Projoy Electric Co.,Ltd.

CE LVD REPORT

Prepared For :	Projoy Electric Co.,Ltd. Room 3017, 3018, 30th Floor, Tiancheng Times Business Plaza, Xiangcheng District, Suzhou
Manufacturer:	Projoy Electric Co.,Ltd. Room 3017, 3018, 30th Floor, Tiancheng Times Business Plaza, Xiangcheng District, Suzhou
Product Name:	DC Junction and AC Distribution Box
Trade Name:	PROJOY
S/N:	20200105
Model :	PEJDB
Additional Model :	PEJB-1-1, PEJB-2-1, PEJB-2-2, PEJB-3-1, PEJB-3-3, PEJB-4-1, PEJB-4-2, PEJB-4-4, PEJB-5-1, PEJB-5-2,PEJB-6-1, PEJB-6-2, PEJB-6-6, PEJB-12-1,PEJB-12-2,PEJB-16-1,PEDB-S3, PEDB-S6, PEDB-S8, PEDB-T5, PEDB-T6,PEDB-T8, PEDB-T9,PEDB-T10, PEDB-T12, PEDB-T15, PEDB-T18,PEDB-T20, PEDB-T36, PEDB-T50,PEDB-T60,PEJDB-S3, PEJDB-S6, PEJDB-T9, PEJDB-T10, PEJDB-T20, PEJDB-T36,PEDB-M3
Prepared By :	TST Testing Technology(Dongguan) Co., Ltd. 2F Yinhe Building Hetian Road,Houjie Town, Dongguan, Guangdong, China
Test Date:	Feb.17,2020 To Feb.21,2020
Date of Report :	Feb.21,2020
Report No.:	TST2020021401-1SR

LVD Report
EN 60335-1
Safety of household and similar electrical appliances
&EN 62233
Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure

Testing laboratory	
Name.....:	TST Testing Technology(Dongguan) Co., Ltd.
Address.....:	2F Yinhe Building Hetian Road,Houjie Town, Dongguan, Guangdong, China
Testing location.....:	TST Testing Technology(Dongguan) Co., Ltd.
Applicant	
Name.....:	Projoy Electric Co.,Ltd.
Address.....:	Room 3017, 3018, 30th Floor, Tiancheng Times Business Plaza, Xiangcheng District, Suzhou
Test specification	
Standard.....:	EN 60335-1:2016 EN 62233:2008
Test procedure .....:	Compliance with EN 60335-1:2016. EN 62233:2008
Procedure deviation.....:	N.A.
Non-standard test method.....:	N.A.
Test item	
Description.....:	DC JUNCTION AND AC DISTRIBUTION BOX
Trademark.....:	PROJOY
Model and/or type reference.....:	PEJDB
Manufacturer.....:	PROJOY ELECTRIC CO.,LTD.
Address.....:	Room 3017, 3018, 30th Floor, Tiancheng Times Business Plaza, Xiangcheng District, Suzhou
Rating(s).....:	10~250A,600/1000/1500V,6~63A,230/400V,50/60Hz

Test case verdicts	
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)
Class of protection against electrical shock.....:	Class I appliance

General remarks
"This report is not valid as a CB Test Report unless appended to a CB Test Certificate issued by a NCB, in accordance with EN EE 02".

General remarks
This test report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item tested.

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

General product information:

Copy of marking plate

DC Junction and AC Distribution Box
Model: PEJDB
Rating: 10~250A,600/1000/1500V,6~63A,230/400V,50/60Hz

PROJOY ELECTRIC CO.,LTD..

Name and address of the testing laboratory : TST Testing Technology(Dongguan) Co.,Ltd.
2F Yinhe Building Hetian Road,Houjie Town,
Dongguan, Guangdong, China

Test by : Sgan Feb.21,2020
Signature Date

Technician
Title

Review by : Apple Li Feb.21,2020
Signature Date

Project Engineer
Title

Approved by : Feb.21,2020
Signature Date

Andy/ Manager
Name and Title

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
4	GENERAL REQUIREMENT		---
	Appliance shall be constructed so that in normal use they function safely so as to cause no danger to persons or surroundings, even in the event of carelessness that may occur in normal use		P
	In general this principle is achieved by fulfilling the relevant requirements specified in this standard and compliance is checked by carrying out all the relevant tests	All the relevant tests are carried out	P
5	GENERAL CONDITIONS FOR THE TESTS		---
	Unless otherwise specified, the tests are carried out in accordance with this clause		P
5.1	Tests according to this standard are type tests		P
5.2	Tests are carried out on a single appliance that shall withstand all the relevant tests		P
5.3	The tests are carried out in the order of the clauses		P
	The test of 19.101 is carried out after the other tests. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
5.4	When testing appliances that are also supplied by other energies such as gas, the influence of their consumption has to be taken into account	No such construction	N
5.5	The tests are carried out with the appliance placed in the most unfavourable position that may occur in normal use.		P
5.6	If the setting can be altered by the user, tests shall be adjusted to their most unfavourable setting	No such setting	N
5.7	Tests are carried out at a temperature of 20℃±5℃.		N
5.8.1	For a.c. only, tested at rated frequency	Tested with 50Hz and 60Hz	P
5.8.2	For a.c./d.c., tested at the most unfavourable supply	Max load	P
5.8.3	For heating appliance, it operated at rated power input range		P
5.9	Alternative heating elements, the appliance is tested in the most unfavourable results		N
5.10	The tests are carried out on the appliance as supplied		P
5.11	Flexible cord appliance are tested with the appropriate flexible cord connected to the appliance		P
5.12	For heating appliance, only to heating elements without appreciable positive temperature coefficient of resistance		P

