



EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR ENERGY

Directorate C - Renewables, Research and Innovation, Energy Efficiency
C.3 - Energy efficiency

Guidelines accompanying:

Commission Delegated Regulation (EU) No 665/2013 of 3 May 2013 supplementing Directive 2010/30/EU with regard to energy labelling of vacuum cleaners

and

Commission Regulation (EU) No 666/2013 of 8 July 2013 implementing Directive 2009/125/EC with regard to ecodesign requirements for vacuum cleaners

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1. PURPOSE OF THE GUIDELINES AND DISCLAIMER

The Ecodesign and Energy Labelling regulations for vacuum cleaners were published in 2013. The regulations establish minimum requirements and an energy labelling scheme for the products in its scope. These guidelines aim to help relevant stakeholders, including industry and public authorities, to implement the regulations and their requirements into practice. They also summarise the most relevant information from the regulations to give SMEs an introduction to the subject matter and answer the most common questions.

The guidelines are intended to be used only for facilitating the implementation of the regulations. They are not intended to replace the regulations nor to provide legal “interpretation”. The guidelines only reflect the opinion of the Commission services and are not legally binding. A finally binding legal interpretation of EU legislation may only be provided by the European Court of Justice. The guidelines are without prejudice to the position the Commission might take should an issue arise in a procedure before the European Court of Justice.

1.1. The Regulations

The Commission has published the following regulations concerning vacuum cleaners:

- ✓ [Commission Delegated Regulation \(EU\) No 665/2013 of 3 May 2013 supplementing Directive 2010/30/EU with regard to energy labelling of vacuum cleaners](#)
- ✓ [Commission Regulation \(EU\) No 666/2013 of 8 July 2013 implementing Directive 2009/125/EC with regard to eco-design requirements for vacuum cleaners](#)
- ✓ [Commission Delegated Regulation \(EU\) No 518/2014 of 5 March 2014 amending Commission Delegated Regulations \(EU\) No 1059/2010, \(EU\) No 1060/2010, \(EU\) No 1061/2010, \(EU\) No 1062/2010, \(EU\) No 626/2011, \(EU\) No 392/2012, \(EU\) No 874/2012, \(EU\) No 665/2013, \(EU\) No 811/2013 and \(EU\) No 812/2013 with regard to labelling of energy-related products on the internet](#)

1.2. Review

Both regulations are due to be reviewed by 2018. Key topics to be reviewed include:

- ✓ Tolerances set in the verification procedure for market surveillance purposes
- ✓ Whether full size battery operated vacuum cleaners should be included in the scope
- ✓ Whether it is feasible to use measurement methods based on a part loaded rather than an empty receptacle

2. SCOPE

The scope of the regulations is the same for Energy Labelling and Ecodesign and concerns electric mains-operated vacuum cleaners intended for domestic and commercial cleaning, including canister, upright and cyclonic vacuum cleaners. Some types of vacuum cleaners are excluded such as robot machines and central vacuum cleaners. The regulations do not differentiate between household and commercial vacuum cleaners and are applicable to both.

2.1. Types of vacuum cleaners not covered by the regulation

Article 1 in both regulations specifies which types of vacuum cleaners or similar appliances are outside the scope of the regulations:

- ✓ Wet, wet & dry, battery-operated, robot, industrial and central vacuum cleaners
- ✓ Floor polishers
- ✓ Outdoor vacuum cleaners (e.g. to collect grass clippings)

The appliances depicted and described below are not explicitly mentioned in Article 1, but they are also out of scope for the reasons provided below.



Left to right: hand-held vacuum cleaner, mattress cleaner, ash cleaner

2.1.1. (Corded) hand-held vacuum cleaners

There is no definition of hand-held vacuum cleaner in the regulations, because the intention was not to cover them: they are not used for cleaning hard-floors or carpets by the user from an erect standing position; they are normally used for cleaning desks, tables, etc. Thus, hand-held vacuum cleaners are out of the scope.

