

INTERNATIONAL STANDARD

AMENDMENT 1

**Household and similar electrical appliances - Safety -
Part 2-40: Particular requirements for electrical heat pumps, air-conditioners and
dehumidifiers**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**Household and similar electrical appliances - Safety -
Part 2-40: Particular requirements for electrical heat pumps,
air-conditioners and dehumidifiers****AMENDMENT 1****FOREWORD**

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Amendment 1 to IEC 60335-2-40:2024 has been prepared by subcommittee 61D: Appliances for air-conditioning for household and similar purposes, of IEC technical committee 61: Safety of household and similar electrical appliances.

The text of this Amendment is based on the following documents:

Draft	Report on voting
61D/568/FDIS	61D/572/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 Amendment 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.

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- withdrawn, or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.

1 Scope

Replace the existing fifth paragraph with the following:

This standard does not take into account refrigerants other than safety group A1, A2L, A2 and A3 as defined by ISO 817. For refrigerant blends, the classification based on WCF is used. **Flammable refrigerants** are limited to those of a molar mass of more than or equal to 42 kg/kmol as specified in ISO 817. For refrigerant blends, the molar mass shall be based on WCF (worst case formulation).

NOTE 103 The tables with ISO 817 refrigerant data are provided at <https://standards.iso.org/iso/817/ma/en/>.

Renumber the existing NOTE 103 and NOTE 104 as NOTE 104 and NOTE 105.

2 Normative references

Replace, in reference IEC 60335-2-34, publication date "2021" with "2024".

Add the publication date "2025" to ISO 14903.

Delete ISO 1302 from the list.

Add the following new documents to the list:

ISO 4126-1, *Safety devices for protection against excessive pressure - Part 1: Safety valves*

ISO 4126-2, *Safety devices for protection against excessive pressure - Part 2: Bursting disc safety devices*

ISO 13971, *Refrigeration systems and heat pumps - Flexible pipe elements, vibration isolators, expansion joints and non-metallic tubes - Requirements and classification*

ISO 24664, *Refrigerating systems and heat pumps - Pressure relief devices and their associated piping - Methods for calculation*

3 Terms and definitions

3.117

appliances accessible to the general public

Replace the existing definition with the following definition and Note to entry:

appliances that are installed in an **area open to the public** and not in a location with restricted access, or appliances intended for household use and not installed in a location with restricted access

Note 1 to entry: Examples of restricted access are machine rooms, rooftop and the like, or parts of appliances installed at a level above 2,5 m.

3.118

appliances not accessible to the general public

Replace the existing definition with the following:

appliances which are not **appliances accessible to the general public**

3.120

flammable refrigerant

Replace the existing definition with the following definition and Note to entry:

refrigerant with a flammability classification of Class 2L, Class 2 or Class 3 in accordance with ISO 817

Note 1 to entry: For blends, the classification based on worst case formulation (WCF) according to ISO 817 is used.

3.138

refrigerant detection system

Replace the existing definition and Note to entry with the following:

sensing system with one or more **refrigerant sensors** with **electronic circuit** that determines if an output signal is required based on a comparison of a sensed refrigerant gas concentration to a pre-set concentration of refrigerant

Note 1 to entry: The following components are part of a refrigerant detection system:

- **refrigerant sensor**.
- circuits that perform self-test routines of the **refrigerant detection system** and provide an error signal,
- circuits that provide an output signal based on pre-set concentration of refrigerant detected by the **refrigerant sensor**,
- interconnected circuits and **electronic circuits** between the **refrigerant sensor** and circuit sending the output signal.

3.141

A2L refrigerant

Add the following new Note to entry:

Note 1 to entry: For blends, the classification based on worst case formulation (WCF) according to ISO 817 is used.

3.142

lower flammability limit

Replace the existing Note to entry with the following:

Note 1 to entry: Data is listed in ISO 817.

3.161

potential leak point

Add, in the existing definition, the following text after "similar stresses":

or air/refrigerant separator or pressure relief valve for compliance with Clause GG.6 placed in the secondary circuit

Add, after 3.166, the following new terms and definitions and bold face them throughout the document:

3.167

intermediate chamber

space between the refrigerant channel and secondary fluid channel in a **double wall heat exchanger**

3.168

refrigerant pressure relief device

refrigerant pressure relief valve or **bursting disc** to relieve excessive pressure automatically

3.169

refrigerant pressure relief valve

pressure actuated valve held shut by a spring or other means and designed to automatically relieve excessive pressure in a **refrigerating system** by starting to open at a set refrigerant pressure and re-closing after the pressure has fallen

3.170

bursting disc

disc or foil which bursts at a predetermined pressure to avoid an overpressure in the **refrigerating system**

3.171

mechanical joint

piping joint in a **refrigerating system** which is not brazed or welded

5 General conditions for the tests

5.2 *Add the following new text:*

Unless the motor-compressor complies with IEC 60335-2-34, additional samples can be required.

If the motor-compressor complies with IEC 60335-2-34 and is classified as not being protected by a motor-compressor protection system, then at least one additional specially prepared sample is required for the test of 19.7.

5.7 *Replace the existing text of the addition with the following:*

The tests of Clause 10 and Clause 11 are carried out under the most unfavourable temperature conditions within the operating temperature range specified by the manufacturer. Annex AA provides examples of such temperature conditions.

7 Marking and instructions

7.1 Add, as a first paragraph, the following new text:

Where safety group per ISO 817 is mentioned in this clause for blends with dual classification, the classification based on WCF shall be used.

NOTE 101 Where dual classification exists in ISO 817, the WCF is the least restrictive of the classifications. The tables with ISO 817 refrigerant data are provided at <https://standards.iso.org/iso/817/ma/en/>.

Renumber the existing NOTE 101 as NOTE 102.

Replace, in the penultimate paragraph of the addition, "that it is visible during normal operation." with "that it is visible during normal use and storage".

7.108 Delete, in the first paragraph, the word "A2L".

8 Protection against access to live parts

8.1.1 Replace the existing addition with the following:

Modification:

Replace the penultimate paragraph of Part 1 with the following:

Test probe 18 of IEC 61032 is not applied to **appliances not accessible to the general public**.

Test probe 18 of IEC 61032 is not applied to parts of appliances situated at a height exceeding 1,8 m above the floor after installation or in normal use.

For **appliances accessible to the general public**, parts situated not more than 850 mm above the floor after installation or in normal use, in addition to the use of test probe 18 of IEC 61032, test probe 19 of IEC 61032 shall also be applied wherever test probe 18 of IEC 61032 is used and with the same test conditions used for test probe 18 of IEC 61032.

11 Heating

Table 3 – Maximum normal temperature rises

Replace, in the existing footnote aa, "IEC 60335-2-34:2021" with "IEC 60335-2-34:2024".

19 Abnormal operation

19.7 Replace the existing text of the addition to the last paragraph with the following:

If the motor-compressor:

- has not been type-tested against the requirements of IEC 60335-2-34, or
- is complying with IEC 60335-2-34 and classified as not being protected by a motor-compressor protection system,

then it shall be subject to the following test.