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Environmental product label - a comparison

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More information about CaSCo is available on:
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Content

| | |
|--|-----------|
| 1) Background | 3 |
| 2) European environmental labels | 3 |
| 2.1 Environmental labels and public procurement | 3 |
| 2.2 Advantages of european environmental labels | 4 |
| 2.3 Environmental labels and life cycle | 4 |
| 2.4 Relevant european environmental labels and other quality marks | 4 |
| 2.5 Selected impact factors in detail | 5 |
| A) Responsible sourcing | 5 |
| B) Resource saving | 7 |
| C) Climate protection. | 10 |
| D) Environmental friendly production | 11 |
| E) Biodiversity. | 12 |
| 2.6 Validity period of the standards | 14 |
| 2.7 Product group Relevance | 15 |
| 2.8 Links und sources for product databases | 17 |
| 2.9 Costs of certification | 17 |
| 2.10 Helpful sources and hints | 18 |
| 3) Environmental labels in profile | 19 |



Environmental label for building and living

1 Background

The aim of the project CaSCo is to provide planners and architects with basic information that enables them to better assess various aspects of sustainability in products and construction materials at an early stage of the planning process and thus set the course for more sustainable buildings.

As a planner, one faces the challenge of assessing and evaluating the environmental friendliness and sustainability of materials and construction methods. So far, the focus of sustainability considerations has been on the construction, the energy concept and the operation of buildings. Here are aspects such as passive house standard, use of renewable energy, insulation, etc. in focus. However, the more the environmental performance of buildings in these stages improves, the more significant is the contribution of materials and products to sustainability and, in particular, the aspect of the gray energy of the materials used. In order to assess these, eco-labels have an important function. The purpose of this document is to highlight and explain the main eco-labels related to wood. In particular, the claim regarding the climate friendliness of the upstream chains is analyzed.

In order to be able to take greater account of sustainability-related aspects of building products, the „CaSCo“ project will develop a toolkit with tools that planners can use for sustainable planning right from the start („LCT planner toolkit“). In addition to a CO2 savings simulation tool, a digital product sample case and an FAQ help desk, this toolkit also includes a comparison matrix of existing environmental assessment tools. These can be subdivided into the categories a) environmental labels (type 1 according to ISO 14024 and others), b) environmental product declarations (EPD, type 3 according to ISO 14025) and c) building assessment systems. This document provides a comparative overview of the environmental label type 1 or similar and its usability or statement regarding various aspects of sustainability of building materials.

The overview and the comparison between the va-

rious environmental labels is based on own evaluations within the framework of the project „CaSCo“ as well as on existing evaluations by the project „ZUKUNFT BAU“ - Comparison of certification marks with sustainability characteristics in Europe „(2015) on behalf of the German Federal Building Ministry.

2 European environmental labels

2.1 Environmental labels and public procurement

Environmental labels are of central importance to the EU for sustainable procurement. As product diversity becomes ever more extensive and production chains become more and more global and confusing, environmental labels are increasingly important. Their use is recommended by the EU.

With an environmental label, the municipality or planner has the guarantee of verifying the criteria and the verifiability of what it has been tendered, without the necessity to undertake own extensive examinations to ensure evidence for each completed procurement act, because the control is an important condition of sustainable procurement in Europe.

In the preliminary phase of a tendering process, it is important for a municipality to examine what it wants to achieve in terms of sustainability. Each environmental label sets a different focus. None of them comprehensively covers all aspects of sustainability. It may therefore even make sense to prescribe criteria from several labels.

Importantly, European Environmental Labels wants and should go beyond the status quo of what is required by the EU and continue to develop. An environmental label is more than a DIN or EU regulation (eg due diligence) in terms of environmental impact, but does not replace it.

When purchasing, a municipality can not rely on self-statements from companies but must demand reliable proofs. Environmental labels are not only trendsetting for sustainable municipal purchasing, but also an optimal way to control the tendered environmental criteria. Only if these are ensured an environmental impact can be achieved.

2.2 Advantages of european environmental labels

The European environmental labels, i.e. the labels that have emerged in the legal area of the EU and act here comply with the requirements of the EU, because these are often formulated in accordance with standards in the labels. In many cases, these labels go beyond the EU requirements. In the case of labels that are raised mainly outside the European area, it is necessary to check whether these products comply with all European requirements, such as the European REACH regulation. Example 1: organostannic compounds are prohibited under the REACH regulation in the EU or are subject to limitations; in the US they are still used in production. Example 2: PCP is forbidden in production in Germany for a long time though in many cases it is still contained in products, even those, which are sold on the European market).

2.3 Environmental labels and life cycle

Environmental labels start at different points in the product life cycle. Some of them already in the prechains, others only in the usage phase. Almost no label has previously explicitly tackled reuse, which makes sense, since the possibilities of reuse are still scarce today and can hardly be foreseen for example for fifty years. Nevertheless, the manner and environmental compatibility of reuse also depends on the material used.

The importance of lifecycle phases also varies greatly depending on the product group. For products such as building materials, building elements, interior materials, furniture, wall coverings or floors, etc., the prechains are crucial for the environmental performance of the product even in the building context. These product groups are ‚inert‘ in the usage phase in terms of consumption of energy, water or raw materials. In this case, the procurer has a significant influence on the material flow and the LCA of the prechains. In the description of the environmental label, the following chapter also deals with the relevance of the eco-labels for the life-cycle phases.

2.4 Relevant european environmental labels and other quality marks

The following environmental labels have been included in the evaluations:

Group A: Main labels used in Germany have relevance to materials and construction products and are ISO Type I or similar labels. These are described in more detail below and also presented in the individual profiles. These labels were also selected by the German Agency for Renewable Resources from more than 300 examined Ecolabel as recommendable for sustainable procurement with renewable raw materials:

- **Blue Angel** (blauerengel.de).
- **Cradle to Cradle** (epea.com).
- **European environmental label** (eu-ecolabel.de).
- **FSC** (fsc.de).
- **HOLZ VON HIER** (holz-von-hier.de).
- **NaturePlus** (natureplus.org).
- **Nordic Swan** (nordic-ecolabel.org).
- **Austrian environmental label** (umweltzeichen.at).
- **PEFC** (pefc.de).

Group B: Other labels, named e.g. in the report „ZUKUNFT BAU - Comparison of certification marks with sustainability features in Europe“ (2015). These are not considered further below as they are either not awarded for wood products, are not type ISO 1 or are only applied regionally:

- **Naturland - Deutschland.** Forest certification.
- **Coop Oecoplan Label - Schweiz** (coop.ch/oecoplan). No own label, „parent product label“ based on other marks.
- **GI Label - Switzerland** (s-cert.ch). Building label which qualifies the indoor air and the supply air.
- **Lignum - Switzerland** (lignum.ch). Label for timber from Switzerland (Producers association).
- **STEP - Switzerland** (label-step.org). Carpet label, fair trade, only company, no product label.
- **Stiftung Farbe Umweltetikette - Switzerland** (stiftungfarbe.org). The label certifies coatings of all kinds in terms of environment and use.
- **ANAB/ICEA-Label - Italy** (anab.it). Label for construction products, the architect association ANAB in cooperation with ICEA certification.
- **ACERMI - France** (acermi.com). Association pour la CERTification des Matériaux Isolants, a found-

ation of the state CSTB and the state LNE. Certification of insulating materials for usability, no eco-label.

- **ACOTHERM - France** (cstb.fr). Founding of the CSTB on the usability of doors and windows, no eco-label.
- **CSTBat - France** (cstb.fr). Foundation of the CSTB for the technical certification of construction products, no eco-label.
- **NF-Environnement - France** (marque-nf.com). Certification for use and ecological quality of coatings.
- **PURE - France** (association-pure.org). Association spec. for certification of paints and varnishes.
- **Dubokeur- Netherlands** (dubokeur.nl). Seal Type III for construction products for the environment and health aspects of NIBE.

- **BRE Green Guide - Great Britain.** Type III label.
- **Byggvarubedömningen - Sweden** (Schweden). uncertain.
- **Dansk Indeklima Mærkning - Danmark** (dsic.org). Label for construction products and buildings of the Danish Association of Indoor Climate, for emissions and release of pollutants.
- **M1 Emission - Finland** (rakennustieto.fi). Emission classification for multi-class building materials, M1 is the highest / best class (hersg RTS Finnish Building Information Foundation).

In the following, the eco-labels selected as particularly relevant are characterized in an overview with regard to the covered life-cycle phase, product-group relevance and the general environmental statement.

Tab. 1: Covered LC phase by the different environmental labels. A1 = raw material extraction, A2 = Transports within Chain of custody, A3 = production, A4 = transports to final destination, B = usage phase, C = after use. Dark green fields = directly addressed by criteria, light green fields = partly, limited or indirectly covered.

| Environm. label | A1 | A2 | A3 | A4 | B | C |
|--------------------------|-------------|------------|------------|------------|------------|-------------|
| Blue Angel climate | | | | | Dark Green | |
| Blue Angel Resources | Light Green | | | | | |
| Blue Angel health | | | | | Dark Green | |
| Cradle to cradle | | | | | | Light Green |
| EU Ecolabel | Light Green | | | | | |
| FSC | Dark Green | | | | | |
| Holz von Hier | Dark Green | Dark Green | Dark Green | Dark Green | | |
| NaturePlus | Light Green | | Dark Green | | Dark Green | |
| Nordic Swan | Light Green | | | | | |
| Austrian Environm. label | Light Green | | | | | |
| PEFC | Dark Green | | | | | |

Tab. 2: Environmental factor, covered by the label. Dark blue fields = directly addressed by criteria, light blue = partly, limited or indirectly covered.

| Environm. label | respons. sourcing | resource saving | climate protection | no harmful emissions | environm. friendly prod. | saving biodiversity |
|--------------------------|-------------------|-----------------|--------------------|----------------------|--------------------------|---------------------|
| Blue Angel climate | | | Dark Blue | | | |
| Blue Angel Resources | Light Blue | Dark Blue | | | | |
| Blue Angel health | | | | Dark Blue | | |
| Cradle to cradle | | Dark Blue | | Dark Blue | Light Blue | |
| EU Ecolabel | Light Blue | | | Dark Blue | Light Blue | |
| FSC | Dark Blue | | | | | Light Blue |
| Holz von Hier | Dark Blue | Light Blue | Dark Blue | | Dark Blue | Light Blue |
| NaturePlus | Light Blue | | | Dark Blue | | |
| Nordic Swan | Light Blue | | | Dark Blue | Light Blue | |
| Austrian Environm. label | Light Blue | | | Dark Blue | | |
| PEFC | Dark Blue | | | | | Light Blue |

2.5 Selected impact factors in detail

A) Responsible sourcing

Sustainable / responsible extraction of raw materials should be a general requirement for all raw materials. Corresponding Ecolabels and certificates have so far only been developed and established in the wood sector. Classically, the two global forest certification systems FSC and PEFC are known here. However, other labels also take this into account and demand corresponding proof, albeit to varying degrees, as described below.

It should be noted in principle that both forest certification systems each have two completely different standards, namely the standard for the type of forest management (i.e. the actual target of the environmental label), the forest management (FM) standard on the one hand and the so-called COC standard on the other hand, which is merely intended to ensure that no more wood products are sold along the processing chain as certified, as raw material required for this has also been purchased.

Both systems offer different models within the COC standard, on the one hand the physical separation model of certified and non-certified material, and on the other hand volume-weighted models such as the percentage method and the credit model. Only in the case of physical separation a physical identity of wood in a certified product with wood from certified forests (theoretically) would be guaranteed. In practice, such a guarantee is not given. In particular, because predominantly quantity-weighted models are already used in the first stages of processing.

The requirements for sustainable extraction of raw materials in the various environmental labels are described below. Table 3 briefly summarizes the required % shares again.

(1) Blue Angel. In the RAL-UZ 176 procurement directive relevant to wood products, the Blue Angel demands that the wood comes from legal sources, in accordance with the European Timber Regulation and that 50% of the wood in the product should come from sustainable forestry.

(2) EPEA C2C. The general Cradle to Cradle Standard contains no direct statements or requirements for a sustainable extraction of raw materials. Even in the case of wood, there are no guidelines in this direction.

(3) EU Ecolabel. The EU Ecolabel requires for wood products: „As of January 2013, wood products should contain at least 70% wood in the case of solid wood and 40% wood-based materials either from sustainable sources (in line with point 15 of the EU Regulation of 15 December 1998 on the forestry strategy of the European Union), ... or recycled materials,,

(4a) FSC FM. FSC is a global label. The FM certificate documents compliance with the FSC's global criteria for „sustainable forest management“. It should be noted that these criteria may differ greatly from country to country, which is also one of the frequent criticisms of the FSC. **(4b) FSC CoC.** The COC standard requires that either a part (FSC mix, FSC controlled Wood) or up to 100% (FSC 100%) of the wood in a certified product comes from forests that are managed according to the principles of the FSC.

(5) HOLZ VON HIER. HOLZ VON HIER is an environmental and climatic label for wood products. It has not defined its own criteria for the sustainable extraction of raw materials, but relies in its requirement on FM certificates under the two forest certification systems FSC and PEFC. Wood products certified by Holz contain 100% of the wood from sustainably managed forests.

In addition, Holz von Hier (unlike, for example, FSC or PEFC) prohibits the use or certification of wood of internationally endangered tree species according to the IUCN International Red List (categories: CR critically endangered, EN endangered, VU vulnerable and NT near threatened). Corresponding tree species can technically not be chosen by the electronic controlling system of Holz von Hier.

(6) NaturePlus. NaturePlus demands in the basic criteria that environmentally friendly and resource-conserving production should be guaranteed for all raw materials. For wood, this does mean no wood from unsustainable plantation management or wood from overexploitation. The proof in detail, however, is open.

(7) Nordic swan. Nordic Swan relies on the systems FSC and PEFC in its requirements. However, there are differences depending on the product group or standard. Two examples:

- In the standard for small buildings, the requirement is: The supplier of the raw materials must be COC-certified according to FSC or PEFC. *(Please note, however, that the certification of the raw material does not automatically apply to the entire processing chain).*
- In the furniture standard, e.g. requires that in the case of spruce, pine, birch and tropical woods 70% should come from certified sustainable forestry. In the case of other woods 50% are required. In the case of floor coverings as low as only 30%.

(8) Austrian Ecolabel (Ö-UZ). The requirements that the Austrian Ecolabel places on the extraction of raw materials differ, for example at Nordic Swan between different product standards and / or public procurement regulations. Here are some examples:

- Wooden floors (UZ 56): „50% of the wood components must come from sustainable forestry“
- Möbel (UZ 06): „The processed wood should

come from forests that are managed according to the principles of sustainable forestry. Appropriate certification must be provided for 50% of the processed wood.

- Insulating materials from NaWaRO (UZ 44): „Insulating materials that fall into this product group must contain at least 75% renewable resources, such as cellulose, flax or hemp. (no further references or comments on sustainability issues). „
- Energy wood (UZ 38): „Only natural by-products of wood processing such as sawdust are permitted as raw material. The use of waste wood in any form is not allowed. At least 70% of the wood material used must come from sustainable sources. „
- Wood in the outdoor area (UZ 28): „The wood used should come from forests that are managed according to the principles of sustainable forestry. A corresponding certification must be obtained for at least 50% of the wood,„

(9a) PEFC FM. PEFC is a global label. The FM certificate documents compliance with the PEFC global criteria for „sustainable forest management“

(9b) PEFC CoC. The COC standard requires that either a part or up to 100% of the wood in a certified product comes from forests that are managed according to the principles of the PEFC.

Tab. 3) Minimum requirements for the sustainable extraction of raw materials in the various environmental labels.

| Label | requirements to responsible sourcing |
|---------------------|--|
| 1) Blue Angel | 50% of the wood is to come from sustainable forestry, the rest from legal sources according to the EUTR. |
| 2) cradle to cradle | Indication: „from sustainable management“, proof and percentage unclear. |
| 3) EU ecolabel | (a) 70% share of sustainable sources for solid wood, (b) 40% for wood materials. |
| 4) FSC - CoC | From any proportion in FSC mix, FSC controlled Wood up to 100% in FSC 100%. |
| 5) HOLZ VON HIER | 100% share of the wood in certified products must come from sustainable forestry, as evidenced by an FM certificate from FSC, PEFC or equivalent. |
| 6) NaturePlus | Proof of the origin of the wood from sustainable forestry is required. Share is unclear, but probably 100% |
| 7) Nordic Swan | Quantities vary between > 10%, > 50% up to > 70% depending on the product standard. |
| 8) Austrian UZ | 70% minimum for wood energy, 50% for solid wood, floors, furniture, exterior wood. No information for insulation materials. |
| 9) PEFC - CoC | No minimum percentage of total processed amount. A final product should contain at least 70% of the material that comes from PEFC certified forests. |

B) Resource saving.

Resource conservation is a broad term that allows for many design options. When assessing the sustainability of products, it is crucial to a) which and b) how many resources a product consumes until completion and c) how well and in the long term these resources can be obtained or are available. No label covers all these aspects directly via criteria or provides specific information.

There are several basic methodological approaches to assess resource use:

- 1) **ADP** (als ADPE, ADPF) in the context of LCA's or EPD's (environmental product declaration).
- 2) **MIPS** (Material intensity per service unit of the Wuppertalinstitut)
- 3) **DMC / GDP** (domestic material consumption per gross domestic product) as a unit for the efficiency in the sense of generated added value which is extracted from a given amount of material.
- 4) the **Ecological footprint** as a measure of the land use associated with a particular product or behavior.