2.1.2. (Corded) mattress cleaners

These products are also hand-held, but designed especially to clean mattresses. They are not used for hard-floors or carpets. Thus, mattress vacuum cleaners are out of the scope.

2.1.3. Ash cleaners

Ash cleaners are specially designed cleaners with the aim of sucking cold ash from fireplaces. Ash cleaners do not incorporate accessories for carpets or hard-floors. Ash cleaners do not fall within any of the definitions of vacuum cleaner as set out in the

regulations. They do not fall under the definition of 'vacuum cleaner'¹, because they do not pick up soil, and they do not fall under 'dry vacuum cleaner'², as ash is not among the examples of dry soil that are given in that definition. Thus, ash cleaners are out of the scope of the regulations.

3. ECODESIGN AND ENERGY LABELLING REQUIREMENTS

3.1. Responsibilities

The table below provides an overview of the responsibilities established by the regulations for suppliers, manufacturers and dealers. The Ecodesign Regulation applies to manufacturers. The Energy Labelling Regulation applies to suppliers and dealers. The manufacturer and the supplier can be the same actor. The definitions of manufacturer, supplier and dealer are provided in the Ecodesign and Energy Labelling Directives³.

Actor	From date	Responsibilities
Manufacturer	1 September 2014	<ul style="list-style-type: none"> ✓ Ensure that vacuum cleaners comply with the following limits: <ul style="list-style-type: none"> • Annual energy consumption: less than 62 kWh/year • Rated input power: less than 1600 W • Minimum dust pick up on carpet (dpu_c): 0.70 • Minimum dust pick up on hard floor (dpu_{hf}) : 0.95 ✓ Provide specific information and technical documentation⁴
	1 September 2017	<ul style="list-style-type: none"> ✓ Ensure that vacuum cleaners comply with the following limits: <ul style="list-style-type: none"> • Annual energy consumption: less than 43 kWh/year • Rated input power: less than 900 W • Minimum dust pick up on carpet (dpu_c): 0.75 • Minimum dust pick up on hard floor (dpu_{hf}) : 0.98 • Maximum dust re-emission: 1,00 % • Maximum sound power level: 80 dB(A) • Minimum durability of the hose (if any): still usable after 40 000 oscillations under strain

¹ Ecodesign/Energy Labeling Regulation, Article 2(1)

² Ecodesign/Energy Labeling Regulation, Article 2(5)

³ Directive 2009/125/EC and 2010/30/EU, respectively

⁴ Ecodesign Regulation, Annex I, point 2. As indicated by the first indent of this point 2 and by point 3 of Annex IV of the Energy Labelling Regulation the information and the technical documentation can be merged with those to be provided under the Energy Labelling Regulation.

Actor	From date	Responsibilities
		<ul style="list-style-type: none"> • Minimum operational motor lifetime: 500 hours ✓ Provide specific information and technical documentation⁵
Supplier	1 September 2014	<ul style="list-style-type: none"> ✓ Provide each vacuum cleaner placed on the market with an A to G energy label (The template for printing purposes can be found on the DG Energy website) ✓ Make the product fiche available ✓ Make the technical documentation available on request of authorities⁶ ✓ Include the energy efficiency class in any new advertisement concerning a specific model of vacuum cleaner disclosing energy-related or price information ✓ Include the energy efficiency class in any new technical promotional material concerning a specific model of vacuum cleaner describing specific technical parameters
	1 January 2015	<ul style="list-style-type: none"> ✓ Make the A to G label and the fiche available to dealers in electronic format for each new model⁷ ✓ (other requirements remain the same)
	1 September 2017	<ul style="list-style-type: none"> ✓ Provide each vacuum cleaner placed on the market with an A+++ to D energy label (instead of an A to G label) ✓ Make the A+++ to D label available to dealers in electronic format (instead of the A to G label) ✓ (other requirements remain the same)
Dealer	1 September 2014	<ul style="list-style-type: none"> ✓ Include the energy efficiency class in any new advertisement concerning a specific model of vacuum cleaner disclosing energy-related or price information ✓ Include the energy efficiency class in any new technical promotional material concerning a specific model of vacuum cleaner describing specific technical parameters
	1 September 2014, once the label is provided by a	<ul style="list-style-type: none"> ✓ Clearly display the energy label on the vacuum cleaner presented at the point of sale ✓ In case of distance selling, including via the internet, indicate as text the information that is on the label⁸

