

BLUE ANGEL

The German Ecolabel



Solar Collectors

DE-UZ 73

Basic Award Criteria

Edition March 2009

Version 4

The Environmental Label is supported by the following four institutions:



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



The German Environmental 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.



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 and Nuclear Safety, 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

Conventional energy generation systems use finite resources and emit pollutants. This applies not only to small and large-scale plants fired by fossil fuels but also to plants using nuclear energy.

1.3 Objectives of the Environmental Label

Using solar plants for the generation of energy helps to save resources and avoid pollutant emissions.

Award of the Environmental Label to energy-efficient solar collectors is to promote a wider use of solar plants on the basis of the requirements as specified hereinafter, e.g. for hot-water generation.

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



2 Scope

These Basic Criteria apply to solar collectors according to DIN EN 12975.

3 Requirements and Compliance Verifications

Solar collectors as specified under para.2 may be marked with the Environmental Label shown on page 1, provided that they comply with the following requirements:

3.1 Annual collector output

The annual collector output (annual energy supply) Q_{kol} related to a solar cover portion of 40% must be at least 525 kWh/m².

Compliance Verification

The applicant shall present a Collector Output Certificate in accordance with the "Empfehlung betr. Nachweis eines Kollektormindestertrags" (Information on how to prove the minimum collector output) (Appendix to these Basic Criteria according to DE-UZ 73) as a prerequisite for award of federal funds in accordance with the Guidelines for Promotion of the Use of Renewable Sources of Energy, dated January 1996, and indicate the collector output Q_{kol} ¹. Such certificate shall be prepared by a testing institute authorized by DIN - Deutsches Institut für Normung (German Institute for Standardization) or by an accredited test institute according to EN ISO/IEC 17025.

3.2 Exclusion of halogenated hydrocarbons as a heat transfer medium

No halogenated hydrocarbons may be used as heat transfer medium of the collectors. In addition, the heat transfer medium must not include any substances

- which are classified as hazardous according to a legal regulation based on Section 14, Chemikaliengesetz (Chemicals Act),
- which the "Regulation of Water-Endangering Substances"², as amended, lists in Category 2 or 3 of Water-Endangering Substances (WGK 2 or WGK 3),
- which according to the "Gefahrstoffverordnung" (Ordinance on Hazardous Substances), as amended, require marking (on the basis of the definition of "hazardous substances/hazardous preparations" in Section 3a, Chemicals Act),
- which according to the EC Directive in force must be marked "dangerous to the environment"³

Compliance Verification

The applicant shall declare compliance with the requirement and present a Safety Data Sheet of the heat transfer medium according to Directive 91/155/EEC.

3.3 Exclusion of halogenated hydrocarbons for the manufacturing of materials used for the insulation of the collectors

The materials used for the insulation of the collectors must not be manufactured with the help of halogenated hydrocarbons.

Apart from that, the insulating materials must not contain any substances the exhalation of which at stagnation temperature according to EN 12975-1

¹ Alternatively, Q_{kol} can be calculated from the data sheet of the Solar Keymark certificate based on collector yields at 25°C (W25) and 50°C (W50) at the Würzburg site as follows:

$$Q_{kol} = 0,38 (W25 / A_{ap} - C_{eff}) + 0,71 (W50 / A_{ap} - C_{eff})$$

with A_{ap} = aperture area [m²]

C_{eff} = specific effective heat capacity [kJ/(m²K)]

² Allgemeine Verwaltungsvorschrift zum Wasserhaushaltsgesetz (Administrative Regulation relating to the Water Supply Act on the Classification of Water-Endangering Substances dated 17.5.1999 (Federal Legal Gazette 29.5.1999 No.98a)

³ Directive in force: Commission Directive, dated April 27, 1993, for the 18th adaptation to technological progress of the Council Directive 67/548/EEC for the harmonization of legal and administrative provisions relating to classification, packaging and marking of hazardous substances.

- is classified as hazardous according to a legal regulation based on Section 14, Chemicals Act,
- requires marking according to the "Gefahrstoffverordnung" (Ordinance on Hazardous Substances), as amended, (based on the definition of "hazardous substances/hazardous preparations", as specified in Section 3a, Chemicals Act),
- requires marking "dangerous to the environment" in accordance with the EC Directive in force³.

Compliance Verification

The applicant shall declare compliance with the requirement.

3.4 Safety and durability

The collectors and the materials used for their manufacture must meet the safety and durability requirements as specified in the relevant standard DIN EN 12975.

Compliance Verification

The applicant shall submit the Typprüfungsprotokoll (Type Approval Test Report) according to DIN EN 12975 from accredited test institute according to EN ISO/IEC 17025.

3.5 Return of used products and recycling

The applicant shall undertake to accept return of used products marked with the Environmental Label and the materials used for their manufacture and to forward them to proper recycling. Information on this obligation shall be included in the Operating Instructions.

Compliance Verification

The applicant shall declare compliance with the requirement and submit the Operating Instructions.

3.6 Operating/Mounting Instructions

The Operating Instructions supplied along with the solar collector shall include a Safety Data Sheet according to Directive 91/155/EEC on the heat transfer medium to be used.

Compliance Verification

The applicant shall declare compliance with the requirement and submit the Operating/Mounting Instructions.

3.7 Absorber coating process

The applicant shall inform about the absorber coating process.

Compliance Verification

The applicant shall explain the coating process.

4 Applicants and Parties Involved

Manufacturers 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, 2021. They shall be extended by periods of one year each, unless terminated in writing by March 31, 2021 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.

The Contract on the Use of the Environmental Label shall specify:

- Applicant (manufacturer)
- Brand/trade name, product description
- Distributor (label user), i.e. the above-mentioned marketing organisations.

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