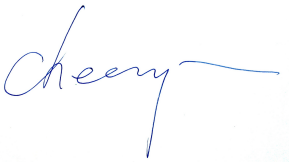
TEST REPORT
IEC 60335-2-69

Household and similar electrical appliances - Safety
Part 2-69: Particular requirements for wet and dry vacuum cleaners, including power brush, for commercial use

Report Number. .....:	3194401.50A
Date of issue .....:	2016-08-24
Total number of pages.....	122 pages
Applicant's name.....:	LEE YEONG INDUSTRIAL CO., LTD.
Address .....:	NO.2, KEJIA RD., DOULIU CITY, YUNLIN COUNTY, TAIWAN
Test specification:	
Standard.....:	IEC 60335-2-69:2012 (Fourth Edition) in conjunction with IEC 60335-1:2010 (Fifth Edition)
Test procedure .....:	Type test
Non-standard test method……..:	N/A
Test Report Form No.....:	IEC60335_2_69H
Test Report Form(s) Originator.....:	OVE
Master TRF.....:	Dated 2013-01

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description .....:	Wet/Dry Vacuum Dust Extractor
Trade Mark .....:	AGP
Manufacturer.....:	LEE YEONG INDUSTRIAL CO., LTD. NO.2, KEJIA RD., DOULIU CITY, YUNLIN COUNTY, TAIWAN
Model/Type reference .....:	DE25, DEP25
Ratings .....:	110-120 V or 220-240 V; 1200 W; 50-60 Hz; Class I; IPX4

Testing procedure and testing location:			
☒	**Testing Laboratory:**	**DEKRA Testing and Certification (Shanghai) Ltd.**	
Testing location/ address .....:		10F, #250 Jiangchangsan Road, Building 16, Headquarter Economy Park Shibei Hi-Tech Park, Zhabei District, Shanghai, 200436, China	
☒	**Associated CB Laboratory:**		
Testing location/ address .....:			
	Tested by (name + signature).....:	**Ye Hao**	
	Approved by (name + signature)...:	**Cheery Wu**	
☐	**Testing procedure: TMP**		
Testing location/ address .....:			
	Tested by (name + signature).....:		
	Approved by (name + signature)...:		
☐	**Testing procedure: WMT**		
Testing location/ address .....:			
	Tested by (name + signature).....:		
	Witnessed by (name + signature)..:		
	Approved by (name + signature)...:		
☐	**Testing procedure: SMT**		
Testing location/ address .....:			
	Tested by (name + signature).....:		
	Approved by (name + signature)...:		
	Supervised by (name + signature) :		

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

Attachment 1: 3194401.50B (12 pages of European group differences and special national differences of EN 60335-1 & EN 60335-2-69)

Summary of testing:

Tests performed (name of test and test clause):

Full tests except for noise test were performed on model DEP25 (220-240 V type) in CBTL. Cl.10, cl.11, cl.13, cl.19 were also performed on model DEP25 (110-120 V type) in CBTL.

Amendment report 1: 3194401.50A+3194401.50B

No need tests

The submitted samples fulfil the requirements of the relevant standards listed in general remarks.

Testing location:

DEKRA Testing and Certification (Shanghai) Ltd.

10F, #250 Jiangchangsan Road, Building 16,Headquarter Economy Park Shibei Hi-Tech Park, Zhabei District, Shanghai, 200436, China

Summary of compliance with National Differences

List of countries addressed:

EU Group Differences, EU Special National Conditions, EU A-Deviations are taken into considerations.

Pls. refer to Attachment 1: 3194401.50B.

☒ **The product fulfils the requirements of**

EN 60335-1:2012+A11:2014

EN 60335-2-69:2012

EN 62233:2008

Copy of marking plate

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

DE25 (110-120 V)

DE25 (220-240 V)

DEP25 (110-120 V)

DEP25 (220-240 V)

Note: According to directive 2014/35/EU, when placing the products on the market the importer's name, registered trade name or registered trade mark and the postal address at which they can be contacted must be marked on the product or, where that is not possible, on its packaging or in a document accompanying the electrical equipment.
The contact details shall be in a language easily understood by end users and market surveillance authorities.

Test item particulars ..... :	
Classification of installation and use ..... :	Portable appliance
Supply Connection..... :	Type Y attachment, Non-detachable cord with plug
..... :	
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement .....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing .....:	
Date of receipt of test item .....:	2013-02-05
Date (s) of performance of tests.....:	2013-02-05 ~ 2013-08-21

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

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

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

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

Name and address of factory (ies).....:	LEE YEONG INDUSTRIAL CO., LTD. NO.2, KEJIA RD., DOULIU CITY, YUNLIN COUNTY, TAIWAN

General product information:

The submitted appliance was one type of dry and wet vacuum dust extractor intended for industrial use. The appliance was intended to extract non-dangerous dusts, dirt, shaving, etc. and water.
The submitted two models DE25 and DEP25 are all the same except that DEP25 can be used in conjunction with power tools which require dust extraction while DE25 cannot.
Both models DE25 and DEP25 have 110-120 V and 220-240 V types.

Amendment report 1: 3194401.50A+3194401.50B

The original test report 3133366.50A and 3133366.50B issued on dated 2013.08.23 were updated and including below modifications which were considered as technical modifications:

1.The standard EN 60335-1:2012 is updated to EN 60335-1:2012/A11:2014.

After reviewing, all relevant tests are considered, see details in summary of testing.

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict
5	GENERAL CONDITIONS FOR THE TESTS		P
	Tests performed according to clause 5, e.g. nature of supply, sequence of testing, etc.	Tested at 50 Hz	P
5.101	The test solution is stored in a cool atmosphere and used within seven days after its preparation. (IEC60335-2-69:2012)		P
6	CLASSIFICATION		P
6.1	Protection against electric shock: Class I, II or III ....: IEC60335-2-69:2012)	Class I	P
6.2	Appliance has the appropriate degree of protection against harmful ingress of water. Water suction cleaning machines have protection degree at least IPX4 (IEC60335-2-69:2012)	IPX4	P
7	MARKING AND INSTRUCTIONS		P
7.1	Rated voltage or voltage range (V)..... .....:	See marking label	P
	Symbol for nature of supply, or..... .....:	See marking label	P
	Rated frequency (Hz) ....:	See marking label	P
	Rated power input (W), or ....:	See marking label	P
	Rated current (A) ....:		N/A
	Business name and address of the manufacturer and, if applicable, his authorized representative; any address is sufficient to ensure postal contact (IEC60335-2-69:2012)..... .....:	See marking label	P
	Model or type reference..... .....:	See marking label	P
	Symbol IEC 60417-5172, for class II appliances		N/A
	IP number, other than IPX0..... .....:	IPX4	P
	Symbol IEC 60417-5180, for class III appliances, unless		N/A
	the appliance is operated by batteries only		N/A
	Symbol IEC 60417-5036, for the enclosure of electrically-operated water valves in external hose-sets for connection of an appliance to the water mains, if the working voltage exceeds extra-low voltage		N/A
	Machines marked also with:		P
	– serial number, if any (IEC60335-2-69:2012)	See marking label	P

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict
	– designation of the machine and series or type, allowing the technical identification of the product. This may be achieved by a combination of letters and/or numbers (IEC60335-2-69:2012)	See marking label	P
	– the year of construction, i.e. the year in which the manufacturing process is completed (IEC60335-2-69:2012)	See marking label	P
	– Machines are marked with the mass of the most usual configuration in kg (IEC60335-2-69:2012)	See marking label	P
7.1.101	Motorized cleaning heads marked with: (IEC60335-2-69:2012)		N/A
	– rated voltage or rated voltage range in volts; (IEC60335-2-69:2012)		N/A
	– rated power input in watts (IEC60335-2-69:2012)		N/A
	– name, trade mark or identification mark of the manufacturer or responsible vendor (IEC60335-2-69:2012)		N/A
	– model or type reference (IEC60335-2-69:2012)		N/A
	– mass of the most usual configuration in kg. (IEC60335-2-69:2012)		N/A
	Motorized cleaning heads for water-suction cleaning appliances, except those of class III construction having a working voltage up to 24 V marked with symbol IEC 60417-5935 (2002-10) (IEC60335-2-69:2012)		N/A
7.1.102	Socket-outlets for accessories marked with the maximum load in watts on the socket-outlet or close to it (IEC60335-2-69:2012)	Max. 2200 W	P
7.2	Warning for stationary appliances for multiple supply		N/A
	Warning placed in vicinity of terminal cover		N/A
7.3	Range of rated values marked with the lower and upper limits separated by a hyphen	110-120 V; 220-240 V; 50-60 Hz	P
	Different rated values marked with the values separated by an oblique stroke		N/A
7.4	Appliances adjustable for different rated voltages, the voltage setting is clearly discernible		N/A
	Requirement met if frequent changes are not required and the rated voltage to which the appliance is to be adjusted is determined from a wiring diagram		N/A

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict
7.5	Appliances with more than one rated voltage or one or more rated voltage ranges, marked with rated input or rated current for each rated voltage or range, unless		N/A
	the power input is related to the arithmetic mean value of the rated voltage range		P
	Relation between marking for upper and lower limits of rated power input or rated current and voltage is clear		N/A
7.6	Correct symbols used		P
	Symbol for nature of supply placed next to rated voltage		P
	Symbol for class II appliances placed unlikely to be confused with other marking		N/A
	Units of physical quantities and their symbols according to international standardized system		P
	Symbol IEC 60417-5935 (2002-10) used (motorized cleaning head for water-suction cleaning) (IEC60335-2-69:2012)		N/A
7.7	Connection diagram fixed to appliances to be connected to more than two supply conductors and appliances for multiple supply, unless		N/A
	correct mode of connection is obvious		N/A
7.8	Except for type Z attachment, terminals for connection to the supply mains indicated as follows:		P
	- marking of terminals exclusively for the neutral conductor (letter N)		N/A
	- marking of protective earthing terminals (symbol IEC 60417-5019)		P
	- marking not placed on removable parts		P
7.9	Marking or placing of switches which may cause a hazard		P
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means ....:	By graphics and letters	P
	This applies also to switches which are part of a control		N/A
	If figures are used, the off position indicated by the figure 0		N/A
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
7.11	Indication for direction of adjustment of controls		P
7.12	Instructions for safe use provided		P
	Details concerning precautions during user maintenance		P
	The instructions state that:		P
	- the machine is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge (IEC60335-2-69:2012)		P
	- children being supervised not to play with the appliance		P
	For a part of class III construction supplied from a detachable power supply unit, the instructions state that the appliance is only to be used with the unit provided		N/A
	Instructions for class III appliances state that it must only be supplied at SELV, unless		N/A
	it is a battery-operated appliance, the battery being charged outside the appliance		N/A
	The front cover of the instructions includes the substance of the following warning: Caution – Read the instructions before using the machine Wording may be replaced by symbols (IEC60335-2-69:2012)		P
	The instructions contains at least the following: (IEC60335-2-69:2012)		P
	– the business name and full address of the manufacturer and, if applicable, his authorized representative (IEC60335-2-69:2012)		P
	– designation of series or type of the machine as marked on the machine itself, except for the serial number (IEC60335-2-69:2012)		P
	– the general description of the machine (IEC60335-2-69:2012)		P
	– the intended use of the machine and the auxiliary equipment as covered by the scope of this standard (IEC60335-2-69:2012)		P
	– the meaning of the symbols used on the machine and in the instructions (IEC60335-2-69:2012)		P
	– drawings, diagrams, descriptions and explanations necessary for the safe use, maintenance and repair of the machine and for checking its correct functioning (IEC60335-2-69:2012)		P

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Clause	Requirement - Test	Result - Remark	Verdict
	– technical data including the markings on the machine (IEC60335-2-69:2012)		P
	– information regarding putting into service, safe operation, handling, transportation, and storage of the machine taking into account its weight (IEC60335-2-69:2012)		P
	– instructions to enable adjustment and maintenance to be carried out safely, including the protective measures that should be taken during these operations (IEC60335-2-69:2012)		P
	– the conditions in which the machine meets the requirement of stability during use, transportation, assembly, dismantling when out of service, testing or foreseeable breakdowns (IEC60335-2-69:2012)		P
	– the procedure to be followed to prevent unsafe situations in the event of accident (e.g. contact with or spillage of detergents, battery acid, fuel or oil) or equipment breakdown (IEC60335-2-69:2012)		P
	– the substance of the following: This machine is intended for commercial use, for example in hotels, schools, hospitals, factories, shops, offices and rental businesses (IEC60335-2-69:2012)		P
	The instructions shall indicate the type and frequency of inspections and maintenance required for safe operation, including preventive maintenance measures (IEC60335-2-69:2012)		P
	They shall, if applicable, give the specifications of the spare parts if they affect the health and safety of the operator (IEC60335-2-69:2012)		P
	In addition, the instructions shall give the following information, if applicable:		P
	– for battery powered machines, instructions regarding the precautions to be taken for safe charging (IEC60335-2-69:2012)		N/A
	– precautions to be taken when changing brushes or other attachments (IEC60335-2-69:2012)		N/A
	– information on the detergents or other liquids that may be used including the choice and use of personal protective equipment (PPE) (IEC60335-2-69:2012)		N/A
	– essential characteristics of auxiliary equipment which may be fitted to the machine (IEC60335-2-69:2012)		N/A
	– information regarding safe disposal of batteries (IEC60335-2-69:2012)		N/A
	– purposes of the socket outlet on the machine (IEC60335-2-69:2012)		P
	– the precautions to be taken when using the machine under specific conditions such as handling flammable liquids or dusts and dusts hazardous to health (IEC60335-2-69:2012)		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	– the intended use of the brushes specified for the machine (IEC60335-2-69:2012)		N/A
7.12.101	The instructions include warnings concerning ways in which the machine shall not be used, which in the experience of the manufacturer are likely to occur. At least, they include the substance of the following warnings, if applicable (IEC60335-2-69:2012)		P
	– WARNING Operators shall be adequately instructed on the use of these machines (IEC60335-2-69:2012)		P
	– WARNING This machine is not suitable for picking up hazardous dust (IEC60335-2-69:2012)		P
	– WARNING This machine is for dry use only (IEC60335-2-69:2012)		N/A
	– CAUTION This machine is for indoor use only (IEC60335-2-69:2012)		N/A
	– CAUTION This machine shall be stored indoors only (IEC60335-2-69:2012)		N/A
	A warning that the machine has to be disconnected from its power source during cleaning or maintenance and when replacing parts or converting the machine to another function: (IEC60335-2-69:2012)		P
	– for mains operated machines, by removing the plug from the socket-outlet; (IEC60335-2-69:2012)		P
	– for battery powered machines, by safely disconnecting at least the B+ or B- pole of the battery or an equivalent method (disconnecting device): for non-SELV both poles must be disconnected (IEC60335-2-69:2012)		N/A
	Instructions for mains operated machines shall also include the substance of the following: (IEC60335-2-69:2012)		P
	– WARNING Do not allow the supply cord to come into contact with the rotating brushes (IEC60335-2-69:2012)		N/A
	– WARNING Only use the socket outlet on the machine for purposes specified in the instructions (IEC60335-2-69:2012)		P
	Instructions for water suction cleaning machines shall also include the substance of the following: (IEC60335-2-69:2012)		P
	– WARNING If foam or liquid escapes from the machine, switch off immediately (IEC60335-2-69:2012)		P
	– CAUTION Clean the water level limiting device regularly and examine it for signs of damage (IEC60335-2-69:2012)		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Instructions for machines having a current-carrying hose, operating at other than safety extra-low voltage, also include the substance of the following: (IEC60335-2-69:2012)		N/A
	– WARNING This hose contains electrical connections: do not use it to collect water and do not immerse in water for cleaning (IEC60335-2-69:2012)		N/A
7.12.102	Information on noise (IEC60335-2-69:2012)		P
7.12.103	Information on vibration (IEC60335-2-69:2012)		P
7.12.1	Sufficient details for installation supplied		N/A
	For an appliance intended to be permanently connected to the water mains and not connected by a hose-set, this is stated		N/A
7.12.2	Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules		N/A
7.12.3	Insulation of the fixed wiring in contact with parts exceeding 50 K during clause 11; instructions state that the fixed wiring must be protected		N/A
7.12.4	Instructions for built-in appliances:		N/A
	- dimensions of space		N/A
	- dimensions and position of supporting and fixing		N/A
	- minimum distances between parts and surrounding structure		N/A
	- minimum dimensions of ventilating openings and arrangement		N/A
	- connection to supply mains and interconnection of separate components		N/A
	- allow disconnection of the appliance after installation, by accessible plug or a switch in the fixed wiring, unless		N/A
	a switch complying with 24.3		N/A
7.12.5	Replacement cord instructions, type X attachment with a specially prepared cord		N/A
	Replacement cord instructions, type Y attachment		P
	Replacement cord instructions, type Z attachment		N/A

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict
7.12.6	Caution in the instructions for appliances incorporating a non-self-resetting thermal cut-out that is reset by disconnection of the supply mains, if this cut-out is required to comply with the standard		N/A
7.12.7	Instructions for fixed appliances stating how the appliance is to be fixed		N/A
7.12.8	Instructions for appliances connected to the water mains:		N/A
	- max. inlet water pressure (Pa) ....:		N/A
	- min. inlet water pressure, if necessary (Pa) .....:		N/A
	Instructions concerning new and old hose-sets for appliances connected to the water mains by detachable hose-sets		N/A
7.13	Instructions and other texts in an official language	English	P
	The words “Original instructions” appear on the language version(s) verified by the manufacturer (IEC60335-2-69:2012)		P
7.14	Marking clearly legible and durable, rubbing test as specified		P
	The height of symbol IEC 60417-5935 (2002-10) is at least 15 mm (IEC60335-2-69:2012)		N/A
7.15	Markings on a main part		P
	Marking clearly discernible from the outside, if necessary after removal of a cover		P
	For portable appliances, cover can be removed or opened without a tool		P
	For stationary appliances, name, trademark or identification mark and model or type reference visible after installation		N/A
	For fixed appliances, name, trademark or identification mark and model or type reference visible after installation according to the instructions		N/A
	Indications for switches and controls placed on or near the components. Marking not on parts which can be positioned or repositioned in such a way that the marking is misleading		P
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		N/A
8	PROTECTION AGAINST ACCESS TO LIVE PARTS		P
8.1	Adequate protection against accidental contact with live parts		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Water and water-borne cleaning agents are considered conductive (IEC60335-2-69:2012)		P
8.1.1	Requirement applies for all positions, detachable parts removed		P
	Lamps behind a detachable cover not removed, if conditions met		N/A
	Insertion or removal of lamps, protection against contact with live parts of the lamp cap		N/A
	Use of test probe B of IEC 61032, with a force not exceeding 1 N: no contact with live parts		P
8.1.2	Use of test probe 13 of IEC 61032, with a force not exceeding 1 N, through openings in class 0 appliances and class II appliances/constructions: no contact with live parts	Class II construction	P
	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating: no contact with live parts		N/A
8.1.3	For appliances other than class II, use of test probe 41 of IEC 61032, with a force not exceeding 1 N: no contact with live parts of visible glowing heating elements		N/A
8.1.4	Accessible part not considered live if:		N/A
	- safety extra-low a.c. voltage: peak value not exceeding 42.4 V		N/A
	- safety extra-low d.c. voltage: not exceeding 42.4 V		N/A
	- or separated from live parts by protective impedance		N/A
	If protective impedance: d.c. current not exceeding 2 mA, and		N/A
	a.c. peak value not exceeding 0.7 mA		N/A
	- for peak values over 42.4 V up to and including 450 V, capacitance not exceeding 0,1 μF		N/A
	- for peak values over 450 V up to and including 15 kV, discharge not exceeding 45 μC		N/A
	- for peak values over 15kV, the energy in the discharge not exceeding 350 mJ		N/A
8.1.5	Live parts protected at least by basic insulation before installation or assembly:		N/A
	- built-in appliances		N/A
	- fixed appliances		N/A
	- appliances delivered in separate units		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
8.2	Class II appliances and constructions constructed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only	Class II construction	P
	Only possible to touch parts separated from live parts by double or reinforced insulation		P
9	STARTING OF MOTOR-OPERATED APPLIANCES		N/A
	This clause of Part 1 is not applicable (IEC60335-2-69:2012)		N/A
10	POWER INPUT AND CURRENT		P
10.1	Power input at normal operating temperature, rated voltage and normal operation not deviating from rated power input by more than shown in table 1..:	(see appended table)	P
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		N/A
	the rated power input is related to the arithmetic mean value		P
10.2	Current at normal operating temperature, rated voltage and normal operation not deviating from rated current by more than shown in table 2 .....:	(see appended table)	N/A
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		N/A
	the rated current is related to the arithmetic mean value of the range		N/A
11	HEATING		P
11.1	No excessive temperatures in normal use		P
11.2	The appliance is held, placed or fixed in position as described .....:		P
11.3	Temperature rises, other than of windings, determined by thermocouples		P
	Temperature rises of windings determined by resistance method, unless		P
	the windings are non-uniform or it is difficult to make the necessary connections	Transformer	P