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
5.13	Appliance with PTC heating elements are carried out at a voltage corresponding to the specified power input		P
5.14	If class 0I appliance or class I appliance have accessible metal parts that are not earthed, such parts are checked for class II construction		N
5.15	If appliance have parts operating at safety extra-low voltage, such parts are checked for class III construction		N
5.16	When testing electronic circuits, the supply is to be free from perturbations		P
5.17	Appliance powered by rechargeable batteries are tested in accordance with annex B	No rechargeable batteries	N
5.18	If liner and angular dimensions are specified without a tolerance, ISO2768-1 is applicable		N
6	CLASSIFICATION		---
6.1	Protection against electric shock: Class I, II, III	Class I appliance	P
6.2	Protection against harmful ingress of water	IPX0	N
	Wash boilers and livestock feed boilers shall be at least IPX3 (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
7	MARKING		---
7.1	Rated voltage or voltage range (V) ..... :	110-220VAC	P
	Single-phase appliances: 230 V covered (EN 60 335-1:2012)	230V covered	P
	Multi-phase appliances: 400 V covered (EN 60 335-1:2012)	Single-phase appliances	N
	Nature of supply	~	P
	Rated frequency or frequency range (Hz) ..... :	50-60Hz	P
	Rated input or rated current	200W	P
	Manufacturer's or responsible vendor's name, trademark or identification mark	See the page 2	P
	Model or type reference	PEJDB	P
	Symbol for Class II	Class I appliance	N
	IP number	IPX0	N
	Appliances intended to be partially immersed in water for cleaning, shall be marked with the maximum level of immersion, and (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	with the substance of the following: "Do not immerse beyond this level" (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Special requirements for kettles so as to prevent overfilling (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008):		N
	- visible level mark in filling position, or (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	- impossibility to fill beyond rated capacity, or (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	- successful withstanding the test of 15.2 when kettle is completely filled (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	This indication shall be visible when the kettle is in the filling position (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	If the level mark is not self-evident, there shall be a reference to this mark on the outside of the kettle (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	which shall be visible when the kettle is in its normal position of use (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Pressure cooker: if the closed position of the lid of a pressure cooker is not obvious, this position shall be marked on the appliance (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	The associated stands delivered with cordless kettles shall be marked with (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008):		N
	- the name or trademark or identification mark of the manufacturer or responsible vendor (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	- the model or type reference (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
7.2	Warning for stationary appliances	No such stationary appliance	N
	Warning placed in vicinity of terminal cover	Not placed in vicinity of terminal cover	N
7.3	Range of rated values correctly marked		N
7.4	Voltage setting clearly discernible	No such setting	N
7.5	Marking of rated input for each rated voltage		N
	Marking for upper and lower limits of rated input		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
7.6	Correct symbols used	See marking label	P
7.7	Correct connection diagram, fixed to the appliance	No connection diagram	N
7.8	Not for type Z attachment:		P
	- marking of terminals for the neutral conductor (N)		N
	- marking of protect earthing terminals		P
	- marking not placed on removable parts		P
	- marking of terminal for single- pole protective device	No such protective device	N
7.9	Marking or placing of switches which may cause a hazard	No such switch	N
7.10	Indications of switches and regulating devices by use of figures, letters or other		P
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		N
7.11	Indication for direction of adjustment of controls		N
7.12	Instructions for safe use provided	See product manual	P
	Appliances incorporating batteries which contain materials hazardous to the environment: statement in the instructions how to remove, scrap and dispose of the battery safely	No batteries	N
	Statement in the instructions that the appliance must be disconnected from the supply		P
	Appliance with inlet and intended to be immersed for cleaning: instruction sheet including in substance (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008):		N
	- remove connector before cleaning (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	- dry appliance inlet before re-use (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	The instructions for use for appliances intended to be used with a connector incorporating a thermostat, shall state that only the appropriate connector must be used (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Unless, kettles are constructed so that a hazard cannot arise from boiling water being ejected, the instructions for use shall include the substance of the following (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008):		--
	- if the kettle is overfilled, boiling water may be ejected (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	The instructions for use for kettles filled through a lid aperture which is situated below the handle, shall include the substance of the following warnings (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008):		--
	Warning: "Position the lid so that steam is directed away from the handle" (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Warning: "Do not remove the lid while the water is boiling" (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Cordless kettles (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008):		--
	- the instructions for use for cordless kettles shall state that the kettle is only to be used with the stand provided (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	- if the kettle and stand of cordless kettles can be lifted together by gripping the handle of the kettle, the instructions for use shall include the substance of the following: "Caution - Ensure that the kettle is switched off before removing it from its stand" (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	The instructions for use for feeding bottle heaters shall state (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008):		N
	- that the food should not be heated for too long a period (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		P
	- how to check that the correct food temperature has not been exceeded (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		P
	The instructions for use for appliances normally cleaned after use and not intended to be immersed in water for cleaning, shall state that the appliance must not be immersed (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		P
	Pressure cooker (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008):		N
	The instructions for use for pressure cookers, shall state that the ducts in the pressure regulator allowing the escape of steam should be checked regularly to ensure that they are not blocked (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	They shall also give details of how to open the container safely, and (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	state that the container must not be opened until the pressure has decreased sufficiently (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	The instructions for use for egg boilers provided with a pricking device shall contain the substance of the following (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008):		N
	Caution: "Avoid injuries from the egg pricker" (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
7.12.1	Sufficient details for installation or maintenance supplied		P
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 60 335-1:2012)	With power supply cord	N
7.12.3	Insulation in contact with parts exceeding 50 K; instruction		N
7.12.4	Information with regard to built-in:	No built-in appliance	N
	- 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		N
	Replacement cord, type Z attachment		N
7.13	Instructions and other texts in official language	In English	P
7.14	Marking easily legible and durable	After testing, legible and durable	P
7.15	Marking on a main part		P
	Marking clearly discernible from outside		P
	Stationary appliance: name or trademark and model or type reference visible after installation		N
	Indication for switches and controls in vicinity of components; not on removable parts if misleading	Not make a misleading	P
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		P

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
8	PROTECTION AGAINST ACCESS TO LIVE PARTS		---
8.1	Adequate protection against accidental contact with live parts		P
8.1.1	All positions; detachable parts removed		P
	Removal of lamps: protection against contact with live parts	No such lamps	N
	Use of test finger: no contact with live parts	No hazards	P
8.1.2	Use of test pin: no contact with live parts	No hazards	P
8.1.3	Use of test probe: no contact with live parts of visible glowing heating elements	No visible glowing heating elements	N
8.1.4	Accessible part not considered live if:	No hazards	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 μF		N
	- for peak value 450 V up to and including 15 kV capacitance not exceeding 0,1 μF		N
8.1.5	Live parts protected at least by basic insulation before installation or assembly: checked by inspection and the test of 8.1.1 (EN 60 335-1:2012):		--
	- 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	Class I appliance; Class II constructions are accord with the clause.	P
	Only possible to touch parts separated from live parts by double or reinforced insulation		N
	Appliances with batteries replaceable by the user, basic insulation between live parts and the inner surface of the battery compartment adequate		N
	If appliance can be operated without batteries: double or reinforced insulation used		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
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 .....:	(see appended table 10)	P
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	Comply with requirements	P
11.2	Placing and mounting of appliance as described:		P
	- built-in		N
	- against a wall		P
	- suspended in still air		N
	- on the floor		P
	- fixed to a ceiling		N
	- on its stand		N
	Portable appliances are tested away from the walls of the test corner (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
11.3	Temperature rises determined by thermocouples or resistance method	By thermocouples method	P
11.4	Heating appliances operated under normal operation at 1,15 times rated power input	1000X1.15=1150W	P
	If the temperature rise limits are exceeded in appliances incorporating motors, transformers or electronic circuits and if 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 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
11.5	Motor operated appliances are operated under normal operation and supplied with the unfavourable voltage 0.94 times and 1.06 times the rated voltage.		N
11.6	Combined appliances operated under normal operation, supply voltage at most unfavourable voltage between 0,94 and 1,06 times rated voltage		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	Combined appliances are tested as heating appliances (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		P
11.7	Appliances are operated for the duration specified in 11.7.101 to 11.7.105. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		P
11.7.101	Kettles incorporating a temperature limiter, the temperature limiter is reset 1 min after it has operated or as soon as possible afterwards. The test is terminated after the temperature limiter has operated for the second time. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	For kettles incorporating a temperature limiter, the test is terminated 15 min after the water has attained a temperature of 95℃. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Other kettles the test is terminated 5 min after the water has attained a temperature of 95 ℃. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
11.7.102	For appliances for boiling water other 11.7.102. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
11.7.103	Slow cookers, steam cookers and yoghurt makers are operated until steady conditions are established. Slow cookers are prewarmed in the instruction is given. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
11.7.104	Espresso coffee-makers are operated in accordance with the instructions. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Espresso coffee-makers having an outlet for supplying steam or hot water, the brewing period is immediately followed by a period during which the steam or water is supplied for the time stated in the instructions. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Espresso coffee-makers are operated until steady conditions are established. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
11.7.105	Pressure cookers are operated for 15 min after attaining the maximum cooking pressure. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
11.8	Protective devices do not operate	Not operate	P
	Sealing compound not flowing out	No sealing compound	N
	Temperatures not exceeding values in table 3 (EN 60 335-1:2012)	(see appended table 11.8)	P

