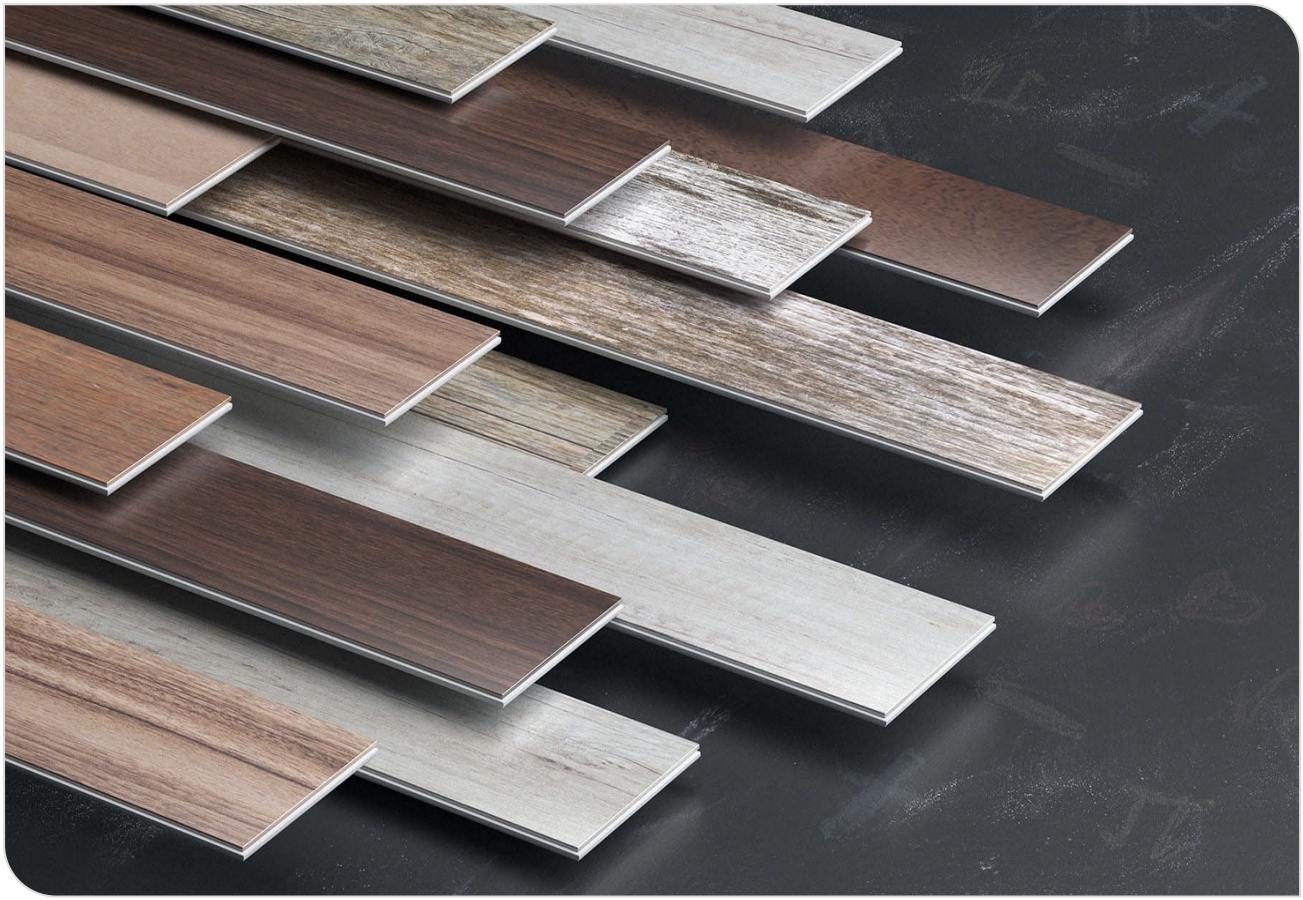
Nordic Ecolabelling for

Floor coverings and flooring underlays



Version 7.0 • 05 December 2023 – 31 December 2028

Nordic Ecolabelling

Content

029 Floor coverings coverings, version 7.0, 10 June 2024

Contact information

In 1989, the Nordic Council of Ministers decided to introduce a voluntary official ecolabel, the Nordic Swan Ecolabel. These organisations/companies operate the Nordic Ecolabelling system on behalf of their own country's government. For more information, see the websites:

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What is a Nordic Swan Ecolabel Floor covering and flooring underlay?

Nordic Swan Ecolabel floor coverings and flooring underlays have a reduced environmental impact as they contain a high share of responsibly sourced renewable and/or recycled materials, saving resources. Moreover, the production must be energy efficient to decrease its effect on the climate.

To be resource efficient, the products must demonstrate good quality performance and a long service life. To minimize the product's impact on health, strict requirements are set on the chemicals used in production and on emissions released to the indoor environment. Finally, requirements on quality, traceability, repairability and recyclability help promote circular economy.

A Nordic Swan Ecolabel floor covering or flooring underlay:

- Is made of a high share of renewable and/or recycled materials.
- Has responsible sourced renewable raw materials, through requirements for traceability and a high share of certified wood raw material.
- Comply with tough requirements relating to chemicals that are harmful to environment and/or health, including a ban on phthalates, halogenated flame retardants, PFAS and identified and potential endocrine disruptors on up-to-date lists from EU and national authorities.
- Meets ambitious requirements for energy efficient manufacturing, an important contribution to reduced climate impact.
- Meets requirements for emissions of formaldehyde and VOC to ensure a safe indoor environment.
- Is quality and performance tested and verified to guarantee a long lifespan. A 5-year warranty must be provided.
- Is traceable to the manufacturer to ensure reparability and/or recyclability.
- Fulfils all requirements for materials in Nordic Swan Ecolabel new buildings and renovations.

Why choose the Nordic Swan Ecolabel?

- The licensee may use the Nordic Swan Ecolabel trademark for marketing. The Nordic Swan Ecolabel is a very well-known and well-reputed trademark in the Nordic region.
- The Nordic Swan Ecolabel is a simple way of communicating environmental work and commitment to customers.
- The Nordic Swan Ecolabel clarifies the most important environmental impacts and thus shows how a company can cut emissions, resource consumption and waste management.
- Environmentally suitable operations prepare floor coverings and flooring underlays for future environmental legislation.
- Nordic Ecolabelling can be seen as providing a business with guidance on the work of environmental improvements.
- The Nordic Swan Ecolabel not only covers environmental issues but also quality requirements, since the environment and quality often go hand in hand. This means that a Nordic Swan Ecolabel licence can also be seen as a mark of quality.

What can carry the Nordic Swan Ecolabel?

Nordic Ecolabelling has chosen to limit the criteria to floor coverings intended for indoors used as well as to flooring underlays. Flooring underlays can be defined as a thin layer of either plates or rolled material installed under the floor covering to which they may or may not be attached or glued to. The purpose of the underlays is to enhance the properties of the installation and flooring construction (e.g., levelling out subfloor irregularities, support of the flooring click system, sound dampening and humidity barrier). Floor coverings and underlays must e.g., be able to be laid on a surface of concrete or timber boarding.

Floor coverings that can be Nordic Ecolabelled are:

- wooden floorings according to EN 13756, EN 13489 and EN 14354 (solid wood flooring, multi-layer wood flooring or engineered wood floorings and wood-based panels - wood veneer floor covering/rigid floor covering),
- cork floor covering (meaning both cork tile flooring according to EN 12104 and engineered cork flooring),
- bamboo flooring,
- laminate flooring as defined in standard EN 13329.

In addition to cork flooring, the following resilient flooring can be Nordic Ecolabelled according to these criteria:

- plastic flooring,
- linoleum flooring.

Hybrid flooring, which combines wood, laminate and resilient flooring can also be Nordic Ecolabelled if the materials can fulfil all relevant requirements. However, for hybrid floorings and other flooring types containing a layer made of *recycled* composite material, specific requirements must be fulfilled (see section 1.4.5).

A Nordic Ecolabelled floor covering that is marketed and sold as flooring for wet rooms must be approved for wet rooms.

Flooring underlays, depending on the materials they consist of, are not always products covered by a harmonised standard. Hence, it is not defined exactly which types of flooring underlays can be Nordic Ecolabelled. Flooring underlays must fulfil all relevant requirements to become Nordic Ecolabelled. Flooring underlays are added to the product group definition as a separate product type and may not be certified in combination with a floor covering.

The product group <u>does not include</u> the following products:

- Floor coverings and flooring underlays which contains > 5% of a type of material not included in section 1.4 Materials. This allows floor coverings and flooring underlays to contain a limited amount of materials for which there are no requirements.
- Textile flooring. They can be Nordic Ecolabelled according to the criteria for Carpets, floor rugs and floor mats.*
- Rubber flooring. However, it is allowed to use rubber as a material for instance in the intermediate or backing layer of the flooring.
- PVC/vinyl flooring as well as PVC as a material in flooring underlays. See requirement O5 for more information.
- Construction panels, including medium-density fibreboard (MDF) and high-density fibreboard (HDF) can be Nordic Ecolabelled according to the criteria for Panels and mouldings for interior use*.
- Hard floor coverings based on materials such as natural stone, agglomerated stone and ceramic. These products can be certified according to the criteria from the EU Ecolabel.
- Polymeric poured seamless floors which form a hard surface upon curing.
- Flooring that is part of the load-bearing structure of the building.
- Flooring sold together with integrated underfloor heating systems.

* *See https://www.nordic-ecolabel.org/product-groups*

Nordic Ecolabelling determines whether a product can be Nordic Swan Ecolabelled or not, and under which criteria a product can apply for a licence.

If there are other types of floor coverings or underlays being used in buildings, that are not mentioned in the product group definition above, and there is a demand for such products to be Nordic Swan Ecolabelled, an assessment may be made as to whether these can also be included. Nordic Ecolabelling will determine which new products may be included in the product group.

How to apply

Application and costs

For information about the application process and fees for this product group, please refer to the respective national web site. For contact information see in the beginning of this document.

What is required?

The application consists of a web form and documentation showing that the requirements are fulfilled.

Each requirement is marked with the letter O (obligatory requirement) and a number. All requirements must be fulfilled to be awarded a licence.

The text describes how the applicant shall demonstrate fulfilment of each requirement. There are also icons in the text to make this clearer. These icons are:

✉ Enclose

Upload

State data in electronic application

Requirement checked on site

All information submitted to Nordic Ecolabelling is treated confidentially. Suppliers can send documentation directly to Nordic Ecolabelling, and this will also be treated confidentially.