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict
	If it is necessary to dismantle the machine for fitting thermocouples or other wiring, the input shall be measured before and after fitting at the lowest possible load, for example, with closed suction openings, with brushes not in contact with the floor, with declutched drive, etc. to check that the assembling has been accomplished properly (IEC60335-2-69:2012)		P
11.4	Not applicable (IEC60335-2-69:2012)		N/A
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V) .....:	Operated at most unfavourable voltage of 1,06 times rated voltage	P
	For the heating test, the normal load Pr on the motor driving the moving brushes can be simulated by a brake or other means (IEC60335-2-69:2012)		N/A
11.6	Not applicable (IEC60335-2-69:2012)		N/A
11.7	Operation duration corresponding to the most unfavourable conditions of normal use		P
	Appliances are operated until steady conditions are established (IEC60335-2-69:2012)		P
11.8	Temperature rises monitored continuously and not exceeding the values in table 3 .....:	(see appended table)	P
	If the temperature rise of a motor winding exceeds the value of table 3, or		N/A
	if there is doubt with regard to classification of insulation,		N/A
	tests of Annex C are carried out		N/A
	Sealing compound does not flow out		P
	Protective devices do not operate, except		N/A
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4		N/A
13	LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE		P
13.1	Leakage current not excessive and electric strength adequate		P
	Heating appliances operated at 1.15 times the rated power input (W) .....:		N/A
	Motor-operated appliances and combined appliances supplied at 1.06 times the rated voltage (V).....:	Supplied at 1,06 times the rated voltage	P
	Protective impedance and radio interference filters disconnected before carrying out the tests		N/A

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict
13.2	For class 0, class II and class III appliances, leakage current measured by means of the circuit described in figure 4 of IEC 60990		N/A
	For other appliances, a low impedance ammeter may be used		P
	Leakage current measurements .....:	(see appended table)	P
	For class I appliances where several motors operate at the same time, the leakage current shall not exceed 3,5 mA (IEC60335-2-69:2012)		N/A
13.3	The appliance is disconnected from the supply		P
	Electric strength tests according to table 4.....:	(see appended table)	P
	No breakdown during the tests		P
14	TRANSIENT OVERVOLTAGES		N/A
	Appliances withstand the transient over-voltages to which they may be subjected		N/A
	Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6 .....:	(see appended table)	N/A
	No flashover during the test, unless		N/A
	of functional insulation if the appliance complies with clause 19 with the clearance short-circuited		N/A
15	MOISTURE RESISTANCE		P
15.1	Enclosure provides the degree of moisture protection according to classification of the appliance		P
	Compliance checked as specified in 15.1.1, taking into account 15.1.2, followed by the electric strength test of 16.3		P
	No trace of water on insulation which can result in a reduction of clearances or creepage distances below values specified in clause 29		P
15.1.1	Appliances, other than IPX0, subjected to tests as specified in IEC 60529.....:	IPX4	P
	Water valves containing live parts in external hoses for connection of an appliance to the water mains tested as specified for IPX7 appliances		N/A
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test		N/A
	Built-in appliances installed according to the instructions		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Appliances placed or used on the floor or table placed on a horizontal unperforated support		P
	Appliances normally fixed to a wall and appliances with pins for insertion into socket-outlets are mounted on a wooden board		N/A
	For IPX3 appliances, the base of wall mounted appliances is placed at the same level as the pivot axis of the oscillating tube		N/A
	For IPX4 appliances, the horizontal centre line of the appliance is aligned with the pivot axis of the oscillating tube, and		P
	for appliances normally used on the floor or table, the movement is limited to two times 90° for a period of 5 min, the support being placed at the level of the pivot axis of the oscillating tube		P
	Wall-mounted appliances, take into account the distance to the floor stated in the instructions		N/A
	Appliances normally fixed to a ceiling are mounted underneath a horizontal unperforated support, the pivot axis of the oscillating tube located at the level of the underside of the support, and		N/A
	for IPX4 appliances, the movement of the tube is limited to two times 90° from the vertical for a period of 5 min		P
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Detachable parts subjected to the relevant treatment with the main part		P
	However, if a part has to be removed for user maintenance and a tool is needed, this part is not removed		P
	Water-suction cleaning machines are operated for 10 min on a level surface wetted by the test solution. In practice, the pick-up consists largely of air such that there is no overloading of the suction motor; the input load should be observed to avoid overloading (IEC60335-2-69:2012)		P
15.2	Machines with liquid container: Spillage of liquid due to normal operation, overfilling and overturning of unstable machines do not affect their electrical insulation (IEC60335-2-69:2012)		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Machines with liquid container and provided with an appliance inlet are fitted with an appropriate connector and flexible cable or cord (IEC60335-2-69:2012)		N/A
	Machines with liquid container and type X attachment are fitted with a cord of the lightest cross-sectional area specified in table 11 (IEC60335-2-69:2012)		N/A
	Other machines are tested as delivered (IEC60335-2-69:2012)		P
	Unstable machines are then, with the container completely filled and with the cover or lid in place, overturned from the most unfavourable of the normal positions of use, and are left in that position for 5 min unless the machine returns automatically to its normal position of use (IEC60335-2-69:2012)		P
	Nozzles and motorized cleaning heads of water-suction cleaning machines are placed in a tray, as specified and machine is operated until its liquid container is completely full and for a further 5 min. (IEC60335-2-69:2012)		N/A
	Machine withstands the electric strength test of 16.3 (IEC60335-2-69:2012)		P
	No trace of liquid on insulation that reduces the creepage distances and clearances below the values specified in clause 29 (IEC60335-2-69:2012)		P
15.3	Appliances proof against humid conditions		P
	Checked by test Cab: Damp heat steady state in IEC 60068-2-78		P
	Detachable parts removed and subjected, if necessary, to the humidity test with the main part		P
	Humidity test for 48 h in a humidity cabinet The relative humidity shall have (93 ± 6) % (IEC60335-2-69:2012)	23 °C; 93% RH	P
	Reassembly of those parts that may have been removed		P
	The appliance withstands the tests of clause 16		P
15.101	Motorized cleaning heads of water suction cleaning machines are resistant to liquids that may come into contact with them. Compliance is checked by the test as specified (IEC60335-2-69:2012)		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
16	LEAKAGE CURRENT AND ELECTRIC STRENGTH		P
16.1	Leakage current not excessive and electric strength adequate		P
	Protective impedance disconnected from live parts before carrying out the tests		N/A
	Tests carried out at room temperature and not connected to the supply		P
16.2	Single-phase appliances: test voltage 1.06 times rated voltage (V) .....:		P
	Three-phase appliances: test voltage 1.06 times rated voltage divided by √3 (V) .....:		N/A
	Leakage current measurements .....:	(see appended table)	P
	Limit values doubled if:		N/A
	- all controls have an off position in all poles, or		N/A
	- the appliance has no control other than a thermal cut-out, or		N/A
	- all thermostats, temperature limiters and energy regulators do not have an off position, or		N/A
	- the appliance has radio interference filters		N/A
	With the radio interference filters disconnected, the leakage current do not exceed limits specified .....:	(see appended table)	N/A
16.3	Electric strength tests according to table 7.....:	(see appended table)	P
	Test voltage applied between the supply cord and inlet bushing and cord guard and cord anchorage as specified .....:	(see appended table)	P
	Current-carrying hoses, except for their electrical connections, are immersed for 1 h in water containing approximately 1 % NaCl, at a temperature of 20 °C ± 5 °C. While the hose is still immersed, a voltage of 2 000 V is applied for 5 min between each conductor and all the other conductors connected together. A voltage of 3 000 V is then applied for 1 min between all the conductors and the saline solution (IEC60335-2-69:2012)		N/A
	No breakdown during the tests		P
17	OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS		P
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use .....:	(see appended table)	P

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Clause	Requirement - Test	Result - Remark	Verdict
	Appliance supplied with 1.06 or 0.94 times rated voltage under the most unfavourable short-circuit or overload likely to occur in normal use (V) .....:	Supplied with 1,06 times rated voltage	P
	Basic insulation is not short-circuited		P
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K		N/A
	Temperature of the winding not exceeding the value specified in table 8		P
	However, limits do not apply to fail-safe transformers complying with sub-clause 15.5 of IEC 61558-1		N/A
18	ENDURANCE		N/A
	This clause of Part 1 is not applicable (IEC60335-2-69:2012)		N/A
19	ABNORMAL OPERATION		P
19.1	The risk of fire, mechanical damage or electric shock under abnormal or careless operation obviated		P
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe .....:	(see appended table)	P
	Appliances incorporating heating elements subjected to the tests of 19.2 and 19.3, and		N/A
	if the appliance also has a control that limit the temperature during clause 11 it is subjected to the test of 19.4, and		N/A
	if applicable, to the test of 19.5		N/A
	Appliances incorporating PTC heating elements are also subjected to the test of 19.6		N/A
	Appliances incorporating motors subjected to the tests of 19.7 to 19.10, as applicable		P
	Appliances incorporating electronic circuits subjected to the tests of 19.11 and 19.12, as applicable		P
	Appliances incorporating contactors or relays subjected to the test of 19.14, being carried out before the tests of 19.11		P
	Appliances incorporating voltage selector switches subjected to the test of 19.15		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Unless otherwise specified, the tests are continued until a non-self-resetting thermal cut-out operates, or		P
	until steady conditions are established		P
	If a heating element or intentionally weak part becomes open-circuited, the relevant test is repeated on a second sample		N/A
	*Machines are also subjected to the test of 19.101 (*IEC60335-2-69:2012)		P
	*The test of 19.7 is only carried out on motorized cleaning heads and fan motors of centrally-sited vacuum cleaners (*IEC60335-2-69:2012)		N/A
	*Dust extractors are also subjected to the tests of 19.102, and 19.103 if applicable (*IEC60335-2-69:2012)		P
	*Centrally-sited vacuum cleaners are also subjected to the tests of 19.104, and 19.105 if applicable (*IEC60335-2-69:2012)		N/A
19.2	Test of appliances with heating elements with restricted heat dissipation (without liquid in the container); test voltage (V), power input of 0.85 times rated power input (W) .....: (IEC60335-2-69:2012)		N/A
19.3	Test of 19.2 repeated; test voltage (V), power input of 1.24 times rated power input (W) .....:		N/A
19.4	Test conditions as in clause 11, any control limiting the temperature during tests of clause 11 short-circuited		N/A
19.5	Test of 19.4 repeated on Class 0I and I appliances with tubular sheathed or embedded heating elements. No short-circuiting, but one end of the element connected to the sheath		N/A
	The test repeated with reversed polarity and the other end of the heating element connected to the sheath		N/A
	The test is not carried out on appliances intended to be permanently connected to fixed wiring and on appliances where an all-pole disconnection occurs during the test of 19.4		N/A
19.6	Appliances with PTC heating elements tested at rated voltage, establishing steady conditions		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	The working voltage of the PTC heating element is increased by 5% and the appliance is operated until steady conditions are re-established. The voltage is then increased in similar steps until 1.5 times working voltage or until the PTC heating element ruptures (V) .....:		N/A
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque, or		N/A
	locking moving parts of other appliances		N/A
	Motorized cleaning heads are tested with the rotating brush or similar device locked for 30 s (IEC60335-2-69:2012)		N/A
	Unattended dust extractors are operated until steady conditions are reached (IEC60335-2-69:2012)		N/A
	Separate fan motors of centrally-sited vacuum cleaners are operated until steady conditions are reached. (IEC60335-2-69:2012)		N/A
	Locked rotor, capacitors open-circuited one at a time		N/A
	Test repeated with capacitors short-circuited one at a time, unless		N/A
	capacitor is of class P2 of IEC 60252-1		N/A
	Appliances with timer or programmer supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed.....:		N/A
	Other appliances supplied with rated voltage for a period as specified .....:		N/A
	Winding temperatures not exceeding values specified in table 8.....:	(see appended table)	N/A
19.8	Multi-phase motors operated at rated voltage with one phase disconnected		N/A
19.9	Not applicable (IEC60335-2-69:2012)		N/A
19.10	Appliances incorporating series motors are operated with the lowest possible load and supplied at 1.3 times rated voltage for 1 min) .....: In the case of cleaners driving a brush or agitator, the belt is removed	312 V for 220-240 V type; 127,2 V for 110-120 V type	P
	During the test, parts not being ejected from the appliance		P
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	Epoxy resin adhesive used on PCB board.	N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	they comply with the conditions specified in 19.11.1		N/A
	Appliances incorporating an electronic circuit that relies upon a programmable component to function correctly, subjected to the test of 19.11.4.8, unless		N/A
	restarting does not result in a hazard		N/A
	Appliances having a device with an off position obtained by electronic disconnection, or a device placing the appliance in a stand-by mode, subjected to the tests of 19.11.4		N/A
	If the safety of the appliance under any of the fault conditions depends on the operation of a miniature fuse-link complying with IEC 60127, the test of 19.12 is carried out		N/A
	During and after each test the following has to be checked:		N/A
	- the temperature of the windings do not exceed the values specified in table 8		N/A
	- the appliance complies with the conditions specified in 19.13		N/A
	- any current flowing through protective impedance not exceeding the limits specified in 8.1.4		N/A
	If a conductor of a printed board becomes open-circuited, the appliance is considered to have withstood the particular test, provided both of the following conditions are met:		N/A
	- the base material of the printed circuit board withstands the test of Annex E		N/A
	- any loosened conductor does not reduce clearance or creepage distances between live parts and accessible metal parts below the values specified in clause 29		N/A
19.11.1	Fault conditions a) to g) in 19.11.2 are not applied to circuits or parts of circuits meeting both of the following conditions:		N/A
	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15 W according to the tests specified		N/A
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction of other parts of the appliance does not rely on the correct functioning of the electronic circuit		N/A
19.11.2	Fault conditions applied one at a time, the appliance operating under conditions specified in clause 11, but supplied at rated voltage, duration of the tests as specified:		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	a) short circuit of functional insulation if clearances or creepage distances are less than the values specified in clause 29		N/A
	b) open circuit at the terminals of any component		N/A
	c) short circuit of capacitors, unless		N/A
	they comply with IEC 60384-14		N/A
	d) short circuit of any two terminals of an electronic component, other than integrated circuits		N/A
	This fault condition is not applied between the two circuits of an optocoupler		N/A
	e) failure of triacs in the diode mode		N/A
	f) failure of microprocessors and integrated circuits		N/A
	g) failure of an electronic power switching device		N/A
	Each low power circuit is short-circuited by connecting the low-power point to the pole of the supply source from which the measurements were made		N/A
19.11.3	If the appliance incorporates a protective electronic circuit which operates to ensure compliance with clause 19, the relevant test is repeated with a single fault simulated, as indicated in a) to g) of 19.11.2		N/A
19.11.4	Appliances having a device with an off position obtained by electronic disconnection, or		N/A
	a device that can be placed in the stand-by mode,		N/A
	subjected to the tests of 19.11.4.1 to 19.11.4.7, the device being set in the off position or in the stand-by mode		N/A
	Appliances incorporating a protective electronic circuit subjected to the tests of 19.11.4.1 to 19.11.4.7, the tests being carried out after the protective electronic circuit has operated, except that		N/A
	appliances operated for 30 s or 5 min during the test of 19.7 are not subjected to the tests for electromagnetic phenomena.		N/A
	Surge protective devices disconnected, unless		N/A
	They incorporate spark gaps		N/A
19.11.4.1	The appliance is subjected to electrostatic discharges in accordance with IEC 61000-4-2, test level 4		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, test level 3		N/A
19.11.4.3	The appliance is subjected to fast transient bursts in accordance with IEC 61000-4-4, test level 3 or 4 as specified		N/A
19.11.4.4	The power supply terminals of the appliance subjected to voltage surges in accordance with IEC 61000-4-5, test level 3 or 4 as specified		N/A
	Earthed heating elements in class I appliances disconnected		N/A
19.11.4.5	The appliance is subjected to injected currents in accordance with IEC 61000-4-6, test level 3		N/A
19.11.4.6	Appliances having a rated current not exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-11		N/A
	Appliances having a rated current exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-34		N/A
19.11.4.7	The appliance is subjected to mains signals in accordance with IEC 61000-4-13, test level class 2		N/A
19.11.4.8	The appliance is supplied at rated voltage and operated under normal operation. After 60s the power supply is reduced to a level such that the appliance ceases to respond or parts controlled by the programmable component cease to operate		N/A
	The appliance continues to operate normally, or		N/A
	requires a manual operation to restart		N/A
19.12	If the safety of the appliance for any of the fault conditions specified in 19.11.2 depends on the operation of a miniature fuse-link complying with IEC 60127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A).....:		N/A
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts		P
	Temperature rises not exceeding the values shown in table 9 .....:	(see appended table)	P
	Compliance with clause 8 not impaired		P
	If the appliance can still be operated it complies with 20.2 and 22.104 (IEC60335-2-69:2012)		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Insulation, other than of class III appliances or class III constructions that do not contain live parts, withstands the electric strength test of 16.3, the test voltage as specified in table 4:		P
	- basic insulation (V).....:	1000 V	P
	- supplementary insulation (V).....:	1750 V	P
	- reinforced insulation (V) .....:	3000 V	P
	After operation or interruption of a control, clearances and creepage distances across the functional insulation withstand the electric strength test of 16.3, the test voltage being twice the working voltage		N/A
	The appliance does not undergo a dangerous malfunction, and		P
	no failure of protective electronic circuits, if the appliance is still operable		N/A
	Appliances tested with an electronic switch in the off position, or in the stand-by mode:		N/A
	- do not become operational, or		N/A
	- if they become operational, do not result in a dangerous malfunction during or after the tests of 19.11.4		N/A
	If the appliance contains lids or doors that are controlled by one or more interlocks, one of the interlocks may be released provided that:		N/A
	- the lid or door does not move automatically to an open position when the interlock is released, and		N/A
	- the appliance does not start after the cycle in which the interlock was released		N/A
19.14	Appliances operated under the conditions of clause 11, any contactor or relay contact operating under the conditions of clause 11 being short-circuited		P
	For a relay or contactor with more than one contact, all contacts are short-circuited at the same time		P
	A relay or contactor operating only to ensure the appliance is energized for normal use is not short-circuited		N/A
	If more than one relay or contactor operates in clause 11, they are short-circuited in turn		N/A
19.15	For appliances with a mains voltage selector switch, the switch is set to the lowest rated voltage position and the highest value of rated voltage is applied		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
19.101	Machines having liquid containers that are provided with shut-off device(s) or valve(s) are again subjected to the test of 15.2 Test as specified (IEC60335-2-69:2012)		P
19.102	Dust extractors for which 30.2.3 applies are supplied at rated voltage and operated with the inlet for the suction hose closed. The temperatures of the windings shall not exceed the values specified in 19.9 (IEC60335-2-69:2012)		N/A
19.103	Dust extractors for which 30.2.3 applies with separate ventilation for the motor are supplied at rated voltage and operated with the airflow through the motor blocked. The temperatures of the windings shall not exceed the values specified in 19.9 (IEC60335-2-69:2012)		N/A
19.104	Centrally-sited vacuum cleaners are supplied at rated voltage and operated with the inlet for the suction hose open and then closed. The temperatures of the windings shall not exceed the values specified in 19.9 (IEC60335-2-69:2012)		N/A
19.105	Centrally-sited vacuum cleaners with separate ventilation for the motor are supplied at rated voltage and operated with the airflow through the motor blocked (IEC60335-2-69:2012)		N/A
20	STABILITY AND MECHANICAL HAZARDS		P
20.1	Appliances have adequate stability Motorized cleaning heads are not subjected to this test (IEC60335-2-69:2012)		P
	Tilting test through an angle of 10°, appliance placed on an inclined plane/horizontal support, not connected to the supply mains; appliance does not overturn		P
	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15°		N/A
	Possible heating test in overturned position; temperature rise does not exceed values shown in table 9		N/A
20.2	These requirements do not apply to rotating brushes and similar devices, or to moving parts exposed during the fitting of accessories that allow conversion from one application to another (IEC60335-2-69:2012)		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Moving parts adequately arranged or enclosed as to provide protection against personal injury		P
	Protective enclosures, guards and similar parts are non-detachable, and		P
	have adequate mechanical strength		P
	Enclosures that can be opened by overriding an interlock are considered to be detachable parts		N/A
	Self-resetting thermal cut-outs and overcurrent protective devices not causing a hazard by unexpected closure		N/A
	Not possible to touch dangerous moving parts with the test probe described		P
20.101	Shaft ends and similar rotating parts shall be protected if they protrude by more than a quarter of their diameter. Shafts up to 50 mm diameter do not need to be protected if they are rotating at less than 5 revolutions per second and their ends are rounded and smooth (IEC60335-2-69:2012)		N/A
	The unintentional closing and lowering of doors, lids, covers etc., which could cause injury, shall be prevented (IEC60335-2-69:2012)		N/A
	Machines heavier than 20 kg (empty) are equipped with wheels or rollers for transport, which are located or protected so as to prevent injury to the feet of the operator (IEC60335-2-69:2012)		N/A
21	MECHANICAL STRENGTH		P
21.1	Machines and their components and fittings have adequate mechanical strength and are constructed as to withstand rough handling (IEC60335-2-69:2012)		P
	Checked by applying 3 blows to every point of the enclosure like to be weak, in accordance with test Ehb of IEC 60068-2-75, spring hammer test, with an impact energy of 1,0 J ± 0,04 J (IEC60335-2-69:2012)		P
	The appliance shows no damage impairing compliance with this standard, and		P
	compliance with 8.1, 15.1 and clause 29 not impaired		P
	If doubt, supplementary or reinforced insulation subjected to the electric strength test of 16.3		N/A
	If necessary, repetition of groups of three blows on a new sample		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
21.2	Accessible parts of solid insulation having strength to prevent penetration by sharp implements		P
	Test not applicable if the thickness of supplementary insulation is at least 1 mm and reinforced insulation at least 2 mm		P
	The insulation is tested as specified, and does withstand the electric strength test of 16.3		N/A
21.101	Parts of the machine subjected to impact in normal use are tested as specified (IEC60335-2-69:2012)		P
21.102	Current-carrying hoses are resistant to crushing (test as specified) (IEC60335-2-69:2012)		N/A
21.103	Current-carrying hoses are resistant to abrasion (test as specified) (IEC60335-2-69:2012)		N/A
21.104	Current-carrying hoses are resistant to flexing (test as specified) (IEC60335-2-69:2012)		N/A
21.105	Current-carrying hoses are resistant to torsion (test as specified (IEC60335-2-69:2012)		N/A
21.106	Current-carrying hoses are resistant to cold conditions (test as specified) (IEC60335-2-69:2012)		N/A
22	CONSTRUCTION		P
22.1	Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled	IPX4	N/A
22.2	Stationary appliance: means to ensure all-pole disconnection from the supply being provided:		N/A
	- a supply cord fitted with a plug, or		N/A
	- a switch complying with 24.3, or		N/A
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided, or		N/A
	- an appliance inlet		N/A
	Singe-pole switches and single-pole protective devices for the disconnection of heating elements in single-phase, permanently connected class 01 and class I appliances, connected to the phase conductor		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
22.3	Appliance provided with pins: no undue strain on socket-outlets		N/A
	Applied torque not exceeding 0.25 Nm		N/A
	Pull force of 50N to each pin after the appliance has being placed in the heating cabinet; when cooled to room temperature the pins are not displaced by more than 1mm		N/A
	Each pin subjected to a torque of 0.4Nm; the pins are not rotating, unless		N/A
	rotating does not impair compliance with this standard		N/A
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for insertion into socket-outlets		N/A
22.5	No risk of electric shock when touching the pins of the plug, for appliances having a capacitor with rated capacitance exceeding 0,1μF, the appliance being disconnected from the supply at the instant of voltage peak		P
	Voltage not exceeding 34 V (V):	6,8 V	P
22.6	Electrical insulation not affected by condensing water or leaking liquid		P
	Electrical insulation of Class II appliances not affected if a hose ruptures or seal leaks		N/A
	In case of doubt, test as described		N/A
	Water-suction cleaning machines are so constructed that neither water nor foam from detergents can penetrate into the motor or come in contact with live parts (IEC60335-2-69:2012)		P
22.7	Adequate safeguards against the risk of excessive pressure in appliances containing liquid or gases or having steam-producing devices		N/A
22.8	Electrical connections not subject to pulling during cleaning of compartments to which access can be gained without the aid of a tool, and that are likely to be cleaned in normal use		N/A
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances, unless	No similar substances	N/A
	the substance has adequate insulating properties		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
22.10	Not possible to reset voltage-maintained non-self-resetting thermal cut-outs by the operation of an automatic switching device incorporated within the appliance, if:		N/A
	- a non-self-resetting thermal cut-out is required by the standard, and		N/A
	- a voltage maintained non-self-resetting thermal cut-out is used to meet it		N/A
	Non-self-resetting thermal motor protectors have a trip-free action, unless		N/A
	they are voltage maintained		N/A
	Reset buttons of non-self-resetting controls so located or protected that accidental resetting is unlikely		N/A
22.11	Reliable fixing of non-detachable parts that provide the necessary degree of protection against electric shock, moisture or contact with moving parts		P
	Obvious locked position of snap-in devices used for fixing such parts		P
	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing		P
	Tests as described	50 N pull and push force on enclosure, handle, main switch knob, speed switch knob; 2 N/m on main switch knob, speed switch knob	P
22.12	Handles, knobs etc. fixed in a reliable manner		P
	Fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible		P
	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied		N/A
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied	Main switch knob, speed switch knob	P
22.13	Unlikely that handles, when gripped as in normal use, make the operator's hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only		P
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance		P

