



SLOVENSKI STANDARD SIST EN 60335-2-50:1998

01-februar-1998

Nadomešča:

SIST EN 60335-2-50:1995

Safety of household and similar electrical appliances - Part 2: Particular requirements for commercial electric bains marie (IEC 60335-2-50:1995)

Safety of household and similar electrical appliances -- Part 2-50: Particular requirements for commercial electric bains-marie

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke -- Teil 2-50: Besondere Anforderungen für elektrische Warmhaltergeräte für den gewerblichen Gebrauch

Sécurité des appareils électrodomestiques et analogues -- Partie 2-50: Règles particulières pour les bains-marie électriques à usage collectif

Ta slovenski standard je istoveten z: EN 60335-2-50:1997

ICS:

97.040.50 Majhni gospodinjski aparati Small kitchen appliances

SIST EN 60335-2-50:1998

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 60335-2-50:1998](#)

<https://standards.iteh.ai/catalog/standards/sist/199d6190-8847-4152-8dd0-45cbf31027c3/sist-en-60335-2-50-1998>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60335-2-50

March 1997

ICS 97.040.20

Supersedes EN 60335-2-50:1991 and its amendment

Descriptors: Household electrical appliances, bain-marie, appliance for commercial use, safety requirements, protection against electric shock, fire protection, protection against mechanical hazard

English version

Safety of household and similar electrical appliances
Part 2: Particular requirements for commercial electric bains-marie
(IEC 335-2-50:1995)

Sécurité des appareils
électrodomestiques et analogues
Partie 2: Règles particulières pour les
bains-marie électriques à usage collectif
(CEI 335-2-50:1995)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2: Besondere Anforderungen für
elektrische Warmhaltegeräte für den
gewerblichen Gebrauch
(IEC 335-2-50:1995)

[SIST EN 60335-2-50:1998](https://standards.iteh.ai/catalog/standards/sist/199d6190-8847-4152-8dd0-45cbf31027c3/sist-en-60335-2-50-1998)

<https://standards.iteh.ai/catalog/standards/sist/199d6190-8847-4152-8dd0-45cbf31027c3/sist-en-60335-2-50-1998>

This European Standard was approved by CENELEC on 1997-03-11. 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, 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

Foreword

The proposal to endorse IEC 335-2-50:1995, document CLC/TC 61 (SEC) 1018, was circulated under the enquiry procedure in June 1995. This proposal was discussed during the Copenhagen meeting in May 1996, when it was decided to submit a draft for EN 60335-2-50 to the formal vote.

This draft was circulated in September 1996 and was ratified by CENELEC as EN 60335-2-50 on 1997-03-11.

This European standard has been prepared by the secretariat of CENELEC Technical Committee TC 61.

The following dates are applicable:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1997-12-01
- date on which national standards conflicting with the EN have to be withdrawn (dow) 1999-12-01

For products which have complied with EN 60335-2-50:1991 including its amendment A1:1992 before 1999-12-01, as shown by the manufacturer or by a certification body, these previous standards may continue to apply for production until 2004-12-01.

This standard has to be used in conjunction with EN 60335-1, Safety of household and similar electrical appliances, Part 1: General requirements. It was established on the basis of the 1994 edition of that standard. Amendments and revisions of part 1 have also to be taken into account and the dates when such changes become applicable will be stated in the relevant amendment or revision of part 1.

This part 2 supplements or modifies the corresponding clauses of EN 60335-1, so as to convert it into the European Standard: Safety requirements for commercial electric bains-marie-2-

Where a particular subclause of part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. Where this standard states "addition", "modification" or "replacement", the relevant text of part 1 is to be adapted accordingly.

Subclauses and figures which are additional to those in part 1 are numbered starting with 101.

There are no special national conditions causing a deviation from this European Standard, other than those listed in annex ZA to EN 60335-1.

There are no national deviations from this European Standard, other than those listed in annex ZB to EN 60335-1.

