



UL 60335-2-3

STANDARD FOR SAFETY

Standard for Safety of Household and Similar
Electrical Appliances, Part 2: Particular
Requirements for Electric Irons

Copyright UL
Provided by IHS under license with UL
No reproduction or networking permitted without license from IHS
Full document details: UL 60335-2-3 2013



Documents
Document Sharing Hub

*UL COPYRIGHTED MATERIAL –
NOT AUTHORIZED FOR FURTHER REPRODUCTION OR
DISTRIBUTION WITHOUT PERMISSION FROM UL*



Documents
Document Sharing Hub

UL Standard for Safety for Household and Similar Electrical Appliances, Part 2: Particular Requirements for Electric Irons, UL 60335-2-3

Fifth Edition, Dated July 14, 2004

Summary of Topics

Revisions dated February 26, 2013 were issued to reflect the latest approval date as an American National Standard and to incorporate the following changes in requirements:

- Update to UL 60335-2-3 to align it with the 5th edition of UL 60335-1 issued October 31, 2012.

UL 60335-2-3 is an adoption of IEC 60335-2-3, Safety Standard for Household and Similar Electrical Appliances, Part 2: Particular Requirements for Electric Irons, (Edition 5.2, Issued by the IEC July 2008). Please note that the national difference document incorporates all of the U.S. national differences for UL 60335-2-3.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The new and revised requirements are substantially in accordance with Proposal(s) on this subject dated November 2, 2012.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic, mechanical photocopying, recording, or otherwise without prior permission of UL.

UL provides this Standard "as is" without warranty of any kind, either expressed or implied, including but not limited to, the implied warranties of merchantability or fitness for any purpose.

In no event will UL be liable for any special, incidental, consequential, indirect or similar damages, including loss of profits, lost savings, loss of data, or any other damages arising out of the use of or the inability to use this Standard, even if UL or an authorized UL representative has been advised of the possibility of such damage. In no event shall UL's liability for any damage ever exceed the price paid for this Standard, regardless of the form of the claim.

Users of the electronic versions of UL's Standards for Safety agree to defend, indemnify, and hold UL harmless from and against any loss, expense, liability, damage, claim, or judgment (including reasonable attorney's fees) resulting from any error or deviation introduced while purchaser is storing an electronic Standard on the purchaser's computer system.

The requirements in this Standard are now in effect, except for those paragraphs, sections, tables, figures, and/or other elements of the Standard having future effective dates as indicated in the preface. The prior text for requirements that have been revised and that have a future effective date are located after the Standard, and are preceded by a "SUPERSEDED REQUIREMENTS" notice.

No Text on This Page

*UL COPYRIGHTED MATERIAL –
NOT AUTHORIZED FOR FURTHER REPRODUCTION OR
DISTRIBUTION WITHOUT PERMISSION FROM*



Documents

Document Sharing Hub

JULY 14, 2004
(Title Page Reprinted: February 26, 2013)



ANSI/UL 60335-2-3-2013

1

UL 60335-2-3

Standard for Safety of Household and Similar Electrical Appliances, Part

2: Particular Requirements for Electric Irons

Efforts have been made to synchronize the UL edition number with that of the corresponding IEC standard. As a result, one or more edition numbers have been skipped in the process. The list of UL editions included here is a complete list of published UL editions.

First Edition – Not Printed
Second Edition – Not Printed
Third Edition – Not Printed
Fourth Edition – Not Printed

Fifth Edition

July 14, 2004

This ANSI/UL Standard for Safety consists of the Fifth Edition including revisions through February 26, 2013.

The most recent designation of ANSI/UL 60335-2-3 as an American National Standard (ANSI) occurred on February 26, 2013. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, Preface, or effective date information. The National Difference Page and IEC Foreword are also excluded from the ANSI approval of IEC-based standards.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <http://csds.ul.com>.

UL's Standards for Safety are copyrighted by UL. Neither a printed nor electronic copy of a Standard should be altered in any way. All of UL's Standards and all copyrights, ownerships, and rights regarding those Standards shall remain the sole and exclusive property of UL.

COPYRIGHT © 2013 UNDERWRITERS LABORATORIES INC.