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	When an appliance connector incorporates a thermostat, the temperature rise limit for the pins of the inlet does not apply (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		P
	The temperature rise limits of motors, transformers, components of electronic circuit and parts directly influenced by them may be exceeded when the appliance is operated at 1,15 times rated power input (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
13	LEAKAGE CURRENT		---
13.1	Leakage current not excessive and electric strength adequate		P
13.2	Leakage current measured by means of circuit described in Annex G		P
	Leakage current measurements	(see appended table 13.2)	P
13.3	Electric strength test of insulation	(see appended table 13.3)	P
	No breakdown during the test		P
15	MOISTURE RESISTANCE		---
15.1	Enclosure provides the degree of moisture protection according to classification of appliance (EN 60 335-1:2012)	IPX0	N
15.1.1	Appliance subjected to test as specified	IPX0	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
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test	Portable appliance	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		N
	Overfilling test with additional amount of liquid (l)		N
	The test is only carried out with the appliance connector in position (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Spillage test with a deviation ( ) form the normal position (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	Spout-filling kettle: particular overfilling test in conditions as specified (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Withstand electric strength test in 16.3		P
	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	(see appended table 15.3)	P
	Withstanding the test of Cl. 16		P
15.101	Appliances to be immersed in water for cleaning sufficiently protected against effects of immersion. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Testing conditions and scheduling as specified. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	No trace of water on insulation which can result in reduction of creepage distances and clearances below values specified in 29.1. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
15.102	Cordless kettle: particular electric strength test in conditions as specified (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Voltage test at 2500 V		N
16	LEAKAGE CURRENT AND ELECTRIC STRENGTH		---
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 16.2)	P
16.3	Electric strength tests (values in table 7)	(see appended table 16.3)	P
17	OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS		---
	No excessive temperatures in transformer or associated circuits in event of short- circuits likely to occur in normal use		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
	Temperature of the winding not exceeding the value specified in table 6		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	Fail-safe transformers complying with subclause 15.5 of IE C61558-1		N
19	ABNORMAL OPERATION		---
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
	Kettles are not subjected to the test of 19.2. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	For kettles, comply with test of 19.101, unless the appliance incorporates a non-self resetting thermal cut-out which is not resettable by the user, in order to comply with 19.4. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Kettles relies on the operation of a self-resetting thermal cut-out when compliance with 19.101 are also subjected to the test of 19.103. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008).		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 .....:	Perfected, no danger	P
	They are tested empty with lids open or closed whichever is the more unfavourable: power input of 0,85 times rated power input (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		P
19.3	Test of 19.2 repeated; test voltage (V): power input of 1,24 times rated power input .....:	Perfected, no danger	P
	Kettles are operated empty at 1,15 times the rated power input (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008) .....:		N
	The test is repeated but with the kettle filled with sufficient water to cover the heating element or if the heating element is not positioned inside the container, to a depth of 10 mm (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008) .....:		N
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		P

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	Pressure regulators of pressure cookers are rendered inoperative together with each protective device in turn (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
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	Perfected, no danger	P
	The test repeated with reversed polarity and the other end of the heating element connected to the sheath	Perfected, no danger	P
19.6	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 is reached or until the PTC 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 60 335-1:2012)		N
	Locked rotor, motor capacitors open circuited or short-circuited, if required		N
	The test is repeated with the capacitors short-circuited one at a time unless they are of class P2 of EN 60252		N
	Appliances with timer or controller supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed	No such timer or controller	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
	Espresso coffee-makers are operated for a period of 5 min. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Winding temperatures not exceeding limiting temperature; type of appliance; insulation class; measured temperature (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008):		P
19.8	Three- phase motors operated at rated voltage with one phase disconnected	No three-phase motors	N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
19.9	Running overload test of appliance incorporating motors at rated voltage; motor windings insulation class; measured temperature (C); allowed temperature (C) (EN 60 335-1:2012) .....:		N
19.10	Series motor operated at 1,3 times rated voltage for 1 min	No such series motor	N
	Parts not ejected from the appliance during test (EN 60 335-1:2012)		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		N
	During and after each test, the temperature of the windings shall not exceed the values specified in table 6.		N
	These limits do not apply to fail-safe transformers complying with subclause 15.5 of EN 61558-1.		N
	Comply with the conditions specified in 19.13.		N
	Any current flowing through protective impedance not exceeds the limits specified in 8.1.4.	No protective impedance	N
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		N
	b) open circuit at the terminals of any component		N
	c) short-circuit of capacitors, unless they comply with EN 384- 14 or 14.2 of EN 65		N
	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		N
	e) failure of triacs in the diode mode		N

EN 60335-1 & EN 60335-2-106			
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		N
	During and after each test the following is checked:		---
	- the temperature rise of the windings do not exceed the values specified in table 9	(see appended table 19)	N
	- the appliance complies with the conditions specified in 19.13		N
	- live parts not accessible to the test finger or test pin as specified in Cl. 8		N
	- 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	Comply with requirements	P
	Temperature rises not exceeding the values shown in table 7	(see appended table 19)	P
	Enclosures not deformed to such an extent that compliance with Cl. 8 is impaired		P
	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: 1250 V	Live parts to enclosure	P
	- supplementary insulation: 1750 V		N
	- reinforced insulation: 3000 V	Live parts to enclosure with metal foil	P

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	During the test of 19.4, pressure relief devices of pressure cookers shall operate before the pressure has reached 350 kPa (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
19.101	Additional test for kettles (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Conditions as specified; plywood support; steady conditions established; input (V) (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008) .....:		N
	Any flames kept within the enclosure, supporting surface shall not ignite and live parts not accessible (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
19.102	Appliance with detachable liquid container: automatic transfer of liquid from one container to another is liable and safe (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	One cycle operation with liquid container and pipes incorrectly positioned or removed (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Electric strength test (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	No trace of water on insulation which can result in reduction of creepage distances and clearances below values specified in 29.1 (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
19.103	Kettles incorporating two self-resetting thermal cut-outs are operated with one of the thermal cut-outs rendered inoperative, the conditions being as specified in 19.101. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008).		N
	Within 2 s of the other thermal cut-out operating, the kettle is filled with water having a temperature of 15 ℃ ± 5 ℃. After 1 min, the kettle is emptied. The test is carried out 100 times. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
20	STABILITY AND MECHANICAL HAZARDS		---
20.1	Adequate stability	Portable appliance	P
	Tilting test through an angle of 10° (appliance placed on an inclined plane/horizontal plane); appliance does not overturn	Not turnover.	P
	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15	Not turn over.	P

