



## **NINGBO CITY FENGHUA XIKOU JIANDA HAIR DRESSING TOOLS FACTORY**

# **CE LVD REPORT**

Prepared For :	NINGBO CITY FENGHUA XIKOU JIANDA HAIR DRESSING TOOLS FACTORY. No.18 Tongzhou Road, Xikou Town, Fenghua District, Ningbo City, Zhejiang Province
Product Name:	CURLER APPLIANCE
Main Test Model:	111-90
Additional Model:	001-50, 001-36, 001-28, 002-50, 002-36, 002-28, 003-50, 003-36, 003-28, 004-50, 004-36, 004-28, 006-60, 006-50, 006-40, 007-60, 007-50, 007-40, 011-90, 011-65, 011-55, 012-90, 012-65, 012-55, 018-60, 018-50, 018-40, 019-60, 019-50, 019-40, 020-50, 020-36, 020-28, 021-60, 021-50, 021-40, 111-65, 111-55, 051, 052, 055, 058, 005, 014-T, 013-T, 008-60, 008-50, 008-40, 009-60, 009-50, 009-40, 010-90, 010-65, 010-55, 015-60, 015-50, 015-40, 016-90, 016-65, 016-55, 017-60, 017-50, 017-40, 100-60, 100-50, 100-40, 110-90, 110-65, 110-55, 022-60, 022-50, 022-40
Prepared By :	BST Testing (Shenzhen) Co.,Ltd. No.7,New Era Industrial Zone, Guantian, Bao'an District, Shenzhen, Guangdong, China
Test Date:	Jul.03, 2020–Jul.14, 2020
Date of Report :	Jul.14, 2020
Report No.:	BSTXD200714077801SR



## TEST REPORT

EN 60335-2-23

Part 1: Safety of household and similar electrical appliances  
Part 2: Particular requirements for appliances for skin or hair care

## Testing laboratory

Name ..... : BST Testing (Shenzhen) Co.,Ltd.  
Address ..... : No.7,New Era Industrial Zone, Guantian, Bao'an District, Shenzhen,  
Guangdong, China  
Testing location ..... : BST Testing (Shenzhen) Co.,Ltd.

## Applicant

Name ..... : NINGBO CITY FENGHUA XIKOU JIANDA HAIR DRESSING  
TOOLS FACTORY  
Address ..... : No.18 Tongzhou Road, Xikou Town, Fenghua District, Ningbo City,  
Zhejiang Province

## Test specification

Standard ..... : EN 60335- 2- 23: 2003 + A1: 2008 + A11: 2010 + A2: 2015  
EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A2:2019  
Test procedure ..... : Compliance with  
EN 60335-2-23: 2003 + A1: 2008 + A11: 2010 + A2: 2015  
EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A2:2019  
Procedure deviation ..... : N.A.  
Non-standard test method ..... : N.A.

## Test item

Description..... : See Page 1  
Model and/or type reference ..... : See Page 1  
Manufacturer ..... : NINGBO CITY FENGHUA XIKOU JIANDA HAIR DRESSING  
TOOLS FACTORY  
Address ..... : No.18 Tongzhou Road, Xikou Town, Fenghua District, Ningbo City,  
Zhejiang Province  
Rating(s) ..... : See label

## Particulars: test item vs. test requirements

Electrical safety class ..... : Class II  
IP number ..... : IPX0  
Voltage selector..... : No



PTC heating element .....	: Yes
Switch .....	: Yes
Thermostat .....	: No
Thermal cut-out .....	: No
Electronic circuit .....	: Yes
Timer .....	: No
Motor.....	: No
Low voltage motor .....	: No
Accessories .....	: No
- nozzle .....	: No
- diffusor.....	: No
- etc.....	: No
Portable appliance.....	: Yes
Appliance for fixing to a wall.....	: No
Swivel connection.....	: Yes
Supply cord.....	: Yes
<b>Test case verdicts</b>	
Test case does not apply to the test object .....	: N(.A.)
Test item does meet the requirement.....	: P(ass)
Test item does not meet the requirement.....	: F(ail)
<b>General remarks</b>	
<p>"This report is not valid as a CB Test Report unless appended to a CB Test Certificate issued by a NCB, in accordance with ENEE 02".</p> <p>This test report shall not be reproduced except in full without the written approval of the testing laboratory.</p> <p>The test results presented in this report relate only to the item tested.</p> <p>"(see remark #)" refers to a remark appended to the report.</p> <p>"(see appended table)" refers to a table appended to the report.</p>	



Copy of marking plate

CURLER APPLIANCE

Model: 111-90

Rated: 220-240V~, 90W



NINGBO CITY FENGHUA XIKOU JIANDA HAIR  
DRESSING TOOLS FACTORY

Prepared by :

*Sophie Tang*

Engineer

Reviewer :

*Jacky Zhang*

Supervisor

Approved & Authorized Signer :

*CS Chan*

Manager



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict

5	GENERAL NOTES FOR THE TESTS		--
	Tests performed according to Cl. 5, e.g. nature of supply, sequence of testing, etc.		P
	The test of 25.14 for hand-held appliances is carried out on a separate appliance. (EN 60 335-2-23)		P

6	CLASSIFICATION		--
6.1	Appliances shall be one of the following Classes with respect to protection against electric shock (EN 60 335-2-23):		--
	- hairdryers, curling irons, curling combs, facial saunas and other steam-producing or spray-producing appliances shall be of Class II or III (EN 60 335-2-23)		N
	- however, fixed hairdryers intended to be permanently connected to fixed wiring, helmet-type hairdryers for hairdressers and steam-producing appliances for hairdressers may be of Class I (EN 60 335-2-23)		N
	- other appliances shall be of Class I, Class II or Class III (EN 60 335-2-23)	Class II appliances	P
	Protection against harmful ingress of water (EN 60 335-2-23)	IPX0	N
6.2	Hand dryers shall be at least IPX1		N
	Curling rollers of permanent-wave appliances shall be at least IPX4 (EN 60 335-2-23)		N

7	MARKING		--
7.1	Rated voltage or voltage range (V) .....	220-240V	P
	Single-phase appliances: 230 V covered (EN 60 335-1)		P
	Multi-phase appliances: 400 V covered (EN 60 335-1)		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	Nature of supply	~	P
	Rated frequency or frequency range (Hz) .....		P
	Rated input or rated current	90W	P
	Manufacturer's or responsible vendor's name, trademark or identification mark		P
	Model or type reference		P
	Symbol for Class II		P
	IP number	IPX0	N
	Portable hairdryers, curling irons and similar appliances shall be marked with the substance of the following warning: WARNING - Do not use this appliance near water, contained in bath-tubes, basins or other vessels (EN 60 335-2-23)		P
	Marking on a label which is permanently attached to the appliance or appropriate symbol (EN 60 335-2-23)		P
7.2	Warning for stationary appliances		N
	Warning placed in vicinity of terminal cover		N
7.3	Range of rated values correctly marked		N
7.4	Voltage setting clearly discernible		N
7.5	Marking of rated input for each rated voltage		N
	Marking for upper and lower limits of rated input		N
7.6	Correct symbols used	See label	P
	Symbol 5582 of EN 60417-1(EN 60 335-2-23)		N
7.7	Correct connection diagram, fixed to the appliance		N
7.8	Not for type Z attachment:		--
	- marking of terminals for the neutral conductor (N)		N
	- marking of earthing terminals		N
	- marking not placed on removable parts	On outside enclosure	P
	- marking of terminal for single-pole protective device		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
7.9	Marking or placing of switches which may cause a hazard	No hazard when operating	P
7.10	Indications of switches and regulating devices by use of figures, letters or other		N
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		P
7.11	Indication for direction of adjustment of controls		P
7.12	The instructions for use for portable hairdryers shall include the substance of the following (EN 60 335-2-23):		--
	- when the hairdryer is used in a bathroom, unplug it after use since the proximity of water presents a hazard even when the hairdryer is switched off (EN 60 335-2-23)		N
	- for additional protection the installation of a residual current device (RCD) with a rated residual operating current not exceeding 30 mA is advisable in the electrical circuit supplying the bathroom. Ask your installer for advice (EN 60 335-2-23)		N
	The instructions for use for facial saunas shall include the substance of the following (EN 60 335-2-23):		--
	- clean the appliance after use to avoid the accumulation of grease and other residues (EN 60 335-2-23)		N
7.12.1	The instructions for installation for fixed hairdryers intended for use in bathrooms shall include the substance of the following (EN 60 335-2-23):	No such construction	--
	- this hairdryer must be fixed out of reach of a person using a bath or shower (EN 60 335-2-23)		N
	If the hand-held part of the hairdryer incorporates electrical components, the instructions shall state that the appliance must be fixed so that the hand-held part, when fully extended, is out of reach of a person using a bath or shower (EN 60 335-2-23)		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
7.12.2	Means for disconnection with contact separation at least 3 mm		N
	Stationary appliance with supply cord and plug: statement in the instructions that the appliance is so positioned that the plug is accessible (EN 60335-1)		N
7.12.3	Insulation in contact with parts exceeding 50 K; instruction		P
7.12.4	Information with regard to building-in:	No such construction	--
	- dimensions of space		N
	- dimensions and position of support		N
	- ventilation openings		N
	- connection/interconnection plug accessible		N
7.12.5	Replacement cord, type X attachment		N
	Replacement cord, type Y attachment	Type Y attachment	P
	Replacement cord, type Z attachment		N
7.13	Instructions and other texts in official language	English	P
7.14	Marking easily legible and durable	The label is clearly legible after the rubbing test	P
7.15	Marking on a main part	Marking label attached to outside enclosure	P
	Marking clearly discernible from outside		P
	Stationary appliance: name or trademark and model or type reference visible after installation	No such construction	N
	Indication for switches and controls in vicinity of components; not on removable parts if misleading		N
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		P
8	<b>PROTECTION AGAINST ACCESSIBILITY TO LIVE PARTS</b>		--
8.1	Adequate protection against accidental contact with live parts		P





EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
8.1.1	All positions; detachable parts removed		P
	Removal of lamps: protection against contact with live parts	No lamp	N
	Use of test finger: no contact with live parts		P
8.1.2	Use of test pin: no contact with live parts		P
8.1.3	Not applicable (EN 60 335-2-23: 03)		--
8.1.4	Accessible part not considered live if:	No hazards when operating	N
	- extra-low a.c. voltage: peak values not exceeding 42,4 V		N
	- extra-low d.c. voltage: not exceeding 42,4 V		N
	- or separated from live parts by protective impedance, d.c. current not exceeding 2 mA		N
	- or separated from live parts by protective impedance, a.c. peak value not exceeding 0,7 mA		N
	- for peak value 42,4 V up to and including 450 V capacitance not exceeding 0,1 uF		N
	- for peak value 450 V up to and including 15 kV discharge not exceeding 45 C.		N
8.1.5	Live parts protected at least by basic insulation before installation or assembly:		--
	- built-in appliances		N
	- fixed appliances		N
	- separate units		N
8.2	Class II appliances and constructions adequately protected against accidental contact with basic insulation and metal parts separated from live parts with only basic insulation		P
10	POWER INPUT AND CURRENT		--
10.1	Power input at rated voltage and normal operating temperature not deviating from rated input by more than shown in table; measured power input (W); rated input (W); deviation .....		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
10.2	Current at normal operating temperature not deviating from rated current by more than shown in table; measured current at rated voltage under normal operation (A); rated current (A); deviation ... :		N
11	HEATING		--
11.1	No excessive temperatures in normal use		P
	For appliances incorporating a swivel connection, compliance is also checked by the test of 11.101 (EN 60335-2-23)		P
11.2	Placing and mounting of appliance as described		P
	Appliances provided with a stand and which also have means for attaching to a support are positioned to give the most unfavourable results (EN 60335-2-23)		N
11.3	Temperature rises determined by thermocouples or resistance method	Determined by thermocouples	P
11.4	Heating appliances operated under normal operation at 1,15 times rated power input		P
	If the temperature rise limits are exceeded in appliance incorporating motors, transformers or electronic circuits and the power input is lower than the rated power input, the test is repeated with the appliance supplied at 1,06 times rated voltage (EN 60 335-2-23)		N
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0,94 and 1,06 times rated voltage		N
11.6	Combined appliances are operated as heating appliances (EN 60 335-2-23)		N
11.7	Appliances without a timer are operated (EN 60 335-2-23):		N
	- for 30 min for hand-held appliances (EN 60 335-2-23)		P



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	- in cycles of 30 s on and 5 s off, until steady conditions are established, for hand dryers which are automatically controlled by the presence of the hands (EN 60 335-2-23)	No such devices	N
	- until steady conditions are established for other appliances (EN 60 335-2-23)		N
	Appliances incorporating a timer are operated in cycles until steady conditions are established (EN 60 335-2-23)		N
	Each cycle consists of the maximum operating time of the timer followed by a rest period of 5 s (EN 60 335-2-23)		N
11.8	Protective devices do not operate		P
	Sealing compound not flowing out	No such sealing compound	N
	Temperatures not exceeding values in Table 3	(see appended table)	P
11.101	Appliances incorporating a swivel connection are positioned with their major axis horizontal, the supply cord hanging vertically (EN 60 335-2-23)		P
	A pull force of 1 N is applied to the supply cord (EN 60 335-2-23)		P
	The appliance is supplied at rated voltage, the current being 1,25 times the rated current (EN 60 335-2-23)		P
	The appliance is rotated about its major axis at a rate of approximately 50 rev/min, the direction of rotation being reversed after every 20 revolutions (EN 60 335-2-23)		P
	The test is continued for 1500 revolutions (EN 60 335-2-23)		P
	The temperature rise of sliding contacts shall not exceed 65 K (EN 60 335-2-23)		N
13	<b>LEAKAGE CURRENT</b>		--
13.1	Leakage current not excessive and electric strength adequate		P



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
13.2	Leakage current measured by means of circuit described in Annex G		P
	Leakage current measurements	(see appended table)	P
13.3	Electric strength test of insulation	(see appended table)	P
	No breakdown during the test		P

15	MOISTURE RESISTANCE		--
15.1	Enclosure provides the degree of moisture protection according to classification of appliance	IPX0	N
	Appliance subjected to test as specified		N
	Withstand electric strength test specified in 16.3		N
	No trace of water on insulation which can result in a reduction of distances and clearances below values specified in 29.1		N
15.1.1	Appliances other than IPX0 are subjected to the test of EN 529 as follows (EN 60 335-2-23):		--
	- IPX1 appliances as described in 14.2.1 (EN 60 335-2-23)		N
	- IPX2 appliances as described in 14.2.2 (EN 60 335-2-23)		N
	- IPX3 appliances as described in 14.2.3 (EN 60 335-2-23)		N
	- IPX4 appliances as described in 14.2.4 (EN 60 335-2-23)		N
	- IPX5 appliances as described in 14.2.5 (EN 60 335-2-23)		N
	- IPX6 appliances as described in 14.2.6 (EN 60 335-2-23)		N
	- IPX7 appliances as described in 14.2.7 (EN 60 335-2-23)		N
	For this test the appliance is immersed in water containing 1% NaCl. (EN 60 335-2-23)		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test	IPX0	N
	Built-in appliance installed according to the manufacturer's instruction		N
	Other appliances tested as specified		N
15.2	Spillage of liquid does not affect the electrical insulation	No such construction	N
	Overfilling test with additional amount of liquid (l) .. :		N
	Withstand electric strength test in 16.3		N
	No trace of water on insulation which can result in reduction of distances and clearances below values specified in 29.1		N
15.3	Humidity treatment for 48 h	93 %, 25 °C	P
	Withstanding the test of Cl. 16		P
16	<b>LEAKAGE CURRENT AND ELECTRIC STRENGTH</b>		--
16.1	No excessive leakage current and adequate insulation and electric strength (tests 16.2 and 16.3)		P
16.2	Leakage current measurements	(see appended table)	P
16.3	Electric strength tests (values in Table 5)	(see appended table)	P
17	<b>OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS</b>		--
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use	No transformer used	N
	Appliance supplied with 1,06 or 0,94 times rated voltage and the most unfavourable short-circuit or overload likely to occur in normal use applied		N
	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



