent to the basic insulation of cords complying with IEC 60227 or IEC 60245, or		P
	no breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation		N/A
	For class II construction, the requirements for supplementary insulation and reinforced insulation apply,		N/A
	except that the sheath of a cord complying with IEC 60227 or IEC 60245 may provide supplementary insulation.		N/A
	A single layer of internal wiring insulation does not provide reinforced insulation		P
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by clamping at both ends, or		N/A
	be such that it can only be removed by breaking or cutting		N/A
23.7	The colour combination green/yellow only used for earthing conductors		P
23.8	Aluminium wires not used for internal wiring		P
23.9	Stranded conductors not consolidated by soldering where they are subjected to contact pressure, unless		P
	the contact pressure is provided by spring terminals		N/A
23.10	The insulation and sheath of internal wiring, incorporated in external hoses for the connection of an appliance to the water mains, at least equivalent to that of light polyvinyl chloride sheathed flexible cord (60227 IEC 52)		N/A
24	**COMPONENTS**		**P**
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components..... :	(see appended table)	P

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Motors not required to comply with IEC 60034-1, they are tested as part of the appliance		N/A
	Relays tested as part of the appliance, or		N/A
	alternatively acc. to IEC 60730-1, and meeting the additional requirements in IEC 60335-1		N/A
	The requirements of Clause 29 apply between live parts of components and accessible parts of the appliance		P
	Components can comply with the requirements for clearances and creepage distances for functional insulation in the relevant component standard		N/A
	30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections		N/A
	Components that have not been previously tested to comply with the IEC standard for the relevant component are tested according to the requirements of 30.2		P
	Components that have been previously tested to comply with the resistance to fire requirements in the IEC standard for the relevant component need not be retested provided the specified conditions are met		N/A
	If these conditions are not satisfied, the component is tested as part of the appliance.		N/A
	Power electronic converter circuits not required to comply with IEC 62477-1, they are tested as part of the appliance		N/A
	If components have not been tested and found to comply with relevant IEC standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9		N/A
	For components mentioned in 24.1.1 to 24.1.9 no additional tests specified in the relevant component standard are necessary other than those specified in 24.1.1 to 24.1.9		N/A
	Components not tested and found to comply with relevant IEC standard and components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance		P

IEC 60335-1				
Clause	Requirement + Test		Result - Remark	Verdict
	Lampholders and starterholders that have not being tested and found to comply with the relevant IEC standard, tested as a part of the appliance and additionally according to the gauging and interchangeability requirements of the relevant IEC standard			N/A
	No additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of IEC 60320-1 and IEC 60309			P
24.1.1	Capacitors likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing, comply with IEC 60384-14			N/A
	If the capacitors have to be tested, they are tested according to Annex F			N/A
24.1.2	Transformers in associated switch mode power supplies comply with Annex BB of IEC 61558-2-16			N/A
	Safety isolating transformers comply with IEC 61558-2-6			N/A
	If they have to be tested, they are tested according to Annex G			N/A
24.1.3	Switches comply with IEC 61058-1, the number of cycles of operation being at least 10 000			P
	If they have to be tested, they are tested according to Annex H			N/A
	If the switch operates a relay or contactor, the complete switching system is subjected to the test			N/A
	If the switch only operates a motor staring relay complying with IEC 60730-2-10 with the number of cycles of a least 10 000 as specified, the complete switching system need not be tested			N/A
24.1.4	Automatic controls comply with IEC 60730-1 with the relevant part 2. The number of cycles of operation being at least:			N/A
	- thermostats:	10 000		N/A
	- temperature limiters:	1 000		N/A
	- self-resetting thermal cut-outs:	300		N/A
	- voltage maintained non-self-resetting thermal cut-outs:	1 000		N/A
	- other non-self-resetting thermal cut-outs:	30		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- timers: 3 000		N/A
	- energy regulators: 10 000		N/A
	The number of cycles for controls operating during clause 11 need not be declared, if the appliance meets the requirements of this standard when they are short-circuited		N/A
	Thermal motor protectors are tested in combination with their motor under the conditions specified in Annex D		N/A
	For water valves containing live parts and that are incorporated in external hoses for connection of an appliance to the water mains, the degree of protection declared for subclause 6.5.2 of IEC 60730-2-8 is IPX7		N/A
	Thermal cut-outs of the capillary type comply with the requirements for type 2.K controls in IEC 60730-2-9		N/A
24.1.5	Appliance couplers comply with IEC 60320-1		N/A
	However, for class II appliances classified higher than IPX0, the appliance couplers comply with IEC 60320-2-3		N/A
	Interconnection couplers comply with IEC 60320-2-2		N/A
24.1.6	Small lamp holders similar to E10 lampholders comply with IEC 60238, the requirements for E10 lampholders being applicable		N/A
24.1.7	For remote operation of the appliance via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is IEC 62151		N/A
24.1.8	The relevant standard for thermal links is IEC 60691		P
	Thermal links not complying with IEC 60691 are considered to be an intentionally weak part for the purposes of Clause 19		P
24.1.9	Contactors and relays, other than motor starting relays, tested as part of the appliance		N/A
	They are also tested in accordance with Clause 17 of IEC 60730-1, the number of cycles of operations in 24.1.4 selected according to the contactor or relay function in the appliance.....:		N/A
24.2	Appliances not fitted with:		P

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- switches, automatic controls or power supplies in flexible cords		P
	- devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance		N/A
	- thermal cut-outs that can be reset by soldering, unless		N/A
	the solder has a melding point of at least 230 ˚C		N/A
24.3	Switches intended for all-pole disconnection of stationary appliances are directly connected to the supply terminals and have a contact separation in all poles, providing full disconnection under overvoltage category III conditions		N/A
24.4	Plugs and socket-outlets for extra-low voltage circuits and heating elements, not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1 or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1		P
24.5	Capacitors in auxiliary windings of motors marked with their rated voltage and capacitance, and used accordingly		N/A
	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load		N/A
24.6	Working voltage of motors connected to the supply mains and having basic insulation that is inadequate for the rated voltage of the appliance, not exceeding 42 V		N/A
	In addition, the motors comply with the requirements of Annex I		N/A
24.7	Detachable hose-sets for connection of appliances to the water mains comply with IEC 61770		N/A
	They are supplied with the appliance		N/A
	Appliances intended to be permanently connected to the water mains not connected by a detachable hose-set		N/A
24.8	Motor running capacitors in appliances for which 30.2.3 is applicable and that are permanently connected in series with a motor winding, not causing a hazard in event of a failure		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	One or more of the following conditions are to be met:		N/A
	- the capacitors are of class S2 or S3 according to IEC 60252-1		N/A
	- the capacitors are housed within a metallic or ceramic enclosure		N/A
	- the distance of separation of the outer surface to adjacent non-metallic parts exceeds 50 mm		N/A
	- adjacent non-metallic parts within 50 mm withstand the needle-flame test of Annex E		N/A
	- adjacent non-metallic parts within 50 mm classified as at least V-1 according to IEC 60695-11-10		N/A
25	**SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS**		**P**
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		N/A
	- supply cord fitted with a plug, the current rating and voltage rating of the plug being not less than the corresponding ratings of its associated appliance		N/A
	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance, or		N/A
	- pins for insertion into socket-outlets		N/A
25.2	Appliance not provided with more than one means of connection to the supply mains		P
	Stationary appliance for multiple supply may be provided with more than one means of connection, provided electric strength test of 1250 V for 1 min between each means of connection causes no breakdown		N/A
25.3	Appliance intended to be permanently connected to fixed wiring provided with one of the following means for connection to the supply mains:		P
	- a set of terminals allowing the connection of a flexible cord		N/A
	- a fitted supply cord		P
	- a set of supply leads accommodated in a suitable compartment		N/A
	- a set of terminals for the connection of cables of fixed wiring, cross-sectional areas specified in 26.6, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate types of cable or conduit, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	For a fixed appliance constructed so that parts can be removed to facilitate easy installation, this requirement is met if it is possible to connect the fixed wiring without difficulty after a part of the appliance has been fixed to its support		N/A
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimension according to table 10 (mm)..... :		N/A
	Introduction of conduit or cable does not reduce clearances or creepage distances below values specified in clause 29		N/A
25.5	Method for assembling the supply cord to the appliance:		P
	- type X attachment		N/A
	- type Y attachment		P
	- type Z attachment, if allowed in relevant part 2		N/A
	Type X attachment, other than those with a specially prepared cord, not used for flat twin tinsel cords		N/A
	For multi-phase appliances supplied with a supply cord and that are intended to be permanently connected to fixed wiring, the supply cord is assembled to the appliance by type Y attachment		N/A
25.6	Plugs fitted with only one flexible cord		P
25.7	Supply cords, other than for class III appliances, being one of the following types:		P
	- rubber sheathed (at least 60245 IEC 53)		P
	- polychloroprene sheathed (at least 60245 IEC 57)		N/A
	- polyvinyl chloride sheathed. Not used if they are likely to touch metal parts having a temperature rise exceeding 75 K during the test of clause 11		N/A
	• light polyvinyl chloride sheathed cord (60227 IEC 52), for appliances not exceeding 3 kg		N/A
	• ordinary polyvinyl chloride sheathed cord (60227 IEC 53), for other appliances		N/A
	- heat resistant polyvinyl chloride sheathed. Not used for type X attachment other than specially prepared cords		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	• heat-resistant light polyvinyl chloride sheathed cord (60227 IEC 56), for appliances not exceeding 3 kg		N/A
	• heat-resistant polyvinyl chloride sheathed cord (60227 IEC 57), for other appliances		N/A
	- halogen-free, low smoke, thermoplastic insulated and sheathed		N/A
	• light duty halogen-free low smoke flexible cable (62821 IEC 101) for circular cable and (62821 IEC 101f) for flat cable		N/A
	• Ordinary duty halogen-free low smoke flexible cable (62821 IEC 102) for circular cable and (62821 IEC 102f(for flat cable		N/A
	Supply cords for class III appliances adequately insulated		N/A
	Test with 500 V for 2 min for supply cords of class III appliances that contain live parts		N/A
25.8	Nominal cross-sectional area of supply cords not less than table 11; rated current (A); cross-sectional area (mm²)..... :		P
25.9	Supply cords not in contact with sharp points or edges		P
25.10	Supply cord of class I appliances have a green/yellow core for earthing		P
	In multi-phase appliances, the colour of the neutral conductor of the supply cord is blue		N/A
	Where additional neutral conductors are provided in the supply cord:		N/A
	– other colours may be used for these additional neutral conductors;		N/A
	– all of the neutral conductors and line conductors are identified by marking using the alpha numeric notation specified in IEC 60445		N/A
	– the supply cord is fitted to the appliance		N/A
25.11	Conductors of supply cords not consolidated by soldering where they are subject to contact pressure, unless		N/A
	the contact pressure is provided by spring terminals		N/A
25.12	Insulation of the supply cord not damaged when moulding the cord to part of the enclosure		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
25.13	Inlet openings so constructed as to prevent damage to the supply cord		N/A
	If it is not evident that the supply cord can be introduced without risk of damage, a non-detachable lining or bushing complying with 29.3 for supplementary insulation provided		N/A
	If unsheathed supply cord, a similar additional bushing or lining is required, unless the appliance is		N/A
	class 0, or		N/A
	a class III appliance not containing live parts		N/A
25.14	Supply cords moved while in operation adequately protected against excessive flexing		N/A
	Flexing test, as described:		N/A
	- applied force (N).....:		N/A
	- number of flexings.....:		N/A
	The test does not result in:		N/A
	- short-circuit between the conductors, such that the current exceeds a value of twice the rated current		N/A
	- breakage of more than 10% of the strands of any conductor		N/A
	- separation of the conductor from its terminal		N/A
	- loosening of any cord guard		N/A
	- damage to the cord or the cord guard		N/A
	- broken strands piercing the insulation and becoming accessible		N/A
25.15	For appliances with supply cord and appliances to be permanently connected to fixed wiring by a flexible cord, conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorage		N/A
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		N/A
	Pull and torque test of supply cord:		N/A
	- fixed appliances: pull 100 N; torque (not on automatic cord reel) (Nm)..... :		N/A
	- other appliances: values shown in table 12: mass (kg); pull (N); torque (not on automatic cord reel) (Nm).....:		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Cord not damaged and max. 2 mm displacement of the cord		N/A
25.16	Cord anchorages for type X attachments constructed and located so that:		P
	- replacement of the cord is easily possible		P
	- it is clear how the relief from strain and the prevention of twisting are obtained		
	- they are suitable for different types of supply cord		N/A
	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless		P
	they are separated from accessible metal parts by supplementary insulation		P
	- the cord is not clamped by a metal screw which bears directly on the cord		P
	- at least one part of the cord anchorage securely fixed to the appliance, unless		P
	it is part of a specially prepared cord		N/A
	- screws which have to be operated when replacing the cord do not fix any other component, unless		N/A
	the appliance becomes inoperative or incomplete or the parts cannot be removed without a tool		N/A
	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood		N/A
	- for class 0, 0I and I appliances they are of insulating material or are provided with an insulating lining, unless		P
	failure of the insulation of the cord does not make accessible metal parts live		P
	- for class II appliances they are of insulating material, or		N/A
	if of metal, they are insulated from accessible metal parts by supplementary insulation		N/A
	After the test of 25.15, under the conditions specified, the conductors have not moved by more than 1 mm in the terminals		N/A
25.17	Adequate cord anchorages for type Y and Z attachment, test with the cord supplied with the appliance		N/A
25.18	Cord anchorages only accessible with the aid of a tool, or		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Constructed so that the cord can only be fitted with the aid of a tool		N/A
25.19	Type X attachment, glands not used as cord anchorage in portable appliances		P
	Tying the cord into a knot or tying the cord with string not used		N/A
25.20	The conductors of the supply cord for type Y and Z attachment insulated from accessible metal parts		N/A
25.21	Space for supply cord for type X attachment or for connection of fixed wiring constructed:		P
	- to permit checking of conductors with respect to correct positioning and connection before fitting any cover		P
	- so there is no risk of damage to the conductors or their insulation when fitting the cover		P
	- for portable appliances, so that the uninsulated end of a conductor, if it becomes free from the terminal, prevented from contact with accessible metal parts		P
	2 N test to the conductor for portable appliances; no contact with accessible metal parts		P
25.22	Appliance inlets:		P
	- live parts not accessible during insertion or removal		P
	Requirement not applicable to appliance inlets complying with IEC 60320-1		P
	- connector can be inserted without difficulty		P
	- the appliance is not supported by the connector		N/A
	- not for cold conditions if temp. rise of external metal parts exceeds 75 K during clause 11, unless		N/A
	the supply cord is unlikely to touch such metal parts		P
25.23	Interconnection cords comply with the requirements for the supply cord, except that:		N/A
	- the cross-sectional area of the conductors is determined on the basis of the maximum current during clause 11		N/A
	- the thickness of the insulation may be reduced		N/A
	- for class I or class II appliance with class III construction, the cross sectional areas of the conductors need not comply with 25.8 if specified conditions are met		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	If necessary, electric strength test of 16.3		N/A
25.24	Interconnection cords not detachable without the aid of a tool if compliance with this standard is impaired when they are disconnected		N/A
25.25	Dimensions of pins that are inserted into socket-outlets compatible with the dimensions of the relevant socket-outlet.		N/A
	Dimensions of pins and engagement face in accordance with the dimensions of the relevant plug in IEC/TR 60083		N/A
26	**TERMINALS FOR EXTERNAL CONDUCTORS**		N/A
26.1	Appliances provided with terminals or equally effective devices for connection of external conductors		N/A
	Terminals only accessible after removal of a non-detachable cover, except		N/A
	for class III appliances that do not contain live parts		N/A
	Earthing terminals may be accessible if a tool is required to make the connections and means are provided to clamp the wire independently from its connection		N/A
26.2	Appliances with type X attachment and appliances for the connection of cables of fixed wiring provided with terminals in which connections are made by means of screws, nuts or similar devices, unless		N/A
	the connections are soldered		N/A
	Screws and nuts not used to fix any other component, except		N/A
	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors		N/A
	If soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone, unless		N/A
	barriers provided so that neither clearances nor creepage distances between live parts and other metal parts reduced below the values for supplementary insulation if the conductor becomes free at the soldered joint		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
26.3	Terminals for type X attachment and for connection of cables of fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure but without damaging the conductor		N/A
	Terminals fixed so that when the clamping means is tightened or loosened:		N/A
	- the terminal does not become loose		N/A
	- internal wiring is not subjected to stress		N/A
	- neither clearances nor creepage distances are reduced below the values in clause 29		N/A
	Compliance checked by inspection and by the test of subclause 9.6 of IEC 60999-1, the torque applied being equal to two-thirds of the torque specified (Nm)..... :		N/A
	No deep or sharp indentations of the conductors		N/A
26.4	Terminals for type X attachment, except those having a specially prepared cord and those for the connection of cables of fixed wiring, no special preparation of conductors such as by soldering, use of cable lugs, eyelets or similar, and		N/A
	so constructed or placed that conductors prevented from slipping out when clamping screws or nuts are tightened		N/A
26.5	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection to other parts that result in a hazard		N/A
	Stranded conductor test, 8 mm insulation removed		N/A
	No contact between live parts and accessible metal parts and,		N/A
	for class II constructions, between live parts and metal parts separated from accessible metal parts by supplementary insulation only		N/A
26.6	Terminals for type X attachment and for connection of cables of fixed wiring suitable for connection of conductors with cross-sectional area according to table 13; rated current (A); nominal cross-sectional area (mm^2)..... :		N/A
	If a specially prepared cord is used, terminals need only be suitable for that cord		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
26.7	Terminals for type X attachment, except in class III appliances not containing live parts, accessible after removal of a cover or part of the enclosure		N/A
26.8	Terminals for the connection of fixed wiring, including the earthing terminal, located close to each other		N/A
26.9	Terminals of the pillar type constructed and located as specified		N/A
26.10	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless		N/A
	conductors ends fitted with means suitable for screw terminals		N/A
	Pull test of 5 N to the connection		N/A
26.11	For type Y and Z attachment, soldered, welded, crimped or similar connections may be used		N/A
	For Class II appliances, the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone		N/A
	If soldering, welding or crimping alone used, barriers provided so that clearances and creepage distances between live parts and other metal parts are not reduced below the values for supplementary insulation if the conductor becomes free		N/A
27	**PROVISION FOR EARTHING**		**P**
27.1	Accessible metal parts of Class 0I and I appliances permanently and reliably connected to an earthing terminal or earthing contact of the appliance inlet		P
	Earthing terminals and earthing contacts not connected to the neutral terminal		P
	Class 0, II and III appliances have no provision for protective earthing		P
	Class II appliances and class III appliances can incorporate an earth for functional purposes		N/A
	Safety extra-low voltage circuits not earthed, unless		N/A
	protective extra-low voltage circuits		N/A
27.2	Clamping means of earthing terminals adequately secured against accidental loosening		P
	Terminals for the connection of external equipotential bonding conductors allow connection of conductors of 2.5 to 6 mm², and		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- do not provide earthing continuity between different parts of the appliance, and		N/A
	- conductors cannot be loosened without the aid of a tool		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
27.3	For a detachable part having an earth connection and being plugged into another part of the appliance, the earth connection is made before and separated after current-carrying connections when removing the part		N/A
	For appliances with supply cords, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		P
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
27.4	No risk of corrosion resulting from contact between parts of the earthing terminal and the copper of the earthing conductor or other metal		P
	Parts providing earthing continuity, other than parts of a metal frame or enclosure, have adequate resistance to corrosion		P
	If of steel, these parts provided with an electroplated coating with a thickness at least 5 µm		N/A
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		P
	In the body of the earthing terminal is a part of a frame or enclosure of aluminium or aluminium alloys, precautions taken to avoid risk of corrosion		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
27.5	Low resistance of connection between earthing terminal and earthed metal parts		P
	This requirement does not apply to connections providing earthing continuity in the protective extra-low voltage circuit, provided the clearances of basic insulation are based on the rated voltage of the appliance		P