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Clause	Requirement - Test	Result - Remark	Verdict
	No exposed pointed ends of self-tapping screws or other fasteners, likely to be touched by the user in normal use or during user maintenance		P
22.15	Storage hooks and the like for flexible cords smooth and well rounded		N/A
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands and no undue wear of contacts		N/A
	Cord reel tested with 6000 operations, as specified		N/A
	Electric strength test of 16.3, voltage of 1000 V applied		N/A
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner		N/A
22.18	Current-carrying parts and other metal parts resistant to corrosion		P
22.19	Driving belts not relied upon to provide the required level of insulation, unless		N/A
	constructed to prevent inappropriate replacement		N/A
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless		P
	material used is non-corrosive, non-hygroscopic and non-combustible		N/A
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless	No similar material	N/A
	impregnated		N/A
	This requirement does not apply to magnesium oxide and mineral ceramic fibres used for the electrical insulation of heating elements		N/A
22.22	Appliances not containing asbestos		P
22.23	Oils containing polychlorinated biphenyl (PCB) not used		P
22.24	Bare heating elements, except in class III appliances or class III constructions that do not contain live parts, adequately supported		N/A
	In case of rupture, the heating conductor is unlikely to come in contact with accessible metal parts		N/A
22.25	Sagging heating conductors, except in class III appliances or class III constructions that do not contain live parts, cannot come into contact with accessible metal parts		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
22.26	For class III constructions the insulation between parts operating at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation		N/A
22.27	Parts connected by protective impedance separated by double or reinforced insulation		N/A
22.28	Metal parts of Class II appliances conductively connected to gas pipes or in contact with water, separated from live parts by double or reinforced insulation		N/A
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of access to live parts is maintained after installation		N/A
22.30	Parts serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or		P
	so constructed that they cannot be replaced in an incorrect position, and so that if they are omitted, the appliance is rendered inoperable or manifestly incomplete		P
22.31	Neither clearances nor creepage distances over supplementary and reinforced insulation reduced below values specified in clause 29 as a result of wear		P
	Neither clearances nor creepage distances between live parts and accessible parts reduced below values for supplementary insulation if wires, screws etc. become loose		P
22.32	Supplementary and reinforced insulation constructed or protected against pollution so that clearances or creepage distances are not reduced below the values in clause 29		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 29.2		N/A
	Ceramic material not tightly sintered, similar materials or beads alone not used as supplementary or reinforced insulation		N/A
	Insulating material in which heating conductors are embedded is considered to be basic insulation, not reinforced insulation		N/A
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
22.33	Conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts are not in direct contact with live parts		P
	Electrodes not used for heating liquids		N/A
	For class II constructions, conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts, not in direct contact with basic or reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		P
	For class II constructions, conductive liquids which are in contact with live parts, not in direct contact with reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	An air layer not used as basic or supplementary insulation in a double insulation system if likely to be bridged by leaking liquid		N/A
22.34	Shafts of operating knobs, handles, levers etc. not live, unless		P
	the shaft is not accessible when the part is removed		N/A
22.35	For other than class III constructions, handles, levers and knobs, held or actuated in normal use, not becoming live in the event of a failure of basic insulation		P
	Such parts being of metal, and their shafts or fixings are likely to become live in the event of a failure of basic insulation, are either adequately covered by insulation material or their accessible parts are separated from their shafts or fixings by supplementary insulation		N/A
	This requirement does not apply to handles, levers and knobs on stationary appliances, other than those of electrical components, provided they are reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal		N/A
	Insulating material covering metal handles, levers and knobs withstand the electric strength test of 16.3 for supplementary insulation		N/A
	Parts subjected to the hammer test of clause 21 (IEC60335-2-69:2012)		P

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Clause	Requirement - Test	Result - Remark	Verdict
	If this insulation does not meet the requirement of 29.3 – impact test as specified (IEC60335-2-69:2012)		N/A
	For centrally-sited vacuum cleaners, this clause of Part 1 is applicable (IEC60335-2-69:2012)		N/A
22.36	For appliances other than class III, handles continuously held in the hand in normal use so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless		N/A
	they are separated from live parts by double or reinforced insulation		N/A
22.37	Capacitors in Class II appliances not connected to accessible metal parts and their casings, if of metal, separated from accessible metal parts by supplementary insulation, unless		N/A
	the capacitors comply with 22.42		N/A
22.38	Capacitors not connected between the contacts of a thermal cut-out		N/A
22.39	Lamp holders used only for the connection of lamps		N/A
22.40	Motor-operated appliances and combined appliances intended to be moved while in operation, or having accessible moving parts, fitted with a switch to control the motor. The actuating member of the switch being easily visible and accessible		P
	If the appliance cannot operate continuously, automatically or remotely without giving rise to a hazard, appliances for remote operation being fitted with a switch for stopping the operation. The actuating member of the switch being easily visible and accessible		N/A
22.41	No components, other than lamps, containing mercury		P
22.42	Protective impedance consisting of at least two separate components		N/A
	Values specified in 8.1.4 not exceeded if any one of the components are short-circuited or open-circuited		N/A
	Resistors checked by the test of 14.1 a) in IEC 60065		N/A
	Capacitors checked by the tests for class Y capacitors in IEC 60384-14		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur		N/A
22.44	Appliances not having an enclosure that is shaped or decorated like a toy		P
22.45	When air is used as reinforced insulation, clearances not reduced below the values specified in 29.1.3 due to deformation as a result of an external force applied to the enclosure		N/A
22.46	For programmable protective electronic circuits used to ensure compliance with the standard, the software contains measures to control the fault/error conditions in table R.1		N/A
	Software that contains measures to control the fault/error conditions specified in table R.2 is to be specified in parts 2 for particular constructions or to address specific hazards		N/A
	These requirements are not applicable to software used for functional purpose or compliance with clause 11		N/A
22.47	Appliances connected to the water mains withstand the water pressure expected in normal use		N/A
	No leakage from any part, including any inlet water hose		N/A
22.48	Appliances connected to the water mains constructed to prevent backsiphonage of non-potable water		N/A
22.49	For remote operation, the duration of operation is to be set before the appliance can be started, unless		N/A
	the appliance switches off automatically or can operate continuously without hazard		N/A
22.50	Controls incorporated in the appliance take priority over controls actuated by remote operation		N/A
22.51	There is a control on the appliance manually adjusted to the setting for remote operation before the appliance can be operated in this mode		N/A
	There is a visual indication showing that the appliance is adjusted for remote operation		N/A
	These requirements not necessary on appliances that can operate as follows, without giving rise to a hazard:		N/A
	- continuously, or		N/A
	- automatically, or		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	- remotely		N/A
22.52	Socket-outlets on appliances accessible to the user in accordance with the socket-outlet system used in the country in which the appliance is sold		P
22.101	Machines constructed so as to prevent the penetration of objects from the floor, which may impair the safety of the machine. (IEC60335-2-69:2012)		P
	Live parts of machines for wet use have at least 30 mm distance from the surface of the floor, measured in vertical direction through existing holes. This requirement does not apply to motorized cleaning heads (IEC60335-2-69:2012)	Min. 52 mm	P
22.102	Class I appliances and class II appliances have a mains isolating switch that ensures all-pole disconnection according to overvoltage category III conditions (IEC60335-2-69:2012)		P
	For built-in battery chargers, this all-pole disconnection can be realised by pulling the plug (IEC60335-2-69:2012)		N/A
	The following circuits are disconnected by the supply disconnecting device or their own disconnecting device: (IEC60335-2-69:2012)		P
	– plug and socket-outlets (IEC60335-2-69:2012)		P
	– undervoltage protection circuits that are only provided for automatic tripping in the event of supply failure (IEC60335-2-69:2012)		N/A
	– phase rotating indicators (IEC60335-2-69:2012)		N/A
	– control circuits for interlocking (IEC60335-2-69:2012)		N/A
22.103	For machines where the operator is required to use personal protective equipment (PPE), controls shall be designed in such a way that they can be operated safely (IEC60335-2-69:2012)		N/A
22.104	If machines are provided with shut-off devices, the devices shall prevent the liquid level from exceeding the maximum allowed level (IEC60335-2-69:2012)		P
22.105	Harness of back-pack vacuum cleaners All measurements are made with all filters in place, empty dust containers and without the weight of the supply cord (IEC60335-2-69:2012)		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Back-pack vacuum cleaners with a mass exceeding 6 kg shall be equipped with at least a single shoulder harness. A double shoulder harness shall be provided for back-pack vacuum cleaners exceeding a mass of 7,5 kg (IEC60335-2-69:2012)		N/A
	Single shoulder harnesses shall be designed so that the machine can be released quickly from the operator in the event of emergency. One way to fulfil this is to have a quick release mechanism on the harness (IEC60335-2-69:2012)		N/A
	Double shoulder harnesses shall always have a quick release mechanism. The quick release mechanism shall only allow separation by a deliberate action (IEC60335-2-69:2012)		N/A
	All harnesses shall be adjustable to the size of the operator. The harness shall distribute the load evenly on the operator's back, shoulders, waist and/or hip (IEC60335-2-69:2012)		N/A
	Back-pack vacuum cleaners exceeding a mass of 7,5 kg shall be supplied with a pad at the points of contact between the machine and the body (IEC60335-2-69:2012)		N/A
22.106	Handgrip of back-pack vacuum cleaners (IEC60335-2-69:2012)		N/A
	Back-pack vacuum cleaners shall be equipped with a handgrip with a surface or structure specifically designed for the operator's hand to allow the operator to grasp the back-pack vacuum cleaner to place it on his back or take it off (IEC60335-2-69:2012)		N/A
23	INTERNAL WIRING		P
23.1	Wireways smooth and free from sharp edges		P
	Wires protected against contact with burrs, cooling fins etc.		P
	Wire holes in metal well-rounded or provided with bushings		N/A
	Wiring effectively prevented from coming into contact with moving parts		P
23.2	Beads etc. on live wires cannot change their position, and are not resting on sharp edges		N/A
	Beads inside flexible metal conduits contained within an insulating sleeve		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress		N/A
	Flexible metallic tubes not causing damage to insulation of conductors		N/A
	Open-coil springs not used		N/A
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		N/A
	No damage after 10 000 flexings for conductors flexed during normal use, or		N/A
	100 flexings for conductors flexed during user maintenance		N/A
	Electric strength test of 16.3, 1000 V between live parts and accessible metal parts		N/A
	Not more than 10% of the strands of any conductor broken, and		N/A
	not more than 30% for wiring supplying circuits that consume no more than 15W		N/A
23.4	Bare internal wiring sufficiently rigid and fixed		N/A
23.5	The insulation of internal wiring subjected to the supply mains voltage withstanding the electrical stress likely to occur in normal use		P
	Basic insulation electrically equivalent to the basic insulation of cords complying with IEC 60227 or IEC 60245, or		P
	no breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation		P
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by clamping at both ends, or		P
	be such that it can only be removed by breaking or cutting		P
23.7	The colour combination green/yellow only used for earthing conductors		P
23.8	Aluminium wires not used for internal wiring	No aluminium wires	N/A
23.9	Stranded conductors not consolidated by soldering where they are subjected to contact pressure, unless		P
	the contact pressure is provided by spring terminals		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
23.10	The insulation and sheath of internal wiring, incorporated in external hoses for the connection of an appliance to the water mains, at least equivalent to that of light polyvinyl chloride sheathed flexible cord (60227 IEC 52)		N/A
24	COMPONENTS		P
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components .....:	(see appended table)	P
	If components have not been tested and found to comply with relevant IEC standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9		N/A
	For components mentioned in 24.1.1 to 24.1.9 no additional tests specified in the relevant component standard are necessary other than those specified in 24.1.1 to 24.1.9		P
	Components not tested and found to comply with relevant IEC standard and components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance		N/A
	Lampholders and starterholders that have not being tested and found to comply with the relevant IEC standard, tested as a part of the appliance and additionally according to the gauging and interchangeability requirements of the relevant IEC standard		N/A
	No additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of IEC 60320-1 and IEC 60309		N/A
24.1.1	Capacitors likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing, complying with IEC 60384-14	Approved type	P
	If the capacitors have to be tested, they are tested according to Annex F		N/A
24.1.2	Safety isolating transformers complying with IEC 61558-2-6		N/A
	If they have to be tested, they are tested according to Annex G		N/A
24.1.3	Switches complying with IEC 61058-1, the number of cycles of operation being at least 10 000		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	If they have to be tested, they are tested according to Annex H		N/A
	If the switch operates a relay or contactor, the complete switching system is subjected to the test		N/A
	If the switch only operates a motor staring relay complying with IEC 60730-2-10 with the number of cycles of a least 10 000 as specified, the complete switching system need not be tested		N/A
	The main switch in vacuum cleaners shall be tested for 50 000 cycles of operation. This test specification does not apply for centrally-sited vacuum cleaners (IEC60335-2-69:2012)		N/A
24.1.4	Automatic controls complying with IEC 60730-1 with the relevant part 2. The number of cycles of operation being at least:		N/A
	- thermostats: 10 000		N/A
	- temperature limiters: 1 000		N/A
	- self-resetting thermal cut-outs: 300		N/A
	- voltage maintained non-self-resetting thermal cut-outs: 1 000		N/A
	- other non-self-resetting thermal cut-outs: 30		N/A
	- timers: 3 000		N/A
	- energy regulators: 10 000		N/A
	The number of cycles for controls operating during clause 11 need not be declared, if the appliance meets the requirements of this standard when they are short-circuited		N/A
	Thermal motor protectors are tested in combination with their motor under the conditions specified in Annex D		N/A
	For water valves containing live parts and that are incorporated in external hoses for connection of an appliance to the water mains, the degree of protection declared for subclause 6.5.2 of IEC 60730-2-8 is IPX7		N/A
24.1.5	Appliance couplers complying with IEC 60320-1		N/A
	However, for appliances classified higher than IPX0, the appliance couplers complying with IEC 60320-2-3		N/A
	Interconnection couplers complying with IEC 60320-2-2		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
24.1.6	Small lamp holders similar to E10 lampholders complying with IEC 60238, the requirements for E10 lampholders being applicable		N/A
24.1.7	For remote operation of the appliance via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is IEC 62151		N/A
24.1.8	The relevant standard for thermal links is IEC 60691		N/A
	Thermal links not complying with IEC 60691 are considered to be an intentionally weak part for the purposes of Clause 19		N/A
24.1.9	Contactors and relays, other than motor starting relays, tested as part of the appliance		P
	They are also tested in accordance with Clause 17 of IEC 60730-1, the number of cycles of operations in 24.1.4 selected according to the contactor or relay function in the appliance .....:		N/A
24.2	Appliances not fitted with:		P
	- switches or automatic controls in flexible cords		N/A
	- devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance		N/A
	- thermal cut-outs that can be reset by soldering, unless		N/A
	the solder has a melding point of at least 230 ˚C		N/A
	For back-pack vacuum cleaners with a switching device located at the end of an interconnecting cord, the switching device shall be designed so that it cannot come into contact with the floor in normal use (IEC60335-2-69:2012)		N/A
	The strain relieves on both sides of the interconnecting cord shall comply with 25.15 (IEC60335-2-69:2012)		N/A
24.3	Switches intended for all-pole disconnection of stationary appliances are directly connected to the supply terminals and have a contact separation in all poles, providing full disconnection under overvoltage category III conditions		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
24.4	Plugs and socket-outlets for extra-low voltage circuits and heating elements, not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1 or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1		N/A
24.5	Capacitors in auxiliary windings of motors marked with their rated voltage and capacitance, and used accordingly		N/A
	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load		N/A
24.6	Working voltage of motors connected to the supply mains and having basic insulation that is inadequate for the rated voltage of the appliance, not exceeding 42 V		N/A
	In addition, the motors comply with the requirements of Annex I		N/A
24.7	Detachable hose-sets for connection of appliances to the water mains comply with IEC 61770		N/A
	They are supplied with the appliance		N/A
	Appliances intended to be permanently connected to the water mains not connected by a detachable hose-set		N/A
24.8	Motor running capacitors in appliances for which 30.2.3 is applicable and that are permanently connected in series with a motor winding, not causing a hazard in event of a failure		N/A
	One or more of the following conditions are to be met:		N/A
	- the capacitors are of class P2 according to IEC 60252-1		N/A
	- the capacitors are housed within a metallic or ceramic enclosure		N/A
	- the distance of separation of the outer surface to adjacent non-metallic parts exceeds 50 mm		N/A
	- adjacent non-metallic parts within 50 mm withstand the needle-flame test of Annex E		N/A
	- adjacent non-metallic parts within 50 mm classified as at least V-1 according to IEC 60695-11-10		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
24.101	Machines with motors provided with self-resetting thermal cut-outs shall work reliably under overvoltage conditions (test as described) (IEC60335-2-69:2012)		N/A
25	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS		P
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		P
	- 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, or		N/A
	- pins for insertion into socket-outlets		N/A
	No appliance inlet in machines classified as IPX7 (IEC60335-2-69:2012)		N/A
	Machines classified as IPX4, IPX5 or IPX6 shall not be provided with an appliance inlet, unless both inlet and connector have the same classification as the machine when coupled or separated, or unless inlet and connector can only be separated by the use of a **tool** and have the same classification as the machine when coupled (IEC60335-2-69:2012)		P
	Machines provided with an appliance inlet are also provided with an appropriate cord set (IEC60335-2-69:2012)		N/A
25.2	Appliance not provided with more than one means of connection to the supply mains		P
	Stationary appliance for multiple supply may be provided with more than one means of connection, provided electric strength test of 1250 V for 1 min between each means of connection causes no breakdown		N/A
25.3	Appliance intended to be permanently connected to fixed wiring provided with one of the following means for connection to the supply mains:		N/A
	- a set of terminals allowing the connection of a flexible cord		N/A
	- a fitted supply cord		N/A
	- a set of supply leads accommodated in a suitable compartment		N/A
	- a set of terminals for the connection of cables of fixed wiring, cross-sectional areas specified in 26.6, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	- a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate types of cable or conduit, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	For a fixed appliance constructed so that parts can be removed to facilitate easy installation, this requirement is met if it is possible to connect the fixed wiring without difficulty after a part of the appliance has been fixed to its support		N/A
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimension according to table 10 (mm) .....:		N/A
	Introduction of conduit or cable does not reduce clearances or creepage distances below values specified in clause 29		N/A
25.5	Method for assembling the supply cord to the appliance:		P
	- type X attachment		N/A
	- type Y attachment		P
	- type Z attachment, if allowed in relevant part 2		N/A
	Type X attachment, other than those with a specially prepared cord, not used for flat twin tinsel cords		N/A
	For multi-phase appliances supplied with a supply cord and that are intended to be permanently connected to fixed wiring, the supply cord is assembled to the appliance by type Y attachment		N/A
25.6	Plugs fitted with only one flexible cord		P
25.7	Supply cords being one of the following types:	(IEC60335-2-69:2012)	P
	- Rubber sheathed (at least 60245 IEC 53)	H07RN-F	P
	- Polychloroprene sheathed (at least 60245 IEC 57)		N/A
	- Cross-linked polyvinyl chloride sheathed (at least 60245 IEC 87)		N/A
	- Polyvinyl chloride sheathed. Not used if they are likely to touch metal parts having a temperature rise exceeding 75 K during the test of clause 11 (at least ordinary polyvinyl chloride sheathed cord - 60227 IEC 53)		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	- Heat resistant polyvinyl chloride sheathed. Not used for type X attachment other than specially prepared cords (at least heat-resistant polyvinyl chloride sheathed cord - 60227 IEC 57)		N/A
25.8	Nominal cross-sectional area of supply cords not less than table 11; rated current (A); cross-sectional area (mm²).....:	9,6 A; 3G 1,5 mm^2 cord used	P
25.9	Supply cords not in contact with sharp points or edges		P
25.10	Supply cord of class I appliances have a green/yellow core for earthing		P
25.11	Conductors of supply cords not consolidated by soldering where they are subject to contact pressure, unless		P
	the contact pressure is provided by spring terminals		N/A
25.12	Insulation of the supply cord not damaged when moulding the cord to part of the enclosure		N/A
25.13	Inlet openings so constructed as to prevent damage to the supply cord		P
	If the enclosure at the inlet opening is not of insulating material, a non-detachable lining or bushing complying with 29.3 for supplementary insulation provided		N/A
	If unsheathed supply cord, a similar additional bushing or lining is required, unless the appliance is		N/A
	class 0, or		N/A
	a class III appliance not containing live parts		N/A
25.14	Supply cords moved while in operation adequately protected against excessive flexing		N/A
	Flexing test, as described:		N/A
	- applied force (N).....:		N/A
	- number of flexings.....: For machines incorporating a type X attachment or type Y attachment the number of flexings is 20 000 (IEC 60335-2-69:2012)		N/A
	The test does not result in:		N/A
	- short-circuit between the conductors, such that the current exceeds a value of twice the rated current		N/A
	- breakage of more than 10% of the strands of any conductor		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	- separation of the conductor from its terminal		N/A
	- loosening of any cord guard		N/A
	- damage to the cord or the cord guard		N/A
	- broken strands piercing the insulation and becoming accessible		N/A
25.15	For appliances with supply cord and appliances to be permanently connected to fixed wiring by a flexible cord, conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorage		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
	Pull and torque test of supply cord, values shown in table 12 of IEC60335-2-69:2012: Mass of machine (kg).....: Pull force (N) .....: Torque (not on automatic cord reel) (Nm).....: The test is also applied to the cord in the cord set for machines classified as IPX4 or higher that are provided with an appliance inlet. The cord set is fitted to the appliance inlet prior to the commencement of the test (IEC60335-2-69:2012)	14,4 kg 125 N 0,4 Nm	P
	Cord not damaged and max. 2 mm displacement of the cord	0,4 mm	P
25.16	Cord anchorages for type X attachments constructed and located so that:		N/A
	- replacement of the cord is easily possible		N/A
	- it is clear how the relief from strain and the prevention of twisting are obtained		N/A
	- they are suitable for different types of supply cord		N/A
	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless		N/A
	they are separated from accessible metal parts by supplementary insulation		N/A
	- the cord is not clamped by a metal screw which bears directly on the cord		N/A
	- at least one part of the cord anchorage securely fixed to the appliance, unless		N/A
	it is part of a specially prepared cord		N/A
	- screws which have to be operated when replacing the cord do not fix any other component, unless		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	the appliance becomes inoperative or incomplete or the parts cannot be removed without a tool		N/A
	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood		N/A
	- for class 0, 0I and I appliances they are of insulating material or are provided with an insulating lining, unless		N/A
	failure of the insulation of the cord does not make accessible metal parts live		N/A
	- for class II appliances they are of insulating material, or		N/A
	if of metal, they are insulated from accessible metal parts by supplementary insulation		N/A
	After the test of 25.15, under the conditions specified, the conductors have not moved by more than 1 mm in the terminals		N/A
25.17	Adequate cord anchorages for type Y and Z attachment, test with the cord supplied with the appliance		P
25.18	Cord anchorages only accessible with the aid of a tool, or		P
	Constructed so that the cord can only be fitted with the aid of a tool		P
25.19	Type X attachment, glands not used as cord anchorage in portable appliances		N/A
	Tying the cord into a knot or tying the cord with string not used		N/A
25.20	The insulated conductors of the supply cord for type Y and Z attachment additionally insulated from accessible metal parts	Type Y	P
25.21	Space for supply cord for type X attachment or for connection of fixed wiring constructed:		N/A
	- to permit checking of conductors with respect to correct positioning and connection before fitting any cover		N/A
	- so there is no risk of damage to the conductors or their insulation when fitting the cover		N/A
	- for portable appliances, so that the uninsulated end of a conductor, if it becomes free from the terminal, prevented from contact with accessible metal parts		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	2 N test to the conductor for portable appliances; no contact with accessible metal parts		N/A
25.22	Appliance inlets:		N/A
	- live parts not accessible during insertion or removal		N/A
	Requirement not applicable to appliance inlets complying with IEC 60320-1		N/A
	- connector can be inserted without difficulty		N/A
	- the appliance is not supported by the connector		N/A
	- not for cold conditions if temp. rise of external metal parts exceeds 75 K during clause 11, unless		N/A
	the supply cord is unlikely to touch such metal parts		N/A
25.23	Interconnection cords comply with the requirements for the supply cord, except that:		N/A
	- the cross-sectional area of the conductors is determined on the basis of the maximum current during clause 11		N/A
	- the thickness of the insulation may be reduced		N/A
	If necessary, electric strength test of 16.3		N/A
25.24	Interconnection cords not detachable without the aid of a tool if compliance with this standard is impaired when they are disconnected		N/A
25.25	Dimensions of pins that are inserted into socket-outlets compatible with the dimensions of the relevant socket-outlet.		N/A
	Dimensions of pins and engagement face in accordance with the dimensions of the relevant plug in IEC/TR 60083		N/A
26	TERMINALS FOR EXTERNAL CONDUCTORS		P
26.1	Appliances provided with terminals or equally effective devices for connection of external conductors		P
	Terminals only accessible after removal of a non-detachable cover, except		P
	for class III appliances that do not contain live parts		N/A
	Earthing terminals may be accessible if a tool is required to make the connections and means are provided to clamp the wire independently from its connection		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
26.2	Appliances with type X attachment and appliances for the connection of cables to fixed wiring provided with terminals in which connections are made by means of screws, nuts or similar devices, unless		N/A
	the connections are soldered		N/A
	Screws and nuts not used to fix any other component, except		N/A
	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors		N/A
	If soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone, unless		N/A
	barriers provided so that neither clearances nor creepage distances between live parts and other metal parts reduced below the values for supplementary insulation if the conductor becomes free at the soldered joint		N/A
26.3	Terminals for type X attachment and for connection of cables of fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure but without damaging the conductor		N/A
	Terminals fixed so that when the clamping means is tightened or loosened:		N/A
	- the terminal does not become loose		N/A
	- internal wiring is not subjected to stress		N/A
	- neither clearances nor creepage distances are reduced below the values in clause 29		N/A
	Compliance checked by inspection and by the test of subclause 9.6 of IEC 60999-1, the torque applied being equal to two-thirds of the torque specified (Nm) .....:		N/A
	No deep or sharp indentations of the conductors		N/A
26.4	Terminals for type X attachment, except those having a specially prepared cord and those for the connection of cables of fixed wiring, no special preparation of conductors such as by soldering, use of cable lugs, eyelets or similar, and		N/A
	so constructed or placed that conductors prevented from slipping out when clamping screws or nuts are tightened		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
26.5	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection to other parts that result in a hazard		N/A
	Stranded conductor test, 8 mm insulation removed		N/A
	No contact between live parts and accessible metal parts and,		N/A
	for class II constructions, between live parts and metal parts separated from accessible metal parts by supplementary insulation only		N/A
26.6	Terminals for type X attachment and for connection of cables of fixed wiring suitable for connection of conductors with cross-sectional area according to table 13; rated current (A); nominal cross-sectional area (mm²).....:		N/A
	If a specially prepared cord is used, terminals need only be suitable for that cord		N/A
26.7	Terminals for type X attachment, except in class III appliances not containing live parts, accessible after removal of a cover or part of the enclosure		N/A
26.8	Terminals for the connection of fixed wiring, including the earthing terminal, located close to each other		N/A
26.9	Terminals of the pillar type constructed and located as specified		N/A
26.10	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless		P
	conductors ends fitted with means suitable for screw terminals		N/A
	Pull test of 5 N to the connection		P
26.11	For type Y and Z attachment, soldered, welded, crimped or similar connections may be used		P
	For Class II appliances, the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone		N/A
	If soldering, welding or crimping alone used, barriers provided so that clearances and creepage distances between live parts and other metal parts are not reduced below the values for supplementary insulation if the conductor becomes free		N/A
27	PROVISION FOR EARTHING		P

