

# DC-900A TCF

1, Model: DC-900A Dust Collector

2, Stock No. : 10001051MA

3, Brand : JET

4, Description of products (with photos)

- 
- DC-900A Dust Collector
- 
- Industrial quality motor and specially designed blower wheel for maximum performance
- Ballance blower wheel for vibration free and quiet operation
- Quick-install collection bags for easy installation
- Four casters allow total mobility
- Rugged housing design

- DC-900A PHOTO



5. Supplier

Laizhou Sindy Electronic & Technology Co., LTD

6. Supplier's model name

Sindy Model: DC-230L Dust Collector

7. Supplier's CE declaration of conformity with latest directives and EN standards (including comparison of supplier's model to JPW's model)



## EC DECLARATION OF CONFORMITY

**We** *Laizhou Sindy Electronic & Technology Co.,LTD.*

**Address:** *Chinashidu Exhibition Centre West Road, Laizhou City, Shandong 261400 P.R. China*

**Declare under our sole responsibility that:**

**Product:** **Dust Collector**

**JPW TYPE Model :** **DC-900A**

**SINDY TYPE Model :** **DC230L**

**Test Report No:** **17705554 001**

**Year of Construction:** **2014**

**Complies with the following relevant provisions and standard:**

**2006/42/EC** Machinery Directive  
**2014/35/EU (2006/95/EC)** Low Voltage Directive  
**2014/30/EU (2004/108/EC)** Electromagnetic Compatibility Directive  
**2011/65/EU** RoHS

**For the essential safety and health requirements of this machine, following the harmonized standards have been applied:**

- EN ISO 12100 / Safety of machinery — General principles for design — Risk assessment and risk reduction
- EN 60335-1:2012 / Household and similar electrical appliances - Safety - Part 1: General requirements
- EN 60335-2-69:2012 / Household and similar electrical appliances. Safety . Particular requirements for wet and dry vacuum cleaners, including power brush for commercial use
- EN 55014-1 / Electromagnetic compatibility. Requirements for household appliances, electric tools and similar apparatus. Emission
- EN 55014-2 / Electromagnetic compatibility. Requirements for household appliances, electric tools and similar apparatus. Immunity. Product family standard

**Date of Issue:** **2015 / 12 / 07**  
**Place of Issue:** **Shandong China**  
**Name:** **Yuguo Zhong**  
**Position:** **General Manager**  
**Signature and Stamp:**

Company: Laizhou Sindy Electronic & Technology Co.,LTD.  
Address: Chinashidu Exhibition Centre West Road, Laizhou City, Shandong 261400 P.R. China  
TEL : --  
FAX : --



*For and on behalf*  
**LAIZHOU SINDY ELECTRONIC & TECHNOLOGY CO., LTD.**

Authorized Signature(s)

8. JPW's CE declaration of conformity with latest directives and EN standards

## CE-Conformity Declaration

Product: Dust Collector

**DC-900A**

Stock Number: 10001051MA

Brand: JET

Manufacturer:

JPW (Tool) AG, Tämperlistrasse 5, CH-8117 Fällanden, Switzerland

On our own responsibility we hereby declare that this product complies  
with the regulations

- \* 2006/42/EC Machinery Directive
- \* 2014/30/EU (2004/108/EC) EMC Directive (Electro Magnetic Compatibility)
- \* 2014/35/EU (2006/95/EC) Low Voltage Directive
- \* 2011/65/EU RoHS Directive (Reduction of Hazardous Substances)

designed in consideration of the standards

\*\* EN ISO 12100, EN 60335-1, EN 60335-2-69, EN 55014-1, EN 55014-2

Technical file compiled by: Hansjörg Meier, JPW (Tool) AG, Product Management




2015-12-08 **Alain Schmid, General Manager**

JPW (Tool) AG, Tämperlistrasse 5, CH-8117 Fällanden, Switzerland

9. CE certificates

**C E R T I F I C A T E**

of Conformity  
EC Council Directive 2006/42/EC  
Machinery

  
**TÜVRheinland®**

Registration No.: AM 50273803 0001

Report No.: 17705554 001

Holder: **Laizhou Sindy Electronic & Technology Co., Ltd.**  
Chinashidu Exhibition Centre  
West Road  
Laizhou City, Shandong 261400  
P.R. China

Product: Suction Cleaning Device  
(Dust Collector)

Identification:


Type Designation :	DC230	DC300	DC315
	DC230A-Z	DC300A-Z	DC315A-Z
Serial No. :	140308015	140308017	140308019
	140308016	140308018	140308020

Remark: Refer to test report 17705554 001 for details.

This certificate of conformity is based on an evaluation of a sample of the above mentioned product. This is to certify that the tested sample is in conformity with all provision of Annex I of Council Directive 2006/42/EC, referred to as the Machinery Directive. This certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity. The holder of the certificate is authorized to use this certificate in connection with the EC declaration of conformity according to Annex II of the Directive.

Certification Body

Date 24.06.2014

  
Haojian Dong



**TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg**

CE The CE marking may be used if all relevant and effective EC Directives are complied with. CE

000 0 04 06 © TÜV, TÜV and TÜV are registered trademarks. Utilization and application requires prior approval.



10. Labels (ID label, motor label, warning label...)

<b>J E T</b>			
<b>Model</b>	<b>DC-900A Dust Collector</b>		 
<b>Power</b>	~ 230V 50Hz P1=750W 4.2A		
<b>Specification</b>	$\dot{V} = 900\text{m}^3/\text{h}$ $\varnothing=100\text{mm}$ $p=1050\text{Pa}$		
<b>Article No.</b>	10001051MA	<b>Weight</b>	<b>24kg</b>
<b>Series No.</b>		<b>Year</b>	<b>2015</b>
JPW (Tool) AG, CH-8117 Fällanden, Switzerland <a href="http://www.jettools.com">www.jettools.com</a>			

<b>J E T</b>		<b>CE</b>
<b>TYPE</b>	<b>DC900A-16</b>	<b>~ 230V</b>
<b>IEC 60034-1</b>		<b>50Hz</b>
<b>IP 44</b>		<b>4.2A</b>
<b>I.CL. B</b>		<b>cos<math>\varphi</math> 0.90</b>
<b>P1=750 W</b>	<b>S1</b>	<b>SERIES</b>
<b>2800 /min</b>		



## 11. Packing information (with photos)

 <p><b>DC-900A 10001051MA</b>          Absauggerät fahrbar / Dust collector on wheels          Aspirateur à sorexais bois / Вытяжная установка          Витяжна установка / Сорыл шыгару құрылғысы</p>					
 <p><b>DC-900A 10001051MA</b>          Absauggerät fahrbar / Dust collector on wheels          Aspirateur à sorexais bois / Вытяжная установка          Витяжна установка / Сорыл шыгару құрылғысы</p>		 <p><b>DC-900A 10001051MA</b>          Absauggerät fahrbar / Dust collector on wheels          Aspirateur à sorexais bois / Вытяжная установка          Витяжна установка / Сорыл шыгару құрылғысы</p>			
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<p>   <b>JPW Tool AG</b>                  Traubergasse 3, 34211 Falkenberg                  Deutschland                  www.jpw-tool.com             </p>					



## 12. User manual (including part list, machine drawings and electric diagrams)

# JET

**DC-900A**

**Dust Collector**

Original:

**GB**  
**Operating Instructions**

Translations:

**D**  
**Gebrauchsanleitung**

**F**  
**Mode d'emploi**



**JPW (Tool) AG**  
Tämperlistrasse 5  
CH-8117 Fällanden  
Switzerland  
Phone +41 44 806 47 48  
Fax +41 44 806 47 58

[www.jettools.com](http://www.jettools.com)

M- 10001051MA

2015-12



# CE-Conformity Declaration

Product: Dust Collector

**DC-900A**

**Stock Number: 10001051MA**

Brand: JET

Manufacturer:

JPW (Tool) AG, Tämperlistrasse 5, CH-8117 Fällanden, Switzerland

On our own responsibility we hereby declare that this product complies with the regulations

- \* 2006/42/EC Machinery Directive
- \* 2014/30/EU (2004/108/EC) EMC Directive (Electro Magnetic Compatibility)
- \* 2014/35/EU (2006/95/EC) Low Voltage Directive
- \* 2011/65/EU RoHS Directive (Reduction of Hazardous Substances)

designed in consideration of the standards

\*\* EN ISO 12100, EN 60335-1, EN 60335-2-69, EN 55014-1, EN 55014-2

Technical file compiled by: Hansjörg Meier, JPW (Tool) AG, Product Management



2015-12-08 **Alain Schmid, General Manager**

JPW (Tool) AG, Tämperlistrasse 5, CH-8117 Fällanden, Switzerland

# GB - ENGLISH

## Operating Instructions

Dear Customer,

Many thanks for the confidence you have shown in us with the purchase of your new JET-product. This manual has been prepared for the owner and operators of a **DC-900A dust collector** to promote safety during installation, operation and maintenance procedures. Please read and understand the information contained in these operating instructions and the accompanying documents. To obtain maximum life and efficiency from your dust collector, and to use it safely, read this manual thoroughly and follow instructions carefully.

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General safety notes  
Remaining hazards

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Unit description

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Dust collection  
Mains connection

#### 6. Machine operation

#### 7. Maintenance and inspection

Cleaning filter  
Changing collector bag

#### 8. Trouble shooting

#### 9. Environmental protection

#### 10. Available accessories

### 1. Declaration of conformity

On our own responsibility we hereby declare that this product complies with the regulations\* listed on page 2. Designed in consideration with the standards\*\*.

### 2. Warranty

The Seller guarantees that the supplied product is free from material defects and manufacturing faults. This warranty does not cover any defects which are caused, either directly or indirectly, by incorrect use, carelessness, accidental damage, repair, inadequate maintenance or cleaning and normal wear and tear.

Guarantee and/or warranty claims must be made within twelve months from the date of purchase (date of invoice). Any further claims shall be excluded.

This warranty includes all guarantee obligations of the Seller and replaces all previous declarations and agreements concerning warranties.

The warranty period is valid for eight hours of daily use. If this is exceeded, the warranty period shall be reduced in proportion to the excess use, but to no less than three months.

Returning rejected goods requires the prior express consent of the Seller and is at the Buyer's risk and expense.

Further warranty details can be found in the General Terms and Conditions (GTC). The GTC can be viewed at [www.jettools.com](http://www.jettools.com) or can be sent by post upon request.

The Seller reserves the right to make changes to the product and accessories at any time.

### 3. Safety

#### 3.1 Authorized use

This dust collector is designed for sucking wood dust only. Any other application is not permitted and may be carried out in specific cases only after consulting with the manufacturer.

Materials such as liquids, metal shavings, metal dust, screws, glass, plastic or rock can cause sparks and/or damage when coming into contact with any part of the dust collector.

The product is not suitable for use in wet or humid environment.

Don't use appliance in places with a risk of explosion.

The proper use also includes compliance with the operating and maintenance instructions given in this manual.

The dust collector must be operated only by persons familiar with its operation and maintenance and who are familiar with its hazards.

The required minimum age must be observed.

The dust collector must only be used in a technically perfect condition.

Before connecting the dust collector to electric power, all safety mechanisms and covers must be mounted.

In addition to the safety requirements contained in these operating instructions and your country's applicable regulations, you should observe the generally recognized technical rules concerning the dust collection on woodworking machines.

Any other use exceeds authorization. In the event of unauthorized use of the product, the manufacturer renounces all liability and the responsibility is transferred exclusively to the operator.

#### 3.2 General safety notes

Read and understand the entire instruction manual before attempting assembly or operation of the air cleaner.

Keep this operating instruction close by the product, protected from dirt and humidity, and pass it over to the new owner if you part with the tool.

No changes to the dust collector may be made.

Daily inspect the function and existence of the safety appliances before you start the air cleaner. Do not attempt operation in this case, protect the dust collector by unplugging the power cord.

Always disconnect the dust collector from the power source (unplug) before servicing or changing filters.

During the changing or cleaning of the filter it's necessary to use a mask (mask with filtration).

Never reach into the machine while it is operating or running down.

To reduce the risk of injury from moving parts, always keep inlet port covered with the caps provided, if they are not connected to a hose.

Make sure that the power cord does not impede work and cause people to trip.

Do not operate the machine under the influence of drugs, alcohol or any medication. Be aware that medication can change your behaviour.

Keep children and visitors a safe distance from the work area.

Never leave a running machine unattended. Before you leave the workplace switch off the unit.

Do not operate the electric tool near inflammable liquids or gases. Observe the fire fighting and fire alert options, for example the fire extinguisher operation and place.

Do not use the dust collector in a damp environment and do not expose it to rain.

Do not use this equipment to filter volatile fumes or smoke.

Wood dust is explosive and can also represent a risk to health. Dust from some tropical woods in particular, and from hardwoods like beach and oak, is classified as a carcinogenic substance.

Connection and repair work on the electrical installation may be carried out by a qualified electrician only.

Have a damaged or worn power cord replaced immediately.

### 3.3 Remaining hazards

When using the machine according to regulations some remaining hazards may still exist.

Dust can cause injuries.

The use of incorrect mains supply or a damaged power cord can lead to injuries caused by electricity.

Danger of explosion if not properly grounded.

## 4. Machine specifications

### 4.1 Technical data

Dust inlet	Ø100mm
Air flow	900 m³/h
Vacuum pressure	1050Pa
Collector bag capacity	55L
Overall (LxWxH)	1600x900x450mm
Net weight	24 kg
Mains	~230V, 50Hz
Motor power	750W
Reference current	4,2 A
Extension cord (H07RN-F)	3x1.5mm²
Installation fuse protection	10A
Isolation class	I

### 4.2 Noise emission

Acoustic pressure level:  
(EN ISO 11202) LpA 78 dB(A)

The specified values are emission levels and are not necessarily to be seen as safe operating levels. As workplace conditions vary, this information is intended to allow the user to make a better estimation of the hazards and risks involved only.

### 4.3 Content of delivery

Filter bag  
Collection bags (3x)  
Mobile casters (4x)  
Hose 100 mm  
Hose clamps (2x)  
Hose ground wire  
Operating manual  
Spare parts list

### 4.4 Unit description

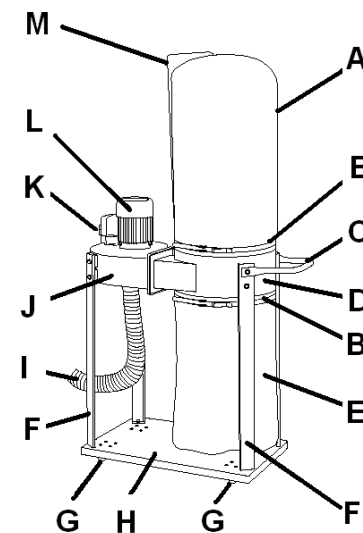


Fig 1

A....Filter bag  
B....Bag clamp  
C....Handle  
D....Bag support housing  
E....Collection bag

F....Legs (4)  
G....Casters (4)  
H....Base  
I....Hose  
J....Motor support housing  
K....ON/OFF switch  
L....Motor  
M...Filter bag hanger

## 5. Assembly and start up

### 5.1 Assembly

If you notice transport damage while unpacking, notify your supplier immediately. Do not operate the unit!

Dispose of the packing in an environmentally friendly manner.

#### Install the casters to the base:

Install four casters to the under side of the base with bolts, lock washers washers and nuts (Fig 2)

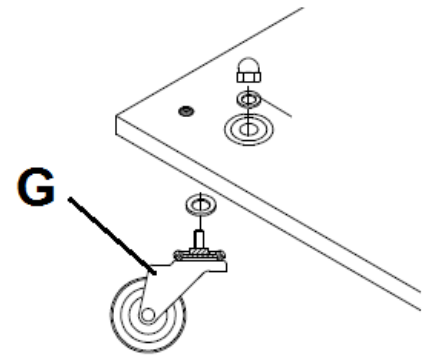


Fig 2

#### Motor and bag-support assembly:

Align the motor assembly and bag support assembly as shown in Fig 3.

Place the square rubber gasket (N) into the exhaust port of the motor assembly (J).

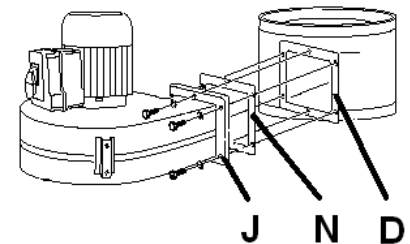


Fig 3

Attach with bolts and washers.

**Attach 2 legs to the motor assembly:**

Turn the motor-bag-support assembly upside down.

Place plastic spacers (O, Fig 4) between motor assembly and legs.

Attach legs with medium bolts and washers.

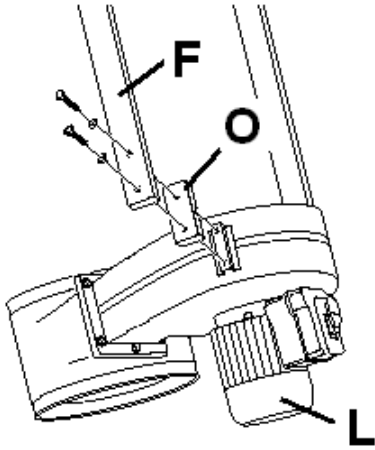


Fig 4

**Attach 2 legs and handle to bag support:**

Place plastic spacers (O, Fig 5) between bag support and legs.

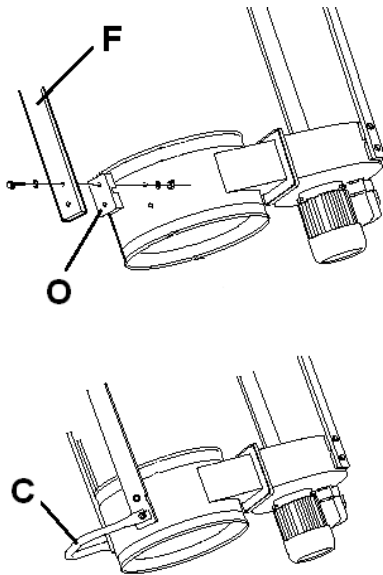


Fig 5

Align handle (C) as shown.

Attach with long bolts washers and nuts.

**Attach the legs to the base:**

Turn the motor-bag-support-leg assembly gently right side up and set it to the base.

Locate the motor side (A, Fig 6) and the bag side (B) of the base.

Note: the holes for the legs of the bag side (B) are closer to the casters.

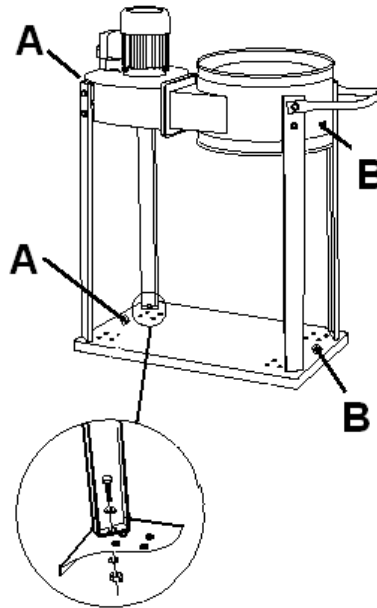


Fig 6

Attach with short bolts washers and nuts.

**Attach filter bag hanger:**

Attach filter bag hanger (M) with short bolts washers and nuts.

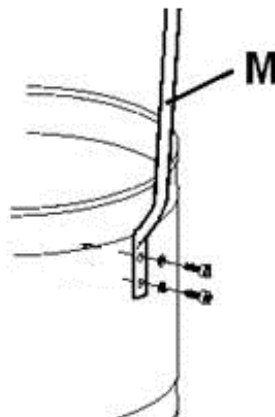


Fig 7

**Install the filter bag:**

Attach the loop of the filter bag to the filter bag hanger (M).

Place the filter bag (A) over the bag support housing.

Place a bag clamp (B) over the bag and close the clamp.

