

# INTERNATIONAL STANDARD

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

First edition  
1999-11

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**Safety of household and similar  
electrical appliances –**

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

*Sécurité des appareils électrodomestiques  
et analogues –*

*Partie 2-82:  
Règles particulières pour les machines de service  
et les machines de divertissement*



Reference number  
IEC 60335-2-82:1999(E)

## Numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series.

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For graphical symbols, and letter symbols and signs approved by the IEC for general use, readers are referred to publications IEC 60027: *Letter symbols to be used in electrical technology*, IEC 60417: *Graphical symbols for use on equipment. Index, survey and compilation of the single sheets* and IEC 60617: *Graphical symbols for diagrams*.

\* See web site address on title page.

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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

PRICE CODE

**R**

*For price, see current catalogue*

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
Part 2-82: Particular requirements for service machines  
and amusement 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.
- 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 IEC technical committee 61: Safety of household and similar electrical appliances.

It forms the first edition of IEC 60335-2-82.

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

FDIS	Report on voting
61/1652/FDIS	61/1748/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 service machines and amusement 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 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 and figures which are additional to those in part 1 are numbered starting from 101.

The following additional differences exist in some countries:

- Clause 1: Gaming machines have to comply with IEC 60950 (South Africa).
- 6.1: Class 0 is allowed for appliances having a rated voltage not exceeding 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 standard may be issued at a later date.

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

### 1 Scope

This clause of part 1 is replaced by:

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

NOTE 1 – Examples of appliances which are within the scope of this standard

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

NOTE 2 – If an appliance incorporates a part which is within the scope of IEC 60065 or IEC 60950, the part has to comply with the relevant standard.

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

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

NOTE 4 – 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 a virtual reality system,
- equipment intended exclusively for fairgrounds, such as carousels.

## 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:

The appliance is operated in the **standby mode** until steady conditions are established and then operated 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 which 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 – 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.

### 2.7.2 Replacement:

#### **detachable part**

part which can be removed without the aid of a **tool**, a part which 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 which does not fulfill the test of 22.11

### 2.8.3 Replacement:

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

device which 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**

### 2.9.9 Replacement:

#### **maintenance operation**

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

NOTE 1 – The **instructions for maintenance** marked on the appliance or supplied with the appliance are applicable only to the **user area** and the **maintenance area**.

NOTE 2 – **Maintenance operation** includes preparing the appliance for new operating methods.

NOTE 3 – **Maintenance operation** does not include operations that are to be performed in the **service area**.



**2.101****standby mode**

state of the appliance when it is ready for use, energized and completely filled in accordance with the instructions. Cash boxes are empty

**2.102****access key**

key or other means which gives access to the **maintenance area** and which 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.

**2.103****override key**

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

**2.104****instructions for maintenance**

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

**2.105****maintenance person**

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

**2.106****user area**

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

**2.107****maintenance area**

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

**2.108****service area**

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

**2.109****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

**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.

**4.3 Addition:**

*Compliance with 22.101 is determined during the tests of clause 8.*

#### 4.6 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 – Controls or switching devices in the **service area** are not adjusted.

#### 4.9 Addition:

When alternative software is made available by the appliance manufacturer, the appliance is tested with the software which gives the most unfavourable results.

**4.101** The requirements of this standard for the **maintenance area** are applicable when the **instructions for maintenance** are being followed. If an **override key** is provided for access to the **maintenance area**, it is used before a test is carried out if this is more unfavourable.

**4.102** When reference is made to the application of the test finger of figure 1, the test probe 18 of IEC 61032 is also applied in the **user area**.

**4.103** Appliances incorporating transformers, **electronic circuits** and lamps are tested as **motor-operated appliances** unless they incorporate a heating element, in which case they are tested as **combined appliances**.

## 5 Void

## 6 Classification

This clause of part 1 is applicable except as follows.

### 6.1 Replacement:

Appliances shall be one of the following classes with respect to protection against electric shock:

**class I, class II, or class III.**

Compliance is checked by inspection and by the relevant tests.

### 6.2 Addition:

Appliances intended for outdoor use shall be at least IPX4.

Appliances which may be cleaned by water jets or installed where water jets are liable to be used shall be at least IPX5.

Appliances which use water jets in normal use shall be at least IPX5 unless the water jet cannot be directed at the enclosure of electrical parts, in which case it may be IPX4.