

# INTERNATIONAL STANDARD

# IEC 60335-2-5

Fifth edition  
2002-03

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## Household and similar electrical appliances – Safety –

### Part 2-5: Particular requirements for dishwashers

*Appareils électrodomestiques et analogues –  
Sécurité –*

*Partie 2-5:  
Règles particulières pour les lave-vaisselle*

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
SAFETY –****Part 2-5: Particular requirements for dishwashers**

## 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.

<https://www.internationalstandards.org> This part of International Standard IEC 60335 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

This fifth edition cancels and replaces the fourth edition published in 1992 and its amendments 1 (1999) and 2 (1999). It constitutes a technical revision.

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

FDIS	Report on Voting
61/2099/FDIS	61/2130/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 dishwashers.

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 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.

- 6.1: Appliances may be of class 0I, if the rated voltage does not exceed 150 V (Japan).
- 20.102: A 30 000 cycle endurance test is carried out on door interlocks (USA).
- 25.7: The supply cord is required to have a free length of at least 1,5 m (USA).
- Annex AA: The detergent and rinsing agent are different (USA).
- Annex BB: Different tests are carried out (USA).

The contents of the corrigendum of May 2003 have been included in this copy.

## 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 which 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 2-5: Particular requirements for dishwashers

### 1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric dishwashers for household use that are intended for washing and rinsing dishes, cutlery and other utensils, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

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

- the use of appliances by young children or infirm persons without supervision;
- playing with the appliance by young children.

NOTE 101 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, the national water supply authorities and similar authorities.

NOTE 102 This standard does not apply to

- commercial electric dishwashing machines (IEC 60335-2-58);
- appliances intended 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).

### 2 Normative references

This clause of Part 1 is applicable except as follows.

*Addition:*

IEC 60436, *Methods for measuring the performance of electric dishwashers*

ISO 1817:1999, *Rubber, vulcanized – Determination of the effect of liquids*

### 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 with the maximum quantity of water for which it is constructed, without detergents or rinsing agents and without place settings or serving pieces. However if it is apparent that the test results will be affected by the load, the appliance is loaded with the maximum number of place settings and serving pieces specified in the instructions.

NOTE 101 The place settings and serving pieces to be used are specified in IEC 60436.

The water is supplied at any convenient pressure within the range specified in the instructions, the temperature of the water at the inlet being

- 60 °C ± 5 °C or that specified in the instructions if it is higher, for inlets intended for hot water only;
- 15 °C ± 5 °C for inlets intended for cold water only.

If the appliance has an inlet intended for hot or cold water, the most unfavourable water temperature is used

## 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.

### 5.3 Addition:

*The test of 15.101 is carried out before the test of 15.3.*

## 6 Classification

This clause of Part 1 is applicable except as follows.

### 6.1 Modification:

Appliances shall be **class I**, **class II** or **class III**.

### 6.2 Addition:

Appliances intended to stand on a draining board shall be at least IPX1.

## 7 Marking and instructions

This clause of Part 1 is applicable except as follows.

### 7.1 Addition:

Appliances without automatic water-level control shall be marked with the maximum permissible water level.

**7.6 Addition:**

[symbol 5036 of IEC 60417-1]

dangerous voltage

**7.10 Addition:**

If the **off position** is only indicated by letters, the word "off" shall be used.

**7.12 Addition:**

The instructions shall state

- the maximum number of place settings to be washed;
- that the door should not be left in the open position since this could present a tripping hazard;
- how to load the dishwasher, and the substance of the following:

WARNING: Knives and other utensils with sharp points must be loaded in the basket with their points down or placed in a horizontal position.

If symbol 5036 of IEC 60417-1 is used, its meaning shall be explained.

**7.12.1 Addition:**

The installation instructions shall state

- that the appliance is to be connected to the water mains using new hose-sets and that old hose-sets should not be reused;
- NOTE 101 This instruction is not required if the hoses are permanently attached to the appliance.
- the maximum permissible inlet water pressure, in megapascals, for appliances intended to be connected to the water mains;
  - the minimum permissible inlet water pressure, in megapascals, if this is necessary for the correct operation of the appliance;
  - for dishwashers with ventilation openings in the base, that a carpet must not obstruct the openings.

**7.14 Addition:**

The height of symbol 5036 of IEC 60417-1 shall be at least 5 mm.

*Compliance is checked by measurement.*

**7.101** The enclosure of magnetic valves, and similar components incorporated in external hoses for direct connection to the water mains, shall be marked with symbol 5036 of IEC 60417 if their **working voltage** exceeds **extra-low voltage**.

NOTE This symbol is a warning sign and the rules of IEC 3864 apply.

*Compliance is checked by inspection.*

## 8 Protection against access to live parts

This clause of Part 1 is applicable.