

INTERNATIONAL STANDARD

**Surface cleaning appliances -
Part 2: Dry vacuum cleaners for household or similar use - Methods for
measuring the performance**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**Surface cleaning appliances -
Part 2: Dry vacuum cleaners for household or similar use - Methods for
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FOREWORD

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IEC 62885-2 has been prepared by subcommittee 59F: Surface cleaning appliances, of IEC technical committee 59: Performance of household and similar electrical appliances. It is an International Standard.

This third edition of IEC 62885-2 cancels and replaces the second edition published in 2021. This edition constitutes a technical revision.

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

- a) relocation of RSB annexes to [IEC TS 62885-1 \[1\]](#);
- b) relocation of remaining test materials, test dust, and equipment to [IEC TS 62885-1 \[1\]](#);
- c) reduced number of test strokes from 5 double strokes to 3 double strokes except as specifically required;

- d) relocated requirements for cordless products, except for battery-related items, from [IEC 62885-4 \[2\]](#) to a new [Annex D](#);
- e) added definition and instructions for a universal dry nozzle;
- f) relocated air data equipment to [IEC TS 62885-1 \[1\]](#), relocated formulae to [5.11](#), and made revisions to air data requirements;
- g) relocated dust re-emission equipment to [IEC TS 62885-1 \[1\]](#).

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

Draft	Report on voting
59F/569/FDIS	59F/576/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. The main document types developed by IEC are described in greater detail at 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.

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 in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

1 Scope

This part of IEC 62885 is applicable for measurements of the performance of mains-operated and **cordless dry vacuum cleaners**, including water filter vacuum cleaners for household or similar use.

Table D.1 of **Annex D** is applicable to measurements of the performance of cordless dry vacuum cleaners for household use or under conditions similar to those in households. The results obtained under this annex are intended to be comparable to the results obtained for mains-operated vacuum cleaners. The purpose of **Annex D** is to specify additional requirements for measurements of **cordless dry vacuum cleaners**.

NOTE 1 **Annex D** is not intended for mains-operated vacuum cleaners or cleaning robots.

NOTE 2 Cleaning robots are evaluated to **IEC/ASTM 62885-7 [3]**.

NOTE 3 Handheld dry vacuum cleaners are excluded, except for **5.10.2** and **5.11**.

NOTE 4 Measurements of the performance of mains-operated commercial dry vacuum cleaners are found in **IEC 62885-8 [4]**.

The purpose of this document is to specify essential performance characteristics of dry vacuum cleaners which are of interest to users and to describe methods for measuring these characteristics.

NOTE 5 Due to the influence of environmental conditions, variations in time, origin of test materials and proficiency of the operator, some of the described test methods will 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.

NOTE 6 The methods here can be applied with modifications for surface-cleaning product types or technologies not currently covered within the scope.

For safety requirements, reference is made to **IEC 60335-1:2020 [5]** and **IEC 60335-2-2 [6]**.

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

2 Normative references

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 60704-2-1, *Household and similar electrical appliances - Test code for the determination of airborne acoustical noise - Part 2-1: Particular requirements for dry vacuum cleaners*

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

IEC TS 62885-1:2026, *Surface cleaning appliances - Part 1: General requirements on test material and test equipment*

ISO 29463-1, *High efficiency filters and filter media for removing particles in air — Part 1: Classification, performance, testing and marking*

EN 1822-1, *High efficiency air filters (EPA, HEPA, and ULPA) - Part 1: Classification, performance testing, marking*.

IEC 60335-2-2:2019, *Household and similar electrical appliances - Safety - Part 2-2: Particular requirements for vacuum cleaners and water-suction cleaning appliances*

IEST-RP-CC001, HEPA and ULPA Filters

ISO 29643-1, High efficiency filters and filter media for removing particles in air — Part 1: Classification, performance, testing and marking

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

3.1

active depth of the dry cleaning head

distance from the front edge of the [dry cleaning head \(3.3\)](#) to its rear edge or a line 10 mm behind the rear edge of the suction opening on the underside of the [dry cleaning head \(3.3\)](#), whichever is the shortest

3.2

active dry nozzle

[dry cleaning head \(3.3\)](#) provided with a driven agitation device to assist dirt removal

Note 1 to entry: The agitation device can be driven by an incorporated electric motor (motorized nozzle), an incorporated turbine powered by the air flow (air-turbine nozzle), or an incorporated friction or gear mechanism actuated by moving the [dry cleaning head \(3.3\)](#) over the surface to be cleaned (mechanical nozzle).

