



natureplus e.V.

Guideline 1204

Fibre-Board Backed Linoleum Floor Coverings

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for the awardance of the eco-label

0 Introduction

The International Association for Sustainable Building and Living – natureplus e.V. – has set itself the goal, through the awardance of a quality label (eco-label), of promoting the use of those construction products which are especially suited to achieving the goal of economic sustainability. The three classic pillars of sustainability (the environment, social aspects and the economy) are reflected in natureplus's the three fundamental requirements: the environment, health and functional quality.

Every construction activity encroaches upon the natural environment and is connected with the consumption of limited resources. Our responsibility towards future generations requires us to undertake every effort to reduce these encroachments to the lowest level possible and to limit our use of resources to a necessary minimum. In view of the foreseeable exhaustion of the reserves of fossil fuels, for example, and the dangers to the earth's climate, such an approach is the only possible means to ensure sustainable and socially equitable development. For the building sector this means promoting the use and application of construction products which help to minimize the consumption of fossil fuels and limited resources. It is natureplus's intention to help promote the commercial success of those products which fulfil these demands.

Energy-saving building methods and the avoidance of uncontrolled ventilation facilitates the accumulation of volatile chemical compounds in the interior air that are emitted by building products and the inventory contained within the building. This presents a(n) (avoidable) danger to the health of the occupants. Also, the accretion of chemical contaminants (especially phthalates/plasticisers) from building products on house dust, the increasing use of biocides in everyday products and the dangers posed by mould growth due to negative product characteristics give rise for concern. An increasing proportion of the population are exhibiting reactions, such as allergies, to the negative health-related effects of these construction products. natureplus therefore evaluates the compatibility of construction products, especially in the usage phase, according to strict standards in order to actively promote those materials which pose no risk to health and are, in addition, conducive to a healthy room climate.

The natureplus®-Eco-label is an award for construction products which meet the highest standards of sustainability by exhibiting the best possible performance in terms of the environment, health and functionality. Scope of the assessment is the building material as raw material and as component. Only the best products in a particular product group are eligible for certification in order to act as an orientation for all building professionals and consumers towards the promotion of a culture of sustainable building. The natureplus®-Eco-label has anticipated the requirements of construction products of the European Construction Products Directive EU CPR 305/2011: In the future this regulation requires a declaration of performance with evidence of the sustainable use of natural resources and of compliance with requirements in terms of low impact, over their entire life cycle, on the environmental quality or on the climate, energy-efficiency and the hygiene, health and safety of people. The natureplus®-Eco-label already provides these proofs of performance in relation to the essential characteristics of construction products. This is gauged by natureplus according to criteria and requirements which, as a rule, far exceed the legal requirements and as a minimum comply in each case with the strictest recognised standards applicable.

The natureplus®-Eco-label is classified as a Type I environmental label as per ISO 14024, taking into consideration the EU Ecolabel Regulation and the EMAS regulation on environmental auditing, and is valid across the whole of Europe according to uniform criteria. The pre-requirements for a construction product to be certified with the natureplus®-Eco-label are its especially high performance characteristics in terms of the environment, health and sustainability. The main focuses are on the protection of limited resources by the minimisation of the use of petrochemical substances, sustainable raw material extraction/harvesting, resource-efficient production methods and the longevity of the products. Therefore, building products made from renewable raw materials, raw materials which are unlimited in their availability or from secondary raw materials will be favoured for certification.

I Application Areas

The following criteria contain the requirements for the awardance of the natureplus eco-label for linoleum floor coverings on HDF-boards which have not been subject to surface treatments. The boards must be manufactured from ligno-cellulose fibres according to

the drying process without chemical preservative treatments in accordance with the requirements of EN 316 ("Wood fibreboards- Definition, classification and symbols") and EN 622-5 ("Fibreboards- Specifications- Part5: Requirements for dry process boards (MDF)") or with a general Building Inspectorate approval as a bearer material.

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:

- GL-5001 Chemicals Directive
- GL-5004 Transparency and Social Responsibility
- GL-5010 Low-emission building products
- GL-5020 Climate compatibility and energy efficiency

2.1 Functional Suitability

The product must fulfill the requirements relating to functional suitability as listed under section 2.1 of Award Guideline RL 1201 "Linoleum Floor Coverings".

The product must fulfill the requirements of EN 14085 relating to functional suitability.

2.2 Composition, Forbidden Substances, Substance Restrictions

The product must fulfill the requirements relating to the composition of the bearer material specified in Award Guideline RL 0207 "MDF Boards - Dry Process Boards".

The product must fulfill the requirements relating to the composition of the linoleum surface material specified in Award Guideline RL 1201 "Linoleum Floor Coverings".

Only water-based adhesives may be used to bond the linoleum surfacing material to the bearer board. The following additives are prohibited:

- Glycol ethers and -esters
- APEO's (Alkyl phenol ethoxylate)
- Formaldehyde separators/dispersers
- Halogenated Isothiazolinones

The product must not contain any chemical-synthetic flame retardants, biocides or halogen-organic compounds.