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	Temperature of the winding not exceeding the value specified in Table 6		N
19	<b>ABNORMAL OPERATION</b>		--
19.1	The risk of fire or mechanical damage under abnormal or careless operation obviated		P
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe		P
	Hairdryers are also subjected to the tests of 19.101 and 19.102 (EN 60 335-2-23)		N
19.2	Test of appliance with heating elements with restricted heat dissipation; test voltage (V): power input of 0,85 times rated power input .....		P
	Restricted heat dissipation is obtained as follows (EN 60335-2-23):		--
	- motors are disconnected (EN 60 335-2-23)		N
	- hand-held hairdryers are placed on the floor of the test corner in any stable position likely to occur (EN 60 335-2-23)		N
	- appliances intended to be filled with water are operated empty (EN 60 335-2-23)	No such construction	N
	Hairdryers provided with a flexible hood attachment are also tested with the motor running, the air flow through the hose being restricted to give the most unfavourable result (EN 60 335-2-23)		N
	Heaters for detachable curlers are placed on a low density glass-fibre insulation having a coefficient of thermal insulation of approximately 2,5 m <sup>2</sup> * K/W (EN 60 335-2-23)	No such constructions	N
19.3	Test of 19.2 repeated; test voltage (V): power input of 1,24 times rated power input .....		P
19.4	Test conditions as in Cl. 11, the power input being 1,15 times rated power input, any control limiting the temperature during tests of Cl. 11 short-circuited		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
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 elements sheath (EN 60335-1:02)	No such constructions	N
	The test repeated with reversed polarity and the other end of the heating element connected to the sheath		N
19.6	Appliances with PTC heating elements tested as specified. Supplied at rated voltage, establishing steady conditions, then the voltage increased in steps by 5% until 1,5 times rated voltage is reached or until the heating element ruptures		P
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque or locking moving parts (EN 60335-1:02)	No motor	N
	Locked rotor, motor capacitors open circuited or short-circuited, if required		N
	Appliances with timer or controller supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed		N
	Test period at rated voltage (s or min) or until steady state conditions established:		N
	Winding temperatures not exceeding limiting temperature; type of appliance; insulation class; measured temperature °C .....* -		N
	The test is carried out for 5 min except for (EN 60335-2-23):		--
	- hand-held appliances (EN 60335-2-23)		N
	- appliances which have to be kept switched on by hand (EN 60335-2-23)		N
	- appliances provided with a timer (EN 60335-2-23)	No provided timer	N
	- hand dryers are subjected to the test only when the locked rotor torque is smaller than the full load (EN 60335-2-23)		N
19.8	Three-phase motors operated at rated voltage with one phase disconnected	No such motors	N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
19.9	Not applicable ( EN 60225-2-23:03)		--
19.10	Series motor operated at 1,3 times rated voltage for 1 min	No such motor	N
	Parts shall not be ejected from the appliance (EN 60 335-1:02)		N
	The test is made with the heating elements disconnected or switched off (EN 60 335-2-23)	No such constructions	N
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 they comply with the conditions specified in 19.11.1		P
19.11.1	Before applying the fault conditions a) to f) in 19.11.2, it is checked if circuits or parts of circuit meet both of the following conditions:		--
	- 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
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction in other parts of the appliance does not rely on the correct functioning of the electronic circuit		N
19.11.2	Fault conditions applied one at a time, the appliance operated under conditions specified in Cl. 11, but supplied at rated voltage, the duration of the tests as specified:		--
	a) short-circuit of creepage distances and clearances between live parts of different potential, if these distances are less than the values specified in 29.1, unless the relevant part is adequately encapsulated		P
	b) open circuit at the terminals of any component	(see appended table)	P
	c) short-circuit of capacitors, unless they comply with EN 384-14 or subclause 14.2 of EN 65		P
	d) short-circuit of any two terminals of an electronic component, other than integrated circuits. This fault condition is not applied between the circuits of an optocoupler		P
	e) failure of triacs in the diode mode		P





EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	f) failure of an integrated circuit. In this case the possible hazardous situations of the appliance are assessed to ensure that safety does not rely on the correct functioning of such a component		P
	During and after each test the following is checked:		--
	- the temperature rise of the windings do not exceed the values specified in Table 6		P
	- the appliance complies with the conditions specified in 19.13		P
	- live parts not accessible to the test finger or test pin as specified in Cl. 8		P
	- any current flowing through protective impedance not exceeding the limits specified in 8.14		N
	If a conductor of a printed board becomes open circuited, the appliance is considered to have withstood the particular test, provided all three of the following conditions are met:		--
	- the material of the printed circuit board withstands the burning test of 20.1 of EN 65		N
	- any loosened conductor does not reduce the creepage distances or clearances between live part and accessible metal parts		N
	- the appliance withstands the tests of 19.11.2 with open circuited conductor bridged		N
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 EN 127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A) ..... :		N
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 7		P
	Enclosures not deformed to such an extent that compliance with Cl. 8 is impaired		P



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	Appliance still operable and complying with 20.2		P
	Appliance, other than Class III, withstands the electric strength test of 16.3, however, the test voltage being:		--
	- basic insulation: 1000 V		P
	- supplementary insulation:1750 V		P
	- reinforced insulation: 3000 V		P
19.101	Hairdryers are operated as specified in Cl. 11 except that the heating element and motor are supplied separately (EN 60 335-2-23)		N
	The heating element is supplied at the voltage used for 1.14 and the motor is supplied at its working voltage until steady conditions are established (EN 60 335-2-23)		N
	The voltage applied to the motor is then reduced until the running speed of the motor is just sufficient to prevent the thermal cut-out from operating (EN 60335-2-23)		N
	The hairdryer is then operated until steady conditions are established (EN 60 335-2-23)		N
	The voltage is decreased at (EN 60 335-2-23):		--
	- 1 V/min for motors having a working voltage not exceeding 30 V (EN 60335-2-23)		N
	- 5 V/min for motors having a working voltage exceeding 30 V (EN 60335-2-23)		N
	The hairdryer shall not emit flames or molten metal, and temperature rises shall not exceed the values in Table 7 (EN 60335-2-23)		N
	The other criteria of 19.13 do not apply (EN 60 335-2-23)		N
	It may be necessary to compensate for the effect on the heating element of disconnecting the motor (EN 60335-2-23)		N
19.102	Portable hairdryers are operated under normal operation at 1,15 times rated power input (EN 60 335-2-23)		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict

	A sheet of polyethylene approximately 20 cm x 20 cm and having a thickness of 50 mm is placed against the air-inlet and moved in any direction in order to reduce the airflow so that the most unfavourable conditions are established (EN 60335-2-23)		N
	The test is carried out for 30 min (EN 60 335-2-23)		N
	The test is repeated with the airflow directed horizontally (EN 60335-2-23)		N
	The most unfavourable conditions are usually obtained by positioning the polyethylene sheet so that the thermal cut-out is prevented from operating (EN 60335-2-23)		N

20	STABILITY AND MECHANICAL HAZARDS		--
20.1	Adequate stability		P
	Tilting test through an angle of 10° (appliance placed on an inclined plane/horizontal plane); appliance does not overturn		P
	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15°		N
	Possible heating test in overturned position; temperature rise does not exceed values shown in Table 7		N
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury	No moving parts	N
	Protective enclosures, guards and similar parts are non-detachable		P
	Adequate mechanical strength and fixing of protective enclosures		P
	Self-resetting thermal cut-outs and overcurrent protective devices not causing a hazard, if unexpectedly reclosed		N
	Not possible to touch dangerous moving parts with test finger		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict

21	<b>MECHANICAL STRENGTH</b>		--
	Appliance has adequate mechanical strength and is constructed as to withstand rough handling		P
	No damage after three blows applied to various parts of the enclosure, impact energy 0,5 ± 0,04 Nm	Impact energy 0.5 J three blows	P
	If necessary, supplementary or reinforced insulation subjected to the electric strength test of 16.3		P
	If necessary, repetition of groups of three blows on a new sample		N
21.101	Hand-held appliances are placed on a horizontal surface which is positioned 70 cm above a rigidly supported hardwood board (EN 60 335-2-23)		P
	The appliances is supplied at rated voltage and operated at its highest setting (EN 60 335-2-23)		P
	It is pulled from the surface by its supply cord and allowed to drop freely (EN 60 335-2-23)		P
	The test is carried out five times, the appliance being placed in different positions likely to occur (EN 60 335-2-23)		P
	The appliance shall not be damaged to such an extent that compliance with this standard is impaired. In particular, the requirements of Cl. 8 and Cl. 29 shall be fulfilled (EN 60 335-2-23)		P