Licence validity

The Nordic Swan Ecolabel licence is valid providing the criteria are fulfilled and until the criteria expire. The validity period of the criteria may be extended or adjusted, in which case the licence is automatically extended, and the licensee informed.

Revised criteria shall be published at least one year prior to the expiry of the present criteria. The licensee is then offered the opportunity to renew their licence.

On-site inspection

In connection with handling of the application, Nordic Ecolabelling normally performs an on-site inspection to ensure adherence to the requirements. For such an inspection, data used for calculations, original copies of submitted certificates, test records, purchase statistics, and similar documents that support the application must be available for examination.

Queries

Please contact Nordic Ecolabelling if you have any queries or require further information. See contact information in the beginning of this document. Further information and assistance (such as calculation sheets or electronic application help) may be available. Visit the relevant national website for further information.

1.1 Definitions

Words/Terms	Definitions
Bamboo flooring	Bamboo flooring means floor coverings made of bamboo in solid pieces or in agglomerates mixed with a binder. No standard definition is available yet.
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora. CITES is an international convention for the control of trade (across borders) in wild fauna and flora at risk of extinction.
CoC	Chain of Custody – certification that ensures traceability in the supply chain.
COD	Chemical oxygen demand. A measure of how much oxygen is used during chemical degradation of organic matter.
Cork floorings	Cork floor covering means granulated cork mixed with a binder, and then cured or several layers of cork (agglomerated/veneer) can be pressed together with glue. There are two main classes of cork coverings: cork tile flooring in accordance with EN 12104 and engineered cork flooring.
Decor paper	Decor papers enable surface upgrades for wood-based substrates for use in the production of furniture, laminate flooring and other interior and exterior design panels.
Floating installation	This works with engineered, for instance, wood, laminate, cork, cork tile and bamboo floorings over a wood or concrete subfloor or existing flooring. Tongue-and-groove planks or tiles locked together mechanically. Some products are also glued together at the joints. The material generally goes over a thin foam or cork pad (known as flooring underlays), which fills minor flaws in the subfloor and absorbs sound. Installations over concrete require a thin plastic vapour barrier.
FSC	Forest Stewardship Council Certification scheme for forestry and traceability in the supply chain.
Genetically modified organisms (GMO)	An organism, with the exception of human beings, in which the genetic material has been altered in a way that does not occur naturally by mating and/or natural recombination. Within the terms of this definition: (a) genetic modification occurs at least through the use of the techniques listed in Annex I A, part 1 of the DIRECTIVE 2001/18/EC; (b) the techniques listed in Annex I A, part 2 (DIRECTIVE 2001/18/EC), are not considered to result in genetic modification.
Glued down installation	Engineered wood is typically glued. Other types of flooring can also be glued down. Adhesive onto a clean, flat, wood or concrete subfloor or existing flooring should be troweled and lay down the sheets, planks, or tiles. No vapour barrier is required. Some glue-down flooring is simply peel-and-stick, the easiest to install. Floorings should not be installed over a concrete sealer of painted concrete. If present, it should be removed by gridding or sanding. Floorings should not be installed over slick, heavily troweled or burnished concrete. For glued down floorings, when installing products wider than 8 cm, a bead of recommended wood glue to all the end grooves prior to installing into the adhesive should be applied.

Hybrid floorings	Hybrid flooring means the next generation of floor coverings that combine several aspects of wood, laminate and resilient floorings. The hybrid floorings can be made of a wide range of materials depending on the properties and characteristics that want to be achieved. Among these materials are ceramic, vinyl layers or resilient plastics.
IFL	Intact Forest Landscape Continuous propagation of natural ecosystems within the zone with current forest spread, showing no sign of significant human activity. The area is large enough to maintain all natural biodiversity, including viable populations of widespread species.
Ingoing substances and impurities	**Ingoing substances:** All substances in the chemical product regardless of amount, including additives (e.g., preservatives and stabilisers) from the raw materials. Substances known to be released from ingoing substances (e.g., formaldehyde, arylamine, in situ-generated preservatives) are also regarded as ingoing substances. **Impurities:** Residues from production, incl. raw material production, which remain in the chemical product at concentrations below 1000 ppm (0.1000% by weight). Examples of impurities are residues of reagents incl. residues of monomers, catalysts, by-products, scavengers (i.e., chemicals that are used to eliminate/minimise undesirable substances), detergents for production equipment and carry-over from other or previous production lines.
IUCN	International Union for Conservation of Nature IUCN's Red List is the world's most comprehensive overview of the global conservation status of the planet's species, including trees.
Laminate	Laminate means a process in which paper is used in the product, e.g., melamine, HPL or compact laminate.
Laminate flooring	Laminate flooring means, in accordance with the definition provided in the EN 13329, a floor covering with a surface layer consisting of one or more thin sheets of a fibrous material (usually paper), impregnated with aminoplastic, thermosetting resins (usually melamine), pressed or bonded on a substrate, normally finished with a backer. Two main classes of laminates are produced depending on the process of manufacture, High pressure laminate (HPL) and direct pressed laminate (DPL).
Linoleum	A natural product made of linseed oil, wood, limestone, cork, and resins.
Nanomaterial	'Nanomaterial' means a natural, incidental or manufactured material consisting of solid particles that are present, either on their own or as identifiable constituent particles in aggregates or agglomerates, and where 50 % or more of these particles in the number-based size distribution fulfil at least one of the following conditions: (a) one or more external dimensions of the particle are in the size range 1 nm to 100 nm; (b) the particle has an elongated shape, such as a rod, fibre or tube, where two external dimensions are smaller than 1 nm and the other dimension is larger than 100 nm; (c) the particle has a plate-like shape, where one external dimension is smaller than 1 nm and the other dimensions are larger than 100 nm.
PEFC	Programme for the Endorsement of Forest Certification Certification scheme for forestry and traceability in the supply chain
Recycled materials	Recycled materials are defined according to ISO 14021 in the following two categories: "Pre-consumer/commercial" is defined as material diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it. Nordic Ecolabelling defines rework, regrind or scrap, that cannot be recycled directly in the same process, but requires a reprocessing (e.g., sorting, remelting and granulation) before it can be recycled, to be pre-consumer/commercial material. This is regardless of whether it is produced in-house or externally. "Post-consumer/commercial" is defined as material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

	Materials that are approved as input in FSC Recycled and which are covered by the term Reclaimed in FSC are regarded as recycled material.
Renewable raw materials	Resources that have a natural rate of availability and yield a continual flow of services which may be consumed in any time period without endangering future consumption possibilities as long as current use does not exceed net renewal during the period under consideration. Wood is a renewable raw material while calcium carbonate is not.
Resilient flooring	Refers to floor coverings that occupy a middle ground between soft floors (like carpeting) and hard floors (like stone or hardwood). According to industry group Resilient Floor Covering Institute (RFCI), only six types of floor coverings can be called resilient flooring: Vinyl and other thermoplastic, linoleum, cork, rubber, asphalt and polymeric poured seamless floors.
Surface treatment	All techniques that aim to provide a twofold basic functionality: a) to protect the underlying material (wood, cork, bamboo-based materials) against deterioration by the adjacent environment and b) to decorate or improve the aesthetic aspect of the surface. Protection should be given against physical and chemical attacks, including water, chemical agents, UV-light and dirt. The aesthetic aspects refer to characteristics like colour performance, gloss and desire surface structure. The basic principle relies on the fact that most of the wood species, cork and bamboo are hygroscopic and absorb stain and lacquer in different ways depending on their porosity and the cell structure.
VOC	Volatile organic compounds (VOC) are defined as any organic compound having an initial boiling point less than or equal to 250°C measured at a standard pressure of 101.3 kPa. This definition is the same as in the Paints Directive (2004/42/EC).
Vinyl flooring	Vinyl comprises the majority share of the resilient flooring market. This includes Vinyl Composition Tile (VCT), Solid Vinyl Tile (SVT) and Luxury Vinyl Tile (LVT).
Wood-based panels	Example of wood-based panels and manufactured board: Particleboard MDF (Medium Density Fibreboard) HDF (High Density Fibreboard) MFB (Melamine Faced Board) Plywood OSB (Oriented Stranded Board) LVL (Laminated Veneer Lumber)
Wooden flooring	Wooden flooring is defined in accordance with prEN 13756 (revised in 2014) as the assembly of wood elements, pre-assembled boards or parquet panels which constitutes the wearing surface of the floor. This definition includes solid wood flooring, multi-layer wood flooring and wood veneer floor covering.

1.2 Overview of the requirements

The criteria are mainly divided into requirement areas where some of the requirements apply to all flooring types and underlays, while others only apply to certain product types. The table below provides an overview of the requirements that must be met for the different flooring types and underlays.

Requirement area	Requirement/Material	Requirement	Responsibility for documentation
General requirements			
Description of product, of the production process and overview of chemicals	General requirements	O1– O3	Product manufacturer
Share of renewable/recycled raw materials	General requirements	O4	Product manufacturer

Chlorinated plastics in floor coverings and flooring underlays	General requirements	O5	Product manufacturer
Materials			
Wood raw material	Nordic Swan Ecolabelled laminate and wood-based panel	O6	Wood-based panels manufacturer
	Tree species – restrictions	O7	Product manufacturer/Subcontractor
	Traceability and certification	O8	Product manufacturer
	Chemicals in reused wood and recycled material	O9	Product manufacturer/Subcontractor
Linoleum	Flax (linen), other bast fibres and linseed oil	O10	Product manufacturer
Other materials	Origin	O11	Product manufacturer/Supplier of material
	Recycled fibres - test for harmful substances	O12	Product manufacturer/Supplier of material
	Chemicals in recycled leather	O13	Product manufacturer/Supplier of material
Plastic, rubber and foam	Raw materials for bio-based polymers	O14	Product manufacturer/Supplier of material
	Emission to water from production of foams	O15	Supplier of material
	Blowing agents in foams	O16	Supplier of material
	Rubber, synthetic latex (SBR) and natural latex	O17	Supplier of material
	Recycled plastic, rubber and foam – Traceability	O18	Product manufacturer/Supplier of material
	Chemicals in recycled plastic, rubber and foam	O19	Product manufacturer/Supplier of recycled material
	Additives – Prohibited substances	O20	Product manufacturer/Supplier of material
Material based on recycled composite	Recycled composite	O21	Product manufacturer/Supplier of material
	Recycled composite - Additives – Prohibited substances	O22	Product manufacturer/Supplier of material
	Chemicals in recycled composite	O23	Product manufacturer/Supplier of material
Production			
Chemicals	Antibacterial substances	O24	Product manufacturer and chemical manufacturer/supplier of chemical product
	Classification of chemical products	O25	Product manufacturer/supplier of chemical product
	Classification of ingoing substances	O26	Product manufacturer/supplier of chemical product
	Preservatives	O27	Product manufacturer/supplier of chemical product
	Prohibited substances	O28	Product manufacturer/supplier of chemical product
	Nanomaterials	O29	Product manufacturer/supplier of chemical product
	Volatile organic compounds	O30	Product manufacturer/supplier of chemical product
	Free formaldehyde	O31	Product manufacturer/supplier of chemical product

