



SLOVENSKI STANDARD
SIST EN 60335-2-84:1999
01-julij-1999

J U f b c g h i [c g d c X] b ' g _ \] b ' d c X c V b \ ' Y Y _ f] b \ ' U d U f U r c j ' ! ' & , (" X Y . ' D c g Y V b Y
n U h j Y ' n U g l f U b] y U f 1 9 7 * \$ ' ') ! & , (. % - , £

Safety of household and similar electrical appliances -- Part 2-84: Particular requirements for toilets

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke -- Teil 2-84: Besondere Anforderungen an Toiletten

Sécurité des appareils électrodomestiques et analogues -- Partie 2-84: Règles particulières pour toilettes

[SIST EN 60335-2-84:1999
https://standards.iteh.ai/catalog/standards/sist/fl2532f-e061-4f60-a480-2399d05495fd/sist-en-60335-2-84-1999](https://standards.iteh.ai/catalog/standards/sist/fl2532f-e061-4f60-a480-2399d05495fd/sist-en-60335-2-84-1999)

Ta slovenski standard je istoveten z: EN 60335-2-84:1998

ICS:

13.120	Varnost na domu	Domestic safety
91.140.70	Sanitarne naprave	Sanitary installations

SIST EN 60335-2-84:1999 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 60335-2-84:1999](https://standards.iteh.ai/catalog/standards/sist/f1f2532f-e061-4f60-a480-2399d05495fd/sist-en-60335-2-84-1999)

<https://standards.iteh.ai/catalog/standards/sist/f1f2532f-e061-4f60-a480-2399d05495fd/sist-en-60335-2-84-1999>

EUROPEAN STANDARD

EN 60335-2-84

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 1998

ICS 91.140.70

Descriptors: Household electrical appliances, toilets, safety requirements, protection against electric shock, fire protection, protection against mechanical hazard

English version

Safety of household and similar electrical appliances
Part 2-84: Particular requirements for toilets
 (IEC 60335-2-84:1998)

Sécurité des appareils
 électrodomestiques et analogues
 Partie 2-84: Règles particulières
 pour toilettes
 (CEI 60335-2-84:1998)

Sicherheit elektrischer Geräte für den
 Hausgebrauch und ähnliche Zwecke
 Teil 2-84: Besondere Anforderungen
 an Toiletten
 (IEC 60335-2-84:1998)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 60335-2-84:1999

<https://standards.iteh.ai/catalog/standards/sist/fl2532fe061-4f60-a480-2399d05495fd/sist-en-60335-2-84-1999>

This European Standard was approved by CENELEC on 1998-10-01. 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, Czech Republic, 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 text of document 61/1481/FDIS, future first edition of IEC 60335-2-84 prepared by the IEC Technical Committee 61, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60335-2-84 on 1998-10-01.

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) 1999-07-01
- date on which national standards conflicting with the EN have to be withdrawn (dow) 2001-07-01

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 toilets.

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.

(standards.iteh.ai)

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

SIST EN 60335-2-84:1999

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.

Introduction

An investigation by CENELEC TC 61 has shown that all risks from products within the scope of this standard are fully covered by the Low Voltage Directive, 73/23/EEC. If the product has mechanical moving parts, a risk assessment in accordance with the Machinery Directive, 89/392/EEC, has shown that the risks are mainly of electrical origin and consequently this directive is not applicable. However, the relevant essential safety requirements of the Machinery Directive are covered by this standard together with the principal objectives of the Low Voltage Directive.

Endorsement notice

The text of the International Standard IEC 60335-2-84:1998 was approved by CENELEC as a European Standard without any modification.

CONTENTS

Clause	Page
1 Scope	4
2 Definitions.....	4
3 General requirement	5
4 General conditions for the tests	5
5 Void	5
6 Classification	5
7 Marking and instructions	5
8 Protection against access to live parts.....	6
9 Starting of motor-operated appliances	6
10 Power input and current	6
11 Heating	6
12 Void	7
13 Leakage current and electric strength at operating temperature	7
14 Void	7
15 Moisture resistance	7
16 Leakage current and electric strength.....	7
17 Overload protection of transformers and associated circuits.....	7
18 Endurance	7
19 Abnormal operation	8
20 Stability and mechanical hazards	8
21 Mechanical strength	9
22 Construction.....	9
23 Internal wiring	10
24 Components.....	10
25 Supply connection and external flexible cords.....	10
26 Terminals for external conductors.....	10
27 Provision for earthing	10
28 Screws and connections.....	11
29 Creepage distances, clearances and distances through insulation	11
30 Resistance to heat, fire and tracking.....	11
31 Resistance to rusting.....	11
32 Radiation, toxicity and similar hazards	11
 Annex A – Normative references.....	 13
 Figure 101 – Small test finger.....	 12
 Tables	
Table 101 – Maximum normal temperature rises	7
Table 102 – Maximum abnormal temperature rises	8

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.

<https://standards.iteh.ai/catalog/standards/sist/fl2532fe061-4f60-a480-2399d05495fd/sist-en-60335-2-84-1999>

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.
SIST EN 60335-2-84:1999
<https://standards.iteh.ai/catalog/standards/sist/fl2532fe061-4f60-a480-2399d05495fd/sist-en-60335-2-84-1999>

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

<i>Part</i>	<i>Temperature rise K</i>
<i>Surfaces likely to be in contact with the skin, – if of metal – if of other material</i>	<i>15 25</i>
<i>Warm air for drying parts of the human body</i>	<i>25¹⁾</i>
<i>Surfaces outside the bowl located within 25 cm of the seat</i>	<i>30</i>
<i>Interior of the excrement tank of mouldering toilets</i>	<i>60</i>
<i>Ducts through which excrement passes</i>	<i>60</i>
¹⁾ <i>The air temperature is measured 5 cm from the air outlet.</i>	

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

12 Void

iTeh STANDARD PREVIEW

13 Leakage current and electric strength at operating temperature

This clause of part 1 is applicable. [SIST EN 60335-2-84:1999
https://standards.iteh.ai/catalog/standards/sist/fl2532fe061-4f60-a480-2399d05495fd/sist-en-60335-2-84-1999](https://standards.iteh.ai/catalog/standards/sist/fl2532fe061-4f60-a480-2399d05495fd/sist-en-60335-2-84-1999)

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.