

Basic Criteria for Award of the Environmental Label

Low-Noise and Low-Emission Garden Tools

RAL-UZ 129



Edition April 2010

Prolongation for 1 year (until 31.12.2015) without any change

Prolongation for 2 years (until 31.12.2017) without any change

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1 Introduction

1.1 In co-operation with the Federal Minister for the Environment, Nature Conservation and Nuclear Safety, the Federal Environmental Agency and considering the results of expert hearings conducted by RAL gGmbH the Environmental Label Jury has set up these Basic Criteria for Award of the Environmental Label. RAL gGmbH has been tasked with awarding the Environmental Label.

Upon application to RAL and on the basis of a Contract on the Use of the Environmental Label to be concluded with RAL the permission to use the Environmental Label may be granted for all products, provided that they comply with the requirements as specified hereinafter.

1.2 Garden tools create a noise nuisance during operation, especially in times of leisure and at places of recreation. Awarding the Blue Angel eco-label to low-noise garden tools is to achieve a reduction in noise emissions. To harmonise the noise protection laws of the member states relating to noise emissions from machinery and equipment for use outdoors the European Union has adopted Directive 2000/14/EC. Article 12 sets maximum permissible sound power levels for the protection of health and environment. The Blue Angel takes the legal limit values as a basis and further tightens the guaranteed sound power level (L_{WAd}) for low-noise garden tools taking advances in noise reduction technology into account. In addition to this, these Basic Award Criteria set noise limits for appliances which so far had only been subject to a labelling obligation according to Article 13. Excluded are leaf blowers and leaf collectors. Even though there are products in the market with a sound power level of less than 104 dB(A) other environmental impacts of these apparatuses may be substantial, as, for example, degradation of humus and destruction of microorganisms. Apart from these noise requirements, combustion-engine-powered garden tools must additionally meet certain exhaust emission requirements. Exhaust emissions limits are set in accordance with EU Directive 2002/88/EC for mobile equipment and machinery. This directive provides for different implementation dates for two stages of emission limits. In order to be awarded the Blue Angel for hand-held machinery the product must meet the stage II limits. Non-hand-held machinery powered by four-stroke engines exclusively must fall well below the stage II limits. The durability of the exhaust emission reduction system shall be guaranteed. Leakage losses are to be prevented by proper filling systems.

The use of environmentally harmful and health-endangering substances in the materials shall be avoided wherever technologically possible.

Battery-powered garden tools shall be equipped with low-emission batteries.

2 Scope

These Basic Award Criteria apply to gardening and landscape conservation equipment according to product groups as specified in Articles 12 and 13 of Directive 2000/14/EC.

This includes the following appliances

according to Article 12:

Lawnmowers (32), **lawn trimmers** (33), **lawn edge trimmers** (33)

according to Article 13:

Brush cutters (2), **chain saws** (6), **grass trimmers** (24,) **hedge trimmers** (25) and **scarifiers** (49).

In addition, these Basic Award Criteria apply to **pole-mounted powered pruners**. This product group is to be included into Article 13.

Numbering and definition of the garden tools corresponds to Annex 1 to Directive 2000/14/EC (see Appendix 1 to the Basic Award Criteria).

Additional types of equipment may be included into the scope provided that they are marketed as low-noise products.

3 Requirements

The Environmental Label shown on page 1 may be used for the marking of products under paragraph 2, provided that they meet the requirements set forth hereinafter.

3.1 Noise Emission Requirements

3.1.1 Guaranteed Sound-Power-Level Limit Value

The guaranteed/declared sound power level (L_{WAd}) shall not exceed the limit values as laid down or to be calculated in Table 1.

The products shall meet the limit value L_{WAd} indicated in Table 1 for each product group in accordance with the measuring / operating conditions as described in Directive 2000/14/EC or in accordance with the measuring method as specified in Table 1.

A type application is to be filed for the type of equipment. The distributor shall name and specify the type of equipment.