Requirement specific to surface treatments	Application method and quantity applied – surface treatment	O32	Product manufacturer/surface treatment contractor.
	Environmentally harmful products and substances in surface treatment	O33	Product manufacturer
	Quantity of applied volatile organic compounds (VOC) in surface treatments	O34	Product manufacturer
Occupational hazard	Emissions to air from production of laminate	O35	Product manufacturer
	Polyurethane	O36	Product manufacturer/Supplier of material
Energy and Waste	Energy mapping	O37	Product manufacturer
	Energy consumption	O38	Product manufacturer/Supplier of material
	Handling of waste and production waste	O39	Product manufacturer
Packaging			
Packaging	Packaging	O40	Product manufacturer
Use-phase requirements			
Emission	Emissions from floor coverings and flooring underlays	O41	Product manufacturer
Quality and durability requirements	Product performance – third-party verification	O42	Product manufacturer
	Quality and durability of floor coverings	O43	Product manufacturer
	Quality and durability of flooring underlays	O44	Product manufacturer
	Wet room approval	O45	Product manufacturer
Circular requirements			
Circular requirements	Labelling and traceability	O46	Product manufacturer
	Warranty and Reparability	O47	Product manufacturer
	Recyclability	O48	Product manufacturer
	Product information	O49	Product manufacturer
Innovation			
Innovation	Innovation	O50	Product manufacturer/supplier of chemical product
License maintenance			
License maintenance	Customer complaints	O51	Product manufacturer
	Traceability	O52	Product manufacturer

1.3 General requirements

O1 Description of the product and material composition

The floor covering or flooring underlays must be made of materials for which requirements are imposed in the criteria.

Materials for which requirements are not imposed must not account for more than 5%. Examples of materials that are not included in the criteria are concrete and ceramic materials.

The applicant must provide the following information about the product:

- Brand/trade name
- A description of the product/products (possibly including drawing/pictures) and the materials involved.
- Flooring type (e.g., wood, laminate, linoleum, plastic, hybrid) or underlays
- The market the product is intended for (private use, commercial use etc.)
- State the percentage composition of the material in the floor and the suppliers of the various materials (see requirement O4 for more information).

✉ A description in line with the requirement above. The template in Appendix 2 can be used by the flooring manufacturer to describe the composition of the materials. Product data sheets can be part of the documentation.

O2 Description of the production chain and the manufacturing process

The manufacturing process and supply chain for the floor covering or underlays must be described. A flow chart can be used.

Make sure to include all production steps (examples can be seen in the table from the introduction to the energy requirements) and all materials/elements. Specify, if relevant, which finished layer/part(s) is purchased from suppliers and incorporated into the final product (e.g, backing foam, HDF, wood layer).

In case, a contract manufacturer is used to produce the final product, the following information must be submitted:

- The name of the contract manufacturer
- The location of the production site (full address and country)
- The contact information of a responsible.

✉ Submit a detailed description of the production chain and the manufacturing processes (a flow chart can be used). State which finished layer/part(s) is purchased, if relevant.

✉ Provide detailed information according to the points above in case a contract manufacturer is used to produce the final product.

O3 Overview of chemical products

All chemical products (e.g., adhesives/resins, additives and pigments, surface treatments and fillers) used in the manufacture of the floor coverings or underlays must be stated and documented with a safety data sheet.

The following information must be submitted for each chemical product:

- trade name
- the function of the chemical
- the process step in which the chemical product is used (the flow chart required in requirement O2 can be used).
- the supplier/producer using the chemical product

✉ List of chemical products used in the manufacturing process.

✉ Safety data sheet in English (or Scandinavian) language for every chemical product, in line with Annex II of REACH 1907/2006.

O4 Share of renewable and/or recycled raw materials

The requirement on the proportion of recycled and/or renewable raw materials must be calculated and met for the floor as a whole, including the laying/joining system.

Both flooring and underlays must meet one of the following three alternatives. The product must consist of:

a) Minimum 90 % by weight of renewable raw materials

OR

b) Minimum 60 % by weight recycled materials*, thereof at least half of it (30 % by weight) consist of post-consumer recycled materials.

OR

c) Floorings and underlays that consist of both renewable and recycled material must comply with the following formula:

$X + Y_1 + Y_2 \geq 70\%$ by weight

X = Percentage by weight of renewable raw materials**

Y_1 = Percentage by weight of pre-consumer recycled materials**

Y_2 = Percentage by weight of post-consumer recycled materials**

Non-organic fillers in the flooring may be exempted from the calculation of the weight percentage of the flooring where these are in principle available to an unlimited extent in nature***.

Note that floor coverings and flooring underlays containing recycled composite material must also fulfil specific requirements from section 1.4.5.

Example: A floor's total weight is 2500 g/m². It consists of 900 g/m² fillers, 600 g/m² bio-based plastics (renewable), 250 g/m2 post-consumer recycled plastics, 350 g/m² pre-consumer recycled plastics and 400 g/m² other materials (non-renewable nor recycled).
The proportion of renewable raw materials is: 600/1600 = 37,5%. The proportion of post-consumer recycled materials is: 250/1600 = 15,6%. The proportion of pre-consumer recycled materials is: 350/1600 = 21,9%. The combination of renewable and recycled materials is (600 + 250 + 350)/1600 = 75%.

** Recycled material is defined in line with ISO 14021. See section 1.1 Definitions for more information.*

*** Recycled renewable materials do not count as both renewable and recycled raw material.*

**** This is the case for the fillers normally used in floors such as kaolin, calcium carbonate, calcium magnesium, carbonate, calcium sulphate, silicates and aluminium trihydrate (ATH). Nordic Ecolabelling reserves the right to assess whether a filler can be considered as being in such abundance that it may be considered as unlimited. Pigment does not count as fillers, but as additives.*

✉ Summary of the raw materials included in the floor stating the proportion of the raw materials as a percentage by weight. State which raw materials are renewable, and which are pre- or post-consumer recycled. Appendix 2 can be used.

✉ For alternative c), calculations showing that the requirement is fulfilled.

O5 Chlorinated plastics in floor coverings and flooring underlays

Chlorinated plastics such as PVC (polyvinyl chloride) and PVDC (polyvinylidene chloride) must not be included in Nordic Ecolabel floor coverings nor flooring underlays.

✉ Declaration from the flooring manufacturer that the flooring is free from chlorinated plastics. Appendix 2 can be used.

1.4 Materials

This chapter includes requirements for different materials such as wood (including bamboo and cork), linoleum, other raw materials, plastic, rubber, foam, and wood plasic composites used in floor coverings and underlays.

The requirements only apply to materials that accounts for more than 5 wt% of the floor covering or underlays. Water is exempted from all requirements.

Floor coverings and underlays consisting of several differing types of materials needs to comply with the specific material requirements e.g., a hybrid flooring must comply with requirements for wood raw materials and plastics raw materials. The same reasoning applies to underlays containing a combination of wood raw materials and other renewable raw materials.

Chemicals used in the production of finished layer/components included in floor coverings such as manufactured board or backing foams must fulfil requirements from section 1.5.1 Chemicals.

1.4.1 Wood raw materials

The requirements in this chapter concern raw materials such as wood, cork or bamboo that are included in underlays, wood flooring and manufactured boards used e.g., in wood (engineered or design floorings), laminate or hybrid floorings.

Wood raw material in paper must also fulfil requirements O7 and O8 if the floor coverings or flooring underlays contains more than 10 wt% paper.

O6 Nordic Swan Ecolabelled laminate and wood-based panel

If the laminate or wood-based panel in the floor covering is Nordic Swan Ecolabelled or included in a license in accordance with the Nordic Swan Ecolabel criteria for Panels and mouldings for interior use, generation 7 or later, the requirements in the chapter 1.4 Materials as well as requirements O35, is fulfilled.

✉ Name, manufacturer and licence number of the laminate/wood-based panel.

O7 Tree species – restrictions

Nordic Ecolabelling's list of tree species* consists of virgin woods listed on:

a) CITES (Appendices I, II and III)
b) IUCN Red List, categorised as CR, EN and VU
c) Rainforest Foundation Norway's tree list:
d) Siberian larch (from forests outside the EU)

Exemption apply for:

- Eucalyptus and Acasia used in production of fibreboards and particle boards are exempted from the list (note**).

Use of tree species listed on a) CITES (Appendices I, II and III) **is not permitted**.

Tree species listed on either b), c) or d) may be used if they meet all the following requirements:

- the tree species does not originate from an area/region where it is on the IUCN Red List, categorised as CR, EN or VU
- the tree species does not originate from an Intact Forest Landscape (IFL), as defined in 2002 http://www.intactforests.org/world.map.html.
- the tree species shall originate from FSC or PEFC certified forests/plantations and shall be covered by a valid FSC/PEFC Chain of Custody (CoC) certificate documented/controlled as FSC or PEFC 100% through the FSC transfer method or PEFC physical separation method.
- In addition, tree species grown in plantations shall originate from FSC or PEFC certified plantations established before 1994.

** The list of tree species can be found on the website:* https://www.nordic-ecolabel.org/declare-items/pulp-and-paper/forestry-requirements/forestry-requirements-2020/

*** Regarding wood chips, fibre raw materials from eucalyptus/acacia must be a minimum of 70% certified (see requirement O8).*

✉ Enter the names of the tree species included in the product, Appendix 3a can be used.

✉ Declaration from the applicant/manufacturer/supplier that tree species listed on a)–d) are not used in the product, Appendix 3c can be used.

If species from the lists b), c) or d) are used:

✉ Valid FSC/PEFC Chain of Custody certificate from supplier/applicant/manufacturer covering the specific tree species and documenting that the wood is controlled as FSC or PEFC 100% through the FSC transfer method or PEFC physical separation method.