⁵ See above footnote

⁶ See above footnote

⁷ Regulation (EU) 518/2014, Article 8

Actor	From date	Responsibilities
	supplier	
	1 January 2015, once electronic label and fiche are made available by a supplier	<ul style="list-style-type: none"> ✓ For distance selling through the internet instead show the electronic label and the fiche provided by suppliers⁹ ✓ (other requirements remain the same)

3.2. Placing on the market

The requirement for suppliers to provide the vacuum cleaner label from 1 September 2014 is for those products placed on the market on or after that date. Products that have already been placed on the market before that date without a label can continue to be sold to consumers without a label. Note that the concept of placing on the market refers to each individual product, not a type or model of a product.

From 1 September 2014, dealers will have to display the vacuum cleaner label provided by suppliers. If the label was not provided by suppliers because the product was placed on the market before 1 September 2014, they do not have to display a label. Stock in store has already been placed on the market. Stock in warehouses of retailers would normally also have been placed on the market, but note that some other stocks (manufacturer, importer) may not yet have been placed on the market.

Further explanations on the concept of placing on the market can be found in the Guide to the Implementation of Directives based on the New Approach and the Global Approach ([The Blue Guide 2014](#)).

3.3. Displaying labels

Packaged vacuum cleaners at the point of sale need to bear a label. There is no requirement to print the label on the package, but it has to be clearly visible on the outside. If the vacuum cleaners are stored in a warehouse, there is no need for these vacuum cleaners to bear a label. If a dealer decides to have multiple vacuum cleaners of the same model displayed at the point of sale, then there needs to be a label on each such vacuum cleaner.

3.4. Types of vacuum cleaners with different requirements

3.4.1. Carpet vacuum cleaners

Carpet vacuum cleaners are vacuum cleaners that have a fixed nozzle designed specifically for carpets that cannot be adapted for cleaning hard floors or vacuum cleaners supplied only with one or more detachable nozzles designed specifically for carpets that cannot be adapted for cleaning hard floors. The requirements for dust pick-up on hard floors do not apply to them and manufacturers are required to indicate

⁸ Energy Labelling Regulation, Annex V

⁹ Regulation (EU) 518/2014, Article 8 and Annex VIII

in their documentation that they are not suitable for use on hard floors. They have a separate label to indicate that they are not suitable for cleaning hard floors.

3.4.2. Hard floor vacuum cleaners

Hard floor vacuum cleaners are vacuum cleaners that have a fixed nozzle designed specifically for hard floors that cannot be adapted for cleaning carpets or vacuum cleaners supplied only with one or more detachable nozzles designed specifically for hard floors that cannot be adapted for carpets. The requirements for dust pick-up on carpets do not apply to them and manufacturers are required to indicate in their documentation that they are not suitable for use on carpets. They have a separate label to indicate that they are not suitable for cleaning carpets.

3.4.3. Water filter vacuum cleaners

Energy labelling for water filter vacuum cleaners only applies from 1 September 2017¹⁰. Specific ecodesign requirements also only apply from 1 September 2017¹¹. This is because a suitable measurement method has not yet been finalised. Given that some elements of the information to be provided by manufacturers¹² are not relevant as long as the specific ecodesign requirements and the Energy Labelling Regulation do not apply to water filter vacuum cleaners, until September 2017 it is sufficient to provide only the specific information for maintenance and dismantling purposes¹³. In addition, for carpet water filter vacuum cleaners and for hard floor water filter vacuum cleaners it should also be mentioned that they are not suitable for the other type of floor¹⁴.