3.3

dry cleaning head

plain nozzle or brush attached to a connecting [tube \(3.23\)](#), or a power nozzle, separate or part of the cleaner housing, and that part of a [dry vacuum cleaner \(3.8\)](#) which is applied to a surface to be cleaned

3.4

dry cleaning head width

B

external maximum width of the [dry cleaning head \(3.3\)](#), in metres

3.5

cordless active dry nozzle

[dry cleaning head \(3.3\)](#) provided on a mains-operated machine with an agitation device to assist dirt removal driven by a battery-operated motor

3.6

cylinder dry vacuum cleaner

portable [dry vacuum cleaner \(3.8\)](#) having a nozzle separated from the cleaner housing by a hose

Note 1 to entry: In use, only the nozzle is guided over the surface area to be cleaned.

Note 2 to entry: These dry vacuum cleaners are generally floor-supported.

Note 3 to entry: The [dry vacuum cleaner \(3.8\)](#) can have detachable passive or [active dry nozzles \(3.2\)](#), attachments, and [tubes \(3.23\)](#) for both floor and above the floor cleaning.

3.7**double stroke**

one forward and one backward movement of the [dry cleaning head \(3.3\)](#) performed according to the appropriate [stroke pattern \(3.19\)](#)

3.8**dry vacuum cleaner**

electrically operated appliance that removes dry material (for example, dust, fibre, threads, and debris) from the surface to be cleaned by 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

3.9**forward stroke**

forward movement of a [stroke pattern \(3.19\)](#)

Note 1 to entry: On [test \(3.21\)](#) carpets, forward strokes are carried out in the direction of the carpet pile.

3.10**in-house reference dry vacuum cleaner**

electrically operated laboratory equipment designated for internal comparison within a laboratory

3.11**maximum operational power**

power level that the machine is not capable of exceeding in any operating condition set either by the user or automatically by the appliance

3.12**maximum continuous airflow**

airflow that occurs when the highest permanently adjustable power level of the [dry vacuum cleaner \(3.8\)](#) is selected

Note 1 to entry: A temporary power mode that does not exceed 5 min is not considered as continuous airflow.

3.13**parallel pattern**

[stroke pattern \(3.19\)](#) where the forward strokes and the return strokes are congruent and are carried out in the direction of the carpet pile (direction of manufacture) unless otherwise specified

3.14**passive dry nozzle**

[dry cleaning head \(3.3\)](#) without any driven agitation device

3.15**return stroke**

backward movement of a [stroke pattern \(3.19\)](#)

3.16**self-propelled dry cleaning head**

[dry cleaning head \(3.3\)](#) provided with a propulsion mechanism

3.17**stroke**

single traverse of the [dry cleaning head \(3.3\)](#) over the test area

3.18**stroke length**

distance between the two parallel lines defining the limits of a [stroke pattern \(3.19\)](#)

3.19**stroke pattern**

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

3.20**stroke speed**

speed of the [dry cleaning head \(3.3\)](#), moved as uniformly as possible, during a [forward stroke \(3.9\)](#) or a [return stroke \(3.15\)](#)

3.21**test**

entirety or superset of all trials and [trial \(3.22\)](#) batches of all samples to be measured for a single vacuum cleaner model

3.22**trial**

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

3.23**tube**

rigid length or lengths of hollow pipe that connect the end of the hose to various vacuum cleaner accessories

Note 1 to entry: The tube can be of fixed length, in multiple parts or telescopic, passive or energized.

3.24**upright vacuum cleaner**

self-standing and floor-supported [dry vacuum cleaner \(3.8\)](#) with the [dry cleaning head \(3.3\)](#) forming an integral part of, or permanently connected to, the cleaner housing, the [dry cleaning head \(3.3\)](#) normally being provided with an agitation device to assist dirt removal and the complete cleaner housing being moved over the surface to be cleaned by means of an attached handle

3.25**water filter vacuum cleaner**

[dry vacuum cleaner \(3.8\)](#) that uses water as the main filter medium, whereby the suction air is forced through the water entrapping the removed dry material as it passes through

3.26**water filter system**

removable water filter components that are in contact with the water

3.27**side brush**

peripheral brush whose main function is to relocate the dust and debris along the floor and extend the cleaning reach beyond the [dry cleaning head width \(3.4\)](#)

3.28**universal dry nozzle**

[active dry nozzle \(3.2\)](#) or [passive dry nozzle \(3.14\)](#) that is used for cleaning hard floor and carpet, where any adaptation for the floor surface can be made automatically or by means of a mechanical adjusting mechanism

3.29**cordless dry vacuum cleaner**

dry vacuum cleaner (3.8) that is not mains-operated

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

3.30**reference vacuum cleaner system RSB**

electrically operated laboratory equipment intended to provide different laboratories with a similarly constructed vacuum cleaner to measure the reference dust removal ability on carpets for passive and **active dry nozzles (3.2)** to improve the reproducibility of results

Note 1 to entry: The reference vacuum cleaner system RSB may be used with active or **passive dry nozzles (3.14)**.