✉ The applicant/manufacturer/supplier shall document full traceability back to the certified forest unit and document the following:

- the wood does not originate from an area/region where it is on the IUCN Red List, categorised as CR, EN or VU.
- the tree species does not originate from an Intact Forest Landscape (IFL), as defined in 2002: http://www.intactforests.org/world.webmap.html
- For plantations, the applicant/manufacturer/supplier must document that the tree species does not originate from FSC or PEFC certified plantations established after 1994.

O8 Traceability and certification

The requirement applies to wood raw material, cork and bamboo used in the product.

Species name

The applicant/manufacturer must state the name (species name) of the wood raw material/bamboo/cork used in the product.

Chain of Custody certification

All wood raw material and bamboo used in Nordic Swan Ecolabelled products must be covered by a valid Chain of Custody certificate in accordance with FSC/PEFC schemes.

The applicant or product manufacturer must have Chain of Custody certification under the FSC/PEFC schemes.

Certified wood raw material, bamboo and cork

A minimum of 70% by weight/volume of the wood raw material, bamboo and cork used in the Nordic Swan Ecolabelled product must come from forests that are managed in accordance with sustainable forestry management principles established by FSC and PEFC and/or be recycled raw material*.

For oak parquet floor covering:

The minimum total share of wood raw materials (weight/volume) used in oak parquet floor covering must come from forests that are managed in accordance with sustainable forestry management principles established by FSC and PEFC and/or be recycled raw material* according to below table:

Deadline	01/01/2025	01/01/2026	01/01/2027
Required share of certified wood raw material (%)	Minimum 60	Minimum 65	Minimum 70

The remaining proportion of wood raw material must be covered by FSC/PEFC's control schemes (FSC controlled wood/PEFC controlled sources) or be recycled material.

The applicant/manufacturer must create a designated product group for Nordic Swan Ecolabelled products in there accounting system to control and meet the required certified content in Nordic Swan Ecolabelled products.

**See Definitions.*

For more information, see appendix 4.

✉ The names (species names) of the wood raw material, bamboo and cork that are used, appendix 3a can be used.

✉ The applicant/manufacturer must provide valid FSC/PEFC CoC certification that includes all wood raw material, bamboo and cork used in the Nordic Swan Ecolabelled product.

✉ The applicant/manufacturer shall provide audited accounting documents showing that at least 70% (60 to 70% for oak parquet) of the material in the Nordic Swan Ecolabelled product or production line is from forests or areas that are managed in accordance with sustainable forestry management principles that meet the requirements of the FSC or PEFC scheme. If the product or production line includes uncertified material, evidence must be provided that the content of uncertified material does not exceed 30% (30 to 40% for oak parquet) and is covered by a verification system that ensures that it is legally harvested and meets any other requirements laid down by FSC or PEFC with regard to uncertified material.

✉ An applicant/manufacturer who only uses recycled material in the Nordic Swan Ecolabelled product, which is not FSC/PEFC certified, must provide documentary evidence that the material is recycled, e.g., an invoice.

✉ The proportion of wood raw material derived from certified forests must be stated and the basis for calculations must be shown. Appendix 3b can be used.

O9 Chemicals in reused wood and recycled material in wood-based panels

Recycled material in floor coverings, underlays and wood-based panels (e.g., particle boards and fibreboards) must meet the requirements of the European Panel Federation's (EPF) Standard for delivery conditions of recycled wood[1].

This means that the materials must not contain

- Treated wood*
- Wood that exceeds the threshold limit values in the table below:

Substance/compound	Limit value (mg/kg recycled wood)
Arsenic (As)	25
Cadmium (Cd)	50
Chromium (Cr)	25
Copper (Cu)	40
Lead (Pb)	90
Mercury (Hg)	25
Fluorine (F)	100
Chlorine (Cl)	1000
Pentachlorophenol (PCP)	5
Creosote (Benzo(a)pyrene)	0.5

The requirement does not apply to sawdust, wood chips and similar materials that come straight from the wood-processing industry where the wood is virgin/untreated.

** The standard defines treated wood as wood that contains halogenated organic compounds, creosote or heavy metals as a result of treatment with wood preservatives.*

✉ Certification or equivalent documentation of compliance with the EFP's Standard for delivery conditions of recycled wood

1.4.2 Linoleum

The requirements in this section cover raw materials used in the manufacture of linoleum flooring. Both jute used in the backing of the flooring and linseed oil used in the manufacture of the linoleum cement must fulfil the requirements. Because linoleum flooring manufacturers may buy their raw materials from a multitude of suppliers, it may be accepted that the license holder documents the requirement for 50% of its jute and linseed oil total purchases.

The chemicals used in the manufacture of the linoleum cement must fulfil the requirements from the section 1.5.1 Chemicals.

O10 Flax (linen), other bast fibres and linseed oil

Flax (linen), other bast fibres (e.g., hemp, jute, and ramie) and linseed oil may only be cultivated/harvested from cultures using pesticides permitted according to Regulation (EC) No 1107/2009.

Production of flax (linen) and other bast fibres (e.g., hemp, jute, and ramie) using water retting is only allowed if the wastewater from the retting ponds is treated to reduce the chemical oxygen demand (COD) or the total organic carbon (TOC) by at least:

[1] https://europanels.org/issues/standards/

- 75% for hemp fibres
- 95% for flax (linen) and other bast fibres

Test method: Test in accordance with ISO 6060.

Measurement of BOD (Bio-chemical oxygen demand), PCOD (particulate chemical oxygen demand) or TOC (total oxygen demand) may also be used if a correlation to COD is evident.

The requirements for analysis laboratory and test methods are stated in Appendix 1.

✉ Statement from the fibre/linseed oil supplier that only approved pesticides are used. Alternatively, a valid certificate from European Flax Standard or equivalent can be used.

✉ Test report from the producer of the flax (linen)/bast fibre, showing that the water retting requirement is fulfilled.

1.4.3 Other materials

The requirements in this section concern other materials than the ones usually used in resilient floor coverings or flooring underlays. Requirement O11 must be fulfilled regardless the quantity of other materials contained in the product. In addition, requirements O12 and O13 must be fulfilled only if the quantity of, in this case, textile and/or leather exceeds 10% in the product.

O11 Origin

The raw material must be either:

a) waste* or residual products* from other production systems, e.g., straw from grain production or,

b) 100% pre- or post-consumer recycled (e.g., recycled textile, recycled fibres or recycled leather). See section 1.1 Definitions for more information.

The species name (Latin and English/Nordic language) and geographic origin (country) must be stated in case the raw material is or renewable origin.

***Waste and residues as defined in EU Directive 2018/2001/EC. Examples of residual products include straw, chaff and the non-edible part of maize.*

Recycled synthetic fibres

The recycled plastic used as raw materials in recycled synthetic fibres must not have undergone any recycling process approved and published on EFSA's** and/or FDA's*** official list.

** *In line with article 9 from Commission Regulation (EC) No 2022/1616 of 22 September 2022 on recycled plastic materials and articles intended to come into contact with foods (*https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022R1616&qid=1696831844440*)*

*** *In line with the Code of Federal Regulations Title 21: Food and Drugs, PART 177 – INDIRECT FOOD ADDITIVES: POLYMERS (*https://www.cfsanappsexternal.fda.gov/scripts/fdcc/index.cfm?set=RecycledPlastics&sort=Recycle_Number&order=DESC&startrow=1&type=basic&search=*).*

Recycled leather

Only skins and hides from the following animals can be used in the recycled leather: fish*, sheep, goats, cattle, horses, pigs, elk, deer and reindeer.

**skin from fish on the IUCN Redlist is not allowed.*

☒ Alternative a): Name and geographic origin of the raw material if relevant. Documentation from the raw material producer which shows that the requirement's definition of waste or residual products is met. Documentation regarding traceability stating where the waste or residual product comes from.

☒ Alternative b): Declaration that the renewable raw material is also 100% post-consumer recycled. Documentation in the form of an invoice or delivery note from the manufacturer of the recycled material.

☒ Recycled synthetic fibres: Declaration from the producer of the recycled raw material that it has not undergone any recycling process approved by EFSA or FDA, see requirement.

☒ Recycled leather: The applicant must provide a declaration from the recycled leather manufacturer or recycled leather supplier that the hides/skins used have come from animals farmed for production of milk, wool and/or meat/fish.

O12 Recycled fibres - test for harmful substances

Recycled fibres must not contain the following substances above the limits stated in the table below:

Substance/substance group	Max. limit	Test method
Extractable metals		Atomic absorption spectrometry (AAS) or ICP. The metals are extracted by use of artificial acidic sweat solution according to ISO 105-04 (testing solution II).
Chromium total	2.0 mg/kg	
Lead	1.0 mg/kg	
Mercury	0.02 mg/kg	
Cadmium	0.1 mg/kg	
Organic tin compounds		
TBT and TPhT	0.5 mg/kg	
Phthalates		Extraction of the testing material with an organic solvent. The extract is analysed by gas chromatography (MS detection).
BBP, DBP, DEP, DMP, DEHP, DMEP, DIHP, DHNUP, DCHP, DHxP, DIBP, DIHxP, DIOP, DINP, DIDP, DPrP, DHP, DNOP, DNP and DPP	Total 0.05 weight%	
PAHs (Polycyclic aromatic hydrocarbons)		Extraction of the testing material with an organic solvent. The extract is analysed after clean-up by gas chromatography with mass selective detection (MSD).
Naphthalene, Acenaphtene, Acenaphtylene, Phenanthrene, Anthracene, Fluorene, Fluoranthene and Pyrene	Each 1 mg/kg	
Flame retardants		Extraction of the testing material with an organic solvent. The extract is analysed then by LC/MS/MS respectively GC/MS/MS.
Brominated and chlorinated flame retardants	Total 50 mg/kg	
Chlorophenols		The samples are extracted with a basic aqueous solution following DIN 50009. The extracted free phenols and possibly hydrolysed phenolesters are acetylated, transferred to an organic phase and analysed with GC-MS.

