



BSI Standards Publication

## Household and similar electrical appliances - Safety

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Part 2-4: Particular requirements for spin extractors

## National foreword

This British Standard is the UK implementation of EN 60335-2-4:2010+A2:2019. It is derived from IEC 60335-2-4:2008, incorporating amendments 1:2012 and 2:2017. It supersedes BS EN 60335-2-4:2010+A11:2018, which will be withdrawn on 8 November 2022.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by  $\boxed{A1}$   $\langle A1 \rangle$ .

Text altered by CENELEC amendment A11 is indicated by  $\boxed{A11}$   $\langle A11 \rangle$ .

The CENELEC common modifications have been implemented at the appropriate places in the text. The start and finish of each common modification is indicated in the text by tags  $\boxed{C}$   $\langle C \rangle$ .

Where a common modification to an IEC amendment has been introduced, the tags carry the number of the amendment. For example, the common modifications introduced by CENELEC to IEC amendment 1 are indicated by  $\boxed{C1}$   $\langle C1 \rangle$ .

The UK participation in its preparation was entrusted to Technical Committee CPL/61, Safety of household and similar electrical appliances.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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**Compliance with a British Standard cannot confer immunity from legal obligations.**

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 April 2010.

### Amendments/corrigenda issued since publication

Date	Text affected
30 April 2015	Implementation of IEC amendment 1:2012 with CENELEC modifications
30 September 2018	Implementation of CENELEC amendment A11:2018
30 November 2019	Implementation of IEC amendment 2:2017 with CENELEC endorsement A2:2019

EUROPEAN STANDARD

**EN 60335-2-4:2010+A2**

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2019

ICS 13.120; 97.060

English Version

## Household and similar electrical appliances – Safety – Part 2-4: Particular requirements for spin extractors

Appareils électrodomestiques et analogues –  
Sécurité – Partie 2-4: Règles particulières  
pour lesessoreuses centrifuges

Sicherheit elektrischer Geräte für den Hausgebrauch  
und ähnliche Zwecke – Teil 2-4: Besondere  
Anforderungen für Wäscheschleudern

This European Standard was approved by CENELEC on 2009-11-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.



CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

## European foreword

The text of document 61/3677/FDIS, future edition 6 of IEC 60335-2-4, prepared by IEC Technical Committee 61, Safety of household and similar electrical appliances, was submitted to the IEC-CENELEC parallel vote.

A draft amendment was prepared by the Technical Committee CENELEC TC 61, Safety of household and similar electrical appliances. It was discussed during the meetings of CENELEC TC 61 in Malaga in June 2007, in Berlin in November 2007, in Kista in June 2008 and in London in December 2008, when it was decided to submit a draft for an amendment to the Unique Acceptance Procedure.

The combined texts were approved by CENELEC as EN 60335-2-4 on 2009-11-01.

This European Standard supersedes EN 60335-2-4:2002 + corr. June 2006 + A1:2004 + A2:2006.

The principal changes compared to EN 60335-2-4:2002 and its amendments are as follows (minor changes are not listed):

- aligns the text with EN 60335-1:2002 and its amendments,
- clarifies criteria for the protection against mechanical hazards for double lid appliances,
- some notes have been converted to normative text.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates are applicable:

- |   |  |       |            |
|---|--|-------|------------|
| — | latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2010-11-01 |
| — | date on which national standards conflicting with the EN have to be withdrawn  | (dow) | 2014-11-01 |

This part 2 has to be used in conjunction with EN 60335-1, Household and similar electrical appliances — Safety — Part 1: General requirements. It was established on the basis of the 2002 edition of that standard. Amendments and revisions of Part 1 have also to be taken into account and the dates when such changes become applicable will be stated in the relevant amendment or revision of Part 1.

This part 2 supplements or modifies the corresponding clauses of EN 60335-1, so as to convert it into the European Standard: Safety requirements for electric spin extractors.

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 of Part 1 is to be adapted accordingly.

NOTE 1 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.;
- subclauses, notes and annexes that are additional to those in the IEC standard are prefixed with the letter Z.

NOTE 2 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.

There are no special national conditions causing a deviation from this European Standard, other than those listed in Annex ZA to EN 60335-1.

There are no national deviations from this European Standard, other than those listed in Annex ZB to EN 60335-1.

P NOTE In this document, p is used in the margin to indicate instructions for preparing the printed version.

#### Endorsement notice

The text of the International Standard IEC 60335-2-4:2008 was approved by CENELEC as a European Standard with agreed common modifications.

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## Foreword to amendment A1

The text of document 61/4447/FDIS, future IEC 60335-2-4:2008/A1, prepared by IEC/TC 61 "Safety of household and similar electrical appliances" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60335-2-4:2010/A1:2015.