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
	Resistance not exceeding 0,1 Ω at the specified low-resistance test (Ω)..... :	0.03Ω	P
27.6	The printed conductors of printed circuit boards not used to provide earthing continuity in hand-held appliances.		N/A
	They may be used to provide earthing continuity in other appliances if at least two tracks are used with independent soldering points and the appliance complies with 27.5 for each circuit		N/A
	Requirements not applicable to class II appliances and class III appliances that incorporate an earth for functional purposes		N/A
28	**SCREWS AND CONNECTIONS**		**P**
28.1	Fixings, electrical connections and connections providing earthing continuity withstand mechanical stresses		P
	Screws not of soft metal liable to creep, such as zinc or aluminium		P
	Diameter of screws of insulating material min. 3 mm		N/A
	Screws of insulating material not used for any electrical connections or connections providing earthing continuity		P
	Screws used for electrical connections or connections providing earthing continuity screwed into metal		P
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		N/A
	For type X attachment, screws to be removed for replacement of supply cord or for user maintenance, not of insulating material if their replacement by a metal screw impairs basic insulation		P
	For screws and nuts; torque-test as specified in table 14.....:	(see appended table)	P
28.2	Electrical connections and connections providing earthing continuity constructed so that contact pressure is not transmitted through non-ceramic insulating material liable to shrink or distort, unless		P

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	there is resiliency in the metallic parts to compensate for shrinkage or distortion of the insulating material		N/A
	This requirement does not apply to electrical connections in circuits of appliances for which:		N/A
	• 30.2.2 is applicable and that carry a current not exceeding 0,5 A		N/A
	• 30.2.3 is applicable and that carry a current not exceeding 0,2 A		N/A
28.3	Space-threaded (sheet metal) screws only used for electrical connections if they clamp the parts together		N/A
	Thread-cutting (self-tapping) screws and thread rolling screws only used for electrical connections if they generate a full form standard machine screw thread		N/A
	Thread-cutting (self-tapping) screws not used if they are likely to be operated by the user or installer		N/A
	Thread-cutting, thread rolling and space threaded screws may be used in connections providing earthing continuity provided it is not necessary to disturb the connection:		N/A
	- in normal use,		N/A
	- during user maintenance,		N/A
	- when replacing a supply cord having a type X attachment, or		N/A
	- during installation		N/A
	At least two screws being used for each connection providing earthing continuity, unless		N/A
	the screw forms a thread having a length of at least half the diameter of the screw		N/A
28.4	Screws and nuts that make mechanical connection secured against loosening if they also make electrical connections or connections providing earthing continuity		N/A
	This requirement does not apply to screws in the earthing circuit if at least two screws are used, or		P
	if an alternative earthing circuit is provided		N/A
	Rivets for electrical connections or connections providing earthing continuity secured against loosening if the connections are subjected to torsion		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

29	**CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION**		**P**
	Clearances, creepage distances and solid insulation withstand electrical stress		P
	For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation (Type 2), Annex J applies.....:		N/A
	The microenvironment is pollution degree 1 under type 1 protection		N/A
	For type 2 protection, the spacing between the conductors before the protection is applied is not less than the values specified in Table 1 of IEC 60664-3		P
	These values apply to functional, basic, supplementary and reinforced insulation.....:		P
29.1	Clearances not less than the values specified in table 16, taking into account the rated impulse voltage for the overvoltage categories of table 15, unless.....:	(see appended table)	P
	for basic insulation and functional insulation they comply with the impulse voltage test of clause 14		N/A
	However, if the distances are affected by wear, distortion, movement of the parts or during assembly, the clearances for rated impulse voltages of 1500V and above are increased by 0,5 mm and the impulse voltage test is not applicable		P
	For appliances intended for use at altitudes exceeding 2 000 m, the clearances in Table 16 is increased according to the relevant multiplier values in Table A.2 of IEC 60664-1		N/A
	Impulse voltage test is not applicable:		P
	- when the microenvironment is pollution degree 3, or		N/A
	- for basic insulation of class 0 and class 01 appliances, or		N/A
	- to appliances intended for use at altitudes exceeding 2 000 m		N/A
	Appliances are in overvoltage category II		P
	A force of 2 N is applied to bare conductors, other than heating elements		P
	A force of 30 N is applied to accessible surfaces		P

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Clause	Requirement + Test	Result - Remark	Verdict
29.1.1	Clearances of basic insulation withstand the overvoltages, taking into account the rated impulse voltage		N/A
	The values of table 16 or the impulse voltage test of clause 14 are applicable.....:	(see appended table)	N/A
	Clearance at the terminals of tubular sheathed heating elements may be reduced to 1,0 mm if the microenvironment is pollution degree 1		N/A
	Lacquered conductors of windings considered to be bare conductors		N/A
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16:	(see appended table)	P
29.1.3	Clearances of reinforced insulation not less than those specified for basic insulation in table 16, using the next higher step for rated impulse voltage.....:	(see appended table)	P
	For double insulation, with no intermediate conductive part between basic and supplementary insulation, clearances are measured between live parts and the accessible surface, and the insulation system is treated as reinforced insulation		N/A
29.1.4	Clearances for functional insulation are the largest values determined from:		N/A
	- table 16 based on the rated impulse voltage.....:	(see appended table)	N/A
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		N/A
	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz		N/A
	If values of table 16 are largest, the impulse voltage test of clause 14 may be applied instead, unless		N/A
	the microenvironment is pollution degree 3, or		N/A
	the distances can be affected by wear, distortion, movement of the parts or during assembly		N/A
	However, clearances are not specified if the appliance complies with clause 19 with the functional insulation short-circuited		N/A
	Lacquered conductors of windings considered to be bare conductors		N/A
	However, clearances at crossover points are not measured		N/A
	Clearance between surfaces of PTC heating elements may be reduced to 1mm		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
29.1.5	Appliances having higher working voltages than rated voltage, clearances for basic insulation are the largest values determined from:		N/A
	- table 16 based on the rated impulse voltage.....:		N/A
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		N/A
	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz		N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1 or Clause 4 of IEC 60664-4, the clearances of supplementary insulation are not less than those specified for basic insulation		N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1, the clearances of reinforced insulation dimensioned as specified in Table F.7a are to withstand 160% of the withstand voltage required for basic insulation		N/A
	If clearances for basic insulation are selected from Clause 4 of IEC 60664-4, the clearances of reinforced insulation are twice the value required for basic insulation		N/A
	If the secondary winding of a step-down transformer is earthed, or if there is an earthed screen between the primary and secondary windings, clearances of basic insulation on the secondary side not less than those specified in table 16, but using the next lower step for rated impulse voltage		N/A
	Circuits supplied with a voltage lower than rated voltage, clearances of functional insulation are based on the working voltage used as the rated voltage in table 15		N/A
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree..... :	(see appended table)	P
	Pollution degree 2 applies, unless		P
	- precautions taken to protect the insulation; pollution degree 1		N/A
	- insulation subjected to conductive pollution; pollution degree 3		N/A
	A force of 2 N is applied to bare conductors, other than heating elements		P
	A force of 30 N is applied to accessible surfaces		P

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Clause	Requirement + Test	Result - Remark	Verdict
	In a double insulation system, the working voltage for both the basic and supplementary insulation is taken as the working voltage across the complete double insulation system		N/A
29.2.1	Creepage distances of basic insulation not less than specified in table 17..... :	(see appended table)	P
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 17.....:		P
	Except for pollution degree 1, corresponding creepage distance not less than the minimum specified for the clearance in table 16, if the clearance has been checked according to the test of clause 14.....:		N/A
29.2.2	Creepage distances of supplementary insulation at least those specified for basic insulation in table 17, or..... :	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable.....:		N/A
29.2.3	Creepage distances of reinforced insulation at least double those specified for basic insulation in table 17, or.....:	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable.....:		N/A
29.2.4	Creepage distances of functional insulation not less than specified in table 18.....:	(see appended table)	N/A
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 18.....:		N/A
	Creepage distances may be reduced if the appliance complies with clause 19 with the functional insulation short-circuited		N/A
29.3	Supplementary and reinforced insulation have adequate thickness, or a sufficient number of layers, to withstand the electrical stresses		N/A
	Compliance checked:		N/A
	- by measurement, in accordance with 29.3.1, or		N/A
	- by an electric strength test in accordance with 29.3.2, or		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- for insulation, other than single layer internal wiring insulation, by an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3, and		N/A
	for accessible parts of reinforced insulation consisting of a single layer, by measurement in accordance with 29.3.4, or		N/A
	- by an assessment of the thermal quality of the material according to 29.3.3 combined with an electric strength test in accordance with 23.5, for each single layer internal wiring insulation touching each other, or		N/A
	- as specified in subclause 6.3 of IEC 60664-4 for insulation that is subjected to any periodic voltage having a frequency exceeding 30 kHz		N/A
29.3.1	Supplementary insulation have a thickness of at least 1 mm		N/A
	Reinforced insulation have a thickness of at least 2 mm		N/A
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		N/A
	Supplementary insulation consist of at least 2 layers		N/A
	Reinforced insulation consist of at least 3 layers		N/A
29.3.3	The insulation is subjected to the dry heat test Bb of IEC 60068-2-2, followed by		N/A
	the electric strength test of 16.3		N/A
	If the temperature rise during the tests of clause 19 does not exceed the value specified in table 3, the test of IEC 60068-2-2 is not carried out		N/A
29.3.4	Thickness of accessible parts of reinforced insulation consisting of a single layer not less than specified in table 19..... :		N/A
30	**RESISTANCE TO HEAT AND FIRE**		**P**
30.1	External parts of non-metallic material,		P
	parts supporting live parts, and		P
	parts of thermoplastic material providing supplementary or reinforced insulation		P
	sufficiently resistant to heat		P
	Ball-pressure test according to IEC 60695-10-2		P

