SLOVENSKI STANDARD
SIST EN 60311:2003

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Electric irons for household or similar use - Methods for measuring performance

Electric irons for household or similar use - Methods for measuring performance

Elektrische Bügeleisen für Haushalt und ähnliche Zwecke - Verfahren zur Messung der Gebrauchseigenschaften

Fers à repasser électriques pour usage domestique ou analogue - Méthodes de mesure de l'aptitude à la fonction

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English version

Electric irons for household or similar use – Methods for measuring performance
(IEC 60311:2002)

Fers à repasser électriques pour usage domestique ou analogue - Méthodes de mesure de l'aptitude à la fonction (CEI 60311:2002)

Elektrische Bügeleisen für Haushalt und ähnliche Zwecke – Verfahren zur Messung der Gebrauchseigenschaften (IEC 60311:2002)

This European Standard was approved by CENELEC on 2003-07-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

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Foreword

The text of the International Standard IEC 60311:2002, prepared by SC 59E, Ironing and pressing appliances, of IEC TC 59, Performance of household electrical appliances, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 60311 on 2003-07-01 without any modification.

This European Standard supersedes EN 60311:1997 + A1:1997 + A2:2000.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2004-07-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2006-07-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, Annexes B, C and ZA are normative and Annexes A and D are informative.
Annex ZA has been added by CENELEC.

In this standard, the following print types are used:

– *test specifications: italic type;*

– In small roman type;

– other texts: in roman type;

Words in **bold** in the text are defined in Clause 3.

Endorsement notice

The text of the International Standard IEC 60311:2002 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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

Publication	Year	Title	EN/HD	Year
IEC 60051-1	1997	Direct acting indicating analogue electrical measuring instruments and their accessories Part 1: Definitions and general requirements common to all parts	EN 60051-1	1998
IEC 60454-3-3	1998	Pressure-sensitive adhesive tapes for electrical purposes Part 3: Specifications for individual materials - Sheet 3: Polyester film tapes with rubber thermoplastic adhesive	EN 60454-3-3	1998
IEC 60734	2001	Household electrical appliances - Performance - Hard water for testing	EN 60734	2003
ISO 105-F	1985	Textiles - Tests for colour fastness Part F: Standard adjacent fabrics	-	-
ISO 1518	1992	Paints and varnishes - Scratch test	EN ISO 1518	2000
ISO 2409	1992	Paints and varnishes - Cross-cut test	EN ISO 2409	1994
ISO 3758	1991	Textiles - Care labelling code using symbols	EN 23758	1993
ISO 3801	1977	Textiles - Woven fabrics - Determination of mass per unit length and mass per unit area	-	-
ISO 6330	2000	Textiles - Domestic washing and drying procedures for textile testing	EN ISO 6330	2000
ISO 7211-2 (mod)	1984	Textiles - Woven fabrics - Construction - Methods of analysis Part 2: Determination of number of threads per unit length	EN 1049-2	1993
ISO 9073-2	1995	Textiles - Test methods for nonwovens – Part 2: Determination of thickness	EN ISO 9073-2	1996
ISO 4-1	1999	Textiles - Tensile properties of fabrics -- Part 1: Determination of maximum force and elongation at maximum force using the strip method	EN ISO 13934-1	1999

INTERNATIONAL STANDARD

IEC 60311

Fourth edition
2002-09

Electric irons for household or similar use – Methods for measuring performance

Fers à repasser électriques pour usage domestique ou analogue –
Méthodes de mesure de l'aptitude à la fonction

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRIC IRONS FOR HOUSEHOLD OR SIMILAR USE – METHODS FOR MEASURING PERFORMANCE

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.

2) The formal decisions or agreements of the 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 National Committees.

3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

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.

International Standard IEC 60311 has been prepared by subcommittee 59E: Ironing and pressing appliances, of IEC technical committee 59: Performance of household electrical appliances.