22	<b>CONSTRUCTION</b>		--
22.1	Appliance marked with the first numeral of the IP system: relevant requirements of EN 529 are fulfilled	IPX0	N
22.2	Stationary appliance: means to provide all-pole disconnection from the supply provided, the following means being available:	Hand-held appliance	--
	- a supply cord fitted with a plug		P
	- a switch complying with 24.3		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided		P
	- an appliance coupler		P
	Single-phase Class I appliance with heating elements, intended to be permanently connected to fixed wiring, incorporating single-pole switches or single-pole protective devices for the disconnection of the heating element(s): the switches/devices being connected in the phase conductor (EN 60 335-1:02)	No such constructions	N
22.3	Appliance provided with pins: no undue strain on socket-outlets	No such pins	N
	Applied torque not exceeding 0,25 Nm		N
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for insertion into socket-outlets	No heating liquids	N
22.5	No risk of electric shock when touching the pins of the plug	After withdraw of the mains plug, the voltage of the plug is 0 V, no exceeded 34V	P
22.6	Electrical insulation not affected by condensing water or leaking liquid	No such appliance	N
	Electrical insulation of Class II appliances not affected in case of a hose rupture or seal leak		P
22.7	Adequate safeguards against the risk of excessive pressure in appliances provided with steam-producing devices	No such appliance	N
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 which are likely to be cleaned in normal use	No such compartments	N
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances		P
	Adequate insulating properties of oil or grease to which insulation is exposed	No such substances	N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
22.10	Location or protection of reset buttons of non-self-resetting controls is so that accidental resetting is unlikely	No such devices	N
22.11	Reliable fixing of non-detachable parts which provide the necessary degree of protection against electric shock, moisture or contact with moving parts		P
	Obvious locked position of snap-in devices used for fixing such parts		P
	No deterioration of the fixing properties of snap-in devices used in parts which are likely to be removed during installation or servicing		P
	Tests	Push force: 50N, 10s, pull force: 50 N, 10s	P
22.12	Handles, knobs etc. fixed in a reliable manner		P
	Fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible		P
	Axial force 15 N applied to parts, the shape of which being so that an axial pull is unlikely to be applied		N
	Axial force 30 N applied to parts, the shape of which being so that an axial pull is likely to be applied		P
22.13	Unlikely that handles, when gripped as in normal use, make the operators 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 etc., liable 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	No such hook	N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands, no undue wear of contacts	No such cord reel	N
	Cord reel tested with 6000 operations, as specified		N
	Electric strength test of 16.3, voltage of 1000 V applied		N
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner	No such spacer	N
22.18	Current-carrying parts and other metal parts resistant to corrosion under normal conditions of use		P
22.19	Driving belts not used as electrical insulation	No such parts	N
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless material used is non-corrosive, non-hygroscopic and non-combustible	Non-corrosive material	P
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not be used as insulation, unless impregnated	No such material use for insulation	N
22.22	Asbestos not used in the construction of the appliance		P
	Asbestos is used, but the liberation of dust of impregnated asbestos or of asbestos fibres into the surrounding air adequately prevented		N
22.23	Oils containing polychlorinated biphenyl (PCB) not used		P
22.24	Bare heating elements adequately supported		--
	In case of rupture, the heating conductor is unlikely to come in contact with earthed metal parts or accessible metal parts		P
	The heating element shall also be unlikely to come into contact with the skin or hair if it ruptures (EN 60 335-2-23)		P



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
22.25	Sagging heating conductors cannot come into contact with accessible metal parts		N
22.26	The insulation between parts operating at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation		N
22.27	Parts connected by protective impedance separated by double or reinforced insulation	No such protective impedance	N
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	No such construction	N
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of protection against electric shock is maintained after installation		N
22.30	Parts serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or		P
	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		P
22.31	Creepage distances and clearances over supplementary and reinforced insulation not reduced below values specified in 29.1 as a result of wear		P
	Creepage distances and clearances over supplementary or reinforced insulation not reduced to less than 50% of values specified in 29.1 if wires, screws etc. becomes loose		P
22.32	Supplementary and reinforced insulation designed or protected against deposition of dirt or dust		P
	Ceramic material not tightly sintered, similar material or beads alone not used as supplementary or reinforced insulation		P





EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	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 29.1		N
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature		N
	Supplementary insulation and reinforced insulation in Class II curling irons shall be resistant to ageing (EN 60 335-2-23)		N
	Additional test for samples of insulation not mentioned in Table 3 (EN 60 335-2-23)		N
22.33	Conductive liquids which are or may become accessible in normal use are not in direct contact with live parts	No conductive liquids	N
	Conductive liquids are not in direct contact with basic insulation or reinforced insulation in Class II constructions		N
22.34	Shafts of operating knobs, handles, levers etc. not live, unless the shaft is not accessible when the part is removed		N
22.35	Handles, levers and knobs, held or actuated in normal use, not becoming live in the event of an insulation fault		P
	Such parts being of metal, and their shafts or fixings are likely to become live in the event of an insulation fault, they are either adequately covered by insulation material, or their accessible parts are separated from their shafts or fixings by supplementary insulation		P
	This requirement does not apply to handles, levers and knobs on stationary appliances other than those of electrical components, provided they are either reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
22.36	Handles continuously held in the hand in normal use are so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless they are separated from live parts by double or reinforced insulation		N
	For Class I appliances other than hand dryers and face dryers, metal parts which could be in contact with skin or hair in normal use shall be separated from live parts by double insulation or reinforced insulation and shall not be earthed (EN 60 335-2-23)		N
22.37	Capacitors in Class II appliances not connected to accessible metal parts, unless complying with 22.42	No such capacitor	N
	Metal casings of capacitors in Class II appliances separated from accessible metal parts by supplementary insulation, unless complying with 22.42		P
22.38	Capacitors not connected between the contacts of a thermal cut-out		N
22.39	Lamp holders only used for the connection of lamps	No lamp holder used	N
22.40	Motor-operated appliances and combined appliances, intended to be moved while in operation or which have accessible moving parts, are fitted with a switch to control the motor (EN 60 335-1:02)		N
	The actuating member of this switch shall be easily visible and accessible (EN 60 335-1:02)		N
	The switch in the off position shall disconnect electronic circuits, unless compliance with Cl. 19 does not depend on the operation of a self-resetting thermal cut-out (EN 60 335-2-23)		N
22.41	Mercury switches mounted according to the requirement	No such component	N
22.42	Protective impedance consisting of at least two separate components	No protective impedance	N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	Values specified in 8.1.4 not exceeded if any one of the components is short-circuited or open circuited		N
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur	No such parts	N
22.44	Appliance enclosure not shaped and decorated so that the appliance is likely to be treated as a toy by children (EN 60 335-1:02)	No such enclosure	P
22.45	The appliance shall be constructed cannot be reduced values specified in 29.1.3 due to deformation.		P
22.101	Appliances provided with steam-producing or spray-producing devices shall be constructed so that there is no spillage or unintentional burst of steam or water which is likely to cause a hazard (EN 60 335-2-23)		N
22.102	Curling rollers of permanent-wave appliances in which the heating elements are integral with the curling rollers and which are energized during use shall be supplied with safety extra-low voltage not exceeding 24 V (EN 60 335-2-23)		N
23	<b>INTERNAL WIRING</b>		--
23.1	Wire ways 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 or corners	No such beads	N
	Beads inside flexible metal conduits contained within an insulating sleeve		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress		N
	Flexible metallic tubes not causing damage to insulation of conductors	No such flexible metallic tubes	N
	Open-coil springs not used		P
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another	No such lining	N
	No damage after 10 000 flexings		N
	Electric strength test, 1000 V between live parts and metal parts		N
	The number of flexings for conductors which are flexed only when the appliance is stored is 5000 (EN 60 335-2-23)		N
23.4	Bare internal wiring sufficiently rigid and fixed	No bare internal wiring	N
23.5	The basic insulation of internal wiring withstanding the electrical stress likely to occur in normal use (EN 60 335-1:02))		P
	No breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation		P
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by positive means		P
23.7	Only the colour combination green/yellow used for earthing conductors	No earthed conductor	N
23.8	Aluminium wires not used for internal wiring	Aluminium wires not used	P
23.9	No lead-tin soldering of stranded conductors where they are subject to contact pressure, unless		P
	clamping means so constructed that there is no risk of bad contact due to cold flow of the solder		P
24	COMPONENTS		--