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Clause	Requirement + Test	Result - Remark	Verdict
	External parts tested at 40 °C plus the maximum temperature rise determined during the test of clause 11, or at 75 °C, whichever is the higher; temperature (°C).....:	(see appended table 30.1)	P
	Parts supporting live parts tested at 40°C plus the maximum temperature rise determined during the test of clause 11, or at 125 °C, whichever is the higher; temperature (°C).....:	(see appended table 30.1)	P
	Parts of thermoplastic material providing supplementary or reinforced insulation tested at 25 °C plus the maximum temperature rise determined during clause 19, if higher; temperature (°C).....:	(see appended table 30.1)	N/A
30.2	Parts of non-metallic material resistant to ignition and spread of fire		P
	This requirement does not apply to:		N/A
	parts having a mass not exceeding 0,5 g, provided the cumulative effect is unlikely to propagate flames that originate inside the appliance by propagating flames from one part to another, or		N/A
	decorative trims, knobs and other parts unlikely to be ignited or to propagate flames that originate inside the appliance		N/A
	Compliance checked by the test of 30.2.1, and in addition:		P
	- for attended appliances, 30.2.2 applies		P
	- for unattended appliances, 30.2.3 applies		N/A
	For appliances for remote operation, 30.2.3 applies		N/A
	For base material of printed circuit boards, 30.2.4 applies		N/A
30.2.1	Parts of non-metallic material subjected to the glow-wire test of IEC 60695-2-11 at 550°C	(see appended table 30.2)	P
	However, test not carried out if the material is classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 550 °C, or		P
	the material is classified at least HB40 according to IEC 60695-11-10		N/A
	Parts for which the glow-wire test cannot be carried out need to meet the requirements in ISO 9772 for material classified HBF		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
30.2.2	Appliances operated while attended, parts of non-metallic material supporting current-carrying connections, and		P
	parts of non-metallic material within a distance of 3mm of such connections,		P
	subjected to the glow-wire test of IEC 60695-2-11 with appropriate severity level:	(see appended table 30.2)	P
	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation		P
	- 650 °C, for other connections		P
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least:		N/A
	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		N/A
	- comprise material having a glow-wire flammability index of at least 750 °C, or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of Annex E, or	(see appended table 30.2/30.2.4)	N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10..... :		N/A
	Glow-wire test not applicable to conditions as specified.....:		N/A
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2		P
	The tests are not applicable to conditions as specified.....:		P
30.2.3.1	Parts of non-metallic material supporting connections carrying a current exceeding 0,2 A during normal operation, and		P
	parts of non-metallic material, other than small parts, within a distance of 3 mm,		P
	subjected to the glow-wire test of IEC 60695-2-11 with a test severity of 850 °C	(see appended table 30.2)	P
	Glow-wire applied to an interposed shielding material, if relevant		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 850 °C		P
30.2.3.2	Parts of non-metallic material supporting connections, and		P
	parts of non-metallic material within a distance of 3mm,		P
	subjected to the glow-wire test of IEC 60695-2-11 with appropriate severity level:	(see appended table 30.2)	N/A
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	However, the glow-wire test of 750 °C or 650 °C as appropriate, is not carried out on parts of material fulfilling both or either of the following classifications:		N/A
	- a glow-wire ignition temperature according to IEC 60695-2-13 of at least:		N/A
	• 775 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	• 675 °C, for other connections		N/A
	- a glow-wire flammability index according to IEC 60695-2-12 of at least:		N/A
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		N/A
	- comprise material having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- comprise material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of Annex E, or		N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The consequential needle-flame test of Annex E applied to non-metallic parts that encroach within the vertical cylinder placed above the centre of the connection zone and on top of the non-metallic parts supporting current-carrying connections, and parts of non-metallic material within a distance of 3 mm of such connections if these parts are those:		N/A
	- parts that withstood the glow-wire test of IEC 60695-2-11 of 750 °C or 650 °C as appropriate, but produce a flame that persist longer than 2 s, or		N/A
	- parts that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts, that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts for which the needle-flame test of Annex E was applied, or		N/A
	- small parts for which a material classification of V-0 or V-1 was applied		N/A
	However, the consequential needle-flame test is not carried out on non-metallic parts, including small parts, within the cylinder that are:		N/A
	- parts having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- parts comprising material classified as V-0 or V-1 according to IEC 60695-11-10, or		N/A
	- parts shielded by a flame barrier that meets the needle-flame test of Annex E or that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
30.2.4	Base material of printed circuit boards subjected to the needle-flame test of Annex E	(see appended table 30.2/30.2.4)	P
	Test not applicable to conditions as specified..... :		P
31	**RESISTANCE TO RUSTING**		N/A
	Relevant ferrous parts adequately protected against rusting		N/A
	Tests specified in part 2 when necessary		N/A
32	**RADIATION, TOXICITY AND SIMILAR HAZARDS**		N/A
	Appliance does not emit harmful radiation or present a toxic or similar hazard due to their operation in normal use		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Compliance is checked by the limits or tests specified in part 2, if relevant		N/A
A	**ANNEX A (INFORMATIVE) ROUTINE TESTS**		**P**
	Description of routine tests to be carried out by the manufacturer		P
B	**ANNEX B (NORMATIVE) APPLIANCES POWERED BY RECHARGEABLE BATTERIES THAT ARE RECHARGED IN THE APPLIANCE**		N/A
	The following modifications to this standard are applicable for appliances powered by batteries that are recharged in the appliance		N/A
	Three forms of construction covered:		N/A
	a) Appliance supplied directly from the supply mains or a renewable energy source, the battery charging circuitry and other supply unit circuitry incorporated within the appliance		N/A
	b) The part of the appliance incorporating the battery is supplied from the supply mains or a renewable energy source, via a detachable supply unit. The battery charging circuitry is incorporated within the part of the appliance containing the battery		N/A
	c) The part of the appliance incorporating the battery is supplied from the supply mains or a renewable energy source, via a detachable supply unit. The battery charging circuitry is incorporated within the detachable supply unit		N/A
3.1.9	Appliance operated under the following conditions:		N/A
	- the appliance, supplied by its fully charged battery, operated as specified in relevant part 2		N/A
	- the battery is charged, the battery being initially discharged to such an extent that the appliance cannot operate		N/A
	-if possible, the appliance is supplied from the supply mains through its battery charger, the battery being initially discharged to such an extent that the appliance cannot operate. The appliance is operated as specified in relevant part 2		N/A
	- if the appliance incorporates inductive coupling between two parts that are detachable from each other, the appliance is supplied from the supply mains with the detachable part removed		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.6.2	Part to be removed in order to discard the battery is not considered to be detachable		N/A
5.B.101	Appliances supplied from the supply mains tested as specified for motor-operated appliances		N/A
7.1	Battery compartment for batteries intended to be replaced by the user, marked with battery voltage (V) and polarity of the terminals.....:		N/A
	The positive terminal indicated by symbol IEC 60417-5005 and the negative terminal by symbol IEC 60417-5006		N/A
	Appliances intending to be supplied from a detachable supply unit marked with symbol IEC 60417-6181 and its type reference along with symbol ISO 7000-0790 (2004-01), or		N/A
	use only with <model designation> supply unit ....:		N/A
7.6	Additional symbols		N/A
7.12	The instructions give information regarding charging		N/A
	Instructions for appliances incorporating batteries intended to be replaced by the user include required information		N/A
	Instructions for appliances containing non user-replaceable batteries state the substance of the following:		N/A
	This appliance contains batteries that are only replaceable by skilled persons		N/A
	Instructions for appliances containing non-replaceable batteries shall state the substance of the following:		N/A
	This appliance contains batteries that are non-replaceable		N/A
	For appliances intending to be supplied from a detachable supply unit for the purposes of recharging the battery, the type reference of the detachable supply unit is stated along with the following:		N/A
	WARNING: For the purposes of recharging the battery, only use the detachable supply unit provided with this appliance		N/A
	If the symbol for detachable supply unit is used, its meaning is explained		N/A
7.15	Markings placed on the part of the appliance connected to the supply mains		N/A
	The type reference of the detachable supply unit is placed in close proximity to the symbol		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.2	Appliances having batteries that according to the instruction may be replaced by the user need only have basic insulation between live parts and the inner surface of the battery compartment		N/A
	If the appliance can be operated without batteries, double or reinforced insulation required		N/A
11.7	The battery is charged for the period stated in the instructions or 24 h.....:		N/A
11.8	Temperature rise of the battery surface does not exceed the limit in the battery manufacturer's specification; measured (K); limit (K).....:		N/A
	If no limit specified, the temperature rise does not exceed 20 K; measured (K) .....:		N/A
19.1	Appliances subjected to tests of 19.B.101, 19.B.102 and 19.B.103		N/A
19.10	Not applicable		N/A
19.B.101	Appliances supplied at rated voltage for 168 h, the battery being continually charged		N/A
19.B.102	For appliances having batteries that can be removed without the aid of a tool, short-circuit of the terminals of the battery, the battery being fully charged,		N/A
19.B.103	Appliances having batteries replaceable by the user supplied at rated voltage under normal operation with the battery removed or in any position allowed by the construction		N/A
19.13	The battery does not rupture or ignite		N/A
21.B.101	Appliances having pins for insertion into socket-outlets have adequate mechanical strength		N/A
	Part of the appliance incorporating the pins subjected to the free fall test, procedure 2, of IEC 60068-2-31, the number of falls being:		N/A
	- 100, if the mass of the part does not exceed 250 g (g).....:		N/A
	- 50, if the mass of the part exceeds 250 g.....:		N/A
	After the test, the requirements of 8.1, 15.1.1, 16.3 and clause 29 are met		N/A
22.3	Appliances having pins for insertion into socket-outlets tested as fully assembled as possible		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
25.13	An additional lining or bushing not required for interconnection cords in class III appliances or class III constructions operating at safety extra-low voltage not containing live parts		N/A
30.2	For parts of the appliance connected to the supply mains during the charging period, 30.2.3 applies		N/A
	For other parts, 30.2.2 applies		N/A
C	**ANNEX C (NORMATIVE) AGEING TEST ON MOTORS**		N/A
	Tests, as described, carried out when doubt with regard to the temperature classification of the insulation of a motor winding		N/A
	Test conditions as specified		N/A
D	**ANNEX D (NORMATIVE) THERMAL MOTOR PROTECTORS**		N/A
	Applicable to appliances having motors that incorporate thermal motor protectors necessary for compliance with the standard		N/A
	Test conditions as specified		N/A
E	**ANNEX E (NORMATIVE) NEEDLE-FLAME TEST**		**P**
	Needle-flame test carried out in accordance with IEC 60695- 11-5, with the following modifications:		P
7	Severities		P
	The duration of application of the test flame is 30 s ± 1 s		P
9	Test procedure		P
9.1	The specimen so arranged that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1		P
9.2	The first paragraph does not apply		P
	If possible, the flame is applied at least 10 mm from a corner		N/A
9.3	The test is carried out on one specimen		P
	If the specimen does not withstand the test, the test may be repeated on two additional specimens, both withstanding the test		N/A
11	Evaluation of test results		P
	The duration of burning not exceeding 30 s		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	However, for printed circuit boards, the duration of burning not exceeding 15 s		P
F	**ANNEX F (NORMATIVE) CAPACITORS**		N/A
	Capacitors likely to be permanently subjected to the supply voltage, and used for radio interference suppression or voltage dividing, comply with the following clauses of IEC 60384-14, with the following modifications:		N/A
1.5	Terms and definitions		N/A
1.5.3	Class X capacitors tested according to subclass X2		N/A
1.5.4	This subclause is applicable		N/A
1.6	Marking		N/A
	Items a) and b) are applicable		N/A
3.4	Approval testing		N/A
3.4.3.2	Table 3 is applicable as described		N/A
4.1	Visual examination and check of dimensions		N/A
	This subclause is applicable		N/A
4.2	Electrical tests		N/A
4.2.1	This subclause is applicable		N/A
4.2.5	This subclause is applicable		N/A
4.2.5.2	Only table 11 is applicable		N/A
	Values for test A apply		N/A
	However, for capacitors in heating appliances the values for test B or C apply		N/A
4.12	Damp heat, steady state		N/A
	This subclause is applicable		N/A
	Only insulation resistance and voltage proof are checked		N/A
4.13	Impulse voltage		N/A
	This subclause is applicable		N/A
4.14	Endurance		N/A
	Subclauses 4.14.1, 4.14.3, 4.14.4 and 4.14.7 are applicable		N/A
4.14.7	Only insulation resistance and voltage proof are checked		N/A
	No visible damage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.17	Passive flammability test		N/A
	This subclause is applicable		N/A
4.18	Active flammability test		N/A
	This subclause is applicable		N/A
G	**ANNEX G (NORMATIVE)** **SAFETY ISOLATING TRANSFORMERS**		N/A
	The following modifications to this standard are applicable for safety isolating transformers:		N/A
7	Marking and instructions		N/A
7.1	Transformers for specific use marked with:		
	-name, trademark or identification mark of the manufacturer or responsible vendor.....:		N/A
	-model or type reference..... :		N/A
17	Overload protection of transformers and associated circuits		N/A
	Fail-safe transformers comply with subclause 15.5 of IEC 61558-1		N/A
22	Construction		N/A
	Subclauses 19.1 and 19.1.2 of IEC 61558-2-6 are applicable		N/A
29	Clearances, creepage distances and solid insulation		N/A
29.1, 29.2, 29.3	The distances specified in items 2a, 2c and 3 in table 13 of IEC 61558-1 apply		N/A
	For insulated winding wires complying with subclause 19.12.3 of IEC 61558-1 there are no requirements for clearances or creepage distances		N/A
	For windings providing reinforced insulation, the distance specified in item 2c of table 13 of IEC 61558-1 is not assessed		N/A
	For safety isolating transformers subjected to periodic voltages with a frequency exceeding 30 kHz, the clearances, creepage distances and solid insulation values specified in IEC 60664-4 are applicable, if greater than the values specified in items 2a, 2c and 3 in table 13 of IEC 61558-1		N/A
H	**ANNEX H (NORMATIVE)** **SWITCHES**		N/A
	Switches comply with the following clauses of IEC 61058-1, as modified below:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The tests of IEC 61058-1 carried out under the conditions occurring in the appliance		N/A
	Before being tested, switches are operated 20 times without load		N/A
8	Marking and documentation		N/A
	Switches are not required to be marked		N/A
	However, a switch that can be tested separately from the appliance marked with the manufacturer's name or trade mark and the type reference		N/A
13	Mechanism		N/A
	The tests may be carried out on a separate sample		N/A
15	Insulation resistance and dielectric strength		N/A
15.1	Not applicable		N/A
15.2	Not applicable		N/A
15.3	Applicable for full disconnection and micro-disconnection		N/A
17	Endurance		N/A
	Compliance is checked on three separate appliances or switches		N/A
	For 17.2.4.4, the number of cycles declared according to 7.1.4 is 10 000, unless		N/A
	otherwise specified in 24.1.3 of the relevant part 2 of IEC 60335.....:		N/A
	Switches for operation under no load and which can be operated only by a tool, and		N/A
	switches operated by hand that are interlocked so that they cannot be operated under load,		N/A
	are not subjected to the tests		N/A
	However, switches without this interlock are subjected to the test of 17.2.4.4 for 100 cycles of operation		N/A
	Subclauses 17.2.2 and 17.2.5.2 not applicable		N/A
	The ambient temperature during the test is that occurring in the appliance during the test of Clause 11 in IEC 60335-1		N/A
	The temperature rise of the terminals not more than 30 K above the temperature rise measured in clause 11 of IEC 60335-1 (K).....:		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
20	Clearances, creepage distances, solid insulation and coatings of rigid printed board assemblies		N/A
	Clause 20 is applicable to clearances across full disconnection and micro-disconnection		N/A
	It is also applicable to creepage distances for functional insulation, across full disconnection and micro-disconnection, as stated in Table 24		N/A
I	**ANNEX I (NORMATIVE) MOTORS HAVING BASIC INSULATION THAT IS INADEQUATE FOR THE RATED VOLTAGE OF THE APPLIANCE**		N/A
	The following modifications to this standard are applicable for motors having basic insulation that is inadequate for the rated voltage of the appliance:		N/A
8	Protection against access to live parts		N/A
8.1	Metal parts of the motor are considered to be bare live parts		N/A
11	Heating		N/A
11.3	The temperature rise of the body of the motor is determined instead of the temperature rise of the windings		N/A
11.8	The temperature rise of the body of the motor, where in contact with insulating material, not exceeding values in table 3 for the relevant insulating material		N/A
16	Leakage current and electric strength		N/A
16.3	Insulation between live parts of the motor and its other metal parts is not subjected to the test		N/A
19	Abnormal operation		N/A
19.1	The tests of 19.7 to 19.9 are not carried out		N/A
19.I.101	Appliance operated at rated voltage with each of the following fault conditions:		N/A
	- short circuit of the terminals of the motor, including any capacitor incorporated in the motor circuit		N/A
	- short circuit of each diode of the rectifier		N/A
	- open circuit of the supply to the motor		N/A
	- open circuit of any parallel resistor, the motor being in operation		N/A
	Only one fault simulated at a time, the tests carried out consecutively		N/A
22	Construction		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
22.I.101	For class I appliances incorporating a motor supplied by a rectifier circuit, the d.c. circuit being insulated from accessible parts of the appliance by double or reinforced insulation		N/A
	Compliance checked by the tests specified for double and reinforced insulation		N/A
J	**ANNEX J (NORMATIVE)** **COATED PRINTED CIRCUIT BOARDS**		N/A
	Testing of protective coatings of printed circuit boards carried out in accordance with IEC 60664-3 with the following modifications:		N/A
5.7	Conditioning of the test specimens		N/A
	When production samples are used, three samples of the printed circuit board are tested		N/A
5.7.1	Cold		N/A
	The test is carried out at -25 °C		N/A
5.7.3	Rapid change of temperature		N/A
	Severity 1 is specified		N/A
5.9	Additional tests		N/A
	This subclause is not applicable		N/A
K	**ANNEX K (NORMATIVE)** **OVERVOLTAGE CATEGORIES**		**P**
	The information on overvoltage categories is extracted from IEC 60664-1		P
	Overvoltage category is a numeral defining a transient overvoltage condition		N/A
	Equipment of overvoltage category IV is for use at the origin of the installation		N/A
	Equipment of overvoltage category III is equipment in fixed installations and for cases where the reliability and the availability of the equipment is subject to special requirements		N/A
	Equipment of overvoltage category II is energy consuming equipment to be supplied from the fixed installation		P
	If such equipment is subjected to special requirements with regard to reliability and availability, overvoltage category III applies		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Equipment of overvoltage category I is equipment for connection to circuits in which measures are taken to limit transient overvoltages to an appropriate low level		N/A
L	**ANNEX L (INFORMATIVE) GUIDANCE FOR THE MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES**		**P**
	Information for the determination of clearances and creepage distances		P
M	**ANNEX M (NORMATIVE) POLLUTION DEGREE**		**P**
	The information on pollution degrees is extracted from IEC 60664-1		P
	Pollution		P
	The microenvironment determines the effect of pollution on the insulation, taking into account the macroenvironment		N/A
	Means may be provided to reduce pollution at the insulation by effective enclosures or similar		N/A
	Minimum clearances specified where pollution may be present in the microenvironment		N/A
	Degrees of pollution in the microenvironment		P
	For evaluating creepage distances, the following degrees of pollution in the microenvironment are established:		N/A
	- pollution degree 1: no pollution or only dry, non-conductive pollution occurs. The pollution has no influence		N/A
	- pollution degree 2: only non-conductive pollution occurs, except that occasionally a temporary conductivity caused by condensation is to be expected		P
	- pollution degree 3: conductive pollution occurs or dry non-conductive pollution occurs that becomes conductive due to condensation that is to be expected		N/A
	- pollution degree 4: the pollution generates persistent conductivity caused by conductive dust or by rain or snow		N/A
N	**ANNEX N (NORMATIVE) PROOF TRACKING TEST**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The proof tracking test is carried out in accordance with IEC 60112 with the following modifications:		N/A
7	Test apparatus		N/A
7.3	Test solutions		N/A
	Test solution A is used		N/A
10	Determination of proof tracking index (PTI)		N/A
10.1	Procedure		N/A
	The proof voltage is 100V, 175V, 400V or 600V...:		N/A
	The test is carried out on five specimens		N/A
	In case of doubt, additional test with proof voltage reduced by 25V, the number of drops increased to 100		N/A
10.2	Report		N/A
	The report states if the PTI value was based on a test using 100 drops with a test voltage of (PTI-25) V		N/A
O	**ANNEX O (INFORMATIVE) SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30**		**P**
	Description of tests for determination of resistance to heat and fire		P
P	**ANNEX P (INFORMATIVE) GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN TROPICAL CLIMATES**		N/A
	Modifications applicable for class 0 and 01 appliances having a rated voltage exceeding 150V, intended to be used in countries having a tropical climate and that are marked with symbol IEC 60417-6332		N/A
	Modifications may also be applied to class 1 appliances having a rated voltage exceeding 150V, intended to be used in countries having a tropical climate and that are marked with symbol IEC 60417-6332, if liable to be connected to a supply mains that excludes the protective earthing conductor		N/A
5.7	The ambient temperature for the tests of clauses 11 and 13 is 40 +3/0 °C		N/A
7.1	The appliance marked with symbol IEC 60417-6332		N/A
7.12	The instructions state that the appliance is to be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30 mA		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The instructions state that the appliance is considered to be suitable for use in countries having a tropical climate, but may also be used in other countries		N/A
	If symbol IEC 60417-6332 is used, its meaning is explained		N/A
11.8	The values of Table 3 are reduced by 15 K		N/A
13.2	The leakage current for class I appliances not exceeding 0,5 mA		N/A
15.3	The value of t is 37 °C		N/A
16.2	The leakage current for class I appliances not exceeding 0,5 mA (mA):		N/A
19.13	The leakage current test of 16.2 is applied in addition to the electric strength test of 16.3		N/A
Q	**ANNEX Q (INFORMATIVE)** **SEQUENCE OF TESTS FOR THE EVALUATION OF ELECTRONIC CIRCUITS**		N/A
	Description of tests for appliances incorporating electronic circuits		N/A
R	**ANNEX R (NORMATIVE)** **SOFTWARE EVALUATION**		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 validated in accordance with the requirements of this annex		N/A
R.1	Programmable electronic circuits using software		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 constructed so that the software does not impair compliance with the requirements of this standard		N/A
R.2	Requirements for the architecture		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 use measures to control and avoid software-related faults/errors in safety-related data and safety-related segments of the software		N/A
R.2.1.1	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.2 have one of the following structures:		N/A
	- single channel with periodic self-test and monitoring		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- dual channel (homogenous) with comparison		N/A
	- dual channel (diverse) with comparison		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 have one of the following structures:		N/A
	- single channel with functional test		N/A
	- single channel with periodic self-test		N/A
	- dual channel without comparison		N/A
R.2.2	Measures to control faults/errors		N/A
R.2.2.1	When redundant memory with comparison is provided on two areas of the same component, the data in one area is stored in a different format from that in the other area		N/A
R.2.2.2	Programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.2 and that use dual channel structures with comparison, have additional fault/error detection means for any fault/errors not detected by the comparison		N/A
R.2.2.3	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, means are provided for the recognition and control of errors in transmissions to external safety-related data paths		N/A
R.2.2.4	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the programmable electronic circuits incorporate measures to address the fault/errors in safety-related segments and data indicated in table R.1 and R.2 as appropriate		N/A
R.2.2.5	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, detection of a fault/error occur before compliance with clause 19 is impaired		N/A
R.2.2.6	The software is referenced to relevant parts of the operating sequence and the associated hardware functions		N/A
R.2.2.7	Labels used for memory locations are unique		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
R.2.2.8	The software is protected from user alteration of safety-related segments and data		N/A
R.2.2.9	Software and safety-related hardware under its control is initialized and terminates before compliance with clause 19 is impaired		N/A
R.3	Measures to avoid errors		N/A
R.3.1	General		N/A
	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the following measures to avoid systematic fault in the software are applied		N/A
	Software that incorporates measures used to control the fault/error conditions specified in table R.2 is inherently acceptable for software required to control the fault/error conditions specified in table R.1		N/A
R.3.2	Specification		N/A
R.3.2.1	Software safety requirements:	Software Id:	N/A
	The specification of the software safety requirements includes the descriptions listed		N/A
R.3.2.2	Software architecture		N/A
R.3.2.2.1	The specification of the software architecture includes the aspects listed - techniques and measures to control software faults/errors (refer to R.2.2); - interactions between hardware and software; - partitioning into modules and their allocation to the specified safety functions; - hierarchy and call structure of the modules (control flow); - interrupt handling; - data flow and restrictions on data access; - architecture and storage of data; - time-based dependencies of sequences and data	Document ref. No:	N/A
R.3.2.2.2	The architecture specification is validated against the specification of the software safety requirements by static analysis		N/A
R.3.2.3	Module design and coding		N/A
R.3.2.3.1	Based on the architecture design, software is suitably refined into modules		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Software module design and coding is implemented in a way that is traceable to the software architecture and requirements		N/A
R.3.2.3.2	Software code is structured		N/A
R.3.2.3.3	Coded software is validated against the module specification by static analysis		N/A
	The module specification is validated against the architecture specification by static analysis		N/A
R.3.3.3	Software validation		N/A
	The software is validated with reference to the requirements of the software safety requirements specification		N/A
	Compliance is checked by simulation of:		N/A
	- input signals present during normal operation		N/A
	- anticipated occurrences		N/A
	- undesired conditions requiring system action		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

