natureplus e.V.

Guideline 1802

Textile Wall 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 economicsustainability. 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 requiresus to undertake every effort to reduce these encroachments to the lowest level possible andto 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 healthyroom 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 305/20111: 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.

1 Application Areas

The following criteria contain the requirements for the awardance of the natureplus eco-label for textile wall coverings. These include ready-to-use wall coverings in accordance with EN 235 with a bearer material (paper or fleece) upon which a textile top layer is laminated (textile wall papers).

The award guideline is to be applied exclusively to the named product group. Wall spans/linings are outside the scope of this guideline.

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
- GL5002 Origin of Wood and Wood Production
- 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 meet the requirements of EN 235 ("Wall coverings – Vocabulary and symbols") and EN 266 ("Wall coverings in roll form - Specification for textile wall coverings") or comparable standards and be labelled according to the applicable standard. The requirements of EN 234 ("Wall coverings in roll form - Specification for wall coverings for subsequent decoration") or a comparable standard apply to wall coverings for subsequent treatment/coverage.

The product must meet the requirements of EN 235 or a comparable standard. The water vapour diffusion characteristics must meet the requirements of DIN 52615 or a comparable standard.

2.2 Composition, Forbidden Substances, Substance Restrictions

Wall coverings with a paper bearer layer must be made to at least 90% from mineral or renewable raw materials. At least 50% of the paper-based backing layer must be made from recycled/recovered paper or from wood certified by FSC (at least FSC mix).

The following product additives are forbidden:

- Halogen organic compounds
- Synthetic-organic fire retardants
- Moth-proofing agents and antimicrobial additives
- Azo dyes/colorants, which are capable of decomposing carcinogenic amines
- Dispersion colorants which are carcinogenic or cause allergic reactions

Furthermore, the addition of synthetic-organic flame retardant and proofing agents is not permitted. The addition of other flame retardant and proofing agents is only permitted for products that are intended for use in commercial buildings where they are subject to and fulfil the appropriate fire protection regulations. Subsequent spray-treatments with flame retardants are not permitted.

Air-impermeable laminations (e.g. Polyethylene laminates) are prohibited.

The product is subject to laboratory analyses as laid down in section 3 and has to comply with the limit values stated therein.

2.3 Raw Material Sourcing, Production of Preliminary Products, Production

The requirements of the guideline GL-5002 for the origins of wood and wood production must be met for wood as a raw material. The manufacturer must provide proof of compliance with the XXXVI. Recommendation of the BfR (German Institute for Risk Assessment) "Paper, Cartons und Cardboard for use in contact with foodstuffs" („Papiere, Kartons und Pappen für den Lebensmittelkontakt"). In the reprocessing and reconditioning of the recovered paper and/or the primary fibres, the use of bleaching agents containing halogen, optical brighteners, chlorine or ethylenediaminetetraacetic acid (EDTA) is forbidden.

Chemical aids containing glyoxal or formaldehyde or those which are capable of decomposing formaldehyde are not permitted for use in the manufacture of the wallpaper. Additionally the use of the following substances is prohibited: - Azo dyes/colorants which can decompose carcinogenic amines, biocides, optical brighteners and organo-phosphates.

Chemical aids containing glyoxal or formaldehyde or those which are capable of decomposing formaldehyde are not permitted for use in the manufacture of the wallpaper. Additionally the use of the following substances is prohibited: - Azo dyes/colorants which can decompose carcinogenic amines, biocides, optical brighteners and organo-phosphates.

The main constituents of the textile top layer may consist of vegetable-, animal- and mineral-based products. A certificate confirming the proof of origin for these main constituents must be provided.

The manufacturer has to state and to place his suppliers under the obligation that no synthetic plant protecting product with agents included on the list of banned pesticides of the chemicals directive GL-5001 are used during growing, harvest, storage or transport of the materials used to make the textile top layer. Compounds based on arsenic or mercury must not be employed. Implementing the obligation and the supplier's declarations are a part of the certification procedures.

Chemical chlorine bleaching of the textiles is not permitted.

2.4 Usage

The product must not exhibit any unpleasant or foreign smells or odours.

The emissions during use have to be in compliance with the limit values according to section 3.

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.

- General data (labelling/designation, type, name, etc.)
- Wall covering type
- Production number
- Measurements (surface area, edges)
- Water resistance
- Impact resistance
- Removal instructions
- Designation/labelling in accordance with EN 233
- Length, width and surface area of the roll
- Durability/storage lifespan
- Density
- Degree of colour fastness (bleaching resistance to light)
- Washable characteristics level (DIN EN 233) for washable wall coverings
- Dimensional stability under changing temperature conditions
- Colour fastness
- Sound absorption properties
- Ease of maintenance/ care instructions

Any wallpaper adhesive product recommendations must include least one product that complies with the substance restrictions and prohibitions as per GL-5001 and with the requirements for declarations according to the product guideline.

2.8 Processing and Installation

The wallpaper adhesive recommended by the manufacturer may not contain any references to specific dangers (so called R-Sätze – a German listing of the risk assessment of certain chemicals in connection with dangers to health).

The manufacturer must provide the user with information relating to the availability of wallpaper adhesive based on starch, cellulose or casein which may be used without the addition of artificial resins or fungicides.

The manufacturer must recommend surface treatment products which comply with the sections 2.1-2.7 of the basic criteria for subsequent treatments of the product.

2.9 Packaging

The packaging used must be recyclable. The manufacturer must be 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]
Aluminium (Al)	(1)
Arsenic (As)	≤ 1
Boron (B)	≤ 50
Cadmium (Cd)	≤ 0,5
Cobalt (Co)	≤ 2
Chromium (Cr)	≤ 10
Copper (Cu)	≤ 20
Mercury (Hg)	≤ 0,1m
Nickel (Ni)	≤ 10
Lead (Pb)	≤ 10
Antimon (Sb)	≤ 1
Tin (Sn)	≤ 5

3.3 Other Analyses

Halogenic organic compounds

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

Asbestos fibres

If the product contains secondary materials:

Test parameters	Limit values	Unit	Method
Asbestos fibres	asbestos free per DAB[1]		SEM

1: DAB: German Register of Medicines

Foreign substances/fibres

Test parameters	Limit values	Unit	Method
Foreign substances/fibres	NAD		TM-08 foreign fibres

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 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

Glyoxal

Test parameters	Limit values	Unit	Method
Glyoxal	≤ 10	mg/kg	

Carcinogenic amines from azo-dyes

Analysis only for coloured or printed products.

Test parameters	Limit values	Unit	Method
Carcinogenic amines from azo-dyes	≤ 10	mg/kg	according to LFGB

Disperse dyes

Analysis only for coloured or printed products. Dispersion pigments/colorants classified as carcinogenic: Disperse Blue 1, Disperse Orange 11, Disperse Yellow 3. Dispersion pigments/dyes classified as causing allergies: Disperse Blue 1, 3, 7, 26, 35, 102,106,124; Disperse Orange 1, 3, 37, 76; Disperse Red 1, 11, 17; Disperse Yellow 1, 3, 9, 39, 49.

Test parameters	Limit values	Unit	Method
Disperse dyes	≤ 30	mg/kg	

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 ac-cording 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