

Criteria for the award of Green Product Mark

Furniture



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Foreword

The work of selecting and developing criteria for the award of Green Product Mark is carried out through Global 2PFG-E Technical Committees (PTC) convened by TÜV Rheinland. Interested parties participate in the selection and development of criteria for the award of Green Product Mark through either PTC membership or stakeholder consultation mechanism.

Criteria for the award of Green Product Mark are drafted in accordance with the rules given in following standards and guides:

- ISO/IEC Directives, Part 1 and Part 2
- ISO/IEC Guide 21, Part 1 and Part 2
- ISO Guide 64
- ISO Guide 82
- ISO 14024
- US EPA Guidelines for Environmental Performance Standards and Ecolabels for Use in Federal Procurement
- ISEAL Code of Good Practice for Setting Social and Environmental Standards

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. TÜV Rheinland shall not be held responsible for identifying any or all such patent rights.

This document was developed using a multi-stakeholder approach involving experts from multiple stakeholder groups including but not limited to consumers, government, industry, labour, non-governmental organizations (NGOs), and service, support, research, academics. Although efforts were made to ensure balanced participation of all the stakeholder groups, a full and equitable balance of stakeholders was constrained by various factors, including the availability of resources and the need for English language skills.

Introduction

Product environmental labels are claims which indicate the environmental aspects of a product and provide information about a product in terms of its overall environmental character, a specified environmental aspect, or any number of aspects. Green Product Mark is a voluntary environmental labelling scheme operating in accordance with ISO 14020 *Environmental labels and declarations – General principles* and ISO 14024 *Environmental labels and declarations – Type I environmental labelling – Principles and procedures*. Green Product Mark has been developed in accordance with ISO/IEC 17067 *Conformity assessment – Fundamentals of product certification and guidelines for product certification schemes*. Certification activities under Green Product Mark scheme shall be performed in accordance with ISO/IEC 17065 *Conformity assessment – Requirements for bodies certifying products, processes and services*.

Through the communication of verifiable and accurate information on environmental aspects of products, Green Product Mark aims to encourage the demand for and supply of those products that cause less stress on the environment, thereby stimulating the potential for market-driven continuous environmental improvement.

Green Product Mark certification scheme is owned by TÜV Rheinland, a leading international technical service provider who have been developing solutions to ensure the safety, quality and economic efficiency of the interaction between man, technology and the environment.

This document is intended to convey clear and unambiguous requirements to be fulfilled for products to get awarded with Green Product Mark.

1 Scope

This document lays out prerequisites, product environmental criteria and product function characteristics that furniture shall comply with, in order to get awarded with Green Product Mark.

All products which demonstrate compliance with relevant prerequisites, product environmental criteria and product function characteristics set forth in this document are entitled to be awarded Green Product Mark.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- SA8000 Social Accountability
- ISO 14040, *Environmental management -- Life cycle assessment – Principles and framework*
- ISO 14044, *Environmental management – Life cycle assessment – Requirements and guidelines*
- Product Environmental Footprint (PEF) Guide
- 2001/95/EC General Product Safety Directive
- RAL GZ 430, *General Quality and Testing Regulations for Furniture*
- PEFC Program for the Endorsement of Forest Certification
- FSC Forest Stewardship Council
- REGULATION (EU) No 995 / 2010 European Timber Regulation
- REGULATION (EU) No 2173/2005 Establishment of FLEGT licensing system
- ISO/TS 14067, *Carbon footprint of products – Requirements and guidelines for quantification and communication*
- PAS2050:2011, *Specification for the assessment of the life cycle greenhouse gas emissions of goods and services*
- ISO 14021, *Environmental labels and declarations – Self-declared environmental claims (Type II environmental labelling)*
- ISO 11469, *Generic identification and marking of plastics products*
- REGULATION (EC) No. 1907/2006
- AfPS GS 2014:01 Central Experience Exchange Commission: Testing and Assessment of PAH (polycyclic aromatic hydrocarbons)
- 94/62/EC Directive on packaging and packaging waste
- REGULATION (EC) No. 850/2004 (POP regulation)
- REGULATION (EC) No. 528/2012 (Biocides regulation)
- 2002/371/EC establishing the ecological criteria for the award of the community eco-label to textile products
- 2009/984/EC establishing the ecological criteria for the award of the Community eco-label for wooden furniture
- 64 LFGB B 82.02-8:2001 Lebensmittel und Futtermittel Gesetzbuch