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	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		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		P
	Not possible to touch dangerous moving parts with test finger	No dangerous moving parts	N
21	MECHANICAL STRENGTH		---
	Appliance has adequate mechanical strength and is constructed as to withstand rough handling	Comply with requirements	P
	No damage after three blows applied to various parts of the enclosure, impact energy 0,5 ± 0,04 J	0.5J, three blows, no hazards	P
	If necessary, supplementary or reinforced insulation subjected to the electric strength test of 16.3	After testing, no breakdown	P
	If necessary, repetition of groups of three blows on a new sample	Not require to conduct the test	N
22	CONSTRUCTION		---
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:		---
	- a supply cord fitted with a plug		P
	- a switch complying with 24.3		N
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided		N
	- an appliance coupler		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	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		N
22.3	Appliance provided with pins: no undue strain on socket-outlets		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		P
22.5	No risk of electric shock when touching the pins of the plug		N
22.6	Electrical insulation cannot be affected by water or liquid.		P
	Class II appliances and class II constructions shall not be affected if hose ruptures or a seal leaks.		N
	Drain holes shall be at least 5 mm in diameter or 20 mm² in area with a width of at least 3 mm (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)	> 5mm	P
22.7	Appliances containing liquid or gases in normal use shall be against the risk of excessive pressure		P
	Additional test for espresso coffee-maker (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008):		N
	Max. pressure obtained with coffee filter blocked and any steam valve closed; test 5 min with twice this max. pressure (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008) ..... :		N
	No rupture, no abnormal leakage; appliance fit for further use (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Max. pressure test with pressure limiting devices made ineffective (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	No explosion nor emission of dangerous jets of steam (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		P
	Last test repeated in case of rupture of an intentionally weak part: the appliance shall be terminated in the same mode (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Pressure cooker test with six times the max. nominal cooking pressure (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	No rupture of container (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		P
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		P
22.10	Location or protection of reset buttons of non-self-resetting controls is so that accidental resetting is unlikely		P
22.11	Reliable fixing of non-detachable parts which provide the necessary degree of protection against electric shock, moisture or contact with moving parts		N
	Obvious locked position of snap-in devices used for fixing such parts		N
	No deterioration of the fixing properties of snap-in devices used in parts which are likely to be removed during installation or servicing		N
	Tests		N
22.12	Handles, knobs etc. fixed in a reliable manner		N
	Fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible		N
	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		N
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 device	N

EN 60335-1 & EN 60335-2-106			
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		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 construction	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		N
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless material used is non-corrosive, non-hygroscopic and non-combustible		P
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless impregnated		P
22.22	Asbestos not used in the construction of the appliance	No asbestos	P
22.23	Oils containing polychlorinated biphenyl (PCB) not used		P
22.24	Bare heating elements adequately supported	No such bare heating elements	N
	In case of rupture, the heating conductor is unlikely to come in contact with earthed metal parts or accessible metal parts		N
22.25	Sagging heating conductors cannot come into contact with accessible metal parts	No such 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

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	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 (EN 60 335-1:2012)		P
	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	No such device	N
	Oxygen bomb test at 70 °C for 02 h and 16 h at room temperature		N
22.33	Conductive liquids which are or may become accessible in normal use are not in direct contact with live parts		P
	Electrodes not used for heating liquids		P
	Conductive liquids are not in direct contact with basic insulation or reinforced insulation in Class II constructions		P
	Conductive liquids in direct contact with live parts shall not be in contact with reinforced insulation for Class II constructions		P
22.34	Shafts of operating knobs, handles, levers etc. not live, unless the shaft is not accessible when the part is removed		P
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

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	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
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
22.37	Capacitors in Class II appliances not connected to accessible metal parts, unless complying with 22.42		N
	Metal casings of capacitors in Class II appliances separated from accessible metal parts by supplementary insulation, unless complying with 22.42		N
22.38	Capacitors not connected between the contacts of a thermal cut-out		P
22.39	Lampholders only used for the connection of lamps		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 60 335-1:2012)		N
	The actuating member of this switch easily visible and accessible (EN 60 335-1:2012)		N
22.41	Mercury switches mounted according to the requirement	No such switches	N
22.42	Protective impedance consisting of at least two separate components	No such protective impedance	N
	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 device	N
22.44	Appliance enclosure not shaped and decorated so that the appliance is likely to be treated as a toy by children (EN 60 335-1:2012)		P
22.45	When air is used as reinforced insulation. Due to deformation as a result of an external force applied to the enclosure, shall not be reduced below the values specified in 29.1.3.		N
22.101	Fixed appliances for boiling water (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		---

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	Container always open to the atmosphere (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Drain hole: diameter 5 mm, or area 20 mm² with a width 3 mm (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Aperture not likely to be obstructed in normal use (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	If the appliance has provisions for discharging steam or water overflowing, the discharge aperture shall be at the base of the appliance and shall discharge vertically downwards (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
22.102	Espresso coffee-maker: impossible to remove the filter by a simple operation while hazardous pressure within the container (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
22.103	Feeding-bottle heater: visible or audible signal to indicate the end of the heating period (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
22.104	Pressure cookers shall incorporate a non- self- resetting pressure or temperature responsive pressure relief device (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
22.105	Pressure cooker: not possible to remove the lid when the inner pressure is excessive (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Pressure test at 4 kPa and 100 N (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	No hazardous displacement of lid at removal (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
22.106	Additional test for cordless kettles (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	The kettle is inserted into and withdrawn from the stand 10 000 times (1,1 times the rated current) (10 times per min) (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	The test is continued for a further 10 000 times without current flowing (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	The kettle shall be fit for further use and compliance with 8.1, 16.3, 27.5 and 29.1 shall not be impaired (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
22.107	Kettles having a lid located underneath the handle shall be constructed so that the lid does not fall off when the water is poured out (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	The kettle is filled to its rated capacity and the lid closed, the kettle is supplied at rated voltage and operated until the water boils. Approximately 90 % of the water is poured, the lid shall not fall off and the water shall only be emitted from the spout. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
22.108	Portable appliances in which water boils (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	The appliance is filled to its rated capacity with the lid closed in accordance with the instructions for use (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	The plane is slowly inclined to an angle of 25 (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	If the appliance overturns, it is left in this position for 10 s and then returned to its normal position (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	The rate of discharge of liquid shall not exceed 16 l/min (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008) .....:		N
22.109	Kettles shall be constructed so that there are no sudden jets of steam or hot water likely to expose the user to a hazard (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
23	INTERNAL WIRING		---
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 or corners	No such materials	N
	Beads inside flexible metal conduits contained within an insulating sleeve		N
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	Flexible metallic tubes not causing damage to insulation of conductors	No 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		N
	No damage after 10 000 flexings		N
	Electric strength test, 1000 V between live parts and metal parts		N
23.4	Bare internal wiring sufficiently rigid and fixed	No such bare internal wire	N
23.5	The basic insulation of internal wiring withstanding the electrical stress likely to occur in normal use (EN 60 335-1:2012)		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		P
23.8	Aluminium wires not used for internal wiring		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		N
24	COMPONENTS		---
24.1	Components comply with safety requirements in relevant EN standards	(see table 24.1)	P
24.1.1	Capacitors likely to be subjected to the supply mains voltage and used for radio interference suppression or voltage dividing, comply with Annex ZC		N
	Small lampholders: compliance with requirements for E10 lampholders		N
	Isolating transformers and safety isolating transformers comply with EN 742		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		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	Other appliance couplers: compliance with EN 309		N
	Switches: compliance with EN 1058, unless tested with the appliance		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 60 335-1:2012)		N
	- timers: 10 000 (EN 60 335-1:2012)		N
24.1.3	For switches, the test of 17.2.7 of EN 1058-1 carried out for 10 000 cycles of operation (EN 60 335-1:2012)		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 (EN 60 335-1:2012)		N
	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 (EN 60 335-1:2012)		N
	This applies also to switches operated by hand, and with interlock for no-load-operation (EN 60 335-1:2012)		N
	Switches without this interlock subjected to the test of 17.2.7 of EN 1058-1 for 100 cycles of operation (EN 60 335-1:2012)		N
	Switches incorporated in espresso coffee-makers and provided for initiating brewing or steaming are tested for 10 000 cycles of operation (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
24.1.4	Components marked with their operating characteristics are used in the appliance in accordance with these markings		P
	Components which have to comply with other standards are tested separately, according to the relevant standard		P
	Components used within the limits of its marking, tested in accordance with conditions occurring in the appliance		P
	Components 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

