



BSI Standards Publication

Household and similar electrical appliances - Safety

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 It supersedes BS EN 60335-2-4:2010+A11:2018, which will be withdrawn on 8 November 2022.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 A1 A1.

Text altered by CENELEC amendment A11 is indicated by A11 A11.

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 C C.

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 C1 C1.

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 committee manager.

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

© The British Standards Institution 2020
Published by BSI Standards Limited 2020

ISBN 978 0 539 13464 3

ICS 13.120; 97.060

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, including the addition of Annex ZZ
30 November 2019	Implementation of IEC amendment 2:2017 with CENELEC endorsement A2:2019, including the addition of Annexes ZZA and ZZB
31 August 2020	Revisions made to the structure of the standard

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.

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.

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.

Contents

	Page
FOREWORD	ii
INTRODUCTION	v
1 Scope	1
2 Normative references	2
3 A1 Terms and definitions A1	2
4 General requirement	2
5 General conditions for the tests	2
6 Classification	2
7 Marking and instructions	3
8 Protection against access to live parts	3
9 Starting of motor-operated appliances	3
10 Power input and current	3
11 Heating	3
12 Void	4
13 Leakage current and electric strength at operating temperature	4
14 Transient overvoltages	4
15 Moisture resistance	4
16 Leakage current and electric strength	4
17 Overload protection of transformers and associated circuits	5
18 Endurance	5
19 Abnormal operation	5
20 Stability and mechanical hazards	5
21 Mechanical strength	7
22 Construction	7
23 Internal wiring	7
24 Components	7
25 Supply connection and external flexible cords	8
26 Terminals for external conductors	8
27 Provision for earthing	8
28 Screws and connections	8
29 Clearances, creepage distances and solid insulation	8
30 Resistance to heat and fire	8
31 Resistance to rusting	8
32 Radiation, toxicity and similar hazards	8
Annexes	9
Z Annexes	13
Bibliography	16

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 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.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 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.

NOTE 2 Void.

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.