

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Surface cleaning appliances –  
Part 6: Wet hard floor cleaning appliances for household or similar use –  
Methods for measuring the performance**

**Appareils de nettoyage des sols –  
Partie 6: Appareils de nettoyage des sols durs et mouillés à usage domestique  
ou analogue – Méthodes de mesure de l'aptitude à la fonction**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### SURFACE CLEANING APPLIANCES –

### Part 6: Wet hard floor cleaning appliances for household or similar use – Methods for measuring the performance

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IEC/ASTM 62885-6 has been prepared by a Joint Working Group of subcommittee 59F: Surface cleaning appliances, of IEC technical committee 59: Performance of household and similar electrical appliances and ASTM Committee F11: Vacuum cleaners. It is an International Standard.

It is published as a dual logo standard.

This second edition cancels and replaces the first edition published in 2018. This edition constitutes a technical revision.



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

- a) Expanded the Scope to include cordless cleaners.
- b) Changed definition for "cleaning width" to "track cleaning width" in 3.7 and provided instructions for determining "track cleaning width" in 4.7.4.
- c) Changed "runtime" definition to "battery runtime" in 3.22.
- d) Added IKW soil instructions, and also a penalty factor calculation with correction examples for products designed with cleaning gaps to section 5.1 "Stain cleaning efficiency of hard flat floors".
- e) Retitled 5.2 "Dirt pickup test" to "Soil cleaning efficacy of hard flat floors" and added comprehensive instructions for executing the method.
- f) Added section 5.3 "Battery runtime" procedure patterned after IEC 62885-4 cordless standard.
- g) Modified Test soils in 7.2.2. to add IKW and Akzo-Nobel soils.

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

Draft	Report on voting
59F/480/FDIS	59F/482/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 International Standard 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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

A list of all the parts in the IEC 62885 series, under the general title *Surface cleaning appliances*, can be found on the IEC website.

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Terms defined in Clause 3: **bold type**.

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](http://webstore.iec.ch) in the data related to the specific document. At this date, the document will be

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## SURFACE CLEANING APPLIANCES –

### Part 6: Wet hard floor cleaning appliances for household or similar use – Methods for measuring the performance

#### 1 Scope

This part of IEC 62885 is applicable for measurements of the performance of mains-operated and cordless wet hard floor cleaning appliances for household or similar use. In the case of appliances with combined functionality, this document only addresses the wet cleaning functionality.

The purpose of this document is to specify essential performance characteristics of wet hard floor cleaning appliances that are of interest to users and to describe methods for measuring these characteristics.

NOTE 1 Owing to the influence of environmental conditions, variations in time, origin of test materials and proficiency of the operator, most of the described test methods give more reliable results when applied to comparative testing of a number of appliances at the same time, in the same laboratory and by the same operator.

NOTE 2 This document is not intended for cleaning appliances according to IEC 60335-2-79 and robotic wet hard floor cleaning appliances.

For safety requirements, reference is made to IEC 60335-1, IEC 60335-2-2, IEC 60335-2-10, and IEC 60335-2-54.

A recommendation on information for the consumer at the point of sale is given in Annex B.

#### 2 Normative references

[IEC/ASTM 62885-6:2023](https://standards.iteh.ai/catalog/standards/iec/2880bb4d-11b7-4541-b1af-9860a0cc2286/iec-astm-62885-6-2023)

<https://standards.iteh.ai/catalog/standards/iec/2880bb4d-11b7-4541-b1af-9860a0cc2286/iec-astm-62885-6-2023>

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60335-1, *Household and similar electrical appliances – Safety – Part 1: General requirements*

IEC 60335-2-2, *Household and similar electrical appliances – Safety – Part 2-2: Particular requirements for vacuum cleaners and water-suction cleaning appliances*

IEC 60335-2-10, *Household and similar electrical appliances – Safety – Part 2-10: Particular requirements for floor treatment machines and wet scrubbing machines*

IEC 60335-2-54, *Household and similar electrical appliances – Safety – Part 2-54: Particular requirements for surface-cleaning appliances for household use employing liquids or steam*

IEC 60688, *Electrical measuring transducers for converting A.C. and D.C. electrical quantities to analogue or digital signals*

IEC 60734:2012, *Household electrical appliances – Performance – Water for testing*

### 3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 3.1

##### **wet hard floor cleaner**

electrically operated appliance that removes wet or dry stains and soils (e.g. beverage & food stains, floor grime, etc.) from a hard floor surface to be cleaned by use of water alone, a detergent solution mix, or use of steam, and may employ an air flow created by a vacuum developed within the unit, the removed material being separated in the appliance and the cleaned suction air being returned to the ambient air

#### 3.2

##### **cordless wet hard floor cleaner**

**wet hard floor cleaner** that is not mains-operated

Note 1 to entry: The term "cordless" is equivalent to "battery-operated" throughout the document.