- EN 717-1 Determination of Formaldehyde of wood based panels, test chamber method
- LGA test method for Emission of volatile organic compounds, test chamber method
- 16 CFR 1303 Lead in Surface Coating
- Toxic in Packaging Clearinghouse (TPCH)
- California Proposition 65
- ANSI/BIFMA M7.1-2011
- CDPH/EHLB/Standard Method V1.1-2010

3 Terms and definitions

For the purpose of this document, the following terms and definitions apply.

3.1

Green Product Mark

A voluntary environmental labelling program owned by TÜV Rheinland to indicate the overall environmental preferability of a product within a particular product category based on life cycle considerations and contribute to a reduction in the environmental impacts associated with products.

3.2

Furniture

The movable articles that are used to make a room or building suitable for living or working in, such as tables, chairs, or desks. It includes outdoor furniture, domestic furniture, office and contract furniture.

3.3

Prerequisites

Preconditions that a product shall comply with to be awarded Green Product Mark, which in principle consist of two pillars: legislative/regulatory requirements that the product shall meet in order to access target market; social compliance requirements prescribed to the site where the product has been manufactured.

3.4

Product environmental criteria

Environmental requirements that the products shall meet in order to be awarded an environmental label. [SOURCE: ISO 14024: 1999, definition 3.4]

3.5

Product function characteristics

Attribute or characteristic in the performance and use of a product. In the context of environmental labelling, fitness for purpose implies that a product satisfies health, safety and consumer performance needs. [SOURCE: ISO 14024: 1999, definition 3.5]

4 Prerequisites

4.1 Social compliance

The social compliance of production site shall be maintained with all statutory and regulatory requirements for the jurisdiction in which the manufacturing operations are located.

Methodology for assessing and demonstrating compliance:

Option 1: The applicant shall be SA8000 certified or carry out the production at SA8000 certified facilities and shall provide documented proof of third party audits conducted at production facilities of Green Product Mark certified products.

Option 2: The applicant shall be a full member of BSCI and should provide documented proof of third party audits conducted at production facilities of Green Product Mark certified products.

Option 3: The applicant shall submit a sustainability report developed according to the GRI Sustainability Reporting Guidelines.

The documented proof/report mentioned in any of the above 3 options shall be a maximum of 12 months old at the time of application for Green Product Mark certification as stipulated in EN ISO/IEC 17021.

4.2 Product safety

Compliance shall be maintained with safety requirements (generally accepted rules of engineering), essential usability requirements, and other requirements set forth in statutory regulations for the jurisdiction in which Green Product Mark certified products will be sold.

Methodology for assessing and demonstrating compliance: The applicant shall provide the certificate of national safety approval relevant to the jurisdiction in which Green Product Mark certified products will be sold. The certificate shall not be older than 1 year.

5 Product environmental criteria

5.1 Protection of human and environmental health

5.1.1 Restriction of hazardous substances

Chemical substances contained in the product shall comply with the limit values listed as follows:

Substances	Regulation	Limit Values
Cadmium	(EC) No. 1907/2006	50mg/kg
Cadmium in recycled wood fibres	2009/894/EC	25 mg/kg
Lead	(EC) No. 1907/2006	100 mg/kg
Lead in surface coating	16 CFR 1303	90 mg/kg
Lead in recycled wood fibres	2009/894/EC	90 mg/kg
Mercury	(EC) No. 1907/2006	100 mg/kg
Mercury in recycled wood fibres	2009/894/EC	25 mg/kg
Arsenic	(EC) No. 1907/2006	100 mg/kg
Arsenic in recycled wood fibres	2009/894/EC	25 mg/kg
Boron	(EC) No. 1907/2006	160 mg/kg
Fluorine in recycled wood fibres	2009/894/EC	100 mg/kg
Chlorine in recycled wood fibres	2009/894/EC	1000 mg/kg
Tar oils (benzo(a)pyrene) in recycled wood fibres	2009/894/EC	0.5 mg/kg
Heavy Metals in Packaging Component	TPCH; 94/62/EC	Pb+Hg+Cd+Cr(VI) < 100 mg/kg
Chromium (VI) after aging	(EC) No. 1907/2006	3 mg/kg by DIN ISO 17075
Nickel release	(EC) No. 1907/2006	For the prolonged skin contact metal according to the REACH definition (3 times for 10 min or 1 time for 30 min in 2 weeks); and for the nickel coating; 0.5 ug/cm ² /week
REACH Substances of Very High Concern(SVHC)	(EC) No. 1907/2006	Refer to 0.1% in each article and each packaging separately. Spot check. Declaration required.
18 PAH (Polycyclic Aromatic Hydrocarbons)	AfPS GS 2014:01; (EC) No. 1907/2006	Refer to AfPS document
Phthalates: DEHP, DBP, BBP, DINP, DIDP, DNOP + SVHC-Phthalates	(EC) No. 1907/2006 2009/894/EC	Refer to 0.1% in each article and each packaging separately.

Substances	Regulation	Limit Values
SCCP (Short Chain Chlorinated Paraffins C10-13)	(EC) No. 850/2004; (EC) No. 1907/2006 (SVHC)	0.1 %
Nonylphenol/ Octylphenol (NP/OP) Nonyl-/Octyl- phenolethoxylates (NPEO/OPEO)	(EC) No. 1907/2006	100 mg/kg for NP/OP 250 mg/kg for NPEO/OPEO
Organotin Compounds	(EC) No. 1907/2006	0.1 mg/kg each (MBT, DBT, TBT, TPhT, DOT, MOT, TeBT, TCyT)
Biocides	(EU) No. 528/2012	Only approved active substances can be used. Spot check. Declaration required.
AZO dyes	(EC) No. 1907/2006	20 mg/kg
Allergenic and carcinogenic dyes	2002/371/EC; Öko-Tex Standard 100	50 mg/kg (referring to the dyed material)
Dimethylfumarate	(EC) No. 1907/2006	0.1 mg/kg
Dimethylformamide	(EC) No. 1907/2006	200 mg/kg
Formamide	(EC) No. 1907/2006	200 mg/kg 30 mg/kg materials with total surface area >1m ²
Formaldehyde	2002/371/EC	75 mg/kg (for skin contact textile) by ISO 14184-1 300 mg/kg (for textile without skin contact) by ISO 14184-1 200 mg/kg (for leather) (textile) by ISO 17226-1
PBB/PBDE	(EC) No. 850/2004	10 mg/kg
TCEP	(EC) No. 1907/2006	0.1 %
HBCDD	(EC) No. 850/2004	0.01 %
PFOS	(EC) No. 850/2004	0.1 % (articles) or 1 µg/m ² (coated material)
PCP, TeCP, TriCP in leather	ISO 17070	Each 0.5 mg/kg
PCP in recycled wood fibres	2009/894/EC	5mg/kg
California Proposition 65	California Proposition 65	Parameters and limits refer to applicable settlements
Odour	with reference to SNV 195651 and DIN 10955	<Grade 3

Methodology for assessing and demonstrating compliance: The applicant shall provide test reports issued by TÜV Rheinland, or by a laboratory accredited by one of ILAC MRA signatories according to ISO/IEC 17025 and holding accreditation scope that cover the standards relevant to substances listed in 5.1.1. Testing reports are deemed valid for a period of 18 month* from date of test sample submission up to the date of review. Reports should be issued for the complete finished product. Component reports shall not be accepted. Declaration of Compliance shall be provided, covering all legal requirements of the target markets as well as the spot-checked parameters: REACH Substances of Very High Concern (SVHC) and biocides.

*Valid period could be extended to 5 years in maximum if applicant could guarantee through appropriate means that the materials are not changed since the initial testing.

5.1.2 Low emissions of volatile organic compounds

The product shall not exceed the limit values of volatile organic compounds emissions listed as follows:

5.1.2.1 For office furniture (system furniture - Seating)

Table 1. Limits of Indoor Air Concentrations Due to Emissions from Systems Furniture and Seating at 168 hours

VOC Compounds	Emission Limits for Systems Furniture	Emission Limits for Seating
TVOC _{Toluene} *	≤ 0.5 mg/m ³	≤ 0.25 mg/m ³
Formaldehyde	≤ 50 ppb	≤ 25 ppb
Total Aldehydes	≤ 100 ppb	≤ 50 ppb
4-Phenylcyclohexene	≤ 0.0065 mg/m ³	≤ 0.00325 mg/m ³

TVOC_{Toluene} represents the total VOC concentration quantified using the response factor of toluene.