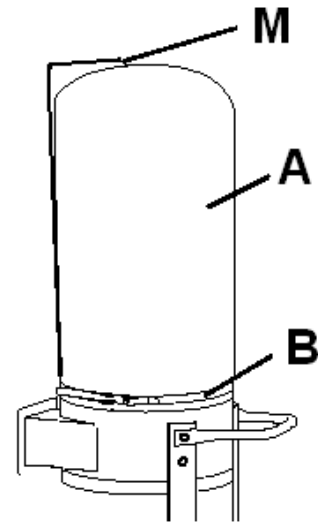


Fig 8

Note: make sure the bag is fastened securely so that no dust will escape during operation.

**Install the collection bag:**

Place a collection bag (E) over the bag support housing.

Place a bag clamp (B) over the collection bag and close the clamp.

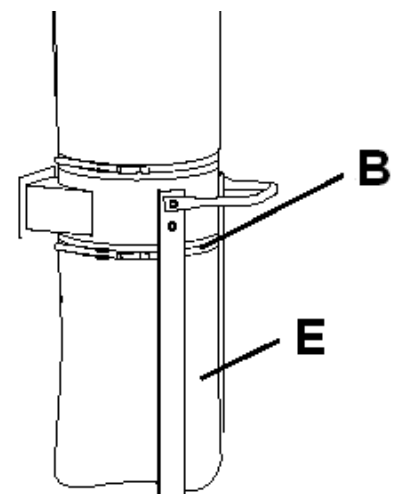


Fig 9

Note: make sure the bag is fastened securely so that no dust will escape during operation.

**Attach the hose:**

Use one hose clamp (Q) to connect the hose (I) to the intake port.

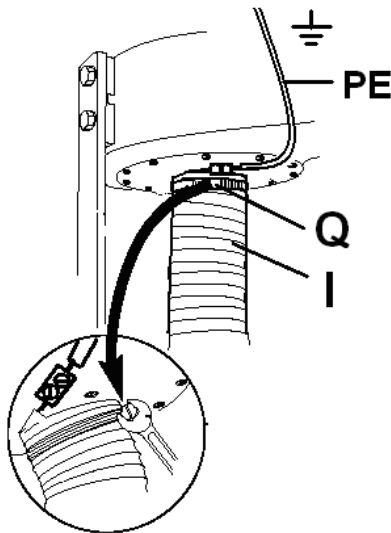


Fig 10

Use the other hose clamp on the machine to be connected.

### 5.2 Dust connection

Connect the steel wire of the hose to the green-yellow ground wire (PE, Fig 10). This eliminates electrostatic charging.

Any hose or ductwork you use to connect the tool to the dust collector must be grounded, for avoiding explosion.  
(Dust Collector Grounding Kit, Article Number: JW1053).

### 5.3 Mains connection

Mains connection and any extension cords used must comply with applicable regulations.  
The mains voltage must comply with the information on the machine licence plate.

The mains connection must have a 10 A surge-proof fuse.

Only use power cords marked H07RN-F

Connections and repairs to the electrical equipment may only be carried out by qualified electricians.

## 6. Machine operation

You can start and stop the machine with the switch (K).

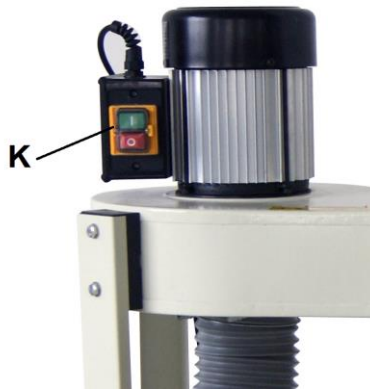


Fig 11

## 7. Maintenance and inspection

### General notes:

**Maintenance, cleaning and repair work may only be carried out after the machine is protected against accidental starting by pulling the mains plug.**

Inspect the proper function of the dust collection system daily.

Clean the unit regularly.

Defective safety devices must be replaced immediately.

Repair and maintenance work on the electrical system may only be carried out by a qualified electrician.

### 7.1 Cleaning filter bag

Shake the filter bag whenever it is clogged and before each collector bag change.

During the cleaning of the filter bag it's necessary to use a mask (mask with filtration).

### 7.2 Changing collector bag

Always disconnect the dust collector from the power source (unplug) before servicing or changing filter.

During the changing or cleaning of the collector bag it's necessary to use a mask (mask with filtration).

## 8. Trouble shooting

### Unit doesn't start

\*No electricity-  
check mains and fuse.

\*Defective switch, motor or cord-  
consult an electrician.

### Air flow too weak

\*Clogged filter-  
Clean filter.

## 9. Environmental protection

Protect the environment.

Your appliance contains valuable materials which can be recovered or recycled. Please leave it at a specialized institution.



This symbol indicates separate collection for electrical and electronic equipment required under the WEEE Directive (Directive 2012/19/EC) and is effective only within the European Union.

## 10. Available accessories

### Stock number 10000315

PVC-hose transparent, Ø100mm, length 1,5m

### Stock number JW1022

Hose clamp Ø100mm

### Stock number JW1053

Dust collector grounding kit

### Stock number 10000339

Automatic start unit 230V

Further dust collection accessories available, see price list.



# **JET**

**DC-900A**

**DUST COLLECTOR**

**10001051MA**

**~230V, 50Hz**

## **PARTS LIST**

**JPW (TOOL) AG**

Tämperlistrasse 5

CH-8117 Fällanden

Switzerland

Phone +41 44 806 47 48

Fax +41 44 806 47 58

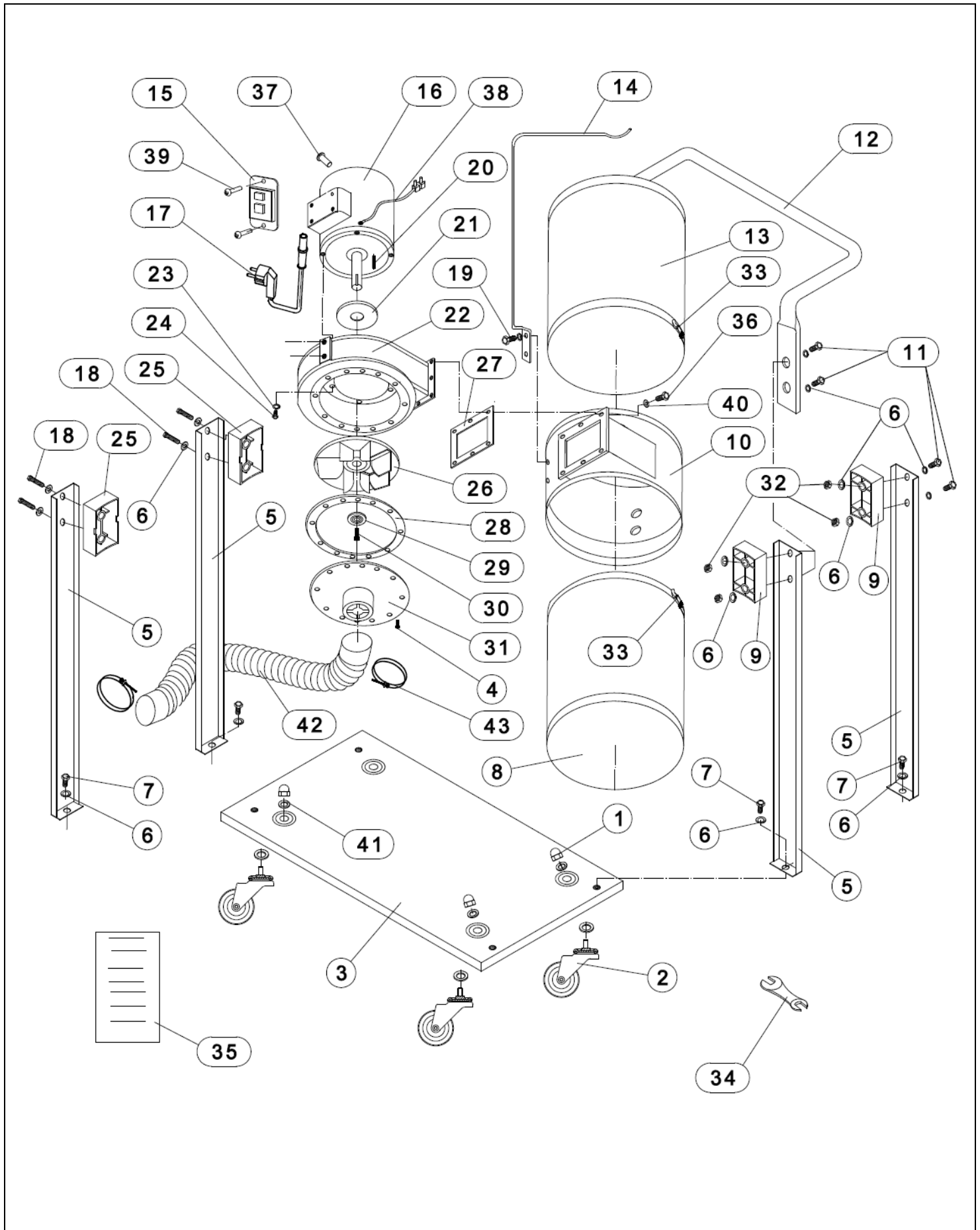
[www.jettools.com](http://www.jettools.com)



P-1000105MA

2015-12

# Parts Breakdown for DC-900A Dust Collector



## Parts List for DC-900A Dust Collector

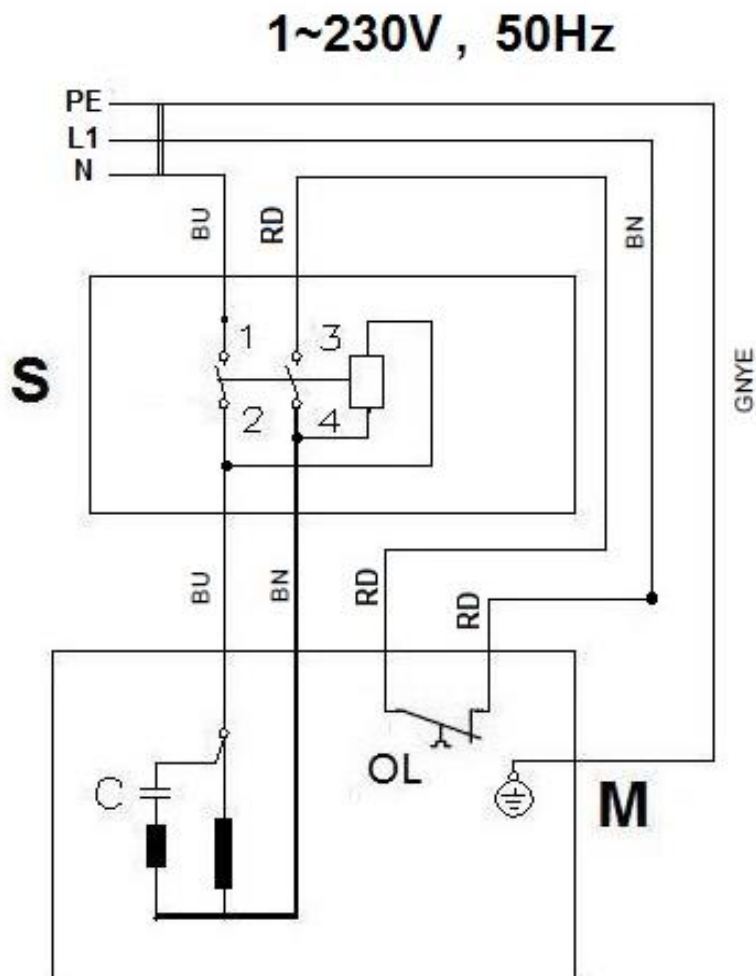
Index No.	Part No.	Description	Size	Qty.
1	DC900A-001	Hex. Cap Nut	M8	4
2	DC900A-002	Caster	2"	4
3	DC900A-003	Base		1
4	DC900A-004	Socket Head Cap Screw	M5x8	12
5	DC900A-005	Collector Support		4
6	DC900A-006	Flat Washer	8	18
7	DC900A-007	Hex. Bolt	M8X10	6
8	DC900A-008	Collection Bag		1
9	DC900A-009	Cushion		2
10	DC900A-010	Collector		1
11	DC900A-011	Hex. Bolt	M8x45	4
12	DC900A-012	Handle		1
13	DC900A-013	Filter Bag		1
14	DC900A-014	Upper bag Support		1
15	DC900A-015	Switch	KJD12-230V	1
16	DC900A-016	Motor Complete Assembly	230V 50Hz 750W	1
	DC900A-016RC	Running Capacitor (not shown)	16µF±5%/450VAC	1
	DC900A-016-A	Junction Box		1
	DC900A-016-B	Junction Box Cover		1
	DC900A-016-C	Motor Fan (not shown)		1
	DC900A-016-D	Motor Cover		1
17	DC900A-017	Power Cord and Clamp		1
18	DC900A-018	Hex. Bolt	M8X25	4
19	DC900A-019	Hex. Bolt	M4X10	2
20	DC900A-020	Key	5x25	1
21	DC900A-021	Packing		1
22	DC900A-022	Fan housing		1
23	DC900A-023	Spring Washer	8	4
24	DC900A-024	Hex. Bolt	M8x16	4
25	DC900A-025	Cushion		2
26	DC900A-026	Impeller		1
27	DC900A-027	Packing		1
28	DC900A-028	Packing		1
29	DC900A-029	Washer		1
30	DC900A-030	Cap Screw (Left)	M6x20(Left)	1
31	DC900A-031	Inlet		1
32	DC900A-032	Nut	M8	4
33	DC900A-033	Bag clamp		2
34	DC900A-034	Wrench	10x8	1
35	DC900A-035	Manual & Part List		1
36	DC900A-036	Hex. Bolt	M6x10	6
37	DC900A-037	Pan Head Machine Screw	M4x10	4
38	DC900A-038	Ground wire		1
39	DC900A-039	Self-Tapping Screw	ST4.2x13	2
40	DC900A-040	Flat Washer	6	6
41	DC900A-041	Flat Washer	8	2
42	DC900A-042	Hose	Ø100x1500mm	1
43	DC900A-043	Hose Clamp	Ø100-115mm	2

# Wiring Diagram for DC-900A Dust Collector

10001051MA ..... ~230V, 50Hz

	colour of strands	Litzenfarben	couleur des cordons
BU	blue	blau	bleu
BN	brown	braun	brun
GNYE	green-yellow	grün-gelb	vert-jaune

	meaning of symbol	Bedeutung der Zeichen	interprétation
M	motor	Motor	moteur
S	switch	Schalter	interrupteur
C	condenser	Kondensator	condensateur



### 13. Test reports with risk analysis

#### Risk Assessment Report according to EN ISO 12100: 2010

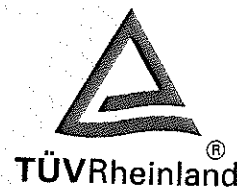
Product:	Dust Collector (DC-230L)
Determination of the limits for use	<ul style="list-style-type: none"> <li>- Domestic and indoor use</li> <li>- Intended to suck wood dust</li> </ul>

Origin related to the hazard	Hazardous event	Standard / method of risk reduction
Shape and / or superficial finishing of accessible parts of the machine	<ul style="list-style-type: none"> <li>- contact with rough surfaces</li> <li>- contact with sharp edges and corners, protruding parts</li> </ul>	Clause 18 of EN 61029-1, all sharp surface rounded.
Moving parts of the machine	<ul style="list-style-type: none"> <li>- contact with moving parts</li> <li>- contact with rotating open ends</li> </ul>	Clause 18 of EN 61029-1, moving parts of none working area are protected by fixed guard, working area is protected by adjustable guard.
Kinetic energy and / or potential energy (gravity) of the machine, parts of the machine, tools and materials used, processed, handled	<ul style="list-style-type: none"> <li>- falling or ejection of objects</li> </ul>	Clause 18 of EN 61029-1, working area is protected by transparent adjustable guard.
Stability of the machine and /or parts of the machine	<ul style="list-style-type: none"> <li>- loss of stability</li> </ul>	Clause 18 of EN 61029-1, this machine must be bolted down to a support.
Mechanical strength of parts of the machine, tools etc.	<ul style="list-style-type: none"> <li>- break up during operation</li> </ul>	Clause 18 of EN 61029-1, saw band is protected by transparent adjustable guard.
Pneumatic, Hydraulic equipment	<ul style="list-style-type: none"> <li>- displacement of moving elements</li> <li>- projection of high pressure fluids</li> <li>- uncontrolled movements</li> </ul>	Not applicable, it is electric motor-operated tool
Electrical	<ul style="list-style-type: none"> <li>- Direct &amp; indirect contact</li> <li>- Disruptive discharge</li> <li>- Electric arc</li> <li>- Fire</li> <li>- Short-circuit</li> </ul>	

Control system	<ul style="list-style-type: none"> <li>- dropping or ejection of a moving part of the machine or of a workpiece clamped by the machine</li> <li>- failure to stop moving parts</li> <li>- machine action resulting from inhibition of protective device</li> <li>- uncontrolled movements (including speed range)</li> <li>- Unintended/unexpected start-up</li> <li>- Other hazardous events due to failure(s) or poor design of the control system</li> </ul>	Requirements of EN 61029-1 are satisfied.
Materials and substances or physical factors (temperature, noise, vibration, radiation and environment)	<ul style="list-style-type: none"> <li>- contact with objects with high or low temperature</li> <li>- emission of a substance that can be hazardous</li> <li>- emission of a level of noise that can be hazardous</li> <li>- emission of a level of noise that can interfere with a speech communication or with acoustic signals</li> <li>- emission of a level of vibration that can be hazardous</li> <li>- emission of radiation fields that can be hazardous</li> <li>- harsh environmental conditions</li> </ul>	Requirements of EN 61029-1 are satisfied.
Workstation and or / or work process design	<ul style="list-style-type: none"> <li>- excessive effort</li> <li>- human errors / misbehaviour</li> <li>- loss of direct visibility of the working area</li> <li>- painful and tiring postures</li> <li>- repetitive handling at high frequency</li> </ul>	Ergonomics principle considered

<b>Manufacturer:</b>	Laizhou Sindy Electronic & Technology Co., LTD
----------------------	--

# C E R T I F I C A T E



of Conformity  
EC Council Directive 2006/42/EC  
Machinery

Registration No.: AM 50273803 0001

Report No.: 17705554 001

Holder: Laizhou Sindy Electronic & Technology  
Co., Ltd.  
Chinashidu Exhibition Centre  
West Road  
Laizhou City, Shandong 261400  
P.R. China

Product: Suction Cleaning Device  
(Dust Collector)

Identification:

Type Designation :	DC230	DC300	DC315
	DC230A-Z	DC300A-Z	DC315A-Z
Serial No. :	140308015	140308017	140308019
	140308016	140308018	140308020

Remark: Refer to test report 17705554 001 for details.

This certificate of conformity is based on an evaluation of a sample of the above mentioned product. This is to certify that the tested sample is in conformity with all provision of Annex I of Council Directive 2006/42/EC, referred to as the Machinery Directive. This certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity. The holder of the certificate is authorized to use this certificate in connection with the EC declaration of conformity according to Annex II of the Directive.