3.4.4. Vacuum cleaners that are enabled to function also for other purposes than vacuum cleaning

Vacuum cleaners that are enabled to function also for other purposes than vacuum cleaning, such as floor polishing, are covered by the regulations. Because of the other purpose(s), the rated input power of such appliances can be higher than the input power required for vacuum cleaning only. If this is the case, only the input power relevant to vacuum cleaning is taken into account for the requirement on rated input power of the Ecodesign Regulation¹⁵. The technical documentation should specifically indicate the input power relevant to the function of vacuum cleaning only¹⁶.

3.4.5. Hybrid vacuum cleaners

Hybrid vacuum cleaners should be tested without taking into account the batteries of the vacuum cleaner itself, but with the batteries required for the operation of active nozzles¹⁷.

¹⁰ Energy Labelling Regulation, Article 8

¹¹ Ecodesign Regulation, Annex I, point 1a

¹² Ecodesign Regulation, Annex I, point 2

¹³ Ecodesign Regulation, Annex I, point 2b

¹⁴ Ecodesign Regulation, Annex I, point 2a

¹⁵ Ecodesign Regulation, Annex II, point 2k

¹⁶ Ecodesign Regulation, Annex I, point 2a

¹⁷ Ecodesign Regulation, Annex II, point 9; Energy Labelling Regulation, Annex VI, point 7

4. TESTING

4.1. Measurement and calculation methods

Measurement and calculation methods can be found in Annex VI of the Energy Labelling Regulation and Annex II of the Ecodesign Regulation. These measurement and calculation methods are mandatory. The parameters are the same in both regulations. Further detail on these methods is provided in harmonised standards. Alternatively, other reliable, accurate and reproducible methods that take into account the generally recognised state-of-the-art measurement and calculation methods can be used if they comply with the measurement and calculation methods set out in the regulations.

Harmonised standards of which the reference numbers have been published for that purpose in the Official Journal of the European Union provide presumption of conformity with the ecodesign regulation. This means that vacuum cleaners tested according to those standards and for which the test results are found to be within the limits are deemed to meet the requirements of the Ecodesign Regulation.

The regulations require that the technical documentation indicates which standards/methods have been applied.¹⁸

4.2. Harmonised standards

There are four standards concerning vacuum cleaners of which [references have been published in the Official Journal of the European Union](#):

- ✓ EN 60312-1:2013 Vacuum cleaners for household use -Part 1: Dry vacuum cleaners -Methods for measuring the performance; *addressing annual energy consumption, dust pick up on carpet, dust pick up on hard floor, dust re-emission, durability of the hose and operational motor lifetime*
- ✓ EN 60704-2-1:2001 Household and similar electrical appliances – Test code for the determination of airborne acoustical noise Part 2-1: Particular requirements for vacuum cleaners; *addressing sound power level for household vacuum cleaners*
- ✓ EN 60335-2-2:2010 + A11:2012 Household and similar electrical appliances – Safety – Part 2-2: Particular requirements for vacuum cleaners and water suction cleaning appliances; *addressing rated input power for household vacuum cleaners*
- ✓ EN 60335-2-69:2012 Household and similar electrical appliances – Safety – Part 2-69: Particular requirements for wet and dry vacuum cleaners, including power brush, for commercial use; *addressing rated input power and sound power level for commercial vacuum cleaners*

¹⁸ Ecodesign Regulation, Annex I, point 2, second indent; Energy Labelling Regulation, Annex IV, point 1(c) and (d)

These are the relevant standards at the time of publication of these guidelines. When newer versions are published by the European Standardisation Organisations, the Commission may decide to update its publication of references to standards in the Official Journal of the European Union.

The following table provides references to where in the standards the necessary detailed methods can be found, including specific notes for clarification.