All these approaches have their strengths and weaknesses or limitations in the statement. They are explained in more detail below.

ADP

ADP stands for abiotic depletion potential, expressed as ADP (abiotic depletion potential of non-fossil elements) in kg of Sb equivalent and in ADPF (abiotic depletion potential of fossil fuels) in MJ.

Both values can be found in most EPD's for individual products. While ADPF is basically just another expression of fossil energy consumed, ADPE makes a statement about the resources consumed in terms of elements (eg, copper, iron, silicon, etc.). It evaluates the amount of different materials used to make the product based on the available reserves of these materials. The materials are each related to the element antimony (Sb) as an equivalent. Advantage is a (theoretical) comparability of different products, partly also related to the life cycle phases. The general problem of EPD with regard to its comparability and transparency applies here as well (see separate document).

However, it does not make sense to base the resource consumption of a product solely on ADP values from EPD:

1. first, because there are too few data available. EPD or basic data for EPD are only available for a few selected building products. In the case of EPD, the individual products do not differ significantly in the ADP values, but this could also be based on the fundamental problems of EPD. Only if one converts these ADP values from EPD to the functional construction unit, differences

result between product groups. Although these differences are more pronounced, this leaves only a few values that could be compared.

2. Secondly, because it is unclear on many EPDs where the EPD starts in the material flow and which input materials were used in the calculation, the raw materials themselves or the input materials that were generally used for the fabrication of the product. That can be different. For example, if an EPD for concrete elements indicates the input materials for the lime, sand, gypsum production process, this is a different input requirement than an EPD used as input material for a plastic product e.g. indicates PE granules, since this starts at very different points in the respective material flow and is not comparable at the beginning. The extent to which the purchase is actually guaranteed back to the basic raw materials remains unclear and is not transparent. Moreover, these basic raw materials (e.g., lime) themselves are not an element but already compounds thereof.
3. Another disadvantage is that the ADP factor takes into account only quantitative aspects and that existing qualitative aspects and differences between resources are not evaluated. For example, it makes a difference if a renewable resource (such as wood) or a finite resource such as oil or ore is needed. It also makes a difference how the material was obtained, e.g. whether wood comes from overexploitation or sustainable forest management, or oil from the very polluting extraction of tar sands or near-surface drilling.
Also decisive is the geographical distribution, i.e. whether a resource is ubiquitous or concentrated in only a few places in the world, possibly even in crisis regions. This, in our opinion, very important qualitative question about the regional distribution of raw materials on the earth, which has - however having a substantial meaning for the real raw material availability - not yet considered.
In addition, whether a commodity is rare or frequent depends not only on the quantity of raw material deposits available and the production quotas, but also on the distribution, artificial market shortages (for example, funds), and the nature of their use in products.

MIPS

MIPS means: Material input per service unit. In order to determine the input-oriented environmental impact of products and services, MIPS indicates how much resources (called „material“ in the MIPS concept) are used for this product and service as a whole.

MIPS calculates the resource consumption at the limit of its abstraction from nature, i.e. the categories

of biotic or renewable raw material, abiotic or non-renewable raw material, water, air and soil movement in agriculture and forestry (including erosion), expressed in tons moved in nature.

In principle, MIPS works in a similar way to other forms of life cycle assessment as it accumulates on different data sets (for example, to upstream chains). However, MIPS does not capture or evaluate the emissions or outputs of a product or a production but the inputs, but in an expanded form, as e.g. also includes ground movements without consumption. For this reason, MIPS is not comparable to other approaches, e.g. the ADP. It is also very specific to a specific region. Available values are usually not available for other regions or even globally. Therefore, the MIPS concept does not allow a comparative statement according to different origins.

In addition, MIPS data are not available at the product level, but only at the material or raw material level (metal, plastic, etc.).

DMC / GDP

This accounting of resource consumption refers to the level of states in order to be able to compare the basic resource efficiency.

The DMC (Domestic Material Consumption) describes the total extraction of directly used material in an economy. It is defined as the annual amount of raw material withdrawn from domestic territory plus all physical imports less all physical exports. The domestic material consumption (DMC) in connection with the gross domestic product (GDP) are widely used as an indicator of the „resource efficiency values“ of countries. The EU also proposes the indicator of resource productivity (gross domestic product / domestic material consumption) as a measure for determining resource efficiency. That is, the amount of (economic) production or value added in \$ or € per kg of resource used. Worldwide, the factor is also often referred to as DMC in kg / US dollars, i.e. in terms of GDP (= GDP) per country.

The gross domestic product per se, however, is often viewed as problematic by environmental organizations, as it does not take into account the actual social and environmental impacts (destruction of nature can be profitable) and also does not take into account imported environmental impacts (pollution in the country of origin). The German umbrella organisation ‚Deutscher Naturschutzring‘ therefore suggests combining this factor with ancillary factors such as (a) material consumption (in tonnes), (b) water footprint (in liters), (c) land footprint (in hectares) and (d) carbon footprint (in Tonnes of CO₂ equivalent).

Ecological Footprint

The concept of the ecological footprint also applies in different contexts. In particular, the seemingly easy comparability (space requirement per pro-

duct or consumer behavior) makes an application appealing. However, the analysis of available data sources has shown that there is no usable product-related information. Moreover, the methodology and calculation methods of the ecological footprint are not transparent and obvious. In addition, the statements from this are in turn not comparable with any other approach.

Environmental labels

However, all of the approaches described above do not constitute environmental labels that would identify and protect resource-conserving products. Many environmental labels address the issue of resource conservation through different approaches. How this is done will be briefly described below.

(1) Blue Angel

Of the 113 standards of the Blue Angel, 20 refer to the protection of resources. In the area of building and renovation however there is none. The raw material wood is addressed by 5 of the 20 standards, all in the field of paper products. For them, the claim, 'save the resources' means the use of waste paper or recycled paper. In other words, multiple use in itself represents the resource saving measure (in the case of wood). Other resource aspects (extraction of materials, energy consumption in production, etc.) are not the focus of the standards.

(2) EPEA C2C

The environmental label cradle to cradle (C2C) has no specific resource conservation criteria. However, the basic concept of C2C with the elimination of the appearance 'waste' (as a theoretical goal) and the orientation towards nature with its perfectly closed circuits ultimately corresponds to the reduction of resource consumption and thus their conservation. Thus, of the 5 key requirements or criteria groups of C2C: Material Health, Material Recycling, Renewable Energies, Water Care and Social Fairness, the aspect of material recycling in particular corresponds to the goal of resource conservation, analogous to the principle of the recycling paper at the Blue Angel. In principle, however, one is far from the ideal model of closed ('eternal') cycles in practice. At the core C2C is about an increase and optimization of the recycled content in the product and the recyclability of the product itself through intelligent product design.

From this point of view, C2C certified products should naturally also be resource-saving products. However, the corresponding criteria and their characteristics in the product remain unclear, and thus the comparability with other products. In practice, there is also the question of whether disproportionate effort on the one hand is not being used to maximize resource conservation on the other.

(3) EU Ecolabel

The EU Ecolabel has also not developed any specific direct resource conservation criteria. Thus, this aspect of the award criteria for wood flooring is essentially reduced to the aspect of the sustainable extraction of wood, as it has already been described under the rubric 'Raw material extraction'. Only another requirement with regard to low energy consumption in production would still correspond to the conservation of resources of fossil fuels. However, it is unclear on the basis of the general calculation formula used to determine the weighting factor whether production is actually above average energy saving.

(4a) FSC FM

The central and only statement of the environmental label FSC is the sustainable management of the forest for the extraction of the raw material wood. In addition to various social and environmental requirements (for example site-specific selection of tree species in Germany), FSC's focus is therefore on conserving the resource wood through management that is intended to secure this use for future generations.

(5) HOLZ VON HIER

HOLZ VON HIER, like most other environmental labels, has no specific resource conservation criteria. Nevertheless, effects of resource conservation and various aspects are inherent. On the one hand, this relates to the use of a renewable raw material (in the case of wood) per se, e.g. evaluated positively at Nordic Swan or NaturePlus. It is also required and ensured that the wood comes from sustainably managed forests. However, an important aspect of resource conservation lies implicitly in the core criterion of HOLZ VON HIER, namely the above-average climate-friendly production by reducing transport processes. Since transport can account for the largest share of emissions in the production of wood products and building materials, this is also where the decisive reduction potential lies. In the use phase, wood products are inert, as already described, thus consuming no resources or energy. Last but not least, by ensuring domestic production (short distances along the entire chain!), It is also ensured indirectly that government regulations regarding environmentally sound production - such as required by the Austrian Eco-label - are complied with.

(6) NaturePlus

NaturePlus deals with resource conservation in a slightly broader way than many other eco-labels such as the Forest Label, the EU Ecoabel or the Blue Angel. Thus, the emphasis or requirement of a certain (as high as possible) proportion of renewable raw materials in the product is intrinsically a contribution to the protection of resources. In addition, a bid to minimize energy consumption or the use of

non-renewable or scarce resources also plays a role. However, this is only an enforcement order, so that it can not be clearly determined to what extent such labeled products make an above-average contribution to the protection of resources.

(7) Nordic swan

The Nordic Swan does not explicitly address resource conservation in its criteria. But one can derive effects from different criteria groups here. On the one hand, the eco-label for raw materials requires that at least 50% of the materials in general must be renewable (for example, wood, but also cork, linoleum, wool carpets, etc.). The wood (at least 30% of the material) should also come from sustainably managed forests.

In addition, the energy consumption in production must not exceed a certain value, which in a sense means to save the resource fossil fuels.

High calorific production waste should be returned to the energy cycle. This represents in principle another form of the aforementioned aspect.

Further specific effects for resource conservation can not be derived from the criteria.

(8) Austrian environmental label (Ö-UZ)

The Austrian Ecolabel has not defined any specific criteria for resource conservation. Again, only the requirement for the sustainable extraction of wood falls under this heading, which has already been dealt with elsewhere. For example, the following criteria are defined in the furniture standard: a) general rules for raw materials, but above all with regard to the avoidance of harmful substances, b) emission limits with regard to indoor air, c) environmentally friendly production (which, however, is already guaranteed if compliance with national regulations and guidelines), longevity and waste reduction (met in the case of an existing repair service or spare parts warranty or return system) and packaging (where packaging is either to be taken back or the manufacturer is in a collective collection system („green dot“ or other) should be involved.

(9a) PEFC

In principle, the same applies to PEFC as described under the FSC environmental label.

Additional remark:

With regard to the conservation of resources of materials and building materials, especially in connection with their origin, the environmental product traffic light („Produktumweltampel“) from Holz von Hier provides valuable information and orientation. This tool, developed as part of a DBU-funded project, introduced a new innovative resource conservation assessment and assessment tool.

C) Climate protection.

Climate protection has different aspects and approaches. Many labels address climate protection, but address very different areas. Therefore, environmental labels in this regard can be much more difficult to compare than e.g. with regard to the requirements of sustainable forest management.

There are different starting points for climate protection measures in the life cycle phases:

- LC phase A1: climate-friendly extraction of the raw material. Here there can be very large differences, both between different materials as well as different places of extraction of a material. An example is the significantly different energy use in the forest in the management and harvest in Germany and Indonesia or Russia (emission factors diesel engines in both countries). However, there are almost no data sets or information in terms of these values, and no label currently covers this aspect.
- LC phase A2: Climate-friendly short routes along the entire processing chain (CoC) as cradle to gate. This factor can make a significant, if not the main contribution to total emissions to the finished product, especially for non-regional processing chains. At present, only the eco-label Holz von Hier collects and documents these flows of goods and associated emissions.
- LC phase A3: Climate-friendly production. Of course, the production of the product can also take place in different energy-intensive or -efficient ways. For many products, however, adequate sound and reliable information is missing. Basically, such information should be provided via product-specific life cycle assessments or environmental product declarations (EPD). However, there are considerable difficulties in practice, which are summarized in a separate EPD document. Some labels formulate specifications that the production should be better under climate aspects than the average. The proof of this is questionable, since there are hardly any corresponding „average values“ for most products.
- LC phase A4: Climate-friendly short distances from the production site to the place of use. This aspect can make an extremely different contribution to the carbon footprint of construction products at the site of use, especially given the increasing proportion of trade in product procurement (see references to construction timber from the region compared to origin from Russia or PVC from German production or from China). The emissions from such transport routes can easily reach a multiple of the total emissions of the fabrication of the product. However, it is precisely this information that is usually missing from every planner when purchasing the building

materials. Here is the environmental label HOLZ VON HIER unique because it records and evaluates all flows of goods up to the final usage site. This is inherently not possible with other eco-labels, since they are usually granted for a period of validity of several years and are not individual product-related.

- LC phase B: Energy consumption in the use phase. Here, products are very different. On the one hand, there are the categories of products that consume energy during the usage phase and thus cause emissions of polluting emissions, such as Electrical appliances, heaters and other. However, in the use phase, construction products and thus also wood products are ‚inert‘ from an energetic point of view, meaning that no product-related emissions arise in this life cycle phase.
- LC phase C/D: Climate-efficient disposal or reuse. This is very much a matter of material as well. This can lead to significant differences between different construction products. For example, PVC underlies significantly lower recycling rates than e.g. wood waste. Here too, the emissions and energy costs associated with the treatment play an important role. However, there is actually no eco-label which gives accurate information on the impact of climate in the post-use phase.

The table 4 summarizes which life cycle phases refer to the climate requirement and climate statement of the various labels.

Tab. 4: Life cycle phase to which the climate change claim of the various labels refers (if relevant). *i* = indirect effect due to domestic production. The environmental footprint of Holz von Hier gives quantitative information on the lifecycle phases analogous to an EPD.

| Label | A1 | A2 | A3 | A4 | B/C | D |
|--------------------|----|----|----|----|-----|---|
| 1) Blue Angel | - | - | - | - | X | - |
| 2) EPEA | - | - | - | - | X | - |
| 3) EU Ecolabel | - | - | - | - | X | - |
| 4) FSC - CoC | - | - | - | - | - | - |
| 5 a) HOLZ VON HIER | i | X | i | X | - | - |
| 5b) HvH footprint | X | X | X | X | - | - |
| 6) NaturePlus | - | - | - | - | X | - |
| 7) Nordic Swan | - | - | - | - | X | - |
| 8) Ö-UZ | - | - | - | - | X | - |
| 9) PEFC - CoC | - | - | - | - | - | - |

D) Environmental friendly production

With this criterion, the production process itself is addressed, it is not about the environmental friendliness of the product (for example, by avoiding critical substances in the product). In the following, we will compare whether the standards make direct demands regarding the way of production. For example, this has been analyzed against the standards for floor coverings for which most label standards exist.

(1) Blue Angel

The Blue Angel makes no specifications or requirements for the environmental friendliness of the production processes.

(2) C2C

C2C has no product-specific standards or award criteria. On the contrary, these generally apply without reference to a specific product. Therefore, they have a more strategic and process character in the sense that the company is to develop a strategy to reduce negative environmental impacts. In general, the concept at C2C is to reduce the negative environmental effects of the product itself (ingredients, recyclability) as well as the production process. Above all, the promotion of the use of renewable energies as well as the careful use of water is in the foreground. Consistently implemented, the requirements could contribute to a clear environmental impact and the corresponding products would correspond to an environmentally friendly production. However, it depends on the degree of certification according to C2C. Basically, there are the certification levels Basic, Bronze, Silver, Gold and Platinum. With Basic, the preparation of a plan for a certification is usually sufficient. An ingenious implementation of the C2C criteria and aspects can usually only be expected at a certification level of gold or platinum. However, at present, among the 490 existing certified products, there is none with the grade platinum and only 80 (15%) with the grade gold.

In the field of furniture, there is only one single certified manufacturer from Switzerland. Office chairs from this manufacturer have the certification level silver. Building materials are currently 16 with a gold certification, two of them in the wood sector: on the one hand Thoma Holz 100 and on the other Accoya. Thoma wood 100 is a pure wood construction without metallic connections using moon phase wood. The only production facility is in Austria. Accoya is a product made durable by acetylation. There is only one german manufacturer. The raw material for this (Pinus radiata), however, comes from New Zealand and thus has the longest possible transport distance on the planet behind.

(3) EU Ecolabel

As a single aspect of production, the EU Ecolabel formulates requirements for the energy consumption of production. This must not be lower than a certain score, which is calculated from a formula that incorporates electricity and heating energy consumption, as well as the share of renewable energies and the share of wood from sustainable forestry. An interesting discrepancy is that the required value for energy consumption in order to achieve the score is probably not reached by any manufacturer, especially in parquet production, at least insofar as the currently existing Environmental Product Declarations (EPD) show.

(4) FSC

The FM certificate only concerns the type of forest management. The CoC standard makes no demands on the way of production.

(5) HOLZ VON HIER

HOLZ VON HIER as standard addresses with central criteria the production chain. The key message is a regionally closed processing chain with minimized transport volumes. It is the only label in the field of wood products, which specifically and directly affects the process chain. Due to the special weight and the high importance of the transport processes on the environmental impact of the production of wood products, HOLZ VON HIER sets a central lever for the environmental improvement of production.

By ensuring short transport distances, the production facilities of the processing chain are located predominantly in Germany or, depending on the situation, also in neighboring EU countries such as Austria and France. Due to the high technical standard in these countries, this indirectly also means comparable other environmental performance of the production processes like with the Austrian Ecolabel, which requires compliance with state regulations and limit values.

