

هيئة الإمارات للمواصفات و المقاييس
EMIRATES AUTHORITY FOR STANDARDIZATION AND METROLOGY
(ESMA)



UAE.S 5010-9:2016

Labeling – Energy Efficiency Label for Electrical Appliances
Part 9: Vacuum Cleaners

دولة الإمارات العربية المتحدة
UNITED ARAB EMIRATES

INTRODUCTION

The Energy Efficiency Standardization and Labeling (EESL) Program is an energy conservation initiative by the United Arab Emirates implemented and maintained by Emirates Authority for Standardization and Metrology, also known as ESMA. With the UAE's commitment to consumer safety, energy conservation and environment protection, this regulation is developed to ensure that vacuum cleaners are registered and monitored for their continuous compliance to the set specifications on:

- Performance: Cleaning and Dust Re-emission;
- Performance: Energy Efficiency;
- Energy Efficiency Labeling Requirements.

This technical regulation shall provide comprehensive information about the UAE Energy Efficiency Standardization and Labeling Program for vacuum cleaners. It details requirements, references and procedures needed by traders, importers and/or manufacturers to ensure that their products complies with the program prior to making their product available in the UAE market.

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Scope

This regulation covers electric mains-operated vacuum cleaners, including hybrid vacuum cleaners.

Exemption:

- Wet, wet and dry, battery operated, robot, industrial, or central vacuum cleaners;
- Floor polishers;
- Outdoor vacuum cleaners.

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Definition of terms

For the purpose of this document, the following terms and definitions apply:

2.1

General

- 2.1.1. ESMA – Emirates Authority for Standardization & Metrology, the national authority mandated to implement this regulation.
- 2.1.2. Government Authorities – relevant UAE government authorities in cooperation with ESMA in conducting market monitoring and surveillance.
- 2.1.3. Manufacturer – means the natural or legal person who manufactures products covered by this Regulation and is responsible for their conformity with this Regulation in view of their being placed on the market and/or put into service under the manufacturer's own name or trademark or for the manufacturer's own use. In the absence of a manufacturer as defined in the first sentence of this point or of an importer, any natural or legal person who places on the market and/or puts into service products covered by this Regulation shall be considered a manufacturer.
- 2.1.4. Own Brand Labeler (Private Labeler) – an own brand labeler (OBL) purchases a finished (or component parts of a) product from the Original Equipment Manufacturer (OEM) which he then places on the market under his own name or trade mark (brand label). This Own Brand Labeler may not be the person who actually designs, manufactures, packages or labels the device.
- 2.1.5. Authorized Representative or Supplier – means any natural or legal person established in the UAE, having a valid trade license, who has received a written mandate from the manufacturer or from the Own Brand Labeler to perform on his behalf all or part of the obligations and formalities connected with this Regulation.
- 2.1.6. Dealer – means a retailer or other person who sells, hires, offers for hire-purchase or displays products to end-users.
- 2.1.7. Importer – means any natural or legal person established in the UAE who places a product from another country on the UAE market in the course of his business.
- 2.1.8. Point of Sale – means a physical location where the product is displayed or offered for sale, hire or hire-purchase to the end-user. Showrooms are also included under this definition.
- 2.1.9. Regulation – refers to this Regulation.
- 2.1.10. End-user – means a natural person buying or expected to buy a product for purposes which are outside his trade, business, craft or profession.
- 2.1.11. Placing on the market – means making a product available for the first time on the United Arab Emirates market with a view to its distribution or use within country.