TABLE R.1 [e] – GENERAL FAULT/ERROR CONDITIONS						
Component [a]	Fault/error	Acceptable measures [b, c]	Definitions	Document reference for applied measure	Document reference for applied test	Ver-dict
1 CPU 1.1 Registers	Stuck at	Functional test, or periodic self-test using either: - static memory test, or - word protection with single bit redundancy	H.2.16.5 H.2.16.6 H.2.19.6 H.2.19.8.2			N/A
1.2 VOID						N/A
1.3 Programme counter	Stuck at	Functional test, or Periodic self-test, or Independent time-slot monitoring, or Logical monitoring of the programme sequence	H.2.16.5 H.2.16.6 H.2.18.10.4 H.2.18.10.2			N/A
2 Interrupt handling and execution	No interrupt or too frequent interrupt	Functional test, or time-slot monitoring	H.2.16.5 H.2.18.10.4			N/A
3 Clock	Wrong frequency (for quartz synchronized clock: harmonics/ sub-harmonics only)	Frequency monitoring, or time slot monitoring	H.2.18.10.1 H.2.18.10.4			N/A
4. Memory 4.1 Invariable memory	All single bit faults	Periodic modified checksum, or multiple checksum, or word protection with single bit redundancy	H.2.19.3.1 H.2.19.3.2 H.2.19.8.2			N/A

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Clause	Requirement + Test	Result - Remark	Verdict

4.2 Variable memory	DC fault	Periodic static memory test, or word protection with single bit redundancy	H.2.19.6 H.2.19.8.2			N/A
4.3 Addressing (relevant to variable and invariable memory)	Stuck at	Word protection with single bit redundancy including the address	H.2.19.8.2			N/A
5 Internal data path	Stuck at	Word protection with single bit redundancy	H.2.19.8.2			N/A
5.1 VOID						N/A
5.2 Addressing	Wrong address	Word protection with single bit redundancy including the address	H.2.19.8.2			N/A
6 External communication	Hamming distance 3	Word protection with multi-bit redundancy, or CRC – single work, or Transfer redundancy, or Protocol test	H.2.19.8.1 H.2.19.4.1 H.2.18.2.2 H.2.18.14			N/A
6.1 VOID						N/A
6.2 VOID						N/A
6.3 Timing	Wrong point in time	Time-slot monitoring, or scheduled transmission Time-slot and logical monitoring, or comparison of redundant communication channels by either: - reciprocal comparison - independent hardware comparator	H.2.18.10.4 H.2.18.18 H.2.18.10.3 H.2.18.15 H.2.18.3			N/A
	Wrong sequence	Logical monitoring, or time-slot monitoring, or Scheduled transmission	H.2.18.10.2 H.2.18.10.4 H.2.18.18			
7 Input/output periphery	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A

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Clause	Requirement + Test	Result - Remark	Verdict

7.1 VOID						N/A
7.2 Analog I/O 7.2.1 A/D and D/A-converter	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A
7.2.2 Analog multiplexer	Wrong addressing	Plausibility check	H.2.18.13			N/A
8 VOID						N/A
9 Custom chips [d] e.g. ASIC, GAL, gate array	Any output outside the static and dynamic functional specification	Periodic self-test	H.2.16.6			N/A
NOTE A Stuck-at fault model denotes a fault model representing an open circuit or a non-varying signal level. A DC fault model denotes a stuck-at fault model incorporating short circuit between signal lines.						
[a] For fault/error assessment, some components are divided into their sub-functions. [b] For each sub-function in the table, the Table R.2 measure will cover the software fault/error. [c] Where more than one measure is given for a sub-function, these are alternatives. [d] To be divided as necessary by the manufacturer into sub-functions. [e] Table R.1 is applied according to the requirements of R.1 to R.2.2.9 inclusive.						

