

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Household and similar electrical appliances – Safety –  
Part 2-80: Particular requirements for fans**

**Appareils électrodomestiques et analogues – Sécurité –  
Partie 2-80: Règles particulières pour les ventilateurs**

IEC 60335-2-80:2002

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

#### Part 2-80: Particular requirements for fans

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

This consolidated version of IEC 60335-2-80 consists of the second edition (2002) [documents 61/2165/FDIS and 61/2245/RVD], its amendment 1 (2004) [documents 61/2538/FDIS and 61/2582/RVD] and its amendment 2 (2008) [documents 61/3644/FDIS and 61/3684/RVD].

The technical content is therefore identical to the base edition and its amendments and has been prepared for user convenience.

It bears the edition number 2.2.

A vertical line in the margin shows where the base publication has been modified by amendments 1 and 2.

The French version of this standard has not been voted upon.

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 fans.

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 following differences exist in the countries indicated below.

- 6.2: This requirement is not applicable (USA).
- 6.101: Only fans for tropical climates are allowed (Australia).
- 7.1: The "T" marking is not required (USA).
- 7.1: Fans for installation in walls or windows are to be marked with a reference to the instructions for use (Germany).
- 7.12.1: The instructions for fans to be installed in walls or windows are to state the maximum negative pressure allowed in the room when the fan is operated simultaneously with an appliance supplied with energy other than electricity (Germany).
- 7.12.1: The fan blades are only required to be 2,1 m above the floor (Australia).
- 7.12.1: Other mounting heights are specified and have to be marked on the appliance (USA).
- 19.7: The addition is not applicable (USA).
- 20.1: The additional test for portable pedestal fans is not carried out (Japan).
- 20.2: The requirements are different (USA).
- 21.102: The loads are different (USA).
- 23.3: Different requirements apply (USA).
- 24.101: The requirement is not applicable (USA).

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

2 | NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may 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 2 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.

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 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.

- 2 | 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 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 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.



## HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

### Part 2-80: Particular requirements for fans

#### 1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric fans for household and similar purposes, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

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

- ceiling fans;
- duct fans;
- partition fans;
- pedestal fans;
- table fans.

This standard also applies to separate controls supplied with fans.

Appliances not intended for normal household use but which nevertheless may be a source of danger to the public, such as appliances intended for use in shops, in light industry and on farms, are within the scope of this standard.

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

- 2
- persons (including children) whose
    - physical, sensory or mental capabilities; or
    - lack of experience and knowledgeprevents them from using the appliance safely without supervision or instruction;
  - children playing with the appliance.

NOTE 102 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 health authorities, the national authorities responsible for the protection of labour and similar authorities.

NOTE 103 This standard does not apply to

- 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);
- fans incorporated in other appliances.

#### 2 Normative references

This clause of Part 1 is applicable.

### 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

Table and pedestal fans are operated with any oscillating mechanism in operation.

Ceiling fans are fixed to a ceiling.

Partition fans are installed in the centre of a suitable partition having dimensions at least four times the diameter of the air inlet.

Duct fans are installed in a duct in accordance with the installation instructions, the length of the duct being approximately four times the diameter of the fan.

#### 3.101

##### duct fan

fan for installation within an enclosed airway so that the airflow is ducted on both the inlet and outlet sides

### 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.

#### 5.7 Addition:

*For fans intended to be used in tropical climates, the tests of Clauses 10, 11 and 13 are carried out at an ambient temperature of  $40\text{ °C} \pm 2\text{ °C}$ .*

*For fans marked with an ambient operating temperature, the tests of Clauses 10, 11 and 13 are carried out at the marked value  $\pm 2\text{ °C}$ .*

### 6 Classification

This clause of Part 1 is applicable except as follows.

#### 6.2 Addition:

Duct fans shall be at least IPX2.

**6.101** Fans shall be of one of the following classes with respect to climatic conditions:

- fans for temperate climates;
- fans for tropical climates.

*Compliance is checked by inspection.*

## 7 Marking and instructions

This clause of Part 1 is applicable except as follows.

### 7.1 Addition:

Fans for tropical climates shall be marked with the letter T.

Fans intended for operation in locations where the local ambient temperature exceeds 40 °C shall be marked with the ambient operating temperature.

### 7.12 Addition:

If the instructions state that the guard has to be removed for cleaning purposes, the instructions shall state the substance of the following:

Ensure that the fan is switched off from the supply mains before removing the guard.

#### 7.12.1 Addition:

The installation instructions shall include the substance of the following:

- the model or type reference of a luminaire that may be installed in a fan constructed for this purpose;
- whether the fan is intended for mounting in outside windows or walls (for partition fans);
- that the fan is to be installed so that the blades are more than 2,3 m above the floor (for fans intended to be mounted at high level);
- that precautions must be taken to avoid the back-flow of gases into the room from the open flue of gas or other fuel-burning appliances (for duct and partition fans).

## 8 Protection against access to live parts

This clause of Part 1 is applicable except as follows.

### 8.1.1 Modification:

*Lamps are not removed. However, during insertion or removal of lamps, protection against contact with **live parts** of the lamp cap shall be ensured.*

### 8.2 Addition:

*After the removal of **detachable parts** for the purposes of **user maintenance**, the **basic insulation** of internal wiring may be touched provided that it is electrically equivalent to the insulation of cords complying with IEC 60227 or IEC 60245.*

## 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 except as follows.