Date 24.06.2014

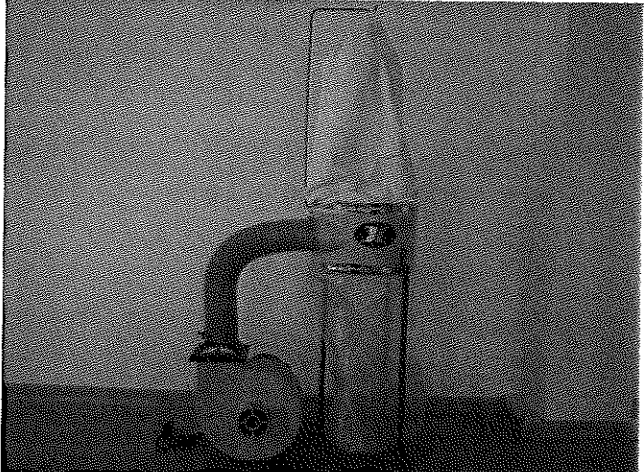

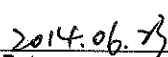


Certification Body

Haojian Dong

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

CE The CE marking may be used if all relevant and effective EC Directives are complied with. CE







<b>Prüfbericht-Nr.:</b> <i>Test Report No.:</i>	17705554 001	<b>Auftrags-Nr.:</b> <i>Order No.:</i>	1150002015		Seite 1 von 110 <i>Page 1 of 110</i>
<b>Kunden-Referenz-Nr.:</b> <i>Client Reference No.:</i>	601141	<b>Auftragsdatum:</b> <i>Order date:</i>	27.12.2013		
<b>Auftraggeber:</b> <i>Client:</i>	Laizhou Sindy Electronic & Technology Co., Ltd. Chinashidu Exhibition Centre, West Road, Laizhou City, Shandong 261400, P.R. China				
<b>Prüfgegenstand:</b> <i>Test item:</i>	Dust Collector				
<b>Bezeichnung / Typ-Nr.:</b> <i>Identification / Type No.:</i>	DC230, DC300, DC315, DC230A-Z, DC300A-Z, DC315A-Z				
<b>Auftrags-Inhalt:</b> <i>Order content:</i>	CE-MD				
<b>Prüfgrundlage:</b> <i>Test specification:</i>	EN 60335-1:2012 EN 60335-2-69:2012, EN 62233:2008, 06/42/EC - Annex I/05.06				
<b>Wareneingangsdatum:</b> <i>Date of receipt:</i>	19.05.2014				
<b>Prüfmuster-Nr.:</b> <i>Test sample No.:</i>	1150002015A001;002;003				
<b>Prüfzeitraum:</b> <i>Testing period:</i>	19.05.2014 – 22.05.2014				
<b>Ort der Prüfung:</b> <i>Place of testing:</i>	TÜV Rheinland / CCIC(Qingdao) Co., Ltd.				
<b>Prüflaboratorium:</b> <i>Testing laboratory:</i>	TÜV Rheinland / CCIC(Qingdao) Co., Ltd.				
<b>Prüfergebnis*:</b> <i>Test result*:</i>	Pass				
<b>geprüft von / tested by:</b>		<b>kontrolliert von / reviewed by:</b>			
 Datum <i>Date</i>	2014.06.16 Name / Stellung <i>Name / Position</i>	Infi He Unterschrift <i>Signature</i>	 Datum <i>Date</i>	2014.06.17 Name / Stellung <i>Name / Position</i>	Guo Lanhui Unterschrift <i>Signature</i>
<b>Sonstiges / Other:</b>					
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b> <i>Condition of the test item at delivery:</i>			Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
* Legende: 1 = sehr gut      2 = gut      3 = befriedigend      4 = ausreichend      5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n)      F(ail) = entspricht nicht o.g. Prüfgrundlage(n)      N/A = nicht anwendbar      N/T = nicht getestet Legend: 1 = very good      2 = good      3 = satisfactory      4 = sufficient      5 = poor P(ass) = passed a.m. test specification(s)      F(ail) = failed a.m. test specification(s)      N/A = not applicable      N/T = not tested					
<b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b> <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>					





<b>TEST REPORT</b> <b>IEC 60335-2-69</b>  <b>Household and similar electrical appliances - Safety</b> <b>Part 2-69: Particular requirements for wet and dry vacuum cleaners,</b> <b>including power brush, for commercial use</b>	
Report Number .....	17705554 001
Date of issue .....	See cover page
Total number of pages .....	See cover page
Applicant's name .....	Laizhou Sindy Electronic & Technology Co., Ltd.
Address .....	Chinashidu Exhibition Centre, West Road, Laizhou City, Shandong 261400, P.R. China
<b>Test specification:</b>	
Standard .....	IEC 60335-2-69:2012 (Fourth Edition) in conjunction with IEC 60335-1:2010 (Fifth Edition)
Test procedure .....	CE-MD
Non-standard test method .....	N/A
Test Report Form No .....	IEC60335_2_69H
Test Report Form(s) Originator .....	OVE
Master TRF .....	Dated 2013-01
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Test item description .....	Dust Collector
Trade Mark .....	N/A
Manufacturer .....	Same with the applicant
Model/Type reference .....	DC230, DC300, DC315, DC230A-Z, DC300A-Z, DC315A-Z
Ratings .....	230V~, 50Hz, other date see marking plate

<b>Testing procedure and testing location:</b>		
<input checked="" type="checkbox"/>	<b>Testing Laboratory:</b>	TÜV Rheinland / CCIC (Qingdao) Co., Ltd.
	<b>Testing location/ address .....</b>	6F, No.2 Bldg., No.175 Zhuzhou Road, Qingdao 266101, P.R. China
<input type="checkbox"/>	<b>Associated CB Laboratory:</b>	
	<b>Testing location/ address .....</b>	
	<b>Tested by (name + signature).....:</b>	
	<b>Approved by (name + signature)....:</b>	
<input type="checkbox"/>	<b>Testing procedure: TMP</b>	
	<b>Testing location/ address .....</b>	
	<b>Tested by (name + signature).....:</b>	
	<b>Approved by (name + signature)....:</b>	
<input type="checkbox"/>	<b>Testing procedure: WMT</b>	
	<b>Testing location/ address .....</b>	
	<b>Tested by (name + signature).....:</b>	
	<b>Witnessed by (name + signature)..:</b>	
	<b>Approved by (name + signature)....:</b>	
<input type="checkbox"/>	<b>Testing procedure: SMT</b>	
	<b>Testing location/ address .....</b>	
	<b>Tested by (name + signature).....:</b>	
	<b>Approved by (name + signature)....:</b>	
	<b>Supervised by (name + signature) :</b>	

<b>List of Attachments (including a total number of pages in each attachment):</b> Attachment 1: Test report of 06/42/EC - Annex I/05.06 – 10 pages. Attachment 2: Measuring instruments and test equipment list – 5 pages;	
<b>Summary of testing:</b>	
<b>Tests performed (name of test and test clause):</b> 1.All tests were performed on model DC315 2. Model DC230 was subjected to test of cl.10, cl.11 and cl.19.7 3.ATEX is not considered in this report.	<b>Testing location:</b> TÜV Rheinland / CCIC (Qingdao) Co., Ltd. 6F, No.2 Bldg., No.175 Zhuzhou Road, Qingdao 266101, P.R. China
<b>Summary of compliance with National Differences</b> N/A	
<b>Copy of marking plate</b> Rating label of DC230A-Z, DC300A-Z and DC315A-Z were the same with model DC230, DC300 and DC315, except model name.	
<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;"><b>DUST COLLECTOR</b></p> <p style="text-align: center;"><b>MODEL: DC230</b>  </p> <p>230V~50Hz 750W 3.5 A 2950min<sup>-1</sup></p> <p>WEIGHT: 27 kg INLET DIAMETER: 100mm</p> <p>FAN DIAMETER: 230mm BAG CAPACITY: 0.057m<sup>3</sup></p> <p>MFG.DATE: <u>Mar.2014</u> SER.NO. <u>140308015</u></p> <p>Laizhou Sindy Electronic &amp; Technology Co., Ltd.                      Chinashidu Exhibition Centre West Road, Laizhou City, Shandong 261400, P.R.China</p> </div>	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;"><b>DUST COLLECTOR</b></p> <p style="text-align: center;"><b>MODEL: DC300</b>  </p> <p>230V~50Hz 2200 W 7.5 A 2950min<sup>-1</sup></p> <p>WEIGHT: 47 kg INLET DIAMETER: 100mm</p> <p>FAN DIAMETER: 305mm BAG CAPACITY: 0.15m<sup>3</sup></p> <p>MFG.DATE: <u>Mar.2014</u> SER.NO. <u>140308017</u></p> <p>Laizhou Sindy Electronic &amp; Technology Co., Ltd.                      Chinashidu Exhibition Centre West Road, Laizhou City, Shandong 261400, P.R.China</p> </div>
<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;"><b>DUST COLLECTOR</b></p> <p style="text-align: center;"><b>MODEL: DC315</b>  </p> <p>230V~50Hz 2200 W 7.5 A 2950min<sup>-1</sup></p> <p>WEIGHT: 59 kg INLET DIAMETER: 100mm</p> <p>FAN DIAMETER: 305mm BAG CAPACITY: 0.31m<sup>3</sup></p> <p>MFG.DATE: <u>Mar.2014</u> SER.NO. <u>140308019</u></p> <p>Laizhou Sindy Electronic &amp; Technology Co., Ltd.                      Chinashidu Exhibition Centre West Road, Laizhou City, Shandong 261400, P.R.China</p> </div>	

<b>Test item particulars</b> .....	
<b>Classification of installation and use</b> .....	Stationary appliance
<b>Supply Connection</b> .....	Supply cord with plug
.....	
<b>Possible test case verdicts:</b>	
- 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)
<b>Testing</b> .....	
<b>Date of receipt of test item</b> .....	2014-05-19
<b>Date (s) of performance of tests</b> .....	2014-05-19 to 2014-05-22
<b>General remarks:</b>	
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 <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.	
<b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC60335-2-69:</b>	
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 .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies)</b> .....	Same with the client

**General product information:**

1. Appliances are ordinary dust collector that shall be connected with wood processing machine for normal operation. It is intended to extract chippings and dust arising from the processing of wood or wood-type materials, and not suitable for the collection of dangerous dust.
2. Model DC315 is comprised by one electromagnetic switch, one motor, one current circuit breaker, one running capacitor, one hose and two dust bags.
3. Model DC300 has the same electrical component with model DC315, except the appearance and DC315 has two dust bags.
4. Model DC230 has almost the same electrical component with DC300, except DC230 has different fan motor, capacitor and current circuit breaker.
5. DC230A-Z, DC300A-Z and DC315A-Z were the same with model DC230, DC300 and DC315, except model name.
6. Refer to below table A and photo documentation for details.

Table A

model	input power	voltage	current	weight	inlet diameter	fan diameter	bag capacity	Overall size (LWH)(MM)
DC230, DC230A-Z	750W	230V~, 50Hz	3,5A	27kg	100	230mm	0,057	730x400x1550
DC300, DC300A-Z	2200W	230V~, 50Hz	7,5A	47kg	100	305mm	0,15	850x560x1860
DC315, DC315A-Z	2200W	230V~, 50Hz	7,5A	59kg	100	305mm	0,31	1460x720x2160

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict
<b>5</b>	<b>GENERAL CONDITIONS FOR THE TESTS</b>		
	Tests performed according to clause 5, e.g. nature of supply, sequence of testing, etc.		P
5.101	The test solution is stored in a cool atmosphere and used within seven days after its preparation. (IEC60335-2-69:2012)		N/A
<b>6</b>	<b>CLASSIFICATION</b>		
6.1	Protection against electric shock: Class I, II or III .....: IEC60335-2-69:2012)	Class I appliance	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)		N/A
<b>7</b>	<b>MARKING AND INSTRUCTIONS</b>		
7.1	Rated voltage or voltage range (V).....:	230V	P
	Symbol for nature of supply, or.....:	~	P
	Rated frequency (Hz) .....	50 Hz	P
	Rated power input (W), or .....	See rating label	P
	Rated current (A) .....	See rating label	P
	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 .....		N/A
	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	For dry use only	N/A
	Machines marked also with:		
	– serial number, if any (IEC60335-2-69:2012)		P
	– 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)		P

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Clause	Requirement - Test	Result - Remark	Verdict
	– the year of construction, i.e. the year in which the manufacturing process is completed (IEC60335-2-69:2012)	Involved in serial No.	P
	– Machines are marked with the mass of the most usual configuration in kg (IEC60335-2-69:2012)	27kg for DC230, DC230A-Z; 47kg for DC300, DC300A-Z; 59kg for DC315, DC315A-Z;	P
7.1.101	Motorized cleaning heads marked with: (IEC60335-2-69:2012)		
	– 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)		N/A
7.2	Warning for stationary appliances for multiple supply		N/A
	Warning placed in vicinity of terminal cover		N/A
7.3	Range of rated values marked with the lower and upper limits separated by a hyphen		N/A
	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
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		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	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:		
	- 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 .....		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	"0" used for OFF position	P
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		P
7.11	Indication for direction of adjustment of controls		N/A
7.12	Instructions for safe use provided		P
	Details concerning precautions during user maintenance		P
	The instructions state that:		



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Clause	Requirement - Test	Result - Remark	Verdict
	- 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)		
	– 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
	– 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

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Clause	Requirement - Test	Result - Remark	Verdict
	– 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:		
	– 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)		P
	– 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)		N/A
	– 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
	– the intended use of the brushes specified for the machine (IEC60335-2-69:2012)	No brush	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)		

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Clause	Requirement - Test	Result - Remark	Verdict
	– WARNING Operators shall be adequately instructed on the use of these machines (IEC60335-2-69:2012)	Mentioned in UM	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)		P
	– CAUTION This machine is for indoor use only (IEC60335-2-769:2012)		P
	– CAUTION This machine shall be stored indoors only (IEC60335-2-69:2012)		P
	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)		
	– WARNING Do not allow the supply cord to come into contact with the rotating brushes (IEC60335-2-69:2012)		P
	– 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)		
	– WARNING If foam or liquid escapes from the machine, switch off immediately (IEC60335-2-69:2012)	For dry use only	N/A
	– CAUTION Clean the water level limiting device regularly and examine it for signs of damage (IEC60335-2-69:2012)		N/A
	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

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Clause	Requirement - Test	Result - Remark	Verdict
7.12.102	Information on noise (IEC60335-2-69:2012)	Mentioned in UM	P
7.12.103	Information on vibration (IEC60335-2-69:2012)		N/A
7.12.1	Sufficient details for installation supplied		P
	For an appliance intended to be permanently connected to the water mains and not connected by a hose-set, this is stated		N/A
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:		
	- 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
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:		
	- max. inlet water pressure (Pa) .....		N/A
	- min. inlet water pressure, if necessary (Pa).....		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Instructions concerning new and old hose-sets for appliances connected to the water mains by detachable hose-sets		N/A
7.13	Instructions and other texts in an official language	English version	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		N/A
	For stationary appliances, name, trademark or identification mark and model or type reference visible after installation		P
	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
<b>8</b>	<b>PROTECTION AGAINST ACCESS TO LIVE PARTS</b>		
8.1	Adequate protection against accidental contact with live parts		P
	Water and water-borne cleaning agents are considered conductive (IEC60335-2-69:2012)		N/A
8.1.1	Requirement applies for all positions, detachable parts removed		P
	Lamps behind a detachable cover not removed, if conditions met	No lamp used	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

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Clause	Requirement - Test	Result - Remark	Verdict
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		P
	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating: no contact with live parts		P
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:		
	- 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:		
	- built-in appliances		N/A
	- fixed appliances		N/A
	- appliances delivered in separate units		N/A
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		P
	Only possible to touch parts separated from live parts by double or reinforced insulation		P
9	<b>STARTING OF MOTOR-OPERATED APPLIANCES</b>		
	This clause of Part 1 is not applicable (IEC60335-2-69:2012)		
10	<b>POWER INPUT AND CURRENT</b>		

IEC 60335-2-69			
Clause	Requirement - Test	Result - Remark	Verdict
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		N/A
10.2	Current at normal operating temperature, rated voltage and normal operation not deviating from rated current by more than shown in table 2.....:	(see appended table)	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 current is related to the arithmetic mean value of the range		N/A
<b>11</b>	<b>HEATING</b>		
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	The motor was tested by resistance method.	P
	the windings are non-uniform or it is difficult to make the necessary connections		N/A
	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)		
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V).....:	1,06Un was the most unfavourable voltage	P
	<i>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)</i>	No moving brush	N/A
11.6	Not applicable (IEC60335-2-69:2012)		
11.7	Operation duration corresponding to the most unfavourable conditions of normal use		P

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Clause	Requirement - Test	Result - Remark	Verdict
	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		P
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4		N/A
<b>13</b>	<b>LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE</b>		
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) .....		P
	Protective impedance and radio interference filters disconnected before carrying out the tests		N/A
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)	Only one motor	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
<b>14</b>	<b>TRANSIENT OVERVOLTAGES</b>		
	Appliances withstand the transient over-voltages to which they may be subjected		N/A



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

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Clause	Requirement - Test	Result - Remark	Verdict
	Appliances normally fixed to a ceiling are mounted underneath a horizontal unperforated support, the pivot axis of the oscillating tube located at the level of the underside of the support, and		N/A
	for IPX4 appliances, the movement of the tube is limited to two times 90° from the vertical for a period of 5 min		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Detachable parts subjected to the relevant treatment with the main part		N/A
	However, if a part has to be removed for user maintenance and a tool is needed, this part is not removed		N/A
	<i>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)</i>		N/A
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)	So such part	N/A
	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)		N/A
	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)		N/A
	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

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Clause	Requirement - Test	Result - Remark	Verdict
	Machine withstands the electric strength test of 16.3 (IEC60335-2-69:2012)		N/A
	No trace of liquid on insulation that reduces the creepage distances and clearances below the values specified in clause 29 (IEC60335-2-69:2012)		N/A
15.3	Appliances proof against humid conditions		P
	Checked by test Cab: Damp heat steady state in IEC 60068-2-78		P
	Detachable parts removed and subjected, if necessary, to the humidity test with the main part		P
	Humidity test for 48 h in a humidity cabinet The relative humidity shall have $(93 \pm 6) \%$ (IEC60335-2-69:2012)	RH. 93%	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)	No motorized cleaning head	N/A
<b>16</b>	<b>LEAKAGE CURRENT AND ELECTRIC STRENGTH</b>		
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 $\sqrt{3}$ (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

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Clause	Requirement - Test	Result - Remark	Verdict
	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)	No current-carrying hose	N/A
	No breakdown during the tests		P
<b>17</b>	<b>OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS</b>		
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use .....	No transformer used	N/A
	Appliance supplied with 1.06 or 0.94 times rated voltage under the most unfavourable short-circuit or overload likely to occur in normal use (V) .....		N/A
	Basic insulation is not short-circuited		N/A
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K		N/A
	Temperature of the winding not exceeding the value specified in table 8		N/A
	However, limits do not apply to fail-safe transformers complying with sub-clause 15.5 of IEC 61558-1		N/A
<b>18</b>	<b>ENDURANCE</b>		
	This clause of Part 1 is not applicable (IEC60335-2-69:2012)		
<b>19</b>	<b>ABNORMAL OPERATION</b>		
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 .....		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	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		N/A
	Appliances incorporating contactors or relays subjected to the test of 19.14, being carried out before the tests of 19.11		N/A
	Appliances incorporating voltage selector switches subjected to the test of 19.15		N/A
	Unless otherwise specified, the tests are continued until a non-self-resetting thermal cut-out operates, or		N/A
	until steady conditions are established		P
	If a heating element or intentionally weak part becomes open-circuited, the relevant test is repeated on a second sample		N/A
	<i>Machines are also subjected to the test of 19.101 (IEC60335-2-69:2012)</i>	No liquid container used	N/A
	<i>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)</i>	No motorized cleaning head	P
	<i>Dust extractors are also subjected to the tests of 19.102, and 19.103 if applicable (IEC60335-2-69:2012)</i>	Attended use	N/A
	<i>Centrally-sited vacuum cleaners are also subjected to the tests of 19.104, and 19.105 if applicable (IEC60335-2-69:2012)</i>		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) .....: (IEC60335-2-69:2012)		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
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
	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		P
	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		P
	Test repeated with capacitors short-circuited one at a time, unless		N/A
	capacitor is of class P2 of IEC 60252-1		P
	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 .....		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Winding temperatures not exceeding values specified in table 8.....:	(see appended table)	P
19.8	Multi-phase motors operated at rated voltage with one phase disconnected		N/A
19.9	Not applicable (IEC60335-2-69:2012)		
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		N/A
	During the test, parts not being ejected from the appliance		N/A
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless		N/A
	they comply with the conditions specified in 19.11.1		N/A
	Appliances incorporating an electronic circuit that relies upon a programmable component to function correctly, subjected to the test of 19.11.4.8, unless		N/A
	restarting does not result in a hazard		N/A
	Appliances having a device with an off position obtained by electronic disconnection, or a device placing the appliance in a stand-by mode, subjected to the tests of 19.11.4		N/A
	If the safety of the appliance under any of the fault conditions depends on the operation of a miniature fuse-link complying with IEC 60127, the test of 19.12 is carried out		N/A
	During and after each test the following has to be checked:		
	- 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:		
	- 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

