BLUE ANGEL

The Environmental Label

Vacuum Cleaners

DE-UZ 188

Basic Award Criteria

Edition January 2020

Version 1

The environmental label is underpinned by the following institutions:

Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit

The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit) is the owner of the label. It regularly provides information on the decisions taken by the Environmental Label Jury.

Umwelt Bundesamt

The Federal Environmental Agency (Umweltbundesamt) in the specialist department "Ecodesign, Eco-Labelling and Environmentally friendly Procurement" acts as the office of the Environmental Label Jury and develops the specialist criteria in the form of the Basic Award Criteria for the Blue Angel environmental labels.

Jury Umweltzeichen

The Environmental Label Jury is the independent, decision-making body for the Blue Angel and includes representatives from environmental and consumer associations, trade unions, industry, the trade, crafts, local authorities, academia, the media, churches, young people and the German federal states.

RAL gGmbH

RAL gGmbH is the awarding body for the environmental label. It organises the process for developing the relevant award criteria in independent, expert hearings – which involve all relevant interest groups.

If you require further information please contact:

RAL gGmbH

RAL ENVIRONMENT

Fränkische Straße 7

53229 Bonn

Tel.: +49 (0) 228 / 6 88 95 - 0

E-Mail: umweltzeichen@ral.de

www.blauer-engel.de

Version 1 (01/2020): First edition, term until 31/12/2023

Table of contents

1 Introduction 4
1.1 Preface 4
1.2 Background and objective of the environmental label 4
1.3 Compliance with legal requirements 4
2 Scope 5
3 Requirements 6
3.1 Rated input power 6
3.2 Annual energy consumption 6
3.3 Dust pick up on carpet and hard floor with the universal nozzle 6
3.4 Dust re-emissions 7
3.5 Noise emissions and motion resistance 7
3.6 Material requirements for plastics used in the housing, housing parts and accessory parts (suction tube/hose, nozzle, etc.) 7
3.7 Easy-to-maintain and recyclable design and PCR plastic 8
3.8 Durability requirements 9
3.8.1 Durability of household vacuum cleaners 9
3.8.2 Durability of cordless vacuum cleaners 9
3.8.3 Provision of spare parts 9
3.9 Consumer information 10
3.10 Outlook 10
4 Applicants and parties involved 10
5 Use of the Environmental Label 11

1 Introduction

1.1 Preface

In cooperation with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, the Federal Environmental Agency and considering the results of the expert hearings conducted by RAL gGmbH, the Environmental Label Jury has set up these Basic Criteria for the Award of the Environmental Label. RAL gGmbH has been tasked with awarding the Environmental Label.
Upon application to RAL gGmbH and on the basis of a Contract on the Use of the Environmental Label to be concluded with RAL gGmbH, the permission to use the Environmental Label may be granted to all products, provided that they comply with the requirements as specified hereinafter.
The product must comply with all the legal requirements in the country in which it is to be marketed. The applicant shall declare that the product meets these conditions.

1.2 Background and objective of the environmental label

There are currently around 39 million vacuum cleaners in German households. These appliances consume around 3.4 billion kilowatt hours of electricity per year in total.
The electricity costs during an 8-year service life are sometimes higher than the purchase price. Energy efficient vacuum cleaners can reduce this electricity consumption.
There has been no EU energy label for vacuum cleaners since 2019. Therefore, consumers are now no longer able to use the energy efficiency class and other parameters for guidance when making a purchase. The difference in the effectiveness of the various models, especially in the case of cordless hand-held and floor vacuum cleaners, is very high in some cases. The Blue Angel environmental label can provide guidance in this area.
Climate protection, a reduction in energy consumption, the avoidance of pollutants and waste and recycling are key objectives of environmental protection. The Blue Angel environmental label for vacuum cleaners may be awarded to products featuring the following environmental properties:

- Low power consumption
- High dust pick up and low dust re-emissions
- Low noise emissions
- Use of environmentally-friendly materials
- Durability and recycling-friendly design

1.3 Compliance with legal requirements

The observance of relevant existing laws and legal requirements is a prerequisite for those products awarded with the environmental label. In particular, the following legal requirements must be observed:

- The Electrical and Electronic Equipment Act (ElektroG)[1] and the ordinance to limit the use of hazardous substances in electrical and electronic equipment (Material Ordinance for

[1] Law for the sale, return and environmental disposal of electrical and electronic equipment, BGBl, 2005, Part I, No. 17 (23 May 2005)

Electrical and Electronic Equipment - ElektroStoffV)[2] to implement the EU directives[3] into German law are observed.

