



**NSAI**  
Standards

Irish Standard  
I.S. EN IEC 60335-2-111:2019

Household and similar electrical  
appliances - Safety - Part 2-111:  
Particular requirements for electric ondol  
mattress with a non-flexible heated part

**I.S. EN IEC 60335-2-111:2019**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN IEC 60335-2-111:2019 is the adopted Irish version of the European Document EN IEC 60335-2-111:2019, Household and similar electrical appliances - Safety - Part 2-111: Particular requirements for electric ondol mattress with a non-flexible heated part

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN IEC 60335-2-111**

November 2019

ICS 97.030

English Version

**Household and similar electrical appliances - Safety - Part 2-111:  
Particular requirements for electric ondol mattress with a non-  
flexible heated part  
(IEC 60335-2-111:2015)**

Appareils électrodomestiques et analogues - Sécurité - Part  
2-111: Exigences particulières pour les matelas électriques  
ondol avec une partie chauffée non-flexible  
(IEC 60335-2-111:2015)

Sicherheit elektrischer Geräte für den Hausgebrauch und  
ähnliche Zwecke - Teil 2-111: Besondere Anforderungen für  
elektrische Ondol-Matratzen mit einem nicht flexiblen  
beheizten Teil  
(IEC 60335-2-111:2015)

This European Standard was approved by CENELEC on 2019-04-19. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN IEC 60335-2-111:2019 (E)****European foreword**

The text of document 61/4826FDIS, future edition 1 of IEC 60335-2-111:2015, 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 IEC 60335-2-111:2019.

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

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 standard shall be read in conjunction with IEC 60335-1:2010+A1:2013+A2:2016+COR1:2016

This standards is not linked to any European legislation.

**Endorsement notice**

The text of the International Standard IEC 60335-2-111:2015 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60335-2-17	NOTE	Harmonized as EN 60335-2-17
IEC 60335-2-30	NOTE	Harmonized as EN 60335-2-30
IEC 60335-2-66	NOTE	Harmonized as EN 60335-2-66
IEC 60335-2-71	NOTE	Harmonized as EN 60335-2-71
IEC 60335-2-81	NOTE	Harmonized as EN 60335-2-81
IEC 60335-2-96	NOTE	Harmonized as EN 60335-2-96
IEC 60335-2-106	NOTE	Harmonized as EN 60335-2-106
IEC 80601-2-35	NOTE	Harmonized as EN 80601-2-35

## Annex ZC

(normative)

### Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

*The Annex ZC of Part 1 applies, except as follows:*

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
<i>Addition</i>				
ISO 2439	-	Flexible cellular polymeric materials Determination of hardness (indentation technique)	-EN ISO 2439	-

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**IEC 60335-2-111**

Edition 1.0 2015-01

# **INTERNATIONAL STANDARD**

## **NORME INTERNATIONALE**

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**Household and similar electrical appliances – Safety –  
Part 2-111: Particular requirements for electric ondol mattress with a non-flexible  
heated part**

**Appareils électrodomestiques et analogues – Sécurité –  
Partie 2-111: Exigences particulières pour les matelas électriques ondol  
avec une partie chauffée non flexible**



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**IEC 60335-2-111**

Edition 1.0 2015-01

# **INTERNATIONAL STANDARD**

## **NORME INTERNATIONALE**

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**Household and similar electrical appliances – Safety –  
Part 2-111: Particular requirements for electric ondol mattress with a non-  
flexible heated part**

**Appareils électrodomestiques et analogues – Sécurité –  
Partie 2-111: Exigences particulières pour les matelas électriques ondol  
avec une partie chauffée non flexible**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

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## CONTENTS

FOREWORD .....	3
INTRODUCTION .....	5
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	7
4 General requirement .....	7
5 General conditions for the tests .....	7
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 .....	9
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 .....	10
17 Overload protection of transformers and associated circuits .....	11
18 Endurance .....	11
19 Abnormal operation .....	11
20 Stability and mechanical hazards .....	12
21 Mechanical strength .....	12
22 Construction .....	12
23 Internal wiring .....	13
24 Components .....	13
25 Supply connection and external flexible cords .....	13
26 Terminals for external conductors .....	13
27 Provision for earthing .....	14
28 Screws and connections .....	14
29 Clearances, creepage distances and solid insulation .....	14
30 Resistance to heat and fire .....	14
31 Resistance to rusting .....	14
32 Radiation, toxicity and similar hazards .....	14
Bibliography .....	17
Figure 101 – Arrangement for measuring leakage current and electric strength of the ondol-mattress .....	15
Figure 102 – Positioning of the thermal insulation on an ondol-mattress incorporating thermostats .....	15

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
SAFETY –****Part 2-111: Particular requirements for electric ondol  
mattress with a non-flexible heated part**

## 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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International Standard IEC 60335-2-111 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

It forms the first edition of IEC 60335-2-111.

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

FDIS	Report on voting
61/4826/FDIS	61/4873/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 fifth edition (2010) 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 ondol mattress with a non-flexible heated part.

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.

NOTE 4 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 standard be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of its publication.

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 this publication will remain unchanged until the stability 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.

## 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 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 2-111: Particular requirements for electric ondol mattress with a non-flexible heated part

#### 1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric **ondol-mattresses** for household and similar purposes, their rated voltage being not more than 250 V.

This standard also applies to **control units** supplied with the appliance.

Appliances not intended for normal household use but which nevertheless may be a source of danger to the public, such as appliances intended to be used in community spas or by persons in cold ambient temperatures, are within the scope of this standard.

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 101 This standard does not apply to

- appliances intended exclusively for industrial purposes;
- 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);
- blankets, pads and similar flexible heating appliances (IEC 60335-2-17);
- room heaters (IEC 60335-2-30);
- water bed heaters (IEC 60335-2-66);
- heating appliances for breeding and rearing animals (IEC 60335-2-71);
- foot warmers and heating mats (IEC 60335-2-81);
- flexible sheet heating elements for room heating (IEC 60335-2-96);
- heated carpets and for heating units for room heating installed under removable floor coverings (IEC 60335-2-106);
- appliances specifically intended for use under medical supervision (IEC 80601-2-35).

#### 2 Normative references

This clause of Part 1 is applicable except as follows.

*Addition:*

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



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