

# INTERNATIONAL STANDARD



Household and similar electrical appliances – Safety –  
Part 2-83: Particular requirements for heated gullies for roof drainage

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IEC Secretariat  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

#### Part 2-83: Particular requirements for heated gullies for roof drainage

#### 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.
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**This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60335-2-83:2001+AMD1:2008 CSV. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.**

IEC 60335-2-83 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This second edition cancels and replaces the first edition published in 2001 and Amendment 1:2008. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) alignment with IEC 60335-1:2020;
- b) removal of test probe 18 (8.1.1, 20.2, B.22.3, B.22.4).

The text of this International Standard is based on the following documents:

Draft	Report on voting
61/7274/FDIS	61/7300/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

A list of all parts of the IEC 60335 series, under the general title: *Household and similar electrical appliances – Safety*, can be found on the IEC website.

This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments unless that edition precludes it; in that case, the latest edition that does not preclude it is used. It was established on the basis of the sixth edition (2020) 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: Particular requirements for heated gullies for roof drainage.

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 document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](https://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations can need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of the amendment 1 be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

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## 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.

Guidance documents concerning the application of the safety requirements for appliances can be accessed via TC 61 supporting documents on the IEC website

<https://www.iec.ch/tc61/supportingdocuments>

This information is given for the convenience of users of this International Standard and does not constitute a replacement for the normative text in this standard.

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~~ can 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.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 1 This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

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.

NOTE 2 ~~Horizontal and generic standards~~ Horizontal publications, basic safety publications and group safety publications covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards. ~~For example, in the case of temperature requirements for surfaces on many appliances, generic standards, such as ISO 13732-1 for hot surfaces, are not applicable in addition to Part 1 or part 2 standards.~~

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 which 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.

NOTE 3 Standards dealing with non-safety aspects of household appliances are:

- IEC standards published by TC 59 concerning methods of measuring performance;
- CISPR 11, CISPR 14-1 and relevant IEC 61000-3 series standards concerning electromagnetic emissions;
- CISPR 14-2 concerning electromagnetic immunity;
- IEC standards published by TC 111 concerning environmental matters.



## HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

### Part 2-83: Particular requirements for heated gullies for roof drainage

#### 1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of electrically heated gullies for de-icing the inlet of the drainage system of flat roofs, balconies, and similar structures, their **rated voltage** being not more than 250 V including direct current (DC) supplied appliances and **battery-operated appliances**.

As far as is practicable, this standard deals with the common hazards presented by appliances which are encountered by all persons in and around the home. However, in general, it does not take into account

- persons (including children) whose
  - physical, sensory or mental capabilities; or
  - lack of experience and knowledge
 prevents them from using the appliance safely without supervision or instruction;
- children playing with the appliance.

**NOTE 101**—Attention is drawn to the fact that in many countries additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour and similar authorities.

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**NOTE 102**—This standard does not apply to 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).

#### 2 Normative references

This clause of Part 1 is applicable except as follows.

*Addition:*

IEC 60068-2-52:~~1996~~, *Environmental testing – Part 2: Tests – Test Kb: Salt mist, cyclic (sodium, chloride solution)*

#### 3 Terms and definitions

This clause of Part 1 is applicable except as follows.

##### 3.1.9 **Replacement Modification:** **normal operation**

Replace the first paragraph with the following:

operation of the appliance with a layer of thermal insulation having a thermal resistance of  $1,25 \text{ m}^2 \text{ K/W} \pm 0,3 \text{ m}^2 \text{ K/W}$  covering the top surface

## 4 General requirement

This clause of Part 1 is applicable.

## 5 General conditions for the tests

This clause of Part 1 is applicable except as follows.

### 5.6 Addition:

*Thermostats are short-circuited.*

### 5.7 Addition:

*The tests of Clause 10, Clause 11, Clause 13 and Clause 19 are carried out at an ambient temperature of  $40\text{ °C} \pm 2\text{ °C}$ .*

## 6 Classification

This clause of Part 1 is applicable except as follows.

### 6.1 Modification:

Replace the first paragraph with the following:

Appliances shall be of **class I**, **class II** or **class III**.

### 6.2 Addition:

Appliances shall be at least IPX7.

## 7 Marking and instructions

This clause of Part 1 is applicable except as follows.

### 7.12.1 Addition:

The instructions shall include the substance of the following:

Install in an area unlikely to be accessed.

