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INTERNATIONAL STANDARD

NORME INTERNATIONALE

Household electric blankets – methods for measuring performance

Couvertures chauffantes électriques à usage domestique – méthodes de mesure des performances

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD ELECTRIC BLANKETS – METHODS FOR MEASURING PERFORMANCE

FOREWORD

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International Standard IEC 60299 has been prepared by sub-committee 59C: Heating appliances, of IEC technical committee 59: Performance of household electrical appliances.

This third edition cancels and replaces the second edition published in 1994. This edition constitutes a technical revision.

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

a) extended classification;

b) extended list of measurements;

c) temperature measurement means changed to thermocouples.

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

FDIS	Report on voting
59C/181/FDIS	59C/184/RVD

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

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

In this standard, the following print types are used:

– *test specifications: in italic type*
– notes: in small roman type
– other text: in roman type
– terms defined in Clause 3: in **bold** type.

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HOUSEHOLD ELECTRIC BLANKETS – METHODS FOR MEASURING PERFORMANCE

1 Scope

This International Standard applies to electric **blankets**, **wraps** and **duvets** for household use.

This International Standard defines the main performance characteristics of electric **blankets**, **wraps** and **duvets** and specifies methods for measuring these characteristics, for the information of users.

This International Standard does not specify values for performance characteristics.

NOTE This standard does not deal with safety requirements that are covered by IEC 60335-2-17.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60335-2-17:2012 *Household and similar electrical appliances – Safety – Part 2-17: Particular requirements for blankets, pads, clothing and similar flexible heating appliances*

IEC 62301:2011, *Household electrical appliances – Measurement of standby power*

ISO 2439, *Polymeric materials, cellular flexible – Determination of linear dimensions*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
blanket
appliance comprising a substantially flat **flexible part** that is intended to form part of the bedding, for heating the bed

3.2
flexible part
all layers of material forming the permanent enclosure of the appliance together with the heating element, thermostats and all other current-carrying parts contained within it.

Note 1 to entry: The **flexible part** may be inside a detachable cover.

3.3
underblanket
blanket to be used under the occupant of the bed

3.4
overblanket
blanket to be used over the occupant of the bed

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3.5
wrap
blanket comprising a **flexible part** intended to be draped over the human body in order to keep it warm

3.6
duvet
quilted **overblanket** intended to be used without additional bedding over the occupant of the bed, the heated element providing supplementary heat

3.7
blanket with uniform temperature
blanket having an even temperature over the **heated area**

3.8
blanket with non-uniform temperature
blanket in which the temperature gradually increases from the head end to the foot end of the **heated area**

3.9
blanket with a high temperature zone
blanket having an even temperature over the major part and having a higher temperature zone generally at the foot end of the **heated area**

3.10
blanket with ambient temperature compensation
blanket having a power input which significantly varies inversely with changes in ambient temperature

3.11
heated area
area of the **flexible part** enclosed within the outer perimeter of the heating element or electro-conductive textile

Note 1: The **heated area** includes a margin outside the perimeter that has a width equal to 0,5 times the average distance between adjacent runs of the heating element.

Note 2: The **heated area** includes the return length of the heating element if the average distance between this part and the adjacent heating element does not exceed the average distance between adjacent runs of the heating element.

Note 3: If a **blanket** has two separate areas, the surface between the two areas is considered to be part of the **heated areas**, if at any place the distance between the two heating elements does not exceed 1,5 times the average distance between adjacent runs of the heating element

3.12
controlled appliance
appliance incorporating means in the **flexible part** for sensing changes in temperature when the appliance is operated under normal operation, thus automatically controlling the average power input

Note 1 to entry: The **heated area** includes the return length of the heating element if the average distance between this part and the adjacent heating element does not exceed the average distance between adjacent parallel runs of the heating element.

Note 2 to entry: If a double **blanket** has two heating elements which are separately controlled, it has two **heated areas**.

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4 Classification

4.1 General

The classifications of the appliance are stated.

4.2 Type

Electric **blankets**, **wraps** and **duvets** for household use are classified according to their type:

– **underblanket;**
– **overblanket;**
– **wrap;**
– **duvet.**

4.3 Heated areas

Electric **blankets**, **wraps** and **duvets** for household use are classified according to the size and the number of **heated areas**:

– single **blanket**;
– double **blanket** with one **heated area**;
– double **blanket** with two **heated areas**.

4.4 Temperature distribution

Electric **blankets**, **wraps** and **duvets** for household use are classified according to temperature distribution.

4.5 Means of control

Electric **blankets**, **wraps** and **duvets** for household use are classified according to the means of control:

– **non-controlled appliance**
– **controlled appliance**
– **blanket** with uniform **temperature**;
– **blanket with non-uniform temperature**;
– **blanket with a high temperature zone**.

4.6 Regulation

Electric **blankets**, **wraps** and **duvets** for household use are classified according to means of regulation:

– **blanket** without any control;
– **blanket** with a control having variable settings;
– **blanket** with a control having step settings;
– **blanket with ambient temperature compensation**;

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4.7 Type of supply

Electric **blankets**, **wraps** and **duvets** for household use are classified according to the type of supply:

– **blanket** for direct connection to the supply mains;
– extra low voltage **blanket**.

NOTE An extra low voltage **blanket** has a rated voltage not exceeding 24 V.

4.8 Method of cleaning

Electric **blankets**, **wraps** and **duvets** for household use are classified according to the method of cleaning:

– washable by hand;
– machine washable;
– not washable.

4.9 Fixing of the underblanket to the mattress

Electric **blankets**, **wraps** and **duvets** for household use are classified according to the means of fixing of the **underblanket** to the mattress:

– **underblanket** without means of fixing;
– **underblanket** with tie tapes;
– fitted **underblanket**.

5 List of measurements

Performance is determined by means of the following measurements:

– dimensions, mass and textile composition (Clause 7);
– evenness of temperature (Clause 8);
– heating-up time and energy consumption (Clause 9);
– stability of temperature (Clause 10);
– effect of laundering (Clause 11);
– control settings (Clause 12).

6 General conditions for measurements

Unless otherwise specified, measurements are made under the following conditions:

a) Test room:

The tests are carried out in a draught-free room in which the ambient temperature is maintained at 20 °C ± 5 °C.

b) Supply voltage:

The supply voltage is maintained at the rated voltage ± 1 %. When the appliance is marked with a rated voltage range, the report shall state the voltage used for the test.

NOTE 1 If the results obtained by testing the appliance at rated voltage are considered to be misleading due to the national supply voltage, the appliance can also be tested at a voltage corresponding to the nominal voltage of the national supply system.

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