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INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Household and similar electrical appliances – Safety – Part 2-71: Particular requirements for electrical heating appliances for breeding and rearing animals

Appareils électrodomestiques et analogues – Sécurité – Partie 2-71: Exigences particulières pour les appareils de chauffage électrique destinés à la reproduction et à l'élevage des animaux

IEC 60335-2-71:2018-01(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-71: Particular requirements for electrical heating appliances for breeding and rearing animals

FOREWORD

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International Standard IEC 60335-2-71 has been prepared by subcommittee 61H: Safety of electrically-operated farm appliances, of IEC technical committee 61: Safety of household and similar electrical appliances.

This third edition cancels and replaces the second edition published in 2002, its Amendment 1 (2007) and its Amendment 2 (2012). This edition constitutes a technical revision.

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

– two paragraphs are deleted (Introduction);
– normative references updated (Clause 2);
– colour required for symbols (7.6);
– some notes converted to normative text (19.2, 21.101, 22.104).

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

FDIS	Report on voting
61H/348/CDV	61H/357/RVC

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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. It was established on the basis of the fifth edition (2010) 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: Safety requirements for electrical heating appliances for breeding and rearing animals.

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 associated noun are also in bold.

NOTE 4 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may 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.

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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.

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 may 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 and generic standards 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. For example, in the case of temperature requirements for surfaces on many appliances, generic standards, such as ISO 13732-1 for hot surfaces, are not applicable in addition to Part 1 or part 2 standards.

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HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-71: Particular requirements for electrical heating appliances for breeding and rearing animals

1 Scope

This clause of Part 1 is replaced by the following.

This part of IEC 60335 deals with the safety of all kinds of electrical heating appliances used for livestock rearing and breeding, such as: **heat-radiating appliances, electrical sitting-hens**, **incubators**, **chicken breeding units and heating plates for animals**, the **rated voltage** of the appliances being not more than 250 V for single-phase appliances and 480 V for other appliances.

NOTE 101 This standard applies to **heating appliances** used for livestock rearing and breeding that include an electrical motor.

NOTE 102 Attention is drawn to the fact that:

– for appliances 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.

NOTE 103 This standard does not apply to:

– appliances designed 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);

– heating units embedded in the floor;

– flexible sheet heating elements for room heating (IEC 60335-2-96);

– room heaters (IEC 60335-2-30).

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

IEC 60068-2-11, *Basic environmental testing procedures – Part 2-11: Tests –Test Ka: Salt mist*

IEC 61184, *Bayonet lampholders*

ISO 3864-1, *Graphical symbols – Safety colours and safety signs – Part 1: Design principles for safety signs and safety markings*

ISO 7010:2011, *Graphical symbols – Safety colours and safety signs – Registered safety signs*

3 Terms and definitions

This clause of Part 1 is applicable except as follows.

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3.1 Definitions relating to physical characteristics

3.1.9 *Replacement:*

normal operation
operation of the appliance as in normal use, in still air

3.5 Definitions relating to types of appliances

3.5.101
heat-radiating appliance
electrical heating appliance that conveys the effective heat mainly by radiation

Note 1 to entry: Appliances of this type that when operated under conditions of **normal operation**, have a temperature rise not exceeding 95 K, measured at the hottest point on the radiator, are considered to be **heating plates for animals** and not **heat-radiating appliances**.

3.5.102
heating plate for animals
appliance mainly intended to be fixed in stables or in **chicken breeding units** or intended to be laid on the floor

3.5.103
electrical sitting-hen
appliance placed on the floor that has feet or hiding-holes enabling chickens to hide under it, the chickens being warmed by an overhead **heating plate**

3.5.104
chicken breeding unit
appliance for the breeding of chickens on several superposed levels

Note 1 to entry: It is usually equipped with **heating plates** above the chickens.

3.5.105
incubator
appliance designed for egg hatching

Note 1 to entry: It is usually equipped with heating elements for air warming and water evaporation, ventilators for air circulation and motors for agitating the eggs on the shelves.

4 General requirement

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable except as follows.

5.2 *Addition:*

Up to two additional samples of the means of suspension of ***portable heat radiating appliances*** *that are not operated on the floor in normal use shall be provided for the tests of 22.104.*

6 Classification

This clause of Part 1 is applicable except as follows.

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6.1 *Replacement:*

Appliances shall be of **class I**, **class II** or **class III** with respect to protection against electric shock.

Appliances that in normal use are used on the floor, except those intended to be built into the floor and permanently connected to the fixed wiring, shall be **class III** and shall have a **rated voltage** not exceeding 24 V.

Compliance is checked by inspection and by the relevant tests.