5.1.2.2 For cabinet furniture (single family residence scenario)

Table 2. Limits of Indoor Air Concentrations Due to Emissions from Cabinet Furniture and Lounge Seating at 336 hours

VOC Compounds	Emission Limits for Cabinet Furniture / Lounge Seating
TVOC _{Toluene} ¹	≤ 0.5 mg/m ³
Individual VOCs ²	≤ 0.1 TVL ³ and 1/2 CREL ⁴
Formaldehyde	≤ 16,5 µg/m ³
Total Aldehydes	≤ 0.05 mg/m ³
4-Phenylcyclohexene	≤ 0.0065 mg/m ³

1. TVOC_{Toluene}: Defined to be the total response of measured VOCs falling within the C6 – C16 range, with responses calibrated to a toluene surrogate.
2. Quantification of individual VOCs are based on multi-point calibrations prepared using pure compounds.
3. Threshold Limit Values (TVL): Any VOC listed must produce an air concentration level no greater than 1/10 the Threshold Limit Value (TLV) industrial work place standard (Reference: American Conference of Government Industrial Hygienists, 6500 Glenway, Building D-7, Cincinnati, Ohio 45211-4438).
4. The CRELs (Chronic Reference Exposure Levels) are currently published at:
http://www.oehha.ca.gov/air/chronic_rels/AllChrels.html

Methodology for assessing and demonstrating compliance: The applicant shall provide test reports issued by an independent ISO/IEC 17025 accredited laboratory according to ANSI/BIFMA M7.1-2011 standard test method and CDPH/EHLB/Standard Method V1.1. Reports are considered valid for a period of 18 month from date of test sample submission up to the date of review.

5.2 Resource efficiency

5.2.1 Recycled/bio-based plastic material content

In case the product contains plastic materials, it shall consist out of material that is one of below three types:

- Option 1: 10% post-consumer recycled material in minimum¹;
- Option 2: 20% total recycled material in minimum¹;
- Option 3: 20% bio-based material in minimum².

1. Exceptions are allowed for bearing parts or plastic parts, which cannot be recycled in the state of the art. Plastic parts compatible with recycling shall be made of a single polymer or a polymer blend compatible with recycling. The percentage refers to the sum of all single components made of plastic. This requirement is applicable, if the sum of all relevant components is > 50 g. The plastic parts shall be separated of the product in such way, that they are recyclable and are free of ingredients which prohibit recycling.

2. The percentage of bio-based refers to the sum of all single components made of plastics. This requirement is applicable, if the sum of all single components is > 50 g. The applicant has to name the kind and composition of the used material. Furthermore, origin and mass fraction of the material shall be clearly documented. The calculation of the material balance may be done according to CEN/TR 16721: 2014.

All plastic parts > 25 g shall be marked for recycling according to ISO 11469 or in a similar way. Parts > 25 g in weight that would be adversely affected by a marking, such as for consumer acceptance and aesthetic reasons, may place the necessary recycling information in the user manual or similar literature. The same applies to parts which the supplier can demonstrate are technically impossible to mark, i.e. due to lack of space for labelling or to production method (e.g. extruded components).

Methodology for assessing and demonstrating compliance: For criterion Option 1 & Option 2, the applicant shall provide evidence of the material composition and the separable of the plastic components regarding the recycling capability with a proper documentation. The applicant shall provide a description of the plastic materials that are present and the quantities used, the way in which they are labelled and how they are attached to one another or to other materials. When the weight of the plastic component exceeds 25g but is technically impossible to label, a declaration indicating the type of plastic will be required. For criterion Option 3, the applicant shall demonstrate compliance through a valid certificate of third party certification programs such as DIN geprüft BIO-BASED (a program under which 20-50% bio-based content is the minimum requirement).

5.2.2 Wood from controlled sources

Wood specified in the product, other than recovered or reused wood, shall not contain endangered wood species, unless the trade of such wood conforms with the requirements of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and is harvested according to the applicable laws and regulations of the country of origin. A minimum of 20 percent of the total wood weight of the product conforms for environmentally and socially responsible forest management.