#### 3.3

##### **steam cleaner**

**wet hard floor cleaner** that uses steam, and generally employs a soft absorbent pad to transfer hot moisture to the floor surface and to absorb and remove the stains and soils

#### 3.4

##### **cleaning head**

plain nozzle, pad, or brush attached to a **wet hard floor cleaner** that is applied to a surface to be cleaned

#### 3.5

##### **active nozzle**

**cleaning head** provided with a driven agitation device to assist stain or soil removal

#### 3.6

##### **passive nozzle**

**cleaning head** without any driven agitation device

#### 3.7

$W_T$

##### **track cleaning width**

maximum measured width of the cleaning pad or brush(es) employed in the **cleaning head** of the **wet hard floor cleaner**, expressed in millimetres, and determined in accordance with 4.7.4

#### 3.8

##### **cleaning cycle**

execution of one **double stroke** to be carried out at a specified **stroke speed** over the test area

#### 3.9

##### **stroke pattern**

arrangement of the **forward strokes** and **return strokes** on the surface to be cleaned

### 3.10

#### **parallel pattern**

**stroke pattern** where the **forward strokes** and the **return strokes** are congruent

### 3.11

#### **in-house wet hard floor reference cleaner**

electrically operated laboratory equipment designated for internal comparison within a laboratory

### 3.12

#### **stroke speed**

speed of the **cleaning head**, moved as uniformly as possible, during a **forward stroke** or a **return stroke**

### 3.13

#### **stroke length**

distance between the two parallel lines defining the limits of a **stroke pattern**

### 3.14

#### **double stroke**

one forward and one backward movement of the **cleaning head** performed in a **parallel pattern**

### 3.15

#### **forward stroke**

forward movement of a **stroke pattern**

### 3.16

#### **return stroke**

backward movement of a **stroke pattern**

### 3.17

#### **test**

entirety or superset of all **trials** and **trial** batches of all samples to be measured for a single **wet hard floor cleaner** model

### 3.18

#### **trial**

single instance of a performance measurement carried out under identical conditions that can be repeated multiple times

### 3.19

#### **fully charged**, adj

point during charging when, according to the manufacturer's instructions, by indicator or time period, the product does not need to be charged anymore

Note 1 to entry: See 4.6.2 for specific charging instructions.

### 3.20

#### **fully discharged**, adj

point in use when the manufacturer's instructions state the product is **fully discharged** or the cleaner stops operating due to low battery, whichever comes first

### 3.21

#### **replacement battery**

battery that is identical in type, fit, and performance to the battery supplied with the cordless product, and is changeable without tools

### 3.22

#### **battery runtime**

effective cleaning time provided by the battery of a **cordless wet hard floor cleaner** from a **fully charged** condition as per 3.19 until the cleaner is **fully discharged** as per 3.20

### 3.23

#### **test runtime**

max period of initial runtime from a **fully charged** condition (3.19) to be used for all **test** evaluations as determined per 5.3.5

### 3.24

#### **active depth of the cleaning head**

distance from the front edge of the **cleaning head** to its rear edge or a line 10 mm behind the rear edge of the suction opening(s) on the underside of the **cleaning head**, whichever is the shortest

## 4 General conditions for testing

### 4.1 Atmospheric conditions

Unless otherwise specified, the test procedures and measurements shall be carried out under the following conditions:

Standard atmosphere 23/50

Temperature:  $(23 \pm 2)$  °C

Relative humidity:  $(50 \pm 5)$  %

Air pressure: 91,3 kPa to 106,3 kPa

Temperature and humidity conditions within the specified ranges are required for good repeatability and reproducibility. Care should be taken to avoid changes during a **test**.

For test procedures and measurements, which may be carried out at conditions other than standard atmospheric conditions, the ambient temperature shall be maintained at  $(23 \pm 5)$  °C.

NOTE Due to the influence of environmental conditions, variations in time, origin of test materials and proficiency of the operator, most of the described test methods give more reliable results when applied for comparative testing of a number of appliances at the same time, in the same laboratory and by the same operator.

### 4.2 Test equipment and materials

Equipment and materials for measurements (devices, test surfaces, stains, soils, etc.) to be used in a **test** shall, prior to the **test**, be stored for at least 16 h at standard atmospheric conditions in accordance with 4.1.

### 4.3 Voltage and frequency

Unless otherwise stated, measurements shall be carried out at rated voltage with a tolerance of  $\pm 1$  % and, if applicable, at rated frequency.

**Wet hard floor cleaners** designed for DC only shall be operated at DC. **Wet hard floor cleaners** designed for both AC and DC shall be operated at AC. **Wet hard floor cleaners** not marked with rated frequency shall be operated at either  $(50 \pm 1)$  Hz or  $(60 \pm 1)$  Hz with a total harmonic distortion of  $< 3$  %, as is common in the country of use.

For **wet hard floor cleaners** with a rated voltage range, measurements shall be carried out at the mean value of the voltage range if the difference between the limits of the range does not exceed 10 % of the mean value. If the difference exceeds 10 % of the mean value, measurements shall be carried out at both the upper and lower limits of the voltage range.

If the rated voltage differs from the nominal system voltage of the country concerned, measurements carried out at rated voltage can give test results misleading for the consumer, and additional measurements could be required. If the test voltage differs from the rated voltage, this shall be reported.