NOTE - 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 2. When a definition of part 1 concerns an adjective, the adjective and the associated noun are also in bold.

Endorsement notice

The text of the International Standard IEC 335-2-50:1995 was approved by CENELEC as an European Standard without any modification.



NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC
335-2-50

Deuxième édition
Second edition
1995-04

**Sécurité des appareils électrodomestiques
et analogues**

Partie 2:

Règles particulières pour les bains-marie
électriques à usage collectif

(standards.iteh.ai)

**Safety of household and similar electrical
appliances**

<https://standards.iteh.ai/standards/sist/199d6190-8847-4152-8dd0-45cbf31027c3/sist-en-60335-2-50-1998>

Part 2:

Particular requirements for commercial electric
bains-marie

© CEI 1995 Droits de reproduction réservés — Copyright — all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'éditeur.

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.

Bureau Central de la Commission Electrotechnique Internationale 3, rue de Varembe Genève, Suisse



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

Q

Pour prix, voir catalogue en vigueur
For price, see current catalogue

CONTENTS

	Page
FOREWORD	5
Clause	
1 Scope	9
2 Definitions.....	9
3 General requirement.....	11
4 General conditions for the tests.....	11
5 Void	13
6 Classification	13
7 Marking and instructions.....	13
8 Protection against access to live parts.....	17
9 Starting of motor-operated appliances	17
10 Power input and current.....	17
11 Heating.....	17
12 Void	19
13 Leakage current and electric strength at operating temperature.....	19
14 Void	19
15 Moisture resistance.....	19
16 Leakage current and electric strength.....	25
17 Overload protection of transformers and associated circuits.....	25
18 Endurance.....	25
19 Abnormal operation.....	25
20 Stability and mechanical hazards.....	27
21 Mechanical strength.....	27
22 Construction.....	27
23 Internal wiring.....	29
24 Components.....	31
25 Supply connection and external flexible cords.....	31
26 Terminals for external conductors	31
27 Provision for earthing.....	33
28 Screws and connections.....	33
29 Creepage distances, clearances and distances through insulation	33
30 Resistance to heat, fire and tracking	33
31 Resistance to rusting	33
32 Radiation, toxicity and similar hazards	33
Figure.....	34
Annexes.....	35

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

Part 2: Particular requirements for commercial
electric bains-marie

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 cooperation 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, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 3) They have the form of recommendations for international use published in the form of standards, 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.
<https://standards.iteh.ai/catalog/standards/sist/199d6190-8847-4152-8dd0-45cbf31027c3/sist-en-60335-2-50-1998>
- 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.

This part of International Standard IEC 335 has been prepared by sub-committee 61E: Safety of electrical commercial catering equipment, of IEC technical committee 61: Safety of household and similar electrical appliances.

It forms the second edition of IEC 335-2-50 and replaces the first edition, published in 1989, and its amendment 1 (1990).

The text of this standard is based on the following documents:

DIS	Report on voting
61E(CO)133	61E/142/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 335-1 and its amendments. It was established on the basis of the third edition (1991) of that standard.

This part 2 supplements or modifies the corresponding clauses in IEC 335-1, so as to convert it into the IEC standard: Safety requirements for commercial electric bains-marie.

Where a particular subclause of part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. Where this standard states "addition", "modification" or "replacement", the relevant text in part 1 is to be adapted accordingly.

NOTES

1 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 2.

2 Subclauses, notes and figures which are additional to those in part 1 are numbered starting from 101.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60335-2-50:1998

<https://standards.iteh.ai/catalog/standards/sist/199d6190-8847-4152-8dd0-45cbf31027c3/sist-en-60335-2-50-1998>

SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

Part 2: Particular requirements for commercial electric bains-marie

1 Scope

This clause of part 1 is replaced by:

This standard deals with the safety of electrically operated **bains-marie** not intended for household use, their **rated voltage** being not more than 250 V for single-phase appliances connected between one phase and neutral, and 480 V for other appliances.