This fourth edition of IEC 60311 cancels and replaces the third edition published in 1995 and its amendment 1 (1997) and amendment 2 (1999).

The text of this standard is based on the third edition, amendments 1 and 2 and the following documents:

FDIS	Report on voting
59E/148/FDIS	59E/149/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 3.

Annexes B and C form an integral part of this standard.

Annexes A and D are for information only.

In this standard, the following print types are used:

— *test specifications: in italic type*

— notes: in small roman type

— other texts: in roman type

Words in **bold** in the text are defined in clause 3.

The committee has decided that the contents of this publication will remain unchanged until February 2005. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

ELECTRIC IRONS FOR HOUSEHOLD OR SIMILAR USE – METHODS FOR MEASURING PERFORMANCE

1 Scope

This International Standard applies to electric irons for household or similar use.

The purpose of this standard is to state and define the principal performance characteristics of electric irons for household or similar use which are of interest to the user and to describe the standard methods for measuring these characteristics.

Electric irons covered by this standard include

– dry irons;

– steam irons;

– spray irons;

– steam irons with separate water reservoir or boiler/generator having a capacity not exceeding 5 l.

This standard is concerned neither with safety nor with performance requirements.

NOTE The primary characteristic to be taken into account in assessing the performance of an electric iron is its basic ability to produce a smooth finish to textile materials, without risk of scorching or other damage. It has not proved possible to devise a single method which will measure this characteristic in a consistently reproducible way and measurements have therefore been included to check certain factors, such as the temperature of the sole-plate at the mid-point, sole-plate temperature distribution, etc., which affect the basic characteristic. In evaluating the results, it must be realized that, while a very exceptional result in any one of them may significantly affect performance, there is considerable latitude in the combination of results which will give satisfactory ironing performance, and too much significance should not be attached to minor differences in any one result.

2 Normative references

The following referenced documents are indispensable for the application 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.

IEC 60051-1:1997, *Direct acting indicating analogue electrical measuring instruments and their accessories – Part 1: Definitions and general requirements common to all parts*

IEC 60454-3-3:1998, *Pressure-sensitive adhesive tapes for electrical purposes – Part 3: Specifications for individual materials – Sheet 3: Polyester film tapes with rubber thermoplastic adhesive*

IEC 60734:2001, *Household electrical applicances – Performance – Hard water for testing*

ISO 105-F:1985, *Textiles – Tests for colour fastness – Part F: Standard adjacent fabrics*

ISO 1518:1992, *Paints and varnishes – Scratch test*

ISO 2409:1992, *Paints and varnishes – Cross-cut test*

ISO 3758:1991, *Textiles – Care labelling code using symbols*

ISO 3801:1977, *Textiles – Woven fabrics – Determination of mass per unit length and mass per unit area*

ISO 6330:2000, *Textiles – Domestic washing and drying procedures for textile testing*

ISO 7211-2:1984, *Textiles – Woven fabrics – Construction – Methods of analysis – Part 2: Determination of number of threads per unit length*

ISO 9073-2: 1995, *Textiles – Test methods for nonwovens – Part 2: Determination of thickness*

ISO 13934-1:1999, *Textiles – Tensile properties of fabrics – Part 1: Determination of maximum force and elongation at maximum force using the strip method*

3 Terms and definitions

For the purposes of this standard the following definitions apply.

3.1
electric iron
portable appliance, which has an electrically heated sole-plate and is used for ironing textile materials

NOTE In this standard, "electric iron" is referred to as "iron".

3.2
thermostatic iron
iron fitted with a thermostat, the setting of which can be adjusted manually to alter the sole-plate temperature over a range and maintain it within certain limits

3.3
electric iron with non-self-resetting thermal cut-out
iron fitted with a non-self-resetting thermal cut-out, such as a fusible link, for the purpose of disconnecting the heating element if the iron attains excessive temperature

3.4
dry iron
iron having neither means to produce and supply steam nor to spray water onto textile materials while ironing

3.5
steam iron
iron having means to produce and supply steam to textile materials while ironing. It can be provided with means to supply a shot of steam

3.5.1
shot-of-steam iron
iron provided with means to supply a shot of steam to textile materials while ironing

3.5.2
shot of steam
single emission of an increased volume of steam from the sole-plate for a short duration

3.5.3
vented steam iron
steam iron in which steam is produced when the water contacts the sole-plate, the water reservoir being at atmospheric pressure.

