

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

Household and similar electrical appliances – Safety –  
Part 2-119: Particular requirements for commercial vacuum packaging  
appliances

Appareils électrodomestiques et analogues – Sécurité –  
Partie 2-119: Exigences particulières pour les emballeuses sous vide à usage  
commercial



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IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

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## CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references .....	7
3 Terms and definitions .....	7
4 General requirement.....	8
5 General conditions for the tests .....	8
6 Classification.....	8
7 Marking and instructions.....	8
8 Protection against access to live parts.....	9
9 Starting of motor-operated appliances .....	9
10 Power input and current.....	9
11 Heating.....	9
12 Charging of metal-ion batteries.....	10
13 Leakage current and electric strength at operating temperature.....	10
14 Transient overvoltages .....	10
15 Moisture resistance.....	10
16 Leakage current and electric strength.....	11
17 Overload protection of transformers and associated circuits .....	11
18 Endurance .....	11
19 Abnormal operation.....	12
20 Stability and mechanical hazards.....	12
21 Mechanical strength .....	12
22 Construction .....	12
23 Internal wiring.....	13
24 Components .....	13
25 Supply connection and external flexible cords .....	13
26 Terminals for external conductors.....	13
27 Provision for earthing .....	13
28 Screws and connections .....	13
29 Clearances, creepage distances and solid insulation .....	14
30 Resistance to heat and fire .....	14
31 Resistance to rusting.....	14
32 Radiation, toxicity and similar hazards.....	14
Annexes .....	16
Annex AA (informative) Method for calculating the gas concentration .....	17
Bibliography.....	21
Figure 101 – Splash apparatus .....	15
Figure 102 – Weight for mechanical test .....	15

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[IEC 60335-2-119:2021](https://standards.iteh.ai/catalog/standards/sist/31c5cefd-b336-47a5-8b38-bd6725d66a33/iec-60335-2-119-2021)

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –  
SAFETY –**
**Part 2-119: Particular requirements for commercial  
vacuum packaging appliances**

## 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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IEC 60335-2-119 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
61/6176/CDV	61/6295/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

A list of all parts in the IEC 60335 series, published under the general title *Household and similar electrical appliances – Safety*, can be found on the IEC website.

This Part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments unless that edition precludes it; in that case, the latest edition that does not preclude it is used. It was established on the basis of the sixth edition (2020) 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: Particular requirements for commercial vacuum packaging appliances.

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; [IEC 60335-2-119:2021](http://standards.iteh.ai/catalog/standards/sist/31c5cefd-b336-47a5-8b38-bd6725d66a33/iec-60335-2-119-2021)
- 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 document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

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

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 this publication be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

## 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.

Guidance documents concerning the application of the safety requirements for appliances can be accessed via TC 61 supporting documents on the IEC website:

<https://www.iec.ch/tc61/supportingdocuments>

This information is given for the convenience of users of this International Standard and does not constitute a replacement for the normative text in this standard.

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.

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 publications, basic safety publications and group safety publications 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.

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.

NOTE 3 Standards dealing with non-safety aspects of household appliances are:

- IEC standards published by TC 59 concerning methods of measuring performance;
- CISPR 11, CISPR 14-1 and relevant IEC 61000-3 series standards concerning electromagnetic emissions;
- CISPR 14-2 concerning electromagnetic immunity;
- IEC standards published by TC 111 concerning environmental matters.



# HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

## Part 2-119: Particular requirements for commercial vacuum packaging appliances

### 1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of commercial electric packaging appliances using vacuum conditions for food preservation, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

These appliances are not intended for household and similar purposes. They are used for commercial preservation of food in areas not open to the public, for example in kitchens of restaurants, canteens, hospitals and in commercial enterprises such as bakeries and butchereries.

Examples of appliances that are within the scope of this standard are:

- chamber vacuum packaging appliances;
- vacuum packaging appliances.

These appliances may be provided with a film-sealing function.

This standard also deals with the hygiene aspects of appliances.

As far as is practicable, this standard deals with the common hazards presented by appliances that are encountered by users. However, in general, it does not consider young children playing with the appliance.

Attention is drawn to the fact that:

- for appliances intended to be used in vehicles or onboard ships or aircraft, additional requirements may be necessary;
- in many countries, additional requirements for appliances incorporating pressure vessels are specified;
- 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.

This standard does not apply to:

- appliances which operate with injection in the vacuum chamber of inert gas with an oxygen content exceeding 21 %;
- 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);
- vacuum packaging appliances for household and similar use (IEC 60335-2-45);
- **battery-operated appliances.**



## 2 Normative references

This clause of Part 1 is applicable except as follows.

