

# INTERNATIONAL STANDARD

**IEC**  
**60335-2-82**

Second edition  
2002-11

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**Household and similar electrical appliances –  
Safety –**

**Part 2-82:  
Particular requirements for amusement machines  
and personal service machines**

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International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland  
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: [inmail@iec.ch](mailto:inmail@iec.ch) Web: [www.iec.ch](http://www.iec.ch)



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
SAFETY –****Part 2-82: Particular requirements for amusement machines  
and personal service machines**

## 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 specifications, technical reports or guides and they are accepted by the National Committees in that sense.
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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.

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

This second edition cancels and replaces the first edition published in 1999. It constitutes a technical revision.

The text of this part of IEC 60335 is based on the following documents:

FDIS	Report on voting
61/2226/FDIS	61/2301/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 fourth edition (2001) 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: Safety requirements for electric amusement machines and personal service machines.

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 publication will remain unchanged until 2004. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

The following differences exist in the countries indicated below.

- Clause 1: Gaming machines have to comply with IEC 60950 (South Africa).
- 6.1: Class 0 appliances are allowed provided that their rated voltage does not exceed 150 V (Japan and USA).
- 6.1: Class 0I is allowed (Japan).
- 19.101: The fault condition with the contactor locked in the on-position is not applied (USA).
- 20.1: The test is different (USA).
- Clause 21: The impact energy is different (USA).
- 25.7: Lighter supply cords are allowed (USA).
- 25.7: The requirements for supply cords are different. Additional protection of the supply cord is required (Australia).

A bilingual version of this publication may be issued at a later date.

## 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.

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.

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 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.

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.

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 that 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.

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## HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

### Part 2-82: Particular requirements for amusement machines and personal service machines

#### 1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric commercial amusement machines and personal service machines, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

NOTE 101 Examples of appliances that are within the scope of this standard are

- amusement machines:
  - billiard tables;
  - bowling machines;
  - dartboards;
  - driving simulators;
  - gaming machines;
  - kiddie rides;
  - laser shooting appliances;
  - pinball machines;
  - video games.
- personal service machines:
  - card re-value machines;
  - currency dispensers;
  - luggage lockers;
  - weighing machines;
  - shoe shining appliances.

NOTE 102 If part of the appliance is within the scope of IEC 60065 or IEC 60950, the part has to comply with the relevant standard.

As far as is practicable, this standard deals with the common hazards presented by appliances that are encountered by users and **maintenance persons**.

NOTE 103 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;
- in many countries additional requirements are specified by the national authorities responsible for health, for the protection of labour and similar authorities.

NOTE 104 This standard does not apply to

- appliances intended exclusively for household use;
- appliances intended 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);
- appliances for washing cars;
- dispensing appliances and vending machines (IEC 60335-2-75);
- appliances within the scope of IEC 60065, such as jukeboxes and household video games;
- appliances within the scope of IEC 60950, such as copying machines, ticket machines and automatic teller machines;
- appliances intended to be used when a trained attendant is present, such as virtual reality systems;
- equipment intended exclusively for fairgrounds, such as carousels.



## 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 Definitions

This clause of Part 1 is applicable except as follows.

### 3.1.9 Replacement:

#### **normal operation**

operation of the appliance under the following conditions

The appliance is operated in the **stand-by mode** until steady conditions are established and then under the most unfavourable conditions of normal use.

The appliance is refilled when necessary in accordance with the instructions for use, or the **instructions for maintenance**, and the next operating period started as soon as possible.

Appliances that support persons in normal use are loaded as follows:

- **kiddie rides**, 50 kg for each riding position;
- other appliances, 100 kg for the first riding position and 75 kg for each additional riding position.

NOTE 101 The riding position may be for a sitting or standing person.

If the instructions state that higher loads are allowed, the appliance is loaded accordingly.

Audio amplifiers are operated in accordance with the normal operating conditions specified in IEC 60065.

### 3.6.2 Replacement:

#### **detachable part**

part that can be removed without the aid of a **tool**, a part that is removed in accordance with the instructions for use or **instructions for maintenance**, even if a **tool** or **access key** is needed for removal, or a part that does not fulfill the test of 22.11

NOTE 101 If a part has to be removed for installation purposes, this part is not considered to be detachable even if the instructions state that it is to be removed.

NOTE 102 A part that can be opened is considered to be a part that can be removed.

### 3.7.3 Replacement:

#### **thermal cut-out**

device that during abnormal operation limits the temperature of the controlled part by automatically opening the circuit, or reducing the current, and constructed so that its setting cannot be altered by the user or the **maintenance person**

### 3.8.5 Replacement:

#### **maintenance operation**

operation that the user or **maintenance person** is intended to perform as stated in the instructions for use, or the **instructions for maintenance**, or as marked on the appliance

NOTE 101 The **instructions for maintenance** marked on the appliance, or supplied with the appliance or subsequently, are applicable only to the **user area** and the **maintenance area**.

NOTE 102 **Maintenance operation** includes preparing and commissioning the appliance for new operating methods. It does not include operations that are to be performed in the **service area**.

**3.101**

**stand-by mode**

mode of the appliance when it is energized and ready for use, while filled as intended but with empty cash boxes

**3.102**

**access key**

key or other means that gives access to the **maintenance area** but does not give access to the **service area**

NOTE "Other means" includes a **tool** or operation by codes or signals produced by optical or electromagnetic sources.

**3.103**

**override key**

key or other means that is used to render an interlock inoperative

**3.104**

**instructions for maintenance**

instructions explaining how to carry out cleaning, replenishing, coin collecting, setting of controls and similar operations

**3.105**

**maintenance person**

person who maintains the appliance in accordance with the **instructions for maintenance**

**3.106**

**user area**

area where access is gained without the use of an **access key** or a **tool**

**3.107**

**maintenance area**

area where access can only be gained by the use of an **access key**

**3.108**

**service area**

area where access cannot be gained by the use of an **access key** alone

**3.109**

**kiddie ride**

moving appliance having a stationary base for use by one or two children between the ages of three and ten years, under the supervision of an adult

**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 Replacement:**

*Controls or switching devices in the **user area** are adjusted to the most unfavourable setting.*

*Controls, switching devices or other parts in the **maintenance area** are adjusted to the most unfavourable setting within the limits stated in the **instructions for maintenance**.*

NOTE 101 Controls or switching devices in the **service area** are not adjusted.