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
24.1	Components comply with safety requirements in relevant EN standards (EN 60 335-1:02)		N
24.1.1	Capacitors likely to be subjected to the supply mains voltage and used for radio interference suppression or voltage dividing, shall comply with Annex ZC (EN 60 335-1:02)	No such capacitor	N
	Small lampholders: compliance with requirements for E10 lampholders	No such lampholder used	N
	Isolating transformers and safety isolating transformers comply with EN 742	No such transformer used	N
	Safety isolating transformers tested with the appliance, comply with Annex ZD		N
	Appliance couplers for IPx0 appliances: compliance with EN 320		N
	Automatic controls: compliance with EN 730, unless tested with the appliance	No such controls	N
	Other appliance couplers: compliance with EN 309		N
	Switches: compliance with EN 1058, unless tested with the appliance (EN 60 335-1:02)		N
24.1.2	Automatic controls complying with EN 730: additional tests according to this standard and 11.3.5 to 11.3.8 and Cl. 17 of EN 730 as type 1 controls, the cycles of operation being:		--
	- thermostats: 10 000		N
	- temperature limiters: 1000		N
	- self-resetting thermal cut-outs: 300		N
	- non-self-resetting thermal cut-outs: 30		N
	- energy regulators: 3000 (EN 60 335-1:02)		N
	- timers: 10 000 (EN 60 335-1:02)		N
24.1.3	For switches, the test of 17.2.7 of EN 1058-1 is carried out for 10 000 cycles of operation		N
	Switches not separately tested and found to comply with EN 1058-1 under conditions covering those occurring in the appliance, comply with Annex ZE		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	Switches for no-load-operation and operable only with the aid of a tool, are not subjected to the tests of Cl. 17 of EN 1058-1		N
	This applies also to switches operated by hand, and with interlock for no-load-operation		N
	Switches without this interlock subjected to the test of 17.2.7 of EN 1058-1 for 100 cycles of operation		N
	Switches incorporated in hand dryers are tested for 50 000 cycles of operation (EN 60 335-2-23)		N
24.1.4	Components marked with their operating characteristics are used in the appliance in accordance with these markings		P
	Component which have to comply with other standard is tested separately, according to the relevant standard		P
	Component used within the limits of its marking, tested in accordance with conditions occurring in the appliance		P
	Component not marked, or not used in accordance with its marking, or no EN standard exists, tested under the conditions occurring in the appliance		P
	Components not mentioned in Table 3 tested as part of the appliance		P
24.1.5	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	No such capacitors	N
	List of components		N
24.2	No switches or automatic controls in flexible cords		P
	Helmet-type hairdryers and permanent-wave appliances may incorporate a switch in a flexible cord (EN 60 335-2-23)		N
	No devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance	No such devices	N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	No thermal cut-outs which can be reset by soldering		P
24.3	Switch intended for all-pole disconnection of stationary appliances is directly connected to the supply terminals, having a contact separation of at least 3 mm in each pole	Hand-held appliances	N
24.4	Plugs and socket-outlets for heating elements and extra-low voltage circuits, not interchangeable with plugs and	No such plug and socket-outlets	N
	socket-outlets or with connectors and appliance inlets complying with EN 83 or EN 320, respectively		N
24.5	Plugs and socket-outlets etc. for interconnection cords, not interchangeable with plugs and socket-outlets or connectors and appliance inlets complying with EN 83 or EN 320, respectively, if direct supply from the mains could give rise to a hazard		N
24.6	Motors connected to the supply mains and having inadequate basic insulation for the rated voltage of the appliance, comply with the requirements of Annex F	No motor	N
25	<b>SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS</b>		--
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		--
	- supply cord fitted with a plug		P
	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance	No inlet	N
	- pins for insertion into socket-outlets		N
25.2	Appliance not provided with more than one means of connection to the supply		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



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
25.3	Connection of supply wires for appliance intended to be permanently connected to fixed wiring possible after the appliance has been fixed to its support	No such constructions	N
	Appliance provided with a set of terminals for the connection of cables or fixed wiring, cross-sectional areas specified in 26.3		N
	Appliance provided with a set of terminals allowing the connection of a flexible cord		N
	Appliance provided with a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate type of cable or conduit		N
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimensions according to Table 10	Not to be permanently connected	N
	Introduction of conduit or cable does not affect the protection against electric shock or reduce creepage distances and clearances below values specified in 29.1		N
25.5	Method for assemble supply cord with the appliance:		--
	- type X attachment		N
	- type Y attachment	Type Y attachment	P
	Type Z attachment is allowed for (EN 60 335-2-23):		N
	- hand-held appliances (EN 60 335-2-23)		N
	- hairdryers with a flexible hood attachment (EN 60 335-2-23)		N
	- heaters for detachable curlers having not more than 10 curlers (EN 60 335-2-23)		N
	Type X attachment: specially prepared cord		N
	Type X attachment not used for flat twin tinsel cord		N
25.6	Plugs fitted with only one flexible cord		N





EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	Supply cords of single-phase portable appliances having a rated current not exceeding 16 A, provided with a plug complying with the following Standard Sheets of EN 83 (EN 60 335-1:02):		--
	- for Class I appliances: Standard Sheet C2b, C3b or C4 (EN 60 335-1:02)	PSE PLUG	N
	- for Class II appliances: Standard Sheet C5 or C6 (EN 60 335-1:02)		N
25.7	Appliance supply cord not lighter than:		--
	- braided cord (245 EN 51)		N
	- ordinary tough rubber sheathed cord (245 EN 53)		N
	- ordinary polychloroprene sheathed flexible cord (245 EN 57) (EN 60 335-1:94)		N
	- flat twin tinsel cord (227 EN 41)		N
	- light polyvinyl chloride sheathed cord (227 EN 52)		N
	- ordinary polyvinyl chloride sheathed cord (227 EN 53)		N
	Temperature rise of external metal parts exceeding 75 K, PVC cord not used		N
	PVC cord used: appliance so constructed that the supply cord is not likely to touch external metal parts in normal use		N
	The temperature rise limit of 75 K is increased to 130 K if the temperature rise decreases to 75 K within 5 min after the appliance has been switched off (EN 60 335-2-23)		N
	PVC supply cord appropriate for higher temperatures, type Y or type Z attachment used		N
25.8	Nominal cross-sectional area of supply cords according to Table 11; rated current (A); cross-sectional area (mm <sup>2</sup> ) .....	<6A, 0.75mm <sup>2</sup>	P
	For hand-held hairdryers having a supply cord not exceeding 2 m, the nominal cross-sectional area may be reduced to (EN 60 335-2-23):		--
	- 0,75 mm <sup>2</sup> for rated current up to 10 A (EN 60 335-2-23)		P



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	- 1,0 mm <sup>2</sup> for rated current up to 16 A (EN 60 335-2-23)		N
25.9	Supply cord not in contact with sharp points or edges	Non - detachable supply cord, not contact sharp point or edges	P
25.10	Green/yellow core for earthing purposes in Class I appliance		N
25.11	Conductors of supply cords not consolidated by lead-tin soldering where they are subject to contact pressure, unless		P
	Clamping means so constructed that there is no risk of bad contacts due to cold flow of the solder		P
25.12	Moulding the cord to part of the enclosure does not damage the insulation of the supply cord	No such constructions	N
25.13	Inlet opening provided with a bushing, or is so constructed, that there is no risk of damage to the supply cord when introduced		P
25.13.1	Inlet bushing so shaped as to prevent damage to the supply cord		P
	Inlet bushing not detachable		P
25.13.2	At inlet openings, the insulation between the conductor of a supply cord and the enclosure of the appliance is consisting of the insulation of the conductor, and in addition:		--
	- for Class 0 appliances: at least one separate insulation		N
	- for other appliances: at least two separate insulations		N
	Only one separate insulation is required if the enclosure at the inlet opening is of insulating material		N
	The separate insulation consists of:		--
	- the sheath of a supply cord at least equivalent to that of a cord complying with EN 227 or 245		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	- a lining or bushing of insulating material complying with the requirements of 29.2 for supplementary insulation		N
25.14	Supply cords adequately protected against excessive flexing		--
	Flexing test; applied force (N); number of flexings :		N
	The test does not result in:		--
	- short-circuit between the conductors		N
	- breakage of more than 10% of the strands of any conductor		N
	- separation of the conductor from its terminal		N
	- loosening of any cord guard		N
	- damage, within the meaning of the standard, to the cord or the cord guard		N
	- broken strands piercing the insulation and becoming accessible		N
	Test for hand-held appliances, except appliances incorporating a swivel connection (4000 flexings, 180°) (EN 60 335-2-23)		N
25.15	Conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorages	Cord anchorage used	N
	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
	Pull and torque test of supply cord, values shown in Table 10: pull (N); torque (not on automatic cord reel) (Nm) .....		N
	Max. 2 mm displacement of the cord, and conductors not moved more than 1 mm in the terminals		N
	Creepage distances and clearances not reduced below values specified in 29.1		N
	The swivel connection is not locked during the tests (EN 60 335-2-23)		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
25.16	Cord anchorages for type X attachments so constructed and located that:		--
	- replacement of the cord is easily possible		N
	- it is clear how the relief from strain and the prevention of twisting are obtained		N
	- they are suitable for different types of cord		N
	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless separated from		N
	- accessible metal parts by supplementary insulation		N
	- the cord is not clamped by a metal screw which bears directly on the cord		N
	- at least one part of the cord anchorage securely fixed to the appliance, unless part of a specially prepared cord		N
	- screws which have to be operated when replacing the cord do not fix any other component, if applicable		N
	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood		N
	- for Class 0, 0I and I appliances: they are of insulating material or are provided with an insulating lining, unless a failure of the insulation of the cord does not make accessible metal parts live		N
	- for Class II appliances: they are of insulating material, or if of metal, they are insulated from accessible metal parts by supplementary insulation		N
25.17	Adequate cord anchorages for type Y and Z attachment		N
25.18	Cord anchorages only accessible with the aid of a tool,		N
	or so constructed that the cord only can be fitted with the aid of a tool		N
25.19	Type X attachment, glands not used as cord anchorage in portable appliances		P