S	**ANNEX S (NORMATIVE) BATTERY OPERATED APPLIANCES POWERED BY BATTERIES THAT ARE NON-RECHARGEABLE OR NOT RECHARGED IN THE APPLIANCE**		N/A
	The following modifications to this standard are applicable for battery-operated appliances where the batteries are either non-rechargeable (primary batteries), or		N/A
	rechargeable batteries (secondary batteries) that are not recharged in the appliance		N/A
5.8.1	If the supply terminals for the connection of the battery have no indication of polarity, the more unfavourable polarity is applied		N/A
5.S.101	Appliances intended for use with a battery box are tested with the battery box supplied with the appliance or with the battery box recommended in the instructions		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.S.102	Appliances are tested as motor-operated appliances.		N/A
7.1	Appliances marked with the battery voltage (V) and the polarity of the terminals, unless.....:		N/A
	the polarity is irrelevant		N/A
	Appliances also marked with:		N/A
	– name, trade mark or identification mark of the manufacturer or responsible vendor..... .....:		N/A
	– model or type reference..... .....:		N/A
	– IP number according to degree of protection against ingress of water, other than IPX0... .....:		N/A
	– type reference of battery or batteries.....:		N/A
	If relevant, the positive terminal is indicated by the symbol IEC 60417-5005 and the negative terminal by the symbol IEC 60417-5006		N/A
	If appliances use more than one battery, they are marked to indicate correct polarity connection of the batteries		N/A
7.6	Additional symbols		N/A
7.12	The instructions contain the following, as applicable:		N/A
	– the types of batteries that may be used... .....:		N/A
	– how to remove and insert the batteries		N/A
	– non-rechargeable batteries are not to be recharged		N/A
	– rechargeable batteries are to be removed from the appliance before being charged		N/A
	– different types of batteries or new and used batteries are not to be mixed		N/A
	– batteries are to be inserted with the correct polarity		N/A
	– exhausted batteries are to be removed from the appliance and safely disposed of		N/A
	– if the appliance is to be stored unused for a long period, the batteries are removed		N/A
	– the supply terminals are not to be short-circuited		N/A
11.5	Appliances are supplied with the most unfavourable supply voltage between		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
	– 0,55 and 1,0 times the battery voltage, if the appliance can be used with non-rechargeable batteries		N/A
	– 0,75 and 1,0 times battery voltage, if the appliance is designed for use with rechargeable batteries only		N/A
	The values specified in Table S.101 for the internal resistance per cell of the battery is taken into account		N/A
19.1	The tests are carried out with the battery fully charged unless otherwise specified		N/A
19.13	The battery does not rupture or ignite		N/A
19.S.101	Appliances are supplied with the voltage specified in 11.5. The supply terminals having an indication of polarity are connected to the opposite polarity, unless		N/A
	such a connection is unlikely to occur due to the construction of the appliance		N/A
19.S.102	For appliances with provision for multiple batteries, one or more of the batteries are reversed and the appliance is operated, if reversal of batteries is allowed by the construction		N/A
25.5	The flexible leads or flexible cord used to connect an external battery or battery box in is connected to the appliance by a type X attachment		N/A
25.13	This requirement is not applicable to the flexible leads or flexible cord connecting external batteries or a battery box with an appliance		N/A
25.S.101	Appliances have suitable means for connection of the battery. If the type of battery is marked on the appliance, the means of connection is suitable for this type of battery		N/A
26.5	Terminal devices in an appliance for the connection of the flexible leads or flexible cord connecting an external battery or battery box are so located or shielded that there is no risk of accidental connection between supply terminals		N/A
30.2.3.2	There is no battery in the area of the vertical cylinder used for the consequential needle flame test, unless		N/A
	the battery is shielded by a barrier that meets the needle flame test of Annex E, or		N/A
	that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict
T	**ANNEX T (NORMATIVE)** **UV-C RADIATION EFFECT ON NON-METALLIC MATERIALS**		N/A
	Requirements for non-metallic materials subject to direct or reflected UV-C radiation exposure and whose mechanical and electrical properties are relied upon for compliance with the		N/A
	Does not apply to glass, ceramic and similar materials		N/A
	Tested as specified in ISO 4892-1 and ISO 4892-2, with the following modifications:		N/A
	Modifications to ISO 4892-1:		N/A
5.1.6	The UV-C emitter is a low pressure mercury lamp with a quartz envelope having a continuous spectral irradiance of 10 W/m2 at 254 nm		N/A
	Subclause 5.1.6.1 and Table 1 are not applicable		N/A
5.2.4	The black-panel temperature shall be 63 °C +/- 3 °C		N/A
5.3.1	Humidification of the chamber air is specified in part 2 when necessary		N/A
9	This clause is not applicable		N/A
	Modifications to ISO 4892-2:		N/A
7.1	At least three test specimens are tested		N/A
	Ten samples of internal wiring is tested		N/A
7.2	The specimens are attached to the specimen holders such that they are not subject to any stress		N/A
7.3	Apparatus prepared as specified		N/A
	The test specimens and, if used, the irradiance-measuring instrument are exposed for 1 000 h		N/A
7.4	If used, a radiometer is mounted and calibrated such that it measures the irradiance at the exposed surface of the test specimen		N/A
7.5	Material properties and test methods for parts providing mechanical support or impact resistance as specified in Table T.1		N/A
	Material properties and test method for electrical insulation of internal wiring as specified in Table T.2		N/A
8	This clause is not applicable		N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

10.1	TABLE: Power input deviation				P
Input deviation of/at:	**P rated (W)**	**P measured (W)**	**Δ P**	**Required Δ P**	**Remark**
110 V, 50 Hz	31	30.1	-2.90%	±20%	pass
220 V, 50 Hz	31	30.5	-1.61%		pass
110 V, 60 Hz	31	30.3	-2.26%		pass
220 V, 60 Hz	31	30.7	-0.97%		pass
Supplementary information:					

10.2	TABLE: Current deviation				N/A
Current deviation of/at:	**I rated (A)**	**I measured (A)**	**Δ I**	**Required Δ I**	**Remark**
Supplementary information:					

11.8	TABLE: Heating test		P
	Test voltage (V).....:		—
	Ambient (°C).....:	25.1	—

Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**
Pins of appliance for insertion into socket-outlets	3.4	50
AC inlet	5.1	Cl.30
Handle	3.3	50
Plastic enclosure, outside	10.5	60
Switch knob	4.0	60
Ambient of switch	4.7	65(T85)
PCB near IC	26.6	105(T130)
Test corner	1.3	65
Supplementary information:		

11.8	TABLE: Heating test, resistance method	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Test voltage (V).....:		—
	Ambient, t1 (°C).....:		—
	Ambient, t2 (°C).....:		—

Temperature rise of winding:	**R1 (Ω)**	**R2 (Ω)**	**Δ T (K)**	**Max. Δ T (K)**	**Insulation class**
Supplementary information:					

13.2	**TABLE: Leakage current**		P
	Heating appliances: 1.15 x rated input (W)...:	1.15×220 V	—
	Motor-operated and combined appliances: 1.06 x rated voltage (V).....:		—

Leakage current between:	**I (mA)**	**Max. allowed I (mA)**
L/N to handle / plastic enclosure / switch	0.005 / 0.005	0.75mA peak
Supplementary information:		

13.3	**TABLE: Dielectric strength**	P

Test voltage applied between:	**Test potential applied (V)**	**Breakdown / flashover (Yes/No)**
Live parts to handle / plastic enclosure / switch	1000	No
Supplementary information:		

14	**TABLE: Transient overvoltages**	N/A

IEC 60335-1			
Clause	Requirement + Test	Result - Remark	Verdict

Clearance between:	Cl (mm)	Required Cl (mm)	Rated impulse voltage (V)	Impulse test voltage (V)	Flashover (Yes/No)
Supplementary information:					

16.2	TABLE: Leakage current		P
	Single phase appliances: 1.06 x rated voltage (V).....:	1.06×220 V	—
	Three phase appliances 1.06 x rated voltage divided by √3 (V).....:		—

Leakage current between:	I (mA)	Max. allowed I (mA)
Live parts to handle / plastic enclosure / switch	0.006	0.75mA rms
Supplementary information:		

16.3	TABLE: Dielectric strength		P
Test voltage applied between:		Test potential applied (V)	Breakdown / flashover (Yes/No)
Live parts to handle / plastic enclosure / switch		1250	No
Supplementary information:			

17	TABLE: Overload protection		N/A
Thermocouple locations:		Max. temperature rise measured, Δ T (K)	Max. temperature rise limit, Δ T (K)

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:		

17	TABLE: Overload protection, resistance method		N/A
	Test voltage (V)..... :		—
	Ambient, t1 (°C)..... :		—
	Ambient, t2 (°C)..... :		—

Temperature of winding:	R1 (Ω)	R2 (Ω)	Δ T (K)	T (°C)	Max. T (°C)
Supplementary information:					

19	Abnormal operation conditions		P
Operational characteristics	**YES/NO**	**Operational conditions**	
Are there electronic circuits to control the appliance operation?	No	-	
Are there “off” or “stand-by” position?	No	-	
The unintended operation of the appliance results in dangerous malfunction?	No	-	

Sub-clause	Operating conditions description	Test results description	PEC description	EMP 19.11.4	Software type required	19.11.3 PEC	Final result
19.2	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.3	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.4	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.5	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.6	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.7	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.8	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.9	N.A	N.A	N.A	N.A	N.A	N.A	N.A

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Clause	Requirement + Test	Result - Remark	Verdict

19.10	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.11.2	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.11.4.8	N.A	N.A	N.A	N.A	N.A	N.A	N.A
19.10X	N.A	N.A	N.A	N.A	N.A	N.A	N.A
Supplementary information:							

19.7	**TABLE: Abnormal operation, locked rotor/moving parts**					N/A
	Test voltage (V).....:					—
	Ambient, t1 (°C).....:					—
	Ambient, t2 (°C).....:					—
Temperature of winding:		**R1 (Ω)**	**R2 (Ω)**	**Δ T (K)**	**T (°C)**	**Max. T (°C)**
Supplementary information:						

19.9	**TABLE: Abnormal operation, running overload**					N/A
	Test voltage (V).....:					—
	Ambient, t1 (°C).....:					—
	Ambient, t2 (°C).....:					—
Temperature of winding:		**R1 (Ω)**	**R2 (Ω)**	**Δ T (K)**	**T (°C)**	**Max. T (°C)**
Supplementary information:						

19.13	**TABLE: Abnormal operation, temperature rises**	N/A
Thermocouple locations:	**Max. temperature rise measured, Δ T (K)**	**Max. temperature rise limit, Δ T (K)**

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:		

21.1	TABLE: Impact resistance			P
Impacts per surface	**Surface tested**	**Impact energy (Nm)**	**Comments**	
Three times	Enclosure	0.5	No damage	
Supplementary information:				

24.1	TABLE: Critical components information				P
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
Appliance inlet	Dong Il Technology Ltd.	DAC-11	AC 250 V, 10 A	DIN EN 60320-1	Tested with appliance
Internal wire	DONGGUAN CHUANTAI WIRE PRODUCTS CO LTD	1007	80 deg C, 300 Vac	UL 758	UL E315628
Plastic enclosure	Sabic Innovative Plastics Us	V3504	V-0, 120°C, Min. 2.2mm	UL 94, UL 746	UL E45587
PCB	Goldenmax International Technology Co., Ltd.	FR-4	V-0, 130°C, 1.0mm	UL 94, UL 746	UL E224772
Supplementary information: [1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

28.1	TABLE: Threaded part torque test		N/A
Threaded part identification:	**Diameter of thread (mm)**	**Column number (I, II, or III)**	**Applied torque (Nm)**

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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:			

29.1	TABLE: Clearances					P
	Overvoltage category..... .....:					—
		Type of insulation:				
Rated impulse voltage (V):	Min. cl (mm)	Basic (mm)	Supplementary (mm)	Reinforced (mm)	Functional (mm)	Verdict / Remark
330	0,2* / 0,5 / 0,8**	-	-	-	-	N/A
500	0,2* / 0,5 / 0,8**	-	-	-	-	N/A
800	0,2* / 0,5 / 0,8**	-	-	-	-	N/A
1 500	0,5 / 0,8** / 1,0***	-	-	-	-	N/A
2 500	**1,5** / 2,0***	>1.5	-	-	-	N/A
4 000	3,0 / 3,5***	-	-	-	-	N/A
6 000	5,5 / 6,0***	-	-	-	-	N/A
8 000	8,0 / 8,5***	-	-	-	-	N/A
10 000	11,0 / 11,5***	-	-	-	-	N/A

Supplementary information:

*) For tracks on printed circuit boards if pollution degree 1 and 2
**) For pollution degree 3
***) If the construction is affected by wear, distortion, movement of the parts or during assembly

29.2	TABLE: Creepage distances, basic, supplementary and reinforced insulation										P
Working voltage (V):	Creepage distance (mm) Pollution degree										
	1	2			3			Type of insulation			
		Material group			Material group						
		I	II	IIIa/IIIb	I	II	IIIa/IIIb*	B**	S**	R**	Verdict
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9		—	—	N/A
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9	—		—	N/A
≤50	0,36	1,2	1,7	2,4	3,0	3,4	3,8	—	—		N/A
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4		—	—	N/A

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Clause	Requirement + Test							Result - Remark			Verdict
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4	—		—	N/A
125	0,56	1,5	2,1	3,0	3,8	4,2	4,8	—	—		N/A
250	0,56	1,25	1,8	2,5	3,2	3,6	4,0	>2.5	—	—	N/A
250	0,56	1,25	1,8	2,5	3,2	3,6	4,0	—		—	N/A
250	1,12	2,5	3,6	5,0	6,4	7,2	8,0	—	—		N/A
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3		—	—	N/A
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	—		—	N/A
400	2,0	4,0	5,6	8,0	10,0	11,2	12,6	—	—		N/A
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0		—	—	N/A
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	—		—	N/A
500	2,6	5,0	7,2	10,0	12,6	14,2	16,0	—	—		N/A
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0		—	—	N/A
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	—		—	N/A
>630 and ≤800	3,6	6,4	9,0	12,6	16,0	18,0	20,0	—	—		N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5		—	—	N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	—		—	N/A
>800 and ≤1000	4,8	8,0	11,2	16,0	20,0	22,0	25,0	—	—		N/A
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0		—	—	N/A
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	—		—	N/A
>1000 and ≤1250	6,4	10,0	14,2	20,0	25,0	28,0	32,0	—	—		N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0		—	—	N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	—		—	N/A
>1250 and ≤1600	8,4	12,6	18,0	25,0	32,0	36,0	40,0	—	—		N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0		—	—	N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	—		—	N/A
>1600 and ≤2000	11,2	16,0	22,0	32,0	40,0	44,0	50,0	—	—		N/A
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0		—	—	N/A
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	—		—	N/A
>2000 and ≤2500	15,0	20,0	28,0	40,0	50,0	56,0	64,0	—	—		N/A
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0		—	—	N/A
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	—		—	N/A

