natureplus e.V.

Guideline 0209

Wood and Wood-Based Flooring

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for the awardance of the eco-label

natureplus e.V., Hauptstr. 24, 69151 Neckargemünd, Germany, info@natureplus.org

Introduction

The International Association for Sustainable Building and Living - natureplus association - pursues the goal of promoting sustainable building products and increasing their popularity and use. To this end, sustainability criteria for building products are defined and verified as part of regular conformity assessments at the applicant's premises.

Three comprehensive sustainability definitions are created to achieve a holistic understanding of quality.

CLIMATE PROTECTION

The climate crisis is worsening, and the consequences are becoming increasingly visible. The construction sector is one of the largest emitters, accounting for around 40% [1] of global greenhouse gas emissions. Energy-intensive manufacturing processes, long transport routes and short renovation cycles are often still characteristic of the status quo.

The natureplus certification requires manufacturers to meet limit values on CO2 emissions and primary energy consumption.

[1] UNEP, 2020, 2020 Global Status Report for Buildings and Construction, p. 4.

HEALTHY LIVING

In Western societies, we spend about 90% [2] of our lives in buildings. Pollutants emitted by building materials can accumulate in the indoor air we breathe daily, posing unnecessary health risks to occupants. The accumulation of chemical pollutants from building materials in household dust is also a cause for concern.

The natureplus certification ensures that hazardous input materials are avoided or used in quantities that are harmless to health. Emissions from building products are strictly regulated and regularly monitored.

[2] Umweltbundesamt, o. D., Ausschuss für Innenraumrichtwerte (AIR)

CONSERVATION OF RESOURCES

All construction activities have an impact on nature and the environment, with the consumption of finite resources remaining unacceptably high. The production of building materials in Germany consumes about 60% of our resources, and as much as 90% if only mineral raw materials are considered. At the same time, the construction sector is responsible for 50% of the waste generated. [3]

The natureplus certification sets out requirements for increased transparency in the supply chain, respect for human rights and the environment, and the responsible use of resources throughout the life cycle of a building product.
Sustainable materials should also be durable, reusable, or recyclable.

[3] VDI ZRE, 2019, Ressourceneffizienz im Bauwesen – Von der Planung bis zum Bauwerk, p. 5.

Notes on this product guideline:

The eco-label, the certification programme including all associated documents is the property of the non-profit natureplus® environmental organisation. The Association and its specially appointed Criteria Commission are therefore responsible for the further development of the requirements.

The label is awarded by the European cooperative natureplus Institute SCE mbH.

In the event of textual discrepancies between different language versions of a guideline, the Criteria Commission's Task Force will determine the valid wording. The affected language versions will be amended to reflect the valid wording.

In the event of conflict between the basic guidelines (50XX) and this product guideline, the product award guideline shall prevail.

For questions, criticism and suggestions, please contact:

International Association for Sustainable Building and Living - natureplus association
Hauptstr. 24, 69151 Neckargemünd, Germany
criteria@natureplus.org
+49 (0)6223 866 017 0

1 Application Areas

The following criteria list the requirements that wood and wood-based flooring must satisfy for the product to qualify for the natureplus eco-label.

These include:

- Tongue and groove, floor boards and solid wood flooring.
- Parquet floor blocks with tongue and groove according to DIN EN 13226
- Solid wood parquet products (without tongue and groove) according to DIN EN 13227
- Solid wood parquet including parquet floor blocks with a connecting system according to DIN EN 13228
- Mosaic parquet with and without surfacing treatments according to DIN EN 13488
- Multi-layer parquet according to DIN EN 13489
- Parquet according to DIN 280, Parts 1, 2 and 5
- Wood based materials – Veneered flooring DIN EN 14354
- Others product types which deviate from the DIN norms must fulfil the minimum requirements analogue to the DIN

This award guideline must be applied exclusively to products of this description. This award guideline does not apply to composite materials, e.g. wood and wood based flooring in combination with other materials (e.g. wooden flooring with sound-proofing insulation).