(6) NaturePlus

In its product-specific award criteria, NaturePlus makes no specifications for environmentally friendly production. What is required here is only the sustainable extraction of raw materials and the avoidance of certain health and environmental harmful chemical substances. Also in the basic criteria, which apply to all products, no specifications are specified here how the production would be environmentally friendly. There is only a minimization requirement.

(7) Nordic Swan

The eco-label Nordic Swan follows (or went ahead?) here almost 1: 1 the model of the EU Ecolabel.

(8) Austrian Environmental label

In its catalog of criteria, the Austrian Ecolabel also addresses the production itself. However, this merely requires that the existing state or European specifications and limit values be adhered to and that the company requires a confirmation in the form of a self-declaration. Further requirements do not exist.

(9) PEFC

The FM certificate only concerns the type of forest management. The CoC standard makes no demands on the way of production.

E) Biodiversity

The preservation of biodiversity, the diversity of species, habitats, and genetic variability is an urgent necessity of our time and has as great importance for the future and sustainable life of mankind as the mitigation of climate change. However, the recording and evaluation of the impacts on biodiversity is still scarcely conscious and methodologically not yet established. Therefore, there is also almost no evidence in the form of eco-labels for this, with a few exceptions or approaches, as explained below.

Tab. 5 Requirements for the protection of biodiversity in the various environmental labels.

| Label | Biodiversity |
|------------------|---|
| 1) Blue Angel | no criteria |
| 2) C2C | no criteria |
| 3) EU Ecolabel | no criteria |
| 4) FSC | No direct criteria (Site-appropriate tree species choice). But indirect protection of biodiversity through protection against overexploitation. |
| 5) HOLZ VON HIER | No use of wood from internationally endangered tree species according to IUCN's International Red List. Indirect promotion of biodiversity in native forests. |
| 6) NaturePlus | No use of wood from CITES species |
| 7) Nordic Swan | no criteria |
| 8) Ö-UZ | no criteria |
| 9) PEFC | No direct criteria (Site-appropriate tree species choice). But indirect protection of biodiversity through protection against overexploitation. |

(1) Blue Angel

The Blue Angel does not have its own specific criteria or requirements concerning biodiversity. Indirectly there is a certain statement about the requirement for wood from sustainable forestry.

(2) C2C

C2C does not specifically address biodiversity. The consistent implementation of the other requirements of C2C, e.g. concerning water care or the avoidance of environmentally harmful substances or waste reduction, it can also have an indirect positive effect on biodiversity. Again, the question of the degree of certification applies, it should be at least grade gold.

(3) EU Ecolabel

The EU Ecolabel makes no demands regarding the protection of biodiversity.

(4) FSC

The Forest Management Standard of FSC regulates the way of managing the forests. These are country-specific and sometimes very different between different countries around the world. For central European countries, site-specific tree species selection is usually a key criterion here. Other requirements (remaining wood, pesticide use, etc.) also have positive effects on biodiversity.

In tropical countries, a distinction must be made between wood from plantations and primary forests. In principle, the forest certification in these countries has the purpose and the benefit that the management of the forest over other 'uses' such as the transformation into agricultural land is interesting for the owners and the forest as such is preserved at all. This is important and useful, and use of wood from tropical areas should be taboo without an FSC certificate.

As part of an FSC certification, a tropical forest can certainly be managed sustainably in terms of carbon footprint. Regarding the conservation of biodiversity, however, an FSC certificate is not a free ticket. In tropical primary forests, ecosystems are structured completely differently than in temperate latitudes. More than half of the total global biodiversity is found in the marginally small tropical primary forests. Here, every commercial intervention - even the so-called single-stem extraction - leads to a more or less drastic loss of biodiversity in the forests.

Plantation wood, on the other hand, can be a sensible and good alternative. However, the problem lies in the fact that in some cases primary forests could have been cleared for the initiation of plantations. A study by Interpol and UNEP has also shown that significantly more 'plantation wood' is traded on the market today than could have been produced in the respective areas, indicating the high level of abuse, trafficking and misrepresentation.

Another problem is that the forest certification systems refer to the forest area as such, but not to certain tree species. There are a number of tropical

wood species that are also regularly available on the market with FSC certificate, but are themselves classified as internationally endangered according to the international red list of IUCN.

(5) HOLZ VON HIER

The HOLZ VON HIER environmental label has a direct and indirect positive impact on biodiversity for different starting points. First, by requesting an FM certificate according to FSC or PEFC for the roundwood entering the certification process.

Moreover, HOLZ VON HIER still prohibits the use of wood from tree species that are classified as internationally endangered according to the International Red List of IUCN. This clearly goes beyond the requirements of e.g. FSC or NaturePlus, because a number of tree species with FSC certification can be found on the international Red List, which also includes considerably more species than are subject to the CITES agreement.

HOLZ VON HIER additionally achieves an indirect positive effect on biodiversity by promoting demand for a wide range of wood species from regional forestry. This demand encourages local farmers to conserve and promote tree diversity in their forests, which in turn forms the basis for a high diversity of accompanying plant and animal species.

However, one significant, largely unnoticed, effect that HOLZ VON HIER covers is the impact of transport on biodiversity. As evaluations of the international red list of IUCN show, a variety of animal and plant species are internationally endangered by transport. The following table 6 gives an exemplary impression thereof. This means that sometimes more species are endangered by the transport of materials, depending on their origin, than by the extraction of raw materials themselves. By minimizing transports, especially over long distances and from other countries or continents, HOLZ VON HIER thus also contributes to the protection of biodiversity.

Tab. 6 Number of species classified as internationally endangered by different factors (logging, mining, production and transport). Data from SAVE database of Holz von Hier, based on IUCN red list.

| country factor | logging | mining | production | transport (to or in D) |
|----------------|---------|--------|------------|------------------------|
| Germany | 14 - 44 | 15 | 45 | 16 |
| Australia | 102 | 242 | 299 | 987 |
| Brasil | 320 | 103 | 153 | 178 |
| Cameroon | 380-429 | 551 | 105 | 105 |
| China | 404 | 113 | 204 | 872 |
| Malaysia | 305-502 | 237 | 266 | 938 |
| Mexico | 373 | 90 | 168 | 210 |
| Russia | 17 | 27 | no data | 72 |
| USA | 315 | 196 | 374 | 290 |

(6) NaturePlus

NaturePlus has an indirect influence on biodiversity through the specification of the origin of wood from sustainable forest management. In addition, NaturePlus also prohibits the use of wood species subject to the Washington Convention on the Protection of Cities (CITES). However, only very few species of wood are affected, much less than e.g. be classified as internationally endangered by IUCN.

(7) Nordic Swan

The environmental label Nordic Swan makes beyond a certain proportion of wood from sustainable forest management, no requirements regarding biodiversity.

(8) Austrian Environmental label

The Austrian Ecolabel does not stipulate any requirements regarding biodiversity beyond a certain proportion of wood from sustainable forest management.

(9) PEFC

With regard to PEFC, the same applies to temperate forests as to FSC, with forest management requirements being lower than for FSC, according to many environmental organizations. In tropical countries PEFC has almost no importance and distribution.

2.6 Validity period of the standards

The validity of standards also plays a role in assessing the environmental impact of eco-labels. Products or companies are usually certified for a certain period of time, i.e. the mark may be awarded to all corresponding products manufactured during the period. The longer this time span, the further the set requirements can lag behind current technical developments. This is especially noticeable in labels for electrical appliances. Within a year, rapid technological developments can reduce energy consumption to such an extent that the state of the art is better than the requirements of the respective eco-label (for example, Energy star or Blue Angel). Basically, resilient eco-labels should be adapted according to changed insights or technical developments in accordance with ISO 14024, but in practice it can happen that developments progress faster than the revision cycle of labels. This effect can also occur in other product groups. For example, The German Pellet Association states that the current state of the art in pellet heating systems is significantly better than the criteria that have to be fulfilled for the award with the Blue Angel (Holzzentralblatt Nr. 29, 2017).

Another aspect is that some production factors tend to change in long-term periods (such as energy use

or the production technique itself), while others may change on a daily basis, e.g. the origin and transport distance of procured raw materials and intermediate products. The table shows a summary of the validity periods of standards or certificates.

Tab. 7: Validity period of environmental label standards.

| Label | Number of standards or procurement guidelines | Validity period of the standard, standard revision | Validity of the certificate, audit turn-around |
|---------------|---|--|--|
| Blue Angel | 113 total, 3 for wood products, 5 for paper products | 2 - 12 years | once in the validity period of the standard |
| C2C | 1 | 2 | once in the validity period of the standard |
| EU ecolabel | comparable to blue angel | Validity unlimited until change of the standard | once in the validity period of the standard |
| FSC FM | country specific | 5 years | annually? |
| FSC CoC | FSC mix, FSC controlled wood, FSC 100%, FSC recycling | 5 years | annually |
| Holz von Hier | 1 | ~ 5 years | In real time and single product related! |
| Natureplus | | 3 years | once in the validity period of the standard |
| Nordic swan | ? | 3-5 years | once in the validity period of the standard |
| Austrian UZ. | | 4 years | once in the validity period of the standard |
| PEFC FM | country specific? | 5 years ? | annually? |
| PEFC CoC | country specific? | 5 years ? | annually |

The validity of the standard means how long the specified criteria of an eco-label will last or remain unchanged. Products that receive the label have been rated according to the standard in a specific version. If the standard changes, this change must also affect the labeled products. Ecolabel must ensure that the product designation is adjusted as the criteria change. In addition, it must be ensured that - even without changes - the requirements for the markings are continuous. This concerns the aspect of the period of validity of the certificate itself.

The period of validity of the standard is very different, ranging from 2 years to unlimited (EU Ecolabel), that is, the standard remains valid until the

signer (EU) decides otherwise. The rule is about 5 years (corresponds to the minimum cycle according to ISO 14024). Most eco-labels have validation or verification of product marking requirements once within the validity period of the standard. FSC and PEFC have an annual audit (in the COC).

A special feature here is the eco-label HOLZ VON HIER, as it is a reference to a single product indicator, which is only valid for the respective product or the delivery. The verification takes place when the certificate is generated in real time and in individual cases. For FSC and PEFC, the conditions are checked retrospectively for the past year. At the other eco-labels this happens in even longer intervals.

2.7 Product group relevance

Not every label is relevant for all product groups in the field of building, renovation and living. Most eco-labels have a focus here. This is important to note, especially if environmental labels are generally set up broadly over different product groups, such as e.g. the Blue Angel.

In addition, there are some standards or award criteria for certain product groups, but there are no concrete certified products available in practice.

The following table therefore provide an overview of the affected product groups on the basis of the evaluations, as well as the number of existing products, if these could be determined from corresponding websites (as of the end of 2017).

Tab. 8 Complete overview of certified products as well as products made of wood and paper. H = manufacturer, P = products

| Label | number of certified products in general | certified wood and paper products |
|--|---|---|
| (1) Blue Angel relevant for wood and paper: BA Resources BA Health not relevant: BA Climate BA Water | > 14.000 | 67 wooden furniture (mainly chipboard) 8 - 9 wood-based panels 11 panels (from Europe, Russia, Taiwan, Shanghai, Turkey, Africa, Japan) 6 frames (no doors and windows (6 prod./ 1 manuf.) 2 pellet producers 80 copy papers 509 paper products in general 528 recycled paper 299 cardboard 56 newsprint |
| (2) C2C | 490 | 14 wood products 6 paper products |
| (3) EU Ecolabel | 774 | no wood products 63 paper products |

| | | |
|-------------------|------------------------------|--|
| (4) FSC CoC | unknown | various wood products, various Papierprod. |
| (5) Holz von Hier | several hundreds | various wood products, soon to be paper, opens. and private. building |
| (6) Natureplus | 641 | 94 insulation materials of renewable materials, 14 floors, 0 paper products |
| (7) Nordic swan | 2.587 (buildings and energy) | 130 small buildings 0 wood products (? No product overview available) 0 paper products (?) |
| (8) Austrian UZ | 438 | <43 wood products 15 paper products |
| (9) PEFC CoC | unknown | various wood products, various Papierprod. |

Overview of individual relevant product groups

In the following, the evaluations are divided into individual product groups. The comparison is not always easy to draw, since the information in the environmental labels are aggregated or presented differently. For example, For FSC and PEFC, it is usually not possible to determine whether companies are manufacturers or just processors and distributors. Therefore, one and the same product may often appear in the database, giving the impression of a wealth of products.

Tab. 9 Overview of certified products by product group. H = manufacturer, P = products.

| Label | Product group / number of products |
|-------------------------------|---|
| construction materials | |
| Blue Angel | boards and panels: 8 P of 4 H |
| EPEA | 2 (Thoma Holz 100; Porothermziegel) |
| EU ecolabel | no |
| FSC | various products and producers |
| HOLZ VON HIER | various products and producers |
| Natureplus | 352, 8 of which timber products |
| Nordic Swan | ? (no individual product overview available on the website). |
| Austrian UZ | 4 P wood panel materials |
| PEFC | various products and producers |
| insulation | |
| Blue Angel | External thermal insulation systems: 25 P and 13 H, of which 1 P from 1 H made of soft wood fiber |
| EPEA | insulation of renewables: 4 P |
| EU ecolabel | no |
| FSC | unknown |
| HOLZ VON HIER | no |
| Natureplus | Insulation of renewables: 135 P, 82 based on wood |
| Nordic Swan | ? (no individual product overview available on the website). |

| | |
|---|---|
| Austrian UZ | 4 P, 2 of which based on wood |
| PEFC | unknown |
| Floors, wall coverings, interior walls, ceilings | |
| Blue Angel (Health) | Wooden panels: 9 P (3 H). Finished parquet, laminate, cork: 143 P (61 H) Origin from all over Europe, Russia, Taiwan, Shanghai, Turkey, Africa, Japan, Slovenia. Textile and synthetic floors: 137 P / 67 H |
| EPEA | 38, of which 12 wood products |
| EU ecolabel | no |
| FSC | Around 350 manufacturers worldwide, unspecified |
| HOLZ VON HIER | various products and manufacturers |
| Natureplus | 14, of which 10 wood products |
| Nordic Swan | ? (no individual product overview available on the website). |
| Austrian UZ | 8 P, 2 of wood |
| PEFC | Worldwide approx. 280 manufacturers, unspecified |
| Furnitures in general | |
| Blue Angel (Health) | 82 P of 30 H, (including office furniture, see next point) |
| EPEA | see next point |
| EU ecolabel | no |
| FSC | 838 H in Germany (Multiple answers by manufacturers and distributors possible!) |
| HOLZ VON HIER | various products and manufacturers |
| Natureplus | no |
| Nordic Swan | ? (no individual product overview available on the website). |
| Austrian UZ | 23 H of which 20 for wooden furniture |
| PEFC | H worldwide: 421, H Germany: 31 |
| Office furnitures | |
| Blue Angel (Health) | Office furniture made of chipboard and upholstered furniture Office Chairs: 9 H, 49 P Particleboard furniture: 12 H, 32 P |
| EPEA | Office chairs: 20 p Office furniture: 16 P, including 1 wood products |
| EU ecolabel | no |
| FSC | see furnitures in general |
| HOLZ VON HIER | Diverse products, 20 H |
| Natureplus | no |
| Nordic Swan | ? (no individual product overview available on the website). |
| Austrian UZ | see furnitures in general |
| PEFC | see furnitures in general |
| Windows & doors | |
| Blue Angel (Health) | Door frame: 6 P, 1 H |
| EPEA | 2 P, 1 H |
| EU ecolabel | no |
| FSC | 297 P |
| HOLZ VON HIER | various products from 4 H |

| | |
|-----------------------------|--|
| Natureplus | Doors: 9 P of 1 H |
| Nordic Swan | ? (no individual product overview available on the website). |
| Öst UZ | no |
| PEFC | unknown |
| Wood for outdoor use | |
| Blauer Engel | no |
| EPEA | 1 P 1 H (Accoya) |
| EU ecolabel | no |
| FSC | 774 suppliers of tropical timber and garden furniture |
| HOLZ VON HIER | various products for terraces, facades, garden furniture etc. Thermowood: 3 H; other woods: 21 H |
| Natureplus | no |
| Nordic Swan | ? (no individual product overview available on the website). |
| Austrian UZ | 1 P |
| PEFC | unknown |
| Pallettes | |
| Blauer Engel | no |
| EPEA | no |
| EU ecolabel | no |
| FSC | unkown |
| HOLZ VON HIER | Flat pallets, 31 H |
| Natureplus | no |
| Nordic Swan | ? (no individual product overview available on the website). |
| Austrian UZ | no |
| PEFC | unknown |
| Pulp & Paper | |
| Blue Angel (Resources) | 509 paper products in general 528 recycled paper 80 copy papers 56 newsprint 299 cardboard |
| EPEA | 6 P |
| EU ecolabel | 63 P, 25 H |
| FSC | 942 products (multiple answers by manufacturers and distributors possible!) |
| HOLZ VON HIER | in future: natural paper, 1 H |
| Natureplus | no |
| Nordic Swan | ? (no individual product overview available on the website). |
| Austrian UZ | 11 P recycled paper 4 P graphic papers |
| PEFC | 218 products (multiple answers by manufacturers and distributors possible!) |

2.7 Links and sources for product data bases

Blue Angel:

<https://www.blauer-engel.de/de/produktwelt>

C2C:

<https://www.c2ccertified.org/products/registry>

EU Ecolabel:

<http://www.eu-ecolabel.de/produkte-anbieter.html>

FSC:

<https://info.fsc.org/certificate.php>

Holz von Hier:

<http://www.holz-von-hier.de/produkte-suchen/>

NaturePlus:

<http://www.natureplus-database.org/>

Nordic Swan:

keine öffentliche Produktdatenbank vorhanden.