Parameter in legislation	Harmonised standard reference	Notes
EN 60312-1:2013		
general conditions for testing (hard floor test, carpet test, dust re-emission)	4 General conditions for testing, 7.3.12 Mechanical operator	
hard floor test	5.2 Dust removal from hard floors with crevices	
hard floor test: test equipment	7.3.2 Test plate with crevice, 7.3.4 Hold-downs and guides	As indicated in the citation in the OJEU the crevice insert should be made of aluminium instead of wood.
artificial dust (for test crevice)	7.2.2.1 Mineral dust - type 1	
carpet test	5.3 Dust removal from carpets	
carpet test: test equipment	7.3.3 Carpet-beating machine, 7.3.4 Hold-downs and guides, 7.3.5 Dust spreader, 7.3.6 Rollers for embedding	
Wilton carpet	7.2.1.3.2 Wilton Carpet, Annex C.1 Wilton Carpet (7.2.1.3.2)	Wilton carpet 'B.I.C. generation 2' should not be used, since it has been found not to give sufficiently reproducible results compared to the other generations. Wilton carpet 'B.I.C. generation 4' is under production at the time of publication of these guidelines.
test dust (carpet test)	5.3.4 Distribution of test dust, 7.2.2.2 Mineral dust - type 2	
P_{hf}	6.16.2.1 Test requirement, 6.16.2.2 Test procedure, 6.16.2.3 Establishing the average effective	

Parameter in legislation	Harmonised standard reference	Notes
	power intake	
P_c	6.16.1.1 Test requirement, 6.16.1.2 Test procedure, 6.16.1.3 Establishing the average effective power intake	
NP	6.16.2.Z1 Energy consumption of battery powered nozzles, 6.16.2.Z2 Energy consumption of the powered battery pack fully charged, 6.16.2.Z3 Energy consumption of powered battery pack after its use	
dpu_{hf}	5.2.3 Determination of dust removal ability	expressed as ratio instead of percentage
dpu_m	5.3.7 Determination of dust removal ability	corresponds to $K_T(i)$, but expressed as ratio instead of percentage
dpu_{cal}	6.Z1.2.2 Reference level	corresponds to K_c ; refers to master carpet in its original condition
dpu_{ref}	6.Z1.2.2	corresponds to K_{ref}
reference vacuum cleaner system	4.Z1 Reference vacuum cleaner system	If the difference between dpu_{cal} and dpu_{ref} is greater than 5% it is recommended to 1) change the carpet and/or; 2) re-calibrate the reference vacuum cleaner system and/or; 3) check laboratory process and testing procedure.
dust re-emission	5.11 Filtration efficiency of the vacuum cleaner	Dust re-emission is the opposite of filtration efficiency; the dust re-emission fraction is the ratio of number of all particles of the stated size range downstream versus upstream.
dust re-emission: test equipment	7.3.8 Test equipment for determining the fractional filtration efficiency of the vacuum cleaner	
dust (for dust re-	7.2.2.5 Mineral dust – type 4	As indicated in the citation in the OJEU the test dust

Parameter in legislation	Harmonised standard reference	Notes
emission)		should be <i>A2 fine test dust</i> as referred to in ISO 12103-1
durability of the hose	6.9 Repeated bending of the hose	Since the related ecodesign requirements are subject to review by September 2016 ¹⁹ , these testing procedures may be revised before their application from 1 September 2017
operational motor lifetime	6.10 Life test	
EN 60704-2-1:2001		
sound power level (household vacuum cleaners)	<i>All sections</i>	Details are in EN 60704-1:2010 and 60704-3:2006
EN 60335-2-2:2010 + A11:2012		
rated input power (household vacuum cleaners)	10 Power input and current	Details are in EN 60335-1:2012, 10 Power input and current
EN 60335-2-69:2012		
rated input power (commercial vacuum cleaners)	10 Power input and current	Details are in EN 60335-1:2012, 10 Power input and current
sound power level (commercial vacuum cleaners)	Annex EE Emission of acoustical noise	

4.3. Selection of nozzle and nozzle settings for testing

4.3.1. Nozzles

Some vacuum cleaners have more than one detachable nozzle, for example providing the consumer with a universal nozzle (for both carpets and hard floor) and one or more nozzles for special purposes. For such cases the regulations do not specify which nozzle has to be used for testing to verify compliance with ecodesign requirements and for establishing the label classes (except that where the vacuum cleaner is equipped with battery operated active nozzles, the regulations specify that the average power equivalent of battery operated active nozzles has to be taken into account).

