# INTERNATIONAL STANDARD

# IEC 60335-2-73

Edition 2.1 2006-03

Edition 2:2002 consolidated with amendment 1:2006

Household and similar electrical appliances – Safety –

Part 2-73:

Particular requirements for fixed immersion heaters

364-37df-46de-9ca5-5f9ad88540cd/jec-60335-2-73-2002

This **English-language** version is derived from the original **bilingual** publication by leaving out all French-language pages. Missing page numbers correspond to the French-language pages.



## **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 (<u>www.iec.ch</u>)

#### . Catalogue of IEC publications

The on-line catalogue on the IEC web site (www.iec.ch/searchsub) 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 On-line information is also available on recently issued publications, withdrawn and replaced publications, as well as corrigenda.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

# INTERNATIONAL STANDARD

# IEC 60335-2-73

Edition 2.1 2006-03

Edition 2:2002 consolidated with amendment 1:2006

Household and similar electrical appliances – Safety –

Part 2-73:

Particular requirements for fixed immersion heaters

en Preview

ttps://standards.iteh.ai/&/day\_tanda\_ts/i&/74\3c364-37df-46de-9ca5-5f9ad88540cd/iec-60335-2-73-200

# © IEC 2006 Copyright - all rights reserved

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale International Electrotechnical Commission Международная Электротехническая Комиссия

# **CONTENTS**

FOREWORDINTRODUCTION	
INTRODUCTION	9
1 Scope	11
Normative references	
3 Definitions	13
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
Starting of motor-operated appliances	15
11 Heating	15
12 Void	15
13 Leakage current and electric strength at operating temperature	15
14 Transient overvoltages	15
15 Moisture resistance	15
l6 Leakage current and electric strength	15
17 Overload protection of transformers and associated circuits	17
18 Endurance	17
19 Abnormal operation	17
20 Stability and mechanical hazards	
21 Mechanical strength	
22 Construction	17
23 Internal wiring	19
24 Components	
25 Supply connection and external flexible cords	19
26 Terminals for external conductors	19
27 Provision for earthing	19
28 Screws and connections	19
29 Clearances, creepage distances and solid insulation	19
Resistance to heat and fire	19
31 Resistance to rusting	21
32 Radiation, toxicity and similar hazards	21
Annexes	23
Ribliography	23

### INTERNATIONAL ELECTROTECHNICAL COMMISSION

# HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

### Part 2-73: Particular requirements for fixed immersion heaters

### **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. 519ad88540cd/iec-60335-2-73-2002
- 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 60335-2-73 consists of the second edition (2002) [documents 61/2176/FDIS and 61/2257/RVD] and its amendment 1 (2006) [documents 61/2957/FDIS and 61/2987/RVD].

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

It bears the edition number 2.1.

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 fixed electric immersion heaters.

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 the countries indicated below.

- 3.1.9: Normal operation is different (USA).
- 6.1: Class 0I appliances are allowed (Japan)
- 24.101: The requirement is not applicable (USA)

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.