*Addition:*

IEC 60068-2-52:2017, *Environmental testing – Part 2-52: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution)*

ISO 683-1:2016, *Heat-treatable steels, alloy steels and free-cutting steels – Part 1: Non-alloy steels for quenching and tempering*

## 3 Terms and definitions

This clause of Part 1 is applicable except as follows.

### 3.1 Definitions relating to physical characteristics

#### 3.1.9 Replacement:

operation of the appliance under the following conditions:

**Vacuum packaging appliances and chamber vacuum packaging appliances** without deaeration function are operated empty in vacuum and sealing cycles in accordance with the instructions, choosing the most unfavourable condition. If no instructions are given, the appliance is operated for the:

- vacuum function, the maximum period allowed by the construction;
- sealing function, 10 s or the maximum period allowed by a timer, if higher, with a rest period of 30 s between each cycle.

The sealing function is carried out by sealing together two sheets of plastic film. The plastic film is high pressure (low density) polyethylene, each sheet having a thickness of 50 µm.

**Vacuum packaging appliances and chamber vacuum packaging appliances** provided with deaeration function intended to remove air molecules from liquids, creams and sauces are operated as indicated above but for 5 min for the vacuum function.

**Vacuum packaging appliances and chamber vacuum packaging appliances** for vacuum and sealing and which can perform sealing function only, are also operated for a series of operating cycles as specified in the instruction for use, choosing the most unfavourable condition. If no instructions are given, in each cycle the sealing function is operated 10 s.

In all cases the sealing operation period is followed by a further period of 15 s for the appliance to be ready to perform the next sealing operation.

The sealing function is carried out by sealing together two sheets of plastic film. The plastic film is high pressure (low density) polyethylene, each sheet having a thickness of 50 µm.

### 3.5 Definitions relating to types of appliances

#### 3.5.101

##### **vacuum packaging appliance**

appliance in which the vacuum function is performed with the packaging outside the vacuum chamber

Note 1 to entry: **Vacuum packaging appliances** may be provided with a sealing function.

### 3.5.102

#### **chamber vacuum packaging appliance**

appliance in which the vacuum function is performed with the packaging inside a vacuum chamber

Note 1 to entry: **Chamber vacuum packaging appliances** may be provided with a sealing function and/or gas injection function that avoids crushing of the food.

## 4 General requirement

This clause of Part 1 is applicable.

## 5 General conditions for the tests

This clause of Part 1 is applicable

## 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 normally used on a table shall be at least IPX3. Other appliances shall be at least IPX4.

## 7 Marking and instructions

This clause of Part 1 is applicable except as follows.

### 7.1 *Addition*

Appliances which may operate with gas injection in the vacuum chamber, shall be marked with:

- the substance of the following:  
WARNING: The oxygen content in the gas shall not exceed 21 %
- the maximum pressure allowed at the injection gas inlet.

### 7.12 *Modification:*

The instruction concerning persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge and children playing with the appliance is not applicable.

**7.12.101** For **chamber vacuum packaging appliances**, the instructions shall include the substance of the following:

- WARNING: Risk of implosion – If the surface of the lid is cracked or damaged, do not use the appliance and refer to the after sales service for its replacement.

**WARNING:** Risk of injury – If unintended disconnection of the appliance from the power supply during the vacuum process leads to blocking the opening mechanism of the vacuum chamber, do not force the lid to open it and operate as indicated in the instructions for use.

Instructions for appliances designed to use rigid vacuum containers such as pots and jars shall draw the attention of the user to the need to verify the maximum vacuum pressure to which vacuum containers can be subjected without distortion or breakage in case such containers are not supplied with the appliance or indicated in the instructions for use.

The instructions of appliances provided with a sealing function shall draw the attention of the user on the fact that some residual heating is present on the sealing bars at the end of the vacuum process.

For appliances which may operate with gas injection, the instruction shall:

- indicate the name of the gases allowed for injection or at least limit them to inert gases;
- indicate a suitable method for the calculation of the gas concentration in the workroom based on the type of gas used, considering as worst-case scenario the one when the gas inlet valve in the appliance is permanently open. Information on how to calculate the gas concentration is given in informative Annex AA;
- draw the attention of the user on the need to close the gas supply each time the appliance is not in use;
- draw the attention of the user on the need to verify the concentration of gas in the workroom and to take adequate precautions (e.g. to provide suitable room ventilation), in case the calculated amount of gas concentration reaches dangerous levels;
- the instructions shall state the substance of the following warnings:
  - **WARNING:** To avoid risk of high flammability or explosion – The oxygen percentage in the gas shall be maximum 21%;
  - **WARNING:** To avoid risk of suffocation – If injection gas is used, an appropriate air exchange rate shall be ensured in the workroom;
- if a pressure reducer is not incorporated in the appliance, the instructions shall indicate that a suitable pressure reducer shall be applied at the customer's site to ensure that the maximum applied pressure corresponds to the one marked on the appliance.