Note 2 to entry: The reference vacuum cleaner system RSB is not intended for tests other than dust pick-up from Wilton test carpets.

Note 3 to entry: The reference vacuum cleaner system RSB is described in **IEC TS 62885-1:2026 [7]**, Annex B. Maintenance of the RSB is described in **IEC TS 62885-1:2026 [7]**, Annex C.

Note 4 to entry: The reference vacuum cleaner system RSB is required for measurements in accordance with legislation in the European Union.

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:	$(23 \pm 2) ^\circ\text{C}$
Relative humidity:	$(50 \pm 5) \%$
Absolute air pressure:	91,3 kPa to 106,3 kPa

Temperature and humidity conditions shall be maintained within the specified ranges to ensure good repeatability and reproducibility during testing.

For test procedures and measurements carried out at other than standard atmospheric conditions, the ambient temperature shall be maintained at $(23 \pm 5) ^\circ\text{C}$.

4.2 Test equipment and materials**4.2.1 General**

To minimize the influence of electrostatic phenomena, measurements on carpets shall be carried out on a flat floor consisting of a smooth untreated pine plywood or equivalent panel, at least 15 mm thick and of a size equal to or larger than the test carpet.

Equipment and materials for measurements (devices, test carpets, test dust, 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**.

Carpets that have already been used shall be stored unbeaten at standard atmospheric conditions in accordance with **4.1**.

When not in use, carpets shall be hanging free, or lying flat, pile upwards and uncovered. Carpets shall not be rolled when stored between **test**. Carpets that have been rolled shall be laid flat for a minimum of 16 h before use.

4.2.2 Pile direction

Machine or manufacturing direction is an indication of the projected pile direction for carpet production. Pile direction is what is important for dust pick-up (DPU) testing.

If the pile direction is clearly parallel to the test bed, as is required by the applicable test procedures, the carpet is acceptable for use for that [test](#). If the pile direction is at an angle to the test bed, the laboratory will be required to decide as to that carpet panel's usability for relevant comparative testing.

NOTE The procedure for determining pile direction can be found in [IEC TS 62885-1 \[1\]](#).

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.

[Dry vacuum cleaners](#) designed for DC only shall be operated on DC. [Dry vacuum cleaners](#) designed for both AC and DC shall be operated at AC. [Dry vacuum cleaners](#) not marked with rated frequency shall be operated at either (50 ± 1) Hz or (60 ± 1) Hz with a total harmonic distortion of $\leq 3\%$, as is common in the country of use.

For [dry vacuum 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 both at 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 that are misleading for the consumer, and additional measurements can be required. If the test voltage differs from the rated voltage, this shall be reported.

4.4 Running-in of [dry vacuum cleaner](#)

Prior to the first [test](#) on a new [dry vacuum cleaner](#), it shall be kept running with unrestricted air flow for at least 2 h to ensure adequate running-in. For [active dry nozzles](#), the agitation device shall be running but not in contact with the floor.

Prior to conducting any series of [tests](#), the age, condition, and history of the product shall be recorded.

4.5 Equipment of the [dry vacuum cleaner](#)

If the [dry vacuum cleaner](#) is designed to be used with disposable dust receptacles, it shall, prior to each [trial](#), be equipped with a new dust receptacle of the type recommended or supplied by the manufacturer of the [dry vacuum cleaner](#).

If the [dry vacuum cleaner](#) is provided with a reusable dust receptacle (as the sole original dust receptacle or as an enclosure for disposable dust receptacles), the dust receptacle and any additional filters removable without the aid of tools shall, prior to each measurement, be cleaned according to the manufacturer's instructions until its mass is within 1 % or 2 g of its original mass, whichever is the lower.

Some reusable receptacles consist of a rigid container and an integral filter. In this case, the container and the filter are considered to be the receptacle and should be treated as if they were a single component.

For [dry vacuum cleaners](#) equipped with separation devices being part of the appliance, which are used to separate the dust from the air flow and/or having additional filters to be changed or