Surface treatment agents that are applied after installation are not considered here.

2 Award Criteria

The prerequisite for a product to be awarded the natureplus® quality label in accordance with these guidelines is compliance with the following award guidelines:

- GL5001 Chemicals Directive
- GL5002 Origin of Wood and Wood Production
- GL5004 Transparency and Social Responsibility
- GL5010 Low-emission building products
- GL5020 Climate compatibility and energy efficiency

2.1 Functional Suitability

The product must fulfil the requirements for functional suitability by having a national or European technical approval or by following a harmonised standard.

The applicant shall meet this requirement by submitting one of the following documents:

- a valid European Technical Assessment (ETA)
- a declaration of performance and conformity according to a European harmonised technical specification (e.g. standard)
- a valid national technical approval (e.g. in Germany a general technical approval - abZ, in Austria a technical approval - BTZ)
- a national declaration of performance and conformity to a national technical specification (e.g. standard)

Product type	Total thickness	Thickness of wear layer
Solid wood flooring	Variable	A minimum of 35% of the total thickness
Parquet and multi-layer parquet	< 12 mm	Hardwood min. 2,5 mm, softwood min. 4 mm[1]
	> 12 mm	Hard- or softwood min. 4 mm[1]

[1] A deviation of 10% below the required surface layer thickness of 4 mm is permissible.

2.2 Composition, Forbidden Substances, Substance Restrictions

The proportion of renewable raw materials in the wood and wood based floor covering products must be at least 90 M% of the end product.

The adhesive proportion should be kept to minimum. It must not exceed a content level of 5 M-% of the absolute dry weight of the wood/wood based material. Polyurethane/Polyurea adhesives based upon Isocyanates may only be used where they do not exceed 2 M-% of the absolute dry weight of the wood/wood-based material.

The use and addition of biozides is not permitted.

The product is subject to assessments as detailed in section 3 and must comply with the limits specified therein.

2.3 Raw Material Sourcing, Production of Preliminary Products, Production

Where wood is used as an ingredient, compliance with GL-5002 "Wood extraction and origin" must be ensured.

Only the following may compose the main constituents of certified products:

- Timber species suited to the location
- Species of timber which are not excluded by the terms of the Washington Wildlife Protection Agreement
- One year old fibre plants

Floor coverings that contain wood from precious wood monocultures are not labelled.

In production facilities outside the European Union, the applicant must demonstrate that the production facility has a hazardous substance management system for the protection of employees that meets the relevant European standards and legal regulations. This must also include information on the release of dust and compliance with the general dust limit values. Where technical or organizational measures cannot ensure compliance with general dust limit values or other workplace limit values, suitable personal protective equipment must be provided. Efforts must be made to minimize avoidable exposure of workers.

Factory applied surface sealing materials must not contain more than 10% solvents. Sealants which contain more than 10% solvents in total may only be used under the following conditions:

1. The production facility must employ protective measures (waste air purification) which ensure that the proportion of solvents emitted is no higher than those preparation processes with a 10% solvent content.

2. The total C-content of volatile organic compounds (VOC) in the waste air must not exceed 100 mg/m3 (as a half-hourly mean value in relation to the correspondingly measured O2-content).

3. The maximum allowable mass flow rate of emitted volatile organic compounds is 0.5 kg/h.

4. Proof of compliance with the statutory employee protection (Health and Safety) regulations.

2.4 Usage

During use, the product must not have any odour or any odour foreign to the product.

Grenzwerte und Methodik sind in Abschnitt 3.3 dieser Richtlinie enthalten.

This criterion does not need to be checked if the product consists of 99 M% mineral ingredients.

If products with surface layers from softwood and hardwood are to be certified, it is necessary that separate emissions tests are carried out for both types of product.

For products with softwood surface layers, samples with the highest number of branch knots will be selected for testing.