Therefore, if more than one nozzle is provided with the vacuum cleaner, manufacturers/suppliers are requested to indicate in the technical documentation

¹⁹ Ecodesign Regulation, Article 7(2)

which nozzle was used for the test on hard floor and on carpet, respectively. The nozzle used in the test should be a nozzle that is delivered with the vacuum cleaner and that is suitable for the floor type in question and one that is recommended for such floor type in the user manual. If a battery operated nozzle is supplied with the vacuum cleaner, this should be used for the tests if it is suitable for the floor type in question.

For tests on carpet, the same nozzle should be used to establish the dust pick-up on carpet, the average specific energy consumption on carpet and the sound power level. For tests on hard floor, the same nozzle should be used to establish the dust pick-up on hard floor and the average specific energy consumption on hard floor. If a nozzle is suitable for both carpet and hard floor, that nozzle may be used in all these tests.

4.3.2. Nozzle settings

Some nozzles may have multiple settings, e.g. one to clean hard floor and another to clean carpets. For such cases the regulations do not specify which nozzle settings have to be used for testing to verify compliance with ecodesign requirements and for establishing the label classes (except that where the vacuum cleaner is equipped with battery-operated active nozzles, the regulations specify that the average power equivalent of battery-operated active nozzles has to be taken into account).

Therefore, if the nozzle used for a test has multiple settings manufacturers/suppliers are requested to indicate in the technical documentation which settings were used for the test on hard floor and on carpet, respectively. The nozzle settings used in the test should be settings that are suitable for the floor type in question and settings that are recommended for such floor type in the user manual.

For tests on carpet, the same settings should be used to establish the dust pick-up on carpet, the average specific energy consumption on carpet and the sound power level. For tests on hard floor, the same settings should be used to establish the dust pick-up on hard floor and the average specific energy consumption on hard floor.

4.3.3. Sound power level test for hard floor vacuum cleaners

The test to establish sound power level has to be done on carpet. For hard floor vacuum cleaners, the nozzle and nozzle settings to be used in this test on carpet should be the same as those that are used to establish the dust pick-up on hard floor and the average specific energy consumption on hard floor.

4.4. Testing of dust re-emission and sound power level

Even though there are no Ecodesign requirements for dust re-emission and sound power level until 1 September 2017, vacuum cleaners placed on the market nevertheless need to be tested on these parameters. This is because the label requires that sound power level and dust re-emission class are indicated from 1 September 2014.

4.5. Tolerances

The tolerances set out in the regulations²⁰ relate only to the verification of the measured parameters by Member State authorities. They are not to be used by others as an allowed tolerance to establish the values in the technical documentation. The values and classes on the label or in the product fiche or used to evaluate conformity with the ecodesign requirements cannot be more favourable for the supplier than the values reported in the technical documentation.

5. RELATION WITH OTHER ECODESIGN REGULATIONS

5.1. Standby regulation (Regulation (EC) No 1275/2008)

The [Standby regulation](#) applies to vacuum cleaners since they fall under its Annex I, point 1 “Other appliances for cooking and other processing of food, cleaning, and maintenance of clothes”. The relevant requirements depend on the type of vacuum cleaner.

5.2. Industrial fans regulation (Regulation (EU) No 327/2011)

The [Industrial fans regulation](#) has been amended by the Ecodesign regulation for vacuum cleaners²¹ and no longer applies to the types of fans that are used in vacuum cleaners.

5.3. Electric motor regulation (Regulation (EC) No 640/2009)

The [Electric motor regulation](#) does not apply to vacuum cleaners, because the regulation applies to three phase motors and not to the single phase motors used for vacuum cleaners.

6. FREQUENTLY ASKED QUESTIONS

Further general and product-specific answers to frequently asked questions on ecodesign are available at [DG Enterprise's website](#) and on energy labelling on [DG Energy's website](#).

²⁰ Ecodesign Regulation, Annex III, Table 1; Energy Labelling Regulation, Annex VII, Table 4
²¹ Ecodesign Regulation Article 8