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REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

Household and similar electrical appliances – Safety – Part 2-108: Particular requirements for electrolysers



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-108: Particular requirements for electrolysers

FOREWORD

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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60335-2-108:2008. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 60335-2-108 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This second edition cancels and replaces the first edition published in 2008. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) the text has been aligned with IEC 60335-1:2020;
b) some notes have been converted to normative text (Clause 1, 22.012);
c) application of test probe 19 has been introduced (8.1.1, 20.2, B22.3, B22.4);
d) addition of external accessible surface temperatures (Clause 11).

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

Draft	Report on voting
61/6955/CDV	61/7056A/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. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts of the IEC 60335 series, 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 electrolysers.

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.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations can 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 standard be adopted for implementation nationally not earlier than 12 months from the date of its publication.

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 in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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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.

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~~ can 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 and generic standards~~ 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. ~~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.

For **electrolysers**, testing in accordance with this standard is an option and cannot be required as a precondition for testing the complete appliance, for example by reference in Clause 24 of a part 2 of IEC 60335. Testing of the appliance ~~should~~ may be reduced if an incorporated **electrolyser** including its protection system or control system, if any, complies with this standard.

In particular, the construction detail inspection and testing may be done separately on the **electrolysers,** thereby eliminating the need for inspection and testing when the **electrolysers** is applied to different appliances.

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 2-108: Particular requirements for electrolysers

1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of **electrolysers** that produce low viscosity, ionized liquids intended for use as detergent free wash water in appliances for household and similar purposes and which conform with the standards applicable to such appliances. It applies to **electrolysers** tested separately, under the most severe conditions that ~~may~~ can be expected to occur in normal use, their **rated voltage** being not more than 250 V including direct current (DC) supplied appliances and **battery-operated appliances**.

~~NOTE 101~~ Examples of appliances that ~~may~~ can contain **electrolysers** are

– dishwashers (IEC 60335-2-5);
– washing machines (IEC 60335-2-7);
– appliances producing wash water for hygiene purposes.

~~NOTE 102~~ This standard does not supersede the requirements of standards relevant to the particular appliance in which the **electrolyser** is used. However, if the **electrolyser** used complies with this standard, the tests for the **electrolyser** specified in the particular appliance standard ~~may not need to be made~~ can be unnecessary in the particular appliance or assembly. If the **electrolyser** control system is associated with the particular appliance control system, additional tests ~~may~~ can be necessary on the final appliance. Guidance for additional requirements to be considered for inclusion in the end product standards for appliances that use **electrolysers** is given in informative Annex BB.

~~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~~ can 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 104~~ 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).

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

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

IEC 60079-15, *Explosive atmospheres – Part 15: Equipment protection by type of protection "n"*

~~IEC 60079-15:2005, *Electrical apparatus for explosive gas atmospheres – Part 15: Construction, test and marking of type of protection, "n" electrical apparatus*~~

IEC 60584-1, *Thermocouples – Part 1: EMF specifications and tolerances*

ISO 1817:~~2005~~2022, *Rubber, vulcanized or thermoplastic– Determination of the effect of liquids*

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*~~ *Modification:*
normal operation

Replace the first paragraph with the following:

operation of the **electrolyser** under the following conditions:

If the **electrolyser** is intended to be filled by the user, it is filled with the amount and type of electrolyte specified in the instructions.

Water is passed through the **electrolyser**, the temperature of the water being 15 °C $^{+10}_{-5}$ °C.

3.5 Definitions relating to types of appliances

3.5.101
electrolyser
device to produce ionized washing water

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.

5.101 ***Electrolysers*** *are tested as* ***motor-operated appliances****.*