The German Ecolabel

BLUE ANGEL

Hair Dryers

DE-UZ 175

Basic Award Criteria

Edition January 2019

Version 2

The Environmental Label is supported by the following four institutions:

Federal Ministry
for the Environment, Climate Action,
Nature Conservation and Nuclear Safety

The Federal Ministry for the Environment is the owner of the label, defines the fundamental guidelines for the award of the Blue Angel ecolabel and appoints the Environmental Label Jury.

Umwelt Bundesamt

The German Environment Agency with its specialist department for "Ecodesign, Eco-Labelling and Environmentally friendly Procurement" acts as the office of the Blue Angel ecolabel. It develops the technical criteria including the required compliance verifications in cooperation with relevant interest groups.

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, churches, young people and the German federal states.

RAL gGmbH

RAL gGmbH is the awarding body for the environmental label. It examines the applications submitted by companies for the use of the Blue Angel ecolabel and concludes the "Contracts on the Use of the Environmental Label". It also monitors correct use of the ecolabel.

Please use the following format when adding citations:
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Changes compared to the previous versions can be found in Appendix C.

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This document is a translation of a German original. In case of dispute, the original document should be taken as authoritative.

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

Hair dryers are one of the standard appliances found in German households. The power consumption of a hair dryer is generally between 1000 and 2400 watts. The annual electricity consumption of an average hair dryer is 140 kWh if used every day. This is about as much as the consumption of an efficient cooling device. Hair dryers awarded the environmental label achieve power savings of up to 30% compared to standard appliances.
The labelled appliances must be particularly energy efficient and low noise and meet requirements for the plastics and materials used, as well as for product safety and durability. In addition, the operating instructions must provide information on environmentally conscious user behaviour and product safety.

Hair dryers generate low-frequency electric and magnetic fields just like other electrical appliances. According to the Federal Office for Radiation Protection (BfS), there are still some unresolved questions about the possible effects of low-frequency fields despite comprehensive research into the subject. In order to take these scientific uncertainties into account, the BfS recommends limiting the exposure to low-frequency fields as far as possible. As a precautionary measure, hair dryers awarded the environmental label are only permitted to emit a limited level of electromagnetic radiation.

1.3 Objective of the environmental label

Climate protection, a reduction in energy consumption and the avoidance of pollutants and waste are key objectives of environmental protection.
The Blue Angel environmental label for hair dryers may be awarded to products featuring the following environmental properties:

- Low power consumption
- Low noise emissions
- High safety requirements
- Reduced pollutant contents
- High technical service life due to the extended warranty period and recycling-oriented design

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

2 Scope

The Basic Award Criteria apply to hand-held hair dryers that supply warm or cold air for the drying, care and styling of hair.
Other hair care appliances, such as e.g. hair styling appliances using hot air, hair straighteners, curling irons, crimpers, wall-mounted hair dryers and hood dryers are excluded from the scope of these Basic Award Criteria.

2.1 Definition Hand-held hair dryer

A hand-held hair dryer (also-called a pistol-grip hair dryer) is a non-wall-mounted hair dryer that can be manually and freely moved to the desired position for hair drying. Appliances secured by an anti-theft fastening device (e.g. in hotels) are not considered to be wall-mounted hair dryers.
This electrical appliance dries wet hair using hot, warm or cold air. It works according to the following principle: A fan blows air across heating elements. The hot air generated by the appliance is then blown through the nozzle attachment into the hair.

3 Requirements

3.1 Energy efficiency

The applicant shall state the ratio of power consumption (in Wh) to drying rate (DR in g/min).

The ratio of power consumption to drying rate for a hand-held hair dryer must not exceed a value of $5{,}2\ \frac{Wh}{\frac{g}{min}}$.
The power consumption of the hair dryer must be stated in the product documentation.