NOTE The water reservoir may be incorporated in the iron or connected by a hose to the iron.

3.5.4
pressurized steam iron
steam iron in which steam is produced in a boiler at a pressure exceeding 50 kPa

NOTE The boiler may be incorporated in the iron or connected by a hose to the iron.

3.5.5
instantaneous steam iron
steam iron in which small quantities of water are pumped from the water reservoir and in which steam is produced when the water contacts the walls of the boiler/generator, the water reservoir being at atmospheric pressure

NOTE The water reservoir and the boiler are connected to the iron by a tube.

3.6
spray iron
iron provided with means to spray water onto textile materials while ironing

3.7
rated voltage

3.7.1
rated voltage
voltage assigned to the iron by the manufacturer

3.7.2
rated voltage range
range of voltage assigned to the iron by the manufacturer, expressed in terms of its lower and upper limits

3.8
rated input
input power of the iron under normal operating conditions assigned by the manufacturer

3.9
sole-plate
flat surface of the iron, which is heated electrically and pressed against textile materials while ironing

3.10
mid-point
point of the sole-plate in the geometrical centre of the centre-line of the sole-plate.

If this point is on a steam outlet, a groove or a cover, the nearest point of the sole-plate on the centre-line as is practicable is chosen

3.11
upright position
vertical still position for a heel-standing iron or normal resting position according to the manufacturer's instructions for other than a heel-standing iron

3.12
cordless iron

3.12.1
cordless iron
iron which is connected to the supply mains only when placed on its stand

3.12.2
cordless iron having a mains supply attachment
cordless iron which is provided, in addition, with a detachable part to which the supply cord is fixed, and which can be connected to the supply mains directly during ironing

3.13
auto switch-off device
device provided by the manufacturer to interrupt the heating element if the iron is not moved for a stated period of time

4 Measurements for various types of irons

The performance of the iron is determined by the measurements indicated in table 1. Relevant measurements for various types of irons are indicated in table 1 by x.

Measurements are performed in the order given in table 1.

Table 1 – Measurements of various types of irons

Item of measurement	Thermo-static dry irons	Thermostatic dry irons with non-self-resetting thermal cut out	Thermo-static steam irons	Thermo-static steam irons with non-self resetting thermal cut out	Cordless irons	Cordless irons having a mains supply attach-ment
6.1 (Determination of mass)	x	x	x	x	x	x
6.2 (Measurement of length of the supply cord)	x	x	x	x	x	x
7.1 (Measurement of heating-up time)	x	x	x	x	x	x
7.2 (Measurement of initial overswing temperature and heating-up excess temperature)	x	x	x	x	x	x
7.3 (Measurement of sole-plate temperature)	x	x	x	x	x	x
7.4 (Determination of the hottest point)	x	x	x	x	x	x
7.5 (Measurement of temperature distribution)	x	x	x	x	x	x
7.6 (Measurement of cyclic fluctuation of temperature of the hottest point)	x	x	x	x	x	x
8 (Assessment of spray function)	(x)	(x)	(x)	(x)	(x)	(x)
9.1 (Measurement of heating-up time for steaming operation)	x	x	x	x	x	x
9.2 (Measurement of steaming time)			x	x		x
9.2 (Measurement of steaming rate)			x	x	x	x
9.3 (Determination of mass of a shot of steam)			(x)	(x)	(x)	(x)
10 (Assessment of smoothing)	x	x	x	x	x	x
10.4 (Ironing with shot of steam)			(x)	(x)	(x)	(x)