Austrian UZ:

<https://www.umweltzeichen.at/cms/de/produkte/content.html>

PEFC:

<https://pefc.de/einkaufsratgeber/>

Tab. 10: costs for certification of products.

| Label | Certification and license fees | internal costs |
|-------------------|---|-----------------------------|
| (1) Blue Angel | (1) Application Fee: 400 - 1.200 € per product. (2) Annual fee: 320 - 10,500 € / per product * year. (3) additional costs in the case of onsite inspections by RAL gGmbH. | unknown |
| (2) C2C | very individually depending on the ingredients used, the processes and the effort of the certifier in the company. Probably sev.l 10,000 € Audit: 1.300 € first application 800 € reaudit | unknown |
| (3) EU ecolabel | (1) Application fee: 1.200 € (600 € SME) per product. (2) Annual fee: 0.15% of the annual turnover of the certified product. at least 300 - max. 25,000 € / product * year. (3) additional costs in the case of onsite inspections by RAL gGmbH. | unknown |
| (4) FSC | (1) For FM certificates: 0.3 - 1.5 € per Ha. (2) For CoC certificates: avg. about 2,000 € per year plus marketing fee 250 - 1,800 € / a depending on company size | ca. 5.000 - 8.000 € / year |
| (5) HOLZ VON HIER | (1) Solidarity contribution: avg. 500 € per year | 0 € |
| (6) NaturePlus | Preliminary exam: 1.200 € (Additional services at cost) Main exam: 5.000 € - 7.000 € (Additional services at cost) Follow-up exam: 430 € (Additional services at cost) Retake: 3.700 € - 5.700 € (Additional services at cost) (3) License fee: 0.05% of sales achieved with certified products. Min. € 1,000 per product * year | unknown |
| (7) Nordic swan | (1) Application fee: 3,000 €. (2) factory inspection: 500 - 2,500 € per visit (depending on the country). (3) License fee: 0.3% of the annual sales of the certified product, in D at least € 2,000 per year per product | unknown |
| (8) Austrian UZ | (1) Application fee: 150 - 600 € (2) License fee: 380 - 2.420 € / per year | unknown |
| (9) PEFC (COC) | Audit costs: avg. about 2,000 € per year, Marketing contribution: 60 - 800 € / year depending on company size | ca. 5.000 - 8.000 € / year. |

2.7 Costs of certification

The cost of certification of products seems at the first glance irrelevant to the customer or consumer because the costs are incurred by the company that wants to have products labeled. Ultimately, these costs are transferred to the product and paid by the consumer. Therefore, a cost transparency or a comparison of the costs resulting from the certification is of interest. Table 10 summarizes this overview.

2.7 Helpful sources and hints

There are numerous portals with the intention of describing, comparing and evaluating the various existing eco-labels (see list below and links).

A similar intention had also the study, which was used beside own analyzes for the present compilation. However, the label comparisons in the studies and platforms are more based on testing the fulfillment of certain formal criteria for eco-labels (neutrality, external monitoring, etc.). They barely make a comparative statement about the degree of environmental impact and statement that is documented with an eco-label.

Therefore, in the analyzes for the present document, the eco-labels were specifically examined for specific environmental aspects and criteria and compared. The purpose of this is to help planners and stakeholders to find out with which eco-label certain aspects are most likely to be ensured. This does not constitute a final 'assessment' of the quality of eco-labels, but rather is the result of putting the eco-labels in practice.

For more detailed information on the eco-labels, readers can find what they are looking for on the various websites and guides.

Platforms with label overviews and comparisons in Germany and Austria

for planners:

www.ausschreiben.de

www.wecobis.de

for procurers:

www.beschaffung.fnr.de

www.das-nachwachsende-buero.de

www.kompass-nachhaltigkeit.de

general:

www.label-online.de

www.Siegelklarheit.de

www.nachhaltiger-warenkorb.de

www.uba.de/siegelkunde


www.nachhaltige-beschaffung-thueringen.de

www.bewusstkaufen.at

www.baubook.info



The environmental label in the profile

| Blue Angel | |
|-----------------------------|---|
| Overview | |
| trade mark(s) |  |
| Website | www.blauer-engel.de |
| Name of the quality mark | <p>The Blue Angel is not a registered trademark in the usual sense, but is classified as an information tool for climate-friendly products. The United Nations owns the conference symbol used in the Blue Angel. The state is the national sign holder.</p> <p>„Blue Angel Climate“ is awarded to products that save energy during use (for example, electrical appliances, lamps, etc.).</p> <p>„Blue Angel Water“ is awarded to products that save water during use (e.g., water-saving toilet flushes).</p> <p>„Blue Angel Resources“ is awarded to products that have saved resources as a product, for example: by using recycled materials (such as waste paper or recycled plastics).</p> <p>„Blue Angel Environment and Health“ will be used for products that are low in emissions with respect to certain hazardous substances (focus: formaldehyde, VOC, plasticizers, and compliance with the European requirements in the subject area is checked).</p> |
| geographical scope | up to now Germany |
| International head-quarters | no |
| national head-quarters | Sankt Augustin |
| structure | <ul style="list-style-type: none"> • Ministry of the Environment is sign authorized. • Federal Environmental Agency and RAL gGmbH accept applications. • Jury Umweltzeichen reviews the applications. • RAL gGmbH awards the Blue Angel |
| aim | Award for sustainable products |
| motto | Information tool about more environmentally friendly and healthy products |
| founding | Founded in 1978; Age of organization: 38 years; Country of establishment: Germany, the world's oldest environmental label, is awarded for products and services. |
| particularity | In the field of colors and coatings, the Blue Angel has arrived today in DIY stores. |
| certificate types | Each product gets its own certificate and possibly its own standard with a RAL-UZ number |


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| standards | Own standards for each product group (see blau-engel.de). RAL Product Group Standards Status at the beginning of 2017: 124 RAL-UZ Standards, of which 2016 expired: 11. Current RAL-UZ Standards: 113 |
| criteria | very complex see individual certificate types |
| decision | The following institutions are currently involved in the standard setting process: Sign holder: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety. The German federal environmental agency examines new applications and submits them to the jury after examination and evaluation. The jury Umweltzeichen („Jury UZ“), the independent decision-making body with representatives from environmental and consumer associations, trade unions, industry, commerce, craft, municipalities, science, media, churches and federal states, has the last word in the award procedure and makes the actual award decision. The jury decides for which product groups and service areas the Blue Angel should be awarded. In addition, it discusses and adopts the respective award criteria, which are developed by the Federal Environment Agency. The jury members are free and impartial, the membership is honorary. |
| certification | RAL gGmbH. The only certification body / awarding authority for the Blue Angel and the European ecolabel in Germany is the RAL Farben und Umweltzeichen gGmbH (it also awards the Stiftung Warentest Logo-Licenses). Chairman and CEO: Rüdiger Wollmann. Certification organizations generally have no status of charitable status. RAL gGmbH is a non-profit organization due to the business of RAL Farben, which still accounts for the majority of revenues and business aspects. |
| costs | 320 - 10.500 €/year |
| product groups | |
| product groups | <p>Various product groups mainly electrical appliances as well as paints and varnishes. Examples (as of Oct. 2017):</p> <p><u>Blue angel for office furniture</u> Products in the field of „upholstered furniture“ (ges 73 pr.) And „wood furniture“ (total 67 pr.). (1) Upholstered furniture suitable for office: 49 products, 9 manufacturers / distributors, v.a. Swivel chairs. (2) Wooden furniture for office supplies: 32 products, 12 manufacturers / distributors (total 67 pr.). The office furniture in the field of „wooden furniture“ is predominantly furniture made of panel materials (for example chipboards) with melamine, HPL or veneer coatings. RAL award criteria: RAL-UZ 38 (valid from 2013 to 2019), RAL-UZ 117 (2008 - 2018). The award criteria apply to low-emission furniture and slatted frames made of wood, wood-based materials, floor coverings, panels and doors made of wood and wood-based materials. The aim is to limit the indoor air pollution through outgassing substances. After 28 days, limits for volatile organic compounds (VOC) and formaldehyde are set. Excluded are halogenated organic binders and flame retardants as well as biocides and substances of concern in the REACH candidate list. Half of the wood from sustainably managed forests.</p> <p><u>Blue angel for wall coverings</u> (1) wall colors:> 230 products. (2) wallpapers:> 90 products. (3) Interior plasters: 2 products. (4) Wood panels for wall and ceiling: 9 products, 3 manufacturers. RAL Basic Criteria: RAL-UZ 12a (valid from 2011 to 2017), RAL-UZ 102 (2015 - 2019), RAL-UZ 198 (2015 - 2019), RAL-UZ 35 (2014 - 2018). Among the pollutants, the Blue Angel focuses primarily on formaldehyde, plasticizers, preservatives and VOCs. The specifications for the European hazardous substances must be observed. For wallpaper, a waste paper content of at least 60% and 80% is required for rape fiber wallpaper.</p> <p><u>Blue angel for flooring:</u> (1) NaWaRo: v.a. Laminate, 2-3-layer engineered flooring, (+ cork): 143 products, 61 manufacturers, dealers from all over Europe, Russia, Taiwan, Shanghai, Turkey, Africa, Japan, Slovenia. (2) Textile coverings v.a. Plastics: 137 products, 67 manufacturers, worldwide. RAL Basic Criteria: RAL-UZ 120 (valid from 2011 to 2016), RAL-UZ 128 (2011 - 2016), RAL-UZ 128 (2016 - 2019), RAL-UZ 113 (2011 - 2019), RAL-UZ 156 (2011 - 2019), RAL-UZ 176 (2012 - 2019). The Blue Angel distinguishes above all textile floor coverings, it is tested for formaldehyde, plasticizers, volatile VOCs and odors. For wooden floor coverings (especially in the coatings), pollutants and especially formaldehyde are tested here.</p> <p><u>Blue angel for windows and doors</u> Doors (affects door elements, frames, no ready-made doors): 6 products, 1 manufacturer. Under the keyword windows (121 hits) are mainly paints and other treatment substances. RAL award criteria: RAL-UZ 176 (2012 - 2019).</p> <p><u>Blue angel for lighting and bulbs</u> (1) LED lamp: 1 product RAL Award Criteria: RAL-UZ 151 (2014 - 2017).</p> <p><u>Blue Angel for Electronics & Green IT</u> (1) Computer: 33 products, 4 manufacturers. (2) Keyboards: 9 products, 2 manufacturers. (3) Monitors: 1 products, 1 manufacturer. (4) Mobile phones: s. Cordless phones. (5) Beamer: 1 products, 1 manufacturer. (6) Schurlostelefone: 8 products, 1 provider (telecom). (7) Voice over IP: 7 products, 1 manufacturer. (8) Router: - Products, - Manufacturers. (9) Printers: 1,202 products, 17 manufacturers / distributors. (10) Telephone systems: 4 products, 2 manufacturers. (11) Video conferencing systems: - Products, - Manufacturers. RAL Basic Criteria: RAL-UZ 78a (valid from 2014 to 2017), RAL-UZ 78b (2014 - 2017), RAL-UZ 78 (2014 - 2017), RAL-UZ 106 (2013 - 2017), RAL-UZ 127 (2014 - 2017), RAL-UZ 131 (2014 - 2017), RAL-UZ 150 (2010 - 2020), RAL-UZ 160 (2014 - 2017), RAL-UZ 161 (2015 - 2018), RAL-UZ 171 (2012 - 2017), RAL-UZ 183 (2013 - 2019), RAL-UZ 191 (2013 - 2017).</p> |

| Select the correct Blue Angel for the respective purchase | |
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| Blue Angel Health | <p>RAL-UZ standards in the field „Protecting the environment and health“: 34. Main topic of certification: Formaldehyde and VOC levels below the legal limits. Validity of standards between 2 and 12 years. 2 of them in the topic of wood:</p> <ul style="list-style-type: none"> • RAL-UZ 38 „Low-emission furniture and slatted frames made of wood and wood-based materials“ • RAL-UZ 117 „Low Emission Upholstered Furniture“ |
| Blue Angel Resources | <p>RAL-UZ standards in the field „Protects resources“: 20. Main topic of certification: recycled paper. Validity between 2 and 12 years). 5 of them in the topic-rim recycled paper:</p> <ul style="list-style-type: none"> • RAL-UZ 5 „Hygiene papers from waste paper“, • RAL-UZ 14 „Recycled Paper“, • RAL-UZ 56 „recycled cardboard“, • RAL-UZ 72 „Printing and press papers mainly from waste paper“, • RAL-UZ 195 „Printed matter (January 2015 issue)“ |
| Blue Angel Water | <p>RAL-UZ standards in the field „Protects“ Protects the water „: 10. Main topic of certification: Water-saving techniques and water-conserving chemicals. Validity between 4 and 12 years. 0 in the field of wood.</p> |
| Blue Angel Climate | <p>RAL-UZ standards in the field „Protecting the climate“: 49. Main topic of certification: energy-saving electrical appliances, lamps and machines in use. Validity between 2 and 10 years. 1 of them in the field of wood:</p> <ul style="list-style-type: none"> • RAL-UZ 153 „Technically dried woodchips / wood pellets“ |
| Note on the wood raw materials | <p>Extracts from the standard RAL-ZU 176 (*) for wood products show that the Blue Angel here is absolutely EU compliant and correct. But that not all wood in the wood products of the RAL-ZU 176 from sustainable forestry (eg proven by the origin from Germany or Europe or the presentation of FM certificates according to FSC, PEFC) must come, but only 50%, is nevertheless with many origins (so) worth considering. Especially with origins outside of Germany or Europe with mostly strict forest laws is to be considered that it defies EU timber trade regulations (which according to their own understanding is only intended to minimize the risk that wood is imported into the EU from robbery), it can occur in some cases, that such introduced timber comes from overexploitation (see the report Green Carbon - Black Trade by UNEP and Interpol, 2012).</p> <p>(*) Quotation from the RAL-ZU 176: 3.1.1.1 Timber origin. It must be ensured that all processed wood comes from legal sources. In addition, at least 50% of the wood or 50% of the primary raw materials for wood-based materials must come from sustainably managed forests, which are proven to be economically viable, environmentally sound and socially responsible. Proof. The applicant declares proof of legality of the wood sources according to EU Regulation 995/2010. The following options may be used to demonstrate the use of wood from sustainable forestry: (a) In the event that the applicant himself is certified to the FSC or PEFC closed-loop (CoC) criteria, he / she will submit the certificate. In this case, no further evidence is required. (b) If the applicant himself is not certified, he will submit suitable certificates from his supplier of raw materials. The certificates are recognized by the Forest Stewardship Council (FSC) and the PEFC (Program for the Endorsement of Forest Certification Schemes), which demonstrate sustainable forest management and a closed product chain (CoC). It is necessary to provide a balance sheet of the timbers used, showing the proportion of certified wood used (Annex 2 to the contract according to RAL-UZ 38). (c) The applicant shall provide other appropriate evidence in accordance with Annex 1 (Appendix 3 to the RAL-UZ 38 contract). The annex can be extended upon application and examination by the Federal Environmental Agency. It is necessary to provide a balance sheet of the timbers used, showing the proportion of certified wood used (Annex 2 to the contract according to RAL-UZ 38).</p> |