2.2 Technical

The definitions laid down in the following references shall apply:

- 2.2.1. Commission Delegated Regulation (EU) No 665/2013 of 3 May 2013
- 2.2.2. Commission Regulation (EU) No 666/2013 of 8 July 2013
- 2.2.3. UAE.S IEC 62885-2:2016 (ed.1.0)
- 2.2.4. UAE.S IEC 60704-2-1:2000 (ed.1.0)

3 References

- 3.1. Commission Delegated Regulation (EU) No 665/2013 of 3 May 2013 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of vacuum cleaners
- 3.2. Commission Regulation (EU) No 666/2013 of 8 July 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to eco-design requirements for vacuum cleaners
- 3.3. Emirates Conformity Assessment Scheme (ECAS) for Low Voltage Equipment (LVE)
- 3.4. UAE.S IEC 62885-2:2016 (ed.1.0) – Surface cleaning appliances – Part 2: Dry vacuum cleaners for household or similar use – Methods for measuring the performance
- 3.5. UAE.S IEC 60704-2-1:2014 (ed.3.0) – Household and similar electrical appliances – Test code for the determination of airborne acoustical noise – Part 2-1: Particular requirements for vacuum cleaners

4 Applicable Standards

- 4.1. UAE.S IEC 62885-2:2016 (ed.1.0) – Surface cleaning appliances – Part 2: Dry vacuum cleaners for household or similar use – Methods for measuring the performance
- 4.2. UAE.S IEC 60704-2-1:2014 (ed.3.0) – Household and similar electrical appliances – Test code for the determination of airborne acoustical noise – Part 2-1: Particular requirements for vacuum cleaners

5 General Requirements

All electric mains-operated vacuum cleaners, including hybrid vacuum cleaners, shall comply with the requirements set forth by this Regulation.

5.1 Performance and Information Requirements

All vacuum cleaners shall comply with the performance requirements set forth in Annex I. Product information and other informative requirements shall be provided by the responsible party as stated in Annex I.

All vacuum cleaners shall be rated in accordance to the rating specified in Annex II. Identification of the Energy Efficiency Rating, Energy Efficiency Index (EEI) and Annual Energy Consumption shall be in accordance with Annex I.

5.2 Energy Efficiency Rating, Cleaning Performance and Dust Re-emission

All vacuum cleaners shall be rated in accordance to the rating specified in Annex II. Identification of the Energy Efficiency Rating, Cleaning Performance Rating and Dust Re-emission Rating shall be in accordance with Annex II.

5.3 Energy Efficiency Label

All vacuum cleaners shall be supplied with the energy efficiency label in the format and containing information as set out in Annex V.

5.4 Conditions and Measurements

Test conditions and measurements for compliance of vacuum cleaners shall be in accordance with the applicable standards specified in section 4 and Annex III of this regulation.

6 Conformity Assessment

The Manufacturers, Own Brand Labelers (OBL), Authorized Representatives or Suppliers shall supply the technical documentation, as specified in Annex IV.

Under the Emirates Conformity Assessment Scheme or ECAS approval, the Certificate of Conformity or CoC shall be issued with a validity of no more than one (1) year from the date of issuance and is renewable every year.

Under the Emirates Quality Mark or EQM approval, the Certificate of Conformity or CoC shall be issued with a validity of no more than three (3) years from the date of issuance and is renewable every three (3) years.

7 Duties and Responsibilities

7.1 ESMA and Other Government Authorities

7.1.1. Emirates Authority for Standardization and Metrology or ESMA shall have overall responsibility in maintaining this regulation. Revisions and/or updates shall be made by ESMA on a regular basis or depending on the need for such revisions and/or updates.

7.1.2. Issuance of CoCs shall be the responsibility of ESMA. Evaluation and inspection of applicants (Manufacturers, Traders and/or Distributors) shall be the responsibility of ESMA and is authorized to delegate such tasks to approved subcontractors.

7.1.3. ESMA is authorized to take appropriate action for any products that do not comply with the requirement of this regulation. Appropriate actions may include suspension, withdrawal and/or cancelation of Certificate of Conformity, Non-acceptance of substandard products and Removal of Non-conforming Products in the Market.

7.1.4. ESMA shall take immediate action by informing other Local Government Authorities for any non-complying products.

7.1.5. Relevant Government Authorities shall conduct market surveillance to ensure that only approved products are traded within their area of responsibility.