- The substance requirements defined by the EU Chemicals Regulation REACH (1907/2006/EC)[4] and Regulation EC No. 1272/2008[5] (or Directive 67/548/EEC) are observed.
- The requirements of the European Union for the safety of equipment (EU Directive - "CE" compliance marking) are observed.
- The requirements for the implementation of the ecodesign regulations[6] are met and the Guidelines[7] are observed.

Therefore, the following benefits for the environment and health are stated in the explanatory box:

2 Scope

These Basic Award Criteria apply to vacuum cleaners for commercial and household use, as well as for cordless hand-held and floor vacuum cleaners in their function for floor cleaning.
Excluded from the scope are:

- Wet vacuum cleaners, combined wet and dry cleaners, cordless vacuum cleaners not intended for floor cleaning.
- Robot, industrial and central vacuum cleaners.
- Floor polishers, outdoor vacuum cleaners.

---

2 Material Ordinance for Electrical and Electronic Equipment of 19 April 2013 (BGBI. I p. 1111)

3 Directive on Waste Electrical and Electronic Equipment: Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment; Directive on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment: Directive 2011/65/EC of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

4 Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

5 Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, as well as amending Regulation (EC) No. 1907/2006

6 Commission Regulation (EC) No. 666/2013 of 8 July 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for vacuum cleaners

7 Guidelines and “frequently asked questions” from the EU Commission on Regulations (EU) No. 665/2013 + 666/2013, http://ec.europa.eu/energy/efficiency/labelling/doc/guidelines_665_666_2013_vacuum_cleaners.pdf

3 Requirements

3.1 Rated input power

The rated input power during active operation on carpet and hard floor must not exceed 800 W.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1, state the measured value and submit the corresponding product documentation in accordance with Regulation (EC) No. 666/2013. The average input power shall be measured in accordance with EN 60335-1, EN 60335-2-2, EN 60335-2-69. The applicant shall specify the rated input power in the consumer information (Paragraph 3.9).

3.2 Annual energy consumption

The appliances must not exceed an annual energy consumption (AE) of 28 kWh/a.
The following calculation formula applies to cordless vacuum cleaners:

$$AE = 4\ x\ \left(\frac{87}{4}\right)\ x\ 200\ x\ 0{,}001\ x\ ASE\ x\ \left(\frac{dpu,BASECASE}{dpuc}\right) + \frac{Mh\ x\ 8026}{1000}$$

Key for the calculation formula:
- ASE is the average specific energy consumption in Wh/m² according to the manufacturer's data
- dpu,BASECASE is the average dust pick up with a value of 0.8
- dpuc is the dust pick up on carpet
- 87 is the standard surface area to be cleaned in m²
- 4 is the standard number of times that a vacuum cleaner runs over every point on the floor (two double strokes)
- 0.001 is the conversion factor for Wh in kWh
- Mh is the input power in standby mode in W
- 8026 is the annual number of hours that the appliance is in standby mode

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit the corresponding product information in accordance with Regulation (EC) No. 666/2013 or for cordless vacuum cleaners in accordance with the prEN (IEC) 62885-4 (Draft April/2019) standard (a standby time of 8026 h is assumed for cordless vacuum cleaners).

3.3 Dust pick up on carpet and hard floor with the universal nozzle

The dust pick up on **carpet** must be greater than 0.85 (85%).
The dust pick up on **hard floor** with crevices must be greater than 1.07 (107%).

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 and submit the corresponding product information in accordance with Regulation (EC) No. 666/2013 or for cordless vacuum cleaners in accordance with the EN 60312-1:2017 standard.

3.4 Dust re-emissions

Household and commercial vacuum cleaners must not exceed a dust re-emission rate of 0.01%. Cordless floor vacuum cleaners must not exceed a dust re-emission rate of 0.1%.

Compliance verification

The applicant shall declare the area of application in accordance with Directive 2006/42/EC, declare compliance with the requirement in Annex 1 and submit the corresponding product information in accordance with Regulation (EC) No. 666/2013 or for cordless vacuum cleaners in accordance with the prEN (IEC) 62885-4 (Draft April/2019) standard.

3.5 Noise emissions and motion resistance

The noise emissions (sound power level) on carpet must not exceed 73 dBA.
The noise emissions for appliances with an electric, mechanical or airflow-driven active nozzle[8] must not exceed 78 dBA.
The results must be stated in the product documentation.