If the emission levels for this quality grade exceed the specified limits, it is permitted to continue the certification process for the middle and high quality grades. The emissions tests will be applied to the medium quality product.

2.5 Reuse, recycling and disposal

The product must be suitable for safe disposal in a waste incineration facility.

2.6 Ecological Parameters

All products in this product group must be manufactured in such a way that the environmental parameters listed in RL5020 are complied with.

2.7 Public Declaration

A public declaration of ingredients[1] must be provided in the official language of the country in which the product is intended for sale. It must be freely accessible. Ingredients must be listed in descending order of weight. The following publicly accessible documentation paths are permitted:

- Product packaging
- Technical data sheet
- Sales brochures
- Website

Ingredients from preliminary products or preparations that remain in the final product with a content of >1 M% must also be included in the full declaration.

The following applies to the public declaration of ingredients:

- above 1 M% the name of the ingredient
- below 1 M% at least the functional name of the ingredient, the mass order is cancelled.

[1] Ingredients are substances and mixtures that remain in the final product. Reactants and ancillary input materials are included in the non-public full declaration submitted to the assessment body

Furthermore, there is an obligation to include the following information with the product or to make it available to the consumer or user in an appropriate manner (e.g. online):

- Instructions for use and safety instructions
- Storage and disposal instructions
- Batch numbers
- Country of production
- Country of origin of input materials > 20 M-% where there is a deviation from the country of production

When using ingredients with an environmentally hazardous potential, the applicant must indicate at an appropriate place which measures are to be taken within the framework of dismantling and demolition work to protect the environment (e.g. controlled dismantling).

Additionally, the following product-specific information must be made available to the consumer or user.

- Labelling according to the guidelines of the European Community (Communauté Européenne, CE marking) or the respective general technical approval, including a scope specification
- General data (designation, type, name, etc.)
- Surface weight [kg/m²] or density [kg/m³]
- Thickness, length and width in mm or the total length where the included lengths vary
- Wood type and origin
- Euro class according to EN 13501-1
- The packet weight

- In the case that adhesive is to be applied to the complete surface: The recommendation of a natureplus-certified adhesive or at least a low emission adhesive complying with EMICODE EC1 or comparable.
- Cleaning and maintenance instructions: At least product that complies with the substance restrictions and prohibitions as per GL-5001 and with the requirements for declarations according to the product guideline must be recommended.
- Repair instructions depending on surface finish

Information about the avoidance of chemical wood preservation and special construction measures being a requirement for classifying wood materials as hazard class 0 (according to DIN 68800-2 or an equivalent standard) is to be provided in the form of a leaflet.

The manufacturer has to give indications regarding sufficient wood conditioning before installation.

2.8 Processing and Installation

For full-surface bonding, it must be possible to use a natureplus-certified adhesive or a low-emission adhesive according to EMICODE EC1 or equivalent. The manufacturer must indicate the use of at least one such adhesive.

The applicant must demonstrate whether low-dust working methods are available for processing the product. If this is the case, these procedures are to be recommended and suitably presented within the processing guidelines. Compliance with the general dust limit value must be ensured by low-dust working methods. If this is not possible, the wearing of personal protective equipment must be prescribed.

2.9 Packaging

The packaging used must be recyclable.

The manufacturer must belong to a recycling system, if one exists for the corresponding material.

Paper and cardboard packaging must be made from recycled paper. Alternatively, paper from sources as per GL5002 is also permitted.

Plastic packaging must be made from polyolefins. PET, polystyrene or polycarbonates are allowed exceptionally in reasonablecases.

PVC packaging is generally not permitted.

Packaging must not contain biocides.

Once awarded, the natureplus label together with the license number must be printed on the packaging or made visible to the consumer in another suitable place.

3 LaboratoryTests

The products are subject to laboratory analyses to test for harmful substances and undesirable ancillary ingredients. A representative sample is collected during the production audit. If the sample collection cannot be conducted by a natureplus examiner, an independent person designated by natureplus can collect the sample. For products with different sizes but the same composition, a single sample is sufficient.