Compliance verification

The applicant shall declare compliance with the requirement and submit a test report from a testing laboratory accredited according to ISO/IEC 17025 or an authorised SMT (Supervised Manufacturer Testing) laboratory (Annex 2), as well as the corresponding pages of the product documentation. The drying rate must be determined in accordance with DIN EN 61855. The power consumption must be determined in accordance with DIN EN 60335-2-23.

3.2 Noise emissions

The evaluation of the noise emissions is based on the provision of the guaranteed A-weighted sound power level L_{WAd} in decibels (dB). The sound power level L_{WAd} of the hand-held hair dryer must not exceed a value of 76 dB when set to the maximum heat and speed (fan) settings.

$$L_{Wad} \leq 76 \text{ dB}$$

The L_{WAd} is determined using a measurement according to DIN EN 60704-1[1] and DIN EN 60704-2-9[2] and applying a correction value determined in accordance with DIN EN 60704-3[3]. Individual measurements are not permitted. The measurement results must be stated in the product documentation.

Compliance verification

The applicant shall declare compliance with the requirement and submit a test report from a testing laboratory accredited according to ISO/IEC 17025 or an authorised SMT (Supervised Manufacturer Testing) laboratory (Annex 3), as well as the corresponding pages of the product documentation.

3.3 Recycling-friendly material selection and labelling

- The plastic housings may only consist of a maximum of two separable polymers or polymer blends.
- Plastic parts weighing more than 25 grams must be labelled in accordance with the ISO standard 11469.

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 to the contract. The applicant shall state which plastics are used for parts > 25 grams and submit a list of plastics in accordance with Annex 4 to the contract (see form).

3.4 Material requirements for plastics used in the housing and housing parts (including attachments)

The plastics used in the housing and housing parts may not contain any substances with the following properties as a constituent component[4]:

a) Substances which are identified as substances of very high concern under the European Chemicals Regulation REACH (1907/2006/EC) and which have been incorporated into the list drawn up in accordance with Article 59, Paragraph 1 of the REACH Regulation (so-called " candidate list").[5]

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1 DIN EN 60704-1: Household and similar electrical appliances - Test code for the determination of airborne noise - Part 1: General requirements

2 DIN EN 60704-2-9: Household and similar electrical appliances - Test code for the determination of airborne acoustical noise - Part 2-9: Particular requirements for electric hair care appliances

3 DIN EN 60704-3: Household and similar electrical appliances - Test code for the determination of airborne noise - Part 3: Procedure for determining and verifying declared noise emission values

4 Constituent components are substances added to the product as such or as part of a mixture and remain there unchanged in order to achieve or influence certain product properties. This does not apply to residual monomers that have been reduced to a minimum.

5 The version of the list of candidates at the time of application is valid. The REACH list of candidates in its relevant version can be found under the following link: https://echa.europa.eu/candidate-list-table

b) Substances that according to the CLP Regulation[6] have been classified in the following hazard categories or which meet the criteria for such classification[7]:
   - carcinogenic in categories Carc. 1A or Carc. 1B
   - germ cell mutagenic in categories Muta. 1A or Muta. 1B
   - reprotoxic (teratogenic) in categories Repr. 1A or Repr. 1B

c) Fluoropolymers (such as e.g. PTFE) used, for example, as cable sheathing may only contain perfluorinated carbon acids with 8-14 carbon atoms (PFOA, PFNA, PFDA, PFUnDA, PFDoDA, PFTrDA, PFTeDA) that have maximum residual contents of 25 ppb (total) or 25 µg/kg. (A DIN standard does not currently exist, the method used by the company 3M should thus be used[8]).

Halogenated polymers are not permitted in the housing and housing parts. Neither may halogenated organic compounds be added as flame retardants. In addition, no flame retardants classified according to the CLP Regulation as carcinogenic in category Carc. 2 or as hazardous to water in category Aquatic Chronic 1 are permitted. The hazard statements (H Phrases) that correspond to the hazard categories can be found in Supplement 2: "Assignment of hazard categories and H Phrases".