## 8 Protection against access to live parts

This clause of Part 1 is applicable except as follows.

### 8.1.1 Addition:

*Test probe 18 is not applied.*

## 9 Starting of motor-operated appliances

This clause of Part 1 is applicable.

## 10 Power input and current

This clause of Part 1 is applicable.

## 11 Heating

This clause of Part 1 is applicable except as follows.

### 11.7 ~~Replacement~~ Modification:

Replace the first paragraph with the following:

*Appliances are operated until steady conditions are established.*

### 11.8 Addition:

*The temperature rises given in Table 3 are reduced by 15 K.*

*The temperature rise of the surface of the enclosure, including that which is inaccessible after installation, shall not exceed 60 K.*

## 12 ~~Void~~ Charging of metal-ion batteries

This clause of Part 1 is applicable.

## 13 Leakage current and electric strength at operating temperature

This clause of Part 1 is applicable. [IEC 60335-2-83:2024](https://standards.iteh.ai/catalog/standards/iec/5f7b8480-19bc-4838-b5f4-38449b9da3ad/iec-60335-2-83-2024)

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## 14 Transient overvoltages

This clause of Part 1 is applicable.

## 15 Moisture resistance

This clause of Part 1 is applicable except as follows.

### 15.1.2 Addition:

*Parts of the appliance which are not intended to be exposed to drainage water are sealed before carrying out the test.*

## 16 Leakage current and electric strength

This clause of Part 1 is applicable.

## 17 Overload protection of transformers and associated circuits

This clause of Part 1 is applicable.

## 18 Endurance

This clause of Part 1 is not applicable.

## 19 Abnormal operation

This clause of Part 1 is applicable.

## 20 Stability and mechanical hazards

This clause of Part 1 is applicable except as follows.

### 20.2 Addition:

*Test probe 18 is not applied.*

## 21 Mechanical strength

This clause of Part 1 is applicable except as follows.

### 21.1 Addition:

*The test is also conducted at an ambient temperature of –25 °C.*

## 22 Construction

This clause of Part 1 is applicable except as follows.

**22.101** Heating elements shall not be **detachable parts**.

*Compliance is checked by inspection and by manual test.*

## 23 Internal wiring

This clause of Part 1 is applicable.

## 24 Components

This clause of Part 1 is applicable except as follows.

**24.101 Thermal cut-outs** which are necessary for compliance with 19.4 shall be **non-self-resetting thermal cut-outs**.

*Compliance is checked by inspection and by the test of 19.4.*

## 25 Supply connection and external flexible cords

This clause of Part 1 is applicable except as follows.

### 25.1 ~~Modification~~ Addition:

Appliances shall not be provided with an appliance inlet or pins for insertion into socket-outlets.

### 25.5 Addition:

**Type Z attachment** is allowed.

### 25.7 ~~Modification~~ Addition:

Supply cords shall be polychloroprene sheathed.

## 26 Terminals for external conductors

This clause of Part 1 is applicable.

## 27 Provision for earthing

This clause of Part 1 is applicable except as follows.

### 27.1 Addition:

All conductive parts of **class I appliances** which ~~may~~ can come into contact with drainage water shall be reliably connected to the earthing terminal.

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## 28 Screws and connections

This clause of Part 1 is applicable.

## 29 Clearances, creepage distances and solid insulation

This clause of Part 1 is applicable.

## 30 Resistance to heat and fire

This clause of Part 1 is applicable except as follows.

### 30.2.2 Not applicable.

## 31 Resistance to rusting

This clause of Part 1 is applicable except as follows.

*Addition:*

Compliance is checked by the salt mist test of IEC 60068-2-52. ~~Severity~~, test method 2, is applicable.

*Before the test, enclosures having a coating are scratched by means of a hardened steel pin, the end of which has the form of a cone with an angle of 40°. Its tip is rounded with a radius of 0,25 mm ± 0,02 mm. The pin is loaded so that the force exerted along its axis is 10 N ± 0,5 N. The scratches are made by drawing the pin along the surface of the coating at a speed of approximately 20 mm/s. Five scratches are made at least 5 mm apart and at least 5 mm from the edges.*

*After the test, the appliance shall not have deteriorated to such an extent that compliance with this standard, in particular with Clause 8 and Clause 27, is impaired. The coating shall not be broken and shall not have loosened from the metal surface.*

### **32 Radiation, toxicity and similar hazards**

This clause of Part 1 is applicable.

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