Pentachlorophenol	0.5 mg/kg	
Tetrachlorophenol	0.5 mg/kg	
Trichlorophenol	2.0 mg/kg	
Dichlorophenpol	3.0 mg/kg	
Monochlorophenol	3.0 mg/kg	
Per- and polyfluorinated compounds		The method for the determination of PFCs/PFAS is based on an extraction with methanol followed by determination of the PFCs/PFAS by means of LCMS and GC-MS.
PFOS, PFOSA, PFOSF, N-Me-FOSA, N-Me-FOSE, N-Et-FOSE	Total <1.0 µg/m2	
PFHpA, PFNA, PFDA, PFUdA, PFDoA, PFTrDA, PFTeDA	0.025 mg/kg for each	
PFOA and salts	Total <0.025 mg/kg	
PFOA related Substances as stated in OekoTex 100 Annex 4 and 5.	Total <0.25 mg/kg	
Other stated per- and polyfluorinated compounds as set out in OekoTex 100 Annex 5.	0.025 or 0.25 mg/kg for each as stated in Oeko-Tex 100	
Organic fluorine content		
Extractable organic fluorine (EOF)	10 mg/kg	
Dyes		EN 14362-1 EN 14362-3 The identification and quantification of dyes extracted with an organic solvent is made by means of chromatographic methods.
Cleavable, classified as carcinogenic	20 mg/kg	
Cleavable aniline	50 mg/kg	
Classified as carcinogenic	50 mg/kg	
Dyes classified as allergenic	50 mg/kg	
Other dyes	50 mg/kg	

This requirement applies to all recycled fibres – both synthetic and natural and must be documented annually with either a) or b):

a) an Oeko-Tex standard 100 class I-III certificate.

b) test report showing that the requirement is fulfilled.

The following are exempted from this requirement:

- Material from PET bottles originally approved for food contact. Please note that rPET that has undergone any FDA/EFSA approved recycling process may not be used (see requirement O11).
- Fibres from chemically recycled polymers, if it can otherwise be documented that the process ensures, that the requirement limits are met.

The requirements for analysis laboratory and test methods are stated in Appendix 1.

✉ Test reports or Oeko-Tex 100 class I-III certificate showing fulfilment of the requirement. A written procedure showing how an annual test is performed in line with the requirement, along with annual in-house checks of compliance with the requirement. Alternatively, a procedure for annual requisition of Oekotex 100 class III certificate. Test results/certificate are to be archived and kept available for inspection by Nordic Ecolabelling.

✉ When using chemically recycled polymers, documentation showing that the recycling process ensures that the requirement is fulfilled.

✉ When using the exemption for material from PET bottles, this must be documented by the fibre supplier.

O13 Chemicals in recycled leather

The requirement applies to chemicals in the recycled* leather.

Chromium

The extractable Chromium content of the recycled leather must be less than 200 mg / kg (mass of Chromium (total) / dry weight of leather) according to EN ISO 17072-1.

Recycled leather must not contain Chromium VI in compliance with EN ISO 17075 (detection limit 3 ppm) or equivalent test method.

Cadmium and Lead

Cadmium and Lead shall not be found in recycled leather.

The content of Cadmium and Lead shall be tested according to the methods AAS, ICP-OES or ICP-MS (detection limit 10 ppm).

**See section 1.1 Definitions for more information.*

The requirements for analysis laboratory and test methods are stated in Appendix 1.

✉ A test report showing that the requirement on total Chromium and Chromium (VI) is fulfilled.

✉ A test report showing that the requirement on Cadmium and Lead is fulfilled.

1.4.4 Plastic, rubber and foam

The requirement in this section applies to all plastic (e.g., polyethylene, polypropylene and polyurethane and their derivatives), rubber and foam contained in floor coverings and underlays. Products including polyurethane must also fulfil the specific requirement O35 Polyurethane in section 1.5.3.

O14 Raw materials for bio-based polymers

Raw materials used in the production of bio-based polymers must meet the following requirements.

Palm oil and soy

Palm oil, soybean oil and soybean flour must not be used as raw material.

Sugar cane

Raw materials from sugar cane must either comply with a) or b):

a) Waste or residual products* defined in accordance with (EU) Renewable Energy Directive 2018/2001. There must be traceability back to the production / process where the residual production occurred.

b) Certified according to Bonsucro standard (EU REDII approved), version 5.1 or later version. In addition sugar cane must not be genetically modified (see section 1.1 Definitions).

The producer of the bio-based polymer must have a chain of custody (CoC) certification according to the standard by which the raw material is certified. Traceability must at least be ensured by mass balance. Book and claim systems are not accepted.

The producer of the bio-based polymer must document its purchase of certified raw materials for polymer production, for example in the form of specifications on an invoice or delivery note.

Other raw materials

The name (in Latin and in English) and supplier of the raw materials used must be stated.

The raw materials must be waste or residual products* defined in accordance with (EU) Renewable Energy Directive 2018/2001. There must be traceability back to the production/process where the residual production occurred.

Traceability must at least be ensured by mass balance. Book and claim systems are not accepted.

The producer of the bio-based polymer must document its purchase of certified raw materials for polymer production, for example in the form of specifications on an invoice or delivery note.

** Residual products as defined in EU Directive 2018/2001/EC. Residual products come from agriculture, aquaculture, fishing and forestry, or they can be processed residues. A processed residual product means a substance that is not the end product(s) that the production process directly seeks to produce; residues are not the primary target of the production process, and the process has not been deliberately modified to produce them. Examples of residual products are, for example, straw, bait, the non-edible part of maize, livestock manure and bagasse. Examples of processing residues are, for example, raw glycerol or brown lye from paper production. PFAD (Palm Fatty Acid Distillate) from palm oil is not considered a residual/waste product and may therefore not be used.*

✉ Declaration by the producer of the polymer, that palm oil (incl. PFAD (Palm Fatty Acid Distillate)) soybean oil and soy flour are not used as raw materials for the bio-based polymer.

✉ For waste and residual products: Documentation from the polymer producer which shows that the requirement's definition of waste or residual products is met. Documentation showing the level of certification (e.g., mass balance). Documentation regarding traceability stating where the waste or residual product comes from. Name (in Latin and English) and geographical origin (country/state) of the primary raw materials used.

✉ Sugar cane b): Verify which certification system sugar cane is certified for. A copy of a valid CoC certificate or a certificate number. Documentation in the form of an invoice or delivery note from the manufacturer of bio-based polymer which shows that certified raw material has been purchased for the production of the polymer. Declaration stating that the sugar cane has not been genetically modified.

O15 Emissions to water from production of foams

Emissions of oxygen demanding substances to water from the production of foam materials (e.g., EPS, XPS, EVA, PUR, PE, latex and rubber) must be reduced by 90% measured as COD or TOC. The reduction may be achieved through on-site or off-site treatment. In the case of off-site treatment, the average treatment level of the effluent treatment plant may be used.

Chemical oxygen demand (COD) must be analysed under ISO 6060. The requirements for analysis laboratory and test methods are stated in Appendix 1.

✉ Description of how the effluent from foam material production is treated and how COD emissions are measured and monitored.

✉ Test report showing that the limit value for chemical oxygen demand (COD) is fulfilled.

O16 Blowing agents in foams

CFC, HCFC, HFC, methylene chloride or other halogenated organic compounds must not be used as blowing agents in the manufacture of foam materials (e.g., EPS, XPS, EVA, PUR, PE and rubber).

✉ Information from the manufacturer of the foam stating which blowing agent has been used.

O17 Rubber, synthetic latex (SBR) and natural latex

1,3-butadiene

The content of 1,3-butadiene in synthetic latex must be less than 1 mg/kg latex and must be determined using test method EN 13130-4.

PAHs

The sum of the PAHs concentration in rubber and latex must be below 10 mg/kg and each individual PAH concentration must be below 1.0 mg/kg.

The requirement concerns the following PAHs:

Substance name	CAS No.	Substance name	CAS No.
Benzo[A]Pyrene	50-32-8	Benzo[A]Pyrene	50-32-8
Benzo[E]Pyrene	192-97-2	Benzo[E]Pyrene	192-97-2
Benzo[A]Anthracene	56-55-3	Acenaphthylene	208-96-8
Dibenzo[A,H]Anthracene	53-70-3	Acenaphthene	83-32-9
Benzo[B]Fluoranthene	53-70-3	Anthracene	120-12-7
Benzo[J]Fluoranthene	205-82-3	Fluorene	86-73-7
Benzo[K]Fluoranthene	207-08-9	Naphthaline	91-20-3
Chrysene	218-01-9	Phenanthrene	85-01-8
Benzo[ghi]perylene	191-24-2	Fluoranthene	206-44-0
Indeno[1,2,3-cd]pyrene	193-39-5	Pyrene	129-00-0

The rubber material must be tested in accordance with ISO 18287 or ZEK 01.2-08 (GC/MS).

Nitrosamines

The following requirements must be met for nitrosamines in rubber and latex material:

- The content of nitrosamines must not exceed 0.05 mg per kg rubber.
- The total content of nitrosamine-soluble substances must not exceed 1 mg per kg rubber.

The requirements for analysis laboratory and test methods are stated in Appendix 1.

✉ Results of an analysis/test for the content of 1,3-butadiene in synthetic latex.

✉ Results of an analysis/test for the content of PAHs in rubber.

✉ Results of an analysis/test for the content of nitrosamines in rubber and latex.

O18 Recycled plastic, rubber and foam - Traceability

Recycled plastic, rubber and foam must not have undergone any recycling process approved and published on EFSA's* and/or FDA's** official list.

The traceability of the recycled raw material must be documented with either a) or b) below:

a) Global Recycled Standard certificate or Recycled Claim Standard certificate showing that the raw material is recycled, or other equivalent certification approved by Nordic Ecolabelling.

b) By giving the name of the recycled raw material producer, by documenting that the feedstock used is recycled material and by stating the share of recycled material included in the raw material, see 1.1 Definitions.

** In line with article 9 from Commission Regulation (EC) No 2022/1616 of 22 September 2022 on recycled plastic materials and articles intended to come into contact with foods (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022R1616&qid=1696831844440).*

*** In line with the Code of Federal Regulations Title 21: Food and Drugs, PART 177 – INDIRECT FOOD ADDITIVES: POLYMERS (https://www.cfsanappsexternal.fda.gov/scripts/fdcc/index.cfm?set=RecycledPlastics&sort=Recycle_Number&order=DESC&startrow=1&type=basic&search=)*

✉ Declaration from the producer of the recycled plastic that it has not undergone any recycling process approved by EFSA or FDA, see requirement.

✉ a) Certificate from an independent certifier of the supply chain (e.g., Global Recycled Standard or Recycled Claim Standard).

✉ b) Documentation in the form of an invoice or delivery note from the manufacturer of the floor covering or flooring underlays which shows that recycled material has been purchased to produce the product. Documentation in form of a statement from the recycled material producer, showing that the feedstock used is recycled material and showing the share of recycled raw material contained in the raw material.

O19 Chemicals in recycled plastic, rubber and foam

The requirement applies to chemicals in the recycled* plastic, rubber and foam raw material.