The following shall be exempt from this rule:
- 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;
- Cable and plug.

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 to the contract and submit a list of the plastics used in the housing according to Annex P-L 10 for those housings made of plastic with a mass greater than 10 grams. For the listed parts, the applicant shall submit a written declaration from the plastics manufacturer or guarantee the provision of these documents to RAL gGmbH. The declaration shall confirm that the excluded substances have not been added to the plastics and provide a chemical description of the flame-retardant materials used including the CAS number and its rating (H-Phrases) (Annex P-M to the Contract). 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 finds that product-relevant substances have been added to the candidate list.

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6 Regulation (EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures, short: CLP (Classification, Labelling and Packing). It replaces the old directives 67/548/EEC (Dangerous Substances Directive) and 1999/45/EC (Dangerous Preparations Directive).

7 The harmonized classifications and labellings of dangerous substances can be found in Annex VI, Part 3 of the CLP Regulation. Furthermore, a compre0hensive classification and labelling inventory, which also includes all of the self-classifications of hazardous substances made by manufacturers, has been made available to the public on the website of the European Chemicals Agency: ECHA classification and labelling inventory.

8 Standard Test Method, 3M, Edition 1.0 Nov 2016: https://multimedia.3m.com/mws/media/1356771O/3m-standard-method-for-pfas.pdf

3.5 Safety

3.5.1 Tested safety

The hair dryer carries the "Tested Safety" mark.

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 to the contract and submit a valid quality mark approval certificate (GS / VDE) (Annex 6).

3.5.2 Safety temperature limiter

The hair dryer has a safety temperature limiter that switches off the appliance when it overheats. The product documentation must contain information about how the safety temperature limiter works.

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 to the contract and submit the corresponding pages of the product documentation in Annex 8 to the contract.

3.6 Electromagnetic fields

The magnetic flux density of the hair dryer at a distance of 10 cm from the location with the highest radiation exposure at a frequency range of 10 Hz to 400 kHz is not permitted to exceed the reference values in the EU Council Recommendation (1999/519/EC)[9].

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 to the contract and submit a test report from a DIN EN ISO/IEC 17025 accredited testing laboratory (Annex 9). Measurement of the magnetic flux density (B-field) of the hair dryer at a distance of 10 centimetres from the location with the highest radiation exposure must be carried out in accordance with DIN EN 62233[10].
Testing laboratories used to measure high-frequency radiation must be a notified body[11] appointed by the Federal Network Agency in accordance with the RED Directive[12] or a notified body appointed by another European notifying authority[13].

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[9] Council Recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) (1999/519/EC), Official Journal of the European Communities of 30/7/1999, see Anhang B

[10] DIN EN 62233: Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure (IEC 62233:2005, modified); German version EN 62233:2008

[11] https://www.bundesnetzagentur.de/DE/Sachgebiete/Telekommunikation/Unternehmen_Institutionen/Technik/AnerkKonformBbewStellen/BenannteStellenFTEG/benanntestellenfteg-node.html

[12] RED Directive: Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment – Radio Equipment Directive

[13] The EU Commission provides information on notified bodies at http://ec.europa.eu/growth/tools-databases/nando/index.cfm?fuseaction=directive.notifiedbody&dir_id=154428

3.7 Endurance test

The product must be subjected to a 400 hour endurance test in cycles consisting of 15 minutes of operation and 15 minutes of pause adding up to a pure operating time of 200 hours. The appliances must be operated at nominal voltage with the hair dryer set at both the highest speed (fan) and heat settings. For this purpose, the appliances should be flexibly hung up without any attachment in an appropriate ready-to-use position. The room temperature must be monitored during the test (20°C ± 5K). The test must be carried out on at least three appliances, of which at least two of the appliances must successfully pass the test.

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 to the contract and submit a test report from a testing laboratory accredited according to ISO/IEC 17025 or an authorised SMT (Supervised Manufacturer Testing) laboratory in Annex 7.