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	Self-resetting thermal cut-outs of 19.101 are subjected to 3 000 cycles of operation. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
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		N
	Capacitors in appliances for which 30.2.3 is applicable and which are permanently connected in series with a motor winding being of class P1 or P2 of EN 60252		N
	List of components		N
	For appliance couplers incorporating thermostats, thermal cut-outs or fuse in the conenctors, conpliance with test of part 2. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
24.2	No switches or automatic controls in flexible cords		P
	No devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance		P
	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		N
24.4	Plugs and socket-outlets for heating elements and extra-low voltage circuits, not interchangeable with plugs, and	No such constructions	N
	socket-outlets or with connectors and appliance inlets complying with EN 83 or EN 320, respectively		N
	This requirement is not applicable to the connection between the kettle and the stand of cordless kettles. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		
24.5	Capacitors in auxiliary of motor shall be marked with their rated voltage and rated capacitance and shall be used in according with these marking.		N
	Capacitors in appliances for which 30.2.3 is applicable , are permanently connected in serials with motor winding shall be of class p1 or p2 of EN 60252.		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
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		N
	The components are listed on an appended table		N
24.101	Devices incorporated in appliance other than kettles, in order to comply with 19.4, shall be non-self-resetting (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	However, self-resetting thermal cut-outs are allowed for fixed water boilers, if they have been tested for 10 000 cycles of operation (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
25	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS		---
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		P
	- pins for insertion into socket-outlets		P
	Appliances incorporating an appliance inlet other than those standardized in EN 320 shall be supplied with a cord set (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
25.2	Appliance not provided with more than one means of connection to the supply	A plug mean connects 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
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		N
	Appliance provided with a set of terminals for the connection of cables or fixed wiring, cross-sectional areas specified in 26.2		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 8 (EN 60 335-1:2012)		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	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		P
	- type Z attachment, if allowed in part 2		N
	Type X attachment: specially prepared cord		N
	Type X attachment not used for flat twin tinsel cord		N
	Type Z attachment is allowed for egg boilers, feeding bottle heaters, yoghurt makers and stands of cordless kettles (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
25.6	Plugs fitted with only one flexible cord		N
	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		---
	- for Class I appliances: Standard Sheet C2b, C3b or C4		N
	- for Class II appliances: Standard Sheet C5 or C6 (EN 60 335-1:2012)		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 60 335-1:2012)		N
	- flat twin tinsel cord (227 EN 41)		N
	- light polyvinyl chloride sheathed cord (227 EN 52), appliance not exceeding 3 kg		N
	- ordinary polyvinyl chloride sheathed cord (227 EN 53), appliance exceeding 3 kg (EN 60 335-1:2012)	60227IEC(57YZW) 300/500V	P
	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
	PVC supply cord appropriate for higher temperatures, type Y or type Z attachment used		N
	The supply cord of livestock feed boilers shall be polychloroprene sheathed. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
25.8	Nominal cross-sectional area of supply cords according to table 9; rated current (A); cross-sectional area (mm²) (EN 60 335-1:2012) ..... :	0.75mm²	P
	Portable appliances having a rated current of up to 10 A may incorporate a supply cord having a nominal cross-sectional area of 0,75 mm² if the length is less than 2 m (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
25.9	Supply cord not in contact with sharp points or edges		P
25.10	The supply cord with green/yellow core for earthing terminal of class I appliance		P
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		N
25.12	Moulding the cord to part of the enclosure does not damage the insulation of the supply cord		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
	Inlet opening is insulation material		P
	Supply is unsheathed		P
25.14	Supply cords adequately protected against excessive flexing		N
	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
25.15	Conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorages		P
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		P

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	Pull and torque test of supply cord, values shown in table 12: pull (N); torque (Nm) (not on automatic cord reel) .....:	100N. 0.35Nm	P
	Max. 2 mm displacement of the cord, and conductors not moved more than 1 mm in the terminals		P
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		P
	- 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		P
25.18	Cord anchorages only accessible with the aid of a tool, or		P
	so constructed that the cord only can be fitted with the aid of a tool		P
25.19	Type X attachment, glands not used as cord anchorage in portable appliances		N
	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		P

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
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.		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		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		N
	- 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 max. current during the test of cl. 11. not by the rated current of appliance;		P
	Thickness of insulation of the conductor may reduce if voltage of conductor is less than the rated voltage.		P
	If necessary, electric strength test of 16.3		N
25.24	Interconnection cords not detachable without the aid of a tool		N
25.25	The dimensions of pin compatible with the dimensions of the relevant socket-outlet.		N
	Dimensions of the pin and engagement fact are to be in accordance with EN 60083.		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		P
	- 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

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	- 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		P
	- for Class II appliances: they are of insulating material, or if of metal, they are insulated from accessible metal parts by supplementary insulation		N
25.101	Supply cord of kettles shall not be longer than 75 cm, unless they helically coiled. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	A cordless kettle has a storage facility, the length of cord is measured after storing as much of the cord as possible. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
26	TERMINALS FOR EXTERNAL CONDUCTORS		---
26.1	The terminals shall only be accessible after the removal of a non-detachable cover.		N
26.2	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
	The conductor soldered shall be positioned or fixed, reliance is not placed upon the soldering alone to maintain it in position.		N
	Soldering alone used, barriers provided, creepage distances and clearances satisfactory if the conductor becomes free		N
26.3	Terminals for type X attachment and those for connection to fixed wiring so fixed that when tightening or loosening the clamping means:		N
	- 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		N
26.4	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

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
26.5	Terminals for type X attachment, when a wire of a stranded conductor escapes there is no risk .		N
	Stranded conductor test, 8 mm insulation removed		N
26.6	Terminals for type X attachment and for connection to fixed wiring suitable for connection of conductors with required cross-sectional area according to table 13; rated current (A); nominal cross-sectional area (mm²):		N
	Terminals only suitable for a specially prepared cord		N
26.7	Terminals for type X attachment accessible after removal of a cover or part of the enclosure		N
26.8	Terminals for the connection to fixed wiring located close to each other, including the earthing terminal		N
26.9	Terminals of the pillar type constructed and located as specified		N
26.10	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
26.11	For type Y and Z attachment: soldered, welded, crimped and similar connections used		N
	For Class II appliances: the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone		N
	For Class II appliances: soldering, welding or crimping alone used, barriers provided, creepage distances and clearances satisfactory if the conductor becomes free		N
27	PROVISION FOR EARTHING		---
27.1	Accessible metal parts of Class 0I and I appliances, permanently and reliably connected to an earthing terminal		P
	Earthing terminals not connected to neutral terminal		P
	Class 0, II and III appliance have no provision for earthing		N
	Safety extra-low voltage circuits shall not be earthed, unless they are protective safety extra-low voltage circuits.		N
27.2	Terminals used for the connection of external equipotential bonding conductors allow connection of conductors of 2,5 to 6 mm², and		P
	do not provide earthing continuity between different parts of the appliance		P