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| <p>Note to the Blue Angel guidelines on formaldehyde and VOC in wood furniture.</p> | <p>Wooden furniture in the office area, which are listed with the Blue Angel, are mainly plate furniture (chipboard) coated with melamine, HPL and veneers. The coatings (stains, primers, clearcoats, topcoats, foils, decorative papers, adhesives) must comply with the European requirements for substances hazardous to health (this is documented by submitting explanations from the coating material manufacturers and submission of technical data sheets for the products). The concentrations in indoor air are subject to the following limit values: (in the following only 28-day value = continuous load): TVOC: $\leq 0.3 \text{ mg / m}^3$, TSVOC $\leq 0.1 \text{ mg / m}^3$, carcinogenic substances $\leq 1 \text{ } \mu\text{g / m}^3$ (single value), VOC without NIK $\leq 0.1 \text{ mg / m}^3$, formaldehyde $\leq 0.05 \text{ ppm}$, ammonia 0.1 mg / m^3. Formaldehyde is now classified as a carcinogen in the CLP regulation (REACH). All products manufactured in the EU must comply with a limit value of $<0.1\%$ formaldehyde since 2016 or declare this on / for the product at higher values. For (chipboard) wood panels (for example for furniture) four emission classes are given today: E0: (chipboard) without formaldehyde; E1: Formaldehyde $<0.1 \text{ ppm}$. E2: formaldehyde $0.1\text{-}1.0 \text{ ppm}$, E3: formaldehyde $> 1.0 \text{ ppm}$. Most plates from German or European manufacturers already have the class E0 or E1 and thus comply with the CPL specifications. Nevertheless you should always ask the class E0. For imported products, you should ask for this or these products should definitely have the Blue Angel. But remember, formaldehyde is not only found in chipboard, but in many products containing glues or coatings, including textiles, plastics, insulation materials, etc. so that the formaldehyde content of a room can be increased by various products. This is another reason why the Blue Angel demands these limits in other non-wood products with the Blue Angel Environment and Health. Also in daily use pay attention to products containing formaldehyde such as Preservatives, disinfectants or cleaners (even cosmetics and detergents etc. by 2016). More information about formaldehydes: see leaflet formaldehyde. The AgBB evaluation scheme of the UBA for VOC emissions from construction products was last adjusted in February 2015 and specifies the following 28-day limit values: TVOC 1 mg / m^3, TSVOC $\leq 0.1 \text{ mg / m}^3$, VOC or NIK $\leq 0.1 \text{ mg / m}^3$. That means in the field of TVOC, the Blue Angel gives in a positive sense here stricter values than usual and is therefore to be preferred. Nevertheless, it should be noted for information that the TVOC gives the sum value of the VOC in the room air. In one room, however, almost all materials emit VOC, including both biogenic and artificial VOCs. Most importantly, it is the emissions of highly toxic artificial VOCs, e.g. to exclude benzene. Again, many artificial highly toxic VOCs are regulated in the Europe in the CLP regulation. The origin of products is therefore not irrelevant here. More information about VOC: see leaflet VOC.</p> |
| <p>Note on the validity of standards in the field of electronics</p> | <p>The Blue Angel applies to all products that apply for the label, ie European as well as non-European products. The label is not a proof of origin for organic products from the EU. It is advantageous that the Blue Angel automatically integrates many existing EU regulations and thus also reflects the current state of legislation and standardization or existing guidelines. The problem is the long validity of many standards. Today, development in certain fields (especially IT and electronics) is so rapid that extreme changes happen every year. A standard that is longer than 2 years is completely obsolete in this field today at the latest at the end of the term. For procurers, it therefore always makes sense to include the current state of the art in the procurement considerations. Acquirers could generally demand the efficiency category A from the Blue Angel for electrical appliances, which in any case always reflects or outperforms the current state of the art. However, this must be additionally demanded, because this is not apparent on the label itself.</p> |


EPEA

Overview

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| brand logo |  |
| website | www.epea.com |
| brand name | Cradle to cradle |
| geographical scope | global |
| International head-quarters | MBDC 700 East Jefferson Street Charlottesville ,Virginia22902 |
| German headquarteris | EPEA Internationale Umweltforschung GmbH, Trostbrücke 4, 20457 Hamburg |
| structure | The Cradle to Cradle Products Innovation Institute, a non-profit organization, awards the Cradle to Cradle Certified™ product standard to products that meet cradle to cradle standards. The EPEA-Umweltinstitut Hamburg, founded by Prof. Braungart, can be requested for examination and consultation. The association Cradle to Cradle e.V. with congress, academy and expert forum supports public relations and events on the subject. Owner of the trademark is the MDBC, 700 East Jefferson Street, Charlottesville, 22902 Virginia |
| aim | Consumption and waste ecologically sustainable and harmless. |
| motto | 'Reinventing' products from materials that can be recycled 100%. |
| founding | 2008 |
| particularity | Cradle to cradle understands itself rather process oriented than product or comapny oriented. The label focusses on the production process at the production site itself. prechains are not always investigated back to raw material extraction. |
| certificate types | Basic / Bronze / Silver / Gold / Platinum |
| standards | ein genereller Standard |
| criteria | C2C follows five categories: 1) Material health, 2) circular economy, 3) renewable energy, 4) water stewardship and 5) social fairness |
| decision | Criteria are defined by the Cradle to Cradle Products Innovation Institute (see certification). |
| certification | The certification of a product can only be awarded by the Cradle to Cradle Products Innovation Institute (C2CPII), which was founded in 2010 as a Certifying Body in San Francisco. Since 2011, he has been responsible for auditing certifications, issuing certificates and organizing the Cradle to Cradle Certified™ certification program worldwide. There are several accredited assessors, which carries out the certification process for customers. Tasks include Material Assessment, Process Evaluation and Site Visit. Afterwards, the certification report („Assessment Summary Report“) is handed over to the C2CPII (s.u.) with a proposal for a certified certification level. Such assessors are i.e. the EPEA but also others. |
| costs | not transparent and consistent. Costs depend strongly on the type of product, certification level, input through consultants and óther factors and may reach several 10.000 €. The auditing of the certification thourgh C2CII ranges at 1.300 € for new applications and 800 € for reauditing every 2 years. |
| product groups | |
| product groups | not principally restricted to certain product groups. Range varies from daily life convenience products to (mostly) construction materials. |
| Requirements for tenderers - selected aspects | |
| Remarks | none |


EU-ecolabel („EU Blume“)

Overview

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| logo |  |
| website | www.eu-ecolabel.de |
| Emblem name | Emblem. No Brand. Not worn as a brand. Emblem owner: European Commission. Emblem Administrator: Ecolabel Helpdesk c / o BIO Intelligence Service S.A.S. The BIO Intelligence Service S.A.S is a structure belonging to the Wuppertal Institute for Climate, Environment and Energy gGmbH and was founded in 2016. |
| geographical scope | Europe |
| International headquarters | none |
| European headquarters | Uncertain, because it is unclear who the signer or the responsible legally binding organization is. The European Commission, which introduced the image of the EU label as a project image, is not itself the seat. It is also unclear whether the seat is under the current sign administrator. Thus the seat of the legally binding organization would be the Wuppertal Institut gGmbH in Wuppertal. |
| structure | Legally binding overall structure unclear. Legislative structures in Europe are (1) Wuppertal Institute for Climate, Environment, Energy gGmbH and (2) RAL gGmbH. No further recognizable on the official website. |
| aim | Award for sustainable, ecological products. |
| motto | Voluntary European sign. |
| founding | Founded in 1992 by the EU Regulation EEC 880/92 as a voluntary sign. The regulation itself refers to the EU flower as an "emblem" (Annex II) |
| particularity | The EU ecolabel is a voluntary EU label. Legal bases are: 2011/337 / EU, Decision 2009/489 / EC. The label is applied for voluntarily. The EU ecolabel systematically adheres to the EU's eco-social laws and regulations. This means that even an imported product with the EU ecolabel must comply with this, which is not automatically the case for imported products into the EU. The EU ecolabel corresponds to the Blue Angel in most respects and will also be awarded by RAL gGmbH in Germany. |
| Certificate types, starting point | No certificate in the usual way (see, for example, FSC) For each product / product category an application is made online which RAL gGmbH processes and approves or not. Application documents: 4 pages; Page 1 and 2 are address tables, pages 3 and 4 are tables for entries. |
| standards | Various standards for each product group (see eu-ecolabel.de), similar to the Blue Angel. |
| criteria | Criteria are determined by RAL gGmbH depending on the product or product group. To obtain the label, the manufacturer must make a self-commitment. A check is carried out by the owner of the mark (Federal Office of Economics and Export Control in the leaflet energy labels for computers, as of 04.02.2015). „To obtain the label, the manufacturer must make a commitment“. Many parameters are checked via self-reports and operational documents, as an important aspect in the health sector over the presentation of measurement protocols such as Blue Angel. |

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| Decision-making, awarding | <p>In Germany, the award is made by the RAL gGmbH, which also awards the Blue Angel.</p> <p>The EU Ecolabel can be requested from manufacturers, importers, service providers, but also traders at the relevant national office. In Germany this is the RAL gGmbH.</p> <p>The application must be accompanied by proof of compliance with the product group criteria. RAL gGmbH reviews the submitted documents. Once all the requirements have been met, RAL gGmbH concludes a contract with the respective signatory for the use of the EU Ecolabel.</p> <p>The validity is based on the term specified in the respective Basic Criteria.</p> |
| certification | <p>in Germany by RAL gGmbH.</p> <p>from http://www.eu-ecolabel.de is not apparent if there is another certification authority within the EU except RAL gGmbH. Certification organizations usually have no status of charitable status. RAL gGmbH is a non-profit organization because of its area of „RAL colors“, which accounts for the overwhelming share of revenue or business aspects.</p> |
| costs | <p>Application fee (processing of admission): 1,200 € (600 € SME) per product.</p> <p>Annual contribution: 0.15% of the annual conversion with the product. At least 300 € handling fee / product and year and a maximum of 25,000 € / per product and year.</p> <p>Additional costs for examinations or on-site inspections by RAL gGmbH.</p> <p>Information from http://www.eu-ecolabel.de</p> |
| product groups | |
| product groups | <p>Note: of the 660 listed products (as of September 2017), the majority are:</p> <ul style="list-style-type: none"> • Sanitary paper, • Lubricant, • General purpose & sanitary cleaners, • Copy paper and graphic papers, • Rinse-of-body products, • Laundry detergent, • Automatic dishwasher detergents, • Hand dishwashing detergents, • Printed matter (9 products), • Textiles (3 products), • Newsprint (1 product), • excellent accommodation and camping. <p>*) More specifically: absorbent hygiene products, general-purpose and sanitary cleaners, tourist accommodation, bed mattresses, imaging equipment, wooden floor coverings, camping services, printed matter, electric, gas or gas absorption heat pumps, televisions, dishwashing detergents, hard coverings, wooden furniture, sanitary paper, interior and exterior paints and lacquers, copy paper and graphic paper, growing media, soil improvers and mulch, dishwasher detergents, machine dishwashing detergents for industrial and institutional use. Furniture, notebooks, personal, notebook and tablet cases, rinse-off cosmetics, sanitary fittings, lubricants, shoes, shoes, textile products, desktop computers, hot water heaters, detergents, detergents, toilets and urinals, processed paper products, newsprint. Beispiele zu Holzproduktgruppen (Stand Oktober 2017):</p> <ul style="list-style-type: none"> • Office furniture: no products(*). (*) Annotation. However, there are already decisions on the product groups: (1) EU ecolabel for „wooden furniture“ (Decision 2009/894 / EC, valid from 2009 to 2017). (2) EU ecolabel for furniture (Decision EU 2016/1332, valid from 2016 to 2022). • Flooring: no products(*). (*) Note for the product groups, however, there are already decisions: (1) EU ecolabel for „wooden floor coverings“ (Decision 2010/18 / EC, valid from 2009-2016) and (2) EU ecolabel for „hard coverings“ (Decision 2009/607 / EC, valid from 2009 - 2017). • Windows and doors: no products, no standard. |
| Requirements for tenderers - selected aspects | |
| Remarks | none |

Überblick

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| logo |  |
| website | <p>www.fsc-deutschland.de www.info.fsc.org</p> |
| Emblem name | <p>Brand Name: ‚FSC‘ FOREST STEWARDSHIP COUNCIL, A.C. European brand no. 002974897, word mark. Brand owner: Forest Stewardship Council A.C. , Mexico.</p> |
| geographical scope | international |
| International head-quarters | Oaxaca, Mexiko |
| European head-quarters | FSC Arbeitsgruppe Deutschland e.V., Bonn |
| structure | <p>Structure International:</p> <ul style="list-style-type: none"> • FSC A.C. (Civil Association). FSC A.C is divided into three International FSC Centers: • FSC International Center (FSC-IC), • FSC Global Development (FSC-GD) • Accreditation Services International (ASI). <p>(Information from Global Commodity Governance, F.G.M. Haward)</p> <p>Structure in Germany. FSC Germany consists of two organizations:</p> <ul style="list-style-type: none"> • The FSC working group Germany e.V. (non-profit association), as an independent organization for the development of national FSC standards and for information about the FSC. Seat in Bonn. • Gute Holz Services GmbH (not for profit) provides FSC certification services such as standard translations, market and advertising campaigns as well as services related to FSC trademarks. Headquarters in Freiburg. |
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| aim | Ensuring sustainable forestry |
| motto | - |
| founding | Foundation international: October 1993. Establishment Germany: 1997. |
| particularity | Bottomup founded by environmental organizations. Occasion: International Sustainability Conference. |
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| certificate types | <ul style="list-style-type: none"> • FM certificates (Forest Management Standard, the actual forest certification) • CoC certificate (separate certification of the CoC). |
| standards | <ul style="list-style-type: none"> • Forest Management Standards • CoC Standards. |
| criteria | <ul style="list-style-type: none"> • <u>FM standard</u>. The FSC FM certificate assesses sustainable forest management according to the criteria of the FSC in the participating countries in the following areas: tree species selection, harvesting methods, ecology / species protection, wildlife, machine use, soil / water protection, chemical use, genetic engineering, neophytes, sustainability aspects, forest clearance and plantations, secondary uses and forest functions, avoid damage, protected forests, management plans. • <u>CoC standard</u>. The purpose of the CoC standard is to ensure that no more wood products are marketed as certified along the entire chain of custody, as each raw material required for the production has been procured. FSC offers different forms of control, either the model of physical separation (e.g., FSC 100%) or the set or percentage method (e.g., FSC mix). |

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| Decision making | <p>Within FSC Germany the standard is developed through following structure:</p> <ul style="list-style-type: none"> • FSC is organized in a 3-chamber system: economy, environment and social affairs. • Three-chamber voting: each of the three chambers has ten votes in the General Assembly. • Decisions are valid if (a) they have at least 20 votes, ie 66.6%, (or / b) at least 25% of the members are present, or (and / c) all the Chambers are represented, (or / d) no chamber votes closely against. |
| Certification, external monitoring | <ul style="list-style-type: none"> • Accreditation distinguishes between (1) Sustainable Forestry Certification and (2) Chain of Custody Certification (CoC). • The certification is carried out exclusively by organizations that have been accredited by Accreditation Services International GmbH (ASI). For this purpose, high requirements must be met by the applicants. The costs are about in the five-digit range. Today, about 32 companies are accredited worldwide, of which there are 11 companies in Germany alone: BM TRADA Certification Ltd, Bureau Veritas Certification Germany GmbH, Control Union Certifications, Dt. Management Systems GmbH (DQS), GFA Consulting Group GmbH (GFA), Institute for Market Ecology (IMO), LGA InterCert GmbH (IC), Rainforest Alliance SmartWood Program (SW), Scientific Certification Systems Forest Conservation Program (SCS), SGS Forestry Qualifor Program (SGS), TÜV Nord CERT GmbH (TUEV), TÜV South (TSUD) |
| costs | <p>Forest certification: 0,3 - 1,5 €/Hektar</p> <p>Promotion fee for CoC companies: 250 - 1.800 €/year</p> <p>Internal costs for SME of the CoC in average: 7.000 - 8.000 €/year (Calculations by wood working associations).</p> <p>Notes: (1) In-house costs for businesses to produce all necessary evidence to meet the standards can vary greatly by company and certifier. (2) The costs are primarily dependent on the existing level of sustainability of the respective establishment. In many tropical countries, for example, there are no economic plans for the use of forests, and very complex initial inventories of large forest areas have to be carried out to create a management plan. Therefore, the certification is considerably more expensive there than in Central Europe, where these data usually already exist. (3) Chain of custody certification requires a separate certificate for each company that comes in contact with the certified product. The cost of chain certification for companies is in the four-digit range.</p> |
| Product groups | |
| product groups | <ul style="list-style-type: none"> • In principle, all product groups made of wood. • Focus: paper, pulp, industrial products of the first processing stage as well as other products such as furniture, exterior wood, etc. |
| Requirements for tenderers - selected aspects | |
| Remarks | none |

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| Brief information on FSC criteria groups | |
| Tree species. | The tree species choice is based on the natural forest communities. Stocks with site-independent stockpiling will be transferred to near-natural forest stands in the long term. |
| Harvesting methods. | The use takes place single-stemming or group-wise; Clearcuts are generally omitted. Exemptions: a) The stock is structurally unstable, has a long-term tillering and is to be converted into a stable stock. b) In very small private forests (max 5 ha) larger quantities of wood are needed for extraordinary reasons, but not more than 1 ha clearcutting. |
| Ecology / biodiversity. | The ecological functions and values of the forest are preserved, improved or restored. The aim of silvicultural nurturing and utilization strategies are site-appropriate forest stands that build up high and valuable wood stocks by approximating the tree species composition, dynamics and structure of natural forest communities. Natural rejuvenation, natural succession and differentiation processes have priority. The conservation and enrichment of biotopes and deadwood is an operational strategy (integrated in the management plan). Cave trees (woodpeckers, etc.) are excluded from forestry use and left to their natural aging - there are exceptions. Representative examples of existing ecosystems of a landscape are to be protected in their natural state and represented in maps according to the extent and intensity of forest management and the uniqueness of the affected natural resources (i.e., landscape biotopes and reference areas (= learning and comparison areas) are not used). This applies to forest holdings in the Federal and Provincial Forest and corporate forest with a surface area of more than 1,000 hectares, which account for at least 5% of the forest area as a reference area. Private forests need no reference areas and are based on the nearest reference areas of neighboring farms. These reference areas should be at least 20 ha. Areas outside the management (eg nature conservation areas, natural forest reserves) that already exist on the farm are counted. Precautions are taken to protect rare, endangered and endangered species and their habitats. |
| Wild stocks. | The wild stocks are regulated so that the rejuvenation of the tree species of natural forest communities is possible without aids. The browsing situation is recorded regularly (for example, browsing report). |
| Machinery. | For mechanical interventions, procedures are applied that minimize damage to the soil and soil as well as the protection of water resources. The journey is limited to forest roads and back lanes. The forest floor is not used extensively. However, a fine clearance system requires a tight network of return lanes. Road construction is based on recognized principles of environmentally sound forest development. By choosing suitable equipment and equipment (wide tires, low-pressure tires, etc.) and the appropriate time, the gentle driving on the back lanes and the gentle timbering is guaranteed. |

Soil / water protection. A tillage does not interfere with the mineral soil and serves only to support the desired rejuvenation. Along watercourses and open water areas the development of continuous tillers (permanent forest) with tree species of the natural forest community is promoted.