A draft amendment, which covers common modifications to IEC 60335-2-4:2008/A1 (61/4447/FDIS), was prepared by CLC/TC 61,"Safety of household and similar electrical appliances" and approved by CENELEC.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2015-09-13
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2016-08-12

This amendment supplements or modifies the corresponding clauses of EN 60335-1:2012 and EN 60335-2-4:2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

#### Endorsement notice

The text of the International Standard IEC 60335-2-4:2008/A1:2012 was approved by CENELEC as a European Standard with agreed common modifications.

## Foreword to amendment A11

This document (EN 60335-2-4:2010/A11:2018) has been prepared by CLC/TC 61 "Safety of household and similar electrical appliances".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2019-02-17
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2021-08-17

This amendment supplements or modifies the corresponding clauses of EN 60335-1:2012 including its amendments and EN 60335-2-4:2010 and its A1:2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative [Annex ZZ](#), which is an integral part of this document.

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## Foreword to amendment A2

The text of document 61/5287/CDV, future IEC 60335-2-4/A2, prepared by IEC/TC 61 "Safety of household and similar electrical appliances" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60335-2-4:2010/A2:2019.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-05-08
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-11-08

This amendment supplements or modifies the corresponding clauses of the standards below:

— EN 60335-1:2012+A11:2014+ A13:2017+A1:2019+A14:2019+A2:2019

— (Part 1) EN 60335-2-4:2010+A1:2015+A11:2018 (Part 2)

For the relationship with EU Directive(s) see informative Annex(es) ZZ, which is(are) an integral part(s) of this document.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

### Endorsement notice

The text of the International Standard IEC 60335-2-4:2008/A2:2017 was approved by CENELEC as a European Standard without any modification.

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

#### Part 2-4: Particular requirements for spin extractors

#### 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
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- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
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- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60335-2-4 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

This sixth edition cancels and replaces the fifth edition published in 2002 including its Amendment 1 (2004) and Amendment 2 (2006). It constitutes a technical revision.

The principal changes in this edition as compared with the fifth edition of IEC 60335-2-4 are as follows (minor changes are not listed):

- aligns the text with IEC 60335-1:2001, and its Amendments 1 and 2;
- clarifies criteria for the protection against mechanical hazards for double lid appliances (20.103 and 20.104);
- some notes have been converted to normative text (Clause 1, 20.102 and Annex AA).



The text of this standard is based on the following documents:

FDIS	Report on voting
61/3677/FDIS	61/3697/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 publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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 spin extractors.

**A2** NOTE 2 Void. **A2**

Annex AA Rinsing agent

IEC 60436

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 3 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 4 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.

A list of all parts of the IEC 60335 series, under the general title: *Household and similar electrical appliances – Safety*, can be found on the IEC website.

The committee has decided that the contents of the base publication and its amendments 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.

NOTE 5 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

The following differences exist in the countries indicated below.

3.1.9: As an alternative to the test material specified, pieces of cloth having an area between 4 800 cm<sup>2</sup> and 5 000 cm<sup>2</sup>, with one side at least 55 cm, may be used for the tests (USA).

6.1: Class 0I appliances are allowed (Japan).

6.2: IPX0 appliances are allowed (USA).

15.2: The test is different (USA).

18: The test is carried out for 6 000 cycles (Canada and USA).

19.7: This subclause is applicable (USA).

20.101: The test is not carried out (USA).

20.103: The requirement is different (USA).

20.104: The requirement is different (USA).

21.101: There are constructional requirements for metal lids and the tests are different for thermoplastic lids (USA)

21.102: There are constructional requirements for metal lids and the tests are different for thermoplastic lids (USA).

## 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.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

**NOTE 1** This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

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.

**NOTE 2** Horizontal and generic standards covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards. For example, in the case of temperature requirements for surfaces on many appliances, generic standards, such as ISO 13732-1 for hot surfaces, are not applicable in addition to Part 1 or part 2 standards.

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 which 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 2-4:

### Particular requirements for spin extractors

#### 1 Scope

☐ This clause of Part 1 is replaced by the following.

This European Standard deals with the safety of

- stand alone electric **spin extractors**
- **spin extractors** incorporated in washing machines that have separate containers for washing and spin extraction

for household and similar purposes that have a capacity not exceeding 10 kg of dry cloth and a drum peripheral speed not exceeding 50 m/s, their **rated voltages** being not more than 250 V for single-phase appliances and 480 V for other appliances.

Appliances not intended for normal household use but which nevertheless may be a source of danger to the public, such as **spin extractors** intended to be used by laymen in shops, on farms, and for communal use in blocks of flats are within the scope of this standard.

☐ This European Standard deals with the reasonably foreseeable hazards presented by appliances and machines that are encountered by all persons.

However, in general, it does not take into account:

- **children** playing with the appliance;
- the use of the appliance by **very young children**;
- the use of the appliance by **young children** without supervision.

It is recognized that **very vulnerable people** may have needs beyond the level addressed in this standard. ☐

This standard does not apply to

- **spin extractors** intended to be used in launderettes,
- **spin extractors** intended exclusively for industrial purposes,
- **spin extractors** intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas).

NOTE 101 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, the national water supply authorities and similar authorities. ☐