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>2500 and ≤3200	20,0	25,0	36,0	50,0	64,0	72,0	80,0	—	—		N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0		—	—	N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	—		—	N/A
>3200 and ≤4000	25,0	32,0	44,0	64,0	80,0	90,0	100,0	—	—		N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0		—	—	N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	—		—	N/A
>4000 and ≤5000	32,0	40,0	56,0	80,0	100,0	112,0	126,0	—	—		N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0		—	—	N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	—		—	N/A
>5000 and ≤6300	40,0	50,0	72,0	100,0	126,0	142,0	160,0	—	—		N/A
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0		—	—	N/A
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	—		—	N/A
>6300 and ≤8000	50,0	64,0	90,0	126,0	160,0	180,0	200,0	—	—		N/A
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0		—	—	N/A
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	—		—	N/A
>8000 and ≤10000	64,0	80,0	112,0	160,0	200,0	220,0	250,0	—	—		N/A
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0		—	—	N/A
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	—		—	N/A
>10000 and ≤12500	80,0	100,0	142,0	200,0	250,0	280,0	320,0	—	—		N/A

Supplementary information:

*) Material group IIIb is allowed if the working voltage does not exceed 50 V

**) B = Basic insulation, S = Supplementary insulation, R = Reinforced insulation

29.2	TABLE: Creepage distances, functional insulation							N/A
Working voltage (V):	**Creepage distance (mm) Pollution degree**							
	1	**2**			**3**			
		Material group			**Material group**			
		I	**II**	**IIIa/IIIb**	**I**	**II**	**IIIa/IIIb***	**Verdict / Remark**
≤10	0,08	0,4	0,4	0,4	1,0	1,0	1,0	N/A
50	0,16	0,56	0,8	1,1	1,4	1,6	1,8	N/A

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125	0,25	0,71	1,0	1,4	1,8	2,0	2,2	N/A
250	0,42	1,0	1,4	2,0	2,5	2,8	3,2	N/A
400	0,75	1,6	2,2	3,2	4,0	4,5	5,0	N/A
500	1,0	2,0	2,8	4,0	5,0	5,6	6,3	N/A
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	N/A
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	N/A
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	N/A
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	N/A
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	N/A
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	N/A
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	N/A
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	N/A
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	N/A
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	N/A
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	N/A
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	N/A
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	N/A
Supplementary information: *) Material group IIIb is allowed if the working voltage does not exceed 50 V								

30.1	TABLE: Ball Pressure Test of Thermoplastics		P
Allowed impression diameter (mm) .....:			—
Object/ Part No./ Material	**Manufacturer/ trademark**	**Test temperature (°C)**	**Impression diameter (mm)**
Plastic enclosure	See table 24.1	75	0.9
PCB	See table 24.1	75	1.0
Supplementary information:			

30.2	TABLE: Resistance to heat and fire - Glow wire tests					P
Object/ Part No./ Material	**Manufacturer / trademark**	**Glow wire test (GWT); (°C)**				**Verdict**
		550	**650**	**750**	**850**	

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Clause	Requirement + Test	Result - Remark	Verdict

			te	**ti**	**te**	**ti**		
Plastic enclosure	See table 24.1	X No flame	--	--	--	--	--	Pass

Object/ Part No./ Material	**Manufacturer / trademark**	**Glow-wire flammability index (GWFI), °C**				**GW ignition temp. (GWIT), °C**		**Verdict**
		550	**650**	**750**	**850**	**675**	**775**	

The test specimen passed the glow wire test (GWT) with no ignition [(t_e – t_i) ≤ 2s] (Yes/No):	Yes
If no, then surrounding parts passed the needle-flame test of annex E (Yes/No)..... :	No
The test specimen passed the test by virtue of most of the flaming material being withdrawn with the glow-wire (Yes/No)?..... :	Yes
Ignition of the specified layer placed underneath the test specimen (Yes/No)..... :	No
Supplementary information: - 550 °C GWT not relevant (or applicable) to parts of material classified at least HB40 or if relevant HBF - The GWIT pre-selection option, the 850 °C GWFI pre-selection option, and the 850 °C GWT are not relevant (or applicable) for attended appliances	

30.2/30.2.4	**TABLE: Needle- flame test (NFT)**				**N/A**
Object/ Part No./ Material	**Manufacturer/ trademark**	**Duration of application of test flame (ta); (s)**	**Ignition of specified layer Yes/No**	**Duration of burning (tb) (s)**	**Verdict**

Supplementary information:
- NFT not relevant (or applicable) for Parts of material classified as V-0 or V-1
- NFT not relevant (or applicable) for Base material of PCBs classified as V-0 or if relevant VTM-0

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Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT UL 60335-1
US DIFFERENCES AND NATIONAL DIFFERENCES

Household and similar electrical appliances – Safety –
Part 1: GENERAL REQUIREMENTS

Differences according to:	UL 60335-1, Edition 6
Attachment Form No.:	UL_IEC 60335_1X
Attachment Originator:	Nemko AS
Master Attachment:	2013-02

5	**General conditions for the tests**		-
5.2DV	DE Modification to replace last sentence of first paragraph to the following: The test of 22.3 and 22.55DV is carried out on a new appliance.		P
6	**Classification**		-
6.1DV	DR Modification to add the following: CLASS 0I appliances are not allowed.		P
7	Marking and instructions		-
7.1DV.1	D2 Modification to add a paragraph after the seventh dashed item of Clause 7.1: Ingress protection markings in addition to the IP ratings are acceptable. If marked, the appliance shall also comply with the referenced standards of Annex DVA (Boxes, Conduit and Fittings). Additional markings, where used, shall be as specified in the applicable Part 2.		P
7.1DV.2	DR Modification to add the following after the compliance statement of Clause 7.1: If the temperature rise of the insulation of the fixed wiring supplying an appliance for permanent connection to the supply mains exceeds the temperature rise specified in Table 3 during the test of Clause 11, the equipment shall be marked with the substance of the following: [2] Use supply wires suitable for ____ °C[2]		N/A
7.1DV.3	DR Modification to add the following (Canada Only): In Canada, warnings shall be written in English and		P

Attachment No.1 IEC60335_1X - ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
	French.		
7.8DV	DR Modification to revise first dashed item as follows: – terminals used for type X attachment, intended exclusively for the neutral conductor shall be indicated by the letter N;		P
7.12.3DV	DR Deletion: Delete Clause 7.12.3.		P
7.13DV	DR Modification to add the following (Canada Only): In Canada the French translation of the warning of Clause 7.2 is as follows: OCTOBER 31, 2016 CAN/CSA-C22.2 NO. 60335-1:16 ¨ UL 60335-1 45 Avertissement: Avant d'accéder aux bornes de raccordement, tous les circuits d'alimentation doivent être déconnectés.		N/A
7.17DV	DR Addition: Appliances requiring the usage of time delay overcurrent PROTECTIVE DEVICES in accordance with 9DV.2 shall be so marked to indicate the use of time delay fuses only.		N/A
7.18DV	DR Addition: Appliances equipped with output terminals supplied from a LIMITED POWER SOURCE and intended for connection to a fixed wiring method shall be marked to indicate Class 2 wiring.		N/A
8	**Protection against access to** LIVE PARTS		-
8.1.1DV.1	D2 Modification to replace the second paragraph with the following: Lamps located behind a DETACHABLE COVER are not removed, provided that a screwshell type lampholder, if any, is connected to a circuit with a potential less than 150 V-to-ground and the screwshell is connected to the grounded (neutral) conductor, and the appliance can be isolated from the supply mains by means of a plug or an all-pole switch. However, during insertion or removal of lamps that are located behind a detachable cover, protection against contact with LIVE PARTS of the lamp cap shall be ensured.		N/A
8.1.1DV.2	D1 Modification to add the following after the third paragraph:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	In addition, the articulated probe of Figure 13DV shall be applied as described for test probe B (IEC 61032) when the product is: a) A hand-held product, or a hand-held part of a product; or b) Accessible to children while the product is operating.		
8.1.4DV	D2 Modification to replace second bullet in first paragraph to read as follows: • for d.c., the voltage does not exceed 30 V;		
9	**Starting of MOTOR-OPERATED APPLIANCES**		-
9DV	DR Addition of 9DV.1 – 9DV.4:		-
9DV.1	An appliance shall start and operate on a circuit protected by a non-time delay fuse having a current rating corresponding to the supply mains to which the appliance would normally be connected.		
9DV.2	The use of time delay fuses is acceptable for STATIONARY APPLIANCES marked as indicated in Clause 7.17DV.		
9DV.3	Compliance is checked by the test specified in 9DV.4		
9DV.4	The appliance shall be capable of starting 3 times at the conditions of Clause 11 at the RATED VOLTAGE. The appliance shall start under conditions representing the beginning of NORMAL OPERATION and the beginning of the normal operating cycle. The performance is unacceptable if the fuse opens or an overload protector provided as part of the appliance operates.		
11	**Heating**		-
11.1DV	DC Modification to add to the compliance statement: In addition, the polymeric materials that enclose or support LIVE PARTS shall not exceed their relative thermal index determined in accordance with the standards in Annex DVA.		N/A
	Table 3DV DC Modification to revise Table 3: Revise Table 3 as follows: a) Change temperature rise for ²Points where the insulation of the wires can come into contact with parts of the terminal block or compartment for fixed wiring, for a STATIONARY APPLIANCE not		P

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Clause	Requirement + Test	Result - Remark	Verdict
	provided with a SUPPLY CORD² from 50 K to 35 K. b) Change temperature rise for ²Material used as insulation, other than that specified for wires and windingse: impregnated or varnished textile, paper or press-board² from 70 K to 65 K. c) Replace the requirement for ²– silicone rubber² with the following: d) Change temperature rise for ²– polytetrafluoroethylene² from 265 K to 180 K. e) Add a reference to footnote o to ² Parts in contact with oil having a flash-point of t °C² and add the following footnote: “o The maximum temperature rise of parts in contact with oil should be considered in the applicable part 2.² f) Add following to Table 3 preceding the Notes section. g) Replace footnote c with the following: “c This limit may be exceeded if the marking specified in 7.1DV.1 is supplied.” h) Delete footnote f. (US only)		
13	**Leakage current and electric strength at operating temperature**		-
13.1DV	D1 Modification to add the following note: NOTE At operating temperature includes warm-up and cool-down periods.		N/A
13.2DV.1	D1 Modification to replace all dashed items of the sixth paragraph with the following dashed items:		N/A
13.2DV.2	D2 Modification to add the following 9th paragraph: For a CLASS 0 or CLASS I cord connected appliance employing a sheathed type heating element, the leakage current may exceed 0,7 mA peak or 0,75 mA, as applicable, but shall not exceed 2,5 mA during a period of 5 minutes beginning when the 0,7 mA peak or 0,75 mA value was exceeded. At the end of the 5 minute period, the leakage current shall not exceed 0,7 mA peak or 0,75 mA, as applicable.		N/A
13.2DV.3	D1 Modification to add the following 10th paragraph: For HEATING APPLIANCES incorporating a user adjustable heater control, the control shall be additionally adjusted, if necessary, so that it		P

