AS/NZS 60335.2.7:2024

STANDARDS NEW ZEALAND
TE MANA TAUTĪKANGA O AOTEAROA

STANDARDS Australia

Australian/New Zealand Standard™

Household and similar electrical appliances — Safety

Part 2.7: Particular requirements for washing machines (IEC 60335-2-7, MOD)

AS/NZS 60335.2.7:2024

This Joint Australian/New Zealand Standard™ was prepared by Joint Technical Committee EL-002, Safety of Household and Similar Electrical Appliances and Small Power Transformers and Power Supplies. It was approved on behalf of Standards Australia's Standards Development and Accreditation Committee on 2 October 2024 and by the New Zealand Standards Approval Board on 2 October 2024.

This Standard was published on 29 November 2024.

The following are represented on Committee EL-002:

Association of Accredited Certification Bodies
Australian Industry Group
Australian Retailers Association
Better Regulation Division (Fair Trading, Safework NSW, TestSafe)
Business New Zealand
Consumer Electronic Suppliers Association, Australia
Consumers' Federation of Australia
Electrical Consultants
Electrical Regulatory Authorities, Australia
Engineers Australia
JAS-ANZ
National Retailers Association, Australia
New Zealand Electric Fence Energizer Manufacturers' Standards Group
Testing Interests New Zealand
WorkSafe, New Zealand

This Standard was issued in draft form for comment as DR AS/NZS 60335.2.7:2024.

Keeping Standards up-to-date

Ensure you have the latest versions of our publications and keep up-to-date about Amendments, Rulings, Withdrawals, and new projects by visiting:

www.standards.org.au

www.standards.govt.nz

ISBN 978 1 76139 940 4

Australian/New Zealand Standard™

Household and similar electrical appliances – Safety

Part 2.7: Particular requirements for washing machines (IEC 60335-2-7 MOD)

Originated in Australia as AS C163—1960.
Originated in New Zealand as NZS 6301:1991.
Previous Australian edition AS 3314—1991.
Jointly revised and designated AS/NZS 3350.2.7:1995.
Previous edition AS/NZS 3350.2.7:2001.
Jointly revised and designated AS/NZS 60335.2.7:2002.
Jointly revised and designated AS/NZS 60335.2.7:2009.
Jointly revised and designated AS/NZS 60335.2.7:2012.
Jointly revised and designated AS/NZS 60335.2.7:2020.
Jointly revised and designated AS/NZS 60335.2.7:2024.

NOTES

PREFACE

This standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-002, Safety of Household and Similar Electrical Appliances and Small Power Transformers to supersede AS/NZS 60335.2.7:2020 3 years from the date of publication of this standard. During this period, AS/NZS 60335.2.7:2020 and its amendments will remain current. Regulatory authorities that reference this standard in regulation may apply these requirements at a different time. Users of this standard should consult these authorities to confirm their requirements.

The objective of this standard is to provide manufacturers, designers, regulatory authorities, testing laboratories, and similar organisations with safety requirements designed to give the user protection against hazards that might occur during normal operation and abnormal operation of the appliance and which may be used as the basis for approval for sale or for connection to the electricity supply mains in Australia and New Zealand.

The text of IEC 60335-2-7, Ed. 9.0, prepared by IEC Technical TC 61, was submitted to the Standards Australia/Standards New Zealand Combined Procedure (dual public comment and committee vote) for adoption of the IEC standard as a Standards Australia/Standards New Zealand joint standard.

The principal changes in this edition as compared with the 2020 edition of AS/NZS 60335.2.7 are as follows (minor changes are not listed):

(a) Alignment with AS/NZS 60335.1:2022;

(b) Conversion of some notes to normative text (clause 1, 20.104, 20.105);

(c) Addition of requirements for restarting the spin cycle of agitator washing machines and impeller washing machines (20.108);

(d) Addition of requirements for remote operation (22.51),

(e) Application of test probe 19 has been introduced (8.1.1, 20.2).

This standard is an adoption with national modifications of the ninth edition of IEC 60335-2-7, *Household and similar electrical appliances – Safety – Part 2-7: Particular requirements for washing machines*. It has been varied as indicated to take account of Australian and New Zealand conditions.

This part 2 has to be used in conjunction with the latest edition of AS/NZS 60335.1, *Household and similar electrical appliances – Safety – Part 1: General requirements* 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 AS/NZS 60335.1:2022.

This part 2 supplements or modifies the corresponding clauses of AS/NZS 60335.1 so as to convert it to the Australian/New Zealand standard: Safety requirements for washing machines.

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. Where this standard states, "addition", "modification", or "replacement", the relevant text of Part 1 is to be adapted accordingly.