The motion resistance with the universal floor nozzle on the test carpet must not exceed a maximum value of 40 N for either the forward or backward movement.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1, state the measured value and submit the corresponding product documentation in accordance with Regulation (EC) No. 666/2013. The sound power level shall be measured and specified in accordance with DIN EN 60704-1 or DIN EN 60704-3 and DIN EN 60704-2-1 or DIN EN 60335-2-69. The motion resistance shall be determined as the average of the results from the cleaning cycles on a test carpet. The motion resistance shall be measured and specified using the same carpet and the same nozzle and vacuum cleaner settings used to measure the dust pick up on carpet according to EN 60312-1:2017.

3.6 Material requirements for plastics used in the housing, housing parts and accessory parts (suction tube / hose, nozzle, etc.)

The plastics may not contain as constituent parts any substances classified as:

a) carcinogenic in categories 1A or 1B according to Table 3.1 of Annex VI to EC Regulation 1272/2008[9]

---

[8] According to DIN EN 60312-1 Section 3.4.

[9] Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, as well as amending Regulation (EC) No 1907/2006, Annex VI on harmonized classification and labelling of hazardous substances, Part 3: Harmonized classification and labelling, Tables, Table 3.2, – List of harmonized classification and labelling of dangerous substances from Annex I to Directive 67/548/EEC,
short: GHS Regulation http://www.reach-info.de/ghs_verordnung.htm, each as amended.
The GHS Regulation (Global Harmonization System) that came into force on 20 January 2009, replaces the old Directives 67/548/EEC and 1999/45/EC. According to the said regulation, substances are classified, labelled and packed until 1 December 2010 according to Directive 67/548/EEC (Dangerous Substances Directive) while mixtures are classified, labelled and packed until 1 June 2015 according to Directive 1999/45/EC (Dangerous Preparations Directive). Notwithstanding this, the classification, labelling and packaging of substances and preparations may be performed according to the provisions of the GHS Regulation already before 1 December 2010 or 1 June 2015, respectively. In such cases,

b) mutagenic in categories 1A or 1B according to Table 3.1 of Annex VI to EC Regulation 1272/2008
c) reprotoxic in categories 1A or 1B according to Table 3.1 of Annex VI to EC Regulation 1272/2008
d) substance of very high concern for other reasons according to the criteria of Annex XIII to the REACH Regulation, insofar as they are included in the List (so-called "Candidate List"[10]) set up in accordance with REACH, Article 59, Paragraph 1.

Halogenated polymers are not permitted. Neither may halogenated organic compounds be added as flame retardants. In addition, the use of flame-retardant materials that are rated as acutely toxic to aquatic organisms with long-term effects according to Tables 3.1 or 3.2 of Annex VI of EC regulation 1272/2008 and classified with the hazard statement code H410 or with the risk phrase R 50/53 is prohibited.

The following shall be exempt from this rule:
- process-related, technically unavoidable impurities;
- fluoroorganic additives (e.g. anti-dripping agents) used to improve the physical properties of plastics, provided that they do not exceed a proportion of 0.5 percent by mass;
- plastic parts with a mass of less than or equal to 25 g.

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 and submit a written declaration from the plastics manufacturer or guarantee the provision of these documents to RAL gGmbH. The declaration in Annex P-M confirms that the excluded substances have not been added to the plastics and provides a chemical description of the flame-retardant materials used including the CAS number and its rating (H-Phrase). When first applying for the Blue Angel environmental label, the submitted declaration must not be older than 6 months. If one applicant submits additional applications for the labelling of products that contain the same plastics, the submitted declarations may be presented unchanged during the term of the Basic Award Criteria. Notwithstanding this, RAL shall be entitled to ask for an updated version of the declarations if the Federal Environmental Agency (Umweltbundesamt) finds that product-relevant substances have been added to the Candidate List. The applicant shall state which plastics are used in the housing for parts with a mass ≥ 25 grams and provide a list of the plastics used in the housing according to Annex P-L25.

3.7 Easy-to-maintain and recyclable design and PCR plastic

The equipment must be designed and constructed in such a way that it is possible to easily and quickly dismantle it for the purposes of repairing it and separating recyclable components and materials. This means:
- having suitable connections that can be removed using standard tools and these connecting joints shall be easily accessible
- batteries and rechargeable batteries can be replaced using standard tools

---

the provisions of the Dangerous Substances Directive or Dangerous Preparations Directive shall not be applicable.

[10] The version of the list of candidates at the time of application is valid (new applications). Link to the list of candidates of Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH): http://echa.europa.eu/web/guest/candidate-list-table

- plastics should consist of only one polymer or plastic parts whose mass is greater than 25 grams must be labelled in accordance with the ISO 11469 standard to enable the separation of different plastic materials

and

- instructions for dismantling the appliance shall be available for those handling old appliances – with the aim of recycling as many resources as possible
- based on the total weight of the plastics used, 30% of the plastics must be sourced from post-consumer recycled materials

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 and submit the relevant dismantling instructions for those handling old appliances and state the proportion of PCR plastic.