**UL COPYRIGHTED MATERIAL –
NOT AUTHORIZED FOR FURTHER REPRODUCTION OR
DISTRIBUTION WITHOUT PERMISSION FROM UL**



Documents

Document Sharing Hub

No Text on This Page

*UL COPYRIGHTED MATERIAL –
NOT AUTHORIZED FOR FURTHER REPRODUCTION OR
DISTRIBUTION WITHOUT PERMISSION FROM UL*



Documents

Document Sharing Hub

CONTENTS

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

Annexes

Bibliography

Preface (UL)

This UL Standard 60335-2-3, Standard for Safety of Household and Similar Electrical Appliances, Part 2: Particular Requirements for Electric Irons is to be used in conjunction with the fifth edition of UL 60335-1. The requirements for electric irons are contained in this part 2 Standard and UL 60335-1.

Requirements of this part 2 Standard, where stated, amend the requirements of UL 60335-1.

Where a particular subclause of UL 60335-1 is not mentioned in UL 60335-2-3, the UL 60335-1 subclause applies.

This standard is based on edition 5.2 of IEC 60335-2-3.

The text, figures and tables of IEC Publication, Safety of Household and Similar Appliances, Part 2: Particular Requirements for Electric Irons, IEC 60335-2-3 copyright 2008, are used in this Standard with the consent of the IEC and the American National Standards Institute (ANSI). The IEC copyrighted material has been reproduced with permission from ANSI. ANSI should be contacted regarding the reproduction of any portion of the IEC material. The IEC Foreword and Introduction are not a part of the requirements of this Standard but are included for information purposes only. Copies of IEC Publication 60335-2-3 may be purchased from ANSI, 11 West 42nd Street, New York, New York, 10036, (212) 642-4900.

Note – Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.

UL Effective Date

As of February 26, 2013, all products Listed by UL must comply with the requirements in this Standard.

NATIONAL DIFFERENCES

GENERAL

National Differences from the text of International Electrotechnical Commission (IEC) Publication 60335-2-3, Safety of Household and Similar Electrical Appliances, Part 2: Particular Requirements for Electric Irons, copyright 2008, are indicated by notations (differences) and are presented in bold text.

There are five types of National Differences as noted below. The difference type is noted on the first line of the National Difference in the standard. The standard may not include all types of these National Differences.

DR – These are National Differences based on the **national regulatory requirements**.

D1 – These are National Differences which are based on **basic safety principles and requirements**, elimination of which would compromise safety for consumers and users of products.

D2 – These are national differences from IEC requirements based on existing **safety practices**. These requirements reflect national safety practices, where empirical substantiation (for the IEC or national requirement) is not available or the text has not been included in the IEC standard.

DC – These are National Differences based on the **component standards** and will not be deleted until a particular component standard is harmonized with the IEC component standard.

DE – These are National Differences based on **editorial comments or corrections**.

Each national difference contains a description of what the national difference entails. Typically one of the following words is used to explain how the text of the national difference is to be applied to the base IEC text:

Addition / Add - An addition entails adding a complete new numbered clause, subclause, table, figure, or annex. Addition is not meant to include adding select words to the base IEC text. |

Modification / Modify - A modification is an altering of the existing base IEC text such as the addition, replacement or deletion of certain words or the replacement of an entire clause, subclause, table, figure, or annex of the base IEC text. |

Deletion / Delete - A deletion entails complete deletion of an entire numbered clause, subclause, table, figure, or annex without any replacement text. |

INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY – Part 2-3: Particular requirements for electric irons

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 nongovernmental 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.

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

This consolidated version of IEC 60335-2-3 consists of the fifth edition (2002) [documents 61/2096/FDIS and 61/2127/RVD], its amendment 1 (2004) [documents 61/2740/FDIS and 61/2798/RVD], its amendment 2 (2008) [documents 61/3539/FDIS and 61/3593/RVD] and its corrigendum of June 2002.

**UL COPYRIGHTED MATERIAL –
NOT AUTHORIZED FOR FURTHER REPRODUCTION OR
DISTRIBUTION WITHOUT PERMISSION FROM**



Documents
Document Sharing Hub

The technical content is therefore identical to the base edition and its amendments and has been prepared for user convenience.

It bears the edition number 5.2.

A vertical line in the margin shows where the base publication has been modified by amendments 1 and 2.

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

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 of IEC 60335-1, so as to convert that publication into the IEC standard: Safety requirements for electric irons.

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.

The following differences exist in some countries indicated below:

- 6.1: Class 0 and Class 0I irons are not allowed (China and Turkey).
- 11.8: The modification to 60 K for polyvinyl chloride insulation does not apply (Japan).
- 11.8: For the test with the iron on the pointed support, all the temperature rise limits apply (USA).
- 19.4: The test is also carried out with the iron on the pointed supports (USA).
- 21.101: The drop test is different (USA).

