
Safety of household and similar electrical appliances - Part 2: Particular requirements for humidifiers intended for use with heating, ventilation or air conditioning systems

Safety of household and similar electrical appliances -- Part 2-88: Particular requirements for humidifiers intended for use with heating, ventilation or air conditioning systems

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke - Teil 2-88: Besondere Anforderungen für Luftbefeuchter, die zur Verwendung mit Heiz-, Lüftungs- oder Klimaanlage bestimmt sind

[SIST EN 60335-2-88:1998](https://standards.iteh.ai/catalog/standards/sist/3207965f-8604-45ff-a551-1998)

<https://standards.iteh.ai/catalog/standards/sist/3207965f-8604-45ff-a551-1998>

Sécurité des appareils électrodomestiques et analogues -- Partie 2-88: Règles particulières pour les humidificateurs destinés à être utilisés avec des appareils de chauffage, de ventilation ou de conditionnement d'air

Ta slovenski standard je istoveten z: EN 60335-2-88:1997

ICS:

13.120	Varnost na domu	Domestic safety
91.140.30	Účel: æ^çæ} ã Á ã æ\ã •ã ç{ã	Ventilation and air-conditioning

SIST EN 60335-2-88:1998 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 60335-2-88:1998](#)

<https://standards.iteh.ai/catalog/standards/sist/3207965f-8604-45ff-a551-903a949d08e3/sist-en-60335-2-88-1998>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60335-2-88

September 1997

ICS 91.140.30

Descriptors: Household electrical appliances, humidifiers, heaters, air conditioning, safety requirements, protection against electric shock, protection against mechanical hazard, fire protection

English version

**Safety of household and similar electrical appliances
Part 2: Particular requirements for humidifiers intended for use
with heating, ventilation or air conditioning systems
(IEC 60335-2-88:1997)**

Sécurité des appareils
électrodomestiques et analogues
Partie 2: Règles particulières pour les
humidificateurs destinés à être utilisés
avec des appareils de chauffage, de
ventilation ou de conditionnement d'air
(CEI 60335-2-88:1997)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2: Besondere Anforderungen für
Luftbefeuchter, die zur Verwendung
mit Heiz-, Lüftungs- oder Klimaanlage
bestimmt sind
(IEC 60335-2-88:1997)

SIST EN 60335-2-88:1998

<https://standards.iteh.ai/catalog/standards/sist/3207965f-8604-45ff-a551-903a949d08e3/sist-en-60335-2-88-1998>

This European Standard was approved by CENELEC on 1997-07-01. 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

© 1997 CENELEC - All rights of exploitation in any form and by any means reserved worldwide for CENELEC members.

Ref. No. EN 60335-2-88:1997 E

Foreword

The text of document 61D/48/FDIS, future first edition of IEC 60335-2-88, prepared by SC 61D of the IEC Technical Committee 61 was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60335-2-88 on 1997-07-01.

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) 1998-04-01
- date on which national standards conflicting with the EN have to be withdrawn (dow) 2000-04-01

For products which have complied with the relevant national standard before 2000-04-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2005-04-01.

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 electric humidifiers intended for use with heating, ventilation or air-conditioning systems.

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 of part 1 is to be adapted accordingly. <https://standards.iteh.ai/catalog/standards/sist/3207965f-8604-45ff-a551-3207965f-8604-45ff-a551>

Subclauses which are additional to those in part 1 are numbered starting with 101. Annexes which are additional to those in part 1 are lettered AA, BB, etc.

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 60335-2-88:1997 was approved by CENELEC as a European Standard without any modification.



NORME
INTERNATIONALE

CEI
IEC

INTERNATIONAL
STANDARD

60335-2-88

Première édition
First edition
1997-07

Sécurité des appareils électrodomestiques et analogues

Partie 2:
Règles particulières pour les humidificateurs
destinés à être utilisés avec des appareils
de chauffage, de ventilation ou de
conditionnement d'air

SIST EN 60335-2-88:1998

<https://standards.iteh.ai/catalog/standards/sist/3207965f-8604-45ff-a551-032746000200/sist-60335-2-88-1998>

Safety of household and similar
electrical appliances

Part 2:
Particular requirements for humidifiers
intended for use with heating, ventilation,
or air-conditioning systems

© IEC 1997 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.

International Electrotechnical Commission
Telefax: +41 22 919 0300

e-mail: inmail@iec.ch

3, rue de Varembé Geneva, Switzerland
IEC web site <http://www.iec.ch>



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

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

Part 2: Particular requirements for humidifiers intended for use
with heating, ventilation, or air-conditioning systems

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 co-operation 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 express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are 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.
- 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.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The 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 subcommittee 61D: Appliances for air-conditioning for household and similar purposes, of IEC technical committee 61: Safety of household and similar electrical appliances.