7.2 Manufacturers and Authorized Representatives

- 7.2.1. Manufacturers, Own Brand Labelers (OBL), Authorized Representatives and Suppliers shall supply only products that comply with the requirements set forth in this regulation.
- 7.2.2. Manufacturers, Own Brand Labelers (OBL), Authorized Representatives and Suppliers shall secure the appropriate approval and certification as indicated in this regulation by submitting the required technical documentation detailed in Annex IV, prior to placing the product on the market.
- 7.2.3. They shall allow ESMA and/or its authorized representative to have an access for purposes of monitoring and inspection related to regulated products covered by this Regulation.

7.3 Retailers and Dealers

- 7.3.1. Retailers and dealers shall sell, display or place on the market only products that are complying with the requirements set forth in this regulation.
- 7.3.2. Retailers and dealers shall allow ESMA and/or its authorized representative to have an access for purposes of monitoring and inspection at point of sale related to regulated products covered by this regulation.

8 Market Surveillance

Authorities performing market surveillance in reference to this regulation shall follow the procedure laid down in Annex VI of this regulation when assessing the conformity of the declared energy efficiency rating, cleaning performance rating and dust re-emission rating, annual energy consumption and sound power level.

9 Violations and Penalties

Violations and Penalties from the Federal Law 28 of 2001 shall apply.

10 Revision

ESMA shall review this regulation in light of technological progress no later than three (3) years after the entry into force.

11 Liability and Disclaimer

ESMA shall not be held responsible for any action (legal or otherwise) raise by any party against the supplier of the registered product on matters resulting from the implementation of the Emirates Conformity Assessment Schemes.

The Approved Supplier is ultimately responsible for the ensuring that the product meets the requirements of other applicable regulations that were not assessed during the process. This includes quality, safety, health and environmental regulations that are not necessarily covered by the relevant Standards and or the Specific Technical Requirements.

Annex I Performance Requirements

Vacuum cleaners shall comply with the following requirements:

- Annual energy consumption shall be less than 43.0 kWh/year
- Rated input power shall be less than 900W
- Dust pick-up on carpet (dpu_c) shall be greater than or equal to 0.75. This limit shall not apply to hard floor vacuum cleaners
- Dust pick-up on hard floor (dpu_{hf}) shall be greater than or equal to 0.99. This limit shall not apply to carpet vacuum cleaners
- Dust re-emission shall be no more than 1.00%
- Sound power level shall be less than or equal to 80dB(A)
- The hose, if any, shall be durable so that it is still useable after 40,000 oscillations under strain
- Operational motor lifetime shall be greater than or equal to 500 hours

The annual energy consumption, rated input power, dpu_c (dust pick-up on carpet), dpu_{hf} (dust pick-up on hard floor), dust re-emission, sound power level, durability of the hose and operational motor lifetime are measured and calculated in accordance with Annex III.

Information to be provided by the manufacturer

- A. The technical documentation, booklet of instructions and free access websites of manufacturers, their authorized representatives, or importers shall contain the following elements:
 - Short title or reference to the measurement and calculation methods used to establish compliance with the above requirements;
 - For hard floor vacuum cleaners, mention that they are not suitable for use on carpets with the delivered nozzle;
 - For carpet vacuum cleaners, mention that they are not suitable for use on hard floors with the delivered nozzle,
 - For appliances that are enabled to function also for other purposes than vacuum cleaning, the electric input power relevant to vacuum cleaning if this is lower than the rated input power of the appliance;
 - As which of the following three groups the vacuum cleaner should be tested: general purpose vacuum cleaner, hard floor vacuum cleaner or carpet vacuum cleaner.
- B. The technical documentation and a part for professionals of the free access websites of manufacturer, their authorized representatives, or importers shall contain the following elements:
 - Information relevant for non-destructive disassembly for maintenance purposes, in particular in relation to the hose, suction inlet, motor, casing and cable;
 - Information relevant for dismantling, in particular in relation to the motor and any batteries, recycling, recovery and disposal at end-of-life.