The product will be subject to an analysis for heavy metals and metalloids and EOX (extractable organic halides) and must meet the threshold limits as laid down in section 3 (Laboratory Tests).

2.3 Raw Material Sourcing, Production of Preliminary Products, Production

A proof of origin must be supplied for all renewable primary materials employed.

The product undergoing certification will be subject to an analysis for pesticides and must meet the threshold limits as laid down in section 3 (Laboratory Tests).

2.4 Usage

The product must not exhibit any unpleasant or foreign smells or odours. Furthermore It must be a very low-emission product. The products will be subject to an odour/smell test and an emissions test for volatile organic compounds (VOC), formaldehyde and isocyanates according to section 3 and must fulfil the specified thresholds contained therein.

The manufacturer must inform the consumer/user through appropriate means (e.g. information in the laying instructions) that if a protective surface-coating material containing acrylates (as per section 2.2 of Award Guideline RL 1201 "Linoleum Floor Coverings") is employed, that it is – even partially – renewable, so that the useful life of the product may be extended. The protective surface-coating must not negatively affect the natural properties of the linoleum.

The manufacturer must provide information on at least one appropriate, renewable raw material based, routine-care product.

2.5 Recycling/Disposal

Indications for recycling or suitable disposal are to be attached to the product.

2.6 Ecological Parameters

All products in this product group must be manufactured in such a way that the ecological parameters listed in RL 5020 are fulfilled.

2.7 Declaration

The product packaging should display a full declaration of the input materials listed, analogue to the EU-Cosmetic Regulations, according to the declining mass percentage. If it is not possible to display this information directly on the product packing, it should be provided with the product in a technical datasheet or sales leaflet (in English or in the national language). If intermediate/preliminary products or formulations are used as input substances and the proportion present in the final product is >0.1 M-%, then all the substances used within these must also be taken into account for the declaration.

For naming the input materials as part of the declaration the following applies:

- More than 1 M-% - designation of the substance in question
- Less than 1 M-% - at least a functional designation (e.g. "moth proofing agent")

Furthermore, it is obligatory to provide the following information in a suitable form to the consumer or user (eg. online):

- Instructions for use and safety precautions
- Indications for storage and disposal
- Batch numbers

- City/town and country of production
- Indication of geographical origin of the key input material

When employing components with a potential for environmental hazard, the manufacturer has to suitably indicate measures to be taken to ensure environmental protection during removal and demolition (i.e. controlled deconstruction).

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

- Suitability for classes as per EN 685
- Specification of the flooring surface material as per the relevant standard (EN 548)
- Total thickness in mm
- The residual indentation characteristics after static loading (EN 433)
- Color-fastness and resistance to fading as per ISO 105-B02
- Thermal resistance as per DIN 52612
- Fire resistance as per DIN EN 13501-1
- The static electrical propensity as per EN 1815
- Resilience to casters grading as per EN 425
- Resistance to cigarette burns as per EN 1399 and to chemical action as per EN 423
- Slip resistance class as per DIN 51130
- Areas of application (dry-, wet/moist- and external areas) as per EN 685
- Cleaning advice and routine care instructions: recommendation of at least one product for each area, that complies with Sections 2.1 to 2.7 of the Basic Criteria (Award Guideline RL0000)

2.8 Processing and Installation

No further requirements in this section.

2.9 Packaging

The packaging used must be recyclable. The manufacturer must participate in a recycling system if there is one for the corresponding material.

Paper and cardboard packaging must be made from recycled paper. Alternatively, paper from sources as per GL-5002 is permitted.

Plastic packaging must be comprised from polyolefins. PET, polystyrene or polycarbonates are allowed exceptionally in reasonable cases. Packaging made from PVC is generally not permitted.

Packaging must not contain biocides.

The natureplus certification mark has to be printed on the packaging after the awardance of the product.

3 Laboratory Tests

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. If a low VOC emission is to be expected, a termination measurement can also be carried out after 7 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.

Element	Limit value [mg/kg]
Arsenic (As)	≤ 5
Cadmium (Cd)	≤ 0,5
Cobalt (Co)	≤ 10
Chromium (Cr)	≤ 5
Kupfer (Cu)	≤ 30
Mercury (Hg)	≤ 0,1
Nickel (Ni)	≤ 10
Lead (Pb)	≤ 10
Antimon (Sb)	≤ 1
Tin (Sn)	≤ 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

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	≤ 0,1	mg/ kg	TM-05 Pesticides
Organophosphate pesticides: Dimethoat, Fenthion, Parathion-methyl, Parathion-ethyl, Phosalon			
Pyrethroids: Cypermethrin, Lambda-Cyhalothrin, Permethrin			
Other: Benomyl, Carbendazim, Prochloraz			

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.

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 24h after loading the test chamber

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