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	Conductors cannot be loosened without the aid of a tool		P
	Clamping means adequately secured against accidental loosening		P
27.3	Current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		P
27.4	No risk of corrosion resulting from contact between metal of earthing terminal and other metal		P
	Adequate resistance to corrosion of coated or uncoated parts providing earthing continuity, other than parts of a metal frame or enclosure		P
	Parts of steel providing earthing continuity provided at the essential areas with an electroplated coating, thickness at least 5 μm		P
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		P
	In case of aluminium alloys precautions taken to avoid risk of corrosion		P
27.5	Low resistance of connection between earthing terminal and earthed metal parts		P
	Resistance not exceeding 0,1 Ω at the specified low-resistance test	0.03Ω	P
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
	the material of the printed board complies with EN 249-2-4 or EN 249-2-5		N
28	SCREWS AND CONNECTIONS		---
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		N
	Screws of insulating material not used for any electrical connection		N
	Screws transmitting electrical contact only screwing into metal		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	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		N
	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		P
	This requirement does not apply to electrical connections in circuits carrying a current not exceeding 0,5 A		N
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	No such space-threaded	N
	Thread-cutting (self-tapping) screws not used for electrical connection of current-carrying parts, unless generating a full form standard machine screw thread	No such thread-cutting	N
	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
	Thread-cutting and space-threaded screws used provide earthing continuity:		---
	- it is not necessary to disturb the connection in normal use		P
	- two screws used for each connection		N
28.4	Screws and nuts making mechanical connection between different parts of the appliance, and also making electrical connection or providing earthing continuity secured against loosening		P
	Rivets for current-carrying connections subject to torsion secured against loosening	No such rivets	N

29	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH INSULATION		---
29.1	Creepage distances and clearances not less than specified in table 13	See table 29.1	P

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	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		P
	The microenvironment is pollution degree 3 if the pollution can be polluted by condensation from steam produced during normal use. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		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		N
	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		N
29.2.2	Supplementary or reinforced insulation inaccessible and does not exceed the maximum permissible temperature values		N
	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		N
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	Plastic	P
	Parts supporting live parts: at 125 °C	Connector	P

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	Parts providing supplementary or reinforced insulation: temperature (°C) ..... :		N
	For coffer maker, egg boilers, kettles and steam cooker, the temperature rises occurring during the tests of 19.4, 19.5 and 19.101 are not taken into account. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
30.2	Relevant parts of non-metallic material adequately resistant to ignition and spread of fire		P
	Clause of 30.2.3 for water distillers and intended to maintain liquid or food at a particular temperature. (EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
	Clause of 30.2.2 for the other appliances.（EN 60335-2-106:2002+A1:2005+A11:2012+A2:2008)		N
30.2.1	Possible burning test of relevant parts according to Annex J		P
	Glow-wire test of Annex K made at temperature 550 °C	Plastic	P
30.2.2	Appliances operated while attended, insulating material glow-wire test is carry out at		P
	750 ℃, parts connections a current exceeds 0.5 A in normal use	Connector	P
	650 ℃, for other connections		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
	Possible needle-flame test of non-metallic material		N
31	RESISTANCE TO RUSTING		---
	Relevant ferrous parts adequately protected against rusting		P

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
32	RADIATION, TOXICITY AND SIMILAR HAZARDS		---
	Appliance does not emit harmful radiation		P
	Appliance does not present a toxic or similar hazard		P
A	ANNEX A, NORMATIVE REFERENCES		---
	The annex contains a list of standards which are referred to, and thus become part of, this standard		N
C	ANNEX C, AGEING TEST ON MOTORS		---
	Test carried out when doubt with regard to the classification of the insulating system of a motor winding		N
D	ANNEX D, ALTERNATIVE REQUIREMENTS FOR PROTECTED MOTOR UNITS		---
	Void (EN 60 335-1:2012)		N
E	ANNEX E, MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		---
	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		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.19	Abnormal operation		N
F.19.101	Appliance operated at rated voltage with each of the following defects:		N
	- 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

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
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
G	ANNEX G, CIRCUIT FOR MEASURING LEAKAGE CURRENTS		---
	A suitable circuit for measuring leakage currents is shown		P
H	ANNEX H, SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30		---
J	ANNEX J, BURNING TEST		---
	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
K	ANNEX K, GLOW-WIRE TEST		---
	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
L	ANNEX L, BAD-CONNECTION TEST WITH HEATERS		---
	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)		---
(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: 8.6 replaced		N
(11)	Information to be given in the relevant specification: item h), the first dashed paragraph, does not apply		N

EN 60335-1 & EN 60335-2-106			
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

Appendix to the TRF
for EN 60335-1: 2016

7	MARKING AND INSTRUCTIONS		---
7.12.2	Replace the requirement by: stationary appliance not provided with a power supply cord or other means for disconnection having a contact separation of at least 3 mm in all poles; Statement in the incorporation that means for disconnection must be incorporated in the fixed wiring according to the wiring rules.		N
8	PROTECTION AGAINST ACCESS TO LIVE PARTS		---
8.1.2	Add: Test pin also applied through openings in earthed metal enclosures having a non-conductive coating such as enamel or lacquer.		N
17	OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS		

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	Repalce the tast paragraph of the test specifications by:		---
	Temperature of the winding not exceeding the valus specified in table 6		N
	However,these limits do not apply to fail-safe transformers complying with Cl.15.5 of EN 61558-1		N
19	ABNORMAL OPERATION		---
19.11.2	Replace fault conditionc by. c)Short circuit of capacitors,unless they comply with EN 60384-14.		N
22	CONSTRUCTION		---
22.22	Replace the text by: Appliances shall bot contain asbestos		P
22.33	Repalce by:		---
	Conductive liquids which are or mar become accessible in normal use are not in direct contact with live parts		P
	Electrodes not be used for heating liquids		N
	For class II construction,conductive liquds which are or may become accesslble in normal use shall not in direct contact with insulation oy reinforced insulation		P
	For class II construction,conductive liquids in contact with live parts,shall not in direct contact with reinforced insulatio		P
22.40	Repalce the requirement by:		---
	Motor-operated appliances and combined appliances which are intended to be move while in operation or which have accessible moving parts,fitted with a switch to control the motor		N
	The actuating member of this switch shall be easily visible and accessible		N
22.44	Appliance enclosure not shaped and decorated so that the appliance is likely to be treated as a toy by children		P
24	COMPONENTS		
24.1.1	Replace the first paragraph by: Capacitors likely to be penmenently subjected to the supply mains voltage and used for radio interference suppression or for voltage dividing shall comply with Annex Q		N
	Replace the third paragraph by: Safety isolating teansformers:compliance with EN 61558-2-6, unless tested separately and comply with Annex R		N
	Repalce the last paragraph by: Switches:compliance with EN 61058-1,unless tested with the appliance		N
24.1.2	Add the following to the list of controls:		---
	-times:3.000		N
	-energy regulators:10.000		N
24.1.3	Replace this subclause by:		---