3.1 Volatile Organic Compounds VOC / TVOC

To check the emission of VOC and to determine the TVOC and TSVOC, an emission chamber test is carried out with the product. Measurements are usually performed after 3 and 28 days. The test-chamber examination is performed according to the current version of natureplus guideline 5010. The product must comply with the limit values specified in guideline 5010.

3.2 Element Analyses

The product is subject to an element analysis to determine the content of harmful elements and to check for undesirable contaminations. The measurements have to be in compliance with the limit values. The analysis is performed according to the current version of the test method TM-02 metals.

An eluate analysis is mandatory if the required values of the content analysis are not met.

Element	Limit value [mg/kg]
Arsenic (As)	≤ 5
Cadmium (Cd)	≤ 0,5
Cobalt (Co)	≤ 100
Chromium (Cr)	≤ 5
Copper (Cu)	≤ 20
Mercury (Hg)	≤ 0,1
Nickel (Ni)	≤ 10
Lead (Pb)	≤ 5
Antimon (Sb)	≤ 1

If a backing layer based on chipboard or fibreboard is applied, the backing layer is tested for the following metals:

Element	Limit value [mg/kg]
Arsenic (As)	≤ 1
Boron (B)	≤ 25
Beryllium (Be)	≤1
Cadmium (Cd)	≤ 0,5
Cobalt (Co)	≤ 1
Chromium (Cr)	≤ 2
Copper (Cu)	≤ 10
Mercury (Hg)	≤ 0,1
Nickel (Ni)	≤ 1
Lead (Pb)	≤ 10
Antimon (Sb)	≤ 1
Zirconium (Zr)	≤ 1

3.3 Other Analyses

Halogenic organic compounds

Test parameters	Limit values	Unit	Method
Halogenic organic compounds: AOX/EOX	≤ 1	mg/kg	TM-03 Halo

Odour

Test parameters	Limit values	Unit	Method
Odour	≤ 3	Odour intensity	TM-04 Odour

Pesticides

To be examined only if necessary:

Test parameters	Limit values	Unit	Method
Total pesticides	≤ 1	mg/kg	TM-05 Pesticides
Individual pesticides Organochlorine pesticides: Aldrin, Chlordane, DDD, DDE, DDT, Dichlofluanid, Dieldrin, Endrin, Heptachlor, Hexachlorobenzene, Lindane, Pentachlorophenol Organophosphate pesticides: Dimethoat, Fenthion, Parathion-methyl, Parathion-ethyl, Phosalon Pyrethroids: Cypermethrin, Lambda-Cyhalothrin, Permethrin Other: Benomyl, Carbendazim, Prochloraz	≤ 0,1	mg/kg	TM-05 Pesticides

Ammonia

An ammonia analysis according to RL5010 is required for floor coverings made of smoked oak.

4 Appendix

Test methods

TM-01 VOC : Volatile Organic Compounds VOC/TVOC, formaldehyde, acetaldehyde and TSVOC: DIN EN ISO 16000 series expanded by the natureplus implementation rules in guideline 5010.

TM-02 Metals: ICP-MS measurements according to DIN EN ISO 17294-2, supplemented with the natureplus implementation rules and a sample preparation adjusted to the issue analysed.

TM-03 Halo: Halogenic organic compounds after combustion, determined by microcoulometry according to the natureplus implementation rules "AOX/EOX".

TM-04 Odour: natureplus implementation rules "odour intensity", 6-degree grading scale 3 days after loading the test chamber following VDA 270:2018.

TM-05 Pesticides: DFG S 19 extended by natureplus implementing regulations

TM-08 Foreign fibres and foreign substances: scanning electron microscopy SEM

TM-09 Monomeric isocyanates: 24h after test chamber loading

TM-10 PAH: HPLC / GC-MS, sum according to EPA