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Clause	Requirement + Test	Result - Remark	Verdict
	interrupts operation while the final measurements are taken.		
13.3DV.1	D1 Modification to add the following Clause: For the test of 13.3, varistors connected from live to accessible metal parts of CLASS I appliances may be disconnected.		N/A
	Table 4DV D1 Modification to revise Table 4: Revise Table 4 as follows: a) Replace footnote a with the following: “a Appliances rated more than 250 V are tested at 2 U + 1000 V.” b) Add superscript ²c² after ²BASIC INSULATION² and add footnote c: “c For wet and moist applications, special test voltages could be considered in the applicable part 2.”		
16	**Leakage current and electric strength**		-
16.2DV.1	D1 Modification to replace all dashed items of the fourth paragraph with the following dashed items:		P
16.2DV.2	D2 Modification to replace the fifth paragraph and dashed items starting with “The values specified above are doubled” with the following: Higher leakage current values, not exceeding 3,5 mA, may be allowed by applicable part 2 standards for cord connected, STATIONARY CLASS I APPLIANCES employing radio interference filters.		P
16.3DV.1	D1 Modification to add the following Clause: For the test of 16.3, varistors connected from live to accessible metal parts of CLASS I appliances may be disconnected.		P
Table 7DV	D1 Modification to revise Table 7: Revise Table 7 as follows: a) Replace footnote a with the following: “a Appliances rated more than 250 V are tested at 2 U + 1000 V.” b) Add superscript ²d² after ²BASIC INSULATION² and add footnote d: “d For wet and moist applications, special test voltages could be considered in the applicable part 2.”		P
19	**Abnormal operation**		-
19.11.2DV	D2 Modification to add the following note: NOTE 3 For the test of 19.11.2(d), the terminals of a varistor complying with the relevant standard for		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	surge suppressors are not short circuited.		
19.11.4DV	D2 Modification to replace the text of the third paragraph with the following: The tests are carried out with surge PROTECTIVE DEVICES disconnected, unless they incorporate spark gaps or are varistors complying with the relevant standard for surge suppressors.		N/A
19.12DV	DC Modification to add the following to note 3: See Annex DVA (Fuses – Branch Circuit and Supplementary) for additional performance requirements applicable to those fuses. This applies only to fuses provided as an integral part of the appliance.		N/A
20	**Stability and mechanical hazards**		-
20.2DV	D1 Modification to add the following after the fourth paragraph: The articulated probe of Figure 13DV shall be applied with a force not exceeding 1 N when the product is: a) A hand-held product, or a hand-held part of a product; or b) Accessible to children while the product is operating. Through openings, the test probe is applied to any depth that the probe will permit and is rotated or angled before, during and after insertion to any position.		N/A
21	**Mechanical strength**		-
21.1DV	D2 Modification to replace the first, second and third paragraphs of 21.1 with 21.1DV.1 – 21.1DV.4: 21.1DV.1 Appliances shall have adequate mechanical strength and be constructed to withstand thermal conditioning and such rough handling that may be expected in normal use. 21.1DV.2 Compliance is checked by applying blows to the appliance in accordance with test Ehb of IEC 60068-2-75, the spring hammer test or the ball impact test. 21.1DV.3 For both, the spring hammer test and ball impact test, the appliance is rigidly supported, and three blows having impact energy of 2,0 J are applied to every point of the enclosure that is likely to be weak.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	21.1DV.4 For the ball impact test, force is applied by a solid, smooth, steel sphere 50 ± 1mm in diameter, weighing approximately 0,53 kg. a) For top surfaces, the steel sphere shall be allowed to fall freely from rest through the distance required to cause it to strike the enclosure when the sphere has the specified energy. b) For surfaces other than the top, the steel sphere shall be suspended by a fine wire and allowed to fall as a pendulum through the distance required to cause it to strike the surface with the specified impact, and the enclosure shall be so placed that the surface to be tested is vertical and in the same vertical plane as the point of support of the pendulum.		
22	**Construction**		-
22.2DV	D2 Modification to add the following: Disconnection of the neutral is not required for all single-phase STATIONARY APPLIANCES.		N/A
22.3DV	DC Modification to replace the 2nd and 3rd paragraph, and the Note, with the following: Compliance is checked in accordance with the tipping moment requirements of Annex DVC.		N/A
22.11DV	DC Modification to add the following (US only): Adhesives securing NON-DETACHABLE PARTS shall additionally have adequate bonding properties. Compliance is checked by the application of the Structural Adhesive standard of Annex DVA.		N/A
22.12DV	D1 Modification to add the following sentence to the note: Friction fits are not considered reliable with respect to protection against a hazard.		N/A
22.33DV	D2 Modification to replace first sentence with the following: Conductive liquids that are or could possibly become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts shall not be in direct contact with LIVE PARTS.		N/A
22.35DV	D2 Modification to add the following note: NOTE Accessible metal parts separated from LIVE PARTS by earthed metal parts are not regarded as likely to become live in the event of an insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	fault.		
22.39DV	D2 Modification to add the following: The screwshell of a mains-connected Edison-base lampholder shall be reliably connected to the identified (neutral) conductor.		N/A
22.40DV	D2 Modification to add the following: A cord-connected product with a motor having a rated output of more rated than 249 W (1/3hp) shall be provided with a manually operated motor-control switch.		P
22.42DV	D2 Replace the first paragraph with the following: PROTECTIVE IMPEDANCE shall consist of at least two separate components, except that a single Y1 capacitor or a single resistor may be used. If any one of the components is short-circuited or open-circuited, the values specified in 8.1.4 shall not be exceeded; however, capacitors and resistors that individually comply with the requirements specified below need not be short-circuited.		N/A
22.52DV	D1 Modification to replace 22.52 with 22.52DV.1 – 22.52DV.2: 22.52DV.1 Socket-outlets on appliances accessible to the user shall be in accordance with the socket-outlet standards of Annex DVA. 22.52DV.2 Compliance is checked by inspection.		N/A
22.55DV	D1 Addition (Canada only): 22.55DV.1 Adhesives required for compliance with Clause 4 of this standard shall be durable. 22.55DV.2 Compliance is checked by the test of Annex DVD.		N/A
22.56DV	D1 Addition (Canada only): Unless connected in series with gas discharge tubes, varistors shall not be connected between LIVE PARTS and accessible metal parts of appliances that have 1-15P, 5-15P, 1-20P, or 5-20P plug configurations. This does not apply to permanently connected appliances or appliances with other plug configurations.		N/A
24	**Components**		-
24.1DV	DC Modification to replace 24.1 with 24.1DV.1 – 24.1DV.11: 24.1DV.1 Components shall comply with the safety requirements specified in the relevant standards of		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Annex DVA as far as they reasonably apply. 24.1DV.2 Compliance with the standard for the relevant component does not necessarily ensure compliance with the requirements of this standard. 24.1DV.3 Motors are not required to comply with the standards specified in Annex DVA. They may be tested as part of the appliance according to this standard. 24.1DV.4 Unless otherwise specified, the requirements of Clause 29 of this standard apply between LIVE PARTS of components and ACCESSIBLE PARTS of the appliance. Unless otherwise specified, components may comply with the requirements for CLEARANCES and CREEPAGE DISTANCES for FUNCTIONAL INSULATION as specified in the relevant component standard. 24.1DV.5 Unless otherwise specified, the requirements of 30.2 of this standard apply to parts of non-metallic material in components, including parts of non-metallic material supporting current-carrying connections inside components. 24.1DV.6 Components that have not been previously tested and shown to comply with the standard for the relevant component shall be tested according to the requirements of 30.2 of this standard. 24.1DV.7 Components that have been previously tested and shown to comply with the resistance to fire requirements in the standard for the relevant component need not be retested, provided that a) the severity specified in the component standard is not less than the severity specified in 30.2 of this standard; and b) unless the pre-selection alternatives in 30.2 are used, the test report for the component states the values of te and ti, as required by IEC 60695-2-11. 24.1DV.8 If the two conditions specified in 24.1DV.7 are not satisfied, the component shall be tested as part of the appliance. NOTE There are two levels of severity specified for appliances for which 30.2.3 is applicable. 24.1DV.9 Unless components have been previously tested and found to comply with the relevant standard of Annex DVA for the number of cycles specified, they shall be tested in accordance with 24.1.1 to 24.1.9. For components mentioned in		

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Clause	Requirement + Test	Result - Remark	Verdict
	24.1.1 to 24.1.9, no additional tests specified in the relevant standard for the component are necessary other than those specified in 24.1.1 to 24.1.9. 24.1DV.10 Components that have not been separately tested and found to comply with the relevant standard of Annex DVA, and components that are not marked or not used in accordance with their marking, shall be tested in accordance with the conditions occurring in the appliance, the number of samples being that required by the relevant standard. NOTE For automatic controls, marking includes documentation and declaration as specified in Clause 7 of IEC 60730-1 24.1DV.11 When a standard does not exist for a component or where one exists but is not specified in Annex DVA, the appliance standard requirements apply and there are no additional tests specified.		
24.1.2DV	DC Modification to add the following: A transformer relied upon to create a LIMITED POWER SOURCE shall meet the requirements of Annex DVA.		N/A
24.1.4DV	DC Modification to replace the second paragraph and all of the dashed items with the following: The number of cycles of operation declared for 6.10 and 6.11 of IEC 60730-1 shall not be less than 2000 for automatic self-resetting thermal motor protectors on motors rated greater than 1 Hp, 300 for all other automatic self-resetting thermal motor protectors, and 6000 for all other automatic controls.		N/A
24.1.5DV	DC Deletion: Delete Clause 24.1.5		N/A
24.1.6DV	DC Deletion: Delete Clause 24.1.6		N/A
24.1.7DV	DC Modification to replace 24.1.7 with the following: If the REMOTE OPERATION of the appliance is via a telecommunication network, the relevant standard for the telecommunications network interface circuitry in the appliance is as specified in Annex DVA.		N/A
24.1.8DV	DC Modification to replace 24.1.8 with the following: THERMAL LINKS that do not comply with the applicable standard of Annex DVA are considered to		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	be an INTENTIONALLY WEAK PART for the purposes of Clause 19.		
24.2DV	DC Modification to add a Note after the first dashed item: NOTE GFCI PROTECTIVE DEVICES are not considered switches or automatic controls. When used in a flexible cord, these are called portable GFCI's.		N/A
24.3DV	DC Modification to replace Note 1 with the following: NOTE 1 Full disconnection is contact separation of a pole to ensure the equivalent of BASIC INSULATION, in accordance with the switch standards of Annex DVA, between the supply mains and those parts that are intended to be disconnected.		N/A
24.4DV	DC Modification to replace 24.4 with the following: Plugs and socket-outlets and those for EXTRA-LOW VOLTAGE circuits used as terminal devices for heating elements shall not be interchangeable with general use plugs and socket-outlets or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1.		N/A
24.7DV	DC Deletion: Delete Clause 24.7		N/A
24.8DV	DC Modification to replace the first dashed item with the following : – the capacitors are of class of safety protection S2 or S3 according to IEC 60252-1 or are of class of safety protection according to relevant standards of Annex DVA;		N/A
25	**Supply connection and external flexible cords**		-
25.1DV.1	DR Modification to add 25.1DV.1.1– 25.1DV.1.2: 25.1DV.1.1 The SUPPLY CORD of appliances incorporating a screwshell type lampholder, general use socket outlet, or single-pole switch used as the 22.2 disconnect device shall be fitted with a polarized attachment plug. 25.1DV.1.2 The SUPPLY CORD of appliances with a polarized attachment plug shall have its identified neutral conductor connected to the grounded (neutral) contact of the plug. 25.1DV.2 DR Modification to add the following note: NOTE A grounding-type attachment plug fulfils the		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	requirement for a polarized attachment plug.		
25.2DV	D1 Modification to add the following: Multiple supply mains connections may be permitted only as specified in part 2 standards.		N/A
25.3DV	D2 Modification to replace the third dashed item with the following: – A set of SUPPLY LEADS accommodated in a suitable compartment. Leads shall be: • a minimum 152 mm long; • no more than two standard AWG wire sizes smaller than the intended supply conductor; and • completely insulated if not every installation would require use of the lead.		N/A
25.7DV	DC Modification to replace 25.7 with 25.7DV.1 – 25.7DV.6: 25.7DV.1 SUPPLY CORDS for appliances other than CLASS III APPLIANCES shall be one of the following types: a) flexible cords and cable of the types indicated in the standards of Annex DVA; or b) cord sets and power SUPPLY CORDS of the types indicated in the standards of Annex DVA. 25.7DV.2 Unless otherwise specified in a part 2 standard, a heater cord is required where the temperature measured during the test of Clause 11 exceeds 121 °C on any surface that the cord is likely to touch when the appliance is used as intended. 25.7DV.3 SUPPLY CORDS for CLASS III APPLIANCES shall be adequately insulated. 25.7DV.4 Compliance is checked by inspection, by measurement, and for CLASS III APPLIANCES that contain LIVE PARTS, by the test of 25.7DV.5. 25.7DV.5 A voltage of 500 V shall be applied for 2 min between the conductor and metal foil wrapped around the insulation, the insulation being at the temperature measured during the test of Clause 11. There shall be no breakdown during this test. 25.7DV.6 An appliance having an appliance inlet for connection to the mains shall be provided with a detachable power SUPPLY CORD (cord set).		N/A
25.8DV	DR Modification to replace 25.8, including Table 11, with 25.8DV.1 – 25.8DV.2:		P