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Clause	Requirement - Test	Result - Remark	Verdict
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:		
	- 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:		
	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



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Clause	Requirement - Test	Result - Remark	Verdict
	Appliances incorporating a protective electronic circuit subjected to the tests of 19.11.4.1 to 19.11.4.7, the tests being carried out after the protective electronic circuit has operated, except that		N/A
	appliances operated for 30 s or 5 min during the test of 19.7 are not subjected to the tests for electromagnetic phenomena.		N/A
	Surge protective devices disconnected, unless		N/A
	They incorporate spark gaps		N/A
19.11.4.1	The appliance is subjected to electrostatic discharges in accordance with IEC 61000-4-2, test level 4		N/A
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, 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

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Clause	Requirement - Test	Result - Remark	Verdict
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
	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:		
	- basic insulation (V) .....		P
	- supplementary insulation (V) .....		N/A
	- reinforced insulation (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:		
	- 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:		
	- 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

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Clause	Requirement - Test	Result - Remark	Verdict
19.14	Appliances operated under the conditions of clause 11, any contactor or relay contact operating under the conditions of clause 11 being short-circuited		N/A
	For a relay or contactor with more than one contact, all contacts are short-circuited at the same time		N/A
	A relay or contactor operating only to ensure the appliance is energized for normal use is not short-circuited		N/A
	If more than one relay or contactor operates in clause 11, they are short-circuited in turn		N/A
19.15	For appliances with a mains voltage selector switch, the switch is set to the lowest rated voltage position and the highest value of rated voltage is applied		N/A
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)	No liquid container	N/A
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)	Attended use	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)	Attended use	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	<b>STABILITY AND MECHANICAL HAZARDS</b>		
20.1	Appliances have adequate stability Motorized cleaning heads are not subjected to this test (IEC60335-2-69:2012)		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	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°	No heating elements	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)		
	Moving parts adequately arranged or enclosed as to provide protection against personal injury	Inlet and outlet are all guarded.	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		P
	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)	Wheels is far from the user during transportation, so the injury is impossible.	P
21	<b>MECHANICAL STRENGTH</b>		
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

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Clause	Requirement - Test	Result - Remark	Verdict
	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)	The enclosures, the switch box and switch button were tested by energy 1,0 J ± 0,04 J	P
	The appliance shows no damage impairing compliance with this standard, and		P
	compliance with 8.1, 15.1 and clause 29 not impaired		P
	If doubt, supplementary or reinforced insulation subjected to the electric strength test of 16.3		N/A
	If necessary, repetition of groups of three blows on a new sample		N/A
21.2	Accessible parts of solid insulation having strength to prevent penetration by sharp implements		P
	Test not applicable if the thickness of supplementary insulation is at least 1 mm and reinforced insulation at least 2 mm	Thickness of plastic enclosure or cover is 3,0mm.	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)	No current-carrying hose	N/A
21.103	Current-carrying hoses are resistant to abrasion (test as specified) (IEC60335-2-69:2012)	No current-carrying hose	N/A
21.104	Current-carrying hoses are resistant to flexing (test as specified) (IEC60335-2-69:2012)	No current-carrying hose	N/A
21.105	Current-carrying hoses are resistant to torsion (test as specified) (IEC60335-2-69:2012)	No current-carrying hose	N/A
21.106	Current-carrying hoses are resistant to cold conditions (test as specified) (IEC60335-2-69:2012)	No current-carrying hose	N/A
22	<b>CONSTRUCTION</b>		
22.1	Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled	IPX0	N/A
22.2	Stationary appliance: means to ensure all-pole disconnection from the supply being provided:		

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Clause	Requirement - Test	Result - Remark	Verdict
	- a supply cord fitted with a plug, or		P
	- 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
	Single-pole switches and single-pole protective devices for the disconnection of heating elements in single-phase, permanently connected class 01 and class I appliances, connected to the phase conductor		N/A
22.3	Appliance provided with pins: no undue strain on socket-outlets		N/A
	Applied torque not exceeding 0.25 Nm		N/A
	Pull force of 50N to each pin after the appliance has been 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):	0V	P
22.6	Electrical insulation not affected by condensing water or leaking liquid		N/A
	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)		N/A
22.7	Adequate safeguards against the risk of excessive pressure in appliances containing liquid or gases or having steam-producing devices		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
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	No wiring accessible by the operator during cleaning	P
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances, unless	No such substances	P
	the substance has adequate insulating properties		N/A
22.10	Not possible to reset voltage-maintained non-self-resetting thermal cut-outs by the operation of an automatic switching device incorporated within the appliance, if:	No such part	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		N/A
	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing		N/A
	Tests as described	Switch and switch box were tested by 50N, 4Nm	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	Switch button was tested	P
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied		N/A
22.13	Unlikely that handles, when gripped as in normal use, make the operator's hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only		P

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Clause	Requirement - Test	Result - Remark	Verdict
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance	Well rounded	P
	No exposed pointed ends of self-tapping screws or other fasteners, likely to be touched by the user in normal use or during user maintenance		P
22.15	Storage hooks and the like for flexible cords smooth and well rounded		N/A
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands and no undue wear of contacts		N/A
	Cord reel tested with 6000 operations, as specified		N/A
	Electric strength test of 16.3, voltage of 1000 V applied		N/A
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner		N/A
22.18	Current-carrying parts and other metal parts resistant to corrosion		P
22.19	Driving belts not relied upon to provide the required level of insulation, unless		N/A
	constructed to prevent inappropriate replacement		N/A
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless		N/A
	material used is non-corrosive, non-hygroscopic and non-combustible		N/A
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless		P
	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	No such material	P
22.23	Oils containing polychlorinated biphenyl (PCB) not used	No such material	P
22.24	Bare heating elements, except in class III appliances or class III constructions that do not contain live parts, adequately supported	No heating element	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		N/A
	Electrodes not used for heating liquids		N/A
	For class II constructions, conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthed accessible metal parts, not in direct contact with basic or reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	For class II constructions, conductive liquids which are in contact with live parts, not in direct contact with reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	An air layer not used as basic or supplementary insulation in a double insulation system if likely to be bridged by leaking liquid		N/A
22.34	Shafts of operating knobs, handles, levers etc. not live, unless		N/A
	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		P
	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)		N/A
	If this insulation does not meet the requirement of 29.3 – impact test as specified (IEC60335-2-69:2012)		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	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	No lamp holder	N/A
22.40	Motor-operated appliances and combined appliances intended to be moved while in operation, or having accessible moving parts, fitted with a switch to control the motor. The actuating member of the switch being easily visible and accessible		N/A
	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	No such material used	N/A
22.42	Protective impedance consisting of at least two separate components	No protective impedance used	N/A
	Values specified in 8.1.4 not exceeded if any one of the components are short-circuited or open-circuited		N/A
	Resistors checked by the test of 14.1 a) in IEC 60065		N/A
	Capacitors checked by the tests for class Y capacitors in IEC 60384-14		N/A
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur		N/A
22.44	Appliances not having an enclosure that is shaped or decorated like a toy		P

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Clause	Requirement - Test	Result - Remark	Verdict
22.45	When air is used as reinforced insulation, clearances not reduced below the values specified in 29.1.3 due to deformation as a result of an external force applied to the enclosure		P
22.46	For programmable protective electronic circuits used to ensure compliance with the standard, the software contains measures to control the fault/error conditions in table R.1	No such component used	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:		
	- continuously, or		N/A
	- automatically, or		N/A
	- remotely		N/A
22.52	Socket-outlets on appliances accessible to the user in accordance with the socket-outlet system used in the country in which the appliance is sold		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
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)		N/A
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)	Plug used	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)		
	– plug and socket-outlets (IEC60335-2-69:2012)	plug	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)	Ear-muff and breathing mask required in user manual	P
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)		N/A
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)		
	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

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Clause	Requirement - Test	Result - Remark	Verdict
	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)		
	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
<b>23</b>	<b>INTERNAL WIRING</b>		
23.1	Wireways smooth and free from sharp edges		P
	Wires protected against contact with burrs, cooling fins etc.		P
	Wire holes in metal well-rounded or provided with bushings		P
	Wiring effectively prevented from coming into contact with moving parts		P
23.2	Beads etc. on live wires cannot change their position, and are not resting on sharp edges	No such component	N/A
	Beads inside flexible metal conduits contained within an insulating sleeve		N/A
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress		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

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Clause	Requirement - Test	Result - Remark	Verdict
	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	No such construction	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		N/A
	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		N/A
	be such that it can only be removed by breaking or cutting		N/A
23.7	The colour combination green/yellow only used for earthing conductors		P
23.8	Aluminium wires not used for internal wiring	No such component	N/A
23.9	Stranded conductors not consolidated by soldering where they are subjected to contact pressure, unless		N/A
	the contact pressure is provided by spring terminals		N/A
23.10	The insulation and sheath of internal wiring, incorporated in external hoses for the connection of an appliance to the water mains, at least equivalent to that of light polyvinyl chloride sheathed flexible cord (60227 IEC 52)		N/A
24	<b>COMPONENTS</b>		
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components .....	(see appended table)	P

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Clause	Requirement - Test	Result - Remark	Verdict
	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	No such component	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	No such component	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 capacitor used	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	Approved switch used	P
	If they have to be tested, they are tested according to Annex H		N/A
	If the switch operates a relay or contactor, the complete switching system is subjected to the test		N/A
	If the switch only operates a motor starting 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)		P



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Clause	Requirement - Test	Result - Remark	Verdict
24.1.4	Automatic controls complying with IEC 60730-1 with the relevant part 2. The number of cycles of operation being at least:		
	- 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	Current Circuit breaker used.	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	No coupler used	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
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		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	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:		
	- switches or automatic controls in flexible cords		P
	- devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance		P
	- thermal cut-outs that can be reset by soldering, unless		N/A
	the solder has a melting 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		P
	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		P
	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	Max. measured voltage is 397,5V < 495V.	P
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

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Clause	Requirement - Test	Result - Remark	Verdict
	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		P
	One or more of the following conditions are to be met:		
	- the capacitors are of class P2 according to IEC 60252-1	Approved P2 capacitor used	P
	- 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
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	<b>SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS</b>		
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		
	- supply cord fitted with a plug,		P
	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance, 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 <b>tool</b> and have the same classification as the machine when coupled (IEC60335-2-69:2012)		N/A
	Machines provided with an appliance inlet are also provided with an appropriate cord set (IEC60335-2-69:2012)		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
25.2	Appliance not provided with more than one means of connection to the supply mains		N/A
	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:		
	- 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
	- 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:		
	- 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

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Clause	Requirement - Test	Result - Remark	Verdict
	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)	
	- Rubber sheathed (at least 60245 IEC 53)		N/A
	- 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)	H05VV-F	P
	- 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 (mm <sup>2</sup> ).....:	3G1,0 mm <sup>2</sup>	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		P
25.13	Inlet openings so constructed as to prevent damage to the supply cord	Cable gland used	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

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Clause	Requirement - Test	Result - Remark	Verdict
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:		
	- short-circuit between the conductors, such that the current exceeds a value of twice the rated current		N/A
	- breakage of more than 10% of the strands of any conductor		N/A
	- separation of the conductor from its terminal		N/A
	- loosening of any cord guard		N/A
	- damage to the cord or the cord guard		N/A
	- broken strands piercing the insulation and becoming accessible		N/A
25.15	For appliances with supply cord and appliances to be permanently connected to fixed wiring by a flexible cord, conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorage		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)	125N, 0,4Nm applied to the sample	P
	Cord not damaged and max. 2 mm displacement of the cord	No displacement	P
25.16	Cord anchorages for type X attachments constructed and located so that:		
	- replacement of the cord is easily possible	Type Y attachment	N/A
	- it is clear how the relief from strain and the prevention of twisting are obtained		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	- 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
	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	Type Y attachment	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		P

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Clause	Requirement - Test	Result - Remark	Verdict
25.21	Space for supply cord for type X attachment or for connection of fixed wiring constructed:		
	- to permit checking of conductors with respect to correct positioning and connection before fitting any cover	Type Y attachment	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
	2 N test to the conductor for portable appliances; no contact with accessible metal parts		N/A
25.22	Appliance inlets:		
	- 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	<b>TERMINALS FOR EXTERNAL CONDUCTORS</b>		



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Clause	Requirement - Test	Result - Remark	Verdict
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
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	Type Y attachment	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	Type Y attachment	N/A
	Terminals fixed so that when the clamping means is tightened or loosened:		
	- 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

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Clause	Requirement - Test	Result - Remark	Verdict
26.4	Terminals for type X attachment, except those having a specially prepared cord and those for the connection of cables of fixed wiring, no special preparation of conductors such as by soldering, use of cable lugs, eyelets or similar, and		N/A
	so constructed or placed that conductors prevented from slipping out when clamping screws or nuts are tightened		N/A
26.5	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection to other parts that result in a hazard		N/A
	Stranded conductor test, 8 mm insulation removed		N/A
	No contact between live parts and accessible metal parts and,		N/A
	for class II constructions, between live parts and metal parts separated from accessible metal parts by supplementary insulation only		N/A
26.6	Terminals for type X attachment and for connection of cables of fixed wiring suitable for connection of conductors with cross-sectional area according to table 13; rated current (A); nominal cross-sectional area (mm <sup>2</sup> ).....:		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		P
	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

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Clause	Requirement - Test	Result - Remark	Verdict
	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
<b>27</b>	<b>PROVISION FOR EARTHING</b>		
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		N/A
	Earthing terminals and earthing contacts not connected to the neutral terminal		P
	Class 0, II and III appliances have no provision for earthing		N/A
	Safety extra-low voltage circuits not earthed, unless		N/A
	protective extra-low voltage circuits		N/A
27.2	Clamping means of earthing terminals adequately secured against accidental loosening	A spring washer used	P
	Terminals for the connection of external equipotential bonding conductors allow connection of conductors of 2.5 to 6 mm <sup>2</sup> , 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		P
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		P

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Clause	Requirement - Test	Result - Remark	Verdict
	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
	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 $\Omega$ at the specified low-resistance test ( $\Omega$ ).....:	0,052 $\Omega$ measured between the metal enclosure of motor and earthing terminal.	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
<b>28</b>	<b>SCREWS AND CONNECTIONS</b>		
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	No such part	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		P
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		N/A
	For type X attachment, screws to be removed for replacement of supply cord or for user maintenance, not of insulating material if their replacement by a metal screw impairs basic insulation		N/A
	For screws and nuts; torque-test as specified in table 14.....:	(see appended table)	P

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Clause	Requirement - Test	Result - Remark	Verdict
28.2	Electrical connections and connections providing earthing continuity constructed so that contact pressure is not transmitted through non-ceramic insulating material liable to shrink or distort, unless		P
	there is resiliency in the metallic parts to compensate for shrinkage or distortion of the insulating material		N/A
	This requirement does not apply to electrical connections in circuits of appliances for which:		
	<ul style="list-style-type: none"> <li>30.2.2 is applicable and that carry a current not exceeding 0,5 A</li> </ul>		N/A
	<ul style="list-style-type: none"> <li>30.2.3 is applicable and that carry a current not exceeding 0,2 A</li> </ul>		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	Thread-cutting screws only used to fix the switch box.	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:		
	- in normal use,		N/A
	- during user maintenance,		N/A
	- when replacing a supply cord having a type X attachment, or		N/A
	- during installation		N/A
	At least two screws being used for each connection providing earthing continuity, unless		N/A
	the screw forms a thread having a length of at least half the diameter of the screw		N/A
28.4	Screws and nuts that make mechanical connection secured against loosening if they also make electrical connections or connections providing earthing continuity		N/A
	This requirement does not apply to screws in the earthing circuit if at least two screws are used, or		P
	if an alternative earthing circuit is provided		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Rivets for electrical connections or connections providing earthing continuity secured against loosening if the connections are subjected to torsion		N/A
<b>29</b>	<b>CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION</b>		
	Clearances, creepage distances and solid insulation withstand electrical stress		P
	For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation (Type 2), Annex J applies .....		N/A
	The microenvironment is pollution degree 1 under type 1 protection		N/A
	For type 2 protection, the spacing between the conductors before the protection is applied is not less than the values specified in Table 1 of IEC 60664-3		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		N/A
	However, if the distances are affected by wear, distortion, movement of the parts or during assembly, the clearances for rated impulse voltages of 1500V and above are increased by 0,5 mm and the impulse voltage test is not applicable		N/A
	Impulse voltage test is not applicable:		
	- when the microenvironment is pollution degree 3, or	Subject to motor	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

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Clause	Requirement - Test	Result - Remark	Verdict
	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
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		P
29.1.4	Clearances for functional insulation are the largest values determined from:		
	- 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	Subject to motor	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:		
	- table 16 based on the rated impulse voltage .....		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

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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 or Clause 4 of IEC 60664-4, the clearances of supplementary insulation are not less than those specified for basic insulation		N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1, the clearances of reinforced insulation dimensioned as specified in Table F.7a are to withstand 160% of the withstand voltage required for basic insulation		N/A
	If clearances for basic insulation are selected from Clause 4 of IEC 60664-4, the clearances of reinforced insulation are twice the value required for basic insulation		N/A
	If the secondary winding of a step-down transformer is earthed, or if there is an earthed screen between the primary and secondary windings, clearances of basic insulation on the secondary side not less than those specified in table 16, but using the next lower step for rated impulse voltage		N/A
	Circuits supplied with a voltage lower than rated voltage, clearances of functional insulation are based on the working voltage used as the rated voltage in table 15		N/A
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree .....	(see appended table)	P
	Pollution degree 2 applies, unless		P
	- precautions taken to protect the insulation; pollution degree 1		N/A
	- insulation subjected to conductive pollution; pollution degree 3	Subject to motor	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



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Clause	Requirement - Test	Result - Remark	Verdict
	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
	Except for pollution degree 1, corresponding creepage distance not less than the minimum specified for the clearance in table 16, if the clearance has been checked according to the test of clause 14.....:		N/A
29.2.2	Creepage distances of supplementary insulation at least those specified for basic insulation in table 17, or .....	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable .....		N/A
29.2.3	Creepage distances of reinforced insulation at least double those specified for basic insulation in table 17, or .....	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable .....		N/A
29.2.4	Creepage distances of functional insulation not less than specified in table 18.....:	(see appended table)	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:		
	- 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		N/A
	- as specified in subclause 6.3 of IEC 60664-4 for insulation that is subjected to any periodic voltage having a frequency exceeding 30 kHz		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
29.3.1	Supplementary insulation have a thickness of at least 1 mm	The thickness of the plastic enclosure or cover is 3,0mm	P
	Reinforced insulation have a thickness of at least 2 mm		P
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		N/A
	Supplementary insulation consist of at least 2 layers		N/A
	Reinforced insulation consist of at least 3 layers		N/A
29.3.3	The insulation is subjected to the dry heat test Bb of IEC 60068-2-2, followed by		N/A
	the electric strength test of 16.3		N/A
	If the temperature rise during the tests of clause 19 does not exceed the value specified in table 3, the test of IEC 60068-2-2 is not carried out		N/A
29.3.4	Thickness of accessible parts of reinforced insulation consisting of a single layer not less than specified in table 19.....:		N/A
<b>30</b>	<b>RESISTANCE TO HEAT AND FIRE</b>		
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:		