NOTE 1 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, and so on;

– Subclauses, notes, and annexes that are additional to those in the IEC standard are prefixed with the letters AZ.

NOTE 2 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.

p NOTE 3 In this document, p is used in the margin to indicate instructions for preparing a consolidated version.

The essential safety requirements in AS/NZS 3820[1] that could be applicable to requirements for washing machines are covered by this standard.

The national variations to IEC 60335-2-7, Ed. 9.0 form the Australian and New Zealand national variations for purposes of the IECEE scheme for recognition of results of testing to standards for safety of electrical equipment (the CB scheme).

The text of the international standard IEC 60335-2-7, Ed. 9.0 was approved as a joint Australian/New Zealand standard with the agreed national variations as given below.

AUSTRALIAN NATIONAL VARIATIONS

The following national variations to this part 2 are additional to those listed in the national variations of AS/NZS 60335.1:2022.

20 Stability and mechanical hazards

p **20.106** *Replace the text with the following.*

For appliances with a front-opening door having an opening dimension exceeding 200 mm, and drum volume exceeding 60 dm^3, it shall not be possible to:

- start the washing cycle, or a drying cycle, if any, until two separate independent means on the appliance that control the movement of the drum are operated manually in turn in less than 60 s, after the door has been closed;
- recommence the washing cycle, or a drying cycle, if any, until two separate independent means on the appliance that control the movement of the drum are operated manually in turn in less than 60 s, after the door has been opened and closed again.

NOTE 1 The volume of the drum can be calculated by measuring the maximum internal diameter and maximum internal length of the drum.

NOTE 2 Manual operation of a single means twice is not considered to be manual operation of two separate independent means on the appliance – for example, touching at the same location on the same screen twice is not acceptable; however, touching two different locations on the same screen is acceptable.

NOTE 3 Setting or revising the washing or drying programme is not considered to be one of the two separate independent means, unless the selection of the washing or drying programme occurs only after the door has been closed.

1 AS/NZS 3820 *Essential safety requirements for electrical equipment*

*Compliance is checked by inspection, measurement ignoring any non-metallic seal fitted in the door opening, and by the following tests with the appliance supplied at **rated voltage**.*

The door is closed and the two separate independent means on the appliance that control the movement of the drum are operated manually in turn, with a time delay of less than 60 s between the operations. The washing cycle or drying cycle shall start only after both of the independent means on the appliance have been operated.

The door is closed and the two separate independent means on the appliance that control the movement of the drum are operated manually in turn, with a time delay of 60^{+1}_{0} s between the operations. The washing cycle or drying cycle shall not start. The door lock may operate on either the first or second manual operation. However, if the second manual operation is not performed within the time frame specified above, the door shall unlock even in the event of a power failure.

The door is opened and closed again. The two separate independent means on the appliance that control the movement of the drum are then operated manually in turn, with a time delay of less than 60 s between the operations. The washing cycle or drying cycle shall recommence only after both of the independent means on the appliance have been operated.

The door is opened and closed again. The two separate independent means on the appliance that control the movement of the drum are then operated manually in turn, with a time delay of 60^{+1}_{0} s between the operations. The washing cycle or drying cycle shall not recommence. The door lock may operate on either the first or the second manual operation. However, if the second manual operation is not performed within the time frame specified above, the door shall unlock even in the event of a power failure.

*If compliance relies on the operation of an **electronic circuit**, the tests are repeated under the following conditions applied separately:*

– *the fault conditions in a) to g) of 19.11.2 are applied one at a time to the **electronic circuit**;*

– *the electromagnetic phenomena tests of 19.11.4.2 and 19.11.4.5 are applied to the appliance.*

NEW ZEALAND NATIONAL VARIATIONS

The following national variations to this part 2 are additional to those listed in the national variations of AS/NZS 60335.1:2022.

20 Stability and mechanical hazards

p **20.106** *Replace the text with the following:*

For appliances with a front-opening door having an opening dimension exceeding 200 mm, and drum volume exceeding 60 dm^3, it shall not be possible to:

- start the washing cycle, or a drying cycle, if any, until two separate independent means on the appliance that control the movement of the drum are operated manually in turn in less than 60 s, after the door has been closed;
- recommence the washing cycle, or a drying cycle, if any, until two separate independent means on the appliance that control the movement of the drum are operated manually in turn in less than 60 s, after the door has been opened and closed again.

NOTE 1 The volume of the drum can be calculated by measuring the maximum internal diameter and maximum internal length of the drum.

NOTE 2 Manual operation of a single means twice is not considered to be manual operation of two separate independent means on the appliance – for example, touching at the same location on the same screen twice is not acceptable; however, touching two different locations on the same screen is acceptable.