Recycled plastics, rubber and foams must not contain:

- halogenated flame retardants
- cadmium
- lead
- mercury
- chromium VI
- arsenic
- phthalates
- polycyclic aromatic hydrocarbons (Benzo[A]Pyrene, Benzo[E]Pyrene, Benzo[A]Anthracene, Dibenzo[A,H]Anthracene, Benzo[B]Fluoranthene, Benzo[J]Fluoranthene, Benzo[K]Fluoranthene, Chrysene)

Impurities up to 100 ppm are permitted.

**See section 1.1 Definitions for more information.*

The requirements for analysis laboratory and test methods are stated in Appendix 1.

✉ A test report (XRF, X-ray fluorescence, GC-MS or equivalent method) from the supplier of the recycled plastic, rubber and foam showing compliance with the requirement. Alternatively, the requirement can be documented with traceability to the source to substantiate that these substances are not included.

O20 Additives - Prohibited substances

Additives to plastic, rubber and foam (both virgin and recycled) must not be classified nor categorised according to the list below. The requirement applies to additives actively added to the polymer raw material in the compound or master batch in production of plastic, rubber and foam. The requirement also covers substances that are added during re-compounding of recycled plastic, foam or rubber raw materials.

The following substances must not be present:

- Substances on the Candidate List
  - The Candidate List can be found on the ECHA website: http://echa.europa.eu/candidate-list-table
  - Exemption applies to melamine (CAS No. 108-78-1)
  - D4 (CAS No. 556-67-2), D5 (CAS No. 541-02-6) or D6 (CAS No. 540-97-6) must only be included in the form of residues from raw material production and are allowed in concentrations up to 1000 ppm each in the silicone raw material.
- CMR substances - Carcinogenic, Germ cell mutagenicity, Reproductive toxicity category 1A or B or category 2 (including all combinations of stated exposure route and stated specific effect)
  - An exemption is made for titanium dioxide (CAS No. 13463-67-7) classified H351
  - An exemption is made for 1,1,1-Trimethylolpropane (TMP, CAS No. 77-99-6) classified H361
- Substances that have been judged in the EU to be PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative)
  - PBT and vPvB in accordance with the criteria in Annex XIII of REACH
- Substances classified with hazard classes EUH440 (Persistent, Bioaccumulative and Toxic properties, PBT), EUH441 (Very Persistent, Very Bioaccumulative properties, vPvB), EUH450 (Persistent, Mobile and Toxic properties, PMT and EUH451 (Very Persistent, Very Mobile properties, vPvM) according to lastly proposed revision of CLP regulation.
- Endocrine disruptors: Substances on the EU member state initiative "Endocrine Disruptor Lists", List I, List II and List III, see following links:

  List I: https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu

  List II: https://edlists.org/the-ed-lists/list-ii-substances-under-eu-investigation-endocrine-disruption

  List III: https://edlists.org/the-ed-lists/list-iii-substances-identified-as-endocrine-disruptors-by-participating-national-authorities

  Substances that are transferred to one of the corresponding sub-lists "Substances no longer on list" and that no longer feature on Lists I–III are not prohibited. However, this does not apply to the substances listed in Sub-List II that were evaluated on the basis of regulations or directives that do not have provisions for identifying endocrine disruptors (e.g., the Cosmetics Regulation). These substances may have endocrine disrupting properties. Nordic Ecolabelling will assess these substances on a case-by-case basis, based on the background information provided in Sub-List II.

- Substances classified with hazard classes EUH380/EUH381 (Endocrine disruption for human health, ED HH 1 or ED HH 2) and EUH340/EUH341 (Endocrine disruption for the environment, ED ENV 1 or ED ENV 2) according to lastly proposed revision of CLP regulation.
- Halogenated organic compounds, such as short-chain chlorinated paraffins (C10-C13), medium-chain chlorinated paraffins (C14-C17) and halogenated flame retardants, with the following exemptions:
    - Halogenated organic pigments that comply with the Council of Europe recommendation "Resolution AP (89) 1 on the use of colorants in plastic materials coming into contact with food", point 2.5.
- Per- and polyfluoroalkyl substances (PFASs), e.g., PFOA and PFOS
- Butylhydroxytoluene (BHT, CAS No. 128-37-0)
- 34 bisphenols[2] that have been identified by ECHA for further EU regulatory risk management that are known or potential endocrine disruptors for the environment or for human health, or that can be
    - identified as toxic for reproduction.Bisphenol A used in the production of epoxy acrylate is not covered by the requirement.
    -
- Organotin compounds
- APEO (alkylphenol ethoxylates) and APD (alkylphenol derivatives/alkylphenols)
    - Alkylphenol derivatives are defined as substances that release alkylphenols when they break down.
    - An exemption is made for sterically hindered phenolic antioxidants with molecular weight (MW) > 600 g/mole.
- Phthalates
    - Phthalates are defined as esters of 1,2-benzenedicarboxylic acid (orthophthalic acid).
- Pigments, dyes and other additives based on lead, tin, cadmium, chromium VI and mercury, and their compounds.
- Nanomaterials and nanoparticles
    - Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01). Pigments are exempted from the requirement.

✉ A declaration from the manufacturer/supplier of the additive, in accordance with Appendix 5.

✉ A safety data sheet for the additive in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).

1.4.5 Materials based on recycled composite

The requirements in this chapter concern floor coverings and flooring underlays containing recycled composite material. The recycled composite material needs only to comply with the requirements in this section 1.4.5.

[2] Assessment of regulatory needs: Bisphenols. ECHA – 16 December 2021: Section 2.1: Bisphenols for which further EU RRM is proposed – restriction https://echa.europa.eu/documents/10162/c2a8b29d-0e2d-7df8-dac1-2433e2477b02

O21 Recycled composite

The recycled composite material must meet the following requirements:

- The ingoing materials and suppliers of the recycled composite material must be stated.
- All recycled composite material must already be a composite. It is not allowed to produce new composite material by mixing pure fractions of different materials, e.g., wood and plastic.
- The composite material must consist of 100% by weight of recycled material. 50% by weight must be post-consumer recycled.

✉ Declaration from the producer of the recycled composite material in line with the requirements above.

O22 Recycled composite - Additives - Prohibited substances

Additives used during manufacturing of material based on recycled composite (e.g., pigments, UV-stabilisers and bonding agents) must not be classified nor categorised according to the list below.

- Substances on the Candidate List
  - The Candidate List can be found on the ECHA website: http://echa.europa.eu/candidate-list-table
  - Exemption applies to melamine (CAS No. 108-78-1)
  - D4 (CAS No. 556-67-2), D5 (CAS No. 541-02-6) or D6 (CAS No. 540-97-6) must only be included in the form of residues from raw material production and are allowed in concentrations up to 1000 ppm each in the silicone raw material.
- CMR substances - Carcinogenic, Germ cell mutagenicity, Reproductive toxicity category 1A or B or category 2 (including all combinations of stated exposure route and stated specific effect)
  - An exemption is made for titanium dioxide (CAS No. 13463-67-7) classified H351
  - An exemption is made for 1,1,1-Trimethylolpropane (TMP, CAS No. 77-99-6) classified H361
- Substances that have been judged in the EU to be PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative)
  - PBT and vPvB in accordance with the criteria in Annex XIII of REACH
- Substances classified with hazard classes EUH440 (Persistent, Bioaccumulative and Toxic properties, PBT), EUH441 (Very Persistent, Very Bioaccumulative properties, vPvB), EUH450 (Persistent, Mobile and Toxic properties, PMT and EUH451 (Very Persistent, Very Mobile properties, vPvM) according to lastly proposed revision of CLP regulation.
- Endocrine disruptors: Substances on the EU member state initiative "Endocrine Disruptor Lists", List I, List II and List III, see following links:

  List I: https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu

  List II: https://edlists.org/the-ed-lists/list-ii-substances-under-eu-investigation-endocrine-disruption

  List III: https://edlists.org/the-ed-lists/list-iii-substances-identified-as-endocrine-disruptors-by-participating-national-authorities

Substances that are transferred to one of the corresponding sub-lists "Substances no longer on list" and that no longer feature on Lists I–III are not prohibited. However, this does not apply to the substances listed in Sub-List II that were evaluated on the basis of regulations or directives that do not have provisions for identifying endocrine disruptors (e.g., the Cosmetics Regulation). These substances may have endocrine disrupting properties. Nordic Ecolabelling will assess these substances on a case-by-case basis, based on the background information provided in Sub-List II.

- Substances classified with hazard classes EUH380/EUH381 (Endocrine disruption for human health, ED HH 1 or ED HH 2) and EUH340/EUH341 (Endocrine disruption for the environment, ED ENV 1 or ED ENV 2) according to lastly proposed revision of CLP regulation.
- Halogenated organic compounds, such as short-chain chlorinated paraffins (C10-C13), medium-chain chlorinated paraffins (C14-C17) and halogenated flame retardants, with the following exemptions:
    - Halogenated organic pigments that comply with the Council of Europe recommendation "Resolution AP (89) 1 on the use of colorants in plastic materials coming into contact with food", point 2.5.
- Per- and polyfluoroalkyl substances (PFASs), e.g., PFOA and PFOS
- Butylhydroxytoluene (BHT, CAS No. 128-37-0)
- 34 bisphenols[3] that have been identified by ECHA for further EU regulatory risk management that are known or potential endocrine disruptors for the environment or for human health, or that can be
    - identified as toxic for reproduction.Bisphenol A used in the production of epoxy acrylate is not covered by the requirement.
    -
- Organotin compounds
- APEO (alkylphenol ethoxylates) and APD (alkylphenol derivatives/alkylphenols)
    - Alkylphenol derivatives are defined as substances that release alkylphenols when they break down.
    - An exemption is made for sterically hindered phenolic antioxidants with molecular weight (MW) > 600 g/mole.
- Phthalates
    - Phthalates are defined as esters of 1,2-benzenedicarboxylic acid (orthophthalic acid).
- Pigments, dyes and other additives based on lead, tin, cadmium, chromium VI and mercury, and their compounds.
- Nanomaterials and nanoparticles
    - Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01). Pigments are exempted from the requirement.

✉ A declaration from the manufacturer of recycled composite material, in accordance with Appendix 5.

[3] Assessment of regulatory needs: Bisphenols. ECHA – 16 December 2021: Section 2.1: Bisphenols for which further EU RRM is proposed – restriction https://echa.europa.eu/documents/10162/c2a8b29d-0e2d-7df8-dac1-2433e2477b02

✉ A safety data sheet for the additive in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).

