

Australian/New Zealand Standard™

**Household and similar electrical
appliances—Safety**

**Part 2.24: Particular requirements for
refrigerating appliances, ice-cream
appliances and ice-makers
(IEC 60335-2-24 Ed 7.2, MOD)**



AS/NZS 60335.2.24:2010

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. It was approved on behalf of the Council of Standards Australia on 10 September 2010 and on behalf of the Council of Standards New Zealand on 10 September 2010.

This Standard was published on 29 October 2010.

The following are represented on Committee EL-002:

Australian Industry Group
Business New Zealand
Consumer Electronic Suppliers Association, Australia
Consumers' Federation of Australia
Electrical Regulatory Authorities, Australia
Electrical consultants
Engineers Australia
JAS-ANZ
National Retailers Association (Australia)
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This Standard was issued in draft form for comment as DR 10903.

Australian/New Zealand Standard™

Household and similar electrical appliances—Safety

Part 2.24: Particular requirements for refrigerating appliances, ice-cream appliances and ice-makers (IEC 60335-2-24 Ed 7.2, MOD)

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

AS/NZS 60335.2.24:2010

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES –
SAFETY –Part 2.24: Particular requirements for refrigerating appliances,
ice-cream appliances and ice-makers

Foreword

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 60335.2.24:2003 three years from the date of publication.

A2

The objective of this Standard is to provide manufacturers, designers, regulatory authorities, testing laboratories and similar organizations 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 60335-2-24 Ed 7, prepared by IEC Technical Committee SC 61C, was submitted to the Standards Australia/Standards New Zealand Combine 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 2003 edition of AS/NZS 60335.2.24 are as follows (minor changes are not listed):

- aligns the text with IEC 60335-1, and its Amendments 1 and 2;
- clarifies the term “household and similar use” (1, 7.12);
- updates marking requirements for supply terminals of battery operated appliances (7.6, 7.101);
- introduces requirements for appliances using transcritical refrigerant systems (3.112, 3.113, 3.114, 3.115, 3.116, 7.1, 7.6, 7.12.1, 22.103, 24.1.4, 24.102);
- introduces an enhanced flexing test (23.3);
- introduces requirements for accessible glass panels (22.116);
- clarifies tests for appliances using flammable refrigerants (22.107, Annex DD)

A2
DOW
29/6/20

The text of IEC 60335-2-24 Ed 7 amendment 1, prepared by IEC Technical Committee SC 61C, was submitted to the Standards Australia/Standards New Zealand Combine Procedure (dual public comment and committee vote) for adoption as an amendment to the Standards Australia/Standards New Zealand joint standard AS/NZS 60335.2.24:2010.

A2
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29/6/20

The text of IEC 60335-2-24 edition 7 amendment 2, prepared by IEC Technical Committee SC 61C, was submitted to the Standards Australia/Standards New Zealand Combined Procedure (dual public comment and committee vote) for adoption as an amendment to the Standards Australia/Standards New Zealand joint standard AS/NZS 60335.2.24:2010

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29/6/20

This Standard incorporates its Amendment No. 1 (June 2013). The changes required by the amendment are indicated in the text by a marginal bar and amendment number against the part affected. The application date of the changes introduced by Amendment 1 is 20 June 2015. Up until this date it is anticipated that regulatory authorities will approve refrigerating appliances, ice-cream appliances and ice-makers to AS/NZS 60335.2.24:2010 or AS/NZS 60335.2.24:2010 + A1:2013.

This Standard is an adoption with national modifications of the seventh edition of IEC 60335-2-24, *Household and similar electrical appliances – safety – Part 2-24: Particular requirements for refrigerating appliances, ice-cream appliances and ice-makers* and its amendment 1 (2012). It has been varied as indicated to take account of Australian and New Zealand conditions.

A2
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29/6/20

This standard incorporates Amendment No.1 (June 2013) and Amendment No.2 (June 2018). The changes introduced by the amendments are indicated in the text by a marginal bar and amendment number against the part affected. Where an application date other than immediate is applicable to an amendment the date of application (DOA) is indicated by the marginal bar against the part affected. Unless otherwise indicated, the application date of the changes introduced by Amendment No. 1 is 20 June 2015 and, the application date of the changes introduced by Amendment No. 2 is 29 June 2020.

This standard is an adoption with national modifications of the seventh edition of IEC 60335-2-24, *Household and similar electrical appliances – Safety – Part 2-4: Particular requirements for refrigerating appliances, ice-cream appliances and ice-makers* including its amendment 1 (2012) and amendment 2 (2017). It has been varied as indicated to take account of Australian and New Zealand conditions.

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29/6/20

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. It was established on the basis of AS/NZS 60335.1:2002.