Use of chemicals. Forest management promotes the development and adaptation of environmentally friendly, chemical-free methods of pest control and does not use fertilizers and chemical biocides in the forest. Pesticides (WHO types 1A and 1B) are not allowed, but there are exceptions (for example, pest control regulations). At pH values below 4.2, liming is permitted.

Genetic engineering. Genetically engineered seed and seedlings are not used.

Neophytes. The use of exotic species is carefully controlled and actively monitored to avoid adverse ecological effects. Planting or sowing of tree species suitable for the site, but not belonging to the natural forest community, is permitted in groups of individuals or groups to an extent that does not jeopardize the long-term development of the stocks towards the desired natural forest communities. In the case of first afforestation, no tree species are planted or sown that are not native to the area.

Sustainability. The amount of forest products used corresponds to a permanently sustainable level. The scheduled use of wood does not exceed the sustainable use possibility.

Forest clearing, plantations. The conversion of forest into plantations is not allowed. Christmas tree and ornamental rice crops can be certified with special consideration if they occupy less than 5% of the forest area. The transfer of equal-in-class clean stocks to near-natural forest stands is explicitly regulated in the management plan. Forest clearances are examined on a case-by-case basis if: (a) it concerns a very small part of the forestry business; b) does not take place in forests with a high protection value; and (c) provide clear, substantial, additional, safe and long-term benefits to sustain the whole forest operation.

Side usages / forest functions. Forest management promotes the efficient use of the diverse products and services of the forest so that it becomes economically viable in the long term and can provide a wide range of environmental and social benefits. The value of forest functions (e.g., water conservation) is maintained and increased where appropriate. For forest areas with defined priority functions (forest function mapping), appropriate measures are taken to maintain and possibly improve these functions.


Avoid damage. Forest management minimizes waste during harvesting and processing and avoids damage to other forest resources. In forest management, felling and reverse damage, damage to the felled trunk, damage to natural regeneration and the soil are minimized. The harvesting and care of the forest are based on the best possible technology. The removal of unused biomass is minimized, branches and bark remain in the forest. Forestry uses biodegradable oils.

Valuable forests. Specially protected forests should be preserved in their individuality and a forestry use should be made so that they at least maintain their characteristics and functions in their entirety. Obligation to map these areas / objects worth protecting. Tree monuments, exceptionally distinctive tree individuals and cultural and historical sites in the forest are preserved.

Management plans. The forest owner should create a business management system consisting of planning, implementation and control for his forestry operation. The basis for this is appropriate data and information from the inventories: silvicultural system, the desired tree species composition, forest dynamics, environmental protection, rare species, harvesting techniques. The documentation / evaluation should be comprehensible for the certification authorities.

HOLZ VON HIER

Overview

| | |
|-----------------------------------|--|
| logo |  |
| website | www.holz-von-hier.de |
| Emblem name | HOLZ VON HIER. |
| geographical scope | first Germany, currently expansion in Europe: Austria, France, Italy, Slovenia |
| International head-quarters | no |
| European head-quarters | Germany, Creussen; planned further seats in Europe. |
| structure | Non-profit organization with stakeholder curatorium, expert advisory boards, expert panel, partner network, Hersteller network, administration and service gGmbH. Trademark owner Holz from Here gemeinnützige service and management gGmbH. |
| aim | Contribution to climate protection, biodiversity, resource efficiency and regional added value |
| motto | Climate protection and regional added value are combined by low carbon products of short distances. |
| founding | 2012 in Germany |
| particularity | <ul style="list-style-type: none"> • Wood from Here was founded because the flow of material in wood products is getting longer and longer and this is an essential but so far neglected part of the climate and environmental backpack of products in general and also in wood products. • Certificate for the customer (private and public), • LCA basic data on the certificate available via the HvH Environmental Footprint, • Real-time verification for each product, product batch, • the product is not awarded the operation, • System also suitable for medium-sized businesses, • Tenderable, VOB compliant, • Innovative control system based on cross-plant digital flow control. • No costs for architects, municipalities, customers, GForst (since not the forest is certified). • Wood from Here, unlike other certification systems, meets the criteria not collected for all products of a product rail within a longer period, but individually for each individual product or a specific product or delivery batch in real time. • This is made possible by Holz's electronic material flow controlling system. • The development of this system was funded by the German Federal Environmental Foundation for its environmental and environmental benefits. • Non-profit organization. • HOLZ VON HIER also advises municipalities and procurers free of charge with regard to sustainable procurement. • Since wood vn is a product-related certificate, every operation of the chain can participate in the chain comparatively in time or object-related. |
| Certificate types, starting point | HOLZ VON HIER certificate of origin, type A: cradle to gate (A1, A2, A3) and type B: cradle to customer (A1, A2, A3, A4) HOLZ VON HIER environmental footprint (,lifetime' LCA) |
| standards | one standard |

| | |
|-----------------------|--|
| criteria | <p>Criteria for the HvH CoC certificate of origin:</p> <ul style="list-style-type: none"> • The logs that are included in the CoC must be 100% sourced from sustainable forestry, as evidenced by FM certificates according to FSC or PEFC or equivalent. • The product does not contain any wood from poaching or of endangered tree species according to the IUCN Red List • The wood products that are certified with the CoC certificate have been produced above average low in transport and thus climate and environmentally friendly, biodiversity-friendly and resource-efficient along the processing chain to the place of use. • no fixed criterion but systemically given: The products were produced according to the international high ecological and social standards. <p>Data from the HvH Environmental Footprint: Products that also have a HvH environmental footprint, providing architects and decision makers with the classic environmental life cycle data for the specific singular product: GWP, EP, AP, ODP, POCP and energy.</p> |
| Decision making | <ul style="list-style-type: none"> • Decision making on new standards or changes is made by the stakeholder board. This independent decision-making body with representatives from environment, society and economy, makes all relevant decisions regarding the label and standards. • This is advised by the expert advisory boards and the expert panel with academic scientists. The Service and Management gGmbH prepares the necessary templates and submits them for decision-making. |
| Certification | <ul style="list-style-type: none"> • Product certification by electronic controlling system. • the system is third party controlled according to the standard PS 880 of the DIW (German Institute of auditors). (also used in state biogas register and carbon trading). |
| costs | <ul style="list-style-type: none"> • Solidarity contribution for participants of the CoC. These are based on the number of employees in the company and ranges in average between € 300 and € 1,000 per year for SME. • These funds are used to implement the non-profit objectives of HOLZ VON HIER for public relations, actions, environmental education, training, system preservation. • No further costs for certification in companies (because of the digital system). |
| product groups | |

| | | | | |
|--|--|---|--|---|
| <p>product groups</p> <p>In principle, the wood from Here Label affects all product groups made of wood and NaWaRo as well as building parts made of wood, wooden houses, bridges, halls and other (A1 to A4). Up to now, the focus has been on products of the 1st processing stage and processed products of medium-sized companies as well as buildings. Further product groups (for example insulating materials and paper) are being developed. Certifiable are products, but also whole objects and buildings. Thus, e.g. Wooden houses, bridges, halls and other buildings will be awarded a HOLZ VON HIER certificate.</p> | <p>Softwood: Logs Industrial wood - softwood Needle roundwood - fixed lengths Needle roundwood - long wood Forest residue wood - softwood</p> <p>Hardwood: Logs Industrial wood - hardwood Hardwood logs - fixed lengths Hardwood logs - long wood Forest residue wood - hardwood</p> <p>lumber Thermoholz boards Block goods - hardwood Window scantlings Hardwood sawnwood Rauspund (Rohhobler) - Raw floorboards - hardwood planed Timber, dry BSH rawlings Block goods - softwood boards slats Glulam Duo / Trio beams Window scantlings Softwood planed wood KVH Construction timber MH solid wood battens customized lumber frame Raw floorboards - softwood formwork rafter Thermoholz packaging</p> <p>veneer Thick veneer - 10 mm Veneer - 0.6 - 2 mm</p> | <p>Solid wood wall panels Cross-laminated timber plates Solid wood panels</p> <p>Components exterior doors inner doors balconies Indoor stairs Outdoor stairs Wood windows Wood-aluminum windows windows Wood and glass facades</p> <p>Flooring Plank 20 mm Plank 16 mm Wide lamella parquet planing plank Gaplessboard Decking board Thermopappel Edgeband massive deck board wood block industrial parquet lam parquet Solid short hallway parquetry belt shipdeck Sports ground</p> <p>Wooden houses and timber construction private Loft conversion roofs carport facades blockhouse Structural panel house Wooden houses shell construction Wooden houses Frameworks rehabilitation work conservatories</p> | <p>Timber construction - commercial, public renovation roof trusses facades resound Wooden buildings kindergartens office building sports halls residential building apartment buildings pavilions bridges</p> <p>Exhibition stands messebau</p> <p>Interior finishing - private Interior renovation furniture restoration floor renovation Floor underbody Interior fittings of every kind Barrier-free living Interior wall systems Solid wood furniture room divider wall coverings ceiling coverings Flooring</p> <p>Commercial. interior surgeries joinery Interior construction public. building shopfitting object commercial kitchens Hotel facilities catering facility wall coverings Flooring</p> <p>Furnitures - private Massivholzmöbel private office furniture bathrooms</p> | <p>built-in furniture Single units nursery kitchens living room sauna furniture</p> <p>Furniture making - commercial public Massive office furniture office tables seating canteen furniture Nursery Furniture Reception area furniture Woodwork in wet areas Built-in furniture Interior, assecoirs Food & Drink Gifts wood Art lamps</p> <p>Sauna and wellness sauna sauna floors garden area pergolas garden homes garden furniture</p> <p>Wood for outdoor use terraces fences city furnitures</p> <p>Sawmill residues Wood Residues mulch bundle of wood sawdust Animal bedding wood energy firewood wood chips pellets Others</p> <p>Tool and device handles</p> |
| <p>Tree species</p> | <p>softwood Douglas Spruce pine pine larch Larch - smoked fir Thermo pine Thuja Weymouth</p> | <p>Hardwood maple Maple - sycamore Maple - field maple Maple - maple Apple birch pear beech Beech - core beech Beech - Thermobook Oak Oak - smoked Oak - kernel oak</p> | <p>Oak - red oak Oak - thermo oak Elsbeere alder ash-tree Ash - thermo ash aspen lilac laburnum hornbeam cherry lime Mooreiche poplar</p> | <p>Poplar - Thermopappel plane Plane tree - smoked robinia buckeye Rüster (elm) sloe black walnut Speierling Rowanberry (rowan) walnut pasture plum</p> |
| <p>Requirements for tenderers - selected aspects</p> | | | | |
| <p>Remarks</p> | <p>see below</p> | | | |

Notes: HOLZ VON HIER also fulfills the requirements of EWG No. 880/92

HOLZ VON HIER also corresponds to EWG No. 880/92, but goes beyond this in terms of climate and environmental impact. The regulation looks at the life cycle phases of product precursors (A1, A2), production (A3), distribution (A4), utilization / use (B), disposal (D). In addition, the environmental aspects: (1) waste generation, (2) soil pollution and damage, (3) water supply, (4) air pollution, (5) noise, (6) energy consumption, (7) consumption of natural resources and (8) impact on ecosystems.


Tab.: Diagram from Council Regulation (EWG) No 880/92 concerning wood aspects of products labeled here. GWP - global warming potential in [kg CO2-equiv.], AP - acidification potential of soil and water in [kg SO2-equiv.], EP - eutrophication potential in [kg PO4-equiv.], ODP - degradation potential of the stratospheric ozone layer in [kg CFC11-equiv.], POCP - formation potential for tropospheric ozone in [kg ethene equiv.], ADPE potential for abiot. Depletion of non-fossil resources in [kg SbEqv.], ADPF - Potential for abiotic depletion of fossil fuels in [MJ], PERE - Renewable primary energy as energy source in [MJ], PENRE - Non-renewable primary energy as energy source [MJ], water consumption

| Envir. factor. | Life cycle stages | | | | |
|---|--|--|--|--|--|
| | Prephases (A1, A2) | Production (A3) | Distribution (A4) | Usage (B) | End of life (D) |
| (1) waste | no waste (1a) | no waste (1a) | alm. no packaging: < 1-2%(1b) | no waste | no waste |
| (2) soil pollution | Data for AP no damages | Data for AP no damages | Data for AP no damages | no emissions (inert) | no damages (no deposition, no eluates) |
| (3) water pollution | Data for AP, EP, (ind.) Water cons. | Data for AP, EP, (ind.) Water cons. | Data for AP, EP, (ind.) Water cons. | no emissions (inert) | no damages (no deposition, no eluates) |
| (4) air pollution | Data for GWP, ODP, POCP | Data for GWP, ODP, POCP | Data for GWP, ODP, POCP | no emission in usage, no emissions in fire case | emission of bound CO2. |
| (5) noise | for production in Germany or Europe compliance with European requirements (extraction of raw materials, transport, production) | | | not relevant | not relevant |
| (6) Energy consumption | Data for PERE, PENRE | Data for PERE, PENRE | Data for PERE, PENRE | no energy consumption in suage phase | combustion, substitute fuel |
| (7) consumption of natural resources | Data for ADPE, ADPF. sustainable harvested roundwood, resource saving in transportation | Data for ADPE, ADPF, RMA Factor: 1 (best) | Data for ADPE, ADPF. resource saving in transportation | no resource consumption in usage phase | no resource consumption because of no deposition |
| (8) Impact on ecosystems | FM certificate, Risk of biodiversity loss factor = 1 (best) | European environmental requirements are met | Risk of biodiversity loss factor for transportation = 1 (best) | European environmental requirements are met | European environmental requirements are met |

Holz von Hier and Life cycle stages

| | |
|---|--|
| A1: Raw material extraction. | Wood from Here products contain only wood from sustainable forestry proven by FM certificates of FSC, PEFC or comparable. Wood from exploitation and unsafe sources is excluded. Timber of globally endangered tree species according to IUCN's red list are excluded. Wood from here product are manufactured in their entire material flow within Europe and due diligence compliant. Captured standard environmental data by the HvH Environmental Footprint for HvH products in the range A1: GWP, AP, EP, ODO, POCP, ADPE, ADPF, PERE, PENRE, water use |
| A2: Transports in the chain of custody - Best Practise in A2 | HOLZ VON HIER products are produced above average low transport in the entire material flow. The certificate of origin documents and certifies this in conformity with the EU. The material flow is documented in real time for the specific product. There are real transports recorded, not invoiced transports as with classical EPD. EPD work here i.d.R. with Stadaradatensätzen (for example, GaBi Sorftware: 50 - 350 km), so that the real transports i.d.R. systemically strongly underestimated). A2 is thus more accurately covered by Holz than by any EPD currently on the market. Captured standard environmental data by the HvH Environmental Footprint for HvH products in the range A2: GWP, AP, EP, ODO, POCP, ADPE, ADPF, PERE, PENRE, water use |
| A3: Production | For HOLZ VON HIER products, in-house product data are available: energy consumption in [MJ], water consumption in [kg] and raw material consumption in [m3, m2, t]. Or there are industry production data from industry EPD for manufacturers (mostly SMEs) that do not have their own LCA data. Captured standard environmental data by the HvH Environmental Footprint for HvH products in the range of A3: GWP, AP, EP, ODO, POCP, ADPE, ADPF, PERE, PENRE, water consumption. |
| A4: Transports „gate to customer“ | For HOLZ VON HIER products by HvH Umweltfootprint for the concrete product in real time present on the real material flow through the product. A4 is not covered by classic life cycle assessments. Captured standard environmental data by the HvH Environmental Footprint for HvH products in the area A4: GWP, AP, EP, ODO, POCP, ADPE, ADPF, PERE, PENRE, water consumption. |
| B: Usage | For HOLZ VON HIER products, a standard service life according to the BNB table for the respective construction product groups is given in the Environmental Footprint Accompanying Documents, as they are also used in the building assessment. Building materials such as HvH products behave inertly during the use phase, meaning they do not consume energy, water or raw materials (unlike, for example, electrical appliances or lamps) during this phase. |
| D: End of life | For HOLZ VON HIER products are documented in the environmental footprint Accompanying documents, the Nachnutzungsmöglichkeiten for the product groups. Since reuse also depends on installation in the building (glued or screwed, natural or lacquer, etc.), the topic of reusability also depends on the use or the exact installation in the building. HvH provides users in Infotools with a high degree of product group transparency and shows starting points for optimally environmentally friendly installation, as reuse is already decided upon when installing the building material. |


