INTERNATIONAL STANDARD

IEC 60335-2-84

First edition
1998-10

Safety of household and similar electrical appliances

Part 2-84: Particular requirements for toilets

Sécurité des appareils électrodomestiques et analogues

Partie 2-84:
Règles particulières pour toilettes

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

Part 2-84: Particular requirements for toilets

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.
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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.

International Standard IEC 60335-2-84 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

It forms the first edition of IEC 60335-2-84.

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

FDIS	Report on voting
61/1481/FDIS	61/1520/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 it into the IEC standard: Safety requirements for electric toilets.

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.

NOTE 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, the adjective and the associated noun are also in bold.

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

The following additional differences exist in some countries:

– 2.2.9: The conditions for normal operation are different (USA).

– 22.103: The test is different (USA).

The contents of the corrigendum of April 1999 have been included in this copy.

SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES

Part 2-84: Particular requirements for toilets

1 Scope

This clause of part 1 is replaced by:

This standard deals with the safety of electric toilets in which excrement is stored, dried or destructed, their **rated voltage** being not more than 250 V.

NOTE 1 – Electric toilets may be used to process garbage such as paper and food waste.

This standard also applies to electric equipment for use with conventional toilets.

NOTE 2 – Examples of such electric equipment are

– pumping units,
– chopping units,
– heated seats,
– automatic seat covering devices.

So 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.

This standard does not in general take into account playing with the appliance by young children.

NOTE 3 – 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.

NOTE 4 – 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),
– chemical toilets,
– toilets in which excrement is destructed by combustion.

2 Definitions

This clause of part 1 is applicable except as follows.

2.2.9 *Replacement:*

normal operation
operation of the appliance under the following conditions:

Appliances are operated in cycles, each cycle being initiated every 10 min, bowl covers being open or closed whichever is more unfavourable. If the cycle is not automatically terminated, the appliance is operated for 15 s or for the period specified by the instructions for use, whichever is longer.

The excrement tank of **mouldering toilets** is empty or filled with peat, whichever is more unfavourable.

Package toilets are provided with bags.

For **freezing toilets**, 0,3 l of water having a temperature of 37 °C is added each cycle, controls being set to the lowest temperature. They are also operated without water.

Shower units are supplied with water at the lowest pressure which provides an effective spray.

2.101
mouldering toilet
appliance in which the excrement is processed by drying

2.102
package toilet
appliance in which the excrement is packed in bags and stored in a tank

2.103
freezing toilet
appliance in which the excrement is frozen and stored in a tank

2.104
vacuum toilet
appliance in which the excrement is evacuated to a storage tank by negative pressure

2.105
shower unit
device incorporated in the appliance which projects water for cleaning parts of the human body

NOTE – **Shower units** may supply warm air for drying.

3 General requirement

This clause of part 1 is applicable.

4 General conditions for the tests

This clause of part 1 is applicable except as follows.

4.7 *Addition:*

The temperature of the water used for the tests is 15 °C ± 5 °C.

5 Void

6 Classification

This clause of part 1 is applicable except as follows.

6.2 *Addition:*

Toilets and heated seats shall be at least IPX4.

7 Marking and instructions

This clause of part 1 is applicable except as follows.

7.12 *Addition:*

The instructions for use shall state how to empty and clean the toilet safely. They shall include details about the final disposal of the excrement or its residue, unless the toilet is connected to the sewage system.

7.12.1 *Addition:*

The instructions for installation of **class I appliances** shall state that they have to be earthed.

The instructions for installation of a toilet shall state that the label concerning glowing cigarettes is to be fixed in a conspicuous place beside the toilet, if applicable.

7.101 Toilets shall be provided with a label stating that glowing cigarettes and other burning materials must not be thrown into the toilet.

NOTE 1 – The label is not required for flushing toilets if the bowl is resistant to heat and fire.

NOTE 2 – The label is to be suitable for permanent fixing.

NOTE 3 – The label may be fixed on the appliance if it is visible before using the toilet.

8 Protection against access to live parts

This clause of part 1 is applicable except as follows.

8.1.1 *Addition:*

The small test finger of figure 101 is also applied.

9 Starting of motor-operated appliances

This clause of part 1 is not 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.

11.3 *Addition:*

Thermocouples attached to the small blackened disks are also used for measuring the temperature rise of warm air.

11.7 *Replacement:*

Appliances are operated until steady conditions are established.

11.8 *Addition:*

The temperature rises shall not exceed the values shown in table 101.

Table 101 – Maximum normal temperature rises

Part	*Temperature rise* K
Surfaces likely to be in contact with the skin,	
– if of metal	*15*
– if of other material	*25*
Warm air for drying parts of the human body	*25* [1)]
Surfaces outside the bowl located within 25 cm of the seat	*30*
*Interior of the excrement tank of **mouldering toilets***	*60*
Ducts through which excrement passes	*60*
[1)] *The air temperature is measured 5 cm from the air outlet*	

*The temperature of the water supplied by **shower units** shall not exceed 40 °C.*

12 Void

13 Leakage current and electric strength at operating temperature

This clause of part 1 is applicable.

14 Void

15 Moisture resistance

This clause of part 1 is applicable except as follows.

15.1.1 *Addition:*

It may be necessary to use the spray nozzle described in subclause 14.2.4 of IEC 60529 for testing the inside of the bowl.

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.