

INTERNATIONAL STANDARD

IEC
60335-2-32

Fourth edition
2002-10

Household and similar electrical appliances – Safety –

Part 2-32: Particular requirements for massage appliances

*Appareils électrodomestiques et analogues –
Sécurité –*

*Partie 2-32:
Règles particulières pour les appareils de massage*



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –
SAFETY –****Part 2-32: Particular requirements for massage appliances**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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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- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

This part of International Standard IEC 60335 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

This fourth edition cancels and replaces the third edition published in 1993 and its amendment 1 (1999). It constitutes a technical revision.

The text of this part of IEC 60335 is based on the following documents:

FDIS	Report on voting
61/2216/FDIS	61/2290/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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 massage appliances.

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 2004. 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: Class 0 portable appliances are allowed (Japan and USA).
- 6.1: Class 0I portable appliances are allowed if their rated voltage does not exceed 150 V (Japan).
- 6.1: Class I portable appliances are allowed (USA).
- 13.2: The leakage current value is 0,30 mA (peak) (India).
- 16.2: The leakage current value is 0,30 mA (peak) (India).
- 19.7: This test is not carried out (USA).
- 19.8: This test is not carried out (USA).
- 20.1: The stability test is carried out at 8° (USA).

A bilingual version of this standard 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.

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.

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-32: Particular requirements for massage appliances

1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric massage appliances for household and similar purposes, their **rated voltage** being not more than 250 V for single phase appliances and 480 V for other appliances.

NOTE 101 Examples of appliances within the scope of this standard are

- foot massagers;
- hand-held massagers;
- massage beds;
- massage belts;
- massage chairs;
- massage pads.

Appliances not intended for normal household use but that nevertheless may be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry and on farms, are within the scope of this standard.

NOTE 102 Examples of such appliances are those used in beauty parlours and fitness centres.

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 103 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 104 This standard does not apply to 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).

2 Normative references

This clause of Part 1 is applicable.

3 Definitions

This clause of Part 1 is applicable except as follows.

3.1.9 Replacement

normal operation

operation of the appliance under the following conditions

Hand-held appliances are operated with no load other than that imposed by the vibrator head.

Appliances intended to be used under the feet of a sitting person are operated with the platform loaded with a mass of 5 kg, evenly distributed over an area of 100 mm x 300 mm. Appliances incorporating heating elements are operated with two sheets of thermal insulation placed on the foot platform. The sheets of thermal insulation are made of open cell polyether and have dimensions approximately 300 mm x 100 mm x 15 mm. They are positioned together and loaded with an evenly distributed mass of 10 kg. Appliances having a liquid container are filled with water in accordance with the instructions and loaded with a mass of 10 kg.

NOTE 101 The open-cell polyether has the following composition:

cell count 18^{+2}_0 per cm;

specific mass $30 \text{ kg/m}^3^{+10}_0$ %;

hardness 120 N to 170 N at 40 % impression, measured according to ISO 2439.

Appliances intended to be used under the feet of a standing person are operated with the platform loaded with a mass of 90 kg, evenly distributed over an area of 200 mm x 300 mm.

Massage belts are operated with the belt loaded with a force of 200 N. The force is applied in a horizontal direction by means of a roller, the belt being approximately symmetrical about the roller.

Massage pads are operated with the pad positioned between two layers of felt and placed on a flat horizontal surface. The felt has a thickness of approximately 25 mm, a mass of $4 \text{ kg/m}^2 \pm 0,4 \text{ kg/m}^2$ and extends at least 15 mm beyond the edges of the pad. The upper layer of felt is loaded with a mass of 90 kg, evenly distributed over an area of 300 mm x 300 mm.

Massage chairs are operated without load.

Massage beds are loaded with a mass of 90 kg, evenly distributed over an area of 0,5 m x 2 m.

4 General requirement

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable.

6 Classification

This clause of Part 1 is applicable except as follows.

6.1 Modification:

Portable appliances shall be **class II** or **class III**. **Stationary appliances** shall be **class I**, **class II**, or **class III**.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.12 Addition:

The instructions for appliances having heated parts in contact with the skin shall include the substance of the following:

The appliance has a heated surface. Persons insensitive to heat must be careful when using the appliance.