NOTE 1 – These appliances are used, for example, in restaurants, canteens, hospitals and similar commercial enterprises.

The electrical part of appliances making use of other forms of energy is also within the scope of this standard.

So far as is practicable, this standard deals with the common hazards presented by these types of appliances.

NOTE 2 - 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;
- for appliances intended to be used in tropical countries, special 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, the national water supply authorities and similar authorities;
- for appliances intended to be used outdoors, additional requirements may be necessary.

This standard does not apply to:

- 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);
- continuous process appliances for the mass production of food.

2 Definitions

This clause of part 1 is applicable except as follows:

2.2.4 Addition:

NOTE - The **rated power input** is the sum of the power inputs of all the individual elements in the appliance which can be on at one time; where there are several such combinations possible, that giving the highest power input is used in determining the **rated power input**.

2.2.9 Replacement:

normal operation: Operation of the appliance under the following conditions:

Open-well and **wet-heat-type bains-marie** are filled with water to the **indicated level** and topped up during the test in accordance with the manufacturer's instructions. The appliance is operated with any control intended to be operated by the user set at maximum. If the water boils, the control is then adjusted to the lowest setting that maintains simmering. No covers or containers are fitted.

Dry-heat-type bains-marie are operated with any controls set at the maximum. Empty food containers are placed in the well but with the container covers removed.

Combined-type appliances are operated under the most unfavourable conditions.

Motors incorporated in the appliance are operated in the intended manner under the most severe conditions which can be expected in normal use taking into account the manufacturer's instructions.

2.2.101 **bain-marie:** An appliance with a well which is used for the storage of hot food in containers prior to serving. The containers are indirectly heated by hot air, steam or water in the well.

2.2.102 **open-well-type bain-marie:** An appliance where the food containers rest in water in a heated well.

2.2.103 **wet-heat-type bain-marie:** An appliance where the fitted food containers are heated by steam generated within the appliance. The pressure in the well or steam generator does not differ significantly from atmospheric pressure.

2.2.104 **dry-heat-type bain-marie:** An appliance where the fitted food containers are heated by warm air generated within the appliance.

2.2.105 **indicated level:** A mark on the appliance to indicate the maximum liquid level for correct operation.

3 General requirement

This clause of part 1 is applicable except as follows:

Addition:

NOTE 101 – The d.c. component in the appliance neutral is limited (Australia).

4 General conditions for the tests

This clause of part 1 is applicable except as follows:

4.101 *Appliances are tested as **heating appliances**, even if they incorporate a motor.*

4.102 Appliances, when assembled in combination with or incorporating other appliances, are tested in accordance with the requirements of this standard. The other appliances are operated simultaneously in accordance with the requirements of the relevant standards.

If a part of the appliance or the whole appliance is intended to be used for different functions covered by different standards, the relevant standard is applied to each function separately, so far as is reasonable.

5 Void

6 Classification

This clause of part 1 is applicable except as follows:

6.1 Replacement:

Appliances shall be of **class I** with respect to protection against electric shock.

Compliance is checked by inspection and by the relevant tests.

NOTE – Class 0I appliances are allowed (Japan).

6.2 Addition:

NOTE 101 – For appliances intended to be installed in a kitchen, an appropriate degree of protection against harmful ingress of water is required according to their height of installation (France).

6.101 With respect to protection against temperature rise due to installation conditions, appliances shall be classified as follows:

- appliances intended for installation in isolation;
- appliances intended for installation in a bank of other appliances.

NOTE – There are no additional requirements for appliances intended for installation in a bank of other appliances at present.

7 Marking and instructions

This clause of part 1 is applicable except as follows:

7.1 Addition:

In addition, appliances shall be marked with:

- the water pressure or range of pressures, in kilopascals (kPa), for appliances intended to be connected to a water supply, unless this is indicated in the instruction sheet.