Annex II Energy Efficiency, Cleaning Performance and Dust Re-emission Rating

A. Energy Efficiency Rating

The energy efficiency rating of a vacuum cleaner shall be determined in accordance with its annual energy consumption as set out in Table 1. The annual energy consumption of a vacuum cleaner shall be determined in accordance with Annex III.

Table 1
Energy Efficiency Rating

Star Rating	Annual Energy Consumption (AE_c) [kWh/Yr]
5-Star (most efficient)	$AE \leq 0.10$
4-Star	$0.10 < AE \leq 18.0$
3-Star	$18.0 < AE \leq 26.0$
2-Star	$26.0 < AE \leq 34.0$
1-Star (least efficient)	$34.0 < AE \leq 43.0$

B. Cleaning Performance Rating

The cleaning performance rating of a vacuum cleaner shall be determined in accordance with its dust pick-up (dpu) as set out in Table 2. The dust pick-up of a vacuum cleaner shall be determined in accordance with Annex III.

Table 2
Cleaning Performance Rating

Star Rating	Dust Pick-up on Carpet (dpu_c)	Dust Pick-up on Hard Floor (dpu_{hf})
5-Star (most efficient)	$dpu_c \geq 0.91$	$dpu_{hf} \geq 1.11$
4-Star	$0.87 \leq dpu_c < 0.91$	$1.08 \leq dpu_{hf} < 1.11$
3-Star	$0.83 \leq dpu_c < 0.87$	$1.05 \leq dpu_{hf} < 1.08$
2-Star	$0.79 \leq dpu_c < 0.83$	$1.02 \leq dpu_{hf} < 1.05$
1-Star (least efficient)	$0.75 \leq dpu_c < 0.79$	$0.99 \leq dpu_{hf} < 1.02$

C. Dust Re-emission Rating

The dust re-emission rating of a vacuum cleaner shall be determined in accordance with its dust re-emission as set out in Table 3. The dust re-emission of a vacuum cleaner shall be determined in accordance with Annex III.

Table 3
Dust Re-emission Rating

Star Rating	Energy Efficiency Index (dre)
5-Star (most efficient)	$dre \leq 0.02 \%$
4-Star	$0.02 \% < dre \leq 0.09 \%$
3-Star	$0.09 \% < dre \leq 0.30 \%$
2-Star	$0.30 \% < dre \leq 0.65 \%$
1-Star (least efficient)	$0.65 \% < dre \leq 1.00 \%$

Annex III Conditions and Measurements

For the purposes of compliance and verification of compliance with the requirements of this Regulation, measurements and calculations shall be made using a reliable, accurate and reproducible methods that take into account the generally recognized state-of-the-art measurement and calculation methods included in the standards referenced in this Regulation. They shall meet the technical definitions, conditions, equations and parameters set out in this Annex.

