



NEGARA BRUNEI DARUSSALAM

**BRUNEI DARUSSALAM STANDARD
PIAWAI BRUNEI DARUSSALAM**

**PBD IEC 60335-2-44:2008
IEC 60335-2-44:2008
Edition 3.0**

**HOUSEHOLD & SIMILAR ELECTRICAL APPLIANCES -
SAFETY PART 2-44 : PARTICULAR REQUIREMENTS FOR IRONERS**

**ENERGY DIVISION, PRIME MINISTER'S OFFICE
IN COLLABORATION WITH MINISTRY OF DEVELOPMENT
NEGARA BRUNEI DARUSSALAM**

FOREWORD

This Brunei Darussalam Electrical Standard was prepared by the Technical Committee on Electrical Standards [TECO (Electrical)], Energy Division at Prime Minister's Office in collaboration with the authority of the standards committee, Construction Planning and Research Unit (CPRU), Ministry of Development, Brunei Darussalam with the objective of developing the National Electrical Standards for electrical products, systems, equipment and facilities for the local industries and consumers with reference to international standards, guidelines and procedures. In developing the national electrical standards, the aim is to promote quality, technical integrity, health, safety and environmental standards for the local industries and consumers.

This Brunei Darussalam Electrical Standard is an adoption of the International Electro technical Commission IEC 60335-2-44:2008 (Edition 3.0) standard and implements it as the Brunei Darussalam National Standard.

Attention is drawn to the fact that this Brunei Darussalam Electrical Standard does not confer any immunity from legal obligations in any contract for compliance to the Standard.

The National Electrical Standards are subject to periodical review according to the current needs of the local industries and consumers to keep abreast of progress in the industries and consumers concerned. Suggestions of amendments will be recorded and in due course brought to the notice of the committees concerned.

COMMITTEE MEMBERS

The Technical Committee on Electrical Standards [TECO (Electrical)] was tasked by the Energy Division at the Prime Minister's Office in collaboration with Construction Planning and Research Unit (CPRU), Ministry of Development, Brunei Darussalam for the preparation of this Brunei Darussalam Electrical Standard. The members of the Technical Committee are as follows:

1. Awg Haji Abd Shawal Yaman
(Chairman) Energy Division, Prime Minister's Office
2. Awg Liaw Wai Khiong
(Co-Chairman) Brunei LNG Sdn Bhd
3. Pg Shahaaruddin Pg Haji Yusoff
(Secretary) CPRU, Ministry of Development
4. Awg William Voon
(Assistant Secretary 1) Institution of Engineering and Technology,
Brunei Network
5. Awg Simon K A Leong
(Assistant Secretary 2) KR Kamarulzaman & Associates
6. Awg Haji Md Azrul Azrin Hj Md Zain Energy Division, Prime Minister's Office
7. Awg Musa Metali Department of Electrical Services, PMO
8. Awg Md Amir Sharifuddin Haji Ali Department of Electrical Services, PMO
9. Dyg Hajah Norhayati Ahmad Department of Electrical Services, PMO
10. Awg Majid Ali Ministry of Industry & Primary Resources
11. Awg Dennis Wong Tet Yin Department of Mechanical & Electrical, PWD
12. Awg Nohi Irwan Surkarki Haji Pawi Department of Fire & Rescue Services
13. Awg Martin Blundell University Brunei Darussalam
14. Awg Haji Morsidi Haji Kassim Institut Teknologi Brunei
15. Awg Haji Ismit Haji Mohamad Institut Teknologi Brunei
16. Awg Matyassin Haji Masri Maktab Kejuruteraan Jefri Bolkihah
17. Awg Sylvester Kong Brunei Shell Petroleum Co. Sdn Bhd .
18. Dyg Seri Malati OKIP Hj Zolkeflee Brunei Shell Petroleum Co. Sdn Bhd
19. Awang Aristoteles Momin Brunei LNG Sdn Bhd

20. Steve Turner	Berakas Power Management Company
21. Caius Yong	Berakas Power Management Company
22. Awg Rick Liaw	Hamzah Hassan Consultant
23. Awg Kyaw Moe Aung	HSE Engineering Sdn Bhd
24. Awg Khairul Ezam bin Haji Mohd. Zain	CPRU, Ministry of Development

**INTERNATIONAL
STANDARD**

IEC
60335-2-44

Troisième édition
Third edition
2002-09

**Household and similar electrical appliances –
Safety –**

**Part 2-44:
Particular requirements for ironers**



Reference number
CEI/IEC 60335-2-44:2003

PBD IEC 60335-2-44:2008 (Published by IEC in 2002)
**This IEC International Standard has been adopted by CPRU, Ministry of Development,
Negara Brunei Darussalam as a national standard under the IEC Affiliate Country Programme**

Numérotation des publications

Depuis le 1er janvier 1997, les publications de la CEI sont numérotées à partir de 60000. Ainsi, la CEI 34-1 devient la CEI 60034-1.

Editions consolidées

Les versions consolidées de certaines publications de la CEI incorporant les amendements sont disponibles. Par exemple, les numéros d'édition 1.0, 1.1 et 1.2 indiquent respectivement la publication de base, la publication de base incorporant l'amendement 1, et la publication de base incorporant les amendements 1 et 2.