NOTE 3 Setting or revising the washing or drying programme is not considered to be one of the two separate independent means, unless the selection of the washing or drying programme occurs only after the door has been closed.

Compliance is checked by inspection, measurement ignoring any non-metallic seal fitted in the door opening, and by the following tests with the appliance supplied at ***rated voltage****.*

The door is closed and the two separate independent means on the appliance that control the movement of the drum are operated manually in turn, with a time delay of less than 60 s between the operations. The washing cycle or drying cycle shall start only after both of the independent means on the appliance have been operated.

The door is closed and the two separate independent means on the appliance that control the movement of the drum are operated manually in turn, with a time delay of 60^{+1}_{0} *s between the operations. The washing cycle or drying cycle shall not start. The door lock may operate on either the first or the second manual operation. However, if the second manual operation is not performed within the time frame specified above, the door shall unlock even in the event of a power failure.*

The door is opened and closed again. The two separate independent means on the appliance that control the movement of the drum are then operated manually in turn, with a time delay of less than 60 s between the operations. The washing cycle or drying cycle shall recommence only after both of the independent means on the appliance have been operated.

The door is opened and closed again. The two separate independent means on the appliance that control the movement of the drum are then operated manually in turn, with a time delay of 60^{+1}_{0} *s between the operations. The washing cycle or drying cycle shall not recommence. The door lock may operate on either the first or the second manual operation. However, if the second manual operation is not performed within the time frame specified above, the door shall unlock even in the event of a power failure.*

If compliance relies on the operation of an ***electronic circuit****, the tests are repeated under the following conditions applied separately:*

– *the fault conditions a) to g) of 19.11.2 are applied one at a time to the* ***electronic circuit****;*

– *the electromagnetic phenomena tests of 19.11.4.2 and 19.11.4.5 are applied to the appliance.*

ANNEX ANZ

(Normative)

Normative references to international publications with their corresponding joint Australian/ New Zealand publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by national variations, the relevant joint Australian/ New Zealand publication applies if the national variations are needed to ensure the safety of the appliance for Australian/ New Zealand conditions. These international publications are indicated by (MOD). If an international publication is not so indicated, then either it or the listed Australian/New Zealand publication may be used.

Publication	Year	Title	AS/NZS	Year
IEC 60068-2-52		*Environmental testing – Part 2-52: Tests – Test Kb: Salt mist, cyclic (sodium, chloride solution)*		
IEC 60079-15		*Explosive atmospheres – Part 15: Equipment protection by type of protection "n"*		
IEC 60584-1		*Thermocouples – Part 1: EMF specifications and tolerances*		
IEC 60730-2-12	2015	*Automatic electrical controls – Part 2-12: Particular requirements for electrically operated door locks*		

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-7: Particular requirements for washing machines

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.
2) The formal decisions or agreements of 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 IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 60335-2-7 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances. It is an International Standard.

This ninth edition cancels and replaces the eighth edition published in 2019. This edition constitutes a technical revision.

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

a) alignment with IEC 60335-1:2020;
b) conversion of some notes to normative text (Clause 1, 20.104, 20.105);
c) addition of requirements for restarting the spin cycle of agitator washing machines and impeller washing machines (20.108);

d) addition of requirements for remote operation (22.51);

e) application of test probe 19 has been introduced (8.1.1, 20.2).

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

Draft	Report on voting
61/7018/FDIS	61/7084/RVD

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 washing 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 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 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.

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 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 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 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 2-7: Particular requirements for washing machines

1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of electric washing machines for household and similar use, that are intended for washing clothes and textiles, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances including direct current (DC) supplied appliances and **battery-operated appliances**.

This standard also deals with the safety of electric washing machines for household and similar use employing an electrolyte instead of detergent. Additional requirements for these appliances are given in normative Annex CC.

NOTE 101 Guidance is given in informative Annex DD for requirements that can be used to ensure an acceptable level of protection against electrical and thermal hazards for washing machines fitted with a power driven wringer.

Appliances not intended for normal household use but which nevertheless can be a source of danger to the public, such as appliances intended to be used by laymen 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 washing machines that are encountered by all persons in and around the home. However, in general, it does not take into account:

– persons (including children) whose:
  - physical, sensory or mental capabilities; or
  - lack of experience and knowledge

  prevents them from using the appliance safely without supervision or instruction;
– children playing with the appliance.

Attention is drawn to the fact that:

– for washing machines intended to be used in vehicles or on board ships or aircraft, additional requirements 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.

This standard does not apply to:

– washing machines intended exclusively for industrial purposes (ISO 10472-2);
– 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);
– washing machines incorporating steam generating devices in which steam is produced at a pressure exceeding 50 kPa;
– washing machines for commercial use including those for communal use in blocks of flats or in launderettes (IEC 60335-2-122).