6.2 *Addition:*

Heating appliances, other than **heat-radiating appliances**, that are operated at floor level in normal use or are intended to be operated less than 500 mm above the floor shall be IPX7.

Other appliances shall be at least IPX4.

7 Marking and instructions

This clause of Part 1 is applicable except as follows.

7.1 *Addition:*

Heat-radiating appliances shall be marked with the substance of the following:

– WARNING: Fire risk or with symbol ISO 7010 W021 (2011-05);
– heat-radiating appliance for animals;
– the appliance shall be securely fixed in position;
– the screen shall not be removed;

They shall also be marked with

– maximum rating of replaceable radiators: ... W;
– the minimum distance between the radiator and animals or inflammable material in the direction of the radiation;
– “Do not cover” or with symbol IEC 60417-5641 (2002-10) combined with the prohibition sign of ISO 3864-1;
– “Read the instructions” or with symbol ISO 7000-0790 (2004-01).

Chicken breeding units and **electrical sitting-hens** shall be marked “Do not cover” or with symbol IEC 60417-5641 (2002-10) combined with the prohibition sign of ISO 3864-1.

Heating appliances for animals with **rated voltage** up to 24 V shall be marked with the substance of the following:

heating appliance for animals.

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Heating appliances for animals with **rated voltage** over 24 V, and that are fixed at a distance less than 500 mm from animals or flammable material, shall be marked with:

– heating appliance for animals;
– the appliance must be securely fixed in position.

They shall also be marked with:

– the minimum fixing distance from animals and flammable material;
– “Read the instructions” or with symbol ISO 7000-0790 (2004-01).

7.6 *Addition:*

do not cover

NOTE This sign incorporates symbol IEC 60417-5641(2002-10) combined with the prohibition sign of ISO 3864-1.

[Sign ISO 7010 W021 (2011-05)]

warning; Risk of fire/Flammable materials

7.12 *Addition:*

If symbol ISO 7000-0790 (2004-01) or the “Do not cover” sign or the “Warning; Risk of fire/Flammable materials” sign are marked on the appliance, its meaning shall be explained in the instructions.

Instructions shall contain the substance of the following:

– for **heat-radiating appliances** with replaceable radiators, the radiator types applicable to the appliance together with an instruction stating that only the specified types are to be used when renewing the radiators;
– an explanation as to why **portable heat radiating appliances** that are not operated on the floor in normal use are not to be hung lower than is indicated on the appliance;
– an instruction stating that **supply cords** shall be placed or protected so as not to be accessible to animals;
– instructions for cleaning the appliance, stating especially that the heating element or radiator is to be kept clear of dust or other dirt particles and that the appliance is to be disconnected from the power supply during cleaning;
– an instruction stating that damaged appliances shall not be used.

Modification:

The instructions concerning persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge and children playing with the appliance are not required.

7.12.1 *Addition:*

Instructions shall contain the substance of the following:

– for **portable heat-radiating appliances** that are not operated on the floor in normal use, instructions for fixing the appliance by its means of suspension;

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– a statement that **heat-radiating appliances** shall not be mounted less than 500 mm, or a greater distance if specified by the manufacturer, from animals or inflammable material;
– an instruction stating that repairs shall be carried out only by a suitably qualified person.

7.12.9 Not applicable.

7.14 *Addition:*

Markings required by the addition to 7.1 shall have a height not less than:

– 5 mm for headlines;
– 3 mm for other lettering.

The outer diameter of the circle of the “Do not cover” sign shall be at least 15 mm.

The perpendicular height of the triangle of Symbol ISO 7010 W021 (2011-05) shall be at least 15 mm.

7.15 *Addition:*

The markings concerning covering and risk of fire shall be visible after the heater has been installed.

8 Protection against access to live parts

This clause of Part 1 is applicable except as follows.

8.1 *Addition:*

This requirement does not apply to **live parts** of screw-type or bayonet-type lampholders incorporated in **heat-radiating appliances** that are accessible only when the radiator is extracted.

9 Starting of motor-operated appliances

This clause of Part 1 is not applicable.

10 Power input and current

This clause of Part 1 is applicable.

11 Heating

This clause of Part 1 is applicable except as follows.

11.2 *Addition:*

Portable heat-radiating appliances *that are not intended to be operated on the floor in normal use shall be freely hung, in still air, above a support of dull black-painted plywood having a thickness of approximately 20 mm. The distance between the appliance and the plywood support shall be that marked on the appliance.*

Heating appliances *for animals, that are placed on the floor in normal use, shall be laid on a support of dull black-painted plywood having a thickness of approximately 20 mm and be*

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