UL COPYRIGHTED MATERIAL –
NOT AUTHORIZED FOR FURTHER REPRODUCTION OR
DISTRIBUTION WITHOUT PERMISSION FROM  Documents
Document Sharing Hub

- 22.105: The endurance test is not carried out (USA).
- 25.7: Polyvinyl chloride cords are not allowed (Canada, Japan and USA).
- 25.14: The flexing test is different (USA).

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 the amendment 1 be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

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.

101DV DE Modification of Note 3 of the part 2:

Words in SMALL ROMAN CAPITALS in the text are defined in Clause 3.

102DV DE Add the following before the country clause of the part 2:

The numbering system in the standard uses a space instead of a comma to indicate thousands and uses a comma instead of a period to indicate a decimal point. For example, 1 000 means 1,000 and 1,01 means 1.01.

103DV D2 Deletion of the country deviations from the UL part 1 and the part 2:

The USA differences have been reviewed and developed into UL differences in this part 2 standard.

104DV DE Modification of the fifth paragraph following item (9) of the Foreword:

Due to formatting differences, marginal lines are not being used to identify where the base publication has been modified by amendment 1.

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 2-3: Particular requirements for electric irons

1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric dry irons and STEAM IRONS, including those with a separate water reservoir or boiler having a capacity not exceeding 5 l, for household and similar purposes, their RATED VOLTAGE being not more than 250 V.

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 by laymen in shops, in light industry and on farms, are within the scope of this standard.

As far as is practicable, this standard deals with the common hazards presented by appliances which are encountered by all persons in and around the home. However, in general, it does not take into account

- persons (including children) whose
 - physical, sensory or mental capabilities; or
 - lack of experience and knowledge

prevents them from using the appliance safely without supervision or instruction;

- children playing with the appliance.

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 and similar authorities.
- additional requirements for pressure vessels may be specified by the national authorities responsible for the safety of pressure vessels.

NOTE 102 This standard does not apply to

- ironers (IEC 60335-2-44);
- appliances designed 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).

1DV.1 D1 Modification of 1DV.1 of the UL part 1:

The articulate probe of figure 12DV shall replace the test finger of figure 1 for these products.

UL COPYRIGHTED MATERIAL –
NOT AUTHORIZED FOR FURTHER REPRODUCTION OR
DISTRIBUTION WITHOUT PERMISSION FROM  **Documents**
Document Sharing Hub

1DV.2 D2 Modification to add the following to the second paragraph of Clause 1 of the part 2:

These requirements apply to electric irons and CORDLESS IRONS rated 250 V or less. These irons are intended to be employed in accordance with the National Electrical Code, ANSI/NFPA 70. Annex DVD of Part 1 provides examples of and references for regulatory requirements that may apply to appliances.

1DV.3 D2 Add the following to Note 101 of the part 2:

- additional requirements applicable to equipment intended for use in hazardous locations as defined in the National Electrical Code, ANSI/NFPA 70, are not included in the standard.

1DV.4 D2 Add the following to Note 102 of the part 2:

- ironing machines, ironing presses, or other garment finishing appliances that are covered by the Standard for Garment Finishing Appliances, UL 141.

1.101DV D2 Addition to the part 2:

Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

2 Normative references

This clause of the Part 1 is applicable.

3 Definitions

This clause of Part 1 is applicable except as follows.

3.1.9 Replacement:

NORMAL OPERATION: Operation of the appliance under the following conditions.

The iron is placed on its STAND and is operated with its THERMOSTAT at the highest setting.

If the iron does not have a THERMOSTAT, the surface temperature at the mid-point of the centre line of the SOLEPLATE is maintained at $250\text{ }^{\circ}\text{C} \pm 10\text{ }^{\circ}\text{C}$ by switching the supply on and off, or at the highest temperature if it is lower.

STEAM IRONS with a separate water reservoir or boiler are operated with the water reservoir or boiler filled with water.

PRESSURIZED STEAM IRONS incorporating the boiler are operated with or without water, whichever is more unfavourable.

Other STEAM IRONS are operated empty.

3.101 STEAM IRON: Iron having means to produce and supply steam to the textile material during ironing.

NOTE STEAM IRONS may incorporate a means for blowing steam onto clothes.