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Clause	Requirement + Test	Result - Remark	Verdict
	25.8DV.1 Ampacities of SUPPLY CORDS and attachment plugs shall not be less than the current rating of the appliance and shall be suitable for the application in accordance with national electrical installation requirements. 25.8DV.2 Compliance is checked by inspection.		P
25.10DV	DR Modification to replace 25.10 with 25.10DV.1 – 25.10DV.3: 25.10DV.1 The earthing conductor of the SUPPLY CORD of CLASS I APPLIANCES shall have green/yellow or solid green insulation and be connected to the earthing terminal of the appliance, and for appliances not intended for permanent connection to the fixed wiring, to the earthing contact of the plug. 25.10DV.2 The colour of the neutral conductor of the SUPPLY CORD, if any, shall be identified according to the national electrical codes. 25.10DV.3 Compliance is checked by inspection.		P
25.22DV	DC Modification to replace the first dashed item with the following: – be located or enclosed so that LIVE PARTS are not accessible during insertion or removal of the connector. This requirement is not applicable to appliance inlets complying with the appliance inlet standards listed in Annex DVA.		N/A
25.25DV	DC Modification to replace 25.25 with 25.25DV.1 – 25.25DV.2: 25.25DV.1 The dimensions of pins of appliances that are inserted into socket-outlets shall be compatible with the dimensions of the relevant socket-outlet. Dimensions of the pins and engagement face are to be in accordance with the dimensions of the relevant plug /socket outlet standards of Annex DVA. 25.25DV.2 Compliance is checked by measurement.		N/A
26	**Terminals for external conductors**		-
26.5DV	DR Modification to replace the third paragraph of 26.5 with the following: A 8 mm length of insulation is removed from the end of a flexible conductor complying with 25.8DV. One wire of the stranded conductor is left free and the other wires are fully inserted and clamped in the terminal. The free wire is bent, without tearing the		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	insulation back, in every possible direction but without making sharp bends around barriers.		
26.6DV	DR Modification: Replace the wording ²shown in Table 13² in the first paragraph by ²in accordance with the national electrical codes². Table 13DV DR Deletion: Delete Table 13.		N/A
27	**Provision for earthing**		-
27.2DV	D1 Modification to add 27.2DV.1 – 27.2DV.2: 27.2DV.1 If a fastener is intended to be used to secure a bonding conductor, it shall only be used for that purpose unless it is clear that it is unlikely to be removed or replaced during servicing. 27.2DV.2 A single binding post may be used to secure both bonding conductors and the earthing conductor, providing that the nut securing the earthing conductor is not relied on to secure the bonding conductors.		N/A
27.5DV.1	D1 Modification to replace the 5th and 6th paragraph with 27.5DV.1.1 – 27.5DV.1.4 and Table 27DV.1: 27.5DV.1.1 A current derived from a source having a no-load voltage not exceeding 12 V (a.c. or d.c.) and equal at least 2,0 times the rating of the earthed branch circuit, shall be passed between the earthing terminal or earthing contact and each of the ACCESSIBLE METAL PARTS in turn. NOTE For the purpose of this requirement, the minimum rating of the branch circuit is 20 A. 27.5DV.1.2 The voltage drop between the earthing terminal of the appliance or the earthing contact of the appliance inlet and the ACCESSIBLE METAL PART shall be measured and shall not exceed 4 volts. 27.5DV.1.3 The resistance of the PROTECTIVE EARTHING CONDUCTOR is not included in the measurement. However, if the PROTECTIVE EARTHING CONDUCTOR is supplied with the equipment, it may be included in the test circuit, but the measurement of the voltage drop shall be made only from the main protective earthing terminal to the part required to be earthed. 27.5DV.1.4 The resistance calculated from the current of this voltage drop shall not exceed 0,1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	ohm. The test duration is specified in Table 27DV.1.		
27.5DV.2	D1 Modification: Delete the Note at the end of 27.5.		N/A
27.6DV	D2 Modification to replace 27.6 with 27.6DV.1 – 27.6DV.2: 27.6DV.1 The printed conductors of printed circuit boards shall not be used to provide earthing continuity in HAND-HELD APPLIANCES. They may be used to provide earthing continuity in other appliances provided that they comply with 27.5 and 27.7DV.1.4 to 27.7DV.1.7. 27.6DV.2 Compliance is checked by inspection and by the relevant tests.		N/A
27.7DV	D1 Addition of 27.7DV.1 – 27.7DV.1.8: 27.7DV.1 Size of protective conductors 27.7DV.1.1 PROTECTIVE EARTHING CONDUCTORS shall at least be of the same size as supply conductors and shall comply with the minimum conductor sizes of column A of Table 27DV.2. 27.7DV.1.2 Compliance is checked by inspection and measurement. 27.7DV.1.3 PROTECTIVE BONDING CONDUCTORS shall comply with the following: a) Shall pass the resistance test of 27.5;and b) Shall be no smaller than the minimum conductor sizes in column B of Table 27DV.2; or for components only, be no smaller than the conductors that supply power to the component. 27.7DV.1.4 If the PROTECTIVE BONDING CONDUCTOR is smaller than the conductor supplying power to the component, or smaller than the conductor size in column B of Table 27DV.2, or a printed conductor on a printed circuit board, the protective bonding path shall demonstrate the ability to withstand a limited short circuit. 27.7DV.1.5 Compliance is determined by conducting the limited short circuit test specified in 27.7DV.1.6 and 27.7DV.1.7. 27.7DV.1.6 The protective earthing path shall be connected to the supply circuit having a capacity in accordance with Table 27DV.3. The capacity shall be determined without the protective earthing path in the circuit. The supply voltage shall be the nominal		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	voltage of the a.c. mains supply. The specified over-current PROTECTIVE DEVICE rated no less than specified in 27.7DV.1.8 shall be connected in series with the protective earthing path. 27.7DV.1.7 During the test, the protective earthing path shall not open, and there shall be no damage to any insulation, the failure of which would result in contact between the earth path and a LIVE PART. The integrity of the insulation shall be checked by the electric strength test of 16.1 by applying the test between LIVE PART and earthed parts. 27.7DV.1.8 The current rating of the overcurrent PROTECTIVE DEVICE shall be the smallest of the following: a) The current rating of the attachment plug but not less than 20 A; b) The rating of an overcurrent PROTECTIVE DEVICE which is specified by the manufacturer for installation in the field to protect the equipment; or		
28	**Screws and connections**		-
28.2DV	D1 Modification to replace 28.2 with 28.2DV.1 – 28.2DV.2: 28.2DV.1 Electrical connections and connections providing earthing continuity shall be constructed so that contact pressure is not transmitted through non-ceramic insulating material that is liable to shrink or to distort, unless there is sufficient resiliency in the metallic parts to compensate for any possible shrinkage or distortion of the insulating material. This requirement does not apply to electrical connections in circuits supplied by a LIMITED POWER SOURCE. 28.2DV.2 Compliance is checked by inspection.		N/A
28.5DV	D1 Addition of 28.5DV.1 – 28.5DV.4 and Table 28DV.1: 28.5DV.1 Pillar, stud, or screw type protective earthing and protective bonding terminals shall comply with the minimum size requirements of Table 28DV.1. 28.5DV.2 Protective bonding terminals which do not comply with Table 28DV.1 are considered acceptable if they meet the requirements of 27.7DV.1.5. 28.5DV.3 The main protective earthing terminal for permanently connected equipment shall be provided with factory installed studs, screws, or bolts,		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	together with the necessary hardware, if requiring a PROTECTIVE EARTHING CONDUCTOR larger than 10 AWG. 28.5DV.4 Compliance is checked by inspection and measurement.		
29	**CLEARANCES, CREEPAGE DISTANCES and solid insulation**		-
	Table 15DV D1 Modification to revise Table 15: Add a 4th row with the following values: “>300 and ⩽480, – , 4 000, –” Table 16DV D1 Modification to revise Table 16: Revise Table 16 as follows: a) Replace the fourth line with the following: “1500, 1,2d, e”. b) Replace the sixth line with the following: “4 000, 3,5”. c) Add footnote e: “e The CLEARANCES at terminals for the connection of field wiring are increased to 6,4 mm for RATED IMPULSE VOLTAGE of 1 500 V and 9,5 mm for RATED IMPULSE VOLTAGES of 2 500 and 4 000 V.”		P
	Table 17DV D1 Modification to add superscript ²b² to title of Table 17 and add the following footnote: “b The CREEPAGE DISTANCES at terminals for the connection of field wiring are increased to 9,5 mm for WORKING VOLTAGES ⩽ 250 volts, and 12,7 mm for voltages >250 and £ 600 volts.”		P
30	**Resistance to heat and fire**		-
30.1DV	D2 Modification to add 30.1DV.1 – 30.1DV.2: 30.1DV.1 As an alternate, the minimum temperature for the ball pressure test for external parts may be 65°C + 2°C if the part complies with the Mould Stress Relief Test of IEC 60695-10-3. 30.1DV.2 Electrical components complying with the standards of Annex DVA, if specified and used within their ratings, are considered to fulfil the requirements of 30.1.		N/A
30.2DV	D2 Modification to add the following note: NOTE 3 Additional flammability requirements (such as 5VA or 5VB rating per IEC 60695-11-20 for external enclosures of STATIONARY APPLIANCES) are specified in the part 2 standard.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
30.2.2DV	D2 Modification to add the following to the end of 30.2.2: The glow-wire test is also not carried out on parts of material classified at least V-1 according to IEC 60695-11-10, or at least VTM-1 according to ISO 9773, provided that the test sample was no thicker than the relevant part of the appliance.		N/A
30.2.3.1DV	D2 Modification to replace the third paragraph with the following: However, the glow-wire test of IEC 60695-2-11 with a test severity of 850 °C is not carried out on parts of material classified at least V-1 according to IEC 60695-11-10, or at least VTM-1 according to ISO 9773, or as having a glow-wire flammability index of at least 850 ° C according to IEC 60695-2-12.		N/A
30.2.3.2DV .1	D2 Modification to replace the fourth paragraph with the following: However, the glow-wire test with a test severity of 750°C or 650°C, as appropriate, is not carried out on parts of material classified at least V-1 according to IEC 60695-11-10, or at least VTM-1 according to ISO 9773, or fulfilling both or either of the following classifications:		N/A
30.2.3.2DV .2	D2 Replace second dashed item of last paragraph with the following: – parts comprising material classified as V-0 or V-1 according to IEC 60695-11-10 or at least VTM-1 according to ISO 9773, provided that the test sample used for the classification was no thicker than the relevant part of the appliance; or		N/A
30.3DV	D2 Modification to add the following note to Clause 30: NOTE IEC and ISO references to flammability designations are equivalent to the same designations in CSA C22.2 No. 0.17 and UL 94.		

Annex A	**Routine tests**		-
A.1DV	D2 Modification to add the following to A.1: As an alternative to the test method specified, grounding continuity may be determined by any suitable indicating device, such as an ohmmeter, a battery and buzzer combination, or the like.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Annex R	**Software evaluation**		-
RDV	D2 Modification to add the following note after the first paragraph: NOTE All references to IEC 60730-1 are replaced by the Software standards of Annex DVA.		N/A
Annex DVA	**North American additional requirements**		-
Annex DVA	DC Add Annex DVA as follows:		
DVA.1	DC Addition: DVA.1.1 The following are North American standards that replace referenced IEC standards where applicable and provide additional requirements. The applicable requirements of the subject standards (first column of Table DVA.1) apply as specified the appliance standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.		N/A
Annex DVC	**Mechanical requirements for direct plug in appliances**		-
Annex DVC	DC Add Annex DVC as follows: DVC.1 Maximum tipping moment DVC.1.1 A device shall comply with the maximum tipping moment requirement specified in DVC.1.2, Table DVC.1, and Figure DVC.1. DVC.1.2 The limits specified in Table DVC.1 shall be determined as follows: a) A directly-mounted accessory shall be in place; and b) A removable part shall be in place.		N/A
Annex DVD	**Adequacy of adhesive bonding properties**		-
Annex DVD	D2 Add Annex DVD as follows (Canada only):		N/A
DVD.1	A sample of the appliance or part shall be evaluated with the sample placed with the adhesive secured part(s) on the underside.		N/A

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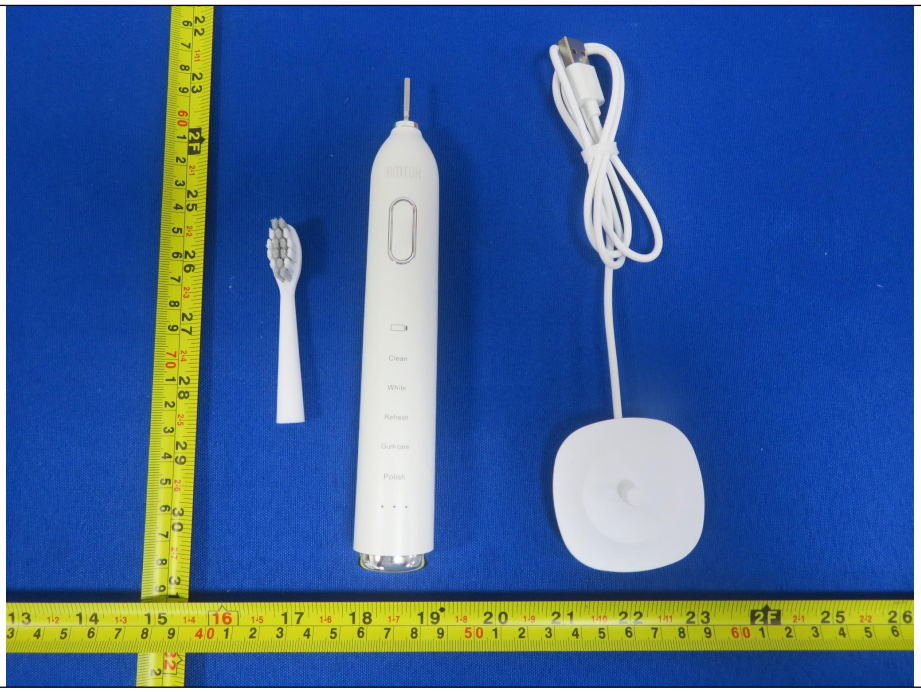
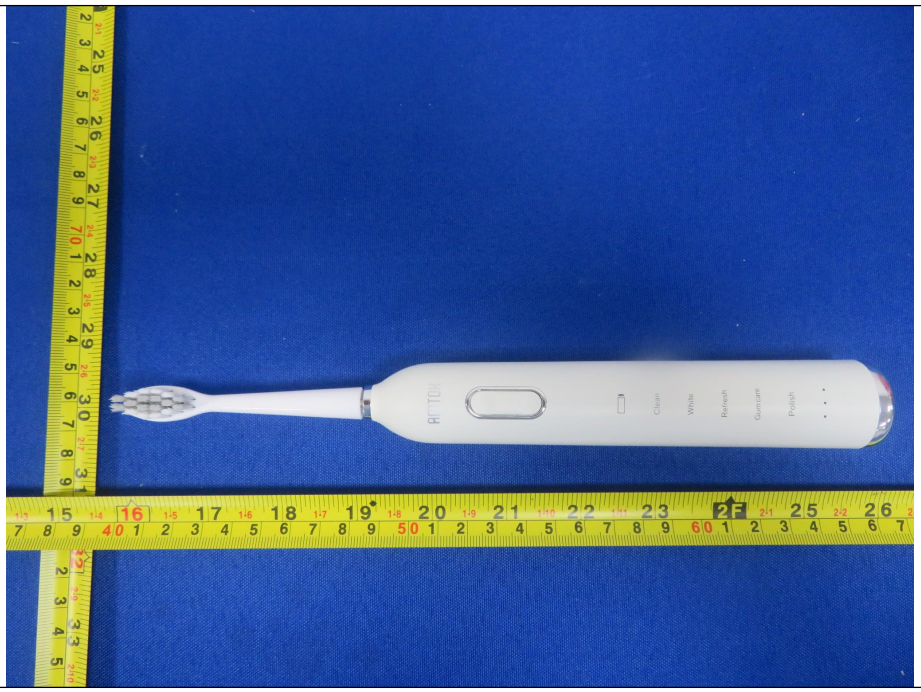
Clause	Requirement + Test	Result - Remark	Verdict
DVD.2	Condition the sample in an oven at one of the following temperatures for the time durations specified: a) 100°C± 2°C for one week; b) 90°C± 2°C for three weeks; or c) 82°C± 2°C for eight weeks		N/A
DVD.3	Upon completion of the temperature conditioning: a) Remove the sample from oven and leave it at any convenient temperature between 20°C and 30°C for 1 h. b) Place the sample in a freezer at -40°C± 2°C for 4h. c) Remove and allow the sample to come to any convenient temperature between 20°C and 30°C for 8 h. d) Place the sample in a cabinet at 91% to 95% relative humidity for 72 h. e) Remove the sample and leave it at any convenient temperature between 20°C and 30°C for 1 h. f) Place the sample in an oven at the temperature used for the temperature conditioning for 4h. g) Remove the sample and allow it to reach any convenient temperature between 20°C and 30°C for 8 hrs.		N/A
DVD.4	The sample shall then be immediately subjected to the following tests: a) For NON-DETACHABLE PARTS, the force and torque tests of 22.11 and the impact test of Clause 21. The NON-DETACHABLE PART shall not fall off or partly dislodge as a result of these tests. b) For other parts, a pull force of 2N without separating the adhesive bond.		
DVD.5	With the concurrence of the manufacturer, any of the above time durations may be increased as specified in DVD.2 or DVD.3.		
DVD.6	Additional testing might need to be conducted if the ENCLOSURE is exposed to oils and solvents during NORMAL OPERATION.		

Attachment No.2 **Product Photos**

Details of: Overview for model N15

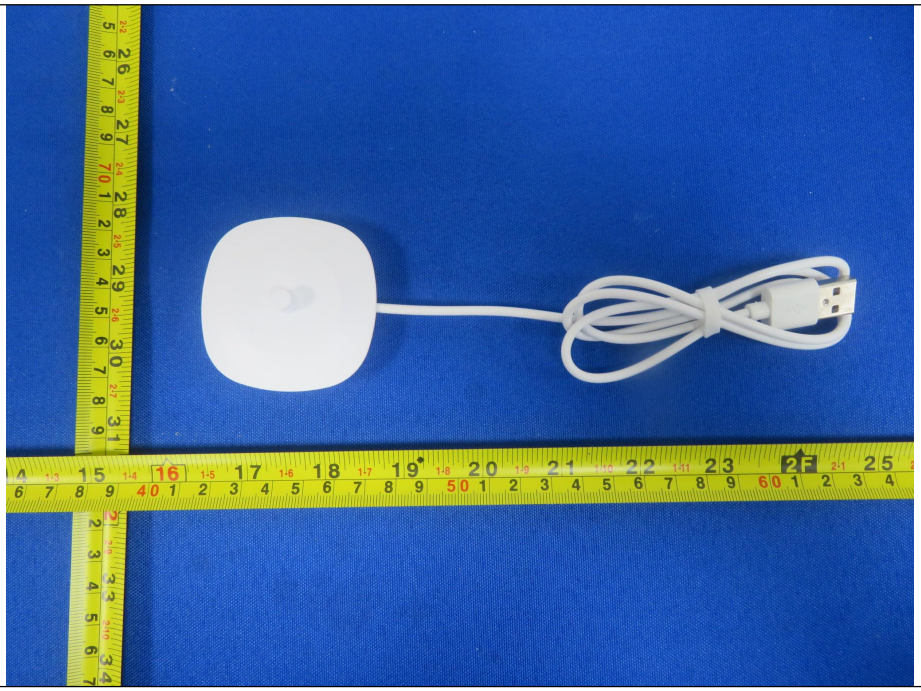


Details of: Overview for model N15



Attachment No.2 **Product Photos**

Details of: Overview for model N15



- End of test report -