A. Technical definitions

- i. Hard floor test – means a test of two cleaning cycles where the cleaning head of a vacuum cleaner operating at maximum suction setting passes over a wooden test plate with width equal to the cleaning head width and appropriate length, featuring a diagonally (45°) placed test crevice, where the time elapsed, electric power consumption and the relative position of the center of the cleaning head to the test area are continuously measured and recorded at an appropriate sample rate and where at the end of each cleaning cycle the mass decrease of the test crevice is appropriately assessed.
- ii. Test crevice – means a removable U-shaped insert with appropriate dimensions filled at the beginning of a cleaning cycle with appropriate artificial dust.
- iii. Carpet test – means a test with an appropriate number of cleaning cycles on a Wilton carpet test rig where the cleaning head of a vacuum cleaner operating at maximum suction setting passes over the test area with width equal to the cleaning head width and appropriate length, soiled with equally distributed and appropriately embedded test dust of appropriate composition, where the time elapsed, electric power consumption and the relative position of the center of the cleaning head to the test area are continuously measured and recorded at an appropriate sample rate and at the end of each cleaning cycle the mass increase of the appliance dust receptacle is appropriately assessed.
- iv. Cleaning head width – in m, at an accuracy of 3 decimal places, means the external maximum width of the cleaning head.
- v. Cleaning cycle – means a sequence of 5 double strokes of the vacuum cleaner on a floor-specific test area ('carpet' or 'hard floor').
- vi. Double stroke – means one forward and one backward movement of the cleaning head in a parallel pattern, performed at a uniform test stroke speed and with a specified test stroke length.
- vii. Test stroke speed – in m/h, means the appropriate cleaning head speed for testing, preferably realized with an electromechanical operator. Products with self-propelled cleaning heads shall try to come as close as possible to the appropriate speed, but a deviation is permitted when clearly stated in the technical documentation.
- viii. Test stroke length – in m, means the length of the test area plus the cleaning head distance covered by the center of the cleaning head when moving over the appropriate acceleration zones before and after the test area.
- ix. Dust pick-up (*dpu*) – at an accuracy of 3 decimal places, means the ratio of the mass of the artificial dust removed, determined for carpet through the mass increase of the appliance dust receptacle and for hard floor through the mass decrease of the test crevice, after a number of double strokes of the cleaning head to the mass of artificial

dust initially applied to a test area, for carpet corrected for the specific test conditions and for hard floor corrected for the length and positioning of the test crevice.

- x. Reference vacuum cleaner system – means electrically operated laboratory equipment used to measure the calibrated and reference dust pick-up on carpets with given air related parameters to improve the reproducibility of test results.
- xi. Rated input power – in W, means the electric input power declared by the manufacturer, whereby for appliances that are enabled to function also for other purposes than vacuum cleaning only the electric input power relevant to vacuum cleaning applies.
- xii. Dust re-emission – means the ratio, expressed as a percentage at an accuracy of 2 decimal places, of the number of all dust particles of a size from 0.3 to 10µm emitted by a vacuum cleaner to the number of all dust particles of the same size range entering the suction inlet when fed with a specific amount of dust of that particle size range. The value includes not only dust measured at the vacuum cleaner outlet but also dust emitted elsewhere either from leaks, or generated by the vacuum cleaner.
- xiii. Sound power level – means airborne acoustical noise emissions, expressed in dB(A) re 1 pW and rounded to the nearest integer.

B. Annual energy consumption

The annual energy consumption AE is calculated, in kWh/year and rounded to one decimal place, as follows:

For carpet vacuum cleaners:

$$AE_c = 4 \times 87 \times 50 \times 0.001 \times ASE_c \times \left(\frac{1 - 0.20}{dpu_c - 0.20} \right)$$

For hard floor vacuum cleaners:

$$AE_{hf} = 4 \times 87 \times 50 \times 0.001 \times ASE_{hf} \times \left(\frac{1 - 0.20}{dpu_{hf} - 0.20} \right)$$

For general-purpose vacuum cleaners:

$$AE_{gp} = 0.5 \times AE_c + 0.5 \times AE_{hf}$$

Where:

- ASE_c is the average specific energy consumption in Wh/m² during carpet test, calculated as provided below
- ASE_{hf} is the average specific energy consumption in Wh/m² during hard floor test, calculated as provided below
- dpu_c is the dust pick-up on carpet, determined in accordance with point C of this Annex
- dpu_{hf} is the dust pick-up on hard floor, determined in accordance with point C of this Annex
- 50 is the standard number of one-hour cleaning tasks per year
- 87 is the standard dwelling surface to be cleaned in m²
- 4 is the standard number of times that a vacuum cleaner passes over each point on the floor (two double strokes)

- 0.001 is the conversion factor from Wh to kWh
- 1 is the standard dust pick-up
- 0.20 is the standard difference between dust pick-up after five and after two double strokes

Average specific energy consumption (ASE)

