

BLUE ANGEL

The German Ecolabel



Building waterproofing with liquid plastics

DE-UZ 233

Basic Award Criteria

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Version 4

The environmental label is supported by the following institutions:



Bundesministerium
für Umwelt, Naturschutz, nukleare Sicherheit
und Verbraucherschutz

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



The German Environment Agency with its specialist department for "Ecodesign, Eco-Labeling 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.



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 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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1 Introduction

1.1 Preface

In cooperation with the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection, the German Environment 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

Liquid plastics can be used for exterior waterproofing in the renovation of existing buildings. They are applied in a liquid state to the components to be waterproofed and form a jointless, waterproof layer after they have cured. Liquid plastics can contain fillers, pigments, auxiliary substances, solvents and biocides. The waterproofing system may also contain other components such as reinforcing linings, sealing tapes and primers or undercoats.

Liquid plastics are installed so that they come into contact with soil and rainwater, which is why it is desirable that these products release the lowest amount of pollutants possible both during their application and also during and after their usage phase. At the same time, the product should have a long service life in order to conserve resources. These Basic Award Criteria include a surface leaching test to evaluate the release of pollutants from the liquid plastics.

1.3 Objectives of the environmental label

This environmental label may be awarded to products that – above and beyond the legal regulations:

- release a low amount of pollutants into the water cycle,
- do not contain any harmful substances that have a detrimental impact during the disposal process
- and are produced and marketed in a resource-conserving manner.

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



2 Scope

These Basic Award Criteria cover products and systems (including any associated primers/undercoats) applied in liquid form to seal used and unused roof surfaces (including green roofs), traffic areas and trafficable roofs (including footbridges and cycle bridges) and construction elements in contact with soil in accordance with

- DIN 18531 Waterproofing of roofs, balconies and walkways,
- DIN 18532 Waterproofing of concrete areas trafficable by vehicles or
- DIN 18533 Waterproofing of elements in contact with soil¹.

The Basic Award Criteria do not cover products designed for indoor use.

3 Requirements

3.1 Technical suitability

In accordance with Article 13 of the German Model Building Code (Musterbauordnung), building structures must be fit for their intended use and designed and constructed in such a way that water and moisture cannot cause any hazards or unacceptable nuisance. The products and systems must comply with all of the building inspection requirements for their intended use. The minimum performance requirements that apply to exterior waterproofing and roof waterproofing systems using substances applied in liquid form are stated in the Model Administrative Rules – Technical Building Regulations (MVV TB) in sections C 3.28, C 3.29 and Annex 15, section 2.2.1². General building inspection test certificates (abP) or European Technical Assessments (ETA) are issued when using liquid plastics. In the case of structures not covered by the building regulations in the German states (e.g. sheds, carports, stables), the applicable requirements in MVV TB for the intended use of the structure must be fulfilled.

Compliance verification

The applicant shall declare that the product complies with the requirements [Annex 1]. Any existing abP or ETA should be enclosed with the application.

¹ The Environmental Label Jury may include other uses on request.

² https://www.dibt.de/fileadmin/dibt-website/Dokumente/Referat/P5/Technische_Bestimmungen/MVV_TB_2021-1.pdf

3.2 Classification according to Regulation (EC) No 1272/2008 (CLP Regulation)

According to the classification rules in the CLP Regulation for the self-classification of products as a mixture, the product must not pose any hazards to human health and the environment. Substances with hazardous properties (see Paragraph 3.3) may not reach concentrations that result in classification and labelling of the product with a GHS hazard pictogram for health and environmental hazards. This requirement also applies to any primers and undercoats needed for the respective product³.

Compliance verification

The applicant shall declare that the product complies with the requirements [Annex 1]. Any existing labelling and packaging should be enclosed with the application.

3.3 Requirements for constituent components

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 or volatile substances such as methanol that form during the application of the product. Above and beyond the legal requirements, products certified with the Blue Angel may not contain any substances with the following properties as constituent components. This requirements also applies to any primers and undercoats needed for the respective product.

1. Substances which are identified in the REACH Regulation (EC) No. 1907/2006
 - as particularly alarming 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") or
 - which are classified as persistent, bioaccumulative and toxic (PBT) substances or as very persistent and very bioaccumulative (vPvB) substances.
2. Substances that according to the CLP Regulation have been classified in the following hazard categories or which meet the criteria for such classification:
 - carcinogenic in categories Carc. 1A or Carc. 1B;
 - germ cell mutagenic in categories Muta. 1A or Muta. 1B or;
 - reprotoxic (teratogenic) in categories Repr. 1A or Repr. 1B.
3. Substances (except for materials according to Paragraph 3.5) that according to the CLP Regulation have been classified in the following hazard categories or which meet the criteria for such classification:
 - acute toxicity (poisonous) in categories Acute Tox. 1 or Acute Tox. 2;
 - specific target organ toxicity in categories STOT SE. 1 or STOT RE. 1;
 - hazardous to water in category Aquatic Chronic 1 or
 - hazardous to the ozone layer in category Ozone 1.

³ At least one primer or undercoat intended for the product must fulfil the requirement according to 3.2. If the technical data sheet (or similar) for the product mentions other primers or undercoats that are labelled with pictograms for environmental or health hazards, an asterisk must be used to indicate that the Blue Angel does not apply to them ("* not covered by the Blue Angel").

The following table assigns the stated hazard categories to the corresponding hazard statements (H Phrases) according to the CLP Regulation (EC) No. 1272/2008.

Table 1: Hazard categories, H Phrases and assigned hazard statements

Hazard categories	H Phrases	Hazard statements
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, 2	H300	Fatal if swallowed
Acute Tox. 1, 2	H310	Fatal in contact with skin
Acute Tox. 1, 2	H330	Fatal if inhaled
Substances with specific target organ toxicity		
STOT SE. 1	H370	Causes damage to organs
STOT RE. 1	H372	Causes damage to organs through prolonged or repeated exposure (state all organs affected, if known)
Environmental hazards		
Aquatic Chronic 1	H410	Very toxic to aquatic life with long-lasting effects
Ozone 1	H420	Harms public health and the environment by destroying ozone in the upper atmosphere.

4. Substances that are classified in TRGS 905 as:

- Carcinogenic (K1A, K1B)
- Germ cell mutagenic (M1A, M1B)
- Reprotoxic (RF1A, RF1B)
- Teratogenic (RD1A, RD1B)

Substances with other hazardous properties are not excluded here but are instead restricted by the tests in Paragraph 3.7.

Compliance verification

The applicant shall declare compliance with the requirements [Annex 1], submit the technical data sheets and safety data sheets for all system components, any primers/ undercoats and primary products/ precursors needed for the respective product and corresponding declarations from the manufacturers/ suppliers [Annex 4] of the primers/ undercoats as well as primary products/ precursors. If the term of validity of the Basic Award Criteria is extended, new declarations from the manufacturers and suppliers shall be submitted.

3.4 Flame retardants

If flame retardants are used, they must be named in the application (name, CAS no).

Compliance verification

The applicant shall declare whether a flame retardant has been added to the product. If this is the case, the applicant shall enclose the name, CAS number and classification of the flame retardant with the application [Annex 1].

3.5 Biocides

3.5.1 Material preservatives

The use of biocides according to Regulation (EU) No 528/2012 as material preservatives (PT7 or PT10) is not permitted.

3.5.2 In-can preservatives

As an exemption to Paragraphs 3.3.2 and 3.6.1, the use of biocides as in-can preservatives is possible if they are included in the list of approved in-can preservatives (see Appendix A). In addition, the in-can preservatives listed under product-type 6 in Annex I of the Biocidal Product Regulation (EU No 528/2012) are permitted. The substances used must be stated in the safety data sheet for the product.

Compliance verification for Paragraph 3.5

The applicant shall declare compliance with the requirement [Annex 1]. If preservatives are used, the applicant shall also submit their concentrations (name, CAS number, content in ppm) and an up-to-date screenshot from the ECHA database for the approval of biocidal products (<https://echa.europa.eu/de/information-on-chemicals/biocidal-active-substances>) together with the latest safety data sheet for the product. The screenshot must demonstrate that the preservative used has already been approved under PT6 or is still being evaluated.

3.6 Prohibited additives

3.6.1 Halogens

No halogenated organic compounds may be used in the manufacture of the systems.

3.6.2 Herbicides

The use of herbicides according to Regulation (EC) No 1107/2009 is prohibited, even outside of the scope of this Regulation.

3.6.3 Pigments

Pigments containing lead compounds may not be added to the system components.

3.6.4 Plasticisers

Products that contain plasticising substances from the group of phthalates or group of organo-phosphates may not be added to the system components.

3.6.5 Organotin compounds

The use of organotin compounds is not permitted.

Compliance verification for Paragraph 3.6

The applicant shall declare compliance with the requirements [Annex 1].

3.7 Ecotoxicity

In order to test the ecotoxicity of the eluate, two test specimens are prepared from a laboratory sample (all system components). The system with recommended primer/undercoat⁴ is applied to glass plates with roughened surfaces (two test specimens of 250 to 500 cm² each) in accordance with the application instructions issued by the manufacturer. Following a curing and pre-conditioning period of 72 hours at a temperature of 19 to 25 °C and a relative humidity of 40 to 60 %, the specimens should be eluted in accordance with CEN/TS 16637-2⁵ for 24 hours. If the primer does not stick to the surface or the liquid coating becomes detached from the surface during the leaching test, the manufacturer and the testing institution should agree on another environmentally safe surface instead of the glass plates with a roughened surface. The leaching test must be carried out at a ratio of water volume to surface area of the test specimen (L/A) of 25 to 30 l/m². The dimensions of the test specimen must be adjusted so that the height of the water in the test vessel is at least 20 mm above the surface of the test specimen at this L/A ratio and a sufficient volume of eluate is produced for the required ecotoxicity tests (including a blind test to exclude any false positives) and other analyses (pH value, conductivity, possibly also DOC) of the eluate. The ecotoxicity of the eluate must be tested in accordance with CEN/TR 17105⁶ (mixture of the first two eluates produced according to CEN/TS 16637-2 from the two test specimens). The eluate must comply with the criteria in the following table.

⁴ The most commonly used/sold primer/undercoat for the product shall be tested.

⁵ DIN CEN/TS 16637-2 Construction products - Assessment of release of dangerous substances - Part 2: Horizontal dynamic surface leaching test

⁶ DIN CEN/TR 17105, Construction products - Assessment of release of dangerous substances - Guidance on the use of ecotoxicity tests applied to construction products

Table 2: Test criteria for ecotoxicity

Test species	Test standard	Endpoint	Criterion
Luminescent bacteria (<i>Vibrio fischeri</i>)	EN ISO 11348-1 ⁷	Light	$G_L \leq 8$
Algae (<i>Raphidocelis subcapitata</i> / <i>Desmodesmus subspicatus</i>)	EN ISO 8692 ⁸	Growth	$G_A \leq 4$
Crustaceans (<i>Daphnia magna</i>)	EN ISO 6341 ⁹	Mobility	$G_D \leq 4$
umu test	ISO 13829 ¹⁰	Genotoxicity	$G_{EU} \leq 1,5$

Compliance verification

The applicant shall submit a test certificate that verifies compliance with the criteria. The testing laboratory must have implemented a quality assurance system according to DIN EN ISO/IEC 17025 "General requirements for the competence of testing and calibration laboratories" or a comparable standard (e.g. GLP) and confirm that this is the case in the test report.

3.8 Green electricity

At least 50 % of the electricity consumed in the production of the certified product must be sourced from renewable energy sources as defined in Directive 2018/2001/EU on the promotion of the use of energy from renewable sources and this electricity must be labelled accordingly. The electricity consumed in the production of the certified product must correspond to the supplied proofs of origin for the purchased electricity. A different rule applies to manufacturers that produce their products outside of the EU: at least 50 % of the electricity consumed in the production of the certified product must be sourced from renewable energy sources certified in accordance with the international REC standard (I-REC).

Compliance verification

The applicant shall declare compliance with the requirement for the use of green electricity [Annex 1] and submit the electricity labelling data (according to the German Energy Act) as verification. In the case of manufacturers outside of the EU, a certificate in accordance with the international REC standard (I-REC) (<https://www.irecstandard.org/>) will be accepted as proof of origin. In addition, the green electricity balance for the labelled product must be submitted [Annex 10]. If the purchased electricity promotes the production of additional electricity from renewable energies (Grüner Strom (Green Electricity) label, OK Power label or the manufacturer's own generation of green electricity) this should be stated in the application. This verification must be re-submitted for every year of the term of the contract on the use of the environmental label.

⁷ DIN EN ISO 11348-1 Water quality - Determination of the inhibitory effect of water samples on the light emission of *Vibrio fischeri* (Luminescent bacteria test) - Part 1: Method using freshly prepared bacteria

⁸ DIN EN ISO 8692 Water quality - Fresh water algal growth inhibition test with unicellular green algae

⁹ DIN EN ISO 6341 Water quality - Determination of the inhibition of the mobility of *Daphnia magna* Straus (Cladocera, Crustacea) - Acute toxicity test

¹⁰ ISO 13829 Water quality - Determination of the genotoxicity of water and waste water using the umu-test

3.9 Application instructions, packaging, container label and advertising claims

It should be made clear that the system is only intended for use by professionals. Environmentally friendly primers/undercoats in the sense of the criteria defined in Paragraphs 3.2 and 3.3 should be recommended irrespective of the surface.

The packaging used for the liquid plastic and associated system components must not contain any PVC. Sales packaging must comply with the current minimum standard for determining the recyclability of packaging¹¹. If plastic packaging is used, at least one of the packaging sizes must contain at least 50% recycled materials (post-consumer materials). The container label must contain information on the reuse, recycling and proper disposal of the packaging.

If the product contains a preservative, a corresponding reference must be included on the container. Advertising messages that contain terms such as "Bio", "Eco" or "Natural" are not permitted.

Compliance verification

The applicant shall declare compliance with the requirement [Annex 1] and submit the application instructions, container label and declarations from the manufacturers/suppliers of the sales packaging [Annex 11].

3.10 Information for planners

The product information must include information for professional planning purposes that explains how the formation of red algae on flat roofs can be prevented. This includes, for example, avoiding the ponding of water on the roof by increasing the inclination, regular annual visual inspections and, if necessary, the timely cleaning of the roof by suitable means.

Compliance verification

The applicant shall declare compliance with the requirement [Annex 1] and submit the product information.

3.11 Outlook

In a future revision of the environmental label for the second term starting in 2028, the intention is to further restrict the use of products that contain preservatives (PT6). Discussions will once again be held on whether mixtures subject to labelling requirements should be included. The criteria for green electricity will be examined. The inclusion of a requirement that the consumed electricity must promote the production of additional electricity from renewable energies will also be considered. In addition, the addition of criteria for microplastics and the inclusion of EPDs in the Basic Award Criteria will be examined and discussed.

¹¹ https://www.verpackungsregister.org/fileadmin/files/Mindeststandard/Mindeststandard_VerpackG_2020.pdf

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, (German Environment 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 December 2026.

They shall be extended by periods of one year each, unless terminated in writing by 31 March 2026 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.

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Anhang A List of approved in-can preservatives

Alternatively, the following substances or substance combinations, where the individual substances in the product have a total content of 400 ppm, may be used for the purposes of in-can preservation in the liquid plastics. The quantities of the preservatives used in the primary/intermediate products must also ensure that the preservation of the final product corresponds to this Appendix. Products labelled with H317 are prohibited.

Permitted Preservatives	CAS no.	Content [ppm]
DBDCB	35691-65-7	400
BIT	2634-33-5	400
Bronopol	52-51-7	200
Natrium pyrithione	3811-73-2	200
Zinc pyrithione	13463-41-7	200
Combination CIT/MIT (3:1)	55965-84-9	Total < 15
CIT ¹²	26172-55-4	
TiO ₂ AgCl based on AgCl	7783-90-6	100
IPBC	55406-53-6	80
Prohibited substances¹³		
Total of		< 15
BBIT	04/07/4299	
MIT	2682-20-4	
OIT	26530-20-1	
DTBMA	2527-58-4	

Only those substances (active substances or biocides) may be used for which an active substance dossier for preservatives for products during storage (product-type 6) according to the Biocidal Product Regulation (BPR, Regulation (EU) 528/2012) has been submitted. If inclusion on the list of approved substances for product type 6 is rejected after an evaluation has been completed, the use of this substance is no longer permitted.

¹² Preliminary approval of the biocidal product ACTICIDE C1 until 16/03/2024

¹³ These substances may not be actively added to the Blue Angel product for the purpose of preserving the product during storage