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	Tying the cord into a knot or tying the cord with string not used		N
25.20	Conductors of the supply cord for type Y and Z attachment adequately additionally insulated		N
25.21	Space for supply cable for fixed wiring or supply cord for type X attachment constructed to permit checking of conductors with respect to correct positioning and connection before fitting any cover, no risk of damage, no contact with accessible metal parts if a conductor becomes loose, etc.	No such space	N
	For portable appliances, the uninsulated end of a conductor prevented from any contact with accessible metal parts, unless the end of the cord is such that the conductors are unlikely to slip free	Plastic enclosure	N
25.22	Appliance inlet:		--
	- live parts not accessible during insertion or removal		P
	- connector can be inserted without difficulty		P
	- the appliance is not supported by the connector		P
	- is not for cold conditions if temperature rise of external metal parts exceeds 75 K, unless the supply cord is not likely to touch such metal parts		P
25.23	Interconnection cords comply with the requirements for the supply cord, except as specified		N
	If necessary, electric strength test of 16.3		N
25.24	Interconnection cords not detachable without the aid of a tool		N
25.25	Interconnection cords shall not be detachable without the aid of a tool if compliance with the standard is when they are disconnected (EN 60335-2-23)		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
25.101	Appliances incorporating a swivel connection shall be constructed so that during normal use there will be no electrical or mechanical failure which could impair compliance with this standard (EN 60 335-2-23)		P
	The appliance is operated under the condition as specified in 11.101, the number of revolutions being increased to 20 000 (EN 60 335-2-23)		P
	After this test, the swivel connection and the supply cord shall be fit for further use (EN 60 335-2-23)		P
	Live parts shall not have become accessible and the appliance shall withstand the electric strength test of 16.3 (EN 60 335-2-23)		P
26	TERMINALS FOR EXTERNAL CONDUCTORS		--
26.1.1	Appliances with type X attachment and appliances for connection to fixed wiring provided with terminals in which connection is made by means of screws, nuts or equally effective devices		N
	Screws and nuts serve only to clamp supply conductors, except		N
	Internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors		N
26.1.2	For type X attachment soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone		N
	Soldering alone used, barriers provided, creepage distances and clearances satisfactory if the conductor becomes free		N
	For type Y and Z attachment: soldered, welded, crimped and similar connections used		P
	For Class II appliances: the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone		P



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	For Class II appliances: soldering, welding or crimping alone used, barriers provided, creepage distances and clearances satisfactory if the conductor becomes free		P
26.2	Terminals for type X attachment and for connection to fixed wiring suitable for connection of conductors with required cross-sectional area according to Table 11; rated current (A); nominal cross-sectional area (mm <sup>2</sup> ) .....		N
	Terminals only suitable for a specially prepared cord		N
26.3	Terminals for the supply cord suitable for their purpose		N
	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless conductors ends fitted with a device suitable for screw terminals		N
	Pull test of 5 N to the connection		N
	Terminals for type X attachment in appliance incorporating a swivel connection, shall not allow the connection of a supply cord by means of screws and shall not be of the screwless type (EN 60 335-2-23)		N
26.4	Terminals for type X attachment and those for connection to fixed wiring so fixed that when tightening or loosening the clamping means:		--
	- the terminal does not loosen		N
	- internal wiring is not subjected to stress		N
	- creepage distances and clearances are not reduced below the values in 29.1		N
26.5	Terminals for type X attachment and for connection to fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure and without damaging the conductor		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
26.6	Terminals for type X attachment, no special preparation of conductors required, and so constructed and placed that conductors prevented from slipping out, except those with a specially prepared cord and those for connection to fixed wiring		N
26.7	Terminals of the pillar type constructed and located as specified	No pillar type	N
26.8	Terminals for the connection to fixed wiring located close to each other, including the earthing terminal		N
26.9	Terminals for type X attachment accessible after removal of a cover or part of the enclosure		N
26.10	Terminals not accessible without the aid of a tool	Terminals are totally enclosed	P
26.11	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection between live parts and accessible metal parts, and		N
	for Class II construction, between live parts and metal parts separated from accessible metal parts by supplementary insulation only		N
	Stranded conductor test, 8 mm insulation removed		N
27	<b>PROVISION FOR EARTHING</b>		--
27.1	Accessible metal parts of Class 0I and I appliances, permanently and reliably connected to an earthing terminal		N
	Earthing terminals not connected to neutral terminal		N
	Class 0, II and III appliance have no provision for earthing		P
27.2	Screw clamping terminals comply with Cl. 26		N
	Screwless terminals comply with EN 998-2-2		N
	Terminals used for the connection of external equipotential bonding conductors allow connection of conductors of 2,5 to 6 mm <sup>2</sup> , and		N





EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	do not provide earthing continuity between different parts of the appliance		N
	Conductors cannot be loosened without the aid of a tool		N
	Clamping means adequately secured against accidental loosening		N
27.3	Earth connection "made before" and "separated after" current-carrying connections		N
	Current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		N
27.4	No risk of corrosion resulting from contact between metal of earthing terminal and other metal		N
	Adequate resistance to corrosion of coated or uncoated parts providing earthing continuity, other than parts of a metal frame or enclosure		N
	Parts of steel providing earthing continuity provided at the essential areas with an electroplated coating, thickness at least 5 m		N
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		N
	In case of aluminium alloys precautions taken to avoid risk of corrosion		N
27.5	Low resistance of connection between earthing terminal and earthed metal parts		N
	Resistance not exceeding 0,1 $\Omega$ at the specified low-resistance test		N
27.6	In hand-held appliances printed conductors of printed circuit boards not used to provide earthing continuity		N
	In other appliances at least two tracks are used with independent soldering points, and		N
	the appliance complies with the requirements of 27.5 for each circuit, and		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	the material of the printed board complies with EN 249-2-4 or EN 249-2-5		N
28	<b>SCREWS AND CONNECTIONS</b>		--
28.1	Fixings and electrical connections 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	No insulating material screws	N
	Screws of insulating material not used for any electrical connection		N
	Screws transmitting electrical contact only screwing into metal		N
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		N
	Type X attachment, screws to be removed for replacement of supply cord, or for users maintenance, not of insulating material if their replacement by a metal screw can impair basic insulation		N
	Screws and nuts transmitting contact pressure subjected to torque test as specified, applying torque as shown in Table 14	The diameter of screw: 2.61mm, 0.5Nm, 10times	P
	The test is not carried out on screws and nuts transmitting contact pressure for earthing continuity provided at least two screws or nuts are used		N
28.2	Contact pressure not transmitted through insulating material liable to shrink or distort, unless shrinkage or distortion compensated		N
	This requirement does not apply to electrical connections in circuits carrying a current not exceeding 0,5 A		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
28.3	Space-threaded (sheet metal) screws only used for the connection of current-carrying parts if they clamp these parts directly in contact with each other		N
	Thread-cutting (self-tapping) screws not used for electrical connection of current-carrying parts, unless generating a full form standard machine screw thread	Only for fixed enclosure	P
	Thread-cutting (self-tapping) screws not used if they are likely to be operated by the user or installer unless the thread is formed by a swaging action		P
	Use of thread-cutting and space-threaded screws for earthing continuity according to specification		N
28.4	Screws for current-carrying mechanical connection or screws providing earthing continuity secured against loosening		N
	Rivets for current-carrying connections subject to torsion secured against loosening		N
29	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH INSULATION		--
29.1	Creepage distances and clearances not less than specified in Table 13	(see appended table)	P
	Resonant voltage between the point where a winding and a capacitor are connected together and metal parts separated from live parts by basic insulation only, creepage distances and clearances not less than the values specified for the value of the voltage produced by the resonance		N
	Values increased by 4 mm in case of reinforced insulation when resonance voltage		N
29.2	Distances through insulation not less than 1,0 mm for supplementary insulation, and 2,0 mm for reinforced insulation	Enclosure > 2mm	P



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict

	For curling irons, the distance through insulation between metal parts separated by supplementary insulation may be reduced to 0,6 mm, provided that the distance through basic insulation is at least 1 mm (EN 60 335-2-23)		P
29.2.1	Supplementary insulation applied in thin sheet form, other than mica or similar scaly material, consists of at least two layers, each of the layers withstands the electric strength test of 16.3 for supplementary insulation		P
	Reinforced insulation applied in thin sheet form, other than mica or similar scaly material, consists of at least three layers, and any two of the layers together withstand the electric strength test of 16.3 for reinforced insulation		P
29.2.2	Supplementary or reinforced insulation inaccessible and does not exceed the maximum permissible temperature values		P
	Supplementary or reinforced insulation, after conditioning as specified, withstands the electric strength test as specified in 16.3, both at the oven temperature and room temperature		P