The average specific energy consumption during carpet test (ASE_c) and during hard floor test (ASE_{hf}) shall be determined as an average of the specific energy consumption (SE) of the number of cleaning cycles that constitute the carpet and hard floor test, respectively. The general equation for the specific energy consumption SE in Wh/m² test area, at an accuracy of 3 decimal places, applicable for carpet, hard floor and general purpose vacuum cleaners with the appropriate suffixes, is:

$$SE = \frac{(P + NP) X t}{A}$$

Where:

- P is the average power in W, at an accuracy of 2 decimal places, during the time in a cleaning cycle that the center of the cleaning head is moving over the test area
- NP is the average power equivalent in W, at an accuracy of 2 decimal places, of battery operated active nozzles, if any, of the vacuum cleaner, calculated as provided below
- T is the total time in hours, at an accuracy of 4 decimal places, in a cleaning cycle during which the center of the cleaning head, i.e. a point halfway between the side, front and back edges of the cleaning head, is moving over the test area
- A is the surface area in m², at an accuracy of 3 decimal places, passed over the cleaning head in a cleaning cycle, calculated as 10 times the product of the head width and the appropriate length of test area. If a household vacuum cleaner has a head width of over 0.320m, then the figure of 0.320m shall be substituted for head width in this calculation.

For the hard floor tests the suffix hf and parameter names SE_{hf} , P_{hf} , NP_{hf} , t_{hf} and A_{hf} shall be used in the above equation. For the carpet tests the suffix c and parameter names SE_c , P_c , NP_c , t_c and A_c shall be used in the above equation. For each of the cleaning cycles, values of SE_{hf} , P_{hf} , NP_{hf} , t_{hf} , A_{hf} and/or SE_c , P_c , NP_c , t_c , A_c , as applicable, shall be included in the technical documentation.

Power equivalent of battery operated active nozzles (NP)

The general equation for the average power equivalent of battery operated active nozzles NP in W, applicable for carpet, hard floor and general purpose vacuum cleaners with the appropriate suffixes, is:

$$NP = \frac{E}{t_{bat}}$$

Where:

- E is the electricity consumption in Wh at an accuracy of 3 decimal places of the battery operated active nozzle of the vacuum cleaner necessary to return the initially fully charged battery to its originally fully charged state after a cleaning cycle
- t_{bat} is the total time in hours, at an accuracy of 4 decimal places, in a cleaning cycle in which the battery operated active nozzle of the vacuum cleaner is activated, in accordance with manufacturer's instructions

In case the vacuum cleaner is not equipped with battery operated active nozzles the value of NP equals zero.

For the hard floor tests the suffix hf and parameter names NP_{hf} , E_{hf} , $tbat_{hf}$ shall be used in the above equation. For the carpet tests the suffix c and parameter names NP_c , E_c , $tbat_c$ shall be used in the above equation. For each of the cleaning cycles, values of E_{hf} , $tbat_{hf}$ and/or E_c , $tbat_c$ as applicable, shall be included in the technical documentation.

C. Dust pick-up

The dust pick-up on hard floor (dpu_{hf}) shall be determined as the average of the results of the two cleaning cycles in a hard floor test.

The dust pick-up on carpet (dpu_c) shall be determined as the average of the results of the cleaning cycles in a carpet test. To correct for deviations from a test carpet's original properties, the dust pick-up on carpet (dpu_c) shall be calculated as follows:

$$dpu_c = dpu_m \times \left(\frac{dpu_{cal}}{dpu_{ref}} \right)$$

Where:

- dpu_m is the measured dust pick-up of the vacuum cleaner
- dpu_{cal} is the dust pick-up of the reference vacuum cleaner system measured when the test carpet was in original condition
- dpu_{ref} is the measured dust pick-up of the reference vacuum cleaner system

Values of dpu_m for each of the cleaning cycles, dpu_c , dpu_{cal} , dpu_{ref} shall be included in the technical documentation.

D. Dust re-emission

The dust re-emission shall be determined while the vacuum cleaner is operating at its maximum air flow.