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	Switches which have not been separately tested and found to comply with EN 61058-1 under conditions covering those occurring in the appliance. shall comply with Annex S		N
	For switches ,the test of Cl.17.2.7 of EN 61058-1 is carried out for 10.000 cycles of operation		N
	Switches intended for operation under no load and which can be operated only with the aid od a tool are not subjected to the test og Cl. 17 of EN 61058-1.This applies also for such swithches operated by hand which are interlocked so that they cannot be operated under load		N
	Switches without this unterlock are subjected to the test of Cl. 17.2.7 for 100 cycles of operation		N
24.4	Add “or EN 61906-1”after “EN 60083”		N
24.5	Add “or EN 61906-1”after “EN 60083”		N
26	TERMINALS FOR EXTER CONDUCTORS		---
26.10	Replace the requirement by: Terminals only be accessible after removal of a non-detachable part		N
27	PROVISION FOR EARTHING		---
27.2	The follwing texts is detelted:		---
	Screw clamping terminals complay with Cl.26		P
	Screwless terminals complay with EN 998-2-2		P
27.6	Printed conductors of printed circuit boards shall not be used to provie earthing continuity in hand-held appliance		P
	They may be used to provide earthing continuity in other appliances if		P
	- at least two tracks are used with independent solding points and the applaince complies with the requirement of Cl. 27.5 for each circuit;		N
	- the material of the printed circuit board complies with EN 60249-2-4 or EN 60249-2-4.		P
28	SCREWS AND CONNECTIONS		---
28.1	Replace the requirement by:		---
	Fixing , 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
	Screws of insulating material not used for any electrical connection or connection providing earthing continuity.		P
	Screws used for electrical connections or connections providing earthingcontinuity shall screw into metal		P
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	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 could impair basic insulation		N
	Screws and nuts are tested if they:		---
	- are used for electrical connections		P
	- are used for connections providing earthing continuity, unless at least tewo screws or nuts		P
	- are likely to be tightened;		N
	- during user maintance		N
	- when replacing a supply cord having a type X attachment		N
	- during insulation		N
	No damage impairing the futher use of fixing or connections occor (torque as shown in table 12)		N
28.3	Replace the requirement by		---
	Space-threaded (sheet metal) screws only used for electrical connections, if they clamp these parts directly in contact with each other		N
	Thread-cutting (self-tapping) screws not used for electrical connections, unless generating a full form standard machine screw thread		N
	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.		N
	Thread-cutting and space –threaded screws used in providing earthing continuity.		---
	- it is not necesessary to disturb the connection in normal use		N
	- two screws used for earth connection		N
28.4	Replace the second paragrahp by: Rivets for electrical connections or for connections providing earthing continuity subject to torsion secured against lossening		N
B	ANNEX B, TESTING OF APPLIANCES POWERED BY RECHARGEABLE BATTERIES		--
B.8.2	Replace the test by:		---
	Basic insulation between live parts and the inner surface of the battery compartment		N
	If the appliance can be operated without batteries, double insulation or reinforced insulation is required.		N
F	ANANEX F MOTORS NOT ISOLATED FROM THE SUPPLY MAINS AND HAVING BASIC INSULATION NOT DESIGNED FOR THE RATED VOLTAGE OF THE APPLAINCE		---
F.19.101	And the following as the second deshed item;		N
	- short circuit of each diode of the rectifier		N
Q	CAPCITOR		---

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
	The following clauses and subclauses of EN 60384-14 apply to capacitors likely to be permanently subjected to the supply mains voltage and used for radio interference suppression or for voltage dividing surposes with the following modifications		N
1	SECTION ONE - GENERAL		---
1.5	terminology		N
1.5.3	Applicable, class X capacitors tested according to subclass X2		N
1.5.4	Applicable		N
1.6	Marking		---
	Items a) and b) are applicable		N
3	SECTION THREE – QUALITY ASSESSMENT PROCEDURES		---
3.4.3.2	Tests		---
	Tables it is applicable as follows:		---
	- group 0: subclause 4.1, 4.2 and 4.2.5		N
	- group 1A: subclause 4.1.1		N
	- group 2: subclause 4.12		N
	- group 3: subclsuse4.13 and 4.14		N
	- group 6: subclause 4.17		N
	- group 7 subclause 4.18		N
4	SECTION FOUR – TEST AND MEASURREMENT PROCEDURES		---
4.1	applicable		N
4.2	Electrical tests		N
4.2.1	Applicable		N
4.2.5	Applicable		N
4.2.5.2	Only table IX applicable, Values for test A apply. For capacitors inheating appliances the values for test B or C apply		N
4.12	Applicable Note: Only insulation resistance and voltage proof are checked (see table XIII)		N
4.13	Applicable		N
4.14	Applicable, together with subclauses 4.14.1, 4.14.3, 4.14.4 and 4.14.7,		N
4.14.7	Additional Note: Onlyinsulating resistance and voltage proof are checked (see table XIV) together with a visual examinaton to ensure that there is not visible damage		N
4.17	Applicable		N
4.18	Applicable		N

R	SAFETY ISOLATING TRANSFORMERS		---
	Safety isolating transformers, tested with the appliance, comply with this standard and the following additional requirements		N
7	Markings and instructions		N
7.1	Transformers for specific use marked with (see NOTE);		N
	- name, trade mark or identrification mark of the manufacturer or responsible vendor		N
	- model or type reference		N

EN 60335-1 & EN 60335-2-106			
Clause	Requirement Test	Result - Remark	Verdict
17	Overload protection of transformer and associated equipment		---
	The temperature limits specified for the windings do not apply to fail-safe transformers.		N
	Fail-safe transformers limits specified for the windings donnot apply to fail-safe transformers		N
	Fail-safe transformers comply with Cl. 15.5 of EN 61558-1 (see NOTE)		N
22	Construction		---
	Cl. 19.1 and 19.1.2 of EN 61558-2-6 arre applicable		N
29	Creepage distaNCE, clearances and distance through insulation		---
29.1	The distance specficed in items 2a, 2b, and 3 in table 13 of REN 61558-1 apply (see NOTE)		N
S	SWITCHES		---
	Switches tested with the appliance comply with this standard and the following clauses of EN 61058-1, as modified.		N
	- the tests of EN 61058-1 carried out under the conditions occuring in the appliance		N
	- unless otherwise specified, the tests are carried out on the switch incorporated in the appliance		N
	- before being tested in the appliance, \switch is operated 20times wothout load		N
8	Marking and documention		---
	Switches are not required to be marked except that incorporated switches shall be marked with the manufacturer’s name or trede mark and the reference (see NOTE)		N
13	Mechanism		N
	Applicable		N
15	Insulation resistance and dielectric strength		N
15.1, 15.2	Not applicable		---
15.3	Applicable for full disconnections and microdisconnection (see NOTE)		N

10	TABLE: power input and current			P
Rated Voltage and Frequency (V/Hz)	Rated Input Power or Current (W/A)	Tested Voltage and Frequency (V/Hz)	Measured Input Power or Current (W/A)	Measured Power deviation
110V/50Hz	200W	110V/50Hz	188W	+5% or-10%
220V/50Hz	200W	220V/50Hz	186w	+5% or-10%
Limited deviation: power input deviation: + 5% or –10%				