Informations supplémentaires sur les publications de la CEI

Le contenu technique des publications de la CEI est constamment revu par la CEI, afin qu'il reflète l'état actuel de la technique. Des renseignements relatifs à cette publication, y compris sa validité, sont disponibles dans le Catalogue des publications de la CEI (voir ci-dessous) en plus des nouvelles éditions, amendements et corrigenda. Des informations sur les sujets à l'étude et l'avancement des travaux entrepris par le comité d'études qui a élaboré cette publication, ainsi que la liste des publications parues, sont également disponibles par l'intermédiaire de:

- Site web de la CEI (www.iec.ch)
- Catalogue des publications de la CEI

Le catalogue en ligne sur le site web de la CEI (www.iec.ch/searchpub) vous permet de faire des recherches en utilisant de nombreux critères, comprenant des recherches textuelles, par comité d'études ou date de publication. Des informations en ligne sont également disponibles sur les nouvelles publications, les publications remplacées ou retirées, ainsi que sur les corrigenda.

- IEC Just Published

Ce résumé des dernières publications parues (www.iec.ch/online_news/justpub) est aussi disponible par courrier électronique. Veuillez prendre contact avec le Service client (voir ci-dessous) pour plus d'informations.

- Service clients

Si vous avez des questions au sujet de cette publication ou avez besoin de renseignements supplémentaires, prenez contact avec le Service clients:

Email: custserv@iec.ch
Tél: +41 22 919 02 11
Fax: +41 22 919 03 00

Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

Consolidated editions

The IEC is now publishing consolidated versions of its publications. For example, edition numbers 1.0, 1.1 and 1.2 refer, respectively, to the base publication, the base publication incorporating amendment 1 and the base publication incorporating amendments 1 and 2.

Further information on IEC publications

The technical content of IEC publications is kept under constant review by the IEC, thus ensuring that the content reflects current technology. Information relating to this publication, including its validity, is available in the IEC Catalogue of publications (see below) in addition to new editions, amendments and corrigenda. Information on the subjects under consideration and work in progress undertaken by the technical committee which has prepared this publication, as well as the list of publications issued, is also available from the following:

- IEC Web Site (www.iec.ch)
- Catalogue of IEC publications

The on-line catalogue on the IEC web site (www.iec.ch/searchpub) enables you to search by a variety of criteria including text searches, technical committees and date of publication. On-line information is also available on recently issued publications, withdrawn and replaced publications, as well as corrigenda.

- IEC Just Published

This summary of recently issued publications (www.iec.ch/online_news/justpub) is also available by email. Please contact the Customer Service Centre (see below) for further information.

- Customer Service Centre

If you have any questions regarding this publication or need further assistance, please contact the Customer Service Centre:

Email: custserv@iec.ch
Tel: +41 22 919 02 11
Fax: +41 22 919 03 00

CONTENTS

FOREWORD	5
INTRODUCTION	9
1 Scope	11
2 Normative references	11
3 Definitions	13
4 General requirement	15
5 General conditions for the tests	15
6 Classification	15
7 Marking and instructions	15
8 Protection against access to live parts	15
9 Starting of motor-operated appliances	15
10 Power input and current	15
11 Heating	17
12 Void	17
13 Leakage current and electric strength at operating temperature	17
14 Transient overvoltages	17
15 Moisture resistance	17
16 Leakage current and electric strength	19
17 Overload protection of transformers and associated circuits	19
18 Endurance	19
19 Abnormal operation	19
20 Stability and mechanical hazards	19
21 Mechanical strength	21
22 Construction	21
23 Internal wiring	23
24 Components	25
25 Supply connection and external flexible cords	25
26 Terminals for external conductors	25
27 Provision for earthing	25
28 Screws and connections	25
29 Clearances, creepage distances and solid insulation	25
30 Resistance to heat and fire	25
31 Resistance to rusting	25
32 Radiation, toxicity and similar hazards	25
Annexes	29
Bibliography	29
Figure 101 – Dimensions of the feed opening of mangles	27

INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES - SAFETY -

Part 2-44: Particular requirements for ironers

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.

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

This third edition cancels and replaces the second edition published in 1997. It constitutes a technical revision.

This bilingual version (2003-10) replaces the English version.

The text of this part of IEC 60335 is based on the following documents:

FDIS	Report on voting
61/2167/FDIS	61/2247/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 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 ironers.

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 committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

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

The following differences exist in the countries indicated below.

- 11.7: The test conditions are different (USA).
- 19.13: The test criteria are different (USA).
- 20.2: The requirements for entrapment and mechanical hazards are different (USA).
- 22.7: The test is different (USA).
- 22.101: The test is different (USA).
- 22.104: The test is different (USA).

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.

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.

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.

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 2-44: Particular requirements for ironers

1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric ironers for household and similar purposes, their rated voltage being not more than 250 V for single-phase appliances and 480 V for other appliances.

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.

NOTE 101 Examples of appliances within the scope of this standard are

- ironing presses for one-person operation;
- mangles;
- rotary ironers for one-person operation;
- trouser presses.

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 102 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.

NOTE 103 This standard does not apply to

- rotary ironers for operation by more than one person. The roller length of such appliances normally exceeds 1,6 m in length;
- 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);
- electric irons (IEC 60335-2-3)

2 Normative references

This clause of Part 1 is applicable.