



MALAYSIAN STANDARD

MS IEC 60335-2-13:2006

**HOUSEHOLD AND SIMILAR ELECTRICAL
APPLIANCES - SAFETY- PART 2-13:
PARTICULAR REQUIREMENTS FOR DEEP
FAT FRYERS, FRYING PANS AND SIMILAR
APPLIANCES
(FIRST REVISION)
(IEC 60335-2-13:2004, IDT)**

ICS: 13.120, 97.040.50

Descriptors: domestic safety, fat fryers, frying pans

© Copyright 2006

DEPARTMENT OF STANDARDS MALAYSIA

DEVELOPMENT OF MALAYSIAN STANDARDS

The **Department of Standards Malaysia (DSM)** is the national standardisation and accreditation body.

The main function of the Department is to foster and promote standards, standardisation and accreditation as a means of advancing the national economy, promoting industrial efficiency and development, benefiting the health and safety of the public, protecting the consumers, facilitating domestic and international trade and furthering international cooperation in relation to standards and standardisation.

Malaysian Standards are developed through consensus by committees which comprise of balanced representation of producers, users, consumers and others with relevant interests, as may be appropriate to the subject in hand. To the greatest extent possible, Malaysian Standards are aligned to or are adoption of international standards. Approval of a standard as a Malaysian Standard is governed by the Standards of Malaysia Act 1996 (Act 549). Malaysian Standards are reviewed periodically. The use of Malaysian Standards is voluntary except in so far as they are made mandatory by regulatory authorities by means of regulations, local by-laws or any other similar ways.

The Department of Standards appoints **SIRIM Berhad** as the agent to develop Malaysian Standards. The Department also appoints SIRIM Berhad as the agent for distribution and sale of Malaysian Standards.

For further information on Malaysian Standards, please contact:

Department of Standards Malaysia
Level 1 & 2, Block C4, Parcel C
Federal Government Administrative Centre
62502 Putrajaya
MALAYSIA

Tel: 60 3 88858000
Fax: 60 3 88885060

<http://www.dsm.gov.my>

E-mail: central@dsm.gov.my

OR **SIRIM Berhad**
(Company No. 367474 - V)
1, Persiaran Dato' Menteri
P.O. Box 7035, Section 2
40911 Shah Alam
Selangor D.E.

Tel: 60 3 5544 6000
Fax: 60 3 5510 8095

<http://www.sirim.my>

CONTENTS

	Page
Committee representation.....	ii
National foreword.....	iii
Foreword.....	iv
Introduction.....	v
1 Scope.....	11
2 Normative references	11
3 Definitions	11
4 General requirement.....	13
5 General conditions for the tests	13
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	15
11 Heating	15
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	21
21 Mechanical strength	21
22 Construction	21
23 Internal wiring.....	21
24 Components	21
25 Supply connection and external flexible cords	23
26 Terminals for external conductors.....	23
27 Provision for earthing	23
28 Screws and connections	23

CONTENTS *(continued)*

	Page
29 Clearances, creepage distances and solid insulation	23
30 Resistance to heat and fire	23
31 Resistance to rusting	25
32 Radiation, toxicity and similar hazards.....	25
 Annexes	 27
 Bibliography.....	 27

Preview Only

Committee representation

The Electrotechnical-2 Industry Standards Committee (ISC S) under whose authority this Malaysian Standard was adopted, comprises representatives from the following organisations:

Association of the Computer and Multimedia Industry of Malaysia
Department of Standards Malaysia
Federation of Malaysian Manufacturers
Jabatan Kerja Raya Malaysia
Malaysian Cable Manufacturers Association
Malaysian Electrical Appliances and Distributors Association
Ministry of Domestic Trade and Consumer Affairs
Ministry of International Trade and Industry
Persatuan Pengguna-Pengguna Standard Malaysia
Pusat Tenaga Malaysia
SIRIM QAS International Sdn Bhd (Electrotechnical Testing Section)
SIRIM QAS International Sdn Bhd (Product Certification and Inspection Section)
Suruhanjaya Komunikasi dan Multimedia Malaysia
Suruhanjaya Tenaga
Tenaga Nasional Berhad
The Electrical and Electronics Association of Malaysia
Universiti Multimedia
Universiti Tenaga Nasional

The Technical Committee on Safety of Household and Similar Electrical Appliances which recommends adoption of the IEC Standard consists of representatives from the following organisations:

Federation of Malaysian Manufacturers (Thermohygro Consultant Sdn Bhd)
Jabatan Kerja Raya Malaysia
J & E Hall Refrigeration Sdn Bhd
Khind Mistral Industries Sdn Bhd
Malaysian Electrical Appliances and Distributors Association
Ministry of Domestic Trade and Consumer Affairs
Sharp Electronic Sdn Bhd
SIRIM Berhad (Secretariat)
SIRIM QAS International Sdn Bhd (Electrotechnical Testing Section)
SIRIM QAS International Sdn Bhd (Product Certification and Inspection Section)
Suruhanjaya Tenaga
The Electrical and Electronics Association of Malaysia
Universiti Teknologi MARA

The Working Group on Household Electrical Heating Appliances which recommends adoption of the IEC Standard consists of representatives from the following organisations:

Alpha Electric Company Sdn Bhd
Federation of Malaysian Manufacturers (Thermohygro Consultant Sdn Bhd)
Jabatan Kerja Raya Malaysia
Khind Mistral Industries Sdn Bhd
Persatuan Pengguna-Pengguna Standard Malaysia
SIRIM Berhad (Secretariat)
SIRIM QAS International Sdn Bhd (Electrotechnical Testing Section)
SIRIM QAS International Sdn Bhd (Product Certification and Inspection Section)
Suruhanjaya Tenaga
TNB Research Sdn Bhd
Universiti Malaya
Universiti Teknologi MARA

NATIONAL FOREWORD

The adoption of the IEC Standard as a Malaysian Standard was recommended by the Technical Committee on Household Electrical Heating Appliances under the authority of the Electrotechnical-2 Industry Standards Committee.

This Malaysian Standard is the first revision of MS IEC 60335-2-13, *Safety of household and similar electrical appliances - Part 2 - 13: Particular for deep fat fryers, frying pans and similar appliances*.

This Malaysian Standard is identical with IEC 60335-2-13:2004, *Household and similar electrical appliances – Safety – Part 2-13: Particular for deep fat fryers, frying pans and similar appliances*, published by the International Electrotechnical Commission (IEC). However, for the purposes of this Malaysian Standard, the following apply:

- a) in the source text “this International Standard” should read “this Malaysian Standard”;
- b) the comma which is used as decimal sign (if any), to read as a point; and
- c) the basis IEC 60335-2-13 is printed in English and French languages. However, only the English version is retained for this Malaysian Standard.

This Malaysian Standard shall be used in conjunction with the latest edition of MS IEC 60335-1:2003, *Household and similar electrical appliances - Safety - Part 1: General requirements*.

This standard cancels and replaces MS IEC 60335-2-13:1995.

Compliance with a Malaysian Standard does not of itself confer immunity from legal obligations.

NOTE. IDT on the front cover indicates an identical standard i.e. a standard where the technical content, structure, and wording (or is an identical translation) of a Malaysian Standard is exactly the same as in an International Standard or is identical in technical content and structure although it may contain the minimal editorial changes specified in clause 4.2 of ISO/IEC Guide 21-1.

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –
SAFETY –**

**Part 2-13: Particular requirements for deep fat fryers,
frying pans and similar appliances**

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 consolidated version of IEC 60335-2-13 is based on the fifth edition (2002) [documents 61/2202/FDIS and 61/2283/RVD] and its amendment 1 (2004) [documents 61/2623/FDIS and 61/2678/RVD].

It bears the edition number 5.1.

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

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 in IEC 60335-1, so as to convert that publication into the IEC standard: Safety requirements for electric deep fat fryers, frying pans and similar appliances.

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 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.

The following differences exist in the countries indicated below.

- 3.1.9: Normal operation is different (USA).
- 7.1: Non-immersible appliances are required to be marked with a warning against immersion (Canada and USA).
- 7.1: Appliances are required to be marked with the identity of the appropriate connector when it incorporates a thermostat (Canada and USA).
- 11.2: Plywood 9,5 mm thick is used for the test corner (USA).
- 11.7: Appliances are operated until a specified quantity of food is cooked (USA).
- 11.8: The oil temperatures are higher (USA).
- 19.2: The test is different (USA).
- 19.13: The oil temperatures are higher (USA).
- 19.101: The test is not carried out (USA).
- 25.7: The types of cords are different (USA).
- 30.2: For frying pans, 30.2.3 applies (USA).

This bilingual version (2005-04) replaces the English version.

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.

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.