



SLOVENSKI STANDARD
SIST EN 60335-2-81:2003/A2:2012
01-maj-2012

Gospodinjiski in podobni električni aparati - Varnost - 2-81. del: Posebne zahteve za grelnike nog in grelna pregrinjala - Dopolnilo A2 (IEC 60335-2-81:2002/A2:2011)

Household and similar electrical appliances - Safety - Part 2-81: Particular requirements for foot warmers and heating mats

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke - Teil 2-81: Besondere Anforderungen an Fußwärmer und Heizmatten

Appareils électrodomestiques et analogues - Sécurité - Partie 2-81: Règles particulières pour les chancelières et les carpettes chauffantes électriques

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Ta slovenski standard je istoveten z: EN 60335-2-81:2003/A2:2012

ICS:

13.120	Varnost na domu	Domestic safety
97.100.10	Električni grelniki	Electric heaters

SIST EN 60335-2-81:2003/A2:2012 **en**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60335-2-81/A2

March 2012

ICS 97.100.10

English version

**Household and similar electrical appliances -
Safety -
Part 2-81: Particular requirements for foot warmers and heating mats
(IEC 60335-2-81:2002/A2:2011)**

Appareils électrodomestiques et
analogues -
Sécurité -
Partie 2-81: Règles particulières pour les
chancelières et les carpettes chauffantes
électriques
(CEI 60335-2-81:2002/A2:2011)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke -
Teil 2-81: Besondere Anforderungen an
Fußwärmer und Heizmatten
(IEC 60335-2-81:2002/A2:2011)

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This amendment A2 modifies the European Standard EN 60335-2-81:2003; it was approved by CENELEC on 2011-10-18. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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.

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, Turkey and the United Kingdom.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 61/4102/CDV, future edition 2 of IEC 60335-2-81:2002/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 60335-2-81:2003/A2:2012.

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) 2012-09-02
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2014-10-18

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.

Endorsement notice

The text of the International Standard IEC 60335-2-81:2002/A2:2011 was approved by CENELEC as a European Standard without any modification.

[SIST EN 60335-2-81:2003/A2:2012](https://standards.iteh.ai/catalog/standards/sist/d295d403-42f1-4f71-8134-90f8ae33c088/sist-en-60335-2-81-2003-a2-2012)

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Addition to Annex ZA of EN 60335-2-81:2003:

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60320-1 + A1	2001 2007	Appliance couplers for household and similar general purposes - Part 1: General requirements	EN 60320-1 + A1	2001 2007

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IEC 60335-2-81

Edition 2.0 2011-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 2
AMENDEMENT 2

Household and similar electrical appliances – Safety –
Part 2-81: Particular requirements for foot warmers and heating mats

Appareils électrodomestiques et analogues – Sécurité –
Partie 2-81: Règles particulières pour les chancelières et les carpettes
chauffantes électriques

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
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CODE PRIX

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ICS 97.100.10

ISBN 978-2-88912-623-1

FOREWORD

This amendment has been prepared by committee 61: Safety of household and similar electrical appliances.

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

CDV	Report on voting
61/4102/CDV	61/4200/RVC

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

The French version of this amendment has not been voted upon.

The committee has decided that the contents of this amendment and the base 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.

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NOTE 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.

2 Normative references

Add the following new reference:

IEC 60320-1:2001, *Appliance couplers for household and similar general purposes – Part 1: General requirements*
Amendment 1 (2007)¹

3 Definitions

Add the following new definition:

3.103

heating element with PTC characteristics

heating element of the appliance consisting of a pair of conductors separated by conductive material that has a rapid non-linear increase in resistance when the temperature is raised through a particular range

¹ There exists a consolidated edition 2.1 (2007) that includes edition 2 and its Amendment 1.

10 Power input and current

Replace the existing text by the following:

This clause of Part 1 is applicable except as follows.

10.101 The power input of appliances incorporating **heating elements with PTC characteristics** shall significantly decrease with an increase in temperature.

Compliance is checked by the following test.

*The appliance is supplied at **rated voltage** and operated under **normal operation**. The power input shall have decreased by at least 50 % from the initial value when steady conditions are established, any control operating during this period being short-circuited.*

21 Mechanical strength

21.101 *In the second sentence of the first paragraph, replace 'A mass of 30 kg' by 'A load'.*

Add a new third sentence as follows:

The total mass of the board, its movable support and the load is 30 kg.

21.102.1 *Add the following new paragraph after Note 3:*

*For **heating elements with PTC characteristics**, the power input is measured before and after the test. The measurement is made with the **heating element** suspended vertically in free air and supplied at the **rated voltage** of the appliance. Both measurements are carried out at the same ambient temperature and when the power input has stabilized. The power input shall not increase during the test.*

Add the following new subclause:

21.103 **Heating elements with PTC characteristics** shall be resistant to crushing.

Compliance is checked by the following test.

*The **flexible part** is fully supported by a piece of plywood 20 mm thick and supplied as specified in 11.4. When steady conditions are established, the temperature of the **heating element** is measured. A block having dimensions of 100 mm × 300 mm and a mass of 80 kg is applied for 5 min to the surface in the most unfavourable place. After removing the block, the appliance is again operated until steady conditions are established and the temperature of the **heating element** is measured. The temperature of the **heating element** where the block has been applied shall not have increased by more than 10 K.*

NOTE 1 The edges of the block in contact with the **flexible part** are rounded.

NOTE 2 The most unfavourable place to apply the block is usually at a loop in the element.