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Clause	Requirement - Test	Result - Remark	Verdict
27.1	Accessible metal parts of Class 0I and I appliances permanently and reliably connected to an earthing terminal or earthing contact of the appliance inlet		P
	Earthing terminals and earthing contacts not connected to the neutral terminal		P
	Class 0, II and III appliances have no provision for earthing		P
	Safety extra-low voltage circuits not earthed, unless		N/A
	protective extra-low voltage circuits		N/A
27.2	Clamping means of earthing terminals adequately secured against accidental loosening		P
	Terminals for the connection of external equipotential bonding conductors allow connection of conductors of 2.5 to 6 mm², and		N/A
	do not provide earthing continuity between different parts of the appliance, and		N/A
	conductors cannot be loosened without the aid of a tool		N/A
27.3	For a detachable part having an earth connection and being plugged into another part of the appliance, the earth connection is made before and separated after current-carrying connections when removing the part		N/A
	For appliances with supply cords, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		P
27.4	No risk of corrosion resulting from contact between parts of the earthing terminal and the copper of the earthing conductor or other metal		P
	Parts providing earthing continuity, other than parts of a metal frame or enclosure, have adequate resistance to corrosion		P
	If of steel, these parts provided with an electroplated coating with a thickness at least 5 µm		N/A
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		N/A
	In the body of the earthing terminal is a part of a frame or enclosure of aluminium or aluminium alloys, precautions taken to avoid risk of corrosion		N/A
27.5	Low resistance of connection between earthing terminal and earthed metal parts		P

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Clause	Requirement - Test	Result - Remark	Verdict
	This requirement does not apply to connections providing earthing continuity in the protective extra-low voltage circuit, provided the clearances of basic insulation are based on the rated voltage of the appliance		N/A
	Resistance not exceeding 0,1 Ω at the specified low-resistance test (Ω).....:	0,013 Ω	P
27.6	The printed conductors of printed circuit boards not used to provide earthing continuity in hand-held appliances.		N/A
	They may be used to provide earthing continuity in other appliances if at least two tracks are used with independent soldering points and the appliance complies with 27.5 for each circuit		N/A
28	SCREWS AND CONNECTIONS		P
28.1	Fixings, electrical connections and connections providing earthing continuity withstand mechanical stresses		P
	Screws not of soft metal liable to creep, such as zinc or aluminium		P
	Diameter of screws of insulating material min. 3 mm		N/A
	Screws of insulating material not used for any electrical connections or connections providing earthing continuity		N/A
	Screws used for electrical connections or connections providing earthing continuity screwed into metal		N/A
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		N/A
	For type X attachment, screws to be removed for replacement of supply cord or for user maintenance, not of insulating material if their replacement by a metal screw impairs basic insulation		N/A
	For screws and nuts; torque-test as specified in table 14.....:	(see appended table)	P
28.2	Electrical connections and connections providing earthing continuity constructed so that contact pressure is not transmitted through non-ceramic insulating material liable to shrink or distort, unless		N/A
	there is resiliency in the metallic parts to compensate for shrinkage or distortion of the insulating material		N/A

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

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Clause	Requirement - Test	Result - Remark	Verdict
	For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation (Type 2), Annex J applies .....:		N/A
	The microenvironment is pollution degree 1 under type 1 protection		N/A
	For type 2 protection, the spacing between the conductors before the protection is applied is not less than the values specified in Table 1 of IEC 60664-3		N/A
	These values apply to functional, basic, supplementary and reinforced insulation.....:		P
29.1	Clearances not less than the values specified in table 16, taking into account the rated impulse voltage for the overvoltage categories of table 15, unless .....:	(see appended table)	P
	for basic insulation and functional insulation they comply with the impulse voltage test of clause 14		P
	However, if the distances are affected by wear, distortion, movement of the parts or during assembly, the clearances for rated impulse voltages of 1500V and above are increased by 0,5 mm and the impulse voltage test is not applicable		N/A
	Impulse voltage test is not applicable:		P
	- when the microenvironment is pollution degree 3, or		P
	- for basic insulation of class 0 and class 01 appliances		N/A
	Appliances are in overvoltage category II		P
	A force of 2 N is applied to bare conductors, other than heating elements		P
	A force of 30 N is applied to accessible surfaces		P
29.1.1	Clearances of basic insulation withstand the overvoltages, taking into account the rated impulse voltage		P
	The values of table 16 or the impulse voltage test of clause 14 are applicable.....:	(see appended table)	P
	Clearance at the terminals of tubular sheathed heating elements may be reduced to 1,0 mm if the microenvironment is pollution degree 1		N/A
	Lacquered conductors of windings considered to be bare conductors		P

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

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Clause	Requirement - Test	Result - Remark	Verdict
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1, the clearances of reinforced insulation dimensioned as specified in Table F.7a are to withstand 160% of the withstand voltage required for basic insulation		N/A
	If clearances for basic insulation are selected from Clause 4 of IEC 60664-4, the clearances of reinforced insulation are twice the value required for basic insulation		N/A
	If the secondary winding of a step-down transformer is earthed, or if there is an earthed screen between the primary and secondary windings, clearances of basic insulation on the secondary side not less than those specified in table 16, but using the next lower step for rated impulse voltage		N/A
	Circuits supplied with a voltage lower than rated voltage, clearances of functional insulation are based on the working voltage used as the rated voltage in table 15		N/A
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree.....:	(see appended table)	P
	Pollution degree 2 applies, unless		N/A
	- precautions taken to protect the insulation; pollution degree 1		N/A
	- insulation subjected to conductive pollution; pollution degree 3		P
	A force of 2 N is applied to bare conductors, other than heating elements		P
	A force of 30 N is applied to accessible surfaces		P
	In a double insulation system, the working voltage for both the basic and supplementary insulation is taken as the working voltage across the complete double insulation system		N/A
	The microenvironment is pollution degree 3 unless the insulation is enclosed or located so that it is unlikely to be exposed to pollution due to normal use of the appliance. (IEC60335-2-69:2012)		P
29.2.1	Creepage distances of basic insulation not less than specified in table 17.....:	(see appended table)	P
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 17.....:		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Except for pollution degree 1, corresponding creepage distance not less than the minimum specified for the clearance in table 16, if the clearance has been checked according to the test of clause 14 .....:		P
29.2.2	Creepage distances of supplementary insulation at least those specified for basic insulation in table 17, or .....:	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable .....:		N/A
29.2.3	Creepage distances of reinforced insulation at least double those specified for basic insulation in table 17, or .....:	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable .....:		N/A
29.2.4	Creepage distances of functional insulation not less than specified in table 18.....:	(see appended table)	P
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 18.....:		N/A
	Creepage distances may be reduced if the appliance complies with clause 19 with the functional insulation short-circuited		N/A
29.3	Supplementary and reinforced insulation have adequate thickness, or a sufficient number of layers, to withstand the electrical stresses		P
	Compliance checked:		P
	- by measurement, in accordance with 29.3.1, or		P
	- by an electric strength test in accordance with 29.3.2, or		N/A
	- by an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3, and		N/A
	for accessible parts of reinforced insulation consisting of a single layer, by measurement in accordance with 29.3.4, or		P
	- as specified in subclause 6.3 of IEC 60664-4 for insulation that is subjected to any periodic voltage having a frequency exceeding 30 kHz		N/A
29.3.1	Supplementary insulation have a thickness of at least 1 mm		P
	Reinforced insulation have a thickness of at least 2 mm	3,03 mm	P