11	TABLE: temperature rise measurements		P
	1.15 times rated power		
	460W		
	Ambient (t1) (℃)	Ambient (t2) (℃)	
	24.5	24.6	

No.	Temperature rise dT of part/at:	dT (K)	Limited dT (K)
1	Plastic enclosure Bottom	46.2	50
2	Power supply cord	8.2	50
3	Terminal	35.6	50
4	Input socket pin	40.2	95
5	Internal wire	52.6	155(T180)
6	Relay environment	53.7	60(T85)
7	Plastic enclosure Surface	42.4	50
8	PCB	63.8	105
9	Key	18.5	60
10	Transformer winding	68.5	95
11	Ambient	24.5 °C	--

13.2	TABLE: leakage current measurements at operating temperature		P
	At 1,15 times power (W): 460W		---
Leakage current between:		I (mA)	Limited I (mA)
Between live parts and enclosure		0.005	0.75

13.3	TABLE: electric strength measurements at operating temperature:		P
Test voltage applied between:		Test voltage (V)	Breakdown
Between live parts and enclosure		1000	No

15.3	TABLE: Moisture resistance, humidity treatment		P
Temperature (℃)		Humidity (%)	Duration (hours)
25℃		93%	48
Remark: After humidity test, electric strength test specified in clause 16.3 should be applied.			

16.2	TABLE: leakage current measurements	P
	At 1,06 times rated voltage (V):233.2V	---

Leakage current I between:	I (mA)	Limited I (mA)
Between live parts and enclosure	0.035	0.75

16.3	TABLE: electric strength measurements:	P

Test voltage applied between:	Test voltage (V)	Breakdown
Between live parts and enclosure	1500Vac	No

19	TABLE: abnormal operation tests				P
	ambient temperature (°C)		--		---
No.	component No.	fault	test voltage (V)	test time	result
1	Thermostat	s-c	220	2.5h	The max. temperature of enclosure is 71℃. No hazard.
2	Thermostat	s-c	220	3h	The max. temperature of enclosure is 76℃. No hazard.

23.5	TABLE: electric strength measurements for basic insulation of internal wiring	N

Test voltage applied between:	Test voltage (V)	Breakdown
Conductor and insulation	3000	No

24.1	TABLE: components				P
object/part No.	manufacturer/trademark	type/model	technical data	standard	mark(s) of conformity
Plug	Various	Various	250V, 5A		VDE
Fuse	Various	Various	142℃,5A/250V		VDE
Internal wire	Various	Various	0.5mm² 300V		Accept by test
Heating tube	Various	RGS series	220V 800W+1000W		UL
Temperature controller	Various	WY77-652-11C1	440V-16A 77℃		Accept by test
PCB	Various	Various	V-0		Accept by test
Relay	Various	Various	12VDC,10A/250V, min 85℃		VDE
Input Socket	Various	Various	10A/250V		VDE
[1]) an asterisk indicates a mark which assures the agreed level of surveillance					

29.1	TABLE: CREEPAGE DISTANCE AND CLEARANCE THROUGH INSULATION MEASUREMENTS					**P**
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)
Live parts to sheath of heater	339	240	2	>2.5	2.5	>2.5

30.1	**TABLE: ball-pressure tests for thermoplastics**		**P**
	Limited impression diameter (mm)	≦2 mm	---
Part	Test temperature (°C)	Impression diameter (mm)	Allowed impression diameter (mm)
PCB	125	0.64	≤2
Plastic	75	0.13	≤2

30.2	**TABLE: glow wire test**	**P**
Part	Test temperature (°C)	Result
PCB	550	Not burning
Plastic	650	Not burning

ANNEX A:

Photo-documentation

Photo 1 General Appearance of the EUT

Photo 2 General Appearance of the EUT

Photo 3 General Appearance of the EUT

Photo 4 General Appearance of the EUT

Photo 5 General Appearance of the EUT

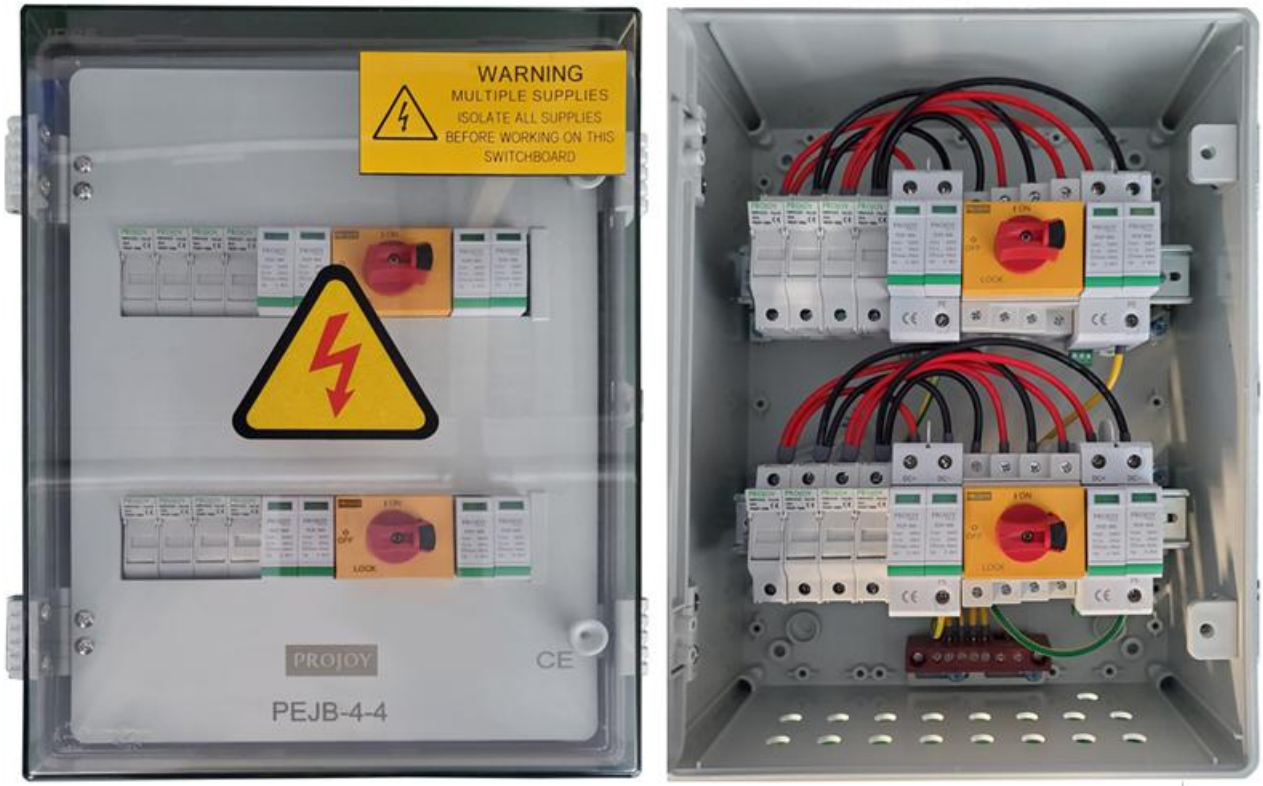

Photo 6 General appearance of the EUT

Photo 7 General appearance of the EUT

Photo 8 General appearance of the EUT