3.8 Warranty

The applicant obligates themselves to provide a warranty of at least 3 years for the entire appliance, subject to the proper use of the appliance.
The product documentation shall contain information about the warranty cover.

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1 to the contract and submit the corresponding pages of the product documentation in Annex 8 to the contract.

3.9 Consumer information

The documentation included with the appliances must include both technical specifications and environmental and safety-related consumer information. The following information must be included in the documentation and also be accessible via the manufacturer's website:

- Information on how to use the appliance and, if relevant, its accessories
- Information on using the appliance for the first time
- Regular cleaning is required to maintain the good performance characteristics of the appliance
- Weight (g)
- Length of the power cord (m)
- Power consumption (watts) without attachments (in lowest and highest settings)
- Noise emissions: Information on the sound power level LWAd when set to the maximum heat and speed (fan) settings in decibels (dB) (according to Chapter 3.2)
- Number of settings according to the operating instructions
- Information on environmentally-friendly disposal at the end of the appliance’s service life in accordance with the German Electrical and Electronic Equipment Act (Elektrogesetz)
- Information on the disposal of the packaging

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 (Annex 8).

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 31/12/2027.
They shall be extended by periods of one year each, unless terminated in writing by 31/03/2027 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.

Anhang A Quoted laws and standards, literature

[1] Legal regulations

The observance of relevant existing laws and legal requirements is naturally 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)[14] For precautionary reasons the product meets material requirements going beyond these provisions.
- The substance requirements defined by the EU Chemicals Regulation REACH (1907/2006/EC)[15] and Regulation EC No. 1272/2008[16] (or Directive 67/548/EEC).
- The ROHS Directive (2011/65/EU)[17] implemented in German law in the German Material Ordinance for Electrical and Electronic Equipment (ElektroStoffV)[18] that regulates the pollutant content of products.
- Observance of the directive on electromagnetic compatibility (EMC Directive: 2014/30/EU)[19].
- Observance of the low-voltage directive (Directive 2014/35/EU)[20]

[14] Law for the sale, return and environmental disposal of electrical and electronic equipment from 20 October 2015 (BGBl. I S. 1739)

[15] 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

[16] 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

[17] Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (new version); ROHS Directive

[18] Ordinance to limit the use of hazardous substances in electrical and electronic equipment (Material Ordinance for Electrical and Electronic Equipment) from 19/04/2013; ElektroStoffV

[19] Directive (EU): 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (recast)

[20] Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits.

Anhang B Reference values for electromagnetic fields

The following table lists the reference values for electromagnetic fields in the physical variable magnetic flux density (B-field) according to the Council Recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) (1999/519/EC)[21] Annex III, Reference Levels, Table 2.
These reference values must not be exceeded by hair dryers in a frequency range of 10 Hz to 400 kHz.

Frequency range	B-field (µT)
0 — 1 Hz	40,000
1 — 8 Hz	40,000 / f²
8 — 25 Hz	5,000/f
0.025 — 0.8 kHz	5/f
0.8 — 3 kHz	6.25
3 — 150 kHz	6.25
0.15 — 1 MHz	0.92/f
1 — 10 MHz	0.92/f
10 — 400 MHz	0.092
400 — 2,000 MHz	0.0046 √f
2 — 300 GHz	0.2

Note: The value for frequency f should be taken from the relevant unit stated for the frequency range.

[21] https://eur-lex.europa.eu/legal-content/DE/TXT/PDF/?uri=CELEX:31999H0519&from=EN

Anhang C Version history

The following changes were made to ecolabel DE-UZ 175 "Hair Dryers, Edition January 2019, Version 1" and required the issuing of an updated version in each case. The version at the time of application is valid. If the changes were required for the implementation of new legal regulations, they apply to all certified products.

Version 2 (01/2023): Prolongation for 4 years without any changes, until 31.12.2027