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Clause	Requirement - Test	Result - Remark	Verdict
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		N/A
	Supplementary insulation consist of at least 2 layers		N/A
	Reinforced insulation consist of at least 3 layers		N/A
29.3.3	The insulation is subjected to the dry heat test Bb of IEC 60068-2-2, followed by		N/A
	the electric strength test of 16.3		N/A
	If the temperature rise during the tests of clause 19 does not exceed the value specified in table 3, the test of IEC 60068-2-2 is not carried out		N/A
29.3.4	Thickness of accessible parts of reinforced insulation consisting of a single layer not less than specified in table 19.....:		P
30	RESISTANCE TO HEAT AND FIRE		P
30.1	External parts of non-metallic material,		P
	parts supporting live parts, and		P
	parts of thermoplastic material providing supplementary or reinforced insulation		P
	sufficiently resistant to heat		P
	Ball-pressure test according to IEC 60695-10-2		P
	External parts tested at 40 °C plus the maximum temperature rise determined during the test of clause 11, or at 75 °C, whichever is the higher; temperature (°C).....:	(see appended table)	P
	Parts supporting live parts tested at 40°C plus the maximum temperature rise determined during the test of clause 11, or at 125 °C, whichever is the higher; temperature (°C).....:	(see appended table)	P
	Parts of thermoplastic material providing supplementary or reinforced insulation tested at 25 °C plus the maximum temperature rise determined during clause 19, if higher; temperature (°C) .....:	(see appended table)	P
30.2	Parts of non-metallic material resistant to ignition and spread of fire		P
	This requirement does not apply to:		N/A
	- parts having a mass not exceeding 0,5 g, provided the cumulative effect is unlikely to propagate flames that originate inside the appliance by propagating flames from one part to another, or		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	- decorative trims, knobs and other parts unlikely to be ignited or to propagate flames that originate inside the appliance		N/A
	Compliance checked by the test of 30.2.1, and in addition:		P
	- for attended appliances, 30.2.2 applies		P
	- for unattended appliances, 30.2.3 applies		N/A
	For appliances for remote operation, 30.2.3 applies		N/A
	For base material of printed circuit boards, 30.2.4 applies		P
	For centrally-sited vacuum cleaners, 30.2.3 is applicable (IEC60335-2-69:2012)		N/A
30.2.1	Parts of non-metallic material subjected to the glow-wire test of IEC 60695-2-11 at 550 °C	(see appended table)	P
	However, test not carried out if the material is classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 550 °C, or		N/A
	the material is classified at least HB40 according to IEC 60695-11-10		N/A
	Parts for which the glow-wire test cannot be carried out need to meet the requirements in ISO 9772 for material classified HBF		N/A
30.2.2	Appliances operated while attended, parts of non-metallic material supporting current-carrying connections, and		P
	parts of non-metallic material within a distance of 3mm of such connections,		P
	subjected to the glow-wire test of IEC 60695-2-11	(see appended table)	P
	The test severity is:		P
	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation		P
	- 650 °C, for other connections		N/A
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least:		N/A
	- 750 °C, for connections carrying a current exceeding 0,5 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	- comprise material having a glow-wire flammability index of at least 750 °C, or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of Annex E, or		N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10 .....:		N/A
	Glow-wire test not applicable to conditions as specified .....:		N/A
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2		N/A
	The tests are not applicable to conditions as specified .....:		N/A
30.2.3.1	Parts of non-metallic material supporting connections carrying a current exceeding 0,2 A during normal operation, and		N/A
	parts of non-metallic material, other than small parts, within a distance of 3 mm,		N/A
	subjected to the glow-wire test of IEC 60695-2-11 with a test severity of 850 °C	(see appended table)	N/A
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 850 °C	(see appended table)	N/A
30.2.3.2	Parts of non-metallic material supporting connections, and		N/A
	parts of non-metallic material within a distance of 3mm,		N/A
	subjected to glow-wire test of IEC 60695-2-11		N/A
	The test severity is:		N/A
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	However, the glow-wire test of 750 °C or 650 °C as appropriate, is not carried out on parts of material fulfilling both or either of the following classifications:		N/A
	- a glow-wire ignition temperature according to IEC 60695-2-13 of at least:	(see appended table)	N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	• 775 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	• 675 °C, for other connections		N/A
	- a glow-wire flammability index according to IEC 60695-2-12 of at least:	(see appended table)	N/A
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		N/A
	- comprise material having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- comprise material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of Annex E, or		N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
	The consequential needle-flame test of Annex E applied to non-metallic parts that encroach within the vertical cylinder placed above the centre of the connection zone and on top of the non-metallic parts supporting current-carrying connections, and parts of non-metallic material within a distance of 3 mm of such connections if these parts are those:		N/A
	- parts that withstood the glow-wire test of IEC 60695-2-11 of 750 °C or 650 °C as appropriate, but produce a flame that persist longer than 2 s, or		N/A
	- parts that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts, that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts for which the needle-flame test of Annex E was applied, or		N/A
	- small parts for which a material classification of V-0 or V-1 was applied		N/A
	However, the consequential needle-flame test is not carried out on non-metallic parts, including small parts, within the cylinder that are:		N/A
	- parts having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- parts comprising material classified as V-0 or V-1 according to IEC 60695-11-10, or		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	- parts shielded by a flame barrier that meets the needle-flame test of Annex E or that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
30.2.4	Base material of printed circuit boards subjected to the needle-flame test of Annex E	(see appended table)	P
	Test not applicable to conditions as specified .....:		N/A
31	RESISTANCE TO RUSTING		P
	Relevant ferrous parts adequately protected against rusting		P
32	RADIATION, TOXICITY AND SIMILAR HAZARDS		P
	Appliance does not emit harmful radiation or present a toxic or similar hazard due to their operation in normal use		P
	For machines intended to pick up hazardous dust, additional requirements are specified in Annex AA (IEC60335-2-69:2012)		N/A
	For machines intended to pick up combustible dust in an explosive atmosphere, additional requirements are specified in Annex CC (IEC60335-2-69:2012)		N/A
	For machines intended to pick up dust in ESD protected areas, additional requirements are specified in Annex DD (IEC60335-2-69:2012)		N/A
A	ANNEX A (NORMATIVE) ROUTINE TESTS		N/A
	Description of routine tests to be carried out by the manufacturer		N/A
B	ANNEX B (NORMATIVE) APPLIANCES POWERED BY RECHARGEABLE BATTERIES		N/A
	The following modifications to this standard are applicable for appliances powered by batteries that are recharged in the appliance		N/A
	This annex does not apply to battery chargers		N/A
3.1.9	Appliance operated under the following conditions:		N/A
	- the appliance, supplied by its fully charged battery, operated as specified in relevant part 2		N/A
	- the battery is charged, the battery being initially discharged to such an extent that the appliance cannot operate		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	-if possible, the appliance is supplied from the supply mains through its battery charger, the battery being initially discharged to such an extent that the appliance cannot operate. The appliance is operated as specified in relevant part 2		N/A
	- if the appliance incorporates inductive coupling between two parts that are detachable from each other, the appliance is supplied from the supply mains with the detachable part removed		N/A
3.6.2	Part to be removed in order to discard the battery is not considered to be detachable		N/A
5.B.101	Appliances supplied from the supply mains tested as specified for motor-operated appliances		N/A
7.1	Battery compartment for batteries intended to be replaced by the user, marked with battery voltage and polarity of the terminals		N/A
	The positive terminal indicated by symbol IEC 60417-5005 and the negative terminal by symbol IEC 60417-5006		N/A
7.6	Symbols 60417-5005 and IEC 60417-5006		N/A
7.12	The instructions give information regarding charging		N/A
	The instructions for appliances incorporating batteries intended to be replaced by the user includes required information		N/A
	Details about how to remove batteries containing materials hazardous to the environment given		N/A
7.15	Markings placed on the part of the appliance connected to the supply mains		N/A
8.2	Appliances having batteries that according to the instruction may be replaced by the user need only have basic insulation between live parts and the inner surface of the battery compartment		N/A
	If the appliance can be operated without batteries, double or reinforced insulation required		N/A
11.7	The battery is charged for the period stated in the instructions or 24 h .....:		N/A
19.1	Appliances subjected to tests of 19.B.101, 19.B.102 and 19.B.103		N/A
19.10	Not applicable		N/A
19.B.101	Appliances supplied at rated voltage for 168 h, the battery being continually charged		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
19.B.102	For appliances having batteries that can be removed without the aid of a tool, short-circuit of the terminals of the battery, the battery being fully charged,		N/A
19.B.103	Appliances having batteries replaceable by the user supplied at rated voltage under normal operation with the battery removed or in any position allowed by the construction		N/A
21.B.101	Appliances having pins for insertion into socket-outlets have adequate mechanical strength		N/A
	Part of the appliance incorporating the pins subjected to the free fall test, procedure 2, of IEC 60068-2-31, the number of falls being:		N/A
	- 100, if the mass of the part does not exceed 250 g (g) .....:		N/A
	- 50, if the mass of the part exceeds 250 g .....:		N/A
	After the test, the requirements of 8.1, 15.1.1, 16.3 and clause 29 are met		N/A
22.3	Appliances having pins for insertion into socket-outlets tested as fully assembled as possible		N/A
25.13	An additional lining or bushing not required for interconnection cords in class III appliances or class III constructions operating at safety extra-low voltage not containing live parts		N/A
30.2	For parts of the appliance connected to the supply mains during the charging period, 30.2.3 applies		N/A
	For other parts, 30.2.2 applies		N/A
C	ANNEX C (NORMATIVE) AGEING TEST ON MOTORS		N/A
	Tests, as described, carried out when doubt with regard to the temperature classification of the insulation of a motor winding		N/A
	Test conditions as specified		N/A
D	ANNEX D (NORMATIVE) THERMAL MOTOR PROTECTORS		N/A
	Applicable to appliances having motors that incorporate thermal motor protectors necessary for compliance with the standard		N/A
	Test conditions as specified		N/A
E	ANNEX E (NORMATIVE) NEEDLE-FLAME TEST		P
	Needle-flame test carried out in accordance with IEC 60695-11-5, with the following modifications:		P

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Clause	Requirement - Test	Result - Remark	Verdict
7	Severities		P
	The duration of application of the test flame is 30 s ± 1 s		P
9	Test procedure		P
9.1	The specimen so arranged that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1		P
9.2	The first paragraph does not apply		P
	If possible, the flame is applied at least 10 mm from a corner		P
9.3	The test is carried out on one specimen		P
	If the specimen does not withstand the test, the test may be repeated on two additional specimens, both withstanding the test		N/A
11	Evaluation of test results		P
	The duration of burning not exceeding 30 s		N/A
	However, for printed circuit boards, the duration of burning not exceeding 15 s		P
F	ANNEX F (NORMATIVE) CAPACITORS		N/A
	Capacitors likely to be permanently subjected to the supply voltage, and used for radio interference suppression or voltage dividing, comply with the following clauses of IEC 60384-14, with the following modifications:		N/A
1.5	Terms and definitions		N/A
1.5.3	Class X capacitors tested according to subclass X2		N/A
1.5.4	This subclause is applicable		N/A
1.6	Marking		N/A
	Items a) and b) are applicable		N/A
3.4	Approval testing		N/A
3.4.3.2	Table 3 is applicable as described		N/A
4.1	Visual examination and check of dimensions		N/A
	This subclause is applicable		N/A
4.2	Electrical tests		N/A
4.2.1	This subclause is applicable		N/A
4.2.5	This subclause is applicable		N/A
4.2.5.2	Only table 11 is applicable		N/A
	Values for test A apply		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	However, for capacitors in heating appliances the values for test B or C apply		N/A
4.12	Damp heat, steady state		N/A
	This subclause is applicable		N/A
	Only insulation resistance and voltage proof are checked		N/A
4.13	Impulse voltage		N/A
	This subclause is applicable		N/A
4.14	Endurance		N/A
	Subclauses 4.14.1, 4.14.3, 4.14.4 and 4.14.7 are applicable		N/A
4.14.7	Only insulation resistance and voltage proof are checked		N/A
	No visible damage		N/A
4.17	Passive flammability test		N/A
	This subclause is applicable		N/A
4.18	Active flammability test		N/A
	This subclause is applicable		N/A
G	ANNEX G (NORMATIVE) SAFETY ISOLATING TRANSFORMERS		N/A
	The following modifications to this standard are applicable for safety isolating transformers:		N/A
7	Marking and instructions		N/A
7.1	Transformers for specific use marked with:		N/A
	-name, trademark or identification mark of the manufacturer or responsible vendor.....:		N/A
	-model or type reference .....:		N/A
17	Overload protection of transformers and associated circuits		N/A
	Fail-safe transformers comply with subclause 15.5 of IEC 61558-1		N/A
22	Construction		N/A
	Subclauses 19.1 and 19.1.2 of IEC 61558-2-6 are applicable		N/A
29	Clearances, creepage distances and solid insulation		N/A
29.1, 29.2, 29.3	The distances specified in items 2a, 2c and 3 in table 13 of IEC 61558-1 apply		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	For insulated winding wires complying with subclause 19.12.3 of IEC 61558-1 there are no requirements for clearances or creepage distances		N/A
	For windings providing reinforced insulation, the distance specified in item 2c of table 13 of IEC 61558-1 is not assessed		N/A
	For safety isolating transformers subjected to periodic voltages with a frequency exceeding 30 kHz, the clearances, creepage distances and solid insulation values specified in IEC 60664-4 are applicable, if greater than the values specified in items 2a, 2c and 3 in table 13 of IEC 61558-1		N/A
H	ANNEX H (NORMATIVE) SWITCHES		N/A
	Switches comply with the following clauses of IEC 61058-1, as modified below:		N/A
	The tests of IEC 61058-1 carried out under the conditions occurring in the appliance		N/A
	Before being tested, switches are operated 20 times without load		N/A
8	Marking and documentation		N/A
	Switches are not required to be marked		N/A
	However, a switch that can be tested separately from the appliance marked with the manufacturer's name or trade mark and the type reference		N/A
13	Mechanism		N/A
	The tests may be carried out on a separate sample		N/A
15	Insulation resistance and dielectric strength		N/A
15.1	Not applicable		N/A
15.2	Not applicable		N/A
15.3	Applicable for full disconnection and micro-disconnection		N/A
17	Endurance		N/A
	Compliance is checked on three separate appliances or switches		N/A
	For 17.2.4.4, the number of cycles declared according to 7.1.4 is 10 000, unless		N/A
	otherwise specified in 24.1.3 of the relevant part 2 of IEC 60335.....:		N/A
	Switches for operation under no load and which can be operated only by a tool, and		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	switches operated by hand that are interlocked so that they cannot be operated under load,		N/A
	are not subjected to the tests		N/A
	However, switches without this interlock are subjected to the test of 17.2.4.4 for 100 cycles of operation		N/A
	Subclauses 17.2.2 and 17.2.5.2 not applicable		N/A
	The ambient temperature during the test is that occurring in the appliance during the test of Clause 11 in IEC 60335-1		N/A
	The temperature rise of the terminals not more than 30 K above the temperature rise measured in clause 11 of IEC 60335-1 (K) .....:		N/A
20	Clearances, creepage distances, solid insulation and coatings of rigid printed board assemblies		N/A
	This clause is applicable to clearances and creepage distances for functional insulation, across full disconnection and micro-disconnection, as stated in table 24		N/A
I	ANNEX I (NORMATIVE) MOTORS HAVING BASIC INSULATION THAT IS INADEQUATE FOR THE RATED VOLTAGE OF THE APPLIANCE		N/A
	The following modifications to this standard are applicable for motors having basic insulation that is inadequate for the rated voltage of the appliance:		N/A
8	Protection against access to live parts		N/A
8.1	Metal parts of the motor are considered to be bare live parts		N/A
11	Heating		N/A
11.3	The temperature rise of the body of the motor is determined instead of the temperature rise of the windings		N/A
11.8	The temperature rise of the body of the motor, where in contact with insulating material, not exceeding values in table 3 for the relevant insulating material		N/A
16	Leakage current and electric strength		N/A
16.3	Insulation between live parts of the motor and its other metal parts is not subjected to the test		N/A
19	Abnormal operation		N/A
19.1	The tests of 19.7 to 19.9 are not carried out		N/A
19.I.101	Appliance operated at rated voltage with each of the following fault conditions:		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	- short circuit of the terminals of the motor, including any capacitor incorporated in the motor circuit		N/A
	- short circuit of each diode of the rectifier		N/A
	- open circuit of the supply to the motor		N/A
	- open circuit of any parallel resistor, the motor being in operation		N/A
	Only one fault simulated at a time, the tests carried out consecutively		N/A
22	Construction		N/A
22.I.101	For class I appliances incorporating a motor supplied by a rectifier circuit, the d.c. circuit being insulated from accessible parts of the appliance by double or reinforced insulation		N/A
	Compliance checked by the tests specified for double and reinforced insulation		N/A
J	ANNEX J (NORMATIVE) COATED PRINTED CIRCUIT BOARDS		N/A
	Testing of protective coatings of printed circuit boards carried out in accordance with IEC 60664-3 with the following modifications:		N/A
5.7	Conditioning of the test specimens		N/A
	When production samples are used, three samples of the printed circuit board are tested		N/A
5.7.1	Cold		N/A
	The test is carried out at -25 °C		N/A
5.7.3	Rapid change of temperature		N/A
	Severity 1 is specified		N/A
5.9	Additional tests		N/A
	This subclause is not applicable		N/A
K	ANNEX K (NORMATIVE) OVERVOLTAGE CATEGORIES		P
	The information on overvoltage categories is extracted from IEC 60664-1		P
	Overvoltage category is a numeral defining a transient overvoltage condition		P
	Equipment of overvoltage category IV is for use at the origin of the installation		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Equipment of overvoltage category III is equipment in fixed installations and for cases where the reliability and the availability of the equipment is subject to special requirements		N/A
	Equipment of overvoltage category II is energy consuming equipment to be supplied from the fixed installation		P
	If such equipment is subjected to special requirements with regard to reliability and availability, overvoltage category III applies		N/A
	Equipment of overvoltage category I is equipment for connection to circuits in which measures are taken to limit transient overvoltages to an appropriate low level		N/A
L	ANNEX L (INFORMATIVE) GUIDANCE FOR THE MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES		P
	Information for the determination of clearances and creepage distances		P
M	ANNEX M (NORMATIVE) POLLUTION DEGREE		P
	The information on pollution degrees is extracted from IEC 60664-1		P
	Pollution		P
	The microenvironment determines the effect of pollution on the insulation, taking into account the macroenvironment		P
	Means may be provided to reduce pollution at the insulation by effective enclosures or similar		P
	Minimum clearances specified where pollution may be present in the microenvironment		P
	Degrees of pollution in the microenvironment		P
	For evaluating creepage distances, the following degrees of pollution in the microenvironment are established:		P
	- pollution degree 1: no pollution or only dry, non-conductive pollution occurs. The pollution has no influence		P
	- pollution degree 2: only non-conductive pollution occurs, except that occasionally a temporary conductivity caused by condensation is to be expected		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	- pollution degree 3: conductive pollution occurs or dry non-conductive pollution occurs that becomes conductive due to condensation that is to be expected		P
	- pollution degree 4: the pollution generates persistent conductivity caused by conductive dust or by rain or snow		N/A
N	ANNEX N (NORMATIVE) PROOF TRACKING TEST		P
	The proof tracking test is carried out in accordance with IEC 60112 with the following modifications:		P
7	Test apparatus		P
7.3	Test solutions		P
	Test solution A is used		P
10	Determination of proof tracking index (PTI)		P
10.1	Procedure		P
	The proof voltage is 100V, 175V, 400V or 600V ...:	175 V	P
	The test is carried out on five specimens		P
	In case of doubt, additional test with proof voltage reduced by 25V, the number of drops increased to 100		N/A
10.2	Report		N/A
	The report states if the PTI value was based on a test using 100 drops with a test voltage of (PTI-25) V		N/A
O	ANNEX O (INFORMATIVE) SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30		P
	Description of tests for determination of resistance to heat and fire		P
P	ANNEX P (INFORMATIVE) GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN WARM DAMP EQUABLE CLIMATES		N/A
	Modifications applicable for class 0 and 01 appliances having a rated voltage exceeding 150V, intended to be used in countries having a warm damp equable climate and that are marked WDaE		N/A
	Modifications may also be applied to class 1 appliances having a rated voltage exceeding 150V, intended to be used in countries having a warm damp equable climate and that are marked WdaE, if liable to be connected to a supply mains that excludes the protective earthing conductor		N/A
5.7	The ambient temperature for the tests of clauses 11 and 13 is 40 +3/0 °C		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
7.1	The appliance marked with the letters WDaE		N/A
7.12	The instructions state that the appliance is to be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30 mA		N/A
	The instructions state that the appliance is considered to be suitable for use in countries having a warm damp equable climate, but may also be used in other countries		N/A
11.8	The values of Table 3 are reduced by 15 K		N/A
13.2	The leakage current for class I appliances not exceeding 0,5 mA		N/A
15.3	The value of t is 37 °C		N/A
16.2	The leakage current for class I appliances not exceeding 0,5 mA (mA):		N/A
19.13	The leakage current test of 16.2 is applied in addition to the electric strength test of 16.3		N/A
Q	ANNEX Q (INFORMATIVE) SEQUENCE OF TESTS FOR THE EVALUATION OF ELECTRONIC CIRCUITS		N/A
	Description of tests for appliances incorporating electronic circuits		N/A
R	ANNEX R (NORMATIVE) SOFTWARE EVALUATION		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 validated in accordance with the requirements of this annex		N/A
R.1	Programmable electronic circuits using software		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 constructed so that the software does not impair compliance with the requirements of this standard		N/A
R.2	Requirements for the architecture		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 use measures to control and avoid software-related faults/errors in safety-related data and safety-related segments of the software		N/A
R.2.1.1	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.2 have one of the following structures:		N/A

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

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

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

TABLE R.1 – GENERAL FAULT/ERROR CONDITIONS						
Component [1)]	Fault/error	Acceptable measures [2) 3)]	Definitions	Document reference for applied measure	Document reference for applied test	Ver-dict
1 CPU 1.1 Registers	Stuck at	Functional test, or periodic self-test using either: - static memory test, or - word protection with single bit redundancy	H.2.16.5 H.2.16.6 H.2.19.6 H.2.19.8.2			N/A
1.2 VOID						N/A
1.3 Programme counter	Stuck at	Functional test, or Periodic self-test, or Independent time-slot monitoring, or Logical monitoring of the programme sequence	H.2.16.5 H.2.16.6 H.2.18.10.4 H.2.18.10.2			N/A

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Clause	Requirement - Test	Result - Remark	Verdict

2 Interrupt handling and execution	No interrupt or too frequent interrupt	Functional test, or time-slot monitoring	H.2.16.5 H.2.18.10.4			N/A
3 Clock	Wrong frequency (for quartz synchronized clock: harmonics/ sub-harmonics only)	Frequency monitoring, or time slot monitoring	H.2.18.10.1 H.2.18.10.4			N/A
4. Memory 4.1 Invariable memory	All single bit faults	Periodic modified checksum, or multiple checksum, or word protection with single bit redundancy	H.2.19.3.1 H.2.19.3.2 H.2.19.8.2			N/A
4.2 Variable memory	DC fault	Periodic static memory test, or word protection with single bit redundancy	H.2.19.6 H.2.19.8.2			N/A
4.3 Addressing (relevant to variable and invariable memory)	Stuck at	Word protection with single bit redundancy including the address	H.2.19.8.2			N/A
5 Internal data path	Stuck at DC fault	Word protection with single bit redundancy Comparison of redundant CPUs by either: - reciprocal comparison - independent hardware comparator	H.2.19.8.2 H.2.18.15 H.2.18.3			N/A
5.1 VOID						N/A
5.2 Addressing	Wrong address	Word protection with single bit redundancy including the address	H.2.19.8.2			N/A

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Clause	Requirement - Test	Result - Remark	Verdict

6 External communication	Hamming distance 3	Word protection with multi-bit redundancy, or CRC – single work, or Transfer redundancy, or Protocol test	H.2.19.8.1 H.2.19.4.1 H.2.18.2.2 H.2.18.14			N/A
6.1 VOID						N/A
6.2 VOID						N/A
6.3 Timing	Wrong point in time	Time-slot monitoring, or scheduled transmission Time-slot and logical monitoring, or Comparison of redundant communication channels by either: - reciprocal comparison - independent hardware comparator	H.2.18.10.4 H.2.18.18 H.2.18.10.3 H.2.18.15 H.2.18.3			N/A
	Wrong sequence	Logical monitoring, or time-slot monitoring, or Scheduled transmission (same options as for wrong point in time)	H.2.18.10.2 H.2.18.10.4 H.2.18.18			
7 Input/output periphery	Fault conditions specified in 19.11.2	Plausibility check Comparison of redundant communication channels by either: - reciprocal comparison - independent hardware comparator	H.2.18.13 H.2.18.15 H.2.18.3			N/A
7.1 VOID						N/A
7.2 Analog I/O 7.2.1 A/D and D/A-converter	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A

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Clause	Requirement - Test	Result - Remark	Verdict

7.2.2 Analog multiplexer	Wrong addressing	Plausibility check	H.2.18.13			N/A
8 VOID						N/A
9 Custom chips [4)] e.g. ASIC, GAL, Gate array	Any output outside the static and dynamic functional specification	Periodic self-test	H.2.16.6			N/A

NOTE A Stuck-at fault model denotes a fault model representing an open circuit or a non-varying signal level. A DC fault model denotes a stuck-at fault model incorporating short circuit between signal lines.

[1)] For fault/error assessment, some components are divided into their sub-functions.

[2)] For each sub-function in the table, the Table R.2 measure will cover the software fault/error.

[3)] Where more than one measure is given for a sub-function, these are alternatives.

[4)] To be divided as necessary by the manufacturer into sub-functions.

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Clause	Requirement - Test	Result - Remark	Verdict
AA	ANNEX AA (NORMATIVE) PARTICULAR REQUIREMENTS FOR VACUUM CLEANERS AND DUST EXTRACTORS FOR THE COLLECTION OF HAZARDOUS DUSTS (IEC60335-2-69:2012)		N/A
6	CLASSIFICATION		N/A
6.AA.201	Classified according to dust classes		N/A
	-L (light hazard)		N/A
	-M (medium hazard)		N/A
	-H (high hazard)		N/A
7	MARKING AND INSTRUCTIONS		N/A
7.1	Model or type reference marked on the machine includes the dust class letter		N/A
	Part number marked on spare parts relating to safety		N/A
7.12	The instructions contains information about		N/A
	- the most important operational data		N/A
	- the dust class		N/A
	- the intended use of the machine		N/A
	- any limitations of use if applicable		N/A
	- the exact designation of spare parts relating to safety and where they may be obtained		N/A
	- max. flow rate (m^3/h)		N/A
	- max. under pressure (hPa)		N/A
	The instruction advise the user to refer to the applicable safety regulations appropriate to the materials being handled		N/A
	Include the substance of the information		N/A
	- concerning use of the machine		N/A
	- user servicing		N/A
	- technical inspection		N/A
	- meaning of warning label according to fig. AA.2 (for class M and class L machines)		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	- for class H and class M machines, outside of the machine should be decontaminated by vacuum cleaning methods and wiped clean or treated with sealant before being taken out of a hazardous area		N/A
	- meaning of warning label according to fig. AA.1, including the corresponding warning text according to 7.14 (only for class H machines)		N/A
	- for dust extractors, adequate air change rate (if the exhaust air is returned to the room)		N/A
7.14	Class H machines fitted with label according to fig. AA.1		N/A
	Class L and M machines fitted with label according to fig. AA.2		N/A
	Warning stated in this clause given on the label for class H machines		N/A
	Covers and guards removable without tool fitted with label worded "REMOVE FOR CLEANING" (for class L, class M and class H machines)		N/A
7.15	Min. height of lettering in warning notices: 3 mm		N/A
	Positioning of warning notices		N/A
22	CONSTRUCTION		N/A
22.AA.201	Dust collection machines		N/A
	- built in accordance with the dust classes (see cl. 6.AA.201)		N/A
	- meet the values given in table AA.1		N/A
	Machines designed for picking up wood dust and mineral dust (containing quartz) are at least of dust class M		N/A
22.AA.201.1	Essential filter material test as specified		N/A
22.AA.201.2	Essential filter element test as specified		N/A
22.AA.201.3	Assembled appliance test as specified		N/A
22.AA.201.4	Burst strength test as specified		N/A
22.AA.202	Filtration efficiency of dust class M and dust class H machines is tested as described		N/A
22.AA.203	If machines are provided with a built-in cleaning mechanism, restore the required suction performance. Test as specified		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
22.AA.204	Dust class M and dust class H machines are designed and constructed so that the essential filter will not be damaged when collecting sharp objects such as broken glass or nails which may be sucked up. Test as specified		N/A
22.AA.205	Capable of achieving an adequate removal of dust		N/A
	An indication is given as following:		N/A
	a) for vacuum cleaners of dust class M and H: indicator operates before the air velocity falls below 20 m/s		N/A
	b) for suction-sweeping appliances: indicator operates before the reduction of pressure in the suction region of the brush area becomes less than 50N/m²		N/A
	c) for dust extractors: indicator operates before the suction velocity becomes less than stated by the manufacturer or 20 m/s or the dust source is shut off by a mechanism. If shut off is not possible a warning signal is given:		N/A
	- an acoustic warning signal, if used, shall comply with ISO 7731		N/A
	- a visual warning signal, if used, shall comply with ISO 11428		N/A
	- a pair of voltage-free contacts and installation instructions for their use as a warning signal switching device		N/A
	Operate the appliance in accordance with the instructions for use, at nominal voltage, at rated voltage +6%, and at rated voltage -10%; and, if necessary, compare the values with the specified values. No leaking of dust shall occur		N/A
22.AA.206	Dust class M machines (except suction sweeping machines) and dust class H machines are fitted with a disposable collection means		N/A
	For dust class M and dust class H machines, it is possible to remove the collection means with a minimum of dust release		N/A
22.AA.207	In dust class H machines, the essential filter are only removable by the use of a tool. This requirement does also apply to filter elements which are relevant for the first numeral of the IP protection designation		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
22.AA.208	The air speed of the exhaust of dust class M and dust class H machines shall not unduly disturb dust lying on the floor. Test as specified		N/A
22.AA.209	In dust class H machines, the essential filter is at less than atmospheric pressure		N/A
	For dust class L machines, if the essential filter is on the positive side, then the penetration test of 22.AA.201.3 shall be conducted		N/A
22.AA.210	Dust class M and dust class H machines are constructed so as to guard against accidental entry and the release of hazardous dust from any part of the machine when not in use.		N/A
	For easy cleaning, dust class H machines and dust class M machines shall comply with the following:		N/A
	– covers which are not protecting against both mechanical and electrical hazards and behind which dust can deposit are removable without tools		N/A
	– guards which are protecting against mechanical and electrical hazards have electrical interlocks which disconnect the mains supply on removal, or are removable only by using tools.		N/A
	– guards fitted with electrical interlocks are removable without tools. The interlock shall be double pole if protecting against electrical hazard, and double or single pole if protecting against mechanical hazard only.		N/A
BB	ANNEX BB (INFORMATIVE) LIST OF DUSTS WHICH PRESENT AN EXPLOSION RISK WHEN SUBJECT TO IGNITION CONDITIONS (IEC60335-2-69:2012)		N/A
	Values of explosion parameters are given in Table BB.1		N/A
CC	ANNEX CC (INFORMATIVE) PARTICULAR REQUIREMENTS FOR VACUUM CLEANERS AND DUST EXTRACTORS FOR THE COLLECTION OF DUSTS WHICH PRESENT AN EXPLOSION RISK (IEC60335-2-69:2012)		N/A
4	GENERAL REQUIREMENT		N/A
4.CC.201	Machines of Type 22 shall comply with dust class L, M or H according to Annex AA. For dust class L, there is an indicator required in accordance with AA.22.202. Machines of Type 22 and class L comply with the requirements of AA.22.209. For all appliances, flow-through collector motors are not allowed.		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
4.CC.202	The temperature of the surfaces of a Type 22 machine that are in contact with combustible dust does not exceed 135 °C		N/A
6	CLASSIFICATION		N/A
6.1	Type 22 machines are of Class I.		N/A
6.2	Type 22 machines have at least IP 54		N/A
6.CC.201	Type 22: Suitable for operation in Zone 22		N/A
7	MARKING AND INSTRUCTIONS		N/A
7.1	machines marked in accordance with IEC 61241-1-1, for example "Ex II 3D T135°C"		N/A
	Appliance inlets marked with the essence of the statement: "Do not plug or unplug under load"		N/A
7.6	Type 22 vacuum cleaners are clearly and permanently marked with the symbol of Figure CC.1		N/A
	Type 22 dust extractors are clearly and permanently marked with the symbol of Fig. CC.2		N/A
7.12	The instructions for use include the substance of the following:		N/A
	For all Type 22 machines:		N/A
	– the dust container has to be emptied when necessary, but also after every use		N/A
	– Extension cords shall not be used		N/A
	– the correct rotation sense is ensured if necessary, to avoid blowing and high temperatures caused by rotation in the wrong sense		N/A
	– For dusts with an ignition energy less than 1mJ additional restrictions of the labour authorities may apply.		N/A
	– During normal operation surface temperatures may rise to (Tmax) °C", if Tmax exceeds 80 °C		N/A
	– Type 22 machines are not suitable to pick up dusts or liquids of high explosion risk, nor mixtures of combustible dust with liquids.		N/A
	– WARNING – Only use accessories approved by the manufacturer for Type 22 use. The use of other accessories may cause explosion hazard.		N/A
	– The machine shall only be operated when all filters, including filters for motor cooling air, are in position and undamaged.		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	For suction sweeping machines:		N/A
	– Type 22 suction sweeping machines are suitable for picking up combustible dust in Zone 22		N/A
	For vacuum cleaners:		N/A
	– Type 22 vacuum cleaners are suitable for picking up combustible dust in Zone 22. They are not suitable to be connected with dust-generating machines		N/A
	For dust extractors:		N/A
	– Type 22 dust extractors are suitable to be connected to dust-generating machines in Zone 22. It has to be ensured that no ignition sources will be picked up. Conductive machine parts, including suction hoods and conductive parts of Class II machines, are electrostatically earthed. Electrostatic earthing can be accomplished through the dust extractor or through a separate electrostatic earthing means		N/A
	– Type 22 dust extractors are not suitable for machines where ignition sources are produced		N/A
	Information is given about the national regulations that apply for the installation of data lead wiring and power sockets in Zone 22		N/A
	The meaning of the symbols according Figure CC.1 or Figure CC.2 is explained, including the substance of the following warnings:		N/A
	– Do not pick up glowing dust or other ignition hazards (Figure CC.1)		N/A
	– Do not pick up glowing dust or other ignition hazards. Do not use with spark-generating machines (Figure CC.2		N/A
19	ABNORMAL OPERATION		N/A
19.7	Test until stable conditions are reached		N/A
19.8	The test is repeated after interchanging two of the three-phase leads in the plug to induce rotation in the wrong sense, if possible, and if there is no warning signal for incorrect rotation sense		N/A
22	CONSTRUCTION		N/A
22.CC.201	The suction fan is on the clean air side and is protected against intake of particles greater than 8 mm		N/A
22.CC.202	Machines are so constructed that a minimum of dust will deposit in or on the appliance		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
22.CC.203	Outer parts of the machine, parts enclosing collected dust, nozzles and dust conduits are not made from aluminium containing more than 7,5 % of magnesium and not coated with aluminium coating		N/A
	Nozzles made of cast aluminium containing more than 7,5 % of magnesium have to be protected against impact by steel or resilient protectors		N/A
22.CC.204	Dust deflectors shall not be made of materials that generate sparks on impact		N/A
22.CC.205	Downstream of the essential filter the air is considered to be free of combustible dust		N/A
23	INTERNAL WIRING		N/A
23.CC.201	Cables and wires not within the IP54 compartment shall not be lighter than 60245 IEC 66		N/A
24	COMPONENTS		N/A
24.1	Components located within enclosures containing collected combustible dust shall be suitable for Zone 20		N/A
24.CC.201	Cooling air filters needed to comply with 6.2 shall only be removable with the aid of a tool		N/A
25	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS		N/A
25.1	Appliance inlets shall be so arranged, that the plug is inserted from below. When disconnected, the appliance inlet shall be protected against deposition of dust by a permanently attached dust cover		N/A
25.7	Power supply cords for Type 22 machines shall not be lighter than 60245 IEC 66		N/A
30	RESISTANCE TO HEAT AND FIRE		N/A
30.2	Non-metallic parts surrounding collected combustible dust shall be resistant to ignition and spread of fire. This requirement does not apply to removable dust-collection media placed within the flame-resistant enclosure, e.g. paper disposal bags. Test as specified		N/A
30.CC.201	Type 22 machines shall not create any ignition source		N/A
	All conductive parts that are in contact with combustible dust shall be electrostatically earthed. The requirement for electrostatic earthing does not apply to small conductive parts, when their time constant (resistance to earth times capacity) is below 0,02 s. Test as specified		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
DD	ANNEX DD (NORMATIVE) PARTICULAR REQUIREMENTS FOR VACUUM CLEANERS FOR USE IN ESD PROTECTED AREAS (IEC60335-2-69:2012)		N/A
4	GENERAL REQUIREMENT		N/A
	Type ESD vacuum cleaners comply with dust class L, M or H according to Annex AA		N/A
6	CLASSIFICATION		N/A
6.1	Type ESD vacuum cleaners are of Class I.		N/A
6.2	Type ESD vacuum cleaners are at least IP54 according to IEC 60529		N/A
7	MARKING AND INSTRUCTIONS		N/A
7.1	Type ESD vacuum cleaners are clearly and permanently marked with the specified symbol		N/A
7.12	The instructions include the substance of the following for all type ESD vacuum cleaners:		N/A
	– Extension cords are Class I		N/A
	– Type ESD vacuum cleaners are not suitable to pick up dusts or liquids of high explosion risk, nor mixtures of combustible dust with liquids		N/A
	– WARNING – Only use accessories approved for Type ESD use. The use of other accessories may cause electrostatic discharges		N/A
	– The machine shall only be operated when all filters, including filters for motor cooling air, are in position and undamaged		N/A
22	CONSTRUCTION		N/A
22.DD.201	Machines are so constructed that a minimum of dust will deposit in or on the machine		N/A
22.DD.202	Type ESD vacuum cleaners shall not generate or keep electrostatic charge. All conductive parts shall be electrostatically earthed		N/A
	The requirement for electrostatic earthing does not apply to small conductive parts, when their time constant (resistance to earth times capacity) is below 0,02 s. Test as specified		N/A
22.DD.203	The surface resistance of chargeable shell parts and accessories do not exceed 10^9 Ω Test as specified		N/A
24	COMPONENTS		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
24.1	Components located within enclosures are suitable for EPA's		N/A
24.DD.201	Cooling air filters which are needed to make the machine compliant with 6.2 as specified in this Annex DD are removable only by using tools		N/A
30	RESISTANCE TO HEAT AND FIRE		N/A
30.2	Non-metallic parts surrounding collected dust are electrically conductive		N/A
EE	ANNEX EE (INFORMATIVE) EMISSION OF ACOUSTICAL NOISE (IEC60335-2-69:2012)		P
FF	ANNEX FF (INFORMATIVE) EMISSION OF VIBRATION (IEC60335-2-69:2012)		P

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Clause	Requirement - Test	Result - Remark	Verdict

10.1	TABLE: Power input deviation					P
Input deviation of/at:		P rated (W)	P measured (W)	dP (W, %)	Required dP (W, %)	Remark
230 V		1200 W	904,5 W	-24,6%	+15%	Tested on 220-240 V type
115 V		1200 W	946,5 W	-12,1%	+15%	Tested on 110-120 V type
Supplementary information:						

10.2	TABLE: Current deviation					N/A
Current deviation of/at:		I rated (A)	I measured (A)	dI (A, %)	Required dI (A, %)	Remark
Supplementary information:						

11.8	TABLE: Heating test, thermocouple measurements		P
	Test voltage (V) .....:	254,4	—
	Ambient (°C).....:	23,9	—

Thermocouple locations	Max. temperature rise measured, dT (K)	Max.temperature rise limit, dT (K)
Power cord	47,1	50
Carbon brush holder	61,5	cl.30
Motor enclosure	50,1	cl.30
Motor winding 1	64,9	140
Motor winding 2	62,5	140
Motor lead	30,9	80 (T105)
Holder of motor	63,4	cl.30
Wire connector	56,1	cl.30
Relay	42,9	45 (T70)
X2 capacitance	63,8	75 (T100)
Y2 capacitance	60,5	100 (T125)
Winding of transformer 1	63,3	85
Winding of transformer 2	64,2	85
Bobbin of transformer	54,9	cl.30
Socket enclosure	55,2	cl.30

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Clause	Requirement - Test	Result - Remark	Verdict

Socket holder	46,2	cl.30
Holder of main PCB	42,0	cl.30
Switch PCB	55,2	120
Holder of switch PCB	72,8	cl.30
Motor cover	29,5	cl.30
Motor support	17,9	cl.30
Air outlet	55,7	60
Speed-control switch knob	36,5	60
Power switch knob	53,8	60
Test floor	23,8	65
Supplementary information: Tested on 220-240 V type.		

11.8	**TABLE: Heating test, resistance method**					P
	Test voltage (V) .....:		254,4			—
	Ambient, t1 (°C) .....:		21,8			—
	Ambient, t2 (°C) .....:		23,9			—
Temperature rise of winding	R1 (Ω)	R2 (Ω)	dT (K)	Max. dT (K)	Insulation class	
Stator winding 1	1,0605	1,4170	84,1	140	Class 180	
Stator winding 2	1,0694	1,4145	80,6	140	Class 180	
Rotor (diagonal)	1,3612	1,8534	90,6	140	Class 180	
Supplementary information:						

11.8	**TABLE: Heating test, thermocouple measurements**		P
	Test voltage (V) .....:	127,2	—
	Ambient (°C) .....:	24,3	—
Thermocouple locations	Max. temperature rise measured, dT (K)	Max.temperature rise limit, dT (K)	
Power cord	44,5	50	
Carbon brush holder	54,7	cl.30	
Motor enclosure	38,2	cl.30	
Motor winding 1	69,7	140	
Motor winding 2	59,6	140	

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Clause	Requirement - Test	Result - Remark	Verdict

Motor lead	42,2	80 (T105)
Holder of motor	26,5	cl.30
Wire connector	27,3	cl.30
Relay	39,0	45 (T70)
X2 capacitance	42,6	75 (T100)
Y2 capacitance	50,4	100 (T125)
Winding of transformer 1	45,5	85
Winding of transformer 2	68,7	85
Bobbin of transformer	36,8	cl.30
Socket enclosure	33,2	cl.30
Socket holder	43,5	cl.30
Holder of main PCB	39,5	cl.30
Switch PCB	34,2	120
Holder of switch PCB	31,5	cl.30
Motor cover	28,2	cl.30
Motor support	34,0	cl.30
Air outlet	32,9	60
Speed-control switch knob	8,3	60
Power switch knob	17,0	60
Test floor	7,7	65
Supplementary information: Tested on 110-120 V type.		

11.8	TABLE: Heating test, resistance method		P
	Test voltage (V) .....:	127,2	—
	Ambient, t1 (°C) .....:	22,3	—
	Ambient, t2 (°C) .....:	24,3	—

Temperature rise of winding	R1 (Ω)	R2 (Ω)	dT (K)	Max. dT (K)	Insulation class
Stator winding 1	1,1211	1,5145	88,1	140	Class 180
Stator winding 2	1,1183	1,5119	88,4	140	Class 180
Rotor (diagonal)	0,3924	0,5401	94,7	140	Class 180
Supplementary information:					

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Clause	Requirement - Test	Result - Remark	Verdict

13.2	**TABLE: Leakage current**		P
	Heating appliances: 1.15 x rated input (W).....:	N/A	—
	Motor-operated and combined appliances: 1.06 x rated voltage (V).....:	254,4 V	—

Leakage current between	I (mA)	Max. allowed I (mA)
L/N – Handle / button / plastic enclosure	0,004	0,35
L/N – Earthing metal material	0,022	0,75

Supplementary information:

Tested on model DEP25 with 220-240 V type.

13.2	**TABLE: Leakage current**		P
	Heating appliances: 1.15 x rated input (W).....:	N/A	—
	Motor-operated and combined appliances: 1.06 x rated voltage (V).....:	127,2 V	—

Leakage current between	I (mA)	Max. allowed I (mA)
L/N – Handle / button / insulated enclosure	0,004	0,35
L/N – Earthing metal material	0,025	0,75

Supplementary information:

Tested on model DEP25 with 110-120 V type.

13.3	**TABLE: Electric strength**	P

Test voltage applied between:	Voltage (V)	Breakdown (Yes/No)
L/N – Earthing metal material	1000	No
Internal wire – Accessible insulated enclosure	1750	No
L/N – Accessible insulated enclosure	3000	No

Supplementary information:

Tested on model DEP25 with 220-240 V type.

13.3	**TABLE: Electric strength**	P

Test voltage applied between:	Voltage (V)	Breakdown (Yes/No)
L/N – Earthing metal material	1000	No
Internal wire – Accessible insulated enclosure	1750	No

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Clause	Requirement - Test	Result - Remark	Verdict

L/N – Accessible insulated enclosure	3000	No
Supplementary information: Tested on model DEP25 with 110-120 V type.		

14	**TABLE: Transient overvoltages**				N/A
Clearance between:	Cl (mm)	Required Cl (mm)	Rated impulse voltage (V)	Impulse test voltage (V)	Flashover (Yes/No)
Supplementary information:					

16.2	**TABLE: Leakage current**		P
	Single phase appliances: 1.06 x rated voltage (V) .....:	254,4	—
	Three phase appliances 1.06 x rated voltage divided by √3 (V) .....:	N/A	—
Leakage current between	I (mA)	Max. allowed I (mA)	
L/N – Handle / button / insulated enclosure	0,005	0,25	
L/N – Earthing metal material	0,030	0,75	
Supplementary information: Tested on model DEP25 with 220-240 V type.			

16.2	**TABLE: Leakage current**		P
	Single phase appliances: 1.06 x rated voltage (V) .....:	127,2	—
	Three phase appliances 1.06 x rated voltage divided by √3 (V) .....:	N/A	—
Leakage current between	I (mA)	Max. allowed I (mA)	
L/N – Handle / button / insulated enclosure	0,004	0,25	
L/N – Earthing metal material	0,032	0,75	
Supplementary information: Tested on model DEP25 with 110-120 V type.			

16.3	**TABLE: Electric strength**		P
Test voltage applied between:	Voltage (V)	Breakdown (Yes/No)	
L/N – Earthing metal material	1250	No	

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Clause	Requirement - Test	Result - Remark	Verdict

Internal wire – Accessible insulated enclosure	1750	No
L/N – Accessible insulated enclosure	3000	No
Supplementary information: Tested on model DEP25 with 220-240 V type.		

16.3	**TABLE: Electric strength**	P

Test voltage applied between:	Voltage (V)	Breakdown (Yes/No)
L/N – Earthing metal material	1250	No
Internal wire – Accessible insulated enclosure	1750	No
L/N – Accessible insulated enclosure	3000	No
Supplementary information: Tested on model DEP25 with 110-120 V type.		

17	**TABLE: Overload protection, thermocouple measurements**	P

Temperature rise of part/at:	dT (K)	Max. dT (K)
Pri. winding of transformer	58,6 °C	225 °C
Sec. winding of transformer	55,2 °C	225 °C
Supplementary information: Tested on model DEP25 with 220-240 V type. Test until steady conditions established.		