30	RESISTANCE TO HEAT, FIRE AND TRACKING		--
30.1	See Annex H		P
	Relevant external parts of non-metallic material		P
	Parts supporting live parts and parts providing supplementary or reinforced insulation sufficiently resistant to heat		P
	Ball-pressure test with a force of 20 N, diameter of impression not exceeding 2 mm		P
	External parts: at 75°C for enclosure	Enclosure, Plastic frame	P
	Parts supporting live parts: at 125°C		N
	Parts providing supplementary or reinforced insulation: temperature (°C) .....		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	For hand dryers and hairdryers, the temperature rise occurring during the tests of Cl. 19 are not taken into account (EN 60 335-2-23)		N
30.2	Relevant parts of non-metallic material adequately resistant to ignition and spread of fire		N
	For helmet-type hairdryers compliance is also checked by the test of 30.101 (EN 60 335-2-23)		N
	For heaters for detachable curlers, 30.2.3 is applicable (EN 60 335-2-23)		N
	For other appliances, 30.2.2 is applicable (EN 60 335-2-23)		P
30.2.1	Possible burning test of relevant parts according to Annex J		N
	Glow-wire test of Annex K made at temperature 550 °C	Enclosure, Plastic frame	P
30.2.2	Appliances operated while attended, parts of insulating material supporting connections carrying a current exceeding 0,5 A in normal operation, subjected to the glow-wire test of Annex K at 650 °C		N
30.2.3	Appliances operated while unattended, possible bad-connection test according to Annex L		N
	Glow-wire test of Annex K made at 850 °C		N
	Possible needle-flame test according to Annex M		N
30.2.4	Parts of non-metallic material within a distance of 50 mm from parts not withstanding the tests of 30.2.2 or 30.2.3, subjected to the needle-flame test of Annex M		N
30.3	Relevant insulating material have adequate resistance to tracking		N
	Tracking test at 175 V according to Annex N		N
	Tracking test at 250 V according to Annex N		N
	No hazard other than fire, tracking test at 175 V according to Annex N, and in addition needle-flame test of surrounding parts according to Annex M		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	Possible needle-flame test of non-metallic material		N
30.101	For helmet-type hairdryers the needle-flame test of Annex M is applied to (EN 60 335-2-23):		--
	- parts of non-metallic material enclosing the heating element and other electrical components (EN 60 335-2-23)		N
	- non-metallic parts within the enclosure (EN 60 335-2-23)		N
31	<b>RESISTANCE TO RUSTING</b>		--
	Relevant ferrous parts adequately protected against rusting		P
32	<b>RADIATION, TOXICITY AND SIMILAR HAZARDS</b>		--
	Appliance does not emit harmful radiation	No radiation	P
	Appliance does not present a toxic or similar hazard		P
A	<b>ANNEX A, NORMATIVE REFERENCES</b>		--
	The annex contains a list of standards which are referred to, and thus become part of, this standard		P
C	<b>ANNEX C, AGEING TEST ON MOTORS</b>		--
	Test carried out when doubt with regard to the classification of the insulating system of a motor winding		N
D	<b>ANNEX D, ALTERNATIVE REQUIREMENTS FOR PROTECTED MOTOR UNITS</b>		--
	Test of 19.7 carried out on a separate motor protector according to the specification		N
E	<b>ANNEX E, MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		--



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	Methods of measuring creepage distances and clearances, specified in 29.1, indicated in 10 different cases		P
F	ANNEX F, MOTORS NOT ISOLATED FROM THE SUPPLY MAINS AND HAVING BASIC INSULATION NOT DESIGNED FOR THE RATED VOLTAGE OF THE APPLIANCE		--
	Motors having a working voltage not exceeding 42 V, not being isolated from the supply mains, and having basic insulation not designed for the rated voltage of the appliance are tested according to this annex	No motors	N
	All clauses of this standard apply, unless otherwise specified in this annex		N
F.8	Protection against accessibility to live parts		N
F.11.8	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
F.16	Leakage current and electric strength		N
F.16.3	The insulation between live parts of the motor and its other metal parts is not subjected to this test		N
F.19	Abnormal operation		--
	The test of 19.7 to 19.9 are not to make		N
F.19.101	Appliance operated at rated voltage with each of the following defects:		--
	- short-circuit of the terminals of the motor, including any capacitor incorporated in the motor circuit		N
	- open circuit of the supply to the motor		N
	- open circuit of any shunt resistor during operation of the motor		N
F.22	Construction		N
F.22.101	Class I appliance 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



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
<b>G</b>	<b>ANNEX G, CIRCUIT FOR MEASURING LEAKAGE CURRENTS</b>		--
	A suitable circuit for measuring leakage currents is shown		P
<b>J</b>	<b>ANNEX J, BURNING TEST</b>		--
	The burning test is made in accordance with EN 707, and method FH is used		N
	Category FH3 applies, the maximum burning rate being 40 mm/min		N
<b>K</b>	<b>ANNEX K, GLOW-WIRE TEST</b>		--
	The glow-wire test is made in accordance with EN 695-2-1 (clause numbers between parentheses refer to EN 695-2-1)		--
(4)	Description of test apparatus: the last paragraph before the note is replaced		P
(5)	Severities: the duration of application of the tip of the glow-wire to the specimen being (30 ± 1) s		P
(10)	Observations and measurements: item c) does not apply		P
<b>L</b>	<b>ANNEX L, BAD-CONNECTION TEST WITH HEATERS</b>		--
	The bad-connection test with heaters is made in accordance with EN 695-2-3 (clause numbers between parentheses refer to EN 695-2-3)		N
(3)	General description of the test: additions concerning crimped connections		N
(4)	Description of test apparatus: replacements of some of the test specifications and the first paragraph of the note		N
(6)	Severities: the duration of application of the test power being (30 ± 1) min		N
(8)	Test procedure: subclause 8.6 replaced		N
(11)	Information to be given in the relevant specification: item h), the first dashed paragraph, does not apply		N





EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
M	ANNEX M, NEEDLE-FLAME TEST		--
	The needle-flame test is made in accordance with EN 695-2-2 (clause numbers between parentheses refer to EN 695-2-2)		--
(4)	Description of the apparatus: the sixth paragraph is replaced		N
(5)	Severities: the duration of application of the test flame is (30 ± 1) s		N
(8)	Test procedure: some changes in the test specifications		N
(10)	Evaluation of the test results: addition in the test specification		N
N	ANNEX N, PROOF TRACKING TEST		--
	The proof tracking test is made in accordance with EN 112 (clause numbers between parentheses refer to EN 112)		--
(3)	Test specimen: the last sentence of the first paragraph does not apply		N
(5)	Test apparatus: some changes in the subclauses		N
(6)	Procedure: adjustments of the test specifications		N
P	ANNEX P, SEVERITY OF DUTY CONDITIONS OF INSULATING MATERIAL WITH RESPECT TO THE RISK OF TRACKING		--
	Recognition of different duty conditions with respect to the risk of tracking		N
ZA	ANNEX ZA, SPECIAL NATIONAL CONDITIONS (EN 60 335-1:02)		--
7.12	DENMARK: requirements regarding marking tag of power supply cord and connecting of earthing wire		N
19.5	NORWAY: the test is also applicable to appliances intended to be permanently connected to fixed wiring		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
19.11.2	AUSTRIA: requirements regarding appliances having circuits which under fault conditions may cause earth-leakage currents having a d.c. component exceeding 5 mA and exceeding 20% of the total earth-leakage		N
22.2	FRANCE, NORWAY: The second paragraph of this subclause dealing with single-phase Class I appliances with heating elements is not applicable due to the supply system		N
25.6	BELGIUM, FRANCE, GREECE, UNITED KINGDOM: plugs according to Standard Sheet C2b not allowed		N
	AUSTRIA, GERMANY, FINLAND, ICELAND, IRELAND, ITALY, LUXEMBOURG, NETHERLANDS, NORWAY, PORTUGAL, SPAIN, SWEDEN, SWITZERLAND, UNITED KINGDOM: plugs according to Standard C3b not allowed		N
	DENMARK: Supply cords of single-phase portable appliances having a rated current not exceeding 10 A provided with a plug according to the following:		--
	Class I appliances: Section 107-2-DI Standard Sheet DK2-1a		N
	For appliances covered by a Part 2 of EN 60 335, also plugs in accordance with EN 83, Standard Sheet C2b, C3b or C4 are allowed		N
	Class II appliances: EN 83, Standard Sheet C5 or C6		P
	Stationary single-phase appliances, having a rated current not exceeding 10 A, and provided with a plug, the plug is in accordance with the requirements above		N
	Multi-phase appliances and single-phase appliances having a rated current exceeding 10 A, and provided with a plug, the plug is in accordance with the requirements below:		--
	Class I appliances: Section 107-2-D1, Standard Sheet DK6-1a/EN 60 309-2, Standard Sheet 2-II, 2-IV		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	Class II appliances: Section 107-2-D1, Standard Sheet DK6-1a/2-II, 2-IV		N
	IRELAND: plug is in accordance with Standard Sheets B1 (15A), B2 and C2b		N
	SPAIN: appliances having a rated current not exceeding 6 A, provided with a plug complying with UNE 20 315:		--
	for Class I appliances: figure 7C		N
	for Class II appliances: figure 15A		N
	Class I appliances having a rated current not exceeding 16 A, provided with a plug complying with Standard UNE 20 315 figure 7B		N
	SWITZERLAND: supply cords of portable household and similar electrical appliances, rated current not exceeding 10 A, provided with a plug complying with SEV 1011 or EN 884-1 and one of the following dimension sheets:		--
	SEV 6532-2:1991 plug type 15 3P+N+PE 250/400 V, 10 A		N
	SEV 6532-2:1991 plug type 11 L+N 250 V, 10 A		N
	SEV 6532-2:1991 plug type 12 L+N+PE 250 V, 10 A		N
	UNITED KINGDOM: plug according to Standard Sheet B2 or C5 used (refer to Annex ZB)		N
25.8	IRELAND, UNITED KINGDOM: replacement of figures (rated current/cross-sectional area) in the table		N
ZB	ANNEX ZB, A-DEVIATIONS (EN 60 335-1:02)		--
3	SWITZERLAND: information about batteries		N
7.1	ITALY: the voltage is 220 V/380 V		N
	SPAIN: the voltages are 127 V/220 V and 220 V/380 V		N
7.12	IRELAND: information about required label attached to the supply cord, concerning the colour code of the wires		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
22.22	GERMANY: the amount of asbestos in the mass containing asbestos not exceeding 0,1%	No asbestos	P
	FINLAND: certain types of asbestos not used		P
24	SWEDEN: components containing mercury not used		P
25.6	UNITED KINGDOM: regulations concerning plugs to be fitted to domestic appliances		N