A2
DOA
29/6/20

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. It was established on the basis of AS/NZS 60335.1:2011.

This part 2 supplements or modifies the corresponding clauses of AS/NZS 60335.1 so as to convert it into the Australian/New Zealand Standard: Safety requirements for refrigerating appliances, ice-cream appliances and ice-makers.

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 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, etc.;
- 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.

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 3820¹ that could be applicable to requirements for refrigerating appliances, ice-cream appliances and ice-makers are covered by this standard.

A2
DOW
29/6/20 | The national variations to IEC 60335-2-24 Ed 7.1 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).

A2
DOA
29/6/20 | The national variations to IEC 60335-2-24 Ed 7.2 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).

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

A2
DOW
29/6/20 | The text of the International Standard IEC 60335-2-24 Ed 7 and its amendment 1 was approved as a joint Australia/New Zealand Standard with the agreed national variations as given below.

A2
DOA
29/6/20 | The text of the International Standard IEC 60335-2-24 Ed 7.2 was approved as a joint Australia/New Zealand Standard with the agreed national variations as given below.

AUSTRALIAN NATIONAL VARIATIONS

A2
DOW
29/6/20 | The following national variations to this Part 2 are additional to those listed in Annex ZZ to AS/NZS 60335.1:2002 and those listed in the national variations of AS/NZS 60335.1:2011.

A2
DOA
29/6/20 | The following national variations to this Part 2 are additional to those listed in the national variations of AS/NZS 60335.1:2011.

6 Classification

p. **6.101** *Replace* the requirement by:

Appliances, other than **ice-cream appliances**, shall be classified as at least appliances for tropical climates.

22 Construction

p **22.116** *Insert* the following variation after 22.116:

AZ.22.101 In **refrigerating appliances**, other than **ice-cream appliances**, thermal insulation shall be encased in and in contact with

- metallic material having a thickness not less than 0.20 mm; or
- polymeric material classified as 5VA according to IEC 60695-11-20, provided that the test sample used for the classification was no thicker than the relevant part of the appliance.

The combined area of holes in the encasing within 150 mm of each other shall not exceed 20 cm² and the total combined area of the holes shall not exceed 100 cm². Holes up to 3 mm² and material that join overlapping metal parts are ignored.

This requirement is also applicable to material encasing thermal insulation between the compressor compartment and food storage compartments.

The requirement is not applicable to:

- parts in food storage compartments or
- parts providing access to the food storage compartment such as doors, drawers and lids;
- the underside of the appliance and parts within 150mm from the top surface of the appliance, the top surface being a horizontal plane from the highest point of the appliance, unless the inlet opening for the supply cord is within 150 mm of the exempt material..
- parts within 50mm of food compartment seals.

Compliance is checked by inspection, measurement and the appropriate tests.

24 Components

- p **24.5** *Add* the following variation to the addition:

For motor running capacitors, the voltage across the capacitors shall not exceed the voltage rating of the capacitor when the appliance is operating at 1,1 times **rated voltage**.

- p **24.8** *Replace* the text of the replacement by the following:

Motor running capacitors shall comply with IEC 60252-1 as follows.

- Class of safety protection: S2 or S3;
- Class of operation: Class A;
- Damp heat test severity: Temperature of 40 °C ± 2 °C at a relative humidity of 93 % ± 3 %;
- Damp heat test duration: 21 days.

Class of safety protection S3 capacitors shall be of pressed core construction within a rectangular enclosure.

Compliance is checked by inspection and the appropriate tests, including the tests in 5.16.3 and 5.16.5 of IEC 60252-1 for class of safety protection S2 capacitors and 5.16.4 and 5.16.6 of IEC 60252-1 for class of safety protection S3 capacitors. After the destruction tests of 5.16 in IEC 60252-1, evaluation of failure is checked according to the 5.16.7 of IEC 60252-1.

30 Resistance to heat and fire

- p. **30.2** *Delete* the additional paragraph.

- p. **30.2.101** *Replace* this subclause by the following variation:

30.2.101 Void

NEW ZEALAND NATIONAL VARIATIONS

A2
DOW
29/6/20 | The following national variations to this Part 2 are additional to those listed in Annex ZZ to AS/NZS 60335.1:2002 and those listed in the national variations of AS/NZS 60335.1:2011.

A2
DOA
29/6/20 | The following national variations to this Part 2 are additional to those listed in the national variations of AS/NZS 60335.1:2011.

6 Classification

- p **6.101** *Replace* the requirement by:

Appliances, other than **ice-cream appliances**, shall be classified as at least appliances for tropical climates.

22 Construction

- p **22.116** *Insert* the following variation after 22.116:

AZ.22.101 In **refrigerating appliances**, other than **ice-cream appliances**, thermal insulation shall be encased in and in contact with