Natureplus

| Natureplus | Überblick |
|-----------------------------|--|
| logo |  |
| website | www.natureplus.org |
| Emblem name | NaturePlus (text-image trade markmarke) |
| geographical scope | Europe, mainly in Germany |
| International head-quarters | no |
| European head-quarters | Internationaler Verein für zukunftsfähiges Bauen und Wohnen - Natureplus e.V., 69151 Neckargemünd |
| structure | Association |
| | |
| aim | The goal is "sustainable development in the construction sector". Climate protection, living health and sustainability are central themes of the label. |
| motto | Outsourcing sustainable products Award for sustainable, climate-friendly, healthy products. |
| founding | The International Association for Sustainable Building and Living natureplus e.V. awards the seal of the same name. The Natureplus is a voluntary label for construction products and building materials of all kinds. The label was established at 20.04.2001 |
| particularity | Natureplus has strict requirements for the detection of harmful substances. Here, not only are European requirements complied with, but the label goes beyond many aspects and above all, it actually allows the substances in the REACH list to be measured. Self-testimonies of the manufacturers are not sufficient as proof, but test reports must be available to recognized laboratories. |
| | |
| certificate types | uniform certificate, no gradations |
| standards | Basic standard A - for all labeled products Basic standard B - for products with wider criteria |
| criteria | <ul style="list-style-type: none"> • The „environmentally sound and resource-conserving extraction of raw materials and the use of environmentally friendly secondary raw materials“ must be proven (do not remove more than re-grow). • Conservation and biodiversity issues, the Washington Convention on the Protection of Species must be taken into account, and land reclaimed or renatured (see „Natura 2000“). • Nonrenewable resources must be able to meet 100 times the annual resource requirements. • Renewable raw materials must as far as possible dispense with the use of pesticides, chemicals and artificial fertilizers. • Avoidance of raw materials from non-sustainable plantation management, no raw materials from overexploitation (eg uncertified tropical timbers) and as broad as possible support to recognized quality systems of organic farming and sustainable forestry. • In raw material extraction and production, energy efficiency and environmental compatibility must be demonstrated in accordance with ISO 14040/44. • Health aspects of the products are comprehensively regulated by Naturplus (according to CLP regulation). • For products from the construction sector, the following substances are measured (template laboratory report) and the following limit (28-day values = duration values): TVOC: 0.3 mg / m³, terpenes: 0.2 mg / m³, sensitizing substances: 0 , 1 mg / m³, mutagens: 0.05 mg / m³, aldehydes: 0.1 mg / m³, styrene: 0.01 mg / m³, methylthiazolines (MIT): 0.001 mg / m³, benzaldehydes: 0.02 mg / m³, VOC o. NIK: 0.1 mg / m³, formaldehyde and acetaldehyde: 0.36 mg / m³ (non-glued products), 0.48 mg / m³ (glued products). Also arsenic (As), cadmium / Cd, cobalt (Co) nickel (Ni), antimony (Sb) each: 1 mg / kg, chromium (Cr): 5 mg / kg, copper (Cu): 50 mg / kg , Lead (Bb): 15 mg / kg, mercury (Hg): 0.1 mg / kg, organohalogen compound (NOX, EOX): <1 mg / kg. Monomeric TDI, HDI: <1 µg / m³, MDI: <2 µg / m³. Social: Compliance with minimum standards according to ILO (*). |
| decision making | Decisions about the standard are set by Natureplus e.V. |
| certification | certification is awarded by an independent institute (unknown) |

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| costs | <p>Preliminary audit: 1.200 € (Additional services at cost) Main audit: 5.000 € - 7.000 € (Additional services at cost) Follow-up audit: 430 € (Additional services at cost) Re-audit: 3.700 € - 5.700 € (Additional services at cost) The license fees amounts to 0.05% of the with the certified products in the Countries achieved sales in which natureplus is active.</p> |
| Product groups | |
| <p>Product groups</p> <p>basically the label is for all products, open - however, the proportion of renewable and mineral raw materials at least 85% by weight of the product. Exceptions require justification under Sustainability aspects.</p> | <p>Product groups at Naturplus the further B-standards (A basic state always applies) are:</p> <ul style="list-style-type: none"> • Wood and wooden materials, • Insulating materials from renewable raw materials, • EIFS, • Insulating materials of expanded, expanded or foamed mineral raw materials, • Roof tiles and roof tiles, • Wall colors • Surface coatings from renewable resources (paints, glazes, oils, waxes), • Plasters, mortars and mineral adhesives, • Adhesives from renewable raw materials, • Drywall, • Wall and mantle stones, • Elastic and textile floor coverings, • mineral wall and floor coverings, • Wooden windows and doors • Seals made from renewable raw materials, • Wallpapers. <p>Examples:</p> <ul style="list-style-type: none"> • Flooring: (1) Engineered Parquet: 10 products, 4 manufacturers. (2) Linoleum flooring: 4 products, 1 manufacturer. • Windows, Doors: (1) Windows: No Products. (2) Doors: 9 Door leaf types (no doors), 1 producer. • Wall coverings: (1) wallpaper, paper wall coverings, textile wallcoverings: currently no Products (2) lime, casein, loam, silicate paints: 16 products, 9 producers. (3) primer / silicate primer: 1 product, 1 producer. (4) Gypsum / cement putties: currently „no products listed. (5) Structural coatings: 2 products, 2 |
| Requirements for tenderers - selected aspects | |
| Requirements for health aspects | <p>In the case of Natureplus, the substances CLR regulation must be measured for almost all construction products (no self-statement by the manufacturer, but submission of laboratory reports, listing 28-day values = duration values): TVOC: 0.3 mg / m³, terpenes: 0, 2 mg / m³, sensibilis. Substances: 0.1 mg / m³, mutagens: 0.05 mg / m³, aldehydes: 0.1 mg / m³, styrene: 0.01 mg / m³, methylthiazolines (MIT): 0.001 mg / m³, benzaldehydes: 0, 02 mg / m³, VOC or NIK: 0.1 mg / m³, formaldehyde and acetaldehyde, in each case non-glued products: 0.36 mg / m³ glued products 0.48 mg / m³. Arsenic (As), cadmium / Cd), cobalt (Co) nickel (Ni), antimony (Sb) each: 1 mg / kg, chromium (Cr): 5 mg / kg, copper (Cu): 50 mg / kg, Lead (Bb): 15 mg / kg, Mercury (Hg): 0.1 mg / kg. In addition, halogenated organic compounds (NOX, EOX): <1 mg / kg. Monomeric TDI, HDI: <1 µg / m³, MDI: <2 µg / m³.</p> |
| Requirements for using natural resources | <p>Sustainable use of natural resources and use of environmentally sound secondary raw materials. The annual utilization rates of the renewable raw materials used may not exceed the annual net production. If non-renewable resources are used, then the resources available in known warehouses with economically justifiable effort must be able to cover 100 times the annual resource requirements.</p> |
| Requirements for Social compatibility of production | <p>As a indicator for the preservation of a socially acceptable production is the observance of the minimum standards after ILO (*). Specifically, therefore, for the production of certified products in accordance with ILO principles, it must be demonstrated that (1) the manufacturer is committed to the aforementioned principles of the ILO. (2) Freedom of association and the right to collective bargaining are guaranteed, in particular where employment contracts do not contain appropriate disclaimers, workers have free access to their representatives and there are clear rules for redundancies and negotiations with representatives of legally recognized employee representatives, as required by law or is permissible. (3) The use of forced labor or forced activity in the company is prohibited. (4) A minimum age for employment of workers exists. (5) Compliance with health and safety measures is respected.</p> |

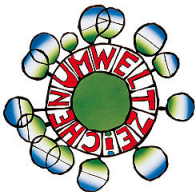
Nordic Swan

Overview


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| logo |  |
| website | www.ecolabel.se |
| Emblem name | Nordic Swan |
| geographical scope | global with focus in scandinavian countries |
| International head-quarters | Ecolabelling Sweden, Box 38114, SE-118 80 Stockholm, Tel: +46 (0) 8 55 55 24 00, svanen@ecolabel.se |
| European head-quarters | - |
| structure | The label Nordic Swan has 5 offices in 5 scandinavian countries. The ownership of the Nordic Swan and relation of the countries offices is unclear. |
| aim | The Nordic Swan Ecolabel creates sustainable solutions based on a life cycle assessment and an overall goal to reduce the environmental impact from production and consumption of goods. |
| motto | - |
| founding | The Nordic Swan Ecolabel was established in 1989 by the Nordic Council of Ministers as a voluntary ecolabelling scheme for the nordic countries Denmark, Finland, Iceland, Norway and Sweden. |
| particularity | - |
| certificate types | one type of certificate / label |
| standards | Various standards, depending on the type of product. Currently there are existing 60 product groups. |
| criteria | Various criteria, depending on the type of product. Currently there are existing 60 product groups. |
| decision making | Experts from the Nordic Ecolabelling organisations develop proposals for criteria. Other experts are often called upon to give their views, and these can represent other environmental organisations, industry or the government. Before The Nordic Ecolabelling Board finalises the criteria, they are sent out for review. They are also available to the general public on the national organisations' websites. |
| certification | certification is awarded by an indiependend institute (unknown) |
| costs | Application fee: 3.000 € + VAT License fee: 2.000 € - 100.000 € + VAT per year (0,15% of turnover) |
| Product groups | |
| Product groups | For the following product groups environmental label standards exist: <ul style="list-style-type: none"> • Natural wood, • Wall colors • Surface coatings from renewable resources (paints, glazes, oils, waxes), • Drywall, • Elastic and textile floor coverings, • Wooden floor coverings • mineral wall and floor coverings, |
| Requirements for tenderers - selected aspects | |
| Remarks | - |

Austrian Ecolabel

Overview

| | |
|-----------------------------|---|
| logo |  |
| website | www.umweltzeichen.at |
| Emblem name | Das Österreichische Umweltzeichen |
| geographical scope | Austria and neighbouring countries. |
| International head-quarters | - |
| National head-quarters | Verein für Konsumenteninformation (VKI), 1060 Wien, Linke Wienzeile 18 |
| structure | The owner of the trademark is the austrian ‚Bundesministerium für Nachhaltigkeit und Tourismus (BMNT)‘. |
| aim | The eco-label is intended to motivate manufacturers and retailers to develop and offer less polluting products. This will trigger a dynamic process on the market, which will shape the supply of environmentally friendly products and services. |
| motto | The Austrian Ecolabel stands for higher quality of living and environment, clear and transparent information, high informative value, environmental policy in the individual responsibility of the companies and organizations, cooperation on a high level with optimal service. |
| founding | The eco-label was created in 1990 on the initiative of the environmental minister Marlies Flemming. |
| particularity | - |
| certificate types | One type of label for all products. |
| standards | various standards related to product groups |
| criteria | The eco-label assesses (if applicable) the following criteria: <ul style="list-style-type: none"> • Raw material and energy consumption • Toxicity of the ingredients • Emissions (eg exhaust gases, waste water, noise, ...) • Disposal / recycling (waste, recyclability) • packaging • Sales and transport (if required) • Quality, safety, longevity, ease of repair. |
| decision making | An Ecolabel Directive is proposed by the „Advisory Council Ecolabel“, an advisory body of the Minister for the Environment. It is being prepared by a committee of experts chaired by the Association for Consumer Information (VKI). This body is made up of representatives of: <ul style="list-style-type: none"> • the administration (federation, countries, municipalities) • the social partners (economy, employees) • NGOs (environment, consumer protection) • and experts from the subject area concerned After completing this process, the Advisory Council on the Environment decides to publish it by the Federal Ministry of Agriculture, Forestry, Environment and Water Management. |
| certification | Auditing of the documents regarding compliance with the criteria is done by accredited organisations. Awarding of the label is pursued by the VKI and BMNT |
| costs | Application fee: 150 - 600 € (depending on turnover) License fee: 380 - 2.420 € (depending on turnover) |

| Product groups | |
|--|---|
| Product groups | <p>The Austrian Ecolabel is currently awarded to following product groups:</p> <ul style="list-style-type: none"> • Building & living • Household & Cleaning • Office, paper, printing • garden • energy • financial products • mobility • Shoes, textiles • film production • Events |
| Requirements for tenderers - selected aspects | |
| Remarks | - |

| PEFC | |
|-----------------------------|---|
| Overview | |
| logo |  |
| website | www.pefc.de |
| Emblem name | PEFC - Programme for the Endorsement of Forest Certification Schemes. Markeninhaber: PEFC Council |
| geographical scope | global |
| International head-quarters | PEFC Council, Geneva, Switzerland |
| European head-quarters | Stuttgart, Germany |
| structure | <ul style="list-style-type: none"> • International: PEFC Council. PEFC Council Members are the respective PEFC organizations of the countries. The legal form of the Council is not mentioned on the website. • Germany: PEFC e.V. Germany |
| aim | Sustainable forest management worldwide according to the criteria of PEFC. |
| motto | "The goal of PEFC is the documentation, improvement and promotion of sustainable forest management according to equally economic, ecological and social standards" (website). |
| founding | PEFC was founded 1999 in Paris. |
| particularity | PEFC has 33 national organizations worldwide. The criteria for PEFC were developed following the decisions of the Ministerial Conference on the Protection of Forests in Europe (Helsinki 1993 / Lisbon 1998) by 37 participating nations. PEFC is a worldwide association, with country-specific associations. |
| certificate types | <ul style="list-style-type: none"> • FM certificate (Forest Management certificate, core fo the aim of PEFC) • CoC certificate (volume conformity certificatoin of the CoC). |
| standards | <ul style="list-style-type: none"> • Forest Management Standard • CoC Standard. |
| criteria | <ul style="list-style-type: none"> • <u>FM standard</u>. The FM certificate evaluates sustainable forest management according to PEFC criteria. Areas: choice of tree species, harvesting methods, ecology / species protection, wildlife, machine use, soil / water protection, chemical use, genetic engineering, neophytes, sustainability aspects, forest clearing, plantations, secondary uses, forest functions, avoid damage, protected forests, management plans. • <u>CoC standard</u>. The purpose of the CoC standard is to ensure that no more wood products are marketed as certified along the entire chain of custody, as each raw material required for the production has been procured. PEFC offers different forms of control, either the model of physical separation or the percentage method or the credit model. |
| decision making | <ul style="list-style-type: none"> • International: PEFC council • Germany: PEFC Deutschland. |
| certification | <ul style="list-style-type: none"> • Accreditation distinguishes between (1) Sustainable Forestry Certification and (2) Chain of Custody Certification (CoC). • Certifiers of certification organizations (e.g. TÜV) check the company once a year. |
| costs | <p>Forest: 0,3 - 1,5 €/Hektar</p> <p>Marketing fee for certified companies: ~ 100 - 800 €/Betrieb.</p> <p>Internal costs for SME of the coc: ca. ~ 7.000 - 8.000 €/year (Calculations by wood working associations).</p> |
| Product groups | |
| product groups | <ul style="list-style-type: none"> • In principle, this applies to all product groups made of wood. The international focus is on paper, pulp and industrial products of the 1st processing stage. • Product range at PEFC Germany: printed products, energy wood, veneers, trade, planed goods including profiled boards, wood in the garden, wood materials (HWS), building and interior products, furniture, paper and pulp, raw wood (round), lumber, household goods, wooden toys, shavings and fibers, stationery, packaging (paper / cardboard), sanitary papers, other goods of wood. |

Requirements for tenderers - selected aspects

Remarks

-

Brief information on PEFC criteria groups

Tree species. Mixed stands with site-specific tree species should be preserved or built. A sufficient proportion of tree species of the natural forest communities should be sought. (Mixing ratio between 10 and 50% in the final stock is considered mixed). Promote rare tree and shrub species. Follow the indications of origin for forest seed and seedlings. Use seed / seedlings of verifiable origin, if available. Natural regeneration takes precedence.

Harvesting methods. Adequate and tailored to the operating objectives care is to ensure. The end use of non-mature stocks (NH: <50a, LH <70a) is generally not permitted (exception: management of low and middle forests). Full tree use (complete with root) is to be avoided. On nutrient-poor soils, it is also possible to foresee full tree utilization. Clearcuts are generally omitted. Exceptions: a) When converting to site-appropriate tillering. b) It is not possible to rejuvenate a site-specific tree species from the dark old stock by other means. c) Due to small-scale farm structures, other silvicultural methods are not applicable. d) For compelling reasons of forest protection, the economic situation of the forest owner or the duty to maintain public safety.

Ecology / biodiversity. Protected biotopes and protected areas as well as endangered plant and animal species are given special consideration in forest management. Deadwood and cave trees are preserved to an appropriate extent, as far as such a waiver of use does not lead to disproportionate economic disadvantages, accident prevention, forest protection or traffic safety problems. To compensate for economic disadvantages, support programs or measures of contract nature conservation should be taken. Desired deadwood: trees > 70a, poss. LH, Horst trees, cave trees, with poss. large diameter, individual broken or dead trees. From a strong lying or standing dead tree / ha can be spoken of a good equipment of dead wood. The deadwood management should be included in the written work orders. Marking the deadwood trees before harvesting is desirable.

Wild stocks. Adapted wild stocks (vegetation expertise) are prerequisites for close-to-nature forest management in the interests of biodiversity. As far as possible, the forest owner is working towards adapted wild stocks.

Machinery. A permanent fine development network is to be set up, which takes into account a forest and soil-conserving use of machinery. The rear track clearance may generally not be less than 20 m. For compaction-sensitive soils, greater distances should be sought. The technical navigability of the return gases should be maintained. A needs-based development of the forest with forest roads is required. Special attention must be paid to the interests of the environment. In particular, protected biotopes are to be conserved.

Soil / water protection. To dispense with extensive, in the mineral soil intervening tillage. Driving in addition to harvesting (tillage, planting, seed) is to be limited to what is necessary. For compaction-sensitive soils, driving is to be designed to be gentle on the soil. Clearcuts in the soil protection forest are to be omitted. The impairment of waters in the forest should be avoided. Dispense with the creation of new drainage facilities.