ZC	ANNEX ZC, CAPACITORS (EN 60 335-1:02)		--
	The following clauses and subclauses of EN 384-14:1981 apply to capacitors likely to be permanently subjected to the supply mains voltage and used for radio interference suppression or for voltage dividing purposes with the following modifications		N
4	Terminology		N
4.3	Applicable, capacitors of Class X tested as capacitors of Class X2		N
4.4	Applicable		N
6	Marking		N
6.1	Items a) and b) applicable		N
8	Schedules for qualification approval tests		N
8.1	Table II, group 0, group 2 and group 3 applicable as follows:		N
	- group 0: subclauses 10.1, 10.2, 11.1 and 11.3		N
	- group 2: subclause 12.10		N
	- group 3: subclause 12.11		N
10.1	Visual examination and check of dimensions		N
	Applicable		N
10.2	Applicable for the marking required by 6.1a) and b)		N
11	Electrical tests		--
11.1	Applicable		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
11.3	Only table VI applies; climatic category is -/-/21; the values for test A apply; capacitors in heating appliances, the values for test B or C apply		N
12	Environmental test		--
12.10	Applicable; only insulation resistance and voltage proof are checked (see Table X)		N
12.11	Applicable with 12.11.2 and 12.11.6 modified as follow		N
	Capacitors are subjected to an impulse voltage test if they are incorporated:		--
	- in appliances liable to be operated while unattended		N
	- in other appliances where they are liable to remain under electric stress while the ON/OFF switch or control is in the OFF position, irrespective of the position of the plug in the socket-outlet		N
	The wave form of the impulse is 1,2/50 with a peak value of 2,5 Kv		N
	Alternatively, the test is carried out with an impulse voltage having any front time but with a time to half value not exceeding 100 s		N
	The peak value of the impulse voltage adjusted by a suitable means such as an impulse proof capacitor of low inductance and having a capacitance similar to that of the capacitor under test		N
	No flashover or visible damage when the impulse voltage is applied 3 times with at least 1 s between the impulses		N
12.11.6	See Note		N
ZD	ANNEX ZD, SAFETY ISOLATING TRANSFORMERS		--
	Safety isolating transformers, tested with the appliance, comply with this standard and the following additional requirements		N
7	Marking and instructions		N
7.1	Marking of transformers for specific use:		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
	- name		N
	- trademark/identification mark of manufacturer or responsible vendor		N
	- model or type reference		N
17	Overload protection of transformers and associated equipment		N
	The temperature limits specified for the windings do not apply to fail-safe transformers		N
	Such transformers comply with 14.5 of EN 60 742		N
22	Construction		N
22.501	Subclause 8.6 of EN 60 742 applicable		N
29	Creepage distances, clearances and distances through insulation		N
29.1	The distances specified in Table XV of EN 60 742, items 1a, 1c and 2 apply		N

ZE	ANNEX ZE, SWITCHES		--
	Switches tested with the appliance comply with this standard and the following clauses of EN 1058-1, as modified		--
	- the tests of EN 1058-1 carried out under the conditions occurring in the appliance, unless		N
	- otherwise specified, the tests are carried out on the switch incorporated in the appliance		N
	- before being tested in the appliance, switches are operated 20 times without load		N
8	Marking and documentation		--
	Switches are not required to be marked except, that incorporated switches shall be marked with the manufacturer's name or trademark and the type reference		N
13	Mechanism		--
	Applicable		N
15	Insulation resistance and electric strength		--
15.1	Not applicable		N



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict
15.2	Not applicable		N
15.3	Applicable for full disconnection and micro-disconnection		N
17	Endurance		--
	Applicable, at the end of the tests, temperature rise of the terminals not increased by more than 30 K		N
20	Clearances, creepage distances and distances through insulation		--
	Applicable for creepage distances and clearances for live parts of different potential only, as stated in Table 18 for operational insulation, and across full disconnection and micro-disconnection		N
ZF	ANNEX ZF, INFORMATIVE		--
	EN and CENELEC code designations for flexible cords		P



EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict

10	TABLE: INPUT DEVIATION MEASUREMENTS					N
input deviation Dp of/at:		Prated (W)	P (W)	Dp	required Dp	remark
--		--	--	--	--	--

11.8	TABLE: TEMPERATURE RISE MEASUREMENTS					P
room temperature t1 ( °C ) .....				23.6 °C		--
room temperature t2 ( °C ) .....				24.8 °C		--
test condition .....				--		--
temperature rise Dt of part/at:				Dt (K)	required Dt (K)	
PCB				35.8	105	
Enclosure inside				71.2	--	
Enclosure outside				49.5	60	

13.2	TABLE: LEAKAGE CURRENT MEASUREMENTS AT OPERATING TEMPERATURE					P
heating appliances: at 1,15 times maximum rated input (W) .....				--		--
motor-operated and combined appliances: at 1,06 times rated voltage (V) .....				--		--
Heater (PTC)						--
leakage current I between:				I (mA)	Limited (mA)	
Live parts to enclosure wrapped foil metal				< 0.07	0.25	

13.3	TABLE: ELECTRIC STRENGTH MEASUREMENTS AT OPERATING TEMPERATURE					P
test voltage applied between:			test voltage (V)	breakdown		
Live parts to enclosure			3000	No		

16.2	TABLE: LEAKAGE CURRENT MEASUREMENTS					P
at 1,06 times rated voltage (V) :				--		--





EN 60335-2-23			
Clause	Requirement – Test	Result - Remark	Verdict

leakage current I between:	I (mA)	required I (mA)
Live parts to enclosure	< 0.06	0.25

16.3	TABLE: ELECTRIC STRENGTH MEASUREMENTS AT OPERATING TEMPERATURE	P
insulation resistance R between:		test voltage (V)
Live parts to enclosure		3000
		breakdown
		No

19	TABLE: abnormal operation tests				P
ambient temperature (°C) .....			25°C		—
No.	component No.	fault	test voltage (V)	test time	result
1	Capacitor	s-c	220	15min	No hazardous

24.1 Object/part No.	Manufacturer / Trademark	Type / Model	Technical data	mark(s) of conformity
-------------------------	-----------------------------	--------------	----------------	--------------------------

29.1	TABLE: CREEPAGE DISTANCE AND CLEARANCE THROUGH INSULATION MEASUREMENTS					N	
clearance cl and creepage distance dcr at/of:		Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)

30.1	TABLE: BALL-PRESSURE TESTS			P
part			test temperature (°C)	impression diameter (mm)
Enclosure			75	0.82

30.2	TABLE: GLOW WIRE TEST		P
Part		Test temperature (°C)	Result
Enclosure		550	Not burning



## **ANNEX A:**

### **Photo-documentation**