8 Protection against access to live parts

This clause of Part 1 is applicable.

9 Starting of motor-operated appliances

This clause of Part 1 is not applicable.

10 Power input and current

This clause of Part 1 is applicable.

11 Heating

This clause of Part 1 is applicable except as follows.

11.2 Modification:

Combined appliances are positioned as specified for **motor-operated appliances**.

11.7 Replacement:

Hand-held appliances are operated for 20 min.

Other appliances are operated until steady conditions are established.

11.8 Addition:

The temperature rise of parts in contact with skin or hair shall not exceed the limits specified for handles that are continuously held.

NOTE 101 For massage pads with heating elements, the temperature limits specified for heating pads in IEC 60335-2-17 apply.

12 Void

13 Leakage current and electric strength at operating temperature

This clause of Part 1 is applicable except as follows.

13.2 Modification:

For stationary class I appliances, except fixed appliances, the leakage current shall not exceed 0,75 mA.

14 Transient overvoltages

This clause of Part 1 is applicable.

15 Moisture resistance

This clause of Part 1 is applicable.

16 Leakage current and electric strength

This clause of Part 1 is applicable except as follows.

16.2 Modification:

For stationary class I appliances, except fixed appliances, the leakage current shall not exceed 0,75 mA.

17 Overload protection of transformers and associated circuits

This clause of Part 1 is applicable.

18 Endurance

This clause of Part 1 is not applicable.

19 Abnormal operation

This clause of Part 1 is applicable except as follows.

19.1 Addition:

Appliances incorporating a liquid container that has to be filled by the user are also subjected to the test of 19.101.

19.7 Modification:

Appliances intended to be used under the feet of a sitting person, massage pads, chairs and beds are operated until steady conditions are established. Other appliances are operated for 30 s.

19.9 Not applicable.

19.10 Addition:

*The test is also carried out with **detachable parts** in place.*

19.13 Addition:

During the test of 19.101, the temperature rise of the surface of the container shall not exceed 60 K.

19.101 *Appliances incorporating a liquid container that has to be filled by the user are supplied at **rated voltage** and operated without liquid.*

20 Stability and mechanical hazards

This clause of Part 1 is applicable.

21 Mechanical strength

This clause of Part 1 is applicable except as follows.

Addition:

*Appliances intended to be used under the feet of a sitting person are loaded as specified for **normal operation** but with the mass increased to 90 kg. The mass is applied for 30 s.*

22 Construction

This clause of Part 1 is applicable except as follows.

22.101 Appliances shall be constructed so that hair cannot be drawn into the appliance or be entangled in moving parts.

Compliance is checked by inspection

23 Internal wiring

This clause of Part 1 is applicable.

24 Components

This clause of Part 1 is applicable except as follows.

24.2 Modification:

Massage pads may be fitted with a switch in the flexible cord.

25 Supply connection and external flexible cords

This clause of Part 1 is applicable except as follows.

25.7 Addition:

Flat twin tinsel cord is allowed for **hand-held massage appliances** as long as they are fitted with a non-rewirable plug.

26 Terminals for external conductors

This clause of Part 1 is applicable.

27 Provision for earthing

This clause of Part 1 is applicable.

28 Screws and connections

This clause of Part 1 is applicable.

29 Clearances, creepage distances and solid insulation

This clause of Part 1 is applicable.

30 Resistance to heat and fire

This clause of Part 1 is applicable except as follows.

30.2.3 Not applicable.

31 Resistance to rusting

This clause of Part 1 is applicable.

32 Radiation, toxicity and similar hazards

This clause of Part 1 is applicable.

Annexes

The annexes of Part 1 are applicable.

Bibliography

The bibliography of Part 1 is applicable except as follows.

Addition:

IEC 60335-2-17, *Household and similar electrical appliances – Safety – Part 2-17: Particular requirements for blankets, pads and similar flexible heating appliances*

ISO 2439:1980, *Flexible cellular polymeric materials – Determination of hardness (indentation technique)*

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