The measurement shall be made and recorded by a notified body in accordance with Article 15 of Directive 2000/14/EC.

Single Measurement

According to ISO 4871 the correction factor for determination of the guaranteed sound power level shall be 3 dB(A) for single measurements.

The L_{WAd} value to be entered into the type application shall be calculated by measurement on a single appliance using the following formula:

$$L_{WAd} = L_{WAE} + K1$$

L_{WAE} = single sample for a type test

$K1 = 3 \text{ dB(A)}$ (correction value added for a „declared” - guaranteed - value).

Multiple Measurement

The correction factor $K2$ for determination of the guaranteed sound power level L_{WAd} can be established in the same way by a notified body by measuring a selection of several appliances of one type.

$$L_{WAd} = L_{WA} + K2$$

3.1.2 Industrial Sound Insulation

For precautionary reasons the Operating Instructions shall include a note instructing the user to always wear ear protection if the sound power level at the workplace exceeds 80 dB (A).

Table 1: Guaranteed Sound-Power-Level Limit Values of Garden Tools

Type of Equipment	No. according to the definition in Annex I, 2000/14/EC	Drive Mode	Guaranteed Sound Power Level LWAd in dB(A)	Test Method Sound power level according to para. 3.1.1	Test method Sound power level at the workplace according to 3.1.2
Scarifiers	49	Combustion engine Electric motor	94 92	2000/14/EC ¹	EN 836: 1997 + A2:2001
Hedge trimmers	25	Combustion engine Electric motor	104 96	2000/14/EC ¹ <small>Fehler! Textmarke nicht definiert.</small>	EN 774:1996 + A3 / prDIN EN ISO 10517:2003
Lawn trimmers/ Lawn edge trimmers	33	Electric motor	92	ISO 22868 Jan.06	ISO 22868 Jan. 06
Lawnmowers	32	Combustion engine Electric motor/Battery-powered	92 at L ≤ 50cm 96 at L > 50cm 90 L= cutting width	ISO 11094	EN 836: 1997 + A2:2001
Grass trimmers	24	Combustion engine	100	ISO 22868 Jan. 06	ISO 22868 Jan. 06
Brush cutters	2	Combustion engine	104	ISO 22868 Jan. 06	ISO 22868 Jan. 06
Chain saws	6	Combustion engine Electric motor	104 102	ISO 22868 Jan.06	ISO 22868 Jan. 06
Pole-mounted powered pruners	no yet available	Combustion engine Electric motor/Battery-powered	104 98	ISO 11680-1 ²	ISO 11680-1

¹ according to Directive 2000/14/EC, Method of Measurement of Airborne Noise according to Annex III, Part B (Noise test codes for specific equipment)

² Measurement according to ISO 11680 -1 - using, however, the enveloping surface method with 6 microphones according to ISO 3744 and a radius $r \geq 2d_0$, with a radius of 4m or, if applicable, 10m. The measurements are carried out on a reverberant base.

The pole-mounted powered pruner shall be operated at an angle of about 60° from the ground. The length of the shaft is to be set to minimum length. In order to determine the limit value, a minimum of 4 measurements has to be made at maximum engine speed, see ISO 11680-1, paragraph B.6.3.

3.2 Exhaust Emission Requirements

Assessment of combustion-engine-driven garden tools is based on EU Directive 2002/88/EC (for further information see Appendix 2 to the Basic Award Criteria). Equipment is differentiated by engine capacity classes (1 to 4) as well as between hand-held and non-hand-held operation:

S: small engines with a power output of up to 19kW

H: engines for hand-held equipment,

N: engines for non-hand-held equipment

Garden Tools of Class SH 1 - SH 3

shall meet the exhaust emission limits of stage II of EU Directive 2002/88.

Garden Tools of Class SN 1 - SN 4

shall fall short of the exhaust emission limits of stage II of EU Directive 2002/88 by 35% with respect to CO and NOx and with respect to the cumulative value of HC + NOx by 15 %.

