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Responsible committee: CPL/61 Safety of household and similar electrical appliances

Interested committees:

Title: Draft BS EN IEC 60335-2-118 Household and similar electrical appliances - Safety. Part 2-118: Particular requirements for professional ice-cream makers.

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

- i) has any issues related to 3rd party IPR, patent or copyright
- ii) affects other national standard(s)
- iii) requires additional national guidance or information

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This draft is issued to allow comments from interested parties; all comments will be given consideration prior to publication. No acknowledgement will normally be sent. **See overleaf for information on the submission of comments.**

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



PROJECT NUMBER:

IEC 60335-2-118 ED1

DATE OF CIRCULATION:

2019-06-21

CLOSING DATE FOR VOTING:

2019-09-13

SUPERSEDES DOCUMENTS:

61C/757/NP, 61C/784A/RVN

IEC SC 61C : SAFETY OF REFRIGERATION APPLIANCES FOR HOUSEHOLD AND COMMERCIAL USE

SECRETARIAT:

Germany

SECRETARY:

Mr Rolf Winterhalder

OF INTEREST TO THE FOLLOWING COMMITTEES:

PROPOSED HORIZONTAL STANDARD:



Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☐ EMC

☐ ENVIRONMENT

☐ QUALITY ASSURANCE

☒ SAFETY

☐ SUBMITTED FOR CENELEC PARALLEL VOTING

☒ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

Household and similar electrical appliances - Safety - Part 2-118: Particular requirements for professional ice-cream makers

PROPOSED STABILITY DATE: 2024

NOTE FROM TC/SC OFFICERS:

Part 2-11X: Particular requirements for commercial ice-cream makers

1 Scope

This Standard deals with the safety of appliances for making ice cream and artisan gelato.

Appliances taken into account are those intended for commercial use and similar appliances not intended for normal household use but which may nevertheless be a source of danger to the public, such as appliances intended to be used by laymen in shops, stores, by artisans or on farms, which rated voltage is not more than 250 V for single-phase appliances and 480 V for other appliances.

Appliances covered by this Standard are provided with a refrigerant condensing unit which is usually incorporated, but for some appliances may be remote.

This Standard also applies to following types of appliances:

- Mixers to make ice cream and similar pastry products in which for the preparation of the product an heating process is made within the appliance before the cooling process;
- Appliances for storing whipping cream mix in a refrigerated tank and for whipping the cream for the delivery process;

NOTE 101 Attention is drawn to the fact that:

- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may 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 transport authorities and similar authorities

NOTE 102 This standard does not apply to:

- appliances with a refrigerating system operating with flammable refrigerant;
- ice cream appliances for household use (IEC 60335-2-24);
- 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

IEC 60947-5-1, Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices

IEC 61770, Electric appliances connected to the water mains - Avoidance of backsiphonage and failure of hose-sets

3 Terms and Definitions

This clause of Part 1 is applicable except as follows:

Addition:

3.1.9 Replacement

3.1.9.1 normal operation for ice cream appliances

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

The appliance shall be operated the time necessary to reach steady state conditions.

For appliances connected to a water supply, the water other than cooling water, is at a temperature of $15\text{ °C} \pm 2\text{ °C}$ and at the most unfavourable pressure specified in the instructions. The cooling water is at the temperature specified in 5.7.

43
44 For appliances with a separate **refrigerant unit**, the **refrigerant unit** is connected to the cabinet in
45 accordance with the manufacturer's instructions.

46 **3.1.9.2 normal operation for pasteurising ice cream making appliances**

47 appliances are operated at ambient temperature, as indicated in 5.7.

48 The appliance is filled using the maximum quantity of the mixture of ingredients indicated in the
49 instructions which gives the most unfavourable results, the mixture being at an initial temperature of
50 $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$.

51 The appliance shall be operated for the time necessary for the mix to reach the maximum
52 pasteurisation temperature and then for the cooling process for the number of cycles needed to reach
53 steady state conditions.

54 **3.1.9.3 normal operation for cream whipping appliances: appliances are operated at an ambient 55 temperature as indicated in 5.7.**

56 The appliance is filled with liquid cream being kept at preservation temperature of $4^{\circ}\text{C} \pm 1^{\circ}\text{C}$ in the
57 maximum quantity prescribed by the instructions and shall be operated the time necessary to reach
58 steady state conditions.

59 The appliance is operated in continuous or cyclic mode, following the instructions for user.

60 **3.101 compression-type appliance**

61 appliance in which refrigeration is effected by the vaporisation at low pressure in a heat
62 exchanger (**evaporator**) of a liquid refrigerant, the vapour thus formed being restored to the liquid
63 state by mechanical compression at a higher pressure and subsequent cooling in another heat
64 exchanger (**condenser**).

65 **3.102 condenser**

66 heat exchanger in which, after compression, vaporised refrigerant is liquefied by rejecting heat to
67 an external cooling medium.

68 **3.103 evaporator**

69 heat exchanger in which, after pressure reduction, the liquid refrigerant is vaporised by absorbing
70 heat from the medium to be refrigerated.

71 **3.104 refrigerant unit**

72 factory assembled unit for performing part of the refrigeration cycle (compressing gas, condensation
73 or gas cooling) comprising one or more refrigerant compressors with motors, condensers, liquid
74 receivers, interconnecting pipe work and ancillary equipment all mounted on a common base.

75 **3.105 heating system**

76 heating element with associated components such as timers, switches, **thermostats** and other
77 controls.

78 **3.106 ancillary heating element**

79 heating device which performs an auxiliary function, such as a defrost heater, door heater or anti-
80 condensation heater.

81 **3.107 pasteurising cycle**

82 A cycle during which the mixture is brought to the pasteurising temperature and then immediately and
83 quickly cooled down to a preservation temperature $\leq 5^{\circ}\text{C}$.

84 3.108 skilled person

85 person having the appropriate technical training and experience necessary to be aware of hazards
86 to which they are exposed in performing a task and of measures to minimise the danger to
87 themselves or other persons.

88 3.109 free space

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

94 4 General requirement

95 This clause of part 1 is applicable.

96 5 General conditions for the tests

97 This clause of part 1 is applicable except as follows:

98 5.2 Addition:

99 NOTE 101: Separate samples of the motor-compressor may be needed for the tests of 19.1.

100 5.3 Addition:

101 *The test of 15.101 is carried out immediately after the test of 15.2.*

102 5.4 Replacement:

103 *For appliances intended to be connected to water supply, water is supplied at the appropriate*
104 *rated pressure, according to the instructions.*

105 5.7 Addition:

106 *Tests according to clauses 10, 11, 13 and 19.103 are carried out at an ambient temperature of:*

- 107 – $32\text{ °C} \pm 1\text{ °C}$ on appliances of extended temperate (SN) and temperate (N) classes;
- 108 – $38\text{ °C} \pm 1\text{ °C}$ on appliances of subtropical (ST) class;
- 109 – $43\text{ °C} \pm 1\text{ °C}$ on appliances of tropical (T) class.

110 *and for appliances of the water-cooling type at a water temperature of*

- 111 – $20\text{ °C} \pm 1\text{ °C}$ on appliances of extended temperate (SN) and temperate (N) classes
- 112 – $25\text{ °C} \pm 1\text{ °C}$ on appliances of subtropical (ST) class
- 113 – $30\text{ °C} \pm 1\text{ °C}$ on appliances of tropical (T) class

114 *Other tests are carried out at an ambient temperature of $20\text{ °C} \pm 5\text{ °C}$ and with cooling water at a*
115 *temperature of $15\text{ °C} \pm 2\text{ °C}$.*

116 *Appliances classified for several climatic classes are tested at the ambient temperature relevant to*
117 *the highest climatic class.*

118 NOTE: Steady conditions are considered to be established when three successive readings of the temperature, taken at
119 approximately 60 min intervals, at the same point of any operating cycle, do not differ by more than 1 K.

121 5.10 Addition:

122 *For the tests of 22.xxx, 22.yyy and 22.zzz, the appliance is empty and installed as follows.*

123 *Appliances, other than **built-in appliances**, are placed in a test enclosure, the walls of which enclose the*
124 *appliance as closely as possible to all its sides and top surface, unless the manufacturer indicates in the*

instructions for installation that a free distance shall be observed from the walls or the ceiling, in which case this distance is observed during the test.

For appliances incorporating remote refrigerant units or remote motor-compressors, the refrigerant line between the refrigerant unit or motor-compressor and the refrigerated display and storage cabinet shall have a length of 5 m to 7,5 m. The refrigerant line shall be installed with thermal insulation applied in accordance with the instructions.

5.101 Compression-type appliances with heating systems are tested as combined appliances.

6 Classification

This clause of part 1 is applicable except as follows:

6.1 Replacement

For appliances provided with hoses and water outlets for cleaning internal parts designed for ice cream production the protection against harmful ingress of water shall be at least IPX1.

6.101 Appliances shall be of one or more of the following climatic classes:

- appliances of extended temperate class (SN);
- appliances of temperate class (N);
- appliances of subtropical class (ST);
- appliances of tropical class (T).

Compliance is checked by inspection.

NOTE: The climatic classes are specified in ISO standards.

7 Marking and instructions

This clause of part 1 is applicable except as follows:

7.1 Modification:

Replace the third dash by:

- rated current in watt and/or amperes;

Addition:

Appliances shall also be marked with:

- the power input, in watts and/or amperes, of heating systems, if greater than 100 W;
- the letters SN, N, ST or T indicating the climatic class of the appliance;
- the total mass of the refrigerant for each separate refrigerant circuit;
- for a single component refrigerant, at least one of the following:
 - the chemical name,
 - the chemical formula,
 - the refrigerant number;
- for a blended refrigerant, at least one of the following:
 - the chemical name and nominal proportion of each of the components,
 - the chemical formula and nominal proportion of each of the components,
 - the refrigerant number and nominal proportion of each of the components,