O23 Chemicals in recycled composite

The used recycled composite material must meet one of the alternatives below.

a) The composite material that is recycled must come from food contact approved materials (e.g., multi-material/layer food packaging). Please note that recycled composite material that has undergone any recycling process approved by FDA or EFSA may not be used.

b) The used recycled composite material must not contain the following substances:

- halogenated flame retardants
- cadmium
- lead
- mercury
- chromium IV
- arsenic
- phtalates
- polycyclic aromatic hydrocarbons (Benzo[A]Pyrene, Benzo[E]Pyrene, Benzo[A]Anthracene, Dibenzo[A,H]Anthracene, Benzo[B]Fluoranthene, Benzo[J]Fluoranthene, Benzo[K]Fluoranthene, Chrysene)

Impurities up to 100 ppm are permitted.

**See section 1.1 Definitions for more information.*

The requirements for analysis laboratory and test methods are stated in Appendix 1.

✉ Declaration from the supplier of recycled composite stating that the material come from approved food contact materials.

✉ A test report (XRF, X-ray fluorescence, GC-MS or equivalent method) from the supplier of the recycled composite material showing compliance with the requirement. Alternatively, the requirement can be document with traceability to the source to substantiate that these substances are not included.

1.5 Production processes

1.5.1 Chemicals

Introduction to chemical requirements

The requirements in this chapter apply to chemical products used in the production/assembly of the Nordic Swan Ecolabelled floor coverings or flooring underlays, such as for example adhesives, resins, sealants, or waxes, as well as lacquers, oils, paints, stains or fillers. The requirements also apply to chemicals used at the production site of subcontractors manufacturing finished layers/elements such as manufactured board and backing foam.

Lamination (thin layer of laminate < 2 mm, including melamine) on another panel is not considered to be surface treatment. For a wood-based panel with laminate, both elements must fulfil the requirements for the relevant panel type individually, i.e., the wood-based panel and laminate must both meet the requirements for chemicals.

Chemical products used in the manufacture of paper, and to print patterns on the decor paper, are not covered by the requirements. Auxiliary substances such as lubricants and detergents are also not covered by the requirements.

Requirements specific for surface treatment are presented in chapter 1.5.2.

Definitions

The requirements in the criteria document apply to all ingoing substances in the chemical product. Impurities are not regarded as ingoing substances and are therefore exempted from the requirements. Ingoing substances and impurities are defined as below, unless otherwise stated.

- **Ingoing substances**: All substances in the product, including additives (e.g. preservatives and stabilisers) in the raw materials. Substances known to be released from ingoing substances (e.g., formaldehyde, arylamine, in situ-generated preservatives) are also regarded as ingoing substances.
- **Impurities**: Residues from production, incl. raw material production, which remain in the chemical product at concentrations below 1000 ppm (0.1000% by weight). Examples of impurities are reagent residue incl. residues of monomers, catalysts, by-products, "scavengers" (i.e., chemicals used to eliminate/minimise undesirable substances), cleaning agents for production equipment and "carry-over" from other/previous production lines.

O24 Antibacterial substances

Chemical products and nanomaterials* with antibacterial or disinfectant properties must not be added during production or during surface treatment process. In addition, they must not be added to the finished product nor to finished ingoing elements (e.g., HDF or backing foam).

The term antibacterial means chemical products that prevent or inhibit growth of microorganisms, such as bacteria or fungi. Silver ions, silver nanoparticles, gold nanoparticles and copper nanoparticles are classed as antibacterial agents.

The requirement does not apply to preservatives used to preserve the chemical product, so-called in-can preservatives.

** Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01).*

✉ Declaration from the manufacturer of the product that no chemical products and nanomaterials with antibacterial or disinfecting properties have been added during production or to the finished product. Appendix 2 can be used.

✉ Declaration from the manufacturer/supplier that the chemical product does not contain nanomaterials with antibacterial or disinfecting properties, in accordance with Appendix 6.

O25 Classification of chemical products

Chemical products, including surface treatments, used in the production of the Nordic Swan Ecolabelled product must not be classified in accordance with the table below:

CLP Regulation 1272/2008		
Hazard statement	**Hazard class and category**	**Hazard code**
Toxic to the environment-	Aquatic Acute 1 Aquatic Chronic 1 Aquatic Chronic 2 Ozone	H400 H410 H411 H420
Acute toxicity	Acute Tox 1 or 2 Acute Tox 1 or 2 Acute Tox 1 or 2 Acute Tox 3 Acute Tox 3 Acute Tox 3	H300 H310 H330 H301 H311 H331
Specific target organ toxicity – single exposure/repeated exposure	STOT SE 1 STOT RE 1	H370 H372
Carcinogenic[1]	Carc. 1A or 1B Carc. 2	H350 H351
Germ cell mutagenic[1]	Mut. 1A or 1B Mut. 2	H340 H341
Reproductive toxicity[1]	Repr. 1A or 1B Repr. 2 Lact.	H360 H361 H362

[1] *Including all combinations of stated exposure route and stated specific effect. For example, H350 also covers the classification H350i.*

Note that responsibility for correct classification lies with the manufacturer.

Exemptions apply for:

- Classification H351 for adhesive products containing methylene diphenyl diisocyanate (MDI). Isocyanates used in the production of polyurethane material such as polyurethane foam are regulated in separate requirement O36.
- Classifications H350, H341, H301, H311 and H331 for adhesive products and resins containing formaldehyde (CAS no. 50-00-0). Formaldehyde emissions are regulated in requirements O31 and O41.
- Classifications H341, H301 and H331 for resins containing a maximum of 10% by weight of phenol (CAS no. 108-95-2).
- Classifications H301, H311, H331 and H370 for resins containing a maximum of 10% by weight of methanol (CAS no. 67-56-1).
- Classifications H351 and H361 for resins containing melamine (CAS no. 108-78-1).
- UV curing surface treatment products classified as environmentally hazardous if UV curing surface treatment products are applied to the material during a controlled closed process where no discharge to recipient takes place. Spills and residual waste (e.g., residues from cleaning) must be collected in containers that are approved for hazardous waste and handled by a waste contractor.

✉ A declaration from the chemical manufacturer or supplier, in accordance with Appendix 6.

✉ A safety data sheet for the product in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).

✉ Exemption for UV curing products: Description of the process and how waste and residual waste are handled, including information about who receives the wastes.

O26 Classification of ingoing substances

Ingoing substances in the chemical product used in production must not have the classifications in the table below.

CLP Regulation 1272/2008		
Hazard statement	**Hazard class and category**	**Hazard code**
Carcinogenic[1]	Carc. 1A or 1B Carc. 2	H350 H351
Germ cell mutagenic[1]	Mut. 1A or 1B Mut. 2	H340 H341
Reproductive toxicity[1]	Repr. 1A or 1B Repr. 2 Lact.	H360 H361 H362
Endocrine disruption for human health[2]	ED HH 1 ED HH 2	EUH380 EUH381
Endocrine disruption for the environment[2]	ED ENV 1 ED ENV 2	EUH430 EUH431
Persistent, Bioaccumulative and Toxic properties[2] Very Persistent, Very Bioaccumulative properties[2]	PBT vPvB	EUH440 EUH441
Persistent, Mobile and Toxic properties Very Persistent, Very Mobile properties	PMT vPvM	EUH450 EUH451

[1] *Including all combinations of stated exposure route and stated specific effect. For example, H350 also covers the classification H350i.*

[2] *See also requirement O28 for additional requirements on potential or identified endocrine disruptors and PBT/vPvB substances.*

For two-component products it is the added ingredients in the separate components that shall comply with the requirement. Alternatively, if it can be documented that protective equipment was worn when the hardener was mixed with the paint/varnish and the finished two-component product was applied in a closed system, the requirement may apply to the hardened product.

Exemptions apply for:

- Photo initiators classified H351, H341 or H361
- Chemical products containing methylene diphenyl diisocyanate (MDI) classified as H351.
- Adhesive and resin containing formaldehyde (CAS no. 50-00-0) classified as H350 and H341. Formaldehyde emissions are regulated in requirements O31 and O41.
- Resin containing maximum 10% by weight of phenol (CAS no. 108-95-2) classified as H341.
- Resin containing melamine (CAS no. 108-78-1) classified as H351 and H361.
- Titanium dioxide (CAS no. 13463-67-7) classified as H351.
- 1,1,1-Trimethylolpropane (TMP, CAS no. 77-99-6) classified as H361.
- VAH (volatile aromatic compounds) in chemical products. VAH content is regulated in requirements O30 and O34.

✉ A declaration from the chemical manufacturer or supplier, in accordance with Appendix 6.

☒ A safety data sheet for the product in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).

☒ Exemption for two-component products: description of the application system and how employees are protected from exposure and an appendix 6.

O27 Preservatives

The content of preservatives in the chemical product must meet the following limit values:

Preservative	Limit value
Bronopol (CAS 52-51-7)	≤ 500 ppm (0.05% by weight)
IPBC (iodopropynyl butylcarbamate, CAS 55406-53-6)	≤ 2000 ppm (0.20% by weight)
Mixture (3:1) of CMIT/MIT (5-chloro-2-methyl-4-isothiazolin-3-one / 2-methyl-2H-isothiazolin-3-one, CAS 55965-84-9)	≤ 15 ppm (0.0015 % by weight)
MIT (2-methyl-2H-isothiazol-3-one, CAS 2682-20-4)	≤ 200 ppm (0.02 % by weight)
Total amount of isothiazolinones	≤ 500 ppm (0.05% by weight).

☒ A declaration from the chemical manufacturer or supplier, in accordance with Appendix 6.

☒ A safety data sheet for the product in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).

O28 Prohibited substances

The chemical product used in production must not contain the following substances:

- Substances on the Candidate List
  - The Candidate List can be found on the ECHA website: http://echa.europa.eu/candidate-list-table
  - Exemption applies to melamine (CAS No. 108-78-1)
  - D4 (CAS No. 556-67-2), D5 (CAS No. 541-02-6) or D6 (CAS No. 540-97-6) must only be included in the form of residues from raw material production and are allowed in concentrations up to 1000 ppm each in the silicone raw material.
- Substances that have been judged in the EU to be PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative)
  - PBT and vPvB in accordance with the criteria in Annex XIII of REACH
- Endocrine disruptors: Substances on the EU member state initiative "Endocrine Disruptor Lists", List I, List II and List III, see following links:

  List I: https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu

  List II: https://edlists.org/the-ed-lists/list-ii-substances-under-eu-investigation-endocrine-disruption

  List III: https://edlists.org/the-ed-lists/list-iii-substances-identified-as-endocrine-disruptors-by-participating-national-authorities

  Substances that are transferred to one of the corresponding sub-lists "Substances no longer on list" and that no longer feature on Lists I–III

are not prohibited. However, this does not apply to the substances listed in Sub-List II that were evaluated on the basis of regulations or directives that do not have provisions for identifying endocrine disruptors (e.g., the Cosmetics Regulation). These substances may have endocrine disrupting properties. Nordic Ecolabelling will assess these substances on a case-by-case basis, based on the background information provided in Sub-List II.

- Halogenated organic compounds, such as short-chain chlorinated paraffins (C10-C13), medium-chain chlorinated paraffins (C14-C17)
    - Halogenated organic pigments that comply with the Council of Europe recommendation "Resolution AP (89) 1 on the use of colorants in plastic materials coming into contact with food", point 2.5.
    - Exemptions apply for bronopol, IPBC, MIT and CMIT/MIT (3:1). These are addressed in a separate requirement, see requirement 7.
    - Exemption applies for halogenated epoxy acrylate used in UV curing products.
- Per- and polyfluoroalkyl substances (PFASs), e.g., PFOA and PFOS
- Butylhydroxytoluene (BHT, CAS No. 128-37-0)
    - An exemption is made for BHT that is included in UV curing chemical products. If BHT receives a harmonised classification that means the substance does not meet the requirements anymore and the exemption will be removed.
- Aziridine and polyazidirines
    - An exemption is made for aziridines/polyaziridines, if the substance is not classified as carcinogenic, mutagenic or reprotoxic from any manufacturer or in ECHA
- 34 bisphenols[4] that have been identified by ECHA for further EU regulatory risk management that are known or potential endocrine disruptors for the environment or for human health, or that can be identified as toxic for reproduction.
    - Bisphenol A used in the production of epoxy acrylate is not covered by the requirement.
    -
- Organotin compounds
- APEO (alkylphenol ethoxylates) and APD (alkylphenol derivatives/alkylphenols)
    - Alkylphenol derivatives are defined as substances that release alkylphenols when they break down.
    - An exemption is made for sterically hindered phenolic antioxidants with molecular weight (MW) > 600 g/mole.
- Phthalates
    - Phthalates are esters of 1,2-benzenedicarboxylic acid (orthophthalic acid).

[4] Assessment of regulatory needs: Bisphenols. ECHA – 16 December 2021: Section 2.1: Bisphenols for which further EU RRM is proposed – restriction https://echa.europa.eu/documents/10162/c2a8b29d-0e2d-7df8-dac1-2433e2477b02

- Pigments, dyes and additives based on lead, tin, cadmium, chromium VI and mercury, and their compounds.

✉ A declaration from the chemical manufacturer or supplier, in accordance with Appendix 6.

✉ A safety data sheet for the product in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).

O29 Nanomaterials

The chemical product must not have nanomaterials* as ingoing substances (See Definitions). Exemptions are made for:

- Pigments. This exemption does not include pigments added for purposes other than colouring.
- Naturally occurring inorganic fillers**
- Synthetic amorphous silica***
- Polymer dispersions

** Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01).*

*** This applies to fillers covered by Annex V item 7 of REACH*

**** This applies to non-modified synthetic amorphous silica. Chemically modified colloidal silica can be included in the products as long as the silica particles form aggregates in the final product. Any surface treatment must meet the chemical requirements in O26 (Classification of ingoing substances) and O28 (Prohibited substances).*

✉ A declaration from the chemical manufacturer that the chemical product does not contain any nanomaterial, in accordance with Appendix 6.

O30 Volatile organic compounds

Volatile organic compounds (VOC)*, including volatile aromatic compounds (VAH), may be present in the chemical product to a maximum of 1% by weight.

In adhesives, volatile organic compounds (VOC) may be present to a maximum of 3% by weight. However, volatile aromatic compounds (VAH) may be to a maximum of 0,1% by weight.

Exemptions:

- Chemicals used for surface treatments are exempted from the requirement and must instead fulfil requirement O34.
- Resin used in the production of laminate is exempted from the requirement provided that the laminate flooring meets the emission requirements O35 and O41.

**Volatile organic compounds (VOC) are defined as any organic compound having an initial boiling point less than or equal to 250°C measured at a standard pressure of 101.3 kPa. This definition is the same as in the Paints Directive (2004/42/EC).*

✉ Declaration from the adhesive manufacturer/supplier that the requirement is fulfilled, in accordance with Appendix 6.

O31 Free formaldehyde

The content of free formaldehyde (from formaldehyde not deliberately added or from formaldehyde-releasing substances) must not exceed 0.02% by weight (200 ppm) in the chemical product.

For adhesive products, up to 0.2% by weight (2000 ppm) of free formaldehyde is permitted. The requirement applies to the pure adhesive before mixing with any hardener.

Resin used in the production of laminate is exempted from the requirement if the laminate fulfils requirement concerning emissions of formaldehyde (see requirement O35 and O41).

✉ A declaration from the manufacturer/supplier of the chemical product that the requirement is fulfilled, in accordance with Appendix 6.

1.5.2 Requirements specific to Surface treatments

O32 Application method and quantity applied – surface treatment

The following information must be given for each surface treatment system used:

a) Name of surface treatment product and manufacturer of surface treatment product

b) Quantity applied (g/m^2), number of coats and application method(s) used

c) The following efficiency rates must be used when calculating VOC quantities in subsequent requirements:

- Automated spray with no recycling: 50%
- Automated spray with recycling: 70%
- Spray application, electrostatic: 65%
- Spray application, bell/disk: 80%
- Roller coating: 95%
- Curtain coating: 95%
- Vacuum coating: 95%
- Dipping: 95%
- Rinsing: 95%

The efficiency rates are standard values. Other efficiency rates may be used if they can be documented.

✉ Description from the performer of the surface treatment of each surface treatment system used, in line with the requirement.

O33 Environmentally harmful chemical products and substances in surface treatments

Chemical products used in surface treatment systems (e.g. fillers, oils, stains, lacquers) must fulfil one of the following two alternatives.

a) None of the chemical products are classified as environmentally harmful according to the table below or,

b) The quantity of environmentally harmful substances applied in the surface treatment system may be no more than 60 g/m^2, calculated in a wet state.

UV-curing surface treatment products are exempted from a) and b) if the requirement O25 is fulfilled.

If alternative b) is used, the formula below must be used first to calculate the amount of environmentally harmful substances in the respective surface treatment product (%):

$$\mathbf{100*H410 + 10*H411 + H412}$$

H410 is the concentration of substances classified as H410 in percent.

H411 is the concentration of substances classified as H411 in percent.

H412 is the concentration of substances classified as H412 in percent.

All environmentally harmful substances that are present in the unhardened chemical products, and are classified according to the table below, are to be included in the calculation.

Hazard class	Hazard category and hazard phrase in line with CLP Regulation 1272/2008
Toxic to aquatic organisms	Chronic 1 with H410
	Chronic 2 with H411
	Chronic 3 with H412

The quantity of environmentally harmful substances applied in the coating system is then calculated as follows:

$$\text{Applied quantity of respective product (g/m2)} \times \frac{\text{Proportion of environmentally harmful substances in product (\%)}}{\text{Surface treatment efficacy (\%)}}$$

When calculating quantity applied, the same efficacy rates are used as those stated in O32.

If information about a substance's harmfulness to the environment (in the form of data concerning toxicity and degradability or toxicity and bioaccumulation) is not available, the substance is treated as a worst case, i.e. as environmentally harmful – H410.

For tinting systems, a worst-case calculation is made for the colour with the most tinting paste in the base paint containing the most environmentally harmful substances.

✉ A safety data sheet for all chemical products in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).

✉ Alternative b) requires a declaration from the manufacturer/supplier of the surface treatment product stating the content of environmentally harmful substances. Appendix 6 can be used. For each constituent classified substance, the concentration in the chemical product must be stated as a percentage by weight. Confidential details from the chemical manufacturer in the form of content declarations/formulations can be sent directly to Nordic Ecolabelling.

✉ Alternative b) requires details of the number of coats, the application method and the quantity applied per coat, stated as g/m^2 flooring. Appendix 7 can be used.

O34 Quantity of applied volatile organic compounds (VOC) in surface treatments

Within each surface treatment system, the total content of volatile organic compounds (VOC), including VAH, in surface treatment products must either:

a) < 5% by weight in total, or

b) amount to a maximum of 2 g/m^2 treated surface in total.

The requirement relates to the total VOC in the chemical products with the chemical composition they have in wet form. If the products required dilutions, the calculation is to be based on the content in the dilutive product. When calculating quantity applied,the same efficacy rates are used as those stated in O32.

The applied quantity of VOCs according to alternative b) is calculated using the following formula:

$$\text{Applied quantity (g/m2)} \times \frac{\text{Proportion VOC in surface treatment (\%)}}{\text{Surface treatment efficacy (\%)|}}$$

✉ Safety data sheet for each chemical product used in the surface treatment system in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).

✉ Declaration from the manufacturer/supplier of the chemical products in the surface treatment system, detailing the amount of VOCs in each product, in accordance with Appendix 6.

✉ A calculation from the performer of the surface treatment showing that the requirement is met, appendix 7 can be used.

1.5.3 Occupational hazard

O35 Emissions to air from production of laminate

This requirement is automatically fulfilled if the laminate used in the floor covering is Nordic Swan Ecolabelled in accordance with the criteria for Panels and mouldings for interior use, generation 7 or later (see requirement O6).

Laminates produced with resins containing formaldehyde and phenol must adhere to the following hygienic limit values for emissions to air in the workplace (gate to gate at the laminate production site) *:

- The average value during an 8-hour period must not exceed:
  - 0.3 ppm (0.37 mg/m^3) for formaldehyde
  - 2 ppm (8 mg/m^3) for phenol.
- The average value during a reference period of 15 minutes must not exceed:
  - 0.6 ppm (0.74 mg/m^3) for formaldehyde
  - 4 ppm (16 mg/m^3) for phenol.

** If the legislation in the country in question has lower limit values than those stated in the requirement, the legal limit values must be fulfilled.*

✉ Test report showing compliance with the requirement. The report shall contain information about measurements, sampling programs, measurement methods and measurement frequency. For analysis methods, see Appendix 1.

✉ Alternative documentation showing the legal requirements of the country in which production takes place. If the legislation in the individual country has lower limit values than those stated in the requirement, no further documentation is necessary.

O36 Polyurethane

Protective measures must be taken to reduce workers exposure as much as possible when handling isocyanates and, when manufacturing and/or welding polyurethane-based (e.g., thermoplastic polyurethane) floor coverings or flooring underlays.

The Workplace Exposure Limits for air* concentrations