It forms the first edition of IEC 60335-2-88.

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

FDIS	Report on voting
61D/48/FDIS	61D/55/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 third edition (1991) of that standard.

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 humidifiers intended for use with heating, ventilation, or air-conditioning systems.

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

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

The following additional differences exist in some countries:

- 6.1: class 01 appliances are allowed (Japan).
- 6.1: class 0 and 01 appliances are allowed (South Africa, Poland).

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60335-2-88:1998

<https://standards.iteh.ai/catalog/standards/sist/3207965f-8604-45ff-a551-903a949d08e3/sist-en-60335-2-88-1998>

SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

Part 2: Particular requirements for humidifiers intended for use with heating, ventilation, or air-conditioning systems

1 Scope

This clause of part 1 is replaced by:

This standard deals with the safety of electric **humidifiers** intended for use with heating, ventilation, or air-conditioning systems in household, commercial, and light industrial applications (and may include large stand-alone commercial equipment) which operate according to the evaporative or atomization system, water-injection, steam and the like, their maximum **rated voltage** being not more than 250 V for single-phase appliances and 600 V for all other appliances.

Air-conditioning equipment to be used in conjunction with the **humidifiers** covered by this standard are covered in IEC 60335-2-40.

So far as is practicable, this standard deals with the common hazards presented by appliances which may be encountered by all persons, except young children or infirm persons without supervision.

Attention is drawn to the fact that: [SIST EN 60335-2-88:1998](https://standards.iteh.ai/catalog/standards/sist/3207965f-8604-45ff-a551-907949d08c3/sist-en-60335-2-88-1998)
<https://standards.iteh.ai/catalog/standards/sist/3207965f-8604-45ff-a551-907949d08c3/sist-en-60335-2-88-1998>

- 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 national health authorities, national authorities responsible for the protection of labour and similar authorities.

This standard does not apply to:

- **humidifiers** without room heating, ventilation or air-conditioning equipment intended exclusively for household use (IEC 60335-2-98*);
- appliances designed exclusively for industrial processing;
- 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);
- **humidifiers** intended for medical purposes (see IEC 60601).

* To be published.

2 Definitions

This clause of part 1 is applicable except as follows:

2.2.9 *Replacement:*

normal operation: Conditions that apply when the appliance is mounted as in normal use and is operating under the most severe environmental operating conditions specified by the manufacturer.

2.101 **humidifiers:** Appliances which are intended to increase air humidity.

2.102 **appliances accessible to the general public:** Appliances intended to be located in residential buildings, or in commercial buildings.

2.103 **appliances not accessible to the general public:** Appliances which are intended to be maintained by qualified service personnel and located either in machine rooms and the like or at a level not less than 2,5 m or in secured rooftop areas.

3 General requirement

This clause of part 1 is applicable.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

4 General conditions for the tests

SIST EN 60335-2-88:1998
<https://standards.iteh.ai/catalog/standards/sist/3207965f-8604-45ff-a551-903a949d08e3/sist-en-60335-2-88-1998>

This clause of part 1 is applicable.

5 Void

6 Classification

This clause of part 1 is applicable except as follows:

6.1 *Replacement:*

Appliances shall be of **class I, II or III** with respect to protection against electrical shock.

Compliance is checked by inspection and by the relevant additional tests.

6.101 Appliances shall be classified according to the accessibility as defined in 2.102 and 2.103.

7 Marking and instructions

This clause of part 1 is applicable except as follows:

7.1 Addition:

For **humidifiers** connected to the water supply:

- permissible maximum pressure (in pascals) of the water supply system.

Humidifiers generating water or steam with a temperature exceeding 60 °C shall be marked with the following:

"Warning: Danger of hot water. Drain water before servicing."

7.12 Addition:

For **appliances accessible to the general public** the classification according to 6.101 shall be included.

7.12.1 Addition:

In particular, the following information shall be supplied:

- that the appliance shall be installed in accordance with national wiring regulations;
- the dimensions of the space necessary for correct installation of the appliance including the minimum permissible distances to adjacent structures;
- for appliances with electric resistance heaters and for those appliances tested in excess of zero clearance, the minimum clearance from the appliance to combustible surfaces;
- a diagram of the appliance with a clear indication of wiring to external control devices;
- the range of external static pressure at volumetric air flow at which the appliance was tested (add-on heat pumps, and appliances with electric resistance heaters, only);
- details of type and rating of fuses.

7.15 Addition:

A marking may be located on a panel that can be removed for installation or service, providing that the panel shall be in place for the intended operation of the appliance.

7.16 Addition:

This requirement is also applicable to overload protective devices.

7.101 If the product is suitable for permanent connection to fixed wiring with aluminium wires, the marking shall so state this.

8 Protection against access to live parts

This clause of part 1 is applicable.