**Cordless wet hard floor cleaner** chargers not marked with rated frequency shall be powered at either  $(50 \pm 1)$  Hz or  $(60 \pm 1)$  Hz with a total harmonic distortion  $< 3\%$ , as is common in the country of use. All charging should occur at the nominal system voltage of the country concerned.

#### 4.4 Running-in of wet hard floor cleaners

##### 4.4.1 Mains-operated wet hard floor cleaner

Prior to the first **trial**, the appliance shall be kept operating while dispensing cleaning liquid, steam, etc. for 30 min or until one tank of liquid, steam, etc. has been depleted. If the appliance employs a pad, the pad shall be removed. If the appliance employs a vacuum, the run-in time shall be 2 h, and the appliance shall be operated with unrestricted air flow during the run-in period. It is not required to deplete more than one tank of liquid, steam, etc. during the 2 h run-in period. If the appliance employs an **active nozzle**, the agitation device shall be running but not in contact with the floor, unless otherwise specified by the manufacturer.

Prior to conducting any series of **tests**, the age, condition, and history of the product shall be recorded.

##### 4.4.2 Cordless wet hard floor cleaner

###### 4.4.2.1 Preparation of cordless wet hard floor cleaner

Prior to the first **trial** (and following preparations in line with the manufacturer's instructions), the appliance shall be **fully charged** in accordance with the manufacturer's instructions and then kept operating while dispensing liquid, steam, etc. until **fully discharged**. The sequence shall be repeated one more time with an interval of at least 30 min after each discharge. No operation shall be carried out during this waiting time. If the appliance employs a pad, the pad shall be removed. If the appliance employs a vacuum, the appliance shall be operated with unrestricted air flow during the running-in sequence. If the appliance employs an **active nozzle**, the agitation device shall be running but not in contact with the floor, unless otherwise specified by the manufacturer. Depletion of no more than one tank of liquid, steam, etc. is required during the running-in sequence.

Prior to conducting any series of **tests**, the age, condition, and history of the product shall be recorded.

###### 4.4.2.2 Preparation of the battery

Any unused Li-ion battery shall be **fully charged** and **fully discharged** once prior to conducting the first **trial** on a **cordless wet hard floor cleaner**. All other battery chemistry/technology types shall be **fully charged** and **fully discharged** three times prior to conducting the first **trial** on a **cordless wet hard floor cleaner**. **Fully charged** and **fully discharged** conditions are defined in 3.19 and 3.20, respectively.

NOTE It is understood that some cordless vacuums do not allow discharge below a certain energy level for battery protection.

#### 4.5 Equipment of the wet hard floor cleaner

If the **wet hard floor cleaner** is provided with a reusable pad(s) or brush that is intended to be removable, it shall be cleaned and prepared according to the manufacturer's instructions prior to each trial.

**Wet hard floor cleaners** with receptacles to collect dirty cleaning solutions shall be cleaned and/or maintained in accordance with relevant clauses and carried out according to the manufacturer's instructions.

## 4.6 Operation of the wet hard floor cleaner

### 4.6.1 General

The grip of cleaners shall be held at a height of  $(800 \pm 50)$  mm above the test surface. For **cleaning heads** without pivoting connectors, it shall be ensured that the bottom of the **cleaning head** be made parallel with the test surface by adjusting the handle height within the tolerances. Any adjustment shall be reported.

During measurements where the agitation device of an **active nozzle** is not used as in normal operation, the agitation device shall be running but not in contact with any surface.

The following wording regarding declaration and compliance shall also apply: "For declaration and compliance purposes, related **tests** conducted on a hard floor shall be conducted with the same **wet hard floor cleaner** setting configurations such as power, **cleaning head** and **cleaning head** setting." Related **tests** are:

- test to measure the stain removal from a hard floor;
- test to measure soil removal from a hard floor;
- test to measure the energy consumption for cleaning hard floor;
- test to measure the noise level on a hard floor;
- test to measure **battery runtime** on a hard floor.

Unless otherwise specified, the cleaner setting configurations, such as power, **cleaning head** and **cleaning head** setting, shall be used, and adjusted in accordance with the manufacturer's instructions for the **test** to be carried out. Any safety-related device shall be allowed to operate.

In the absence of unambiguous instructions within the manufacturer's instructions, the product shall be tested with settings that are in accordance with any explicitly clear text, symbol or pictogram that is identifiable on the product.

If, after following the above order of checks, the tester believes the device under **test** to be in a configuration that is ambiguous, or that multiple configurations are possible with no way to clearly determine which is the most suitable for a given task, then the manufacturer shall be contacted for additional guidance.

Complete details of the settings used for each cleaning task, such as power, height settings and the like shall be recorded in the test documentation.

If values for the performance of a product measured in accordance with this document are published/declared (e.g. in the technical documentation), accurate and unambiguous details of the settings that were used during the test procedure shall be provided.

NOTE Performance in other settings or combinations can differ from the results in the declaration settings; however, this document does not address those results.