The DF factor (deterioration factor) according to EPA method 40 CFR 90 or EC Directive 2002/88 shall be indicated.

3.3 Durability of Exhaust Emission Reduction Systems

The factory settings of the engines' fuel mixing technology for compliance with the exhaust emission limits shall be permanently retained, for instance, by installation of a sealing. Possible manufacturer-installed adjusting ranges shall be blocked in a way that precludes any change during operation.

3.4 Prevention of Leakage Losses

New equipment shall be sold along with filling systems for the fuel tank and, if the occasion arises, for the reservoir of additional operating fluids (e.g. oil), which make sure that fuelling the engine and the supply with additional operating fluids can be done without leakage losses.

3.5 Fuel Tank Permeation

Fuel tank permeation emissions shall not exceed a CARB limit of 2 grams per square meter per day.

3.6 Material Requirements

The plastics used in cases and parts thereof shall not contain halogenated polymers and additions of halogenated organic flame retardants.

The following substances shall be exempt from this rule:

- Fluoroorganic additives (as, for example, anti-dripping agents) used to improve the physical properties of plastics, provided that they do not exceed 0.5 weight percent.
- Fluorinated plastics as, for example, PTFEs
- Small plastic parts with specific use properties weighing less than 25 grams.
These parts may not, however, contain PBBs (polybrominated biphenyls), PBDEs (polybrominated diphenyl ethers) or chlorinated paraffins.

In addition, no substances may be added to the plastics used in cases, parts thereof and handles which are classified according to Directive 67/548/EEC as

- carcinogenic according to Carc. Cat. 1, 2 or 3
- mutagenic according to Mut. Cat. 1,2 or 3
- reprotoxic according to Repr. Cat. 1,2 or 3

or which are classified in TRGS 905. Both regulations have been considered in the overall list of all substances classified as carcinogenic, mutagenic or reprotoxic (see www.baua.de).

Other substance bans according to Section 5 of the German Electrical and Electronic Equipment Act (ElektroG) shall be complied with.

Process-related and technologically unavoidable impurities shall be exempt from this requirement.

Exclusion of DEHP

DEHP (Bis (2-ethylhexyl) phthalate) shall not be permissible for use in the materials of the handles of combustion-engine-powered equipment.

It is also recommended not to use DEHPs in the handle materials of electrically powered garden tools.

Exclusion of PAHs

No polycyclic aromatic hydrocarbons (PAHs) shall be added to the handle materials of all garden tools. A proper method (cf. ZEK* Bulletin 06-07 of March 27, 2007 „Prüfung und Bewertung von PAK“ (Testing and Assessment of PAHs); see Appendix 3 to the Basic Award Criteria) shall be used to provide evidence that the following maximum contents are not exceeded in the handle materials:

- 1mg/kg Benzapyrene
- 10 mg/kg Sum of 16 PAHs (EPA)**

The test method shall ensure a minimum detection limit for each individual PAH component of 0.1 mg/kg. detected in the material exceeding 0.1 mg/kg.

3.7 Marking of Plastics

The plastic parts of the appliances weighing more than 50 grams shall be marked pursuant to ISO 11469.

3.8 Battery-Powered Appliances

The products shall meet the requirements set forth in the Battery Directive. Apart from that, Cd-containing batteries shall not be used.

3.9 Paper used for Product Documentation

Product documentations enclosed with the product shall be printed on chlorine-free bleached paper (virgin fibres or recycled paper).

3.10 Prevention of Manipulation

The Operating Instructions shall inform the user that the appliances may not be subjected to modifications which would lead to an increase in noise or exhaust emissions.

* Zentraler Erfahrungsaustauschkreis (ZEK) (Central Experience Exchange Office) of the Zentralstelle der Länder für Sicherheitstechnik (ZLS) (Central Agency of the Laender for Safety Technology), www.zls-muenchen.de

** List of 16 EPA PAHs:
naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene.

3.11 Chain Lubricants

The Operating Instructions for power chain saws shall include a note advising the user to use readily biodegradable chain lubricants for power chain saws according to RAL-UZ 48.

