

INTERNATIONAL STANDARD

IEC 60335-2-24

1997

AMENDMENT 2
1999-08

Amendment 2

**Safety of household and similar
electrical appliances –**

**Part 2-24:
Particular requirements for refrigerating
appliances, ice-cream appliances and
ice-makers**

Amendement 2

*Sécurité des appareils électrodomestiques
et analogues –*

*Partie 2-24:
Règles particulières pour les appareils de réfrigération,
les appareils de glaces à la crème et les fabriques de glace*

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Commission Electrotechnique Internationale
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PRICE CODE

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For price, see current catalogue

FOREWORD

This amendment has been prepared by subcommittee 61C: Household appliances for refrigeration, of IEC technical committee 61: Safety of household and similar electrical appliances.

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

| | |
|------------------|------------------|
| FDIS | Report on voting |
| 61C/155+156/FDIS | 61C/167+168/RVD |

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

A bilingual version of this amendment may be issued at a later date.

Amend the title of this standard on the cover page, the title page and on pages 5 and 9 as follows:

Part 2-24: Particular requirements for refrigerating appliances, ice-cream appliances and ice-makers

Page 5

FOREWORD

Replace, on page 7, the first paragraph by the following:

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Safety requirements for refrigerating appliances, ice-cream appliances and ice-makers.

Page 9

1 Scope

Add the following new paragraph after the second paragraph:

This standard also deals with the safety of **ice-cream appliances** intended for household use, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

In note 2, on page 11, replace the last dashed item by:

- commercial dispensing appliances and vending appliances (IEC 60335-2-75);
- commercial ice-cream appliances.

Page 11

2 Definitions

Add, after definition 2.2.9.3, the following new definition:

2.2.9.4

normal operation of an ice-cream appliance

operation of the appliance using the maximum quantity of the mixture of ingredients indicated in the instructions. The mixture used being that which gives the most unfavourable results, the mixture being at an initial temperature of $23\text{ °C} \pm 2\text{ °C}$

Replace definition 2.109 by the following:

2.109

flammable refrigerant

refrigerant with a flammability classification of group 2 or 3 according to ISO 5149

NOTE For refrigerant blends which have more than one flammability classification the most unfavourable classification is taken for the purpose of this definition.

Add, after definition 2.109, the following new definitions:

2.110

ice-cream appliance

compression-type appliance which is used to make ice-cream

2.111

free space

space with a volume exceeding 60 l where a child can be entrapped and which is accessible after opening any door, lid or drawer and removing any **detachable internal part**, including shelves, containers or removable drawers which are themselves only accessible after opening any door or lid. In calculating the volume, a space with any single dimension not exceeding 150 mm or any two orthogonal dimensions each of which do not exceed 200 mm is ignored.

Page 13

4 General conditions for the tests

4.3 Replace the first paragraph by:

Before starting the tests:

- **ice-cream appliances** are operated empty at **rated voltage** for 1 h or the maximum setting of an incorporated timer, whichever is shorter;
- other **compression-type appliances** shall be operated at **rated voltage** for at least 24 h, then switched off and left to stand for at least 12 h.

4.7 Replace the first paragraph by:

For **ice-cream appliances**, tests specified in clauses 10, 11 and 13 are carried out at an ambient temperature of $23\text{ °C} \pm 2\text{ °C}$.

For other appliances, tests specified in clauses 10, 11, 13 and subclause 19.103 are carried out at an ambient temperature of:

$32\text{ °C} \pm 1\text{ °C}$ on appliances of extended temperate (SN) and temperate (N) classes;

$38\text{ °C} \pm 1\text{ °C}$ on appliances of subtropical (ST) class;

$43\text{ °C} \pm 1\text{ °C}$ on appliances of tropical (T) class;

Before starting these tests, the appliance with the doors or lids open is brought to within 2 K of the ambient temperature specified.

Page 15

6 Classification

6.101 Replace the first line by:

Appliances, other than **ice-cream appliances**, shall be of one or more of the following climatic classes:

7 Marking and instructions

7.1 Modification:

Replace the third dash by :

- **rated power input** in watts or **rated current** in amperes, except that **compression-type appliances**, other than **ice-cream appliances**, shall be marked only with the **rated current** in amperes;

Add the following:

For **compression-type appliances**, the defrosting power input in watts shall be marked separately if the current corresponding to the defrosting power input is greater than the **rated current** of the appliance.

7.12 Add the following:

The instructions for **ice-cream appliances** shall include the ingredients and maximum quantity of mixtures that can be used in the appliance.

Page 19

10 Power input and current

10.1 Replace, on page 21, the first paragraph under "Addition" by the following:

The power input is considered to be stabilised when steady conditions are established or when any incorporated timer operates, whichever occurs first.

10.2 Replace the text under "Addition" by the following:

The appliance is operated for a period of 1 h or the maximum setting of an incorporated timer which ever is shorter. Excluding starting current, the maximum value of the current averaged over any 5 min period is obtained. The interval between current measurements shall not exceed 30 s.

Replace note 101 by the following:

NOTE 101 Starting current is considered to be excluded if the first current measurement is made approximately 1 min after starting.

11 Heating

11.2 Add, on page 23, after the first paragraph, the following new second paragraph:

***Ice-cream appliances** are placed as near to the walls of the test corner as possible, unless the manufacturer indicates in the instructions for use that a free distance shall be observed from the walls, in which case, this distance is observed during the test. If means of ventilation are supplied by the manufacturer, they are mounted as intended.*

Delete the last paragraph.

11.8 Replace the first paragraph of the test specification by the following:

*During the test, **protective devices** other than self-resetting thermal motor-protectors for motor-compressors shall not operate. When steady conditions are established, self-resetting thermal motor-protectors for motor-compressors shall not operate.*

Page 29

15 Moisture resistance

15.103 Replace, on page 31, the first sentence of the first paragraph by the following:

*Appliances, other than **built-in appliances**, **ice-makers** and **ice-cream appliances** are tilted at an angle of up to 2° in relation to the position of normal use, in the direction which is likely to be the most unfavourable for this test.*

Page 33

19 Abnormal operation

19.1 Add the following:

*Fan motors of **ice-cream appliances** are not subject to the locked-rotor test of annex AA.*

19.7 Addition:

*Fan motors of **ice-cream appliances** are tested for 5 min.*

19.102 Replace, on page 35, the first three paragraphs by the following:

Ice-makers and **ice-cream appliances** shall be constructed so that they shall not cause any risk of fire, mechanical hazard or electric shock even in the case of abnormal operation.

*Compliance is checked by applying any defect which may be expected to occur in normal use, while the **ice-maker**, **incorporated ice-maker** or **ice-cream appliance** is operated under **normal operation at rated voltage**. Only one fault condition is reproduced at a time and the tests are made consecutively.*

*During the tests, the temperatures of windings of the **ice-maker**, **incorporated ice-maker**, **ice-cream appliance** or of the appliance incorporating the **ice-maker** shall not exceed the values given in table 6.*

Page 37

20 Stability and mechanical hazards

Replace the text by the following:

This clause of part 1 is applicable except as follows:

20.1 Addition:

This requirement does not apply to **refrigerating appliances** and **ice-makers**, instead annex BB applies.