E. Sound power level

Sound power level shall be determined on carpet.

F. Durability of the hose

The hose shall be considered useable after 40,000 oscillations under strain if it is not visibly damaged after those oscillations. Strain shall be applied by means of a weight of 2.5 kilograms.

G. Operational motor life-time

The vacuum cleaner shall run with a half-loaded dust receptacle intermittently with periods of 14 minutes and 30 seconds on and 30 seconds off. Dust receptac

H. Hybrid vacuum cleaners

For hybrid vacuum cleaners all measurements shall be executed with the vacuum cleaner powered by the electric mains and any battery operated active nozzle only.

Annex IV Technical Documentation

The technical documentation referred to in Article 7.2.2 shall include:

- A. The name and address of the supplier;
- B. A general description of the vacuum cleaner type and/or model and/or commercial code, sufficient for it to be unequivocally and easily identified;
- C. Where appropriate, the references of the harmonized standards applied;
- D. Where appropriate, the other technical standards and specifications used;
- E. Identification and signature of the person empowered to bind the supplier;
- F. Address of the free-access website referred to in Annex III;
- G. Technical parameters measured and calculate in accordance with Annex III:
 - i. The specific energy consumption during carpet test, where applicable;
 - ii. The specific energy consumption during hard floor test, where applicable;
 - iii. The dust pick-up on carpet and on hard floor as applicable;
 - iv. The dust re-emission;
 - v. The sound power level;
 - vi. The rated input power;
 - vii. Specific values as indicated in points B and C of Annex IV as applicable.
- H. Where the information included in the technical documentation file for a particular vacuum cleaner model has been obtained by calculation on the basis of an equivalent vacuum cleaner, the technical documentation shall include details of such calculations and of tests undertaken by suppliers to verify the accuracy of the calculations undertaken. The technical information shall also include a list of all other equivalent vacuum cleaner models where the information was obtained on the same basis.

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Annex VI Market Surveillance

When performing market surveillance checks referred to in Article 8 of this Regulation, the authorities shall apply the following verification procedure for the requirements set out in Annex III.

- A. The authorities shall test one single unit per model.
- B. The vacuum cleaner model shall be considered to comply with the applicable requirements set out in Annex I if the values in the technical documentation comply with the requirements set out in that Annex and if testing of the relevant model parameters listed in Annex 1 and Table 1 shows compliance for all of those parameters.
- C. If the result referred to in point 2 is not achieved, the authorities shall randomly select three additional units of the same model for testing. As an alternative, the three additional units selected may be of one or more different models which, in accordance with Article 4, have been listed as equivalent vacuum cleaner in the manufacturer's technical documentation.
- D. The vacuum cleaner model shall be considered to comply with the applicable requirements set out in Annex I to this Regulation if testing of the relevant model parameters listed in Annex I and Table shows compliance for all of those parameters.
- E. If the results referred to in point 4 are not achieved, the model and all equivalent vacuum cleaner models shall be considered not to comply with this regulation.

Authorities shall use the measurement and calculation methods set out in Annex III.

The verification tolerances defined in this Annex relate only to the verification of the measured parameters by Member State authorities and shall not be used by the manufacturer or importer as an allowed tolerance to establish the values in the technical documentation.

Parameter	Verification tolerances
Annual energy consumption	The determined value ⁽¹⁾ is not more than 10% higher than the declared value.
Dust pick-up on carpet	The determined value ⁽¹⁾ is not more than 0.03 lower than the declared value.
Dust pick-up on hard floor	The determined value ⁽¹⁾ is not more than 0.03 lower than the declared value.
Dust re-emission	The determined value ⁽¹⁾ is not more than 15% higher than the declared value.
Sound power level	The determined value ⁽¹⁾ is not higher than the declared value.
Operational motor lifetime	The determined value ⁽¹⁾ is not more than 5% lower than the declared value.

⁽¹⁾The arithmetic average of the values determined in the case of three additional units tested as prescribed in point C.