4 Compliance Verifications

4.1 Noise Measurement

To verify compliance with the noise requirements according to para. 3.1 the applicant shall submit a test report prepared by a notified body appointed according to Article 15 of Richtlinie 2000/14/EC. The notified body shall carry out noise measurements to determine and record the L_{WAd} for the type application.

4.2 Exhaust Emission Measurement

To verify compliance with the requirements according to para. 3.2 the applicant shall submit a

- test report prepared by the exhaust emission testing department of TÜV Nord (Technical Inspection Agency) in Essen
or a
- test report prepared by a testing laboratory accredited according to Directive 2002/88/EC and certified by TÜV Nord (Technical Inspection Agency) in Essen.

Within the scope of these tests the applicant shall also have the technical solutions for a durable exhaust emission reduction system according to para. 3.3 reviewed which ensure compliance with the setting range permitted. Possibly existing sealings shall be documented in the test report.

In addition, the applicant shall declare the durability of the exhaust emission reduction system.

4.3 To verify compliance with the requirement for prevention of leakage losses according to para. 3.4 the functionality of the selected technical solution shall be checked and confirmed.

4.4 The manufacturer shall verify compliance with the CARB TP 901 fuel-tank-permeation limit value according to para. 3.5.

- 4.5** To verify compliance with the material requirements according to para. 3.6 the manufacturer shall submit declarations from the plastics suppliers in accordance with Annexes 2a and 2b to the Contract pursuant to RAL-UZ 129 stating that the substances to be banned have not been added to the plastic parts and handle materials.

To verify exclusion of PAHs in the handle materials the manufacturer shall submit a document certifying compliance with the ZLS limits according to para. 3.6 issued by an accredited testing laboratory.

- 4.6** The applicant shall declare compliance with the requirements according to paras. 3.7 to 3.10. or up to and including para. 3.11 (for manufacturers of power chain saws) in Annex 1 to the Contract pursuant to RAL-UZ 129.

The applicant shall submit the Operating Instructions.

5 Applicants and Parties Involved

- 5.1** Distributors of garden tools shall be eligible for application.

- 5.2** Parties involved in the award process are

- RAL gGmbH to award the Blue Angel eco-label,
- the federal state being home to 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 proceed with the development of the Basic Award Criteria.

6 Use of the Environmental Label

- 6.1** The terms governing the use of the Environmental Label by the applicant are stipulated by a Contract on the Use of the Environmental Label to be concluded with RAL.

- 6.2** Within the scope of such contract the applicant undertakes to comply with the requirements under paragraph 3 as long as the Environmental Label is used.

- 6.3** 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 December 31, 2017.

They shall be extended by periods of one year each, unless terminated in writing by March 31, 2017 or March 31 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.

- 6.4** The applicant (distributor) shall be entitled to apply to RAL for an extension of the right to use the label to the product entitled to the label if it is to be marketed under another brand/trade name and/or under other marketing organizations.
- 6.5** The Contract on the Use of the Environmental Label shall specify:
 - 6.5.1** Applicant (distributor)
 - 6.5.2** Brand / trade name
 - 6.5.3** Distributor (label user), i.e. the marketing organization according to para. 6.4.

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Appendix 1 to the Basic Award Criteria

Definition of Garden Tools as set forth in Annex I to Directive 2000/14/EC

Brush Cutter (2)

A combustion-engine driven portable hand-held unit fitted with a rotating blade made of metal or plastic intended to cut weeds, brush, small trees and similar vegetation. The cutting device operates in a plane approximately parallel to the ground.

Chain Saw, portable (6)

A power-driven tool designed to cut wood with a saw chain and consisting of an integrated compact unit of handles, power source and cutting attachment, designed to be supported with two hands.

Grass trimmer / Grass Edge Trimmer (24)

A combustion-engine driven portable hand-held unit fitted with flexible line(s), string(s), or similar non-metallic flexible cutting elements, such as pivoting cutters, intended to cut weeds, grass or similar soft vegetation. The cutting device operates in a plane approximately parallel (grass trimmer) or perpendicular (grass edge trimmer) to the ground.

Hedge Trimmer (25)

Hand-held, integrally driven powered equipment which is designed for use by one operator for trimming hedges and bushes utilising one or more linear reciprocating cutter blades.

Lawn Mower (32)

A walk-behind or ride-on grass cutting machine or a machine with grass-cutting attachment(s) where the cutting device operates in a plane approximately parallel to the ground and which uses the ground to determine the height of cut by means of wheels, air cushion or skids, etc., and which utilises an engine or an electric motor for a power source.

The cutting devices are either

- rigid cutting elements, or
- non-metallic filament line(s) or freely pivoting non-metallic cutter(s) with a kinetic energy of more than 10 J each; the kinetic energy is determined using EN 786:1997, Annex B.

Also a walk-behind or ride-on grass cutting machine or a machine with grass-cutting attachment(s) where the cutting device is rotating about a horizontal axis to provide a shearing action with a stationary cutter bar or knife (cylinder mower).

Lawn Trimmer / Lawn Edge Trimmer (33)

An electrically powered walk-behind or hand-held grass cutting machine with cutting element(s) of non-metallic filament line(s) or freely pivoting non-metallic cutters with a kinetic energy of not more than 10 J each, intended to cut grass or similar soft vegetation. The cutting element(s) operate(s) in a plane approximately parallel (lawn trimmer) or perpendicular (lawn edge trimmer) to the ground. The kinetic energy is determined using EN 786:1997, Annex B.

Scarifier (49)

A walk-behind or ride-on powered machine which uses the ground to determine the depth of cut and which is equipped with an assembly appropriate to slit or scratch the surface of the lawn in gardens, parks and other similar areas.

Appendix 2 to the Basic Award Criteria

Emission Limit Values for Mobile Equipment and Machinery according to EU Directive 2002/88/EC

In March 2004, the German Bundesrat - the upper house of the German Parliament - adopted an amendment to the 28th ordinance under the Federal Immission Control Act (BImSchV). This ordinance implements the European Directive 2002/88/EC into German law. Directive 2002/88 amends Directive 1997/68 which covers the entire spectrum of mobile equipment and machinery.

This directive, for the first time, subjects small gasoline-fuelled engines to a European-wide emission control legislation. It sets limit values for emissions of nitrogen oxides, hydrocarbons and carbon monoxide.

The scope of the directive covers gardening equipment, lawnmowers, chain saws, generators, brush cutters and other machinery.

Size Classes of Gasoline Engines covered by Directive 2002/88/EC:

Class	Engine Capacity Classes in cm³	Application
Hand-held Equipment		
Class SH: 1	< 20	Trimmers/Brush cutters
Class SH: 2	>= 20 to < 50	Chain saws, Trimmers/ Brush cutters, Others
Class SH: 3	>= 50	Chain saws, Trimmers/ Brush cutters, Others

Non-hand-held Equipment (ground-contact equipment)		
Class SN: 1	< 66	Lawnmowers/ Scarifiers
Class SN: 2	>= 66 to < 100	Lawnmowers/ Scarifiers
Class SN: 3	>= 100 to < 225	Lawnmowers/ Scarifiers
Class SN: 4	>= 225	Ride-on lawnmowers
S.	Small engines with a power output of <= 19 kW	
H:	Engines for hand-held equipment	
N:	Engines for non-hand-held equipment	

Emission limits for Gasoline Engines with a Rated Power Output of $\leq 19\text{kW}$ according to Directive 2002/88/EC

The emission values are determined in accordance with the test cycles given in ISO 8178-4.

Class	CO in g/kWh	HC in g/kWh	NOx in g/kWh	HC+NOx in g/kWh
Stage I				
SH:1	805	295	5.36	
SH:2	805	241	5.36	
SH:3	603	161	5.36	
SN: 1	519			50
SN: 2	519			40
SN: 3	519			16.1
SN: 4	519			13.4
Stage II				
SH:1	805		10	50
SH:2	805		10	50
SH:3	603		10	72
SN: 1	610		10	50
SN: 2	610		10	40
SN: 3	610		10	16.1
SN: 4	610		10	12.1

Dates of entry into force taking the transition conditions into account

The EU Directive 2002/88 provides for different dates of entry into force for the stages of limit values. They depend on the types of equipment.

	SH 1	SH 2	SH 3	SN 1	SN 2	SN 3	SN 4
Stage I	8/2004	8/2004	8/2004	8/2004	8/2004	8/2004	8/2004
Stage II	8/2010	8/2010	8/2011	8/2004	8/2004	8/2008	8/2006

CONTRACT

No.

on the Award of the Environmental Label

RAL gGmbH., as label awarding agency, and the firm of

(Distributor)

as applicant, conclude the following Contract
on the Use of the Environmental Label

S P E C I M E N

1. Under the following conditions the applicant shall be entitled to use the Environmental Label for the labelling of the product / product group / project:
Low-noise and low-emission garden tools for

"Brand/Trade Name".
 This shall not include the right to use the Environmental Label as part of a brand.
 Unless otherwise agreed, the Environmental Label shall only be used in the above given shape and colour. The entire inner surrounding text shall always be identical as regards size, form, thickness and colour of the letters and it shall be easy to read.
2. The Environmental Label according to para. 1 shall only be used for the above-mentioned product / product group / project.
3. If the Environmental Label is used for advertising purposes the applicant shall make sure that it is exclusively used in connection with the above-named product / product group / project for which the use of the Environmental Label has been granted and settled under this contract. The applicant shall be solely responsible for the way the label is used, above all, in advertising.
4. During the entire period of label use the product / product group / project to be labelled shall comply with all requirements and conditions for the use of the label as specified in the "Grundlage für Umweltzeichen-Vergabe RAL-UZ 129" (Basic Criteria for Award of the Environmental Label RAL-UZ 129), as amended. This shall also apply to the reproduction of the Environmental Label (including the surrounding text). Claims for damages against RAL, especially on the grounds of third party objections to applicant's use of the label and the accompanying advertising shall be ruled out.
5. If the "Basic Criteria for Award of the Environmental Label" provide for checks by third parties the applicant shall bear the costs accruing in connection therewith.
6. Should the applicant himself or third parties find out that the applicant does not comply with the conditions as stipulated in paras. 2-5 he shall be liable to inform RAL and stop the use of the Environmental Label until the conditions are complied with again. Should the applicant be incapable of restoring the state required for the use of the label immediately or should the applicant seriously offend against this contract RAL may, if necessary, withdraw the Environmental Label and prohibit the applicant from using the label any longer. Claims for damages against RAL because of the withdrawal of the label shall be ruled out.
7. The Contract on the Use of the Environmental Label may be terminated for good reason.
 Examples of good reasons are:
 - unpaid contributions
 - substantiated risk of injury and death.
 In such case, applicant's continued use of the Environmental Label shall be prohibited. The applicant shall not be entitled to bring a claim for damages against RAL (see above: paragraph 6, sentence 3).
8. The applicant undertakes to pay RAL an amount according to the "Entgeltordnung für das Umweltzeichen" (Schedule of Contributions for the Environmental Label), as amended, for the period of use.
9. According to the Basic Criteria for Award of the Environmental Label RAL-UZ 129 this contract will run until December 31, **2017**. It shall be extended by periods of one year each, unless terminated in writing by **March 31, 2017** or by March 31 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 the products being still in the market.
10. Products / projects marked with the Environmental Label and the advertising for these products/ projects may reach the consumer only when naming the company of the

(Applicant/Distributor)

Sankt Augustin, this day of

Place, Date

RAL gGmbH
Management

(signature of authorized person
and company stamp