## 8 Protection against access to live parts

This clause of Part 1 is applicable.

## 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.

### 11.7 Replacement:

The appliance is operated under **normal operation** until steady conditions are established.

Appliance outlets accessible to the user and socket-outlets accessible to the user are loaded with a resistive load that gives the marked **outlet load**.

## 12 Charging of metal-ion batteries

This clause of Part 1 is not applicable.

## 13 Leakage current and electric strength at operating temperature

This clause of Part 1 is applicable.

## 14 Transient overvoltages

This clause of Part 1 is applicable.

## 15 Moisture resistance

This clause of Part 1 is applicable except as follows.

### 15.1.1 Addition:

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In addition, appliances, except those marked IPX5 and IPX6, are subjected for 5 min to the following splash test.

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The apparatus shown in Figure 101 is used. The appliance is placed in normal position of use and adjustable feet shall be set at minimum level in accordance with the instruction for use.

For appliances normally used on the floor, the bowl is placed on the floor and is moved around in such a way as to splash the sides of the appliance from all directions. During the test, the water pressure is so regulated that the water splashes up 150 mm above the bottom of the bowl.

For all other appliances, the bowl is placed on the same plane where the appliance is placed and is moved around in such a way as to splash the sides of the appliance from all directions. During the test, the water pressure is so regulated that the water splashes up 100 mm above the bottom of the bowl. The appliance shall not be hit by the direct jet.

### 15.2 Addition:

Compliance is also checked by the tests of 15.2.101 and 15.2.102.

**15.2.101** For all appliances, 0,5 l of the spillage solution is poured rapidly over the top of the appliance in the most unfavourable way so that the spillage solution also flows over the surfaces of the appliance that incorporate controls and other places where it may penetrate the appliance enclosure, the controls being placed in the most unfavourable position. The controls are then operated through their working range, this operation being repeated after 5 min.

For **chamber vacuum packing appliances**, the test is carried out with the lid placed in the fully open or fully closed position, whichever is likely to be the most unfavourable.

For appliances having a working surface, the test is repeated with the appliance tilted at an angle of 2° in relation to the position of normal use in the direction which is likely to be the most unfavourable.

*The lid of top loading appliances is considered as a working surface if it is flat enough to put something on.*

*Additional action, like drying of tested areas, may be needed to ensure that first pouring test does not impact the result of the second one.*

*The appliance shall withstand the electric strength test of 16.3 and inspection shall show that there is no trace of water on insulation that could result in a reduction of **clearances** and **creepage distances** below the values specified in Clause 29.*

**15.2.102** *Parts liable to be cleaned are wiped in turn, with a sponge, having dimensions approximately 150 mm × 75 mm × 50 mm, saturated with water containing approximately 1 % NaCl. The sponge is applied without appreciable force for approximately 10 s to each surface.*

*After each cleaning test, all residues are removed, and the appliance is dried to ensure that a cleaning test is not impacted by a preceding one.*

*The appliance shall then withstand the electric strength test of 16.3 and inspection shall show that there is no trace of water on the insulation that could result in a reduction of **clearances** and **creepage distances** below the values specified in Clause 29.*

**15.101** Packaging appliances shall be constructed so that suction of liquid does not impair electrical insulation. This requirement does not apply to parts operating at **safety extra-low voltage**.

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Compliance is checked by the following tests:

*For **vacuum packaging appliances**, one plastic channelled bag with dimensions 20 cm × 30 cm filled with water containing approximately 1 % NaCl, at a temperature of 30 °C ± 0,5 °C, is positioned so that the surface of the water is at the same level as the suction opening of the appliance. Then the vacuum and sealing process is performed.*

NOTE Channelled vacuum bags are vacuum bags specifically designed to allow air to escape easily from the bag.

*For **chamber vacuum packaging appliances**, a quantity of water at a temperature of 30 °C ± 0,5 °C containing approximately 1 % NaCl and equal to 10 % of the volume of the vacuum chamber is poured in the chamber. Then the vacuum and sealing process is performed.*

*The appliance shall then withstand the electric strength test of 16.3 and inspection shall show that there is no trace of water on the insulation that could result in a reduction of **clearances** and **creepage distances** below the values specified in Clause 29.*

## 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.