Methodology for assessing and demonstrating compliance: The Applicant shall demonstrate compliance through an independent certification carried out by a “third party” for example FSC or PEFC or trustworthy evidence in alternative form, like European Timber Regulation. The applicant shall make declaration of compliance according to the requirements as defined above.

5.3 Evaluation of product climate resilience

The producer shall quantify/assess the life cycle greenhouse gas emissions of products using life cycle assessment techniques, i.e. by describing the inputs and their associated emissions attributed to the delivery of a specified amount of the product functional unit.

Methodology for assessing and demonstrating compliance:

Option 1: The applicant shall provide a report of Product Carbon Footprint based on PAS 2050 or ISO/TS 14067. The report shall be verified by an independent third-party.

Option 2: The applicant shall provide a report of Life Cycle Assessment using ISO 14040 and ISO 14044. The report shall at least include the environmental impact category Global Warming Potential and shall be reviewed by an independent third-party.

The critical review process shall ensure that (source: ISO 14044:2006):

- the methods used to carry out the LCA are consistent with this international standard,
- the methods used to carry out the LCA are scientifically and technically valid,
- the data used are appropriate and reasonable in relation to the goal of the study,
- the interpretations reflect the limitations identified and the goal of the study, and
- the study report is transparent and consistent.

The minimum necessary score to qualify as a reviewer or a review team is six points, including at least one point for each of the three mandatory criteria (i.e. verification and audit practice, LCA methodology and practice, and knowledge of technologies or other activities relevant to the study).

Table 1: Scoring system for eligible reviewers/review teams (source: Product Environmental Footprint Guide)

Topic		Criteria	Score (points)				
			0	1	2	3	4
Mandatory criteria	Review, verification and audit practice	Years of experience	0 – 2	3 – 4	5 – 8	9 – 14	> 14
		Number of reviews	0 – 2	3 – 5	6 – 15	16 – 30	> 30
	LCA Methodology and practice	Years of Experience	0 – 2	3 – 4	5 – 8	9 – 14	> 14
		Experiences of participation in LCA work	0 – 4	5 – 8	9 – 15	16 – 30	> 30
	Technologies or other activities relevant to the study	Years of experience in private sector	0 – 2 (within the past 10 years)	3 – 5 (within the past 10 years)	6 – 10 (within the past 20 years)	11 – 20	> 20
		Years of experience in public sector	0 – 2 (within the past 10 years)	3 – 5 (within the past 10 years)	6 – 10 (within the past 20 years)	11 – 20	> 20

Topic		Criteria	Score (points)				
			0	1	2	3	4
Other	Review, verification and audit practice	Optional scores relating to audit	<ul style="list-style-type: none"> ▪ 2 points: Accreditation as third party reviewer for at least one EPD Scheme, ISO 14001, or other EMS. ▪ 1 point: Attended courses on environmental audits (at least 40 hours). ▪ 1 point: Chair of at least one review panel (for LCA studies or other environmental applications). ▪ 1 point: Qualified trainer in environmental audit course. 				

6 Product function characteristics

6.1 Design for remanufacturing

The applicant shall design products to ensure that they can be remanufactured. The corresponding wear parts shall be available e.g. at a specialist's trade. Disassembly and remanufacturing shall be possible with standard tools and shall not require special training (exceptions: gas lifts and electrical mechanisms).

Methodology for assessing and demonstrating compliance: The applicant shall guarantee that the product disassembly and remanufacturing instructions are publicly available, if necessary. The applicant shall demonstrate that all parts which are needed for remanufacturing are available for a reasonable time.

6.2 User guide information

Information shall be publicly available and shall contain the following information so far as applicable:

- Necessary recycling information of plastic parts > 50 g, when the marking for recycling according to ISO 11469 or equivalent is not possible
- Remanufacturing information like: source of spare parts, repair instructions
- Information about how to disassembly the product like instructions, tools, duration
- Instructions for environmentally sound disposal at the end of the life cycle

Methodology for assessing and demonstrating compliance: The applicant shall demonstrate that the information listed above are available. The information can be given on the corporate website or as information for use, given in together with the product.