Use of chemicals. Control measures using plant protection products only take place as a last resort in the event of serious endangering of stock or rejuvenation and only on the basis of a written opinion of a competent person. Polterspritzung is permitted without written opinion. Protection by other measures, such as timely removal of wood by the buyer, should, however, have priority. Soil calcifications should only be carried out on the basis of a soil and / or forest nutrition expertise or sound site investigation. Fertilization is to be omitted.

Genetic engineering. Genetically modified organisms are not used.

Neophytes. When foreign tree species are involved, it is important to ensure that this does not impair the ability of other tree species to regenerate and thus displace them.

Sustainability. Forest management takes place in a fully sustainable way, which conserves and, if necessary, improves the forest resources and their diverse forest functions.

Forest clearing, plantations. Forest transformation (changes in use) occurring timber may only be marketed as "PEFC certified" if it is (in accordance with nature conservation and forestry law) approved clearances.


Side usages / forest functions. Forest management promotes the conservation and adequate improvement of protection functions, as they are of particular importance to the general public in a densely populated country. In forest management, all protective functions have to be considered.

Avoid damage. When harvesting wood, damage to the stock and soil must be avoided as far as possible. For this it is necessary to generally refrain from surface driving. Precipitation / reverse damage to existing and rejuvenated areas should be avoided through careful forestry work. Quickly biodegradable chain adhesive oils, hydraulic fluids are to be used, if technically feasible, possible. An exception applies to hydraulic fluids if there is no approval from the machine manufacturer. Emergency kits for oil spills with sufficient collection capacity must always be carried on board the aircraft.


High Value forests. Restrictions may be allowed in particular for the protection of the ecosystem, forest and wildlife management, protection of forest visitors, avoidance of significant damage or protection of other legitimate interests of the forest owner. On sites with recognized special historical, cultural suw. Importance should be taken to consideration.

Management plans. Forest enterprises over 100 hectares are to prepare forest management works or written management concepts (with for example age group overview, stock calculation, operational planning). Forest enterprises under 100 ha should fulfill at least certain of the listed criteria in their operational reports. Forest owners without a written operational plan should explain their goals and plans (use, care, rejuvenation) to the certifier in detail.

Other relevant quality marks in detail

| Energy Star | |
|-----------------------------|--|
| Overview | |
| logo |  |
| website | www.energystar.gov |
| logo name | Energy Star |
| geographical scope | global |
| International head-quarters | U.S. Environmental Protection Agency (EPA) |
| European head-quarters | k.a. |
| structure | k.a. |
| aim | The Energy Star specifies energy consumption during operation and standby for electrical appliances. |
| motto | - |
| founding | The Energy Star is a US American sign. An EU Regulation also introduced the Energy Star for office equipment in the EU (Decision 2009/489 EC, EC Regulation 106/2008). |
| particularity | Strength: as a marketing measure for electrical appliances worldwide valid, even in countries that do not have the high energy requirements of the EU, raises the issue of energy saving awareness. Weaknesses: the criteria are weak for the EU, with its already high legal requirements, and are automatically met by the majority of the electrical equipment produced here. |
| certificate types | one singular label for various product groups |
| standards | <ul style="list-style-type: none"> • Various standards depending on the product group. These differ in countries worldwide. • The Energy Star products in USA are considered e.g. for electrical appliances, building materials, public / commercial buildings or residential buildings and are therefore very diverse. • In Europe, v. a. Electrical appliances the brand, the standards here are rather uniform and in any case meet the requirements of the European Ecodesign Directive, but in some cases do not go beyond that. |
| criteria | To obtain the label, the manufacturer must make a self-commitment. The label is applied for voluntarily. The Energy Star can be used by any manufacturer who believes that their device meets this standard. A notification to the EPO or, in the case of office and computer equipment in the EU, a communication to the EU Commission is sufficient. There is „no verification by sign holder“ (Federal Office of Economics and Export Control in the leaflet energy labels for computers, as of 04.02.2015). |
| decision making | no information on website |


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| certification | product certificates are awarded by independent certification bodies |
| costs | unknown |
| Product groups | |
| Product groups | The Energy Star products in the United States are very diverse in electrical appliances, building materials, public / commercial buildings or residential buildings. In Europe, so far mainly electrical appliances have been the brand. In Europe, there are the Energy Star products so far mainly for computers (s.u.). Product list in the EU (https://www.eu-energystar.org/db-currentlists.htm , Oct. 2017): (1) Computers (6.1 incl. Desktops Thin Clients, Notebooks, Portables, etc.): 5,941 products, about 50 manufacturers. (2) Imaging Equipment (2.0): about 3,264 products, about 38 manufacturers. (3) Displays (6.0): 2.251 products, about 39 manufacturers. (4) Unint. Power Supplies (1.0): 405 Products, 9 Manufacturers .. (5) Servers (2.0): 204 Products, Approx. 17 Manufacturers |
| Requirements for tenderers - selected aspects | |
| remarks | Although the Energy Star is extremely complex in standard but simple in implementation (self-declaration) and is not externally monitored, in Europe (!) It is unlikely that it will achieve significant environmental improvements compared to the state of the art. In any case, the contracting authorities should always include or take into account the state of the art. In terms of sustainability, the better values for the energy consumption of the appliances should be taken into account in the call for tenders |


| TCO | |
|-----------------------------|---|
| TCO | Überblick |
| logo |  |
| website | www.tcodevelopment.com |
| logo name | TCO certified |
| geographical scope | global |
| International head-quarters | The headquarters are located in Stockholm, Sweden, with regional presence in Asia and North America |
| European head-quarters | see international headquarters. |
| structure | The organization behind the sustainability certification ,TCO Certified' is TCO Development. |
| aim | Awarding energy efficient IT devices |
| motto | TCO Certified is the world's most comprehensive sustainability certification for IT products, helping you make responsible product choices that drive the industry in a sustainable direction. |
| founding | 1992 in Sweden |
| particularity | Includes social fairness and social criteria in manufacturing. |
| certificate types | one type of label for all products |
| standards | Several energy standard specifications, according to ISO / IEC 17025. TCO Certified meets the requirements of the standard ISO14024 Type I Ecolabel. TCO Certified is a product certification. The fact that a single product is certified to TCO Certified, e.g. A notebook does not mean that all laptops of this brand are certified. A product can also be certified for a specific market. There are several standards related to different product groups. |
| criteria | (A) Production: (1) ISO1400, EMAS of ind. Manufacturer must be present. (2) Comply with ILO Conventions, UN Convention on the Rights of the Child, OSH legislation and manufacturing country rules regarding minimum wage and social security. (3) Present a policy for conflict minerals. (4) Product sustainability information, which is understood to mean the proportion of recycled plastics. (B) Usage phase: (1) Energy efficient products according to current version Energy Star. (2) Compliance with good ergonomics and working conditions (including resolution, light intensity, contrast, color rendering, adaptability to users). (2) electrical safety, weak electromagnetic fields, halogen limitation. Flame retardant, min. RoHS directive. (3) Mind. 1 year warranty f. Product, spare parts available for at least 3 years after the end of production d. Model. (3) As a sustainability info energy verb of the device. (C) end of life phase. (1) Hazardous substances in product, packaging should be low, not included (eg Cd, Q, Pb, Cr, flame retardants. (2) Trademark is responsible for returns, recycling (this is mandatory for products manufactured in Europe). (3) (product and) packaging must be recyclable (4) „Sustainability Information“ requires the indication of the total weight of the product. Notes: (1) The so-called RoHS Directive No. 2011/65 / EU, previously 2002/95 / EC, is intended to limit the use of certain hazardous substances in electrical and electronic equipment. These directives are in principle replaced and tightened in the EU by the REACH regulation. (2) Hazardous substances are actually regulated in the EU by the REACH Regulation and every European manufacturer is bound by them: it makes sense that some of the substances d. REACH list also for imported product by label as TCO be checked, only then is there a comparability of the products from import with Europ. Products for the procurers. (3) For recycling, a distinction must be made between theoretical recyclability and real recycling capacity in Europe. |
| decision making | The criteria in TCO Certified are science-based and are developed in an open process with our international network of stakeholders that includes users, buyers, brands, manufacturers, NGOs, researchers and subject matter experts. TCO Certified is classified as a Type 1 Ecolabel and our processes and verification meet the requirements in ISO 14024. TCO Development is impartial during the verification process and certified products must meet all criteria to qualify for TCO Certified. |
| certification | Compliance with all criteria in TCO Certified is verified by independent verification partners that specialize in IT products, social responsibility or other sustainability issues. They are all accredited to ISO 17025. Company control is random and many parameters are self-declared (e.g., EMAS). User / Eco-friendliness is checked. Product and d. Manufacturing process. |

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| costs | unknown, not displayed on website |
| Product groups | |
| Product groups | Electrical appliances of various types. Displays: 870P; Notebooks: 32 p; Desktops: 21 P; Tablets: 2 P; Smartphone: 1 P; All-in-one PC: 18 P; Projectors: 2 P; Heatseats: 38 p |
| Requirements for tenderers - selected aspects | |
| remarks | - |

Energy labeling

Overview

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|--|---|
| identification |  |
| website | www.bmwi.de |
| brand name | Energie Verbrauchskennzeichnung (Energy labeling) |
| Geographical scope | Europe |
| International head-quarters | - |
| European head-quarters | European |
| structure | Europäische Verordnung |
| aim | Colored efficiency scales make the energy consumption of products visible and make it easier for customers across Europe to choose energy-efficient products when purchasing them. At the same time, the efficiency scales increase competition between manufacturers, as potential customers take greater account of the perceived energy efficiency of appliances when making their purchasing decisions. |
| motto | - |
| in force settlement | In Germany, the EU Directive was implemented with the Energy Consumption Labeling Act (EnVKG) and the Energy Consumption Labeling Ordinance (EnVKV) and has come into force since 2012. It was updated in 2017. |
| particularity | In Germany the federal states are responsible for market surveillance and regulate the powers of their competent authorities and use them to carry out random checks and determine or implement the procedure for detected infringements. Violations are reported to EU competent authorities, with full reporting every four years |
| regulations | The „EU Energy Label“ is not really a label because energy labeling is mandatory in the EU (Energy Labeling (EU) Regulation 2017/1369), ie for products manufactured in the EU. The directive specifies efficiency funds. |
| Requirements | Efficiency classes A ++, A +, A, B and C apply to lamps and electrical appliances. Classes D and E are obsolete efficiency classes that are no longer relevant but are still shown on the label. Electric new appliances must comply with at least energy efficiency class B since 2015. |
| further aspects | In addition to the energy efficiency class, the pictogram also contains information on absolute energy consumption (not in watt but in kWh / year assuming typical use of the product.) Additional information on other relevant product characteristics such as type of energy supply, size, noise emission or additional functions can also be found in the pictogram be shown. |
| decision | European Union - EU Council of Ministers |
| Obligations for manufacturers | With the release of the EU for a device group, a deadline is set in which device manufacturers must attach an energy label to each device shipped and all data relevant to energy consumption must be documented. Information on energy consumption (or energy efficiency class) must also be listed in all product brochures or technical manuals, printed and online. If the brochure does not include a brochure, a product data sheet with the relevant product information must be provided. The manufacturer is responsible for the accuracy of the information given on the label and on the data sheet. |
| costs | unknown |
| Product groups | |
| Product groups | Energy labeling applies to the following types of products: Refrigerators, Freezers, Vacuum cleaners, Lamps, Lighting fixtures, Washing machines, Clothes dryers, Electric ovens, Hoods, Dishwashers, Air conditioners, Televisions, Wine storage cabinets. |
| Requirements for tenderers - selected aspects | |
| Remarks | Europe-wide obligatory for the manufacturers. Status quo. No sustainability topic in the tender. |

| CE Label | |
|-----------------------|--|
| Overview | |
| Logo |  |
| website | - (national information on different websites) |
| Name of the Brand | EU label |
| Geographical scope | Europe |
| European headquarters | European Union |
| aim | Europäische Harmonisierung der Vorgaben |
| motto | - |
| put into effect | 2013 |
| particularity | Die CE-Kennzeichnung ist kein Verbraucherkennzeichen, sondern dient als „EU-Reisepass“ für Produkte. Dieser besagt, dass ein Produkt mit CE in jedem Mitgliedstaat der EU in Verkehr gebracht werden darf. |
| starting point | <ul style="list-style-type: none"> • With the CE labelling, the manufacturer, distributor or EU authorized representative, in accordance with EU Regulation 765/2008, declares „that the product complies with the applicable requirements set out in the Community harmonization legislation for its affixing“. The Ecodesign Directive is currently being transferred to the CE Marking. In other words, every product that carries the (true) European CE marking theoretically complies with the requirements of the Ecodesign Directive and other relevant EU specifications for the product groups and products that the CE mark refers to or carries. • CE is not an eco-label nor a label or proof of origin for European products. • The CE label has no intention or purpose of achieving environmental improvement beyond the current state of EU legislation, which is usually the goal of environmental labels. • The CE label only indicates that the product complies with legal requirements in the EU and therefore may be circulated within the EU |
| Regulations | <ul style="list-style-type: none"> • The CE mark is usually affixed by the manufacturer himself, along with an EC Declaration of Conformity, he certifies that he has complied with the essential health and safety requirements of the relevant EC directives in the manufacture of the product. • The EC Declaration of Conformity is a special form of the Declaration of Conformity in the legally regulated area. Contents of the EC Declaration of Conformity are defined in each guideline. • General requirements for the content of declarations of conformity are contained in the standards EN ISO / IEC 17050-1: 2004 and EN ISO / IEC 17050-2: 2004 as well as in the „Blue Guide“ of the European Commission. The Blue Guide states: „The CE marking is the first indication that it is safe to assume that all necessary controls have been performed prior to placing the product on the market to ensure compliance with regulatory requirements. The market surveillance authorities are entitled to carry out additional checks to protect the public interest. The measures to be taken by the market surveillance authorities shall be determined on a case-by-case basis in accordance with the principle of proportionality. |
| criteria | European laws and regulations. |
| decisions | European Union |
| control | For example, German market supervisory authorities are also the district governments. |
| costs | unknown |
| Product groups | |

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| | <p>Product groups or technical field of the previous CE marking are:</p> <ul style="list-style-type: none"> • active implantable medical devices, elevators, construction products, pressure equipment, simple pressure vessels, electrical equipment, electromagnetic compatibility, explosives for civil purposes, radio equipment, gas appliances, equipment and protective systems intended for use in potentially explosive atmospheres, domestic refrigeration / freezers, in vitro diagnostic medical devices, noise emissions to the environment, machinery, medical devices, measuring instruments, non-automatic weighing instruments, ecodesign directive, personal protective equipment, pyrotechnic articles, cable cars for passenger transport, toys, pleasure boats, telecommunications equipment, hot water boilers. • Intermediate stages in the industrial processing on the way to the wood product (for example plate manufacturers, sawmills) must be certified in Europe automatically today CE. • Wood products that have been proven to be produced in the entire material flow in Europe have to pass the CE marking system-immanently. This does not apply to imported products in the European Union. |
| Requirements for tenderers - selected aspects | |
| CE and imports | Especially in public procurement, the purchase of products that are not manufactured in Europe and ordered in online stores are to be examined carefully and possibly with the legal department regarding warranty issues and other aspects to approve (e.g. how to recognize real CE label?). For procurers it has great advantages to also purchase electrical products directly from the manufacturer or German dealer, because the reference to internationally active intermediaries is also questionable with regard to warranty issues. |
| Current legal peculiarities for construction products. | <p>In accordance with the EU-law prohibition of market entry, it is no longer possible, as of mid-October 2016, to make supplementary requirements for construction products bearing the CE label, following an ECJ decision. The Federal Environmental Agency (UBA) therefore warns against possible risks for humans and the environment in the construction, renovation and use of buildings (https://www.umweltbundesamt.de/themen/neues-baurecht-koennte-mensch-umwelt-gefaehrden). The background to this is a case law of the European Court of Justice (ECJ) of 16 October 2014, according to which it is no longer permitted to make supplementary requirements for CE-marked construction products that are standardized according to EU regulations. The case law has to be implemented by 15 October 2016, which is why the previous regulations will expire at that time (for example the EU Construction Products Regulation 305/2011).</p> <p>According to the previously valid requirements for construction products tested in Germany, they can no longer be identified as such. It must therefore be ensured that future CE-marked construction products meet high minimum requirements for avoiding environmental and health burdens and this is clearly recognizable for the users. The UBA therefore calls for an information obligation for manufacturers that complies with EU law and has been audited. Although the European Commission intends to integrate environmental and health protection features into the CE marking. However, this will take at least five to ten years, according to the UBA. However, the information required for environmental and health protection is still almost completely missing in the CE marking.</p> <p>The implementation of the ECJ ruling leads in practice, fears the UBA, to a weaker legally regulated environmental and health protection and higher pollution levels in buildings. That is why it is important for municipalities to know what they should look out for in terms of environment and health, which aspects exactly which environmental label should be treated and checked. Only then the municipality can determine what is important to her and what it wants to have checked through the voluntary environmental label.</p> |

Sources:

NaturePlus (2015): Comparison of certification marks with sustainability characteristics in Europe. final report of the project I13-F20-13-1-073 „ZUKUNFT BAU“

Nellemann, C., INTERPOL Environmental Crime Programme (eds) (2012): Green Carbon, Black Trade: Illegal Logging, Tax Fraud and Laundering in the Worlds Tropical Forests. A Rapid Response Assessment. United Nations Environment Programme, GRIDArendal. www.grida.no

and various webresearches.