BLUE ANGEL

The German Ecolabel

Sanitary Tapware

DE-UZ 180

Basic Award Criteria

Edition February 2013

Version 2

The Environmental Label is supported by the following four institutions:

Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

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.

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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Prolongation without any changes for 2 years, until 31.12.2018
Prolongation without any changes for 3 years, until 31.12.2021

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1 Introduction

1.1 Preliminary remarks

Together with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Federal Environment Agency, and taking into account the results of the consultation meetings called by RAL gGmbH, the Environmental Label Jury has determined these basic award criteria for the Environmental Label. RAL gGmbH has been appointed with awarding the Environmental Label.

Once an application has been submitted to RAL gGmbH, all products which fulfil the following conditions can be awarded a licence to use the Environmental Label based on a label usage contract concluded between the manufacturer and RAL gGmbH regarding the specific use of the Environmental Label.

1.2 Background

The most important factor with regard to environmentally friendly sanitary tapware is the ability to save energy by using less hot water. The average German citizen runs around 34 litres of water through kitchen and bathroom sanitary tapware per day. Of this, around 53 per cent is run in the kitchen, and around 47 per cent through sanitary tapware on the wash basin in the bathroom or toilet (SVGW 2012). Flow-restricted sanitary tapware, which allows a maximum flow of 6 litres per minute, can achieve a saving of around 50 per cent compared to conventional tapware, which has an average water flow rate of 12 litres.

For example, a two-person household with hot water provided by a low-temperature gas boiler can avoid around 63 kg CO_2e of climate-changing emissions per year by using an energy- and water-saving kitchen tap. Around 56 kg of CO_2e can be saved per year on a wash basin tap (assumption: 50 per cent of the water is cold water, 50 per cent heated to 60 degrees).

When the Environmental Label is revised, particular attention should be paid to examining the introduction of threshold values regarding the power consumption of electronic sanitary tapware.

1.3 Objective of the Environmental Label

Climate protection, reducing energy consumption and avoiding harmful substances and waste are all key objectives of the Environmental Label.

The Environmental Label for sanitary tapware can be used to identify products which meet the following environmental parameters:

- Reduced energy consumption resulting from the efficient use of hot water,
- No contamination of drinking water by the product materials,
- Reduced water consumption,
- Reduced noise emissions,
- Long service life and fitness for purpose.

2 Scope

These basic award criteria apply to sanitary tapware for wash basins and sinks for private, public and commercial applications.

These include:

- Kitchen taps,
- Sanitary tapware on wash basins (in the bathroom or toilet),

irrespective of water pressure.

The basic award criteria apply to the following designs: single-lever mixers, electronic taps, automatic shut-off valves, thermostatically controlled taps, twin-lever taps, three-hole taps, pillar taps.

Bidet, bath and shower taps are not included in the scope.

3 Requirements

3.1 Water flow rate

3.1.1 Taps with and without restricted flow duration

The maximum rate of flow of a kitchen or wash basin tap must not exceed 6 litres of water per minute, irrespective of the water pressure, but must not fall below 4 litres per minute.

In the case of a kitchen tap with an additional function for increased flow, e.g. a “boost function”, the maximum rate of flow of this function may be up to 8 litres of water per minute, irrespective of the water pressure. This means that the regular water flow rate

is 6 litres per minute and this may be increased to 8 litres if necessary (e.g. to fill a container or the sink). The water flow rate will then automatically revert to 6 litres per minute.

Compliance Verification

The applicant declares compliance with the requirements in Annex 1 to the contract and has provided a test report performed by a DIN EN ISO/IEC 17025 accredited test laboratory (Annex 3) and the relevant pages of the product documentation (Annex 2). Test reports submitted by the applicant shall be regarded as equivalent if the test laboratory used for these measurements is recognised by an independent body as an SMT laboratory (supervised manufacturer testing laboratory). The measurements must be performed in accordance with the standards DIN EN 200[1], DIN EN 816[2], DIN EN 817[3], DIN EN 1111[4], DIN EN 1286[5], DIN EN 1287[6] or DIN EN 15091[7] according to the type of tap. Contrary to the respective standards, the flow measurement is taken at a pressure of 1.5 / 3.0 / 4.5 bar (must be measured in ascending order only). The average of the three measurements must not exceed 6 litres per minute. In the case of a kitchen tap with an additional function for increased flow, e.g. a "boost function", the average of the three measurements for this additional function must not exceed 8 litres of water per minute. Furthermore, the difference between the minimum and maximum values must not exceed 2 litres per minute. If a tap comprises several types of jet settings, the type of jet with the maximum flow should be measured. The average of the three measurements must not fall below a minimum flow of 4 litres per minute.

3.1.2 Taps with restricted flow duration

In addition to the requirements in Section 3.1.1, the following requirements also apply to tapware with restricted flow duration[8]. The default setting is for the flow of water to be switched off automatically after a maximum of 12 seconds. It is possible for trained

1 DIN EN 200: Sanitary tapware - Single taps and combination taps for water supply systems of type 1 and type 2 - General technical specification

2 DIN EN 816: Sanitary tapware - Automatic shut-off valves PN 10

3 DIN EN 817: Sanitary tapware - Mechanical mixing valves (PN 10) - General technical specifications

4 DIN EN 1111: Sanitary tapware - Thermostatic mixing valves (PN 10) - General technical specification

5 DIN EN 1286: Sanitary tapware - Low pressure mechanical mixing valves; general technical specification

6 DIN EN 1287: Sanitary tapware - Low pressure thermostatic mixing valves; general technical specification

7 DIN EN 15091: Sanitary tapware - Electronic opening and closing sanitary tapware

8 This applies to tapware with sensors and automatic shut-off valves; these are usually located in sanitary facilities and not in kitchens.

individuals to adjust this duration manually. Tapware with sensors must be adjusted so that the water flows only for as long as the sensor is activated. The tapware will then switch off automatically after a maximum lag time of 1 second.

Compliance Verification

The applicant declares compliance with the requirements in Annex 1 to the contract in accordance with standards DIN EN 15091 and/or DIN EN 816 and has provided a test report performed by a DIN EN ISO/IEC 17025 accredited test laboratory (Annex 3) and the relevant pages of the product documentation (Annex 2). Test reports submitted by the applicant shall be regarded as equivalent if the test laboratory used for these measurements is recognised by an independent body as an SMT laboratory (supervised manufacturer testing laboratory).

3.2 Energy saving

The sanitary tapware is designed so that energy consumption can be reduced by restricting the outlet temperature. This can be effected by thermostatically controlled taps with bridgeable or fixed hot water limiters or single-lever taps and other mixer taps with devices for restricting the hot water mixing function, e.g. manual devices for restricting the opening angle of the control element. Another accepted method is for only cold water to be emitted when the tap lever is in its standard position (e.g. the centre position of a single-lever tap).

Compliance Verification

The applicant declares compliance with the requirements in Annex 1 to the contract and has described the temperature management system technology in the product documentation (Annex 2).

3.3 Requirements for battery-operated tapware

Environmental Label devices must be designed so that the batteries can be replaced by trained individuals without the use of any special tools and that they may be easily removed for recycling purposes and disposed of separately where possible from the rest of the device.

EU Directive 2006/66/EC[9], which has been transposed into German law as the Battery Act (BattG)[10], must be complied with.

Compliance Verification

The applicant declares compliance with the requirements in Annex 1 to the contract and has provided instructions on how to replace the batteries in the product documentation (Annex 2).

3.4 Material requirements

All substances and materials which come into contact with drinking water must be harmless to health and must not infringe the quality of drinking water as specified in the Drinking Water Ordinance.

They should not emit substances into the drinking water in concentrations higher than it is possible to prevent using the generally recognised rules of technology. Furthermore, substances and materials must not directly or indirectly reduce the level of protection to human health intended by the Drinking Water Ordinance or alter the odour or flavour of the drinking water.

Organic materials must comply with the current guidelines of the Federal Environment Agency on the hygienic assessment of materials coming into contact with drinking water.[11] Furthermore, the microbiological requirements of DVGW W 270[12] must be complied with.

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9 Directive 2006/66/EC of the European Parliament and of the Council of 06.09.2006 on batteries and accumulators and waste batteries and accumulators, OJ No. L 266, p.1, and replaced by OJ No. L 139 of 31.05.2007, p.40

10 Battery Act of 25.06.2009, BGBl. (Federal Law Gazette) Volume I, page 1582

11 Recommendation of the Federal Environment Agency: Guideline for the Hygienic Assessment of Organic Materials in Contact with Drinking water (KTW Guideline); current version available on the UBA (Federal Environment Agency) website: http://www.umweltbundesamt.de/wasser-e/themen/trinkwasser/pruefleitlinie.htm
Recommendation of the Federal Environment Agency: Guidelines on the Hygienic Assessment of Organic Coatings Coming into Contact with Drinking Water; current version available on the UBA (Federal Environment Agency) website: http://www.umweltbundesamt.de/wasser-e/themen/trinkwasser/beschichtungsleitlinie.htm
Recommendation of the Federal Environment Agency: Guideline for the Hygienic Assessment of Lubricants in Contact with Drinking Water (Sanitary Lubricants); current version available on the UBA (Federal Environment Agency) website: http://www.umweltbundesamt.de/wasser-e/themen/trinkwasser/schmierstoffleitlinie.htm
Recommendation of the Federal Environment Agency: Guidelines on the Hygienic Assessment of Elastomers in Contact with Drinking Water; current version available on the UBA (Federal Environment Agency) website: http://www.umweltbundesamt.de/wasser-e/themen/trinkwasser/gummimaterialien.htm

12 DVGW Code of Practice W 270: The growth of microorganisms on materials intended for use in drinking water systems - examination and assessment

Metallic materials must comply with DIN 50930-6 and be listed on the Federal Environment Agency list of metallic materials suitable for contact with drinking water.[13]

The tapware must be certified in accordance with DVGW Code of Practice W 574[14].

Chromium plated tapware must be tested in accordance with DIN EN 15091. Outlet valves are assessed based on the measured nickel concentration of a sample quantity of 1 litre ($c_n^*(T)$) in accordance with prEN 16058.
A moving average is calculated for each tap based on four consecutive T values (e.g. T = 12, 13, 14, 15 weeks) ($\bar{c}_n^*(T)$) where T = time (week) of the first value.
The following conditions apply:

$c_n^*(T) < 40\ \mu g/l$ for all n and T < 12 weeks

and

$\bar{c}^*(T) + 2\sigma(T) < 10\ \mu g/l$ for T ≥ 12 weeks

where $\bar{c}^*(T) = \frac{1}{5}\sum_{n=1}^{5} \bar{c}_n^*(T)$ and $\sigma(T)^2 = \frac{1}{5}\sum_{n=1}^{5}\left(\bar{c}_n^*(T) - \bar{c}^*(T)\right)^2$

Compliance Verification

The applicant declares compliance with the requirements in Annex 1 to the contract. Compliance with W 574 is evidenced by a certificate issued by a DIN EN 45011 accredited certification body (Annex 4). A test report completed by a DIN EN ISO/IEC 17025 accredited test laboratory in accordance with DIN EN 16058 regarding compliance with the nickel concentration is also required (Annex 5)[15]. Test reports submitted by the applicant shall be regarded as equivalent if the test laboratory used for these measurements is recognised by an independent body as an SMT laboratory (supervised manufacturer testing laboratory).

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[13] Recommendation of the Federal Environment Agency: List of metallic materials suitable for contact with drinking water; current version available on the UBA (Federal Environment Agency) website: http://www.umweltbundesamt.de/wasser-e/themen/trinkwasser/verteilung.htm

[14] DVGW Code of Practice W 574: Sanitary tapware as service fittings for drinking water installations - requirements and testing for certification

[15] If as part of the DVGW advisory council manufacturers and the Federal Environment Agency agree upon the grouping of measuring nickel concentration results, the Federal Environment Agency will decide whether these groupings can also be used for the Blue Angel certification procedure.

3.5 Noise emissions

Evidence that the tap belongs to tapware group I or II in accordance with the standard DIN EN 4109 must be provided.

Compliance Verification

The applicant declares compliance with the requirements in Annex 1 to the contract and has provided a relevant general building authority test certificate (Annex 6).

3.6 Spare parts provision

The applicant is committed to ensure that spare parts will be available for a minimum of 10 years from the end of production in order to guarantee the sanitary tapware may be repaired.

Spare parts are understood to include parts which can typically fail during the course of normal use of the product. Other parts which regularly outlive the service life of the product are not regarded as spare parts.

The product documentation must include information regarding the specified requirements.

The product is designed so that original spare parts can be replaced using conventional tools. If special tools are required, they must be supplied by the applicant.

Compliance Verification

The applicant declares compliance with the requirements in Annex 1 to the contract and has provided the relevant pages of the product documentation (Annex 2).

3.7 Consumer information

Comprehensible technical product information must be provided in printed form with the product. It must contain the following information as a minimum:

- Definition of the range of application (e.g. wash basin and/or kitchen sink).
- Installation dimensions.
- Information regarding the water flow in litres per minute at a pressure of 3 bar. If various types of jet are employed, the maximum flow must be stated with additional information provided on the other types of jet available as required.
- Product assembly instructions.
- Product maintenance, cleaning and descaling instructions.
- Information on recommended, maximum and minimum operating water pressures.

- Information on the hot water supply systems for which the product is suitable.
- Instructions for maintaining drinking water hygiene through intended use.
- Information regarding optional water- and energy-saving add-on products.
- For automatic shut-off valves, the instruction that the pre-set maximum shut-off time of 12 seconds should not be adjusted from an environmental perspective.

Compliance Verification

The applicant declares compliance with the requirements in Annex 1 to the contract and has provided the relevant pages of the product documentation.

4 Holder of label and parties concerned

4.1 Holders of the label are manufacturers or distributors of products as defined in Section 2.

4.2 Parties involved in the award procedure:

- RAL gGmbH for awarding the Blue Angel Environmental Label,
- the federal state in which the production facilities of the applicant are located,
- the Federal Environment Agency, which will be provided on conclusion of the contract with all data and documentation submitted for the Blue Angel application in order to be able to continue developing the basic award criteria.

5 Use of the Environmental Label

5.1 The Environmental Label is used by the holder of the label on the basis of a label usage contract concluded with RAL gGmbH**.**

5.2 In accordance with this contract, the holder of the label is committed to comply with the requirements defined in Section 3 for the period of time in which the Environmental Label is used.

5.3 Label usage contracts will be concluded for the identification of products in accordance with Section 2. These contracts will be valid until 31.12.2021.
They will each be extended by a further year if the contract is not terminated in writing by 31.03.2021 or 31.03. of the respective year of extension.
Continued use of the Environmental Label on the product itself or in any advertising is not permitted beyond the duration of the contract. Products which are still commercially available remain unaffected by this regulation.

5.4 The holder of the label (manufacturer) can apply to RAL gGmbH to extend the right to use the label to identify the product if it is to be placed on the market under another brand/trade name and/or by another sales organisation.

5.5 The label usage contract must specify:

5.5.1 Holder of label (manufacturer/distributor)

5.5.2 Brand/trade name, product designation

5.5.3 Distributor (user of label), i.e. the sales organisation as defined in Section 5.4.