

INTERNATIONAL STANDARD

IEC 60335-2-54

Edition 3.1

2004-07

Edition 3:2002 consolidated with amendment 1:2004

Household and similar electrical appliances – Safety –

Part 2-54: Particular requirements for surface-cleaning appliances for household use employing liquids or steam

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Reference number
IEC 60335-2-54:2002+A1:2004(E)

Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

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CONTENTS

FOREWORD.....	4
INTRODUCTION.....	6
1 Scope.....	7
2 Normative references	7
3 Definitions	8
4 General requirement.....	8
5 General conditions for the tests	8
6 Classification.....	8
7 Marking and instructions.....	8
8 Protection against access to live parts	9
9 Starting of motor-operated appliances	9
10 Power input and current	9
11 Heating	10
12 Void	10
13 Leakage current and electric strength at operating temperature.....	10
14 Transient overvoltages	10
15 Moisture resistance	10
16 Leakage current and electric strength.....	11
17 Overload protection of transformers and associated circuits	11
18 Endurance.....	11
19 Abnormal operation	11
20 Stability and mechanical hazards	11
21 Mechanical strength	12
22 Construction.....	13
23 Internal wiring.....	15
24 Components	15
25 Supply connection and external flexible cords	15
26 Terminals for external conductors.....	15
27 Provision for earthing	15
28 Screws and connections.....	16
29 Clearances, creepage distances and solid insulation	16
30 Resistance to heat and fire.....	16
31 Resistance to rusting.....	16
32 Radiation, toxicity and similar hazards.....	16
Annexes	20
Bibliography.....	20

Figure 101 – Apparatus for testing the abrasion resistance of current-carrying hoses 17
Figure 102 – Apparatus for testing the resistance to flexing of current-carrying hoses 18
Figure 103 – Configuration of the hose for the freezing treatment 19
Figure 104 – Flexing positions for the hose after removal from the freezing cabinet..... 19

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –
SAFETY –****Part 2-54: Particular requirements for surface-cleaning appliances
for household use employing liquids or steam**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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This part of International Standard IEC 60335 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

This consolidated version of IEC 60335-2-54 is based on the third edition (2002) [documents 61/2244/FDIS and 61/2311/RVD] and its amendment 1 (2004) [documents 61/2624/FDIS and 61/2679/RVD].

It bears the edition number 3.1.

A vertical line in the margin shows where the base publication has been modified by amendment 1.

This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments. It was established on the basis of the fourth edition (2001) of that standard.

NOTE 1 When "Part 1" is mentioned in this standard, it refers to IEC 60335-1.

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Safety requirements for electric surface-cleaning appliances employing liquids or steam.

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

NOTE 2 The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.

NOTE 3 The following print types are used:

- requirements: in roman type;
- test specifications: *in italic type*;
- notes: in small roman type.

Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and the associated noun are also in bold.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

The following differences exist in the countries indicated below.

- 6.1: Hand-held cleaning appliances and parts held in the hand in normal use shall be class II or class III (Netherlands).
- 22.40: The addition is not applicable (USA).
- 22.104: The dimensions of the inlet aperture are different (USA).

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

This standard takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, national wiring rules may differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 60335, the relevant part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

An appliance that complies with the text of this standard will not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features that impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

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HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-54: Particular requirements for surface-cleaning appliances for household use employing liquids or steam

1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric cleaning appliances for household use that are intended for cleaning surfaces such as windows, walls and empty swimming pools by using liquid cleansing agents or steam, their **rated voltage** being not more than 250 V. It also covers wallpaper strippers.

NOTE 101 Appliances may incorporate heating elements or means for pressurising the liquid container.

As far as is practicable, this standard deals with the common hazards presented by appliances that are encountered by all persons in and around the home. However, in general, it does not take into account

- the use of appliances by young children or infirm persons without supervision;
- playing with the appliance by young children.

NOTE 102 Attention is drawn to the fact that

- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary;
- in many countries additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour, and similar authorities.

NOTE 103 This standard does not apply to

- floor treatment and wet scrubbing machines (IEC 60335-2-10);
- cleaning appliances that are permanently fixed to a building;
- cleaning appliances covered by IEC 60335-2-79, namely those having a
 - pressure exceeding 2,5 MPa;
 - liquid temperature exceeding 160 °C;
 - **rated power input** exceeding 3 500 W;
 - pressurised volume over 5 l;
- cleaning appliances intended for commercial or industrial use;
- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas);
- fabric steamers (IEC 60335-2-85).

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

ISO 6344-2: *Coated abrasives – Grain size analysis – Part 2: Determination of grain size distribution of macrogrits, P12 to P220*

ISO 3864, *Safety colours and safety signs*

3 Definitions

This clause of Part 1 is applicable except as follows.

3.1.9 Replacement:

normal operation

operation of the appliance under the most unfavourable conditions specified in the instructions

The cleaning head is pressed with a force of 30 N against a vertical pane of plain glass and moved up and down over a length of 1 m at a rate of 15 cycles per minute. A film of water is maintained on the pane of glass by continuously applying water having a temperature of $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$.

For steam cleaners and wallpaper strippers, a sheet of stainless steel is used instead of glass, without additional wetting. However, if the steam outlet is not intended to be pressed against the surface, the appliance is operated with the outlet in free air directed downwards at an angle of approximately 45° .

4 General requirement

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable except as follows.

5.2 Addition:

A new hose is used for each of the tests of 21.101 to 21.104.

5.101 Appliances incorporating heating elements are tested as **heating appliances** even if they incorporate motors.

6 Classification

This clause of Part 1 is applicable except as follows.

6.1 Modification:

Appliances shall be **class I**, **class II** or **class III**.

6.2 Addition:

Class I and class II hand-held appliances dispensing liquids shall be at least IPX7. Other appliances shall be at least IPX4. **Class III appliances** not exceeding 24 V can be IPX0.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.1 Modification:

Appliances shall be marked with their **rated power input** in watts.

Addition: