BLUE ANGEL

The German Ecolabel

Mattresses

DE-UZ 119

Basic Award Criteria

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Version 3

The Environmental Label is supported by the following four institutions:

Federal Ministry
for the Environment, Nature Conservation,
Nuclear Safety and Consumer Protection

The Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection is the owner of the label. It regularly provides information on the decisions taken by the Environmental Label Jury.

Umwelt Bundesamt

The German Environmental Agency with its specialist department for "Ecodesign, Eco-Labelling and Environmentally friendly Procurement" acts as office of the Environmental Label Jury and develops the technical criteria of the Basic Criteria for Award of the Blue Angel.

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

The 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.

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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, Nuclear Safety and Consumer Protection, the German 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 this requirement.

1.2 Background

Mattresses can cause environmental pollution across the whole life cycle of the product. Therefore, the requirements for the award of the environmental label focus not only on the materials used in the manufacturing process but also on the period of use of the products and their subsequent disposal. The individual materials must not contain any substances harmful to health. The use of flame retardants, perfluorinated and polyfluorinated chemicals and biocide finishing is generally prohibited. The products must be tested for heavy metals, formaldehyde and other pollutants and comply with strict limits.
As mattresses cover large indoor surfaces and users are in close proximity to the product when lying on them, it is important that these product have the lowest possible emissions from an environmental and health perspective and in the interests of the user. The environmental label is designed for the labelling of low-emission products. In order to evaluate the emissions from mattresses, the design of these Basic Award Criteria has been based on the evaluation procedure (AgBB procedure) developed by the Committee for Health-Related Evaluation of Building Products – a committee of experts from environmental and health authorities at a federal government and state level. As emissions are often associated with odours, which can also have an impact on health, sensory tests are an important element for the evaluation of various products for use indoors. The DIN ISO 16000-28 standard "Indoor air - Part 28: Determination of odour emissions from building products using test chambers" includes a suitable test method. This standard describes the method to measure odours from building products in test chambers in parallel to the measurement of volatile organic compounds (VOC). Therefore, these Basic Award Criteria include verification of low odour emissions as a requirement. During the current term of these Basic Award Criteria, data from the results of the odour tests on mattresses will be used to develop a limit value for use in the future. It will be included as a binding limit in the next revision of the Basic Award Criteria.

1.3 Objectives of the Environmental Label

The environmental label for mattresses identifies products that – above and beyond the legal regulations:

- have low emissions in their usage phase
- do not contain any harmful substances that have a detrimental impact during the recycling process

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

2 Scope

- These Basic Award Criteria apply to **ready-to-use mattresses** for **indoor use**.
- The term "mattresses" (bed mattresses) refers to products providing a **surface to sleep or rest upon**, consisting of a strong cloth cover filled with materials that can be placed on a supporting bed structure.
- This also includes all types of mattresses with an integrated frame, i.e. **upholstered bed bases with a flexible core surrounded by filling material** on a rigid frame to be used in a bed frame or free standing, including the mattress pads specifically designed for use with them. Included are **headrest pillows made of the same materials** that are supplied with the mattresses.
- These Basic Award Criteria also apply to **beds** that are **primarily used for sleeping** (e.g. box spring beds). In the case of box spring beds (with a removable mattress), the mattress must be tested according to DE-UZ 119 and the box (the bed frame without the mattress) according to the ecolabel DE-UZ 38.[1] Upholstered furniture that are occasionally designed for sleeping come under the scope of the ecolabel DE-UZ 117. If box spring beds are manufactured using materials that are not listed in DE-UZ 119 (leather, coated textiles, metals, etc.), they must comply with the requirements of DE-UZ 117.
- Inflatable mattresses, water mattresses and mattresses classified under Council Directive 93/42/EEC ("medical mattresses") are excluded from the scope of these Basic Award Criteria.

[1] If the criteria for both ecolabels are complied with in full, the box spring bed can be advertised with both ecolabels.

3 Requirements

The end products named under Paragraph 2 can be labelled with the environmental label illustrated on the first page of these Basic Award Criteria if they fulfil the following requirements:

3.1 General substance requirements

Compliance with the legal regulations according to European and German chemical law is a prerequisite; in the case of mattresses, this includes, in particular, the REACH Regulation[2] Annexes XIV and XVII, the POP Regulation[3] Annex I, GefStoffV, the Industrial Emissions Regulation[4], the 25th BImSchV[5], the Biocidal Products Regulation[6], the Decopaint Regulation[7] and the CLP Regulation[8],[9].
In addition, the product may not contain any substances with the following properties as a constituent component[10]:

- Substances which are identified as particularly alarming under the European Chemicals Regulation REACH VO2 and which have been incorporated into the list drawn up in accordance with Article 59, Paragraph 1 of the REACH Regulation (so-called "list of candidates")[11].
- Substances that according to the CLP Regulation[8] have been classified in the following hazard categories or which meet the criteria for such classification[12],[13]:
  - 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
  - acute toxicity (poisonous) in categories Acute Tox. 1 or Acute Tox. 2
  - specific target organ toxicity in categories STOT SE 1, STOT SE. 2, STOT RE. 1 or STOT RE. 2

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2 Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), in short REACH
3 Regulation (EC) No. 850/2004 on persistent organic pollutants
4 Regulation 2010/75/EU on industrial emissions
5 25th Ordinance for the implementation of the Federal Immission Protection Act
6 Regulation (EU) No. 528/2012 concerning the making available on the market and use of biocidal products
7 Directive 2004/42/EC on the limitation of emissions of volatile organic compounds (VOC) due to the use of organic solvents in certain paints and varnishes
8 Regulation(EC) No. 1272/2008 on classification, labelling and packaging of substances and mixtures, short: CLP Regulation (Classification, Labelling and Packing). It replaces the old directives 67/548/EEC (Dangerous Substances Directive) and 1999/45/EC (Dangerous Preparations Directive).
9 If other legal regulations also apply to specific products, these also need to be observed.
10 Constituent components are substances added to the product as such or as part of a mixture in order to achieve or influence certain product properties and those required as chemical cleavage products for achieving the product properties. This does not apply to residual monomers that have been reduced to a minimum.
11 The version of the list of candidates as amended at the time of application is valid. It can be found here: REACH list of candidates.
12 The harmonized classifications and labellings of hazardous substances can be found in Annex VI, Part 3 of the CLP Regulation. Furthermore, a comprehensive 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.
13 Substances with other hazardous properties (i.e. CMR substances in category 2) are not excluded here but are instead restricted by the emissions evaluation according to the AgBB procedure (see Paragraph 3.3.1 Indoor air quality).

- The corresponding H phrases for the hazard classes and categories can be found in Appendix 1

- Substances that are classified in TRGS 905[14] as:
  - carcinogenic (K1, K2),
  - mutagenic (M1, M2),
  - reprotoxic (RF1, RF2, RE1, RE2).

Compliance verification

The applicant shall declare compliance with the requirements in Annex 1. In addition, the applicant shall state the brand names and suppliers of all individual primary/intermediate products or individual parts of the mattresses, as well as their proportions and function in the manufactured end product (Annex 2).
All suppliers (cover fabrics and filling materials with prolonged skin contact) shall declare their compliance with the requirements in Annex 3 and submit the technical specifications and safety data sheets if requested to do so by RAL gGmbH.

3.2 Manufacture

3.2.1 Requirements for wood

3.2.1.1 Origin of the wood

It must be ensured that all of the wood processed originates from legal sources. In addition, at least 50% of the wood and 50% of the primary raw materials for the wood-based materials must be sourced from sustainably managed forests that can verify that they are managed in an ecological and socially responsible manner.

Compliance verification

The applicant shall verify the legality of the wood sources in accordance with EU Regulation 995/2010[15].
Compliance with the requirement for using wood from sustainable forestry can by verified in the following ways:

- *If the applicant is certified themselves according to the FSC or PEFC criteria for the chain of custody (CoC), the applicant shall submit the relevant certificate. No further evidence is required in this case.*
- *If the applicant is not certified themselves, the applicant shall submit appropriate certificates from its raw material suppliers. Certificates from the Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification Schemes (PEFC) verifying sustainable forestry and a chain of custody (CoC) will be accepted. The applicant shall*

[14] TRGS 905, directory of carcinogenic, mutagenic or teratogenic substances from the Committee for Hazardous Substances (AGS): TRGS 905. The current version at the time of application is valid (last amended in June 2017 – version 11/2017). The TRGS lists such CMR substances that have not received harmonised classifications up to now or where the AGS has come to a different classification. The CMR complete list published by the Institute for Occupational Safety and Health of the German Social Accident Insurance can also be used as a reference tool: CMR complete list.

[15] OJ L 295 from November 2010

present a record of the woods used that specifies the percentage of the certified woods used (Annex 2 to the contract DE-UZ 38).

- *The applicant shall submit other appropriate verifications according to Supplement A of DE-UZ 38 (Annex 3 to the contract DE-UZ 38).*

3.2.1.2 Formaldehyde in wood-based materials

Wood-based products that have been awarded the environmental label according to DE-UZ 76 may be used to manufacture products according to Paragraph 2. If the wood-based materials used to manufacture the product have not been awarded the environmental label according to DE-UZ 76, they must not exceed a formaldehyde steady state concentration of 0.1 ppm in the test chamber in their raw state i.e. prior to machining or coating.

Compliance verification

The applicant shall state the manufacturer and product name of the wood-based material that has been awarded the environmental label according to DE-UZ 76 (Annex 2). For wood-based materials that have not yet been awarded the environmental label according to DE-UZ 76, the applicant shall submit a test report in accordance with DE-UZ 76.

3.2.2 Cover fabrics (textiles)

3.2.2.1 Dyes and pigments

The dyes and pigments listed in Appendix C may not be used in the product.

Compliance verification

The applicant shall submit declarations from its textile suppliers in accordance with Annex 3 verifying that these materials have not been used or the applicant shall submit verifications in accordance with the test methods stated in the OEKO-TEX Standard 100[16].

3.2.2.2 Biocide residues

In the case of cover fabrics made of vegetable natural fibres, wool and other animal fibres, the requirements for pesticides in OEKO-TEX Standard 100[17] product category I or II must be observed. This also applies to horsehair used as padding.
Baby mattresses must comply with the requirements for product category I.

Compliance verification

The applicant shall submit test results using the test methods stated in the OEKO-TEX Standard 100 for a representative sample of cover fabrics selected in consultation with the testing institution (Annex 3).

[16] OEKO-TEX Standard 100, test methods, in the version valid at the time of application
[17] OEKO-TEX Standard 100, general and special conditions, in the version valid at the time of application

3.2.2.3 Biocide finishing

Biocide finishing of the textiles is prohibited.

Compliance verification

The applicant shall submit a declaration from the textile suppliers (Annex 3) verifying that the textiles have not undergone a biocidal finishing process.

3.2.2.4 Mothproofing

Mothproofing agents may not be used to protect the cover fabrics and their padding made of natural textiles (wool and other animal fibres).

Compliance verification

The applicant shall submit declarations from its textile suppliers in Annex 3 verifying that moth-proofing agents have not be used. The requirement is considered to be fulfilled if the textiles have been awarded the "Naturtextil" quality mark.

3.2.2.5 Extractable heavy metals

The extractable heavy metals must comply with Supplement 4 of the OEKO-TEX Standard 100.

Compliance verification

The textile supplier shall submit a declaration of compliance with the requirement and also a test report according to DIN 54233-2[18] (Annex 3). The extraction process shall be carried out using an acid artificial-perspiration solution within 4 hours at 37°C. Chromium VI can be determined according to method DIN 38405-24 (D-24), although the detection limit must not exceed 0.5 mg/kg (Annex 3).

3.2.3 Filling materials (padding)

The following criteria must only be complied with if the foam accounts for at least 5% of the total weight of the mattress.

3.2.3.1 Latex foam

3.2.3.1.1 Extractable heavy metals

The filling materials (padding) may not exceed the concentration limits for the metals listed below in Table 1:

[18] Test reports according to OEKO-TEX Standard 100 (DIN EN ISO 105-E04; test solution II) will also be accepted.

Table 1:

Extractable heavy metals	Limit values
Antimony	0.5 mg/kg
Arsenic	0.5 mg/kg
Lead	0.5 mg/kg
Cadmium	0.1 mg/kg
Chromium (total)	1.0 mg/kg
Cobalt	0.5 mg/kg
Copper	2.0 mg/kg
Nickel	1.0 mg/kg
Mercury	0.02 mg/kg

Compliance verification

The applicant shall submit a test report for a test carried out in accordance with one of the following methods (Annex 4): Extraction of a ground sample in accordance with DIN 38414-S4, L/S=10[19]. Filtration by use of a 0.45µm membrane filter. Analysis by atomic emission spectroscopy using inductively coupled plasma (ICP-AES or ICP-OES) or by atomic absorption spectroscopy (AAS) using hydride or cold vapour technique. The test can also be conducted using random samples of uniform groups of foam.

3.2.3.1.2 Chlorophenols, butadienes, nitrosamines and carbon disulphide

Chlorophenols, butadienes, nitrosamines and carbon disulphide may not exceed the following substance-specific limits in the latex foam or as an emission:

- Chlorophenols (including salts and esters) < 1 mg/kg

Compliance verification

The applicant shall submit a test report for a test carried out in accordance with one of the following methods (Annex 4): Comminution of a 5g sample, extraction of the chlorophenol or the corresponding salt. Analysis by gas chromatography (GC); verification by means of a mass spectrometer or an electron capture detector (ECD).

- Butadiene < 1 mg/kg

Compliance verification

The applicant shall submit a test report for a measurement carried out in accordance with one of the following methods (Annex 4): Milling and weighing of sample. Sampling performed using headspace sampling. Analysis by gas chromatography (GC); verification by means of a mass spectrometer or flame ionization detector (FID).

- N-nitrosamine* (test chamber measurement) < 1 µg/m³

[19] DIN 38414-4: German standard methods for the examination of water, waste water and sludge; sludge and sediments (group S); determination of leachability by water (S 4)

Compliance verification

The applicant shall submit a test report for a test chamber test carried out according to Paragraph 3.3.1 (Annex 4). The analysis of the N-nitrosamine shall be carried out according to the BGI 505-23 method (formerly ZH 1/120.23) recognised by the HVGB (German Federation of institutions for statutory accident insurance) or a comparable method using gas chromatography in combination with a TEA detector (Thermal Energy Analyzer). A method for determining the emissions of nitrosamines was developed in PR CEN/TS 00351042 and should be published by the middle of 2023. It can then be used as a reference method. The test shall be carried out on the 7th day after preparing the test sample.

(*) especially N-nitrosodimethylamine (NDMA), N-nitrosodiethylamine (NDEA), N-nitrosomethylethylamine (NMEA), N-nitrosodi-i-propylamine (NDiPA), N-Nitrosodi-n-propylamine (NDPA), N-Nitrosodi-n-butylamine (NDBA), N-nitrosopyrrolidinone (NPYR), N-nitrosopiperidine (NPIP), N-nitrosomorpholine (NMOR).

- Carbon disulphide (test chamber measurement) < 20 µg/m³

Compliance verification

The applicant shall submit a test report for a test chamber test carried out according to Paragraph 3.3.1 (Annex 4). The test shall be carried out on the 7th day after preparing the test sample. A suitable adsorbent according to DIN EN ISO 16017-1 (e.g. CarboxenTM 1000) should be used for the sampling and analysis and it must be ensured that there are no minor quantities due to a "breakthrough".

3.2.3.2 Polyurethane foam (PUR)

Dyed filling materials may not exceed the concentration limits for the metals listed below in Table 2:

Table 2:

Extractable heavy metals	**Limit values**
Antimony	0.5 mg/kg
Arsenic	0.2 mg/kg
Lead	0.2 mg/kg
Cadmium	0.1 mg/kg
Chromium (total)	1.0 mg/kg
Chromium (VI)	0.1 mg/kg
Cobalt	0.5 mg/kg
Copper	2.0 mg/kg
Nickel	1.0 mg/kg
Mercury	0.02 mg/kg
Selenium	0.5 mg/kg

Compliance verification

The applicant shall submit a test report for a test carried out in accordance with one of the following methods (Annex 4): Extraction of a ground sample in accordance with DIN 38414-S4, L/S=10[20]. Filtration by use of a 0.45µm membrane filter. Analysis by atomic emission spectroscopy using inductively coupled plasma (ICP-AES or ICP-OES) or by atomic absorption spectroscopy (AAS) using hydride or cold vapour technique. The test can also be conducted using random samples of uniform groups of foam.
In the case of undyed filling materials, the applicant shall submit a declaration from the supplier verifying that the above-listed heavy metals have not been added intentionally.

The following requirements apply to organic tin, plasticizers and physical blowing agents with polyurethane foam:

- *It is not permitted to use any tin in organic form (tin bonded to a carbon).*
- *If the filling materials contain plasticizers, the applicant shall submit a declaration confirming that plasticizers have not been added intentionally.*
- *It is not permitted to add halogenated organic compounds as physical blowing agents or auxiliary blowing agents.*

Compliance verification

The applicant shall submit declarations from the PUR foam suppliers confirming compliance with this requirement (Annex 4).

3.2.3.3 Coconut fibres

The requirements for latex foam must be observed for rubber-coated coconut fibres.

Compliance verification

The applicant shall declare either in Annex 1 that no rubber-coated coconut fibres have been used or submit corresponding test reports as stated under the requirements for latex foam.

3.2.3.4 Wires and springs

a) Degreasing: If degreasing and/or cleaning of wire and/or springs is carried out with organic solvents, a closed cleaning/degreasing system must be used.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1.

b) Galvanisation: The springs must not be covered with a galvanic metallic layer.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1.

[20] DIN 38414-4: German standard methods for the examination of water, waste water and sludge; sludge and sediments (group S); determination of leachability by water (S 4)

3.3 Use

3.3.1 Indoor air quality

Based on the "Health-related Evaluation Procedure for Volatile Organic Compounds Emissions (VOC) from Building Products" developed by the Committee for Health-Related Evaluation of Building Products, products according to Paragraph 2 must not exceed the following emission values in the test chamber[21]:

Table 3:

Substance	Requirements		
	3 days	**Final value[22] 7 days**	**Final value 28 days**
Formaldehyde[23]	-	< 20 µg/m³ (< 0.016 ppm)	< 20 µg/m³ (< 0.016 ppm)
Other C2/C3/C4 aldehydes[24] (total)	-	< 10 µg/m³	< 10 µg/m³
Total organic compounds within the retention range C6 – C16 (TVOC)	-	< 300 µg/m³	< 150 µg/m³
Total organic compounds within the retention range > C16 – C22 (TSVOC)	-	< 50 µg/m³	< 25 µg/m³
C-substances [25]	< 10 µg/m³ total	< 1 µg/m³ per individual substance	< 1 µg/m³ per individual substance
R-substances without LCI [25]		< 20 µg/m³ total	< 20 µg/m³ total
Total VOC without LCI [25, 26]	-	< 100 µg/m³	< 50 µg/m³
R-value [25]	-	< 1	< 1

The measurements must be carried out in accordance with DIN EN 16516. The test can be terminated at an early stage (at the earliest on the 7th day after preparing the test specimen) if the permissible emission values for the 28th day have been reached early and no significant increase in the concentration of any of the identified substances has been observed in comparison to the measurement on the 3rd day. The odour emission test according to Paragraph 3.3.2 should be carried out in combination with the test for indoor air quality.

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[21] For an average-sized living room with an air exchange rate of 0.5/h, the requirements for VOC emissions are designed to limit the contribution made by mattresses to the VOC concentration in the indoor air after 28 days to 150 µg/m³.

[22] The measurements must be carried out with a volumetric load of 0.5-2 m²/m³ and an area-specific flow rate of q = 0.5 m³/m² h. Cut edges must be covered. All other edges, as well as the top and bottom of the mattress, should be included in the calculations for the chamber load. The mattress must be placed in the chamber in such a way that all open areas can freely emit substances. Emission measurements must be carried out in a test chamber with a volume of at least 1 m³.

[23] LCI values for formaldehyde and acetaldehyde are derived in the AgBB procedure 2018. This means that formaldehyde is not attributed to the C-substances but is instead taken into account in the calculation of the R-value. Acetaldehyde and other VVOC values with an LCI value are also included in the calculation of the R-value.

[24] Other aldehydes, as defined in EN 16516, must be determined and quantified in accordance with ISO 16000-6 and ISO 16000-3.

[25] C-substances = carcinogenic substances; according to K1A and K1B in accordance with the EU classification or TRGS 905

[26] Including non-identifiable substances

Compliance verification

The applicant shall submit a test report according to the German technical rules "Anforderungen an bauliche Anlagen bezüglich des Gesundheitsschutzes" (Health protection requirements for physical structures) based on the DIN EN 16516 standard that verifies compliance with these requirements. The test report must be produced by a testing institution recognised for this test by BAM (Bundesanstalt für Materialforschung und Prüfung - Federal Institution for Material Research and Testing) (Annex 2 to the Basic Award Criteria DE-UZ 119). The mattresses to be tested must be taken directly from current production. The product must be packaged with an air-tight sea immediately after sampling. The packaged mattress must be transported as quickly as possible to the testing institution. No more than 7 days may elapse between packaging and arrival at the testing institution.
In contrast to the BAM test method named above, one complete mattress or one half mattress with a corresponding covering of the cut edges should be used for the mattress test.

The sampling protocol shall be submitted along with the test report.[27]

3.3.2 Odour test[28]

Testing of the odour characteristics should be carried out in accordance with DIN ISO 16000-28 together with the emission test for Paragraph 3.3.1 (Indoor air quality), whereby the same criteria for an early termination of the test apply. As an alternative to DIN ISO 16000-28, an odour test in accordance with RAL-GZ 430 is also possible.

If RAL-GZ 430 is used, a value ≤ 3 should be achieved.

Outlook: In the next revision of the Basic Award Criteria, DIN ISO 16000-28 will be made an obligatory requirement. A PI value of 5-7 will be set as the target value; this value is currently still being discussed.

Compliance verification

The applicant shall submit a test report in accordance with DIN ISO 16000-28 in combination with VDI 4302 for the initial test.
Alternatively, the applicant can also submit a certificate or a contract verifying that the product complies with the requirements for the award of RAL-GZ 430.

3.3.3 Fitness for use

The mattresses must meet the standard quality requirements with respect to fitness for use: DIN EN 1334 (Domestic furniture - Beds and mattresses - Methods of measurement and recommended tolerances), DIN EN 1725 (Domestic furniture - Beds and mattresses - Safety

[27] If the applicant wishes to certify multiple mattresses, a worst case variant agreed with RAL gGmbH and the testing institution must be tested, whereby the testing institution shall verify that these mattresses comply with the criteria. In the event of changes to the design of the mattress, the applicant must inform RAL gGmbH and repeat the emission measurements.

[28] In the term covered by the Basic Award Criteria , the odour parameters must be determined by testing institutions but will not result in a rejection of the application. In the meeting to revise the Basic Award Criteria, these results will be taken into account when deciding on whether to include these values.

requirements and test methods) and DIN EN 1957 (Furniture - Beds and mattresses - Test methods for the determination of functional characteristics and assessment criteria).
Mattresses for adults must also be tested in accordance with DIN SPEC 68200 (Furniture - Beds and mattresses - Test methods for the determination of functional mechanical characteristics of zone mattresses and zoned lying systems).
In the case of mattresses for children's beds up to a size of 70x140 cm, the durability test according to DIN EN 1957 can be carried out with a lower roller weight (a weight force of 500 Newtons) and a lower number of cycles (15,000 cycles). Both sides of the mattress (on two test samples) must be tested.
Mattresses for children's beds (cot mattresses) must also meet the requirements of DIN EN 16890 (Children's furniture - Mattresses for cots and cribs - Safety requirements and test methods).

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1. The applicant shall submit the test reports for cot mattresses.

The following durability requirements also apply:
a) Loss in height: the loss in height must be less than 10 mm.
b) Loss in hardness: the loss in hardness must be less than 15%.

Compliance verification

The applicant shall submit a test report according to EN 1957. The loss in height and the loss in hardness refer to the difference in the initial measurements (after 100 cycles) and the measurement results at the end of the durability tests (after 30,000 cycles or 15,000 cycles for cot mattresses).

In terms of the product purity and durability, the ash content of the original material shall be determined in accordance with DIN 3451-1 (Plastics). In order to avoid unwanted conversions from calcium carbonate to calcium oxide and for better comparability of the results, however, an annealing temperature of 550°C must be used for the analysis of the mattresses instead of 600-950°C as specified in DIN 3451. The ash content of polyurethane foam must be < 1% and the ash content of latex foam must be < 6%.

Compliance verification

The applicant shall submit a test certificate from his suppliers.

3.3.4 Removable mattress covers

The mattress cover must be removable and fitted with washing instructions. After washing and drying under both household and industrial washing conditions and temperatures, the dimensions of the mattress cover may not change by more than:

- Woven fabrics: ± 3 %
- Nonwoven fabric: ± 5 %

Compliance verification

The applicant shall submit a description and image of the washing instructions. In terms of the change in dimensions, the application shall submit test reports based on the applicable standards. The test method in ISO 6330 in combination with EN 25077 must be used.

3.4 Recycling and disposal

With regards to recycling and disposal, no material protection agents (fungicides, insecticides, flame retardants) and no halogenated organic compounds (e.g. chloroorganic carriers in textiles) may be added to the mattress, including the materials used for their manufacture (textiles, foams, wood-based materials, adhesives, etc.). Biocides that are exclusively used for in-can preservation in aqueous adhesives as well as adhesives based on aqueous dispersions are exempt from this requirement.

Compliance verification

The applicant shall declare compliance with the requirement in Annex 1 and submit corresponding declarations from its suppliers.

3.5 Consumer information

Consumer information must be enclosed with the mattresses which – possibly in combination with other information – provides at least the following information:

- Manufacturer / distributor (including address)
- Model name
- Product description, including information on material structure
- Hardness value
- Suitability for adjustable spring bases
- Information on the overall durability (loss in height and strength)
- Information on the product's wear resistance (fields of application and, if applicable, results of material tests, product-specific properties, changes resulting from product use)
- Cleaning and care instructions
- If available: Information on the take-back of the products

Compliance verification

The applicant shall submit the consumer information.

3.6 Advertising claims

Advertising claims must not include any information such as "tested for its biological living quality" or claims in the sense of Article 25 (4) of the CLP Regulation (EC) No. 1272/2008) that could play down the risks such as e.g. "non-toxic" or "non-harmful to health". Product designations containing the phrase "bio", "organic" or similar are not permitted. Designations such as "health mattresses", "mattresses for persons suffering from intervertebral disc problems", "mattresses for allergic persons" or similar are also not permitted.

Compliance verification

The applicant shall declare compliance with the requirement.

3.7 Outlook

The circular economy and requirements for recyclable products will become increasingly important in the future. The next revision of the Basic Award Criteria will take into account developments in the use of recycled or refurbished[29] materials and take-back systems. In addition, requirements for the sustainable origins of materials (e.g. wood from sustainable forestry or cotton from organic cultivation) or for the manufacturing process for textiles and filling materials will be addressed.

4 Applicants and Parties Involved

Manufacturers or distributors of final 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 (German Environmental Agency) which after the signing of the contract receives all data and documents submitted in applications 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 December 31, 2026.
They shall be extended by periods of one year each, unless terminated in writing by March 31, 2026 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.

The applicant (manufacturer) 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 organisations.

[29] "Refurbishing" of materials.

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 above-mentioned marketing organisations.

Appendix A Cited legislations and standards, literature

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DIN EN 16890:2021-08: Children's furniture - Mattresses for cots and cribs - Safety requirements and test methods; https://www.beuth.de/de/norm/din-en-16890/328441969, last checked on 05/10/2022

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Appendix B Assignment of hazard categories and hazard statements

The following table assigns the hazard categories in Paragraph 3.1.1 for the general exclusion of substances to the corresponding hazard statements (H Phrases).

The following table assigns the hazard categories in Paragraph 3.1.1 for the general exclusion of substances to the corresponding hazard statements (H Phrases).

Hazard categories	**CLP Regulation (EC) No. 1272/2008 Hazard statements**	
	H Phrases	**Wording**
		Carcinogenic substances
Carc. 1A	H350	May cause cancer.
Carc. 1B	H350	May cause cancer.
Carc. 1A, 1B	H350i	May cause cancer if inhaled.
		Germ cell mutagenic substances
Muta. 1A	H340	May cause genetic defects.
Muta. 1B	H340	May cause genetic defects.
		Reprotoxic (teratogenic) substances
Repr. 1A, 1B	H360D	May damage the unborn child.
Repr. 1A, 1B	H360F	May damage fertility.
Repr. 1A, 1B	H360FD	May damage fertility. May damage the unborn child.
Repr. 1A, 1B	H360Df	May damage the unborn child. Suspected of damaging fertility.
Repr. 1A, 1B	H360Fd	May damage fertility. Suspected of damaging the unborn child.
		Acute toxicity substances
Acute Tox. 1 Acute Tox. 2	H300	Fatal if swallowed
Acute Tox. 1 Acute Tox. 2	H310	Fatal in contact with skin
Acute Tox. 1 Acute Tox. 2	H330	Fatal if inhaled
		Substances with specific target organ toxicity
STOT SE 1	H370	Causes damage to organs.
STOT SE 2	H371	May cause damage to organs.
STOTRE1*	H372	Causes damage to organs through prolonged or repeated exposure.
STOT RE 2*	H373	May cause damage to organs through prolonged or repeated exposure.

Appendix C to the Basic Award Criteria for DE-UZ 119

Dyes and pigments that are not permitted according to Paragraph 3.2.2.1:
(based on Decision 2014/350/EU (EU Ecolabel for textile products)):

a) Carcinogenic aromatic amines
4-Aminobiphenyl (92-67-1),
Benzidine (92-87-5),
4-chloro-o-toluidine (95-69-2),
2-naphtylamine (91-59-8),
o-amino-azotoluene (97-56-3),
2-amino-4-nitrotoluene (99-55-8),
p-chloroaniline (106-47-8),
2,4-diaminoanisol (615-05-4),
4,4’-diaminodiphenylmethane (101-77-9),
3,3’-dichlorobenzidine (91-94-1),
3,3’-dimethoxybenzidine (119-90-4),
3,3’-dimethylbenzidine (119-93-7),
3,3’-dimethyl-4,4’-diaminodiphenylmethane (838-88-0),
p-cresidine (120-71-8),
4,4'-methylene-bis-(2-chloro-aniline) (101-14-4),
4,4’-oxydianiline (101-80-4),
4,4’-thiodianiline (139-65-1),
o-toluidine (95-53-4),
2,4-diaminotoluene (95-80-7),
2,4,5-trimethylaniline (137-17-7),
4-aminoazobenzene (60-09-3),
o-anisidine (90-04-0),
2,4-xylidine (95-68-1),
2,6-xylidine (87-62-7).

b) Indicative list of dyes that may release aromatic amines classified as carcinogens
Dispersion dyes
Disperse Orange 60
Disperse Yellow 7
Disperse Orange 149
Disperse Yellow 23
Disperse Red 151
Disperse Yellow 56
Disperse Red 221
Disperse Yellow 218

Basic dyes
Basic Brown 4
Basic Red 114
Basic Red 42
Basic Yellow 82

Basic Red 76
Basic Yellow 103
Basic Red 111

Acid dyes
CI Acid Black 29
CI Acid Red 24
CI Acid Red 128
CI Acid Black 94
CI Acid Red 26
CI Acid Red 115
CI Acid Black 131
CI Acid Red 26:1
CI Acid Red 128
CI Acid Black 132
CI Acid Red 26:2
CI Acid Red 135
CI Acid Black 209
CI Acid Red 35
CI Acid Red 148
CI Acid Black 232
CI Acid Red 48
CI Acid Red 150
CI Acid Brown 415
CI Acid Red 73
CI Acid Red 158
CI Acid Orange 17
CI Acid Red 85
CI Acid Red 167
CI Acid Orange 24
CI Acid Red 104
CI Acid Red 170
CI Acid Orange 45
CI Acid Red 114
CI Acid Red 264
CI Acid Red 4
CI Acid Red 115
CI Acid Red 265
CI Acid Red 5
CI Acid Red 116
CI Acid Red 420
CI Acid Red 8
CI Acid Red 119:1
CI Acid Violet 12

c) Carcinogenic, mutagenic, reprotoxic and potentially sensitising dyes

Carcinogenic, mutagenic and reprotoxic dyes

C.I. Acid Red 26
C. I. Direct Black 38
C.I. Disperse Blue 1
C.I. Basic Red 9
C. I. Direct Blue 6
C.I. Disperse Orange 11
C.I. Basic Violet 14
C. I. Direct Red 28
C. I. Disperse Yellow 3

Potentially sensitizing dispersion dyes

C.I. Disperse Blue 1
C.I. Disperse Blue 124
C.I. Disperse Red 11
C.I. Disperse Blue 3
C.I. Disperse Brown 1
C.I. Disperse Red 17
C.I. Disperse Blue 7
C.I. Disperse Orange 1
C.I. Disperse Yellow 1
C.I. Disperse Blue 26
C.I. Disperse Orange 3
C.I. Disperse Yellow 3
C.I. Disperse Blue 35
C.I. Disperse Orange 37
C.I. Disperse Yellow 9
C.I. Disperse Blue 102
C.I. Disperse Orange 76
C.I. Disperse Yellow 39
C.I. Disperse Blue 106
C.I. Disperse Red 1