3.8 Durability requirements

3.8.1 Durability of household vacuum cleaners

The appliances must meet the following durability requirements:

- The motor must have a minimum service life of 600 hours. (test with an empty dust container)
- The active floor nozzle must have a minimum service life of 300 hours.
- The passive universal floor nozzle must be able to withstand the impact of at least 600 drum rotations (or 1200 falls from a height of 80 cm).
- The suction hose must have a minimum service life of 40,000 deformations.
- The appliance must withstand threshold and door post impact tests of at least 500 cycles.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit a test report according to DIN EN 60312-1, as well as a test report for the service life of the motor in accordance with DIN EN 60312-1:2017.

3.8.2 Durability of cordless vacuum cleaners

The appliances must meet the following durability requirements:

- The motor must have a minimum service life of 600 hours. (test with an empty dust container)
- The active floor nozzle must have a minimum service life of 300 hours.
- The passive universal floor nozzle must be able to withstand the impact of at least 600 drum rotations (or 1200 falls from a height of 80 cm).
- The run time (in minutes) must be at least 75% of the initial run time after 600 cycles.

Compliance verification

The manufacturer shall declare compliance with the requirements and verify compliance with the criteria by submitting in-house test reports.

3.8.3 Provision of spare parts

The applicant undertakes to guarantee the provision of spare parts for the repair of the appliances for at least 8 years following the termination of production.

Spare parts are those parts which, typically, may break down within the scope of the ordinary use of a product, as well as batteries. Whereas those parts which normally exceed the average life of the product are not to be considered as spare parts.
The applicant also undertakes to offer a technical aftersales service and to provide this service, as well as technical repairers and consumers of these spare parts, with access to technical documents and, if relevant, repair documentation.
The product documentation must contain information on the stated requirements.

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 and submit the corresponding pages of the product documentation.

3.9 Consumer information

When the appliance is sold, easy-to-understand product documentation (operating instructions) for the final consumer must be enclosed with the appliance that includes at least the following information, and which is also accessible on the manufacturer's website:

- Information on the annual energy consumption for cordless and mains-operated vacuum cleaners and the average rated input power (W) in operation for mains-operated vacuum cleaners (displayed in table form where possible).
- Information on the dust pick up and dust re-emissions.
- Information on the noise emissions.
- Information on the type of battery, battery life and battery charging cycle, as well as information on the maintenance, replaceability and disposal of the battery.
- Information on how to replace the dust bag or empty the dust box and filter, as well as information on how to clean the nozzle.
- Information on the weight (in kg), the proportion of recycled PCR material (in %), the operating range (m) for mains-operated vacuum cleaners and the availability of spare parts and where to source them.
- Information and instructions on using the vacuum cleaner on carpet and hard floor by means of clear and adjustable settings on the appliance.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 to the contract and submit the corresponding pages of the product documentation.

3.10 Outlook

Requirements for the dust pick up with dust load and requirements for battery operation will be added in any revision of the criteria in these Basic Award Criteria. In addition, social aspects of the battery production will be examined and included where relevant.

4 Applicants and parties involved

Manufacturers or distributors of products according to Paragraph 2 shall be eligible for application.

Parties involved in the award process are:

- RAL gGmbH to award the Blue Angel environmental label,

- the federal state being home to the applicant's production site,
- Umweltbundesamt, (Federal Environmental Agency) which after the signing of the contract receives all data and documents submitted in application for the Blue Angel in order to be able to further develop the Basic Award Criteria.

5 Use of the Environmental Label

The use of the environmental label by the applicant is governed by a contract on the use of the environmental label concluded with RAL gGmbH.

Within the scope of such contract, the applicant undertakes to comply with the requirements under Paragraph 3 while using the environmental label.

Contracts on the Use of the Environmental Label are concluded to fix the terms for the certification of products under Paragraph 2. Such contracts shall run until 31/12/2023.
They shall be extended by periods of one year each, unless terminated in writing by 31/03/2023 or 31 March of the respective year of extension.
After the expiry of the contract, the Environmental Label may neither be used for labelling nor for advertising purposes. This regulation shall not affect products being still in the market.

The applicant shall be entitled to apply to RAL gGmbH for an extension of the right to use the ecolabel on the product entitled to the label if it is to be marketed under another brand/trade name and/or other marketing organizations.

The Contract on the Use of the Environmental Label shall specify:
- Applicant (manufacturer/distributor)
- Brand/trade name, product description
- Distributor (Label User), i.e. the marketing organization.