17	**TABLE: Overload protection, thermocouple measurements**	P

Temperature rise of part/at:	dT (K)	Max. dT (K)
Pri. winding of transformer	52,2 °C	225 °C
Sec. winding of transformer	48,6 °C	225 °C
Supplementary information: Tested on model DEP25 with 110-120 V type. Test until steady conditions established.		

17	**TABLE: Overload protection, resistance method**					N/A
	Test voltage (V) .....:					—
	Ambient, t1 (°C) .....:					—
	Ambient, t2 (°C) .....:					—
Temperature of winding	R1 (Ω)	R2 (Ω)	dT (K)	T (°C)	Max. T (°C)	

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Clause	Requirement - Test	Result - Remark	Verdict

Supplementary information:					

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

Sub-clause	Operating conditions description	Test results description	PEC description	EMP 19.11.4	Software type required	19.11.3 PEC	Final result
19.2				N.A			N/A
19.3							N/A
19.4							N/A
19.5							N/A
19.6				N.A			N/A
19.7							N/A
19.8							N/A
19.9							N/A
19.10	1,3 Un	No parts ejected from appliance					P
19.11.2							N/A
19.11.4.8							N/A
19.101							P
Supplementary information:							

19.7	**TABLE: Abnormal operation, locked rotor/moving parts**		N/A
	Test voltage (V) .....:		—
	Ambient, t1 (°C) .....:		—
	Ambient, t2 (°C) .....:		—

Temperature of winding	R1 (Ω)	R2 (Ω)	dT (K)	T (°C)	Max. T (°C)

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Clause	Requirement - Test	Result - Remark	Verdict

Supplementary information:					

19.13	TABLE: Abnormal operation, temperature rises	N/A
Thermocouple locations	Max. temperature rise measured, dT (K)	Max.temperature rise limit, dT (K)
Supplementary information:		

24.1	TABLE: Components information				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1])
Power plug	Ta An Electrical	TP-66	250 V, 13 A	BS1363	ASTA
(Alternative)	Ta An Electrical	TP-52A	250 V, 16 A	IEC 60884-1	VDE
(Alternative)	Ta An Electrical	TP-51	250 V, 16 A	IEC 60884-1	VDE
(Alternative)	Ta An Electrical	TP-50	250 V, 16 A	IEC 60884-1	VDE
(Alternative)	Ta An Electrical	TP-34	250 V, 10 A	BS1363	IRAM
(Alternative)	Ta An Electrical	TP-33	250 V, 10 A	IEC 60884-1	IMQ
(Alternative)	Ta An Electrical	TP-32	250 V, 10 A	IEC 60884-1	SEV
(Alternative)	Ta An Electrical	TP-23	250 V; 10A	IEC 60884-1	DEMKO
(Alternative)	Ta An Electrical	TP-22	250 V; 10A	IEC 60884-1	SAA
(Alternative)	Ching Cheng Wire Material	EL-208	250 V; 16A	IEC 60884-1	SABS
(Alternative)	LIAN DUNG	LT-416	250 V; 16A	07/UL-BRAB-0026	U/L
(Alternative)	LIAN DUNG	LT-605	250 V, 16 A	LICENSE NO.40504	LICENSE
Power plug (only for 110-120 V type)	Ta An Electrical	TP-11	125 V; 10 A	ELBZ7.E157860	U/L
(Alternative)	Ningbo Znpon	P1134	130 V; 16 A	IEC 60309-1	SEMKO
Supply cord	Nexans France SA	H07RN-F	3G 1,5 mm^2	60245 IEC 66	LCIE
(Alternative)	Ta Tun Electric	H07RN-F	3G 1,5 mm^2	60245 IEC 66	VDE
(Alternative)	Ta An Electrical	SJTW	3G 14 AWG	ZJCZ.E300888	U/L
(Alternative)	Ta Tun Electric	SJ	3G 14 AWG	ZJCZ.E94325	U/L
(Alternative)	LIAN DUNG	H05VVF	3G 1,5 mm^2	LICENSE NO.40504	LICENSE

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Clause	Requirement - Test	Result - Remark	Verdict

(Alternative)	LIAN DUNG	H07RN-F	3G 1,5 mm^2	07/UL-BRAB-0026	U/L
PCB	HONG SHIEN	CCP-3400	Min. thickness: 1,6 mm	IEC 60335-1 IEC 60335-2-69	Tested with appliance
X2 capacitor	Aid	MEX / MPX	0,47 µF or 0,1 µF, 275 Vac, 40/100/21	IEC 60384-14	VDE
(Alternative)	Carli	MEX / MPX	0,47 µF or 0,1 µF, 275 Vac, 40/100/56	IEC 60384-14	VDE
Y capacitor	Successful electronicS	SB	0,0047 µF, 400 V, 30/125/56	IEC 60384-14	VDE
Varistor	Dongguan Littelfuse Electronics Co., Ltd.	MOV	10D471K	IEC 61051-1	VDE
Socket	WONPRO CO.LTD	RGF	16A 250V	IEC 60884-1:2002+A1:2006 IEC 60884-2-5:1995	Refer to test report No.: IL120615884 issued by INTEGRITY ENE LAB INC
(Alternative)	WONPRO CO.LTD	R4	10A 250V	IEC 60884-1:2002+A1:2006	Pao chiao Road
(Alternative)	RONG FENG	E-08	16A 250V	IEC 60884 / VDE 0621-1	VDE
(Alternative)	RONG FENG	E-05-3.5-B	10A 250V	AS/NZS 3112	SAA
Transformer (for 110-120 type)	YIN NAN	YN08118	Input: 110 V, 60 Hz; Output: 11 V, 120 mA; Class 130	IEC 60335-1 IEC 60335-2-69	Tested with appliance
Transformer (for 220-240 type)	YIN NAN	YN09074	Input: 240 V, 50 Hz; Output: 10,5 V, 100 mA; Class 130	IEC 60335-1 IEC 60335-2-69	Tested with appliance
Relay	Song Chuan Precision Co., Ltd.	845HN-2C-C	12 V dc, 250 V ac, 8 A, 50/60 Hz, T70	IEC 61810-1	TUV
Internal wire	WONDERFUL	1015	600 V, 105 °C, 16 AWG	IEC 60335-1 IEC 60335-2-69	Tested with appliance
(Alternative)	APPLIANCE WIRING	1015	600 V, 105 °C, 16 AWG	IEC 60335-1 IEC 60335-2-69	Tested with appliance
Wire connector	JUST MAKE TERMINAL	XH/2P	600 V, 105 °C, 16 AWG	IEC 60335-1 IEC 60335-2-69	Tested with appliance
(Alternative)	JUST MAKE TERMINAL	XH/3P	600 V, 105 °C, 16 AWG	IEC 60335-1 IEC 60335-2-69	Tested with appliance
(Alternative)	JUST MAKE TERMINAL	XH/4P	600 V, 105 °C, 16 AWG	IEC 60335-1 IEC 60335-2-69	Tested with appliance
(Alternative)	JUST MAKE TERMINAL	XH/5P	600 V, 105 °C, 16 AWG	IEC 60335-1 IEC 60335-2-69	Tested with appliance
(Alternative)	JUST MAKE TERMINAL	VH/3PNC2	600 V, 105 °C, 16 AWG	IEC 60335-1 IEC 60335-2-69	Tested with appliance

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Clause	Requirement - Test	Result - Remark	Verdict

Motor (for 110-120 V type)	LEE YEONG INDUSTRIAL CO., LTD.	--	110-120 V, Class 180, Stator 1: 1,1211 Ω, Stator 2: 1,1183 Ω, Rotor: 0,3924 Ω (22,3 °C)	IEC 60335-1 IEC 60335-2-69	Tested with appliance
Motor (for 220-240 V type)	LEE YEONG INDUSTRIAL CO., LTD.	--	220-240 V, Class 180, Stator 1: 1,0605 Ω, Stator 2: 1,0694 Ω, Rotor: 1,3612 Ω (21,8 °C)	IEC 60335-1 IEC 60335-2-69	Tested with appliance
Plastic enclosure	LEE YEONG INDUSTRIAL CO., LTD.	--	Min. thickness: 2,0 mm	IEC 60335-1 IEC 60335-2-69	Tested with appliance
Supplementary information: [1]) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

28.1	TABLE: Threaded part torque test			P
Threaded part identification	Diameter of thread (mm)	Column number (I, II, or III)	Applied torque (Nm)	
Screw to fix the enclosure	3,9	II	1,2	
Supplementary information:				

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

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Clause	Requirement - Test	Result - Remark	Verdict

Supplementary information:

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

29.2	TABLE: Creepage distances, basic, supplementary and reinforced insulation										P
Working voltage (V)	Creepage distance (mm) Pollution degree										
	1	2			3			Type of insulation			
		Material group			Material group						
		I	II	IIIa/IIIb	I	II	IIIa/IIIb*)	B**)	S**)	R**)	Verdict
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9		—	—	
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9	—		—	
≤50	0,36	1,2	1,7	2,4	3,0	3,4	3,8	—	—		
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4		—	—	
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4	—		—	
125	0,56	1,5	2,1	3,0	3,8	4,2	4,8	—	—		
250	0,56	1,25	1,8	2,5	3,2	3,6	**4,0**	X	—	—	P
250	0,56	1,25	1,8	2,5	3,2	3,6	**4,0**	—	X	—	P
250	1,12	2,5	3,6	5,0	6,4	7,2	**8,0**	—	—	X	P
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3		—	—	
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	—		—	
400	2,0	4,0	5,6	8,0	10,0	11,2	12,6	—	—		
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0		—	—	
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	—		—	
500	2,6	5,0	7,2	10,0	12,6	14,2	16,0	—	—		
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0		—	—	
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	—		—	
>630 and ≤800	3,6	6,4	9,0	12,6	16,0	18,0	20,0	—	—		
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5		—	—	
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	—		—	
>800 and ≤1000	4,8	8,0	11,2	16,0	20,0	22,0	25,0	—	—		

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Clause	Requirement - Test							Result - Remark			Verdict
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0		—	—	
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	—		—	
>1000 and ≤1250	6,4	10,0	14,2	20,0	25,0	28,0	32,0	—	—		
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0		—	—	
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	—		—	
>1250 and ≤1600	8,4	12,6	18,0	25,0	32,0	36,0	40,0	—	—		
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0		—	—	
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	—		—	
>1600 and ≤2000	11,2	16,0	22,0	32,0	40,0	44,0	50,0	—	—		
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0		—	—	
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	—		—	
>2000 and ≤2500	15,0	20,0	28,0	40,0	50,0	56,0	64,0	—	—		
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0		—	—	
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	—		—	
>2500 and ≤3200	20,0	25,0	36,0	50,0	64,0	72,0	80,0	—	—		
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0		—	—	
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	—		—	
>3200 and ≤4000	25,0	32,0	44,0	64,0	80,0	90,0	100,0	—	—		
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0		—	—	
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	—		—	
>4000 and ≤5000	32,0	40,0	56,0	80,0	100,0	112,0	126,0	—	—		
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0		—	—	
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	—		—	
>5000 and ≤6300	40,0	50,0	72,0	100,0	126,0	142,0	160,0	—	—		
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0		—	—	
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	—		—	
>6300 and ≤8000	50,0	64,0	90,0	126,0	160,0	180,0	200,0	—	—		
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0		—	—	
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	—		—	
>8000 and ≤10000	64,0	80,0	112,0	160,0	200,0	220,0	250,0	—	—		
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0		—	—	
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	—		—	

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Clause	Requirement - Test	Result - Remark	Verdict

>10000 and ≤12500	80,0	100,0	142,0	200,0	250,0	280,0	320,0	—	—		

Supplementary information:

*) Material group IIIb is allowed if the working voltage does not exceed 50 V
**) B = Basic insulation, S = Supplementary insulation, R = Reinforced insulation

29.2	TABLE: Creepage distances, functional insulation							P
Working voltage (V)	Creepage distance (mm) Pollution degree							
	1	2			3			
		Material group			Material group			
		I	II	IIIa/IIIb	I	II	IIIa/IIIb*)	Verdict / Remark
≤10	0,08	0,4	0,4	0,4	1,0	1,0	1,0	
50	0,16	0,56	0,8	1,0	1,4	1,6	1,8	
125	0,25	0,71	1,0	1,4	1,8	2,0	2,2	
250	0,42	1,0	1,4	2,0	2,5	2,8	**3,2**	P
400	0,75	1,6	2,2	3,2	4,0	4,5	5,0	
500	1,0	2,0	2,8	4,0	5,0	5,6	6,3	
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	

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Clause	Requirement - Test	Result - Remark	Verdict

Supplementary information:

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

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30	**TABLE: Resistance to heat and fire**																			
Object/ part No.	Manufacturer/ trademark	Type/ model	Ball pressure test °C				Glow wire test (GWT) °C						Glow-wire flammability index (GWFI) °C				Glow- wire ignition temp. (GWIT) °C		Needle - flame test (NFT)	Verdict
			75	125	cl. 11 +40	cl. 19 +25	550	650		750		850	550	650	750	850	675	775		
								te	ti	te	ti									
External enclosure	-	-	-	-	95,7	-	X	-	-	-	-	-	-	-	-	-	-	-	-	P
Carbon brush holder	-	-	-	X	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	P
Motor enclosure	-	-	-	X	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	P
Holder of motor	-	-	-	-	103,4	-	X	-	-	-	-	-	-	-	-	-	-	-	-	P
Wire connector	-	-	-	X	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	P
Bobbin of transformer	-	-	-	X	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	P
Socket enclosure	-	-	-	X	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	P
Socket holder	-	-	-	-	86,2	-	X	-	-	-	-	-	-	-	-	-	-	-	-	P
Holder of main PCB	-	-	-	X	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	P
Holder of	-	-	-	X	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	P

switch PCB																			
Motor cover	-	-	X	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	P
Motor support	-	-	X	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	P
Speed-control switch knob	-	-	-	-	76,5	-	X	-	-	-	-	-	-	-	-	-	-	-	P
Power switch knob	-	-	-	-	93,8	-	X	-	-	-	-	-	-	-	-	-	-	-	P
X2 capacitor	-	-	-	-	-	-	-	-	-	0	0	-	-	-	-	-	-	-	P
Relay	-	-	-	-	-	-	-	-	-	0	0	-	-	-	-	-	-	-	P

Supplementary information:

[1)] Parts of material classified at least HB40 or if relevant HBF
[2)] Parts of material classified as V-0 or V-1
[3)] Flame persisting longer than 2 s (= t_e – t_i) need only be reported for unattended appliances
[4)] Surrounding parts subjected to the needle-flame test of annex E
[5)] Base material classified as V-0 or if relevant VTM-0
[6)] The GWIT pre-selection option, the 850 °C GWFI pre-selection option, and the 850 °C GWT are not applicable for attended appliances

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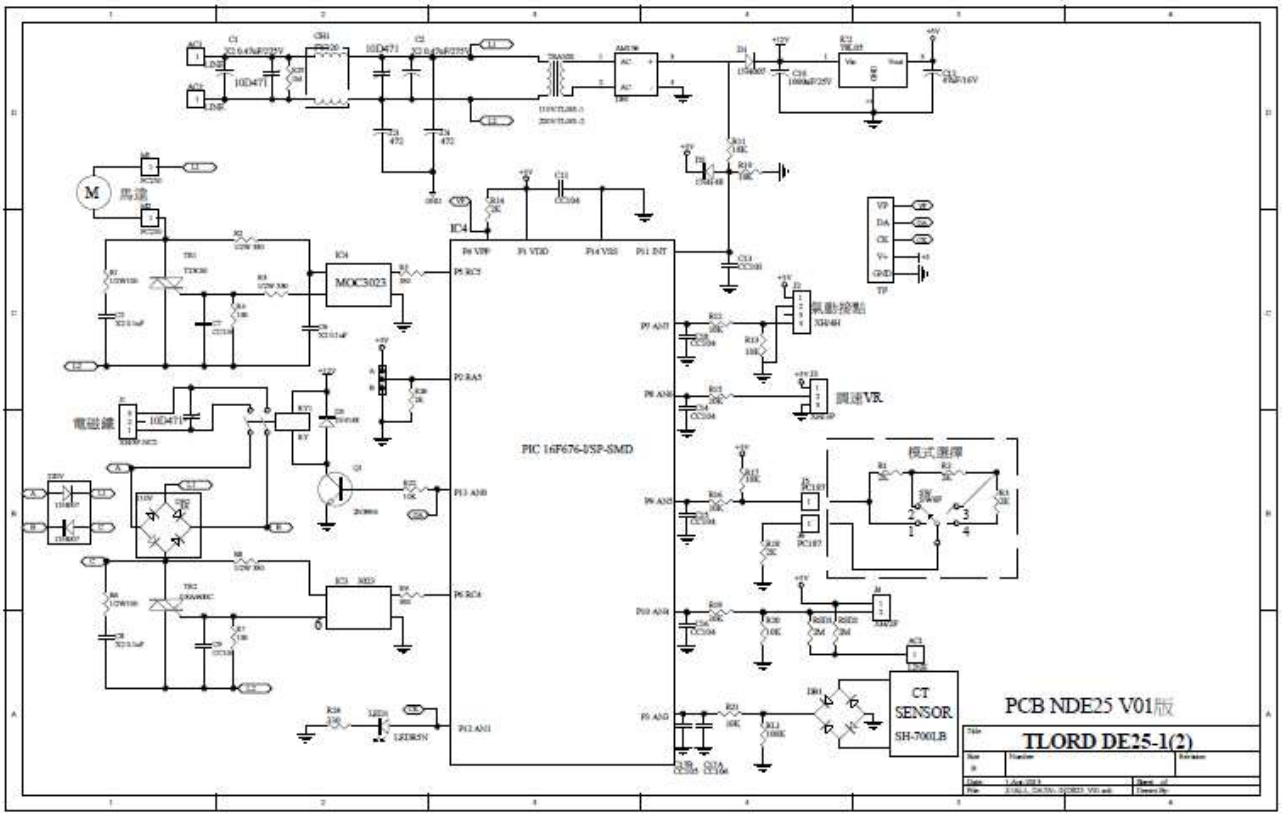
Clause	Requirement - Test	Result - Remark	Verdict

Circuit diagram of appliance:



IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict

Photos of appliance:

Pic.01 General view (DE25)

Pic.02 Side view

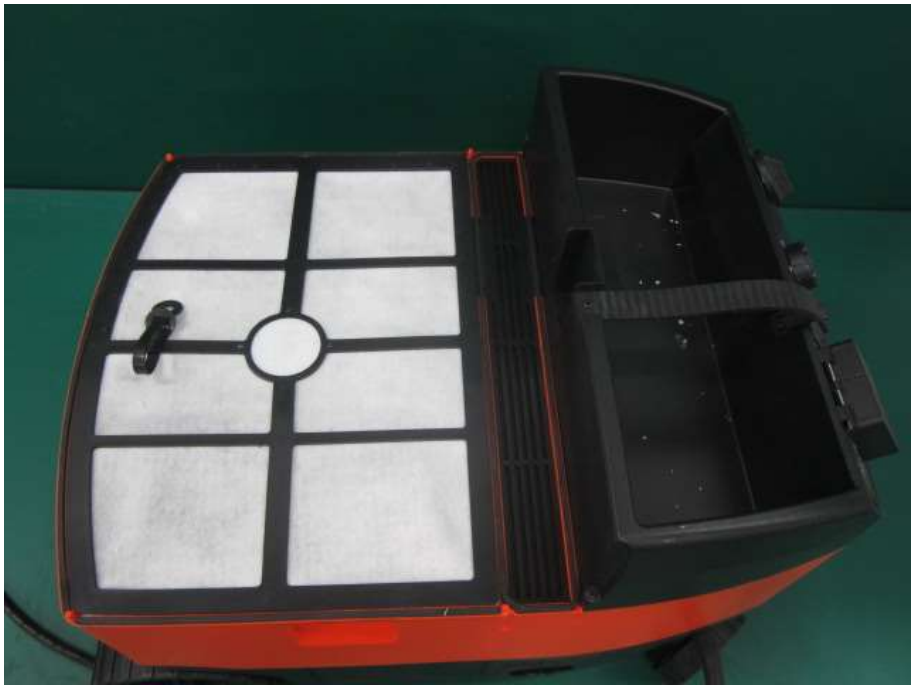
IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict

Pic.03 Back view

Pic.04 Another side view

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict

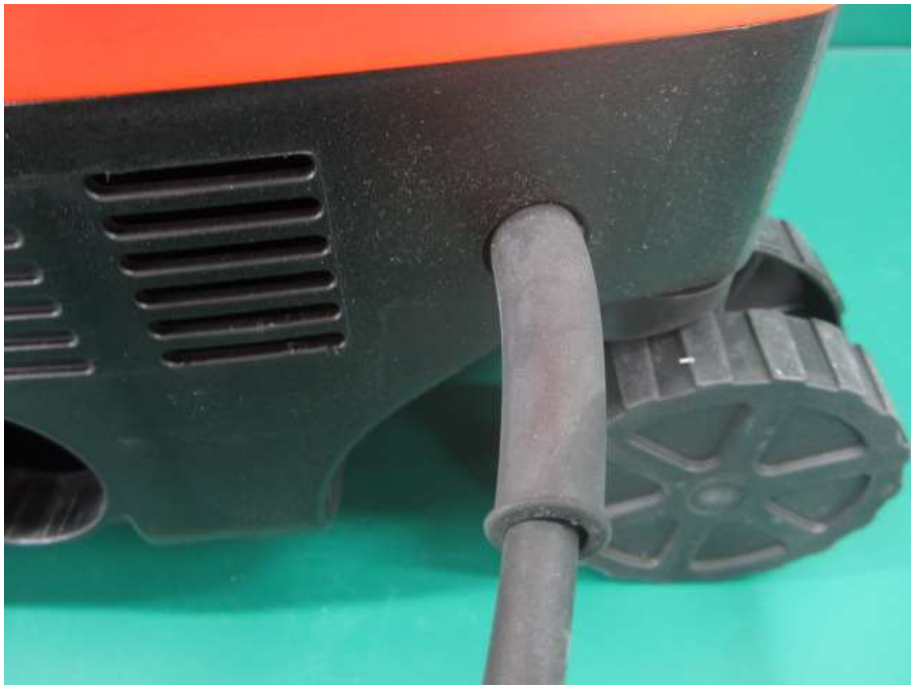
Pic.05 Top view



Pic.06 Top cover removed

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict

Pic.07 Dust & Water container



Pic.08 Cord entrance

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict

Pic.09 Speed switch knob

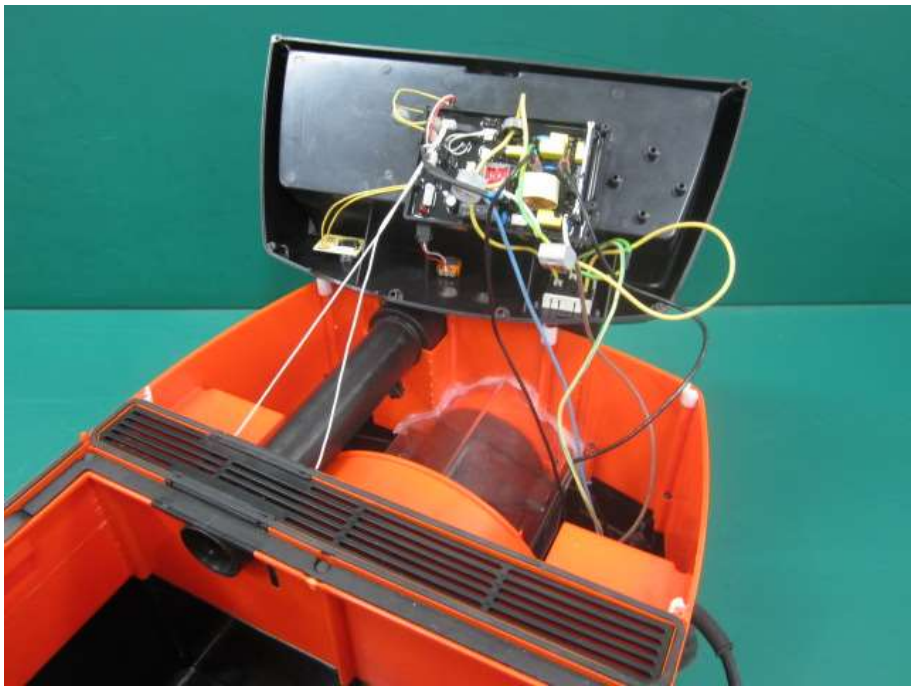
Pic.10 Main switch knob

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict

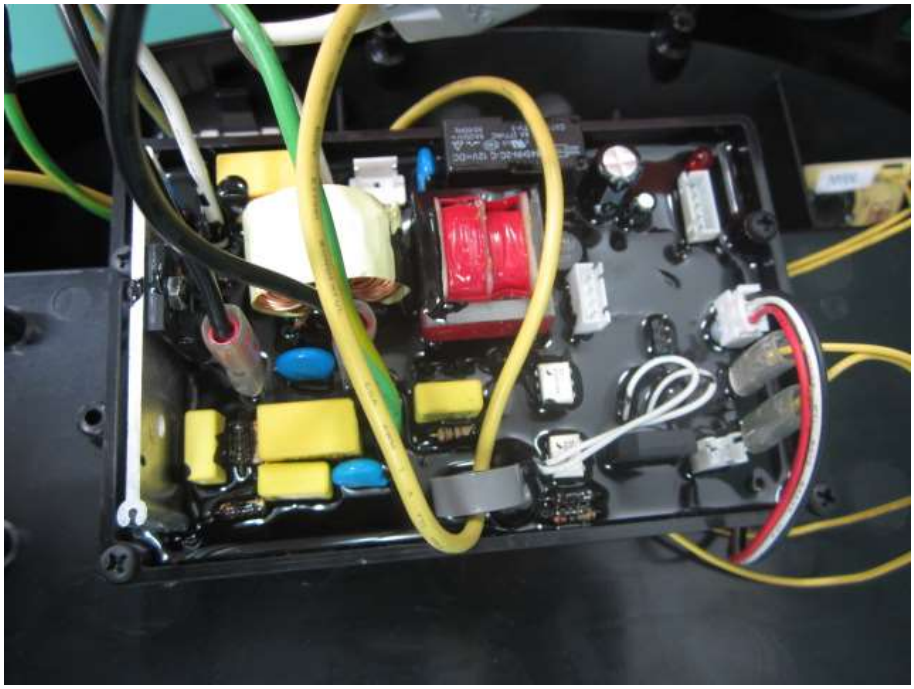
Pic.11 Socket

Pic.12 Continue

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict

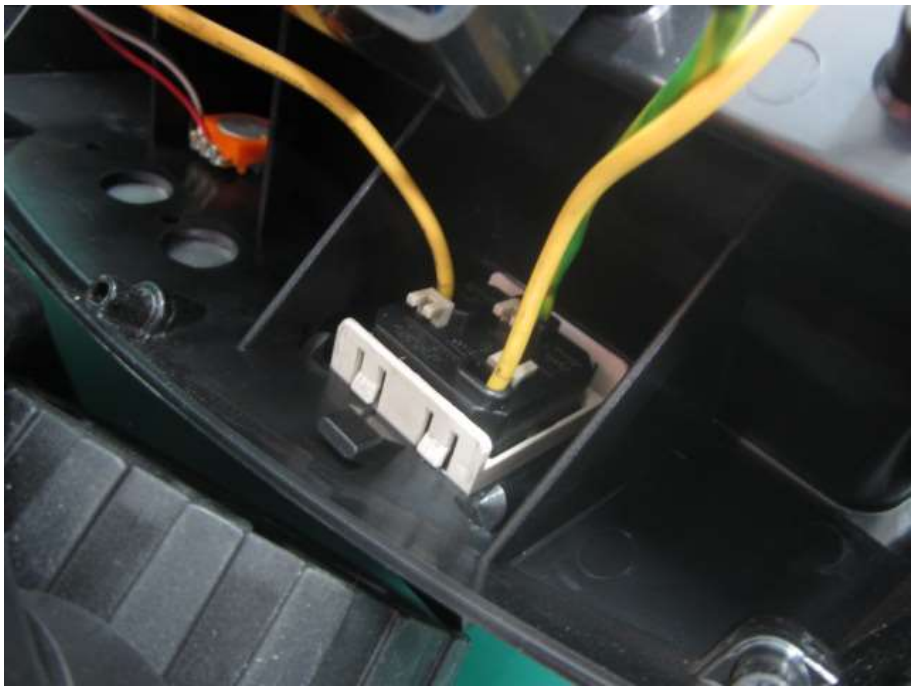


Pic.13 Open view

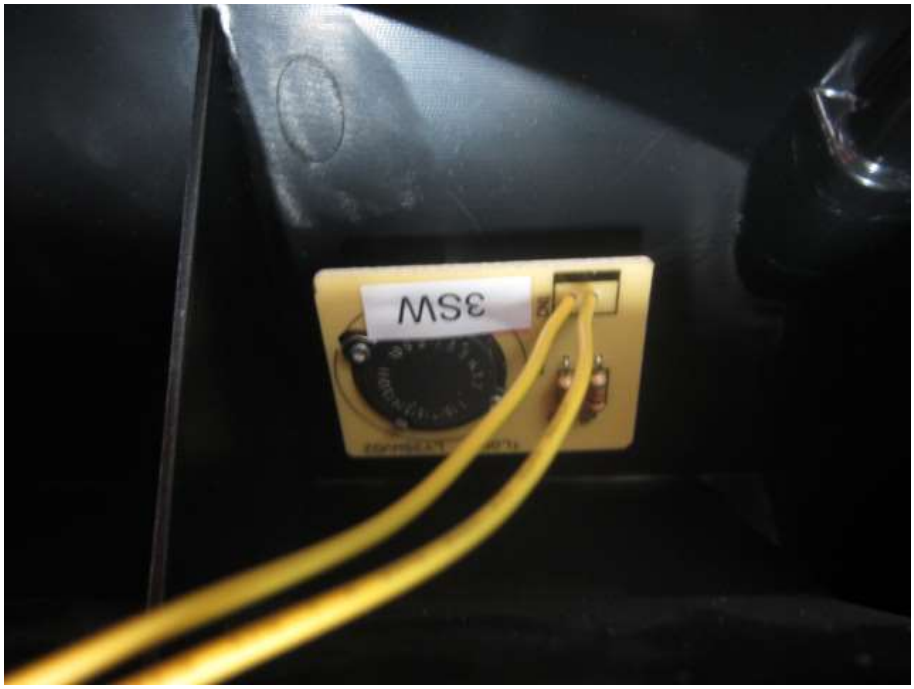


Pic.14 PCB

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict

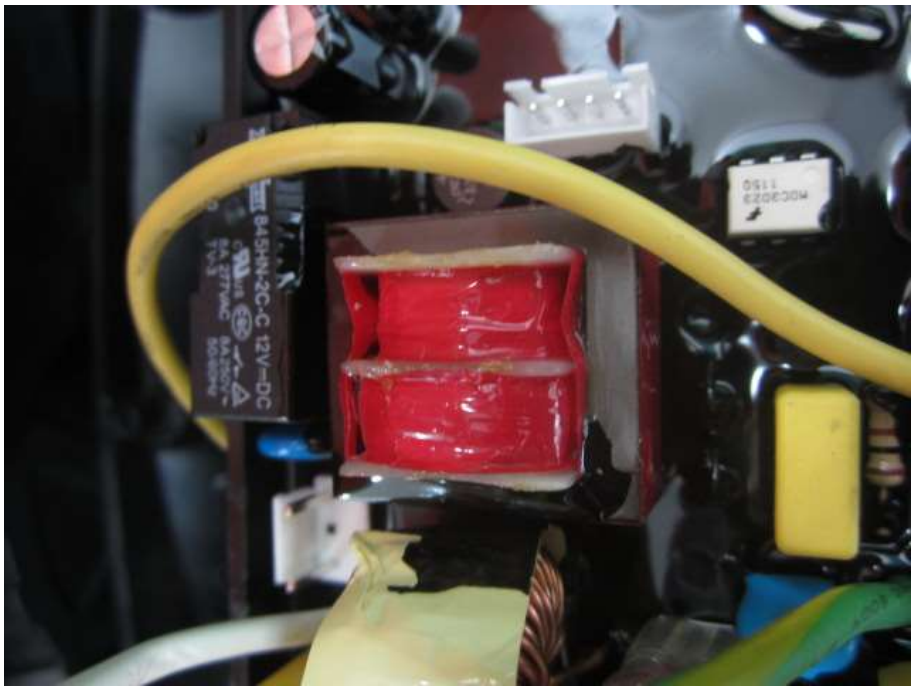


Pic.15 Socket

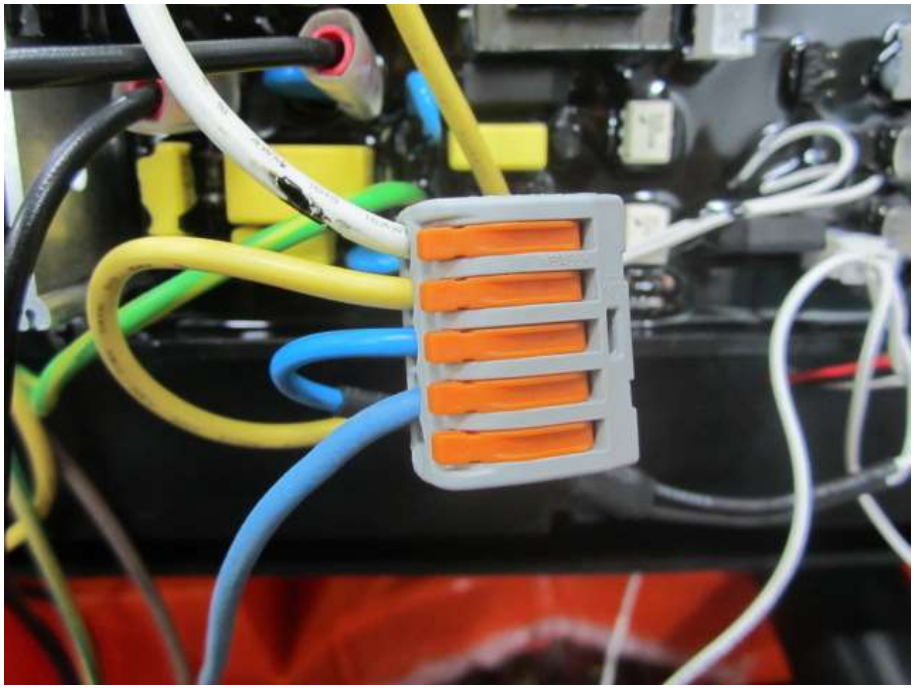


Pic.16 Potentiometer

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict

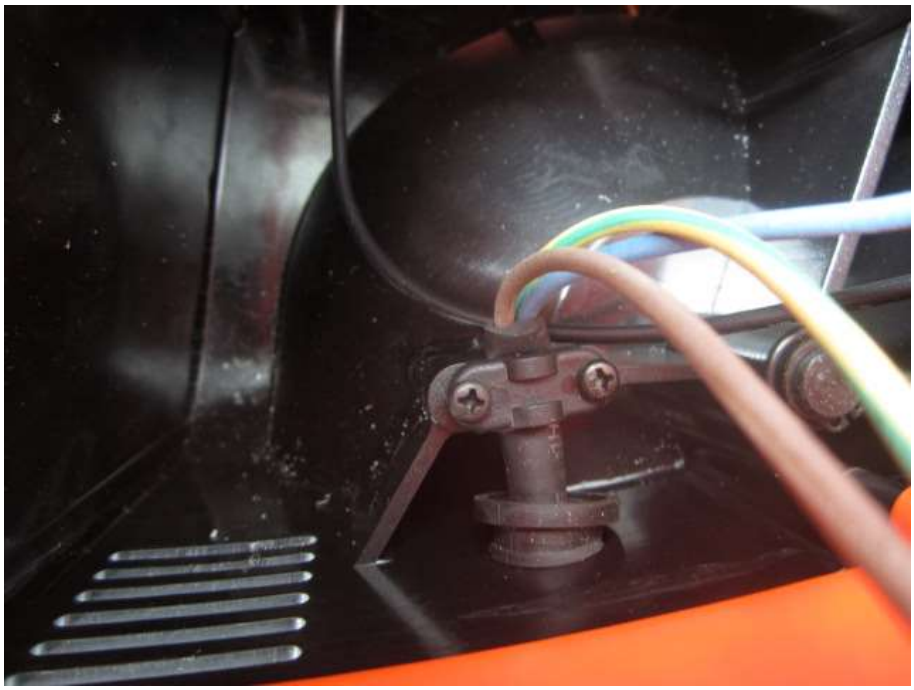


Pic.17 Transformer

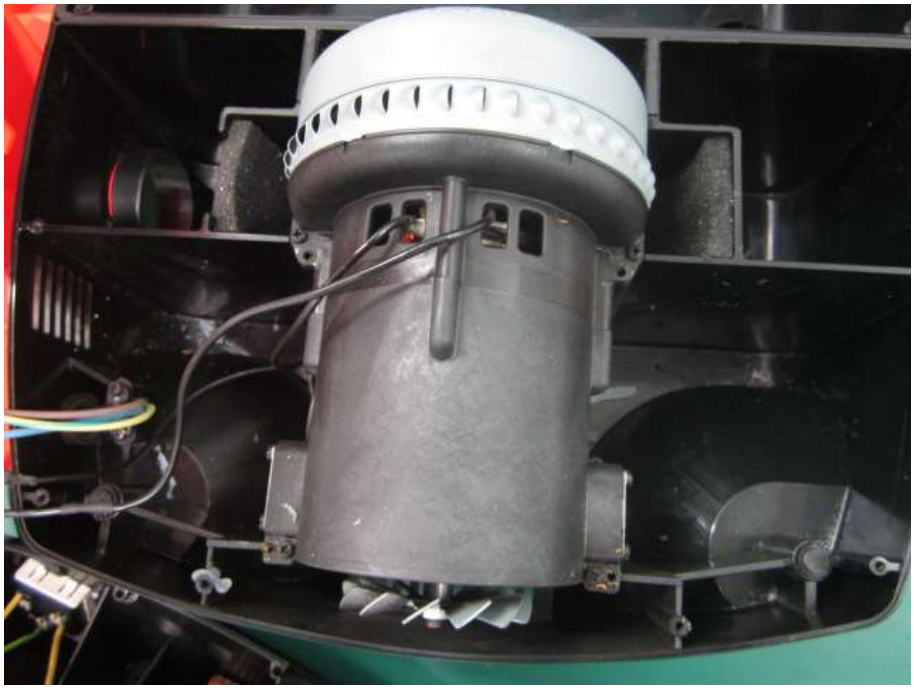


Pic.18 Wire connector

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict

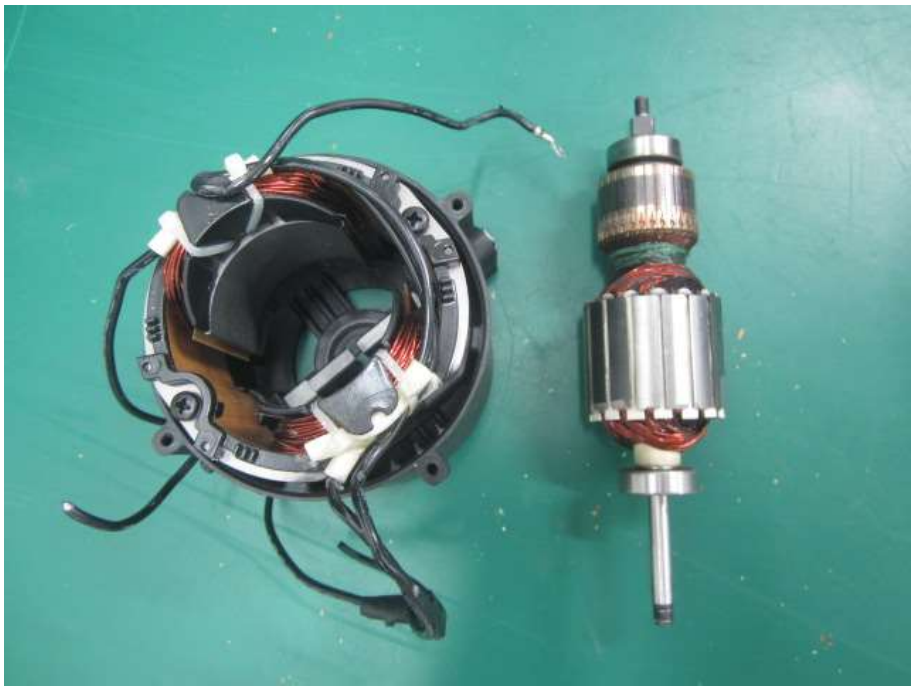


Pic.19 Cord anchorage



Pic.20 Motor

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict



Pic.21 Open view

Pic.22 Rotor windings

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict

Pic.23 Stator windings

Pic.24 General view (DEP25)

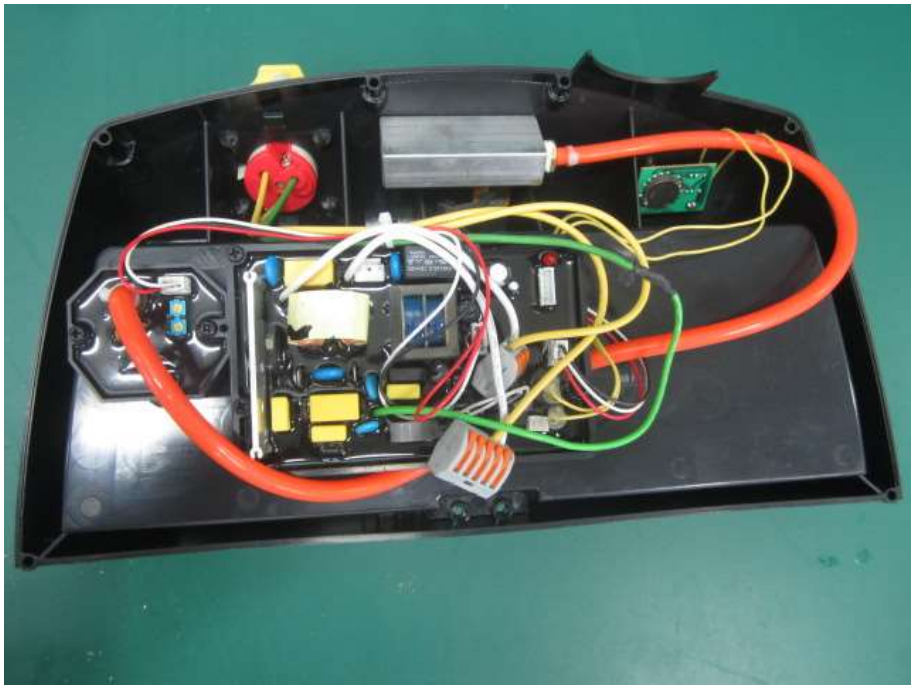
IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict

Pic.25 Connector of power tools

Pic.26 Socket

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict

Pic.27 Continue



Pic.28 Open view of front cover

END