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Clause	Requirement - Test	Result - Remark	Verdict
	- parts having a mass not exceeding 0,5 g, provided the cumulative effect is unlikely to propagate flames that originate inside the appliance by propagating flames from one part to another, or		N/A
	- decorative trims, knobs and other parts unlikely to be ignited or to propagate flames that originate inside the appliance		P
	Compliance checked by the test of 30.2.1, and in addition:		P
	- for attended appliances, 30.2.2 applies		P
	- for unattended appliances, 30.2.3 applies		N/A
	For appliances for remote operation, 30.2.3 applies		N/A
	For base material of printed circuit boards, 30.2.4 applies		N/A
	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:		
	- 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

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Clause	Requirement - Test	Result - Remark	Verdict
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		
	- 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		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		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:		
	- 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:		

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Clause	Requirement - Test	Result - Remark	Verdict
	- a glow-wire ignition temperature according to IEC 60695-2-13 of at least:		N/A
	<ul style="list-style-type: none"> <li>775 °C, for connections carrying a current exceeding 0,2 A during normal operation</li> </ul>		N/A
	<ul style="list-style-type: none"> <li>675 °C, for other connections</li> </ul>		N/A
	- a glow-wire flammability index according to IEC 60695-2-12 of at least:		N/A
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		N/A
	- comprise material having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- comprise material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of Annex E, or		N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
	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:		
	- 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:		
	- parts having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	- parts comprising material classified as V-0 or V-1 according to IEC 60695-11-10, or		N/A
	- parts shielded by a flame barrier that meets the needle-flame test of Annex E or that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
30.2.4	Base material of printed circuit boards subjected to the needle-flame test of Annex E		N/A
	Test not applicable to conditions as specified .....		N/A
<b>31</b>	<b>RESISTANCE TO RUSTING</b>		
	Relevant ferrous parts adequately protected against rusting		P
<b>32</b>	<b>RADIATION, TOXICITY AND SIMILAR HAZARDS</b>		
	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)	Not intended to pick up hazardous dust	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)	Not intended to pick up combustible dust	N/A
	For machines intended to pick up dust in ESD protected areas, additional requirements are specified in Annex DD (IEC60335-2-69:2012)	Not intended to pick up dust in ESD protected areas.	N/A
<b>A</b>	<b>ANNEX A (NORMATIVE) ROUTINE TESTS</b>		
	Description of routine tests to be carried out by the manufacturer		
<b>B</b>	<b>ANNEX B (NORMATIVE) APPLIANCES POWERED BY RECHARGEABLE BATTERIES</b>		
	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:		
	- 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
<b>C</b>	<b>ANNEX C (NORMATIVE) AGEING TEST ON MOTORS</b>		
	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
<b>D</b>	<b>ANNEX D (NORMATIVE) THERMAL MOTOR PROTECTORS</b>		
	Applicable to appliances having motors that incorporate thermal motor protectors necessary for compliance with the standard		N/A
	Test conditions as specified		N/A
<b>E</b>	<b>ANNEX E (NORMATIVE) NEEDLE-FLAME TEST</b>		
	Needle-flame test carried out in accordance with IEC 60695-11-5, with the following modifications:		N/A



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Clause	Requirement - Test	Result - Remark	Verdict
7	Severities		
	The duration of application of the test flame is 30 s ± 1 s		N/A
9	Test procedure		
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		N/A
9.2	The first paragraph does not apply		N/A
	If possible, the flame is applied at least 10 mm from a corner		N/A
9.3	The test is carried out on one specimen		N/A
	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		N/A
	The duration of burning not exceeding 30 s		N/A
	However, for printed circuit boards, the duration of burning not exceeding 15 s		N/A
<b>F</b>	<b>ANNEX F (NORMATIVE) CAPACITORS</b>		
	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:		
1.5	Terms and definitions		
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		
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		
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		
	This subclause is applicable		N/A
	Only insulation resistance and voltage proof are checked		N/A
4.13	Impulse voltage		
	This subclause is applicable		N/A
4.14	Endurance		
	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		
	This subclause is applicable		N/A
4.18	Active flammability test		
	This subclause is applicable		N/A
<b>G</b>	<b>ANNEX G (NORMATIVE) SAFETY ISOLATING TRANSFORMERS</b>		
	The following modifications to this standard are applicable for safety isolating transformers:		
7	Marking and instructions		
7.1	Transformers for specific use marked with:		
	-name, trademark or identification mark of the manufacturer or responsible vendor.....:		N/A
	-model or type reference .....		N/A
17	Overload protection of transformers and associated circuits		
	Fail-safe transformers comply with subclause 15.5 of IEC 61558-1		N/A
22	Construction		
	Subclauses 19.1 and 19.1.2 of IEC 61558-2-6 are applicable		N/A
29	Clearances, creepage distances and solid insulation		N/A
29.1, 29.2, 29.3	The distances specified in items 2a, 2c and 3 in table 13 of IEC 61558-1 apply		N/A
	For insulated winding wires complying with subclause 19.12.3 of IEC 61558-1 there are no requirements for clearances or creepage distances		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	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
<b>H</b>	<b>ANNEX H (NORMATIVE) SWITCHES</b>		
	Switches comply with the following clauses of IEC 61058-1, as modified below:		
	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
<b>8</b>	<b>Marking and documentation</b>		
	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
<b>13</b>	<b>Mechanism</b>		
	The tests may be carried out on a separate sample		N/A
<b>15</b>	<b>Insulation resistance and dielectric strength</b>		N/A
<b>15.1</b>	Not applicable		N/A
<b>15.2</b>	Not applicable		N/A
<b>15.3</b>	Applicable for full disconnection and micro-disconnection		N/A
<b>17</b>	<b>Endurance</b>		
	Compliance is checked on three separate appliances or switches		N/A
	For 17.2.4.4, the number of cycles declared according to 7.1.4 is 10 000, unless		N/A
	otherwise specified in 24.1.3 of the relevant part 2 of IEC 60335.....		N/A
	Switches for operation under no load and which can be operated only by a tool, and		N/A
	switches operated by hand that are interlocked so that they cannot be operated under load,		N/A
	are not subjected to the tests		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	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		
	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
<b>I</b>	<b>ANNEX I (NORMATIVE) MOTORS HAVING BASIC INSULATION THAT IS INADEQUATE FOR THE RATED VOLTAGE OF THE APPLIANCE</b>		
	The following modifications to this standard are applicable for motors having basic insulation that is inadequate for the rated voltage of the appliance:		
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		
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		
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		
19.1	The tests of 19.7 to 19.9 are not carried out		N/A
19.1.101	Appliance operated at rated voltage with each of the following fault conditions:		
	- 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

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Clause	Requirement - Test	Result - Remark	Verdict
	- 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		
22.1.101	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
<b>J</b>	<b>ANNEX J (NORMATIVE) COATED PRINTED CIRCUIT BOARDS</b>		
	Testing of protective coatings of printed circuit boards carried out in accordance with IEC 60664-3 with the following modifications:		
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		
	The test is carried out at -25 °C		N/A
5.7.3	Rapid change of temperature		
	Severity 1 is specified		N/A
5.9	Additional tests		
	This subclause is not applicable		N/A
<b>K</b>	<b>ANNEX K (NORMATIVE) OVERVOLTAGE CATEGORIES</b>		
	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
	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

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Clause	Requirement - Test	Result - Remark	Verdict
	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
<b>L</b>	<b>ANNEX L (INFORMATIVE) GUIDANCE FOR THE MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES</b>		
	Information for the determination of clearances and creepage distances		
<b>M</b>	<b>ANNEX M (NORMATIVE) POLLUTION DEGREE</b>		
	The information on pollution degrees is extracted from IEC 60664-1		P
	Pollution		
	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		
	For evaluating creepage distances, the following degrees of pollution in the microenvironment are established:		
	- pollution degree 1: no pollution or only dry, non-conductive pollution occurs. The pollution has no influence		N/A
	- pollution degree 2: only non-conductive pollution occurs, except that occasionally a temporary conductivity caused by condensation is to be expected		P
	- pollution degree 3: conductive pollution occurs or dry non-conductive pollution occurs that becomes conductive due to condensation that is to be expected	For motor	P
	- pollution degree 4: the pollution generates persistent conductivity caused by conductive dust or by rain or snow		N/A
<b>N</b>	<b>ANNEX N (NORMATIVE) PROOF TRACKING TEST</b>		

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Clause	Requirement - Test	Result - Remark	Verdict
	The proof tracking test is carried out in accordance with IEC 60112 with the following modifications:		P
7	Test apparatus		
7.3	Test solutions		P
	Test solution A is used		P
10	Determination of proof tracking index (PTI)		
10.1	Procedure		P
	The proof voltage is 100V, 175V, 400V or 600V ...:	175V	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		
	The report states if the PTI value was based on a test using 100 drops with a test voltage of (PTI-25) V		P
O	<b>ANNEX O (INFORMATIVE) SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30</b>		
	Description of tests for determination of resistance to heat and fire		
P	<b>ANNEX P (INFORMATIVE) GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN WARM DAMP EQUABLE CLIMATES</b>		
	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		
	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		
5.7	The ambient temperature for the tests of clauses 11 and 13 is 40 +3/0 °C		N/A
7.1	The appliance marked with 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

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Clause	Requirement - Test	Result - Remark	Verdict
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	<b>ANNEX Q (INFORMATIVE) SEQUENCE OF TESTS FOR THE EVALUATION OF ELECTRONIC CIRCUITS</b>		
	Description of tests for appliances incorporating electronic circuits		
R	<b>ANNEX R (NORMATIVE) SOFTWARE EVALUATION</b>		
	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		
	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		
	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:		
	- 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:		
	- single channel with functional test		N/A
	- single channel with periodic self-test		N/A
	- dual channel without comparison		N/A



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Clause	Requirement - Test	Result - Remark	Verdict
R.2.2	Measures to control faults/errors		
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
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		
R.3.1	General		
	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		

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Clause	Requirement - Test	Result - Remark	Verdict
	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		
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		
R.3.2.2.1	The specification of the software architecture includes the aspects listed <ul style="list-style-type: none"> <li>- techniques and measures to control software faults/errors (refer to R.2.2);</li> <li>- interactions between hardware and software;</li> <li>- partitioning into modules and their allocation to the specified safety functions;</li> <li>- hierarchy and call structure of the modules (control flow);</li> <li>- interrupt handling;</li> <li>- data flow and restrictions on data access;</li> <li>- architecture and storage of data;</li> <li>- time-based dependencies of sequences and data</li> </ul>	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		
R.3.2.3.1	Based on the architecture design, software is suitably refined into modules		N/A
	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		
	The software is validated with reference to the requirements of the software safety requirements specification		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Compliance is checked by simulation of:		
	- input signals present during normal operation		N/A
	- anticipated occurrences		N/A
	- undesired conditions requiring system action		N/A

Component <sup>1)</sup>	Fault/error	Acceptable measures <sup>2)3)</sup>	Definitions	Document reference for applied measure	Document reference for applied test	Verdict
1 CPU 1.1 Registers	Stuck at	Functional test, or periodic self-test using either: - static memory test, or - word protection with single bit redundancy	H.2.16.5 H.2.16.6 H.2.19.6 H.2.19.8.2			N/A
1.2 VOID						N/A
1.3 Programme counter	Stuck at	Functional test, or Periodic self-test, or Independent time-slot monitoring, or Logical monitoring of the programme sequence	H.2.16.5 H.2.16.6 H.2.18.10.4 H.2.18.10.2			N/A
2 Interrupt handling and execution	No interrupt or too frequent interrupt	Functional test, or time-slot monitoring	H.2.16.5 H.2.18.10.4			N/A
3 Clock	Wrong frequency (for quartz synchronized clock: harmonics/sub-harmonics only)	Frequency monitoring, or time slot monitoring	H.2.18.10.1 H.2.18.10.4			N/A

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Clause	Requirement - Test		Result - Remark			Verdict
4. Memory						N/A
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
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

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Clause	Requirement - Test			Result - Remark		Verdict
6.3 Timing	Wrong point in time	Time-slot monitoring, or scheduled transmission	H.2.18.10.4			N/A
		Time-slot and logical monitoring, or Comparison of redundant communication channels by either: <ul style="list-style-type: none"> <li>- reciprocal comparison</li> <li>- independent hardware comparator</li> </ul>	H.2.18.18 H.2.18.10.3			
	Wrong sequence	Logical monitoring, or time-slot monitoring, or Scheduled transmission (same options as for wrong point in time)	H.2.18.15 H.2.18.3 H.2.18.10.2 H.2.18.10.4 H.2.18.18			
7 Input/output periphery	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A
		Comparison of redundant communication channels by either: <ul style="list-style-type: none"> <li>- reciprocal comparison</li> <li>- independent hardware comparator</li> </ul>	H.2.18.15 H.2.18.3			
7.1 VOID						N/A
7.2 Analog I/O	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			N/A
7.2.1 A/D and D/A-converter						
7.2.2 Analog multiplexer	Wrong addressing	Plausibility check	H.2.18.13			N/A
8 VOID						N/A
9 Custom chips <sup>4)</sup> e.g. ASIC, GAL, Gate array	Any output outside the static and dynamic functional specification	Periodic self-test	H.2.16.6			N/A

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Clause	Requirement - Test	Result - Remark	Verdict

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.

<sup>1)</sup> For fault/error assessment, some components are divided into their sub-functions.

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

<sup>3)</sup> Where more than one measure is given for a sub-function, these are alternatives.

<sup>4)</sup> 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)		
6	CLASSIFICATION		
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		
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		
	- 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 <sup>3</sup> /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		
	- 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
	- 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

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Clause	Requirement - Test	Result - Remark	Verdict
	- 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		
22.AA.201	Dust collection machines		
	- 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
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		
	An indication is given as following:		



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Clause	Requirement - Test	Result - Remark	Verdict
	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/m <sup>2</sup>		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
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

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Clause	Requirement - Test	Result - Remark	Verdict
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:		
	– 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	<b>ANNEX BB (INFORMATIVE) LIST OF DUSTS WHICH PRESENT AN EXPLOSION RISK WHEN SUBJECT TO IGNITION CONDITIONS (IEC60335-2-69:2012)</b>		
	Values of explosion parameters are given in Table BB.1		
CC	<b>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)</b>		
4	<b>GENERAL REQUIREMENT</b>		
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
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	<b>CLASSIFICATION</b>		
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	<b>MARKING AND INSTRUCTIONS</b>		

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Clause	Requirement - Test	Result - Remark	Verdict
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:		
	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
	For suction sweeping machines:		
	– Type 22 suction sweeping machines are suitable for picking up combustible dust in Zone 22		N/A
	For vacuum cleaners:		
	– 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:		

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Clause	Requirement - Test	Result - Remark	Verdict
	– 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:		
	– 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		
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		
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
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

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Clause	Requirement - Test	Result - Remark	Verdict
23	INTERNAL WIRING		
23.CC.201	Cables and wires not within the IP54 compartment shall not be lighter than 60245 IEC 66		N/A
24	COMPONENTS		
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		
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		
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
DD	ANNEX DD (NORMATIVE) PARTICULAR REQUIREMENTS FOR VACUUM CLEANERS FOR USE IN ESD PROTECTED AREAS (IEC60335-2-69:2012)		
4	GENERAL REQUIREMENT		
	Type ESD vacuum cleaners comply with dust class L, M or H according to Annex AA		N/A
6	CLASSIFICATION		
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		

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Clause	Requirement - Test	Result - Remark	Verdict
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:		
	– 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		
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 $10^9 \Omega$ Test as specified		N/A
24	COMPONENTS		
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		
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)		
FF	ANNEX FF (INFORMATIVE) EMISSION OF VIBRATION (IEC60335-2-69:2012)		

IEC 60335-2-69			
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	
DC230 (230V)	550	275,5	-50,0	+15	P	
DC315 (230V)	2200	838	-61,9	+15	P	
Supplementary information: N/A						

10.2	TABLE: Current deviation					P
Current deviation of/at:	I rated (A)	I measured (A)	dI (A, %)	Required dI (A, %)	Remark	
DC230 (230V)	3,5	1,35	-61,4	+15	P	
DC315 (230V)	7,5	4,02	-46,4	+15	P	
Supplementary information:						

11.8	TABLE: Heating test, thermocouple measurements (DC315)			P
	Test voltage (V).....	243,8		—
	Ambient (°C).....	25,0		—
	Thermocouple locations	Max. temperature rise measured, dT (K)	Max. temperature rise limit, dT (K)	
	Power cord	10,6	50	
	Ambient of switch	28,7	30	
	Surface of switch button	1,8	60	
	Motor surface	24,3	60	
	Capacitor surface	6,8	45	
	Internal wire near the motor	4,2	80	
	Switch box	9,5	60	
	Current Circuit breaker	17,3	60	
	Ambient	0	---	
Supplementary information:				

11.8	TABLE: Heating test, resistance method (DC315)					P
	Test voltage (V).....	243,8			—	
	Ambient, t1 (°C).....	21,3			—	
	Ambient, t2 (°C).....	25,0			—	
	Temperature rise of winding	R1 (Ω)	R2 (Ω)	dT (K)	Max. dT (K)	Insulation class
	Main winding of motor	1,5	1,75	38,9	95	Class 130

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Clause	Requirement - Test			Result - Remark	Verdict
Aux. winding of motor	2,93	3,48	44,3	95	Class 130
Supplementary information: the test under 1,06Un was more unfavourable than the test under 0,94Un.					

11.8	TABLE: Heating test, thermocouple measurements (DC230)			P
	Test voltage (V).....	254,4		—
	Ambient (°C).....	25,0		—
Thermocouple locations		Max. temperature rise measured, dT (K)	Max. temperature rise limit, dT (K)	
Power cord		13,5	50	
Ambient of switch		28,7	30	
Surface of switch button		10,5	60	
Motor surface		14,7	60	
Capacitor surface		8,9	45	
Internal wire near the motor		12,5	80	
Switch box		5,9	60	
Current Circuit breaker		7,8	60	
Ambient		0	---	
Supplementary information:				

11.8	TABLE: Heating test, resistance method (DC230)					P
	Test voltage (V).....	243,8			—	
	Ambient, t1 (°C).....	21,3			—	
	Ambient, t2 (°C).....	25,0			—	
Temperature rise of winding		R1 (Ω)	R2 (Ω)	dT (K)	Max. dT (K)	Insulation class
Main winding of motor		7,45	8,95	47,8	95	Class 130
Aux. winding of motor		12,68	15,24	47,9	95	Class 130
Supplementary information: the test under 1,06Un was more unfavourable than the test under 0,94Un.						

13.2	TABLE: Leakage current		P
	Heating appliances: 1.15 x rated input (W).....	--	—
	Motor-operated and combined appliances: 1.06 x rated voltage (V).....	243,8	—
Leakage current between		I (mA)	Max. allowed I (mA)
L/N-Motor enclosure(DC315)		Max. 0,175	3,5
L/N-Switch box/button(DC315)		Max. 0,036	0,35(peak)
L/N-Motor enclosure(DC230)		Max. 0,169	3,5
L/N-Switch box/button(DC230)		Max. 0,033	0,35(peak)



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Clause	Requirement - Test	Result - Remark	Verdict

Supplementary information:

13.3	TABLE: Electric strength		P
Test voltage applied between:		Voltage (V)	Breakdown (Yes/No)
L/N-Motor enclosure(DC315)		1,2U1+700	No
L/N-Switch button(DC315)		2,4U1+2400	No
L/N-Motor enclosure(DC230)		1,2U2+700	No
L/N-Switch button(DC230)		2,4U2+2400	No
Supplementary information: U1=343V, U2=338V.			

14	TABLE: Transient overvoltages					N/A
Clearance between:	CI (mm)	Required CI (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)		243,8	—
Three phase appliances 1.06 x rated voltage divided by $\sqrt{3}$ (V)		--	—
Leakage current between		I (mA)	Max. allowed I (mA)
L/N-Motor enclosure		0,179	3,5
L/N-Switch button		0,046	0,25
Supplementary information:			

16.3	TABLE: Electric strength		P
Test voltage applied between:		Voltage (V)	Breakdown (Yes/No)
L/N-Motor enclosure		1,2U+700	No
L/N-Switch box/button		2,4U+2400	No
Supplementary information: U=343V			

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Clause	Requirement - Test	Result - Remark	Verdict
17	<b>TABLE: Overload protection, thermocouple measurements</b>		N/A
Temperature rise of part/at:		dT (K)	Max. dT (K)
Supplementary information:			

17	<b>TABLE: Overload protection, resistance method</b>					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)	
Supplementary information:						

19	<b>Abnormal operation conditions</b>						P
Operational characteristics		YES/NO	Operational conditions				
Are there electronic circuits to control the appliance operation?		No					
Are there "off" or "stand-by" position?		No					
The unintended operation of the appliance results in dangerous malfunction?		No					
Sub-clause	Operating conditions description	Test results description	PEC description	EMP 19.11.4	Software type required	19.11.3 PEC	Final result
19.2	--	--	--	N.A	--	--	--
19.3	--	--	--	--	--	--	--
19.4	--	--	--	--	--	--	--
19.5	--	--	--	--	--	--	--
19.6	--	--	--	N.A	--	--	--
19.7	Locking moving part of motor	Current circuit breaker operated	--	--	--	--	P
19.8	--	--	--	--	--	--	--
19.9	--	--	--	--	--	--	--

IEC 60335-2-69							
Clause	Requirement - Test				Result - Remark		Verdict
19.10	--	--	--	--	--	--	--
19.11.2	--	--	--	--	--	--	--
19.11.4.8	--	--	--	--	--	--	--
19.102	--	--	--	--	--	--	--
19.103	--	--	--	--	--	--	--
Supplementary information:							

19.7-1	TABLE: Abnormal operation, locked rotor/moving parts DC315					P
	Test voltage (V).....				230	—
	Ambient, t1 (°C).....				21,3	—
	Ambient, t2 (°C).....				25,0	—
Temperature of winding		R1 (Ω)	R2 (Ω)	dT (K)	T (°C)	Max. T (°C)
Main motor winding		1,5	1,88	61,1	86,1	225
Aux. motor winding		2,93	3,62	56,5	81,5	225
Supplementary information: current circuit breaker operate 3 seconds later.						

19.7-2	TABLE: Abnormal operation, locked rotor/moving parts DC230					P
	Test voltage (V).....				230	—
	Ambient, t1 (°C).....				21,3	—
	Ambient, t2 (°C).....				25,0	—
Temperature of winding		R1 (Ω)	R2 (Ω)	dT (K)	T (°C)	Max. T (°C)
Main motor winding		7,45	9,87	79,4	104,4	225
Aux. motor winding		12,68	16,5	73,4	98,4	225
Supplementary information: current circuit breaker operate 6 seconds later.						

19.13	TABLE: Electric strength tests after abnormal operation		P
Test voltage applied between:		Voltage (V)	Breakdown (Yes/No)
L/N-Motor enclosure		1,2U+700	NO
L/N-Switch box/button		2,4U+2400	NO
Supplementary information: U=343V			

24.1	TABLE: Components information					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>	

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Clause	Requirement - Test			Result - Remark	Verdict
Plug	Shangyu Jintao Electron Co.Ltd.	JT003	AC250V 16A	DIN VDE 0620	VDE 40021286
Power cord	Shangyu Jintao Electron Co.Ltd.	H05VV-F	3G1,0mm <sup>2</sup>	DIN VDE 0281	VDE 40013419
Internal wire	Xinya Electronic Co., Ltd.	1015	18AWG, 105°C	---	UL
Motor for DC230, DC230A-Z	Laizhou Lutai Electromechanical Manufacturing Co.,Ltd.	YYL90S2	230V, 50Hz, 750W, Class B,	EN 60335-1; EN 60335-2-69	Tested with appliance
Motor for DC300, DC300A-Z, DC315, DC315A-Z	Laizhou Lutai Electromechanical Manufacturing Co.,Ltd.	YYL9022	230V, 50Hz, 2200W, Class B,	EN 60335-1; EN 60335-2-69	Tested with appliance
Motor running capacitor for DC230, DC230A-Z	Wenling Xunda Electronic Co., Ltd.	CBB60	12μF, AC450V, T70,P2	EN 60252	TUV R50158907
Motor running capacitor for DC300, DC300A-Z, DC315, DC315A-Z	Wenling Xunda Electronic Co., Ltd.	CBB60	40μF, AC450V, T70,P2	EN 60252	TUV R50158907
Switch	Gaoyou Electric Plastic Factory	KJD12	250V~, 16(12)A, IP54, 5E4, T55	EN 61058	TUV R50141073
Circuit breaker for DC230, DC230A-Z	Sang Mao Enterprise Co., Ltd.	A-0701HM	AC250V, operating current:4A	EN 60934	VDE 93565
Circuit breaker for DC300, DC300A-Z, DC315, DC315A-Z	Sang Mao Enterprise Co., Ltd.	A-0701HM	AC250V, operating current:8A	EN 60934	VDE 93565
Cable gland	Zhejiang Kedu Electric Manufacturing Co., Ltd.	M16	M16X1.5	EN 50262	TUV R50077492
Wire connector	Heavy power CO., Ltd	CE2	--	--	UL
Supplementary information: <sup>1)</sup> 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)	
Fixing screw of switch box	3,5	II	0,8	
Ground screw	4,0	II	1,2	

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Clause	Requirement - Test	Result - Remark	Verdict
Fixing screw of motor cover	4,0	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***	≥4,5	≥8,0		≥8,0		P
4 000	3,0 / 3,5***			≥10,0			P
6 000	5,5 / 6,0***						
8 000	8,0 / 8,5***						
10 000	11,0 / 11,5***						
Supplementary information:							
Basic insulation: live parts inside motor to earthed metal;							
Supplementary insulation: internal wires to accessible surface;							
Functional insulation: different poles of switch;							
Reinforced insulation: live parts of capacitor to accessible surface; live parts of switch to accessible surface.							

29.2	TABLE: Creepage distances, basic, supplementary and reinforced insulation										P
Working voltage (V)	Creepage distance (mm)							Type of insulation			Verdict
	Pollution degree							B**)	S**)	R**)	
	1	2			3						
		Material group			Material group						
		I	II	IIIa/IIIb	I	II	IIIa/IIIb <sup>a)</sup>				
≤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	—	—		

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Clause	Requirement - Test							Result - Remark			Verdict
250	0,56	1,25	1,8	2,5	3,2	3,6	<u>4,0</u>	≥4,5	—	—	P
250	0,56	1,25	1,8	2,5	3,2	3,6	<u>4,0</u>	—	≥8,0	—	P
250	1,12	2,5	3,6	5,0	6,4	7,2	<u>8,0</u>	—	—	≥10	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	—	—	—	
>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	—	—	—	

IEC 60335-2-69											
Clause	Requirement - Test							Result - Remark			Verdict
>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	—		—	
>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)							Verdict / Remark
	Pollution degree							
	1	2			3			
		Material group			Material group			
		I	II	IIIa/IIIb	I	II	IIIa/IIIb*)	
≤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	<b>3,2</b>	P(>8,0mm)
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	

IEC 60335-2-69									
Clause	Requirement - Test							Result - Remark	Verdict
>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		
Supplementary information:									
*) Material group IIIb is allowed if the working voltage does not exceed 50 V									





IEC60335_2_69H - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

<b>ATTACHMENT TO TEST REPORT IEC 60335-2-69H</b> <b>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</b> Household and similar electrical appliances – Safety – Part 2-69: Particular requirements for wet and dry vacuum cleaners, including power brush for commercial use	
<b>Differences according to:</b>	EN 60335-2-69:2012 used in conjunction with EN 60335-1:2012 and EN 62233:2008
<b>Attachment Form No.:</b>	EU_GD_IEC60335_2_69H
<b>Attachment Originator:</b>	OVE
<b>Master Attachment:</b>	2013-02
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EN 62233			
Clause	Requirement + Test	Result - Remark	Verdict
<b>EMF- ELECTROMAGNETICS FIELDS</b>			
	The tested product also complies with the requirements of EN 62233:2008		
	Limit ..... 100%	Measured max. : 13,529%	P

IEC60335_2_69H - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
<b>CENELEC COMMON MODIFICATIONS</b>			
<b>7</b>	<b>MARKING AND INSTRUCTIONS</b>		
7.1	Single-phase appliances to be connected to the supply mains: 230 V covered		P
	Multi-phase appliances to be connected to the supply mains: 400 V covered		N/A
7.12	The instructions include the substance of the following:		P
	- Children should be supervised to ensure that they do not play with the appliance (EN 60335-2-69:2012)		P
7.12.102	The instructions shall provide information on airborne noise emission as indicated in EE.2.7 (EN 60335-2-69:2012)		P
7.12.103	The instructions shall provide information on vibration emission as indicated in FF.2 (EN 60335-2-69:2012)	The appliance shall be connected to the wood processing machine during operating, no need to manual operation.	N/A
	- cleaning and user maintenance shall not be made by children without supervision		N/A
<b>11</b>	<b>HEATING</b>		
11.8	Footnotes to "External enclosure of motor-operated appliances" to be taken into account	Considered	P
<b>15</b>	<b>MOISTURE RESISTANCE</b>		
15.1.2	Appliances with an automatic cord reel tested with the cord in the most unfavourable position so that the reeling of the wet cord may affect electrical insulation during operation, the cord not being dried before reeling		N/A
<b>24</b>	<b>COMPONENTS</b>		
24.1	Components comply with the safety requirements specified in the relevant standards as far as they reasonably apply		P
	The requirements of Clause 29 of this standard apply between live parts of components and accessible parts of the appliance.		P
	The requirements of 30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections inside components		P

IEC60335_2_69H - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	Components that have not been previously tested or do not comply with the standard for the relevant component are tested according to the requirements of 30.2		P
	Components that have been previously tested and shown to comply with the resistance to fire requirements in the standard for the relevant component need not be retested provided that:		N/A
	- the severity specified in the component standard is not less than the severity specified in 30.2, and		N/A
	- the test report for the component states whether it complied with the standard for the relevant component with or without flame, flames not exceeding 2 s during the test are ignored		N/A
	Unless components have been previously tested and found to comply with the relevant standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9		P
	For components mentioned in 24.1.1 to 24.1.9, no additional tests specified in the relevant standard for the component are necessary other than those specified in 24.1.1 to 24.1.9		N/A
	Components that have not been separately tested and found to comply with the relevant standard, and		N/A
	components that are not marked or not used in accordance with their marking,		N/A
	are tested in accordance with the conditions occurring in the appliance, the number of samples being that required by the relevant standard		N/A
	Lamp holders and starter holders that have not been previously tested and found to comply with the relevant standard are tested as a part of the appliance and additionally comply with the gauging and interchangeability requirements of the relevant standard under the conditions occurring in the appliance	No lamp used	N/A
	Where the relevant standard specifies these gauging and interchangeability requirements at elevated temperatures, the temperatures measured during the tests of Clause 11 are used		N/A
	Plugs and socket-outlets and other connecting devices of interconnection cords are not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1, or		P
	with connectors and appliance inlets complying with the standard sheets of IEC 60320-1,		N/A

IEC60335_2_69H - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	if direct supply to these parts from the supply mains gives rise to a hazard		N/A
24.1.7	If the remote operation of the appliance is via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is EN 41003		N/A
	Compliance with Clause 8 of this standard is not impaired by connecting the appliance to a device covered by EN 41003		N/A
24.Z1	For motor running capacitors (IEC 60252-1 type P2) with a metallic enclosure having an overpressure fuse the flame testing of internal plastic parts supporting current carrying connections as required in 30.2.2 and 30.2.3.1 is not necessary	Approved P2 running capacitor used	N/A
<b>25</b>	<b>SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS</b>		
25.6	Supply cords of single-phase portable appliances having a rated current not exceeding 16 A, fitted with a plug complying with the following standard sheets of IEC/TR 60083:		P
	- for Class I appliances: standard sheet C2b, C3b or C4.....:	C4 used	P
	- for Class II appliances: standard sheet C5 or C6 .....		N/A
25.7	Rubber sheathed cords (60245 IEC 53) are not suitable for appliances intended to be used outdoors or when they are liable to be exposed to significant amount of ultraviolet radiation		N/A
	Halogen-free thermoplastic compound sheathed supply cords have properties at least those of:		N/A
	<ul style="list-style-type: none"> <li>halogen-free thermoplastic compound sheathed cords (H03Z1Z1H2-F or H03Z1Z1-F), for appliances having a mass not exceeding 3 kg</li> </ul>		N/A
	<ul style="list-style-type: none"> <li>halogen-free thermoplastic compound sheathed cords (H05Z1Z1H2-F or H05Z1Z1-F), for other appliances (60335-2-69:2012)</li> </ul>		N/A
	Cross-linked halogen-free compound sheathed supply cords have properties at least those of cross-linked halogen-free compound sheathed cords (H07ZZ-F) (60335-2-69:2012)		N/A
<b>26</b>	<b>TERMINALS FOR EXTERNAL CONDUCTORS</b>		

IEC60335_2_69H - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
26.11	Conductors connected by soldering are not considered to be positioned or fixed so that reliance is not placed upon the soldering alone to maintain them in position unless they are held in place near the terminals independently of the solder		P
<b>29</b>	<b>CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION</b>		
29.3.Z1	Appliance constructed so that if there is a possibility of damaging the insulation during installation, the insulation withstands the scratch and penetration test of 21.2		N/A
<b>32</b>	<b>RADIATION, TOXICITY AND SIMILAR HAZARDS</b>		
32	Compliance regarding electromagnetic fields is checked according to EN 50366 or EN 62233		P
<b>I</b>	<b>ANNEX I (NORMATIVE) MOTORS HAVING BASIC INSULATION THAT IS INADEQUATE FOR THE RATED VOLTAGE OF THE APPLIANCE</b>		
Annex I, 19.1.101	The appliance is supplied at rated voltage and operated under normal operation with each of the fault conditions specified		N/A
	The duration of the test is as specified in 19.7		N/A
<b>EE</b>	<b>ANNEX EE (NORMATIVE) EMISSION OF ACOUSTICAL NOISE (EN 60335-2-69:2012)</b>		
EE.1	Noise reduction		
	Noise reduction from vacuum cleaners is an integral part of the design process and shall be achieved by applying measures at source to control noise, see for example ISO/TR 11688-1. The success of the applied noise reduction measures is assessed on the basis of the actual noise emission values in relation to other machines of the same type with comparable non-acoustical technical data		P
EE.2	Noise test code		
EE.2.1	Emission sound pressure level determination		
	The emission sound pressure level for all vacuum cleaners except for back-pack vacuum cleaners is determined in accordance with ISO 11203 applying the method described in 6.2.3 d) with the measurement distance $d = 1$ m		P

IEC60335_2_69H - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	The emission sound pressure level for back-pack vacuum cleaners is determined in accordance with ISO 11201, grade 2. The microphone is placed at a height of 1,65 m ± 0,05 m, and at a distance of 0,10 m ± 0,025 m in y direction from the ear of the operator on the louder side, and at a distance of 0,00 m ± 0,025 m in x direction from the ear of the operator. The microphone shall be pointed towards the ear		N/A
EE.2.2	Sound power level determination		
	The sound power level is measured in accordance with ISO 3744, or with ISO 3743-1 if a suitable hard-walled test room is available, or with ISO 9614-2. The direction of the x-axis in Figures EE.1 and EE.2 must be the same as the x-axis defined for the microphone configurations in ISO 3744		P
EE.2.3	Operating and mounting conditions		
	In addition to normal operation in accordance with 3.1.9, the following requirements for different types of vacuum cleaners shall be taken into account. The measurement time is at least 15 s		P
EE.2.3.1	Canister vacuum cleaners		
	The vacuum cleaner is installed on the reflecting plane		N/A
	Immediately before each series of measurements, the machine shall be operated for at least 10 min		N/A
	Battery powered machines are operated for at least 2 min, starting with a fully charged battery		N/A
	The noise emission of the non-motorised suction nozzle shall be excluded from measurement so that it does not interfere with the measurement result, e.g. by placing the nozzle outside of the measurement area		N/A
EE.2.3.2	Upright vacuum cleaners and motorized cleaning heads		
	Before starting the measurement procedure, the cleaning head shall be adjusted correctly in accordance with the manufacturer's instructions for cleaning carpets		P
	If the cleaning head is equipped with a device to put out brushes or other retractable parts for cleaning carpets, the cleaning head shall be adjusted so that the bristles of rotating brushes or other retractable parts go beyond the theoretical supporting plane of the cleaning head on a hard floor from 2 (+0,2/-0) mm	No brush or other retractable part	N/A

IEC60335_2_69H - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	All parts intended for hard floor treatment only shall be removed or retracted		N/A
	The upright vacuum cleaner shall be fixed directly without any resilient means on the Wilton carpet (according to IEC 60312-1) of a size 2 m x 1 m, placed on the floor of the test room		N/A
	If the measurement is done in a reverberation test room or a hard-walled test room, a minimum clearance of 1 m between any part of the machine or attachments and the nearest wall shall be observed		P
	The vacuum cleaner shall be positioned in accordance with Figures EE.1 or EE.2.	Positioned as intend use	P
	The hose and connecting tube(s) or the handles of hand-supported and upright vacuum cleaners shall be resiliently suspended or supported in normal position of use (middle of the handles at $(80 \pm 5)$ cm above the carpet, if possible), the cleaning head being in full contact with the carpet		N/A
	If necessary, the cleaning head shall be resiliently fastened to prevent self-propulsion		N/A
	Sound radiation due to possible vibrations of the standard test carpet shall be prevented		N/A
EE.2.3.3	Back-pack vacuum cleaners		
	Before starting the measurement procedure, the nozzle intended for cleaning carpets shall be adjusted correctly in accordance with the manufacturer's instructions for cleaning carpets		N/A
	If the nozzle is equipped with a device to put out brushes or other retractable parts for cleaning carpets, the nozzle shall be adjusted so that the bristles or other retractable parts go beyond the theoretical supporting plane of the nozzle on a hard floor from 2 (+0,2/-0) mm		N/A
	All parts intended for hard floor treatment only shall be removed or retracted. Crevice nozzles or similar accessories, if applicable, shall not be taken into account		N/A
	The back-pack vacuum cleaner shall be carried by an operator. The operator shall stand upright and look straight ahead.		N/A
	The operator shall be $1,75 \text{ m} \pm 0,05 \text{ m}$ tall.		N/A
	The harness of the back-pack vacuum cleaner shall be adjusted to the size of the operator		N/A



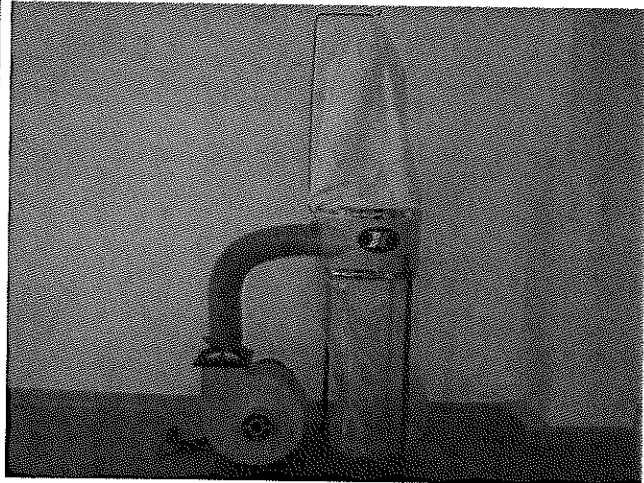
IEC60335_2_69H - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	The handle is held by the operator in the right hand in 0,80 m height with inclination of 45 ° to the floor and the suction nozzle is placed with no pressure on the Wilton carpet (according to IEC 60312-1) of a size 2 m x 1 m, placed on the floor of the test room		N/A
	The vacuum cleaner and the operator shall be positioned in accordance with Figure EE.3		N/A
	If the measurement is done in a reverberation test room or a hard-walled test room, a minimum clearance of 1 m between any part of the machine or attachments and the nearest wall shall be observed		N/A
	Sound radiation due to possible vibrations of the standard test carpet shall be prevented		N/A
EE.2.3.4	Centrally-sited vacuum cleaners		
	The airflow through the machine shall be adjusted so that the power consumption is according to the rated power		N/A
	When carrying out free field measurements, the machine may be operated with the mounting side on the reflecting floor. A suction hose shall be used, long enough to avoid measuring suction noise. Carpets are not required		N/A
EE.2.4	Measurement uncertainties		
	A standard deviation of reproducibility $\sigma_{RO}$ of less than 1,5 dB is expected for both the A-weighted emission sound pressure level according to ISO 11203 and the A-weighted sound power level determined according to ISO 3744 or ISO 3743-1		P
EE.2.5	Information to be recorded		
	The information to be recorded covers all of the technical requirements of this noise test code		P
	Any deviations from this noise test code or from the basic standards upon which it is based are to be recorded together with the technical justification for such deviations		N/A
EE.2.6	Information to be reported		
	The information to be included in the test report is at least that which the manufacturer requires for a noise emission declaration or the user requires to verify the declared values	Declared in user manual.	P
EE.2.7	Declaration and verification of noise emission values		

IEC60335_2_69H - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	The declaration of the emission sound pressure level is made as a dual-number noise emission declaration according to ISO 4871, where it exceeds 70 dB(A)	Max. $L_{pA} = 81$ dB	P
	Where the emission sound pressure level does not exceed 70 dB(A), this fact may be stated in place of the emission value and uncertainty, e.g. by declaring $L_{pA} \leq 70$ dB(A)		N/A
	It declares the noise emission value $L_{pA}$ and separately the respective uncertainty $K_{pA}$		N/A
	The sound power level shall be given as a dual-number noise emission declaration according to ISO 4871, where the emission sound pressure level exceeds 80 dB(A). It declares the noise emission value $L_{WA}$ and separately the respective uncertainty $K_{WA}$	Max. $L_{WA} = 98$ dB	P
	The noise declaration states that the noise emission values have been obtained according to this noise test code	Mentioned in user manual	P
	If this statement is not true, the noise declaration indicates clearly what the deviations from this standard, and from the basic standards, are.		N/A
	If undertaken, verification is conducted according to ISO 4871 by using the same mounting, installation and operating conditions as those used for the initial determination of the noise emission values		N/A
<b>FF</b>	<b>ANNEX FF (NORMATIVE) EMISSION OF VIBRATION</b>		
	<b>(EN 60335-2-69:2012)</b>		
<b>FF.1</b>	<b>Reduction of vibration emission</b>		
	The machine is designed and constructed in such a way that risks resulting from vibrations produced by the machine are reduced to the lowest level		N/A
<b>FF.2</b>	<b>Information on vibration emission</b>		
	The instructions for hand-held and walk-behind machines and hand-held parts of other machines shall give the following information:		
	– the vibration total value to which the hand-arm system is subjected, measured in accordance with ISO 5349-1 for arm vibrations, the machine being supplied at rated voltage or at the maximum rated voltage for machines with a range of voltages, if the vibration total value exceeds $2,5$ m/s <sup>2</sup> . Where this value does not exceed $2,5$ m/s <sup>2</sup> , this fact may be stated in place of the emission value and uncertainty, e.g. by declaring $a_h \leq 2,5$ m/s <sup>2</sup>		N/A

IEC60335_2_69H - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	– the uncertainty surrounding these values, in accordance with the above given standards		N/A
<b>ZA</b>	<b>ANNEX ZA (NORMATIVE) SPECIAL NATIONAL CONDITIONS</b>		
	<b>Finland</b>		
7.12	If a polyvinyl chloride sheathed cord is fitted, the instructions shall state that the appliance is not to be used outdoors at low temperature (EN 60335-2-69:2012)		N/A
	<b>Norway</b>		
19.5	The test is also applicable to appliances intended to be permanently connected to fixed wiring		N/A
	<b>Norway</b>		
22.2	The second paragraph of this subclause, dealing with single-phase, permanently connected class I appliances having heating elements, is not applicable due to the supply system		N/A
	<b>All CENELEC countries</b>		
25.6 and 25.25	Information concerning National plug and socket-outlets is available from the CENELEC website. Normative national requirements concerning plug and socket-outlets are shown in the relevant National standard		N/A
	<b>Ireland and United Kingdom</b>		
25.8	In the table, the lines for 10 A and 16 A are replaced by:		N/A
	> 10 and ≤ 13 1,25		N/A
	> 13 and ≤ 16 1,5		N/A
<b>ZB</b>	<b>ANNEX ZB (INFORMATIVE) A-DEVIATIONS</b>		
	<b>Ireland</b>		

IEC60335_2_69H - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
25.6	These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs complying with I.S. 401:1997, or equivalent, to be fitted to domestic appliances		N/A
	<b>United Kingdom</b>		
25.6	These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs to BS 1363 to be fitted to domestic appliances. It also allows plugs to BS 4573 and EN 50075 to be fitted to shavers and toothbrushes		N/A
<b>ZC</b>	<b>ANNEX ZC (NORMATIVE) NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS</b>		
	A list of referenced documents in this standard		N/A
<b>ZD</b>	<b>ANNEX ZD (INFORMATIVE) IEC and CENELEC CODE DESIGNATIONS FOR FLEXIBLE CORDS</b>		
	A table with IEC and CENELEC code designations for flexible cords		N/A
<b>ZE</b>	<b>ANNEX ZE (INFORMATIVE) SPECIFIC ADDITIONAL REQUIREMENTS FOR APPLIANCES AND MACHINES INTENDED FOR COMMERCIAL USE</b>		
	This Annex is not applicable	(EN 60335-2-69:2012)	
<b>ZF</b>	<b>ANNEX ZF (INFORMATIVE) CRITERIA APPLIED FOR THE ALLOCATION OF PRODUCTS COVERED BY STANDARDS IN THE EN 60335 SERIES UNDER LVD OR MD</b>		
	List of standards under CENELEC/TC61 with the allocation under the LVD (Low Voltage Directive) or the MD (Machinery Directive).....:	Covered by MD	P
<b>ZG</b>	<b>ANNEX ZG (NORMATIVE) UV APPLIANCES</b>		
	The following modifications to this standard apply to appliances having UV emitters		N/A

IEC60335_2_69H - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict
	This annex is not applicable to appliances covered by the scopes of IEC 60335-2-27, IEC 60335-2-59 or IEC 60335-2-109		N/A
7.12.ZG	The instructions for appliances incorporating UVC emitters include the substance of the following: WARNING — This appliance contains a UV emitter. Do not stare at the light source		N/A
32	For appliances incorporating UV emitters the manufacturer delivers a declaration providing evidence that the plastic material exposed to the radiation is UV resistant		N/A
<b>ZZ</b>	<b>ANNEX ZZ (INFORMATIVE) COVERAGE OF ESSENTIAL REQUIREMENTS OF EC DIRECTIVES</b>		
	Description of the relation between this European standard and the LVD (Low Voltage Directive, 2006/95/EC) and the MD (Machinery Directive, 2006/42/EC)	Covered by MD	P

<b>Prüfbericht-Nr.:</b> <i>Test Report No.:</i>	17705554 001 Attachment 1	<b>Auftrags-Nr.:</b> <i>Order No.:</i>	1150002015	Seite 1 von 10 <i>Page 1 of 10</i>
<b>Kunden-Referenz-Nr.:</b> <i>Client Reference No.:</i>	601141	<b>Auftragsdatum:</b> <i>Order date:</i>	27.12. 2013	
<b>Auftraggeber:</b> <i>Client:</i>	Laizhou Sindy Electronic & Technology Co., Ltd. Chinashidu Exhibition Centre, West Road, Laizhou City, Shandong 261400, P.R. China			
<b>Prüfgegenstand:</b> <i>Test item:</i>	Dust Collector			
<b>Bezeichnung / Typ-Nr.:</b> <i>Identification / Type No.:</i>	DC230, DC300, DC315, DC230A-Z, DC300A-Z, DC315A-Z			
<b>Auftrags-Inhalt:</b> <i>Order content:</i>	CE-MD approval			
<b>Prüfgrundlage:</b> <i>Test specification:</i>	06/42/EC-Annex I /05.06			
<b>Wareneingangsdatum:</b> <i>Date of receipt:</i>	19.05.2014			
<b>Prüfmuster-Nr.:</b> <i>Test sample No.:</i>	1150002015A001;002;003			
<b>Prüfzeitraum:</b> <i>Testing period:</i>	19.05.2014 – 22.05.2014			
<b>Ort der Prüfung:</b> <i>Place of testing:</i>	TÜV Rheinland / CCIC (Qingdao) Co., Ltd.			
<b>Prüflaboratorium:</b> <i>Testing laboratory:</i>	TÜV Rheinland / CCIC (Qingdao) Co., Ltd.			
<b>Prüfergebnis*:</b> <i>Test result*:</i>	Pass			
<b>geprüft von / tested by:</b> <i>Infu He / triance</i>		<b>kontrolliert von / reviewed by:</b>		
<i>2014.6.16</i>	Wang Yinghua / trainer	<i>Wangyinghua</i>	<i>2014.6.16</i>	Zhao Xueqin/ Reviewer
<b>Datum</b> <i>Date</i>	<b>Name / Stellung</b> <i>Name / Position</i>	<b>Unterschrift</b> <i>Signature</i>	<b>Datum</b> <i>Date</i>	<b>Name / Stellung</b> <i>Name / Position</i>
<b>Sonstiges / Other:</b> The report is only valid together with report 17705554 001.				
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b> <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
<p>* Legende: 1 = sehr gut    2 = gut    3 = befriedigend    4 = ausreichend    5 = mangelhaft  P(ass) = entspricht o.g. Prüfgrundlage(n)    F(ail) = entspricht nicht o.g. Prüfgrundlage(n)    N/A = nicht anwendbar    N/T = nicht getestet</p> <p>Legend: 1 = very good    2 = good    3 = satisfactory    4 = sufficient    5 = poor  P(ass) = passed a.m. test specification(s)    F(ail) = failed a.m. test specification(s)    N/A = not applicable    N/T = not tested</p>				
<p><b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b>  <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i></p>				

1. GRUNDLEGENDE SICHERHEITS- UND GESUNDHEITSANFORDERUNGEN ESSENTIAL HEALTH AND SAFETY REQUIREMENTS			
1.1 Allgemeines <i>General remarks</i>			
1.1.1 Begriffsbestimmungen <i>Definitions</i>			
1.1.2 Grundsätze für die Integration der Sicherheit <i>Principles of safety integration</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>	
1.1.3 Materialien und Produkte <i>Materials and products</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>	
1.1.4 Beleuchtung <i>Lighting</i>	Bemerkung / Remark: None	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>	
1.1.5 Konstruktion der Maschine im Hinblick auf die Handhabung <i>Design of machinery to facilitate its handling</i>	Bemerkung / Remark: Handle is provided for facilitate its handling.	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>	
1.1.6 Ergonomie <i>Ergonomics</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>	
1.1.7 Bedienungsplätze <i>Operating positions</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>	
1.1.8 Sitze <i>Seating</i>	Bemerkung / Remark: None	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>	
1.2. STEUERUNGEN UND BEFEHLSEINRICHTUNGEN CONTROL SYSTEMS			
1.2.1 Sicherheit und Zuverlässigkeit von Steuerungen <i>Safety and reliability of control system</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/>	

			N/T <input type="checkbox"/>
1.2.2	Stellteile <i>Control devices</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.2.3	Ingangsetzen <i>Starting</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.2.4.	Stillsetzen <i>Stopping</i>		
1.2.4.1	Normales Stillsetzen <i>Normal stop</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.2.4.2	Betriebsbedingtes Stillsetzen <i>Operational Stop</i>	Bemerkung / Remark: None	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
1.2.4.3	Stillsetzen im Notfall <i>Emergency stop</i>	Bemerkung / Remark: Only one motor, not necessary	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
1.2.4.4	Gesamtheit von Maschinen <i>Assembly of machinery</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.2.5	Wahl der Steuerungs- und Betriebsarten <i>Selection of control or operating modes</i>	Bemerkung / Remark: Considered	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
1.2.6	Störung der Energieversorgung <i>Failure of the power supply</i>	Bemerkung / Remark: No hazards when re- establishment of the power supply.	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.3	SCHUTZMASSNAHMEN GEGEN MECHANISCHE GEFÄHRDUNGEN <i>PROTECTION AGAINST MECHANICAL HAZARDS</i>		



1.3.1	Risiko des Verlusts der Standsicherheit <i>Risk of loss of stability</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.3.2	Bruchrisiko beim Betrieb <i>Risk of break-up during operation</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.3.3	Risiken durch herabfallende oder herausgeschleuderte Gegenstände <i>Risk due to falling or ejected objects</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.3.4	Risiken durch Oberflächen, Kanten und Ecken <i>Risk due to surfaces, edges or angles</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.3.5	Risiken durch mehrfach kombinierte Maschinen <i>Risks related to combined machinery</i>	Bemerkung / Remark: Not applicable	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
1.3.6	Risiken durch Änderung der Verwendungsbedingungen <i>Risks related to variations in operating conditions</i>	Bemerkung / Remark: Considered	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
1.3.7	Risiken durch bewegliche Teile <i>Risk related to moving parts</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.3.8	Wahl der Schutzeinrichtungen gegen Risiken durch bewegliche Teile <i>Choice of protection against risks arising from moving parts</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/>
1.3.8.1	Bewegliche Teile der Kraftübertragung <i>Moving transmission parts</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.3.8.2	Bewegliche Teile, die am Arbeitsprozess beteiligt sind <i>Moving parts involved in the process</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/>

		N/A <input type="checkbox"/>
		N/T <input type="checkbox"/>
1.3.9 Risiko unkontrollierter Bewegungen <i>Risks of uncontrolled movements</i>	Bemerkung / Remark: No uncontrolled movements	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
1.4 ANFORDERUNGEN AN SCHUTZEINRICHTUNGEN <i>REQUIRED CHARACTERISTICS OF GUARDS AND PROTECTIVE DEVICES</i>		
1.4.1 Allgemeine Anforderungen General requirements	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/>
1.4.2 Besondere Anforderungen an trennende Schutzeinrichtungen <i>Special requirements for guards</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.4.2.1 Feststehende trennende Schutzeinrichtungen <i>Fixed guards</i>		
1.4.2.2 Bewegliche trennende Schutzeinrichtungen mit Verriegelung <i>Interlocking movable guards</i>	Bemerkung / Remark: None	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
1.4.2.3 Zugangsbeschränkende verstellbare Schutzeinrichtungen <i>Adjustable guards restricting access</i>	Bemerkung / Remark: None	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
1.4.3 Besondere Anforderungen an nichttrennende Schutzeinrichtungen <i>Special requirements for protective devices</i>	Bemerkung / Remark: None	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
1.5 RISIKEN DURCH SONSTIGE GEFÄHRDUNGEN <i>RISKS DUE TO OTHER HAZARDS</i>		
1.5.1 Elektrische Energieversorgung <i>Electricity supply</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.5.2 Statische Elektrizität <i>Static electricity</i>	Bemerkung / Remark: The machine is grounded.	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>

1.5.3	Nichtelektrische Energieversorgung <i>Energy supply other than electricity</i>	Bemerkung / Remark: None	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
1.5.4	Montagefehler <i>Errors of fitting</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.5.5	Extreme Temperaturen <i>Extreme temperatures</i>	Bemerkung / Remark: Considered	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
1.5.6	Brand <i>Fire</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.5.7	Explosion <i>Explosion</i>	Bemerkung / Remark: None	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
1.5.8	Lärm <i>Noise</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.5.9	Vibrationen <i>Vibrations</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.5.10	Strahlung <i>Radiation</i>	Bemerkung / Remark: None	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
1.5.11	Strahlung von außen <i>External radiation</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.5.12	Laserstrahlung <i>Laser equipment</i>	Bemerkung / Remark: None	P <input type="checkbox"/>

		F <input type="checkbox"/>
		N/A <input checked="" type="checkbox"/>
		N/T <input type="checkbox"/>
1.5.13 Emission gefährlicher [Werk]stoffe und Substanzen <i>Emissions of hazardous materials and substances</i>	Bemerkung / Remark: None	P <input type="checkbox"/>
		F <input type="checkbox"/>
		N/A <input checked="" type="checkbox"/>
		N/T <input type="checkbox"/>
1.5.14 Risiko, in einer Maschine eingeschlossen zu werden <i>Risk of being trapped in a machine</i>	Bemerkung / Remark: Considered	P <input type="checkbox"/>
		F <input type="checkbox"/>
		N/A <input checked="" type="checkbox"/>
		N/T <input type="checkbox"/>
1.5.15 Ausrutsch-, Stolper-, und Sturzrisiko <i>Risk of slipping, tripping or falling</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/>
		F <input type="checkbox"/>
		N/A <input type="checkbox"/>
		N/T <input type="checkbox"/>
1.5.16 Blitzschlag <i>Lightning</i>	Bemerkung / Remark: Not applicable	P <input type="checkbox"/>
		F <input type="checkbox"/>
		N/A <input checked="" type="checkbox"/>
		N/T <input type="checkbox"/>
1.6 INSTANDHALTUNG MAINTENANCE		
1.6.1 Wartung der Maschine <i>Machinery maintenance</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/>
		F <input type="checkbox"/>
		N/A <input type="checkbox"/>
		N/T <input type="checkbox"/>
1.6.2 Zugang zu den Bedienungsständen und den Eingriffspunkten für die Instandhaltung <i>Access to operating positions and servicing points</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/>
		F <input type="checkbox"/>
		N/A <input type="checkbox"/>
		N/T <input type="checkbox"/>
1.6.3 Trennung von Energiequellen <i>Isolation of energy sources</i>	Bemerkung / Remark: Power plug used	P <input checked="" type="checkbox"/>
		F <input type="checkbox"/>
		N/A <input type="checkbox"/>
		N/T <input type="checkbox"/>
1.6.4 Eingriffe des Bedienungspersonals <i>Operator intervention</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/>
		F <input type="checkbox"/>
		N/A <input type="checkbox"/>
		N/T <input type="checkbox"/>

1.6.5	Reinigung innen liegender Maschinenteile <i>Cleaning of internal parts</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.7	INFORMATIONEN <i>INFORMATION</i>		
1.7.1	Informationen und Warnhinweise an der Maschine <i>Information and warnings on the machinery</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.7.1.1	Informationen und Informationseinrichtungen <i>Information and information devices</i>	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>
1.7.1.2	Warnrichtungen <i>Warning devices</i>	Bemerkung / Remark: Considered	P <input type="checkbox"/> F <input type="checkbox"/> N/A <input checked="" type="checkbox"/> N/T <input type="checkbox"/>
1.7.2	Warnung vor Restrisiken <i>Warning of residual risks</i>	Bemerkung / Remark: None	P <input checked="" type="checkbox"/> F <input type="checkbox"/> N/A <input type="checkbox"/> N/T <input type="checkbox"/>

<p><b>1.7.3 Kennzeichnung der Maschinen</b>                  Auf jeder Maschine müssen mindestens folgende Angaben erkennbar, deutlich lesbar und dauerhaft angebracht sein:</p> <ul style="list-style-type: none"> <li>- Firmenname und Anschrift des Herstellers (...)</li> <li>- Bezeichnung der Maschine</li> <li>- CE-Kennzeichnung (siehe Anhang III)</li> <li>- Baureihen- oder Typbezeichnung</li> <li>- Gegebenenfalls Seriennummer</li> <li>- Baujahr (...)</li> </ul> <p>Es ist untersagt, bei der Anbringung der CE-Kennzeichnung das Baujahr der Maschine vor- oder nachzutätieren. Ist die Maschine für den Einsatz in explosionsgefährdeter Umgebung konstruiert und gebaut, muss sie einen entsprechenden Hinweis tragen. Je nach Beschaffenheit müssen auf der Maschine ebenfalls alle für die Sicherheit bei der Verwendung wesentlichen Hinweise angebracht sein. (...) Muss ein Maschinenteil während der Benutzung mit Hebezeugen gehandhabt werden, so ist sein Gewicht leserlich, dauerhaft und eindeutig anzugeben.</p> <p><i>Marking of machinery</i>                  All machinery must be marked visibly, legibly and indelibly with the following minimum particulars:</p> <ul style="list-style-type: none"> <li>- name and address of the manufacturer (...)</li> <li>- designation of the machinery</li> <li>- the CE marking (see Annex III)</li> <li>- designation of series or type</li> <li>- Serial no., if any</li> <li>- year of construction (...)</li> </ul> <p><i>It is prohibited to pre-date or post-date the machinery when affixing the CE marking. Furthermore, machinery designed and constructed for use in a potentially explosive atmosphere must be marked accordingly. Machinery must also bear full information relevant to its type and essential for safe use. (...) Where a machine part must be handled during use with lifting equipment, its mass must be indicated legibly, indelibly and unambiguously.</i></p>	<p>Bemerkung / Remark:                  Checked ok</p>	<p>P <input checked="" type="checkbox"/></p> <p>F <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p> <p>N/T <input type="checkbox"/></p>
<p><b>1.7.4. Betriebsanleitung</b>                  Jeder Maschine muss eine Betriebsanleitung in der oder den Amtssprachen der Gemeinschaft des Mitgliedstaats beiliegen, in dem die Maschine in Verkehr gebracht und/oder in Betrieb genommen wird. Die der Maschine beiliegende Betriebsanleitung muss eine „Originalbetriebsanleitung“ oder eine „Übersetzung der Originalbetriebsanleitung“ sein; im letzteren Fall ist der Übersetzung die Originalbetriebsanleitung beizufügen. Abweichend von den vorstehenden Bestimmungen kann die Wartungsanleitung, die zur Verwendung durch Fachpersonal bestimmt ist, in nur einer Sprache abgefasst werden (...).</p> <p><i>Instructions</i>                  All machinery must be accompanied by instructions in the official Community language or languages of the Member State in which it is placed on the market (...). The instructions accompanying the machinery must be either 'Original instructions' or a 'Translation of the original instructions', in which case the translation must be accompanied by the original instructions. By way of exception, the maintenance instructions intended for use by specialised personnel may be supplied in only one Community language (...).</p>	<p>Bemerkung / Remark:                  Checked ok</p>	<p>P <input checked="" type="checkbox"/></p> <p>F <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p> <p>N/T <input type="checkbox"/></p>
<p><b>1.7.4.1 Allgemeine Grundsätze für die Abfassung der Betriebsanleitung</b>  <i>General principles for the drafting of instructions</i></p>	<p>Bemerkung / Remark:                  Checked ok</p>	<p>P <input checked="" type="checkbox"/></p> <p>F <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p> <p>N/T <input type="checkbox"/></p>
<p><b>1.7.4.2 Inhalt der Betriebsanleitung</b>  <i>Contents of the instructions</i></p>	<p>Bemerkung / Remark:                  Considered</p>	<p>P <input checked="" type="checkbox"/></p> <p>F <input type="checkbox"/></p>

		N/A <input type="checkbox"/>
		N/T <input type="checkbox"/>
1.7.4.3 Verkaufsprospekte Sales literature	Bemerkung / Remark: Considered	P <input checked="" type="checkbox"/>
		F <input type="checkbox"/>
		N/A <input type="checkbox"/>
		N/T <input type="checkbox"/>

Anlagen zum Prüfbericht  
*Annexes to Test Report (Machinery Directive)*

- Annex 1: Agri-foodstuffs machinery; EN
- Annex 2: Portable hand-held and/or hand-guided machinery; EN
- Annex 3: Machinery for working wood and analogous materials; EN
- Annex 4: Hazards due to the mobility of machinery; EN
- Annex 5: Hazards due to a lifting operation; EN
- Annex 6: Machinery for underground working; EN
- Annex 7: Hazards due to the lifting or moving of persons; EN

- Keine Anlagen verwendet  
*No annexes were used*

End of Test Report 17705554 001 Attachment 1

**Appendix 9: Measuring Instruments and Test Equipments**  
**附件 9: 测试设备清单**

Test Report No. 1770554 001

Page No. 5

报告号

页数

No.	Name of Equipment	Type No. & Series No.	Calibration Due Date YYYY.MM.DD
N001	<input checked="" type="checkbox"/> Jointed Test Finger 标准测试指	P10.01 5011282	2014.09.18
N002	<input checked="" type="checkbox"/> Test probe B of IEC 61032 测试指 B	P10.14 5011283	2016.10.09
N003	<input type="checkbox"/> Rigid Test finger With Dynamometer 试验指	P10.38	2015.06.22
N004	<input type="checkbox"/> Test Nail to Pin up at a Dynamometer 测试指甲	P10.41 5011285	2016.10.09
N005	<input checked="" type="checkbox"/> Universal Type Spring Hammer 弹簧冲击锤	F22.50 5011286	2015.04.07
N007	<input checked="" type="checkbox"/> Digital Power Meter 数字式功率表	WT200 12A614755	2014.07.22
N008	<input type="checkbox"/> Digital Power Meter 数字式功率表	WT200 12A614756	2014.07.22
N009	<input checked="" type="checkbox"/> Earth Continuity Tester 接地连续性测试仪	TOS6200 EH001169	2014.07.17
N010	<input checked="" type="checkbox"/> Voltage Withstand Tester 耐压测试仪	TOS5051 FD003682	2014.07.17
N012	<input type="checkbox"/> Hybrid recorder 混合打点记录仪	AH3745 - N00 AH008A46	2014.10.19
N015	<input type="checkbox"/> Tumbling Barrel 滚筒式跌落装置	-	2014.06.19
N110	<input checked="" type="checkbox"/> Test probe 13 of IEC 61032 测试指 13	---	2016.06.18
N111	<input type="checkbox"/> Test probe 测试针	---	2015.10.19
N017	<input checked="" type="checkbox"/> Ball-pressure Apparatus 球压试验装置	---	2015.04.08
N018	<input type="checkbox"/> Ball-pressure Apparatus 球压试验装置	---	2015.04.08
N019	<input type="checkbox"/> Insulation Resistance Tester 绝缘电阻表	3453 0133267	2014.07.17
N020	<input type="checkbox"/> Tachometer 电子计数式转速表	SZG-441C 0011019	2015.01.05
N021	<input type="checkbox"/> Hysteresis Dynamometer 数字式磁滞测功机	CC200KL 0111	2014.08.14
N022	<input type="checkbox"/> Hysteresis Dynamometer 数字式磁滞测功机	CC100KL 0111	2014.08.14
N026	<input type="checkbox"/> Three Phase AC Digital Power Analyzer 三相交流功率分析仪	DW73	2014.07.22



No.	Name of Equipment	Type No. & Series No.	Calibration Due Date YYYY.MM.DD
N027	<input type="checkbox"/> Torque Driver 扭矩螺丝刀	RTD120CN 458610P	2014.09.14
N028	<input type="checkbox"/> Torque Driver 扭矩螺丝刀	RTD260CN 426028P	2014.07.07
N030	<input type="checkbox"/> Temp.&Humid. Chamber 冷热气候试验箱	GDW-61AP 0175014	2014.11.14
N031	<input type="checkbox"/> Handy Push Pull Gage 指针式推拉压力计	NK-200 34916	2014.09.14
N032	<input checked="" type="checkbox"/> Glow-wire Tester 灼热丝试验仪	GW-V 20601	2014.08.08
N033	<input type="checkbox"/> Proof tracking Tester 漏电起痕试验仪	TI-V 20602	2014.07.22
N034	<input checked="" type="checkbox"/> Electric Heat-air Dry Test Cabinet 电热鼓风干燥箱	DGF30012SB 2001008	2015.03.24
N038	<input type="checkbox"/> Weight 砝码	100~2000g 381	2014.09.27
N040	<input type="checkbox"/> Digital LCR Tester 数字式 LCR 测量仪	9912 029902002	2014.07.22
N042	<input type="checkbox"/> Goniometer 万能角度尺	0~320° 1346	2014.09.11
N047	<input type="checkbox"/> Needle-flame Tester 针焰试验仪	NF-II 20603	2014.08.08
N048	<input type="checkbox"/> Digital Power Meter 数字式功率表	DW-7	2014.07.22
N049	<input type="checkbox"/> Ergometer 管型测力计	KL-10 106265	2014.09.11
N051	<input type="checkbox"/> Electronic Scale 电子计重秤	ACS-DW 43246	2014.09.13
N054	<input type="checkbox"/> Torque Wrench 扭矩扳手	GNBB-50 031009	2014.09.14
N056	<input type="checkbox"/> Digital Multimeter 数字多用表	FLUKE 187 86160178	2014.07.17
N057	<input checked="" type="checkbox"/> Digital Multimeter 数字多用表	FLUKE 187 86260012	2014.10.09
N059	<input type="checkbox"/> Ergometer 管型测力计	KL-30 0011008	2014.07.07
N063	<input type="checkbox"/> Steel Ruler 钢直尺	HS1020	2015.01.16
N068	<input type="checkbox"/> Vernier Caliper 游标卡尺	0-150mm 22738	2015.04.07
N069	<input type="checkbox"/> Vernier Caliper 游标卡尺	0-150mm 22738	2014.09.12
N074	<input type="checkbox"/> Luminometer 照度计	ZDS-10	2014.11.10
N078	<input type="checkbox"/> Ergometer 管型测力计	F26.31 6031158	2015.01.05
N084	<input type="checkbox"/> Radius gauge 半径量规	R1~6.5mm	2014.09.18
N085	<input type="checkbox"/> Radius gauge 半径量规	R7~14.5mm	2014.09.18
N086	<input type="checkbox"/> Radius gauge 半径量规	R15~25mm	2014.09.18

No.	Name of Equipment	Type No. & Series No.	Calibration Due Date YYYY.MM.DD
N089	<input checked="" type="checkbox"/> Data Acquisition 数据采集仪	34970A My44005291	2015.02.27
N092	<input checked="" type="checkbox"/> mΩ Tester 毫欧计	3540 050814869	2014.07.17
N093	<input type="checkbox"/> AC/DC digital clamp meter 交直流钳流表	2037 1542736	2014.09.12
N094	<input type="checkbox"/> Noncontact Thermometer 非接触温度计	RAYST80XBAP 0182	2014.09.14
N097	<input type="checkbox"/> Electronic Scale 电子台秤	TCS-150 OBW-BS130546	2015.01.05
N101	<input type="checkbox"/> Dial meter 百分表	0-10mm 50915799	2014.09.11
N102	<input type="checkbox"/> Outer diameter 外径千分尺	0-25mm 87294	2014.09.11
N106	<input type="checkbox"/> Tape Ruler 钢卷尺	0-5m	2014.10.09
N107	<input type="checkbox"/> Hygrothermograph 温湿度表	ZJ 1-2B 0609061	2015.01.16
N112	<input checked="" type="checkbox"/> Microscope 读数显微镜	JC10 20070046	2015.04.15
N113	<input checked="" type="checkbox"/> Hygrothermograph 温湿度表	ZJ 1-2B 0701164	2014.10.08
N114	<input type="checkbox"/> Feeler gauge 塞尺	100B17	2016.05.01
N116	<input type="checkbox"/> Sound Level Calibrator 声校准器	AWA6221	2014.11.26
N117	<input type="checkbox"/> Multifunction tester 多功能测试仪	MI2170	2014.06.18
N120	<input type="checkbox"/> Torque tester 扭矩测试仪	TA-6 0707001	2014.09.12
N121	<input checked="" type="checkbox"/> Sound Level Meter 声级计	AWA5661A 030325	2014.11.10
N124	<input type="checkbox"/> Hygrothermograph 温湿度表	ZJ 1-2B 0708055	2014.10.08
N125	<input checked="" type="checkbox"/> Hygrothermograph 温湿度表	ZJ 1-2B 0707058	2014.08.15
N126	<input type="checkbox"/> Hygrothermograph 温湿度表	ZJ 1-2B 0706149	2014.10.08
N128	<input checked="" type="checkbox"/> Torque Wrench 扭矩螺丝刀	FTD100CN2-S 428765W	2014.09.14
N129	<input checked="" type="checkbox"/> B-Field Sensor 磁场探头	2300/90.10 C-0006	2014.09.04
N130	<input checked="" type="checkbox"/> Exposure level tester 电磁场测试仪	ELT-400 C-0006	2014.09.04
N131	<input type="checkbox"/> Go gauge for pin diameter 欧式插头量规	Bild 1-4.06	2016.09.26
N132	<input type="checkbox"/> Stop gauge for pin diameter 欧式插头量规	Bild 1-3.94	2017.04.09
N134	<input type="checkbox"/> Gauge for single-pole insertion 欧式插头量规	Bild 4	2017.04.09
N145	<input type="checkbox"/> Electronic scale 电子天平	BL-600 100410	2014.11.14
N146	<input checked="" type="checkbox"/> Leakage Current Tester 泄漏电流测试仪	7630 1330768	2014.12.29
N148	<input type="checkbox"/> Test probe 41	TP-16	2017.01.05

No.	Name of Equipment	Type No. & Series No.	Calibration Due Date YYYY.MM.DD
	试验探棒	B07007652-0001	
N149	<input type="checkbox"/> Test probe IP1X 球形试验探棒	TP-50 B07007652-0002	2017.01.05
N150	<input type="checkbox"/> Test probe IP3X 试验探棒	TP-2.5/100 B07007652-0003	2017.01.05
N151	<input type="checkbox"/> Test probe IP4, 5, 6X 试验探棒	TP-1/100 B07007652-0004	2017.01.05
N152	<input type="checkbox"/> Cr. & Cl. Gauge 爬漏电距离量规	TA-6 B07007652-0005	2017.01.05
N153	<input type="checkbox"/> Digital push pull force gauge 数显推拉力计	SH-1K 5A06010138	2014.11.09
N154	<input type="checkbox"/> Barometer 气压计	Testo511 39100755	2015.01.08
N155	<input type="checkbox"/> Anemometer 风速计	6004 1500	2015.01.14
N156	<input type="checkbox"/> Angle meter 量角仪	---	2015.05.06
N157	<input type="checkbox"/> Steel ball 钢球	-	-
N159	<input type="checkbox"/> Arm probe 测试臂	---	2015.04.08
N161	<input checked="" type="checkbox"/> Oscilloscope 示波器	TDS3032C C010252	2015.04.03
N163	<input checked="" type="checkbox"/> Earth Continuity Tester 接地连续性测试仪	TOS6210 NF002358	2014.06.18
N164	<input type="checkbox"/> Electronic Scale 电子台秤	TCS-150 OBW-BS143767	2014.08.07
N165	<input type="checkbox"/> Electric iron dropping tester 电熨斗跌落机	EID-1	2014.11.27
N166	<input type="checkbox"/> Temp.&Humid. Chamber 恒温恒湿试验箱	C4-180 54666003670010	2014.08.07
N168	<input type="checkbox"/> Stop Watch 秒表	ZS-1A 018124	2015.01.05
N170	<input type="checkbox"/> Thermometer 水银温度计	-10~110℃	2014.09.10
N189	<input type="checkbox"/> Stop Watch 秒表	ZS-1A 018468	2014.07.22
N190	<input type="checkbox"/> Voltage Withstand Tester 耐压测试仪	TOS5101 NF002605	2014.07.17
N193	<input type="checkbox"/> Test foot 测试脚	TF-08	2014.11.28
N194	<input type="checkbox"/> Digital Power Meter 数字式功率表	WT230 91HB20967	2014.07.22
N196	<input type="checkbox"/> Insulation resistance tester 绝缘电阻测试仪	EXTECH 8205	2014.11.26
N197	<input type="checkbox"/> Electronic load 电子负载	AN23103H 0823H04018	2014.12.03
N198	<input type="checkbox"/> Electronic-load 电子负载	ITECH 002001186374001047	2015.02.17
N199	<input type="checkbox"/> Electronic-load 电子负载	ITECH 002001186374001068	2015.02.17
N203	<input type="checkbox"/> Low temperature impact tester for pin 低温冲击试验装置	TA-18 200812281	2015.01.12
N205	<input type="checkbox"/> Abrasion tester for insulating sleeves of pin	TA-15 200901131	2015.02.05

No.	Name of Equipment	Type No. & Series No.	Calibration Due Date YYYY.MM.DD
N206	<input type="checkbox"/> Dust chamber 粉尘箱	XH351 0901001	2014.07.28
N209	<input type="checkbox"/> Alarmer detector of combustible gas 可燃气体检测报警仪	XP-3110 11006048	2014.07.28
N210	<input type="checkbox"/> Frequency conversion Dynamometer 变频测功机	BC306 9061705	2014.07.07
N211	<input type="checkbox"/> Hysteresis Dynamometer controller 数字式磁滞测功机控制器	AG-38 AC061022	2014.07.22
N212	<input type="checkbox"/> UK plug test gauge 英式插头量规	---	2016.10.09
N214	<input type="checkbox"/> Tachometer 汽油发 动机转速表	SZG-1100	2015.01.12
N238	<input type="checkbox"/> Refrigerator and freezer Performance testing Lab 冰箱及商用冷柜能效实验室	-	2015.05.01
N250	<input type="checkbox"/> Digital protractor 数字量角仪	DXL360	2015.03.06
N251	<input type="checkbox"/> test fixture for Fitness Equipment 测试夹具	-	2017-03-25
N252	<input type="checkbox"/> Memory HiLOGGER 数据采集仪	LR8431-30	2015-04-08
N213	<input type="checkbox"/> AU plug test gauge 澳式插头量规	---	2016.10.09
N229	<input type="checkbox"/> IP X3/4 Test Apparatus IP 试验装置	DMS-E01	2014.10.09
N230	<input type="checkbox"/> Flowmeter 流量计	SYIWGY-15 1109056	2014.10.24
N235	<input type="checkbox"/> Label adhesion tester 剥离力试验机	QT 1196	2014.09.11
N237	<input type="checkbox"/> Triaxial Deltatron seat accelerometer 坐垫传感器	4447/2454-B-002	2014.11.17
N239	<input type="checkbox"/> Mobile Temp. Recorder 无纸打点记录仪	MV2048 S5N707768	2014.08.21
N240	<input type="checkbox"/> Surge tester 浪涌测试仪	Anttema surge P	2014.09.07
N 241	<input type="checkbox"/> RF ATV signal generator 射频模拟信号发生器	TG39BX	2014.11.07
N242	<input checked="" type="checkbox"/> Test probe 18 of IEC61032 测试指 18	ART. 01.14	2016.10.13
N248	<input type="checkbox"/> Dielectric strength test 胶带耐压测试装置	-	-
N243	<input type="checkbox"/> A strip of paper 0.08mm thick 0.08mm 厚纸片	-	-
N244	<input type="checkbox"/> 500g cylindrical weight 500g 圆柱负荷	-	-
N245	<input type="checkbox"/> 1000g cylindrical weight 1000g 圆柱负荷	-	-
N249	<input type="checkbox"/> Hygrothermograph 温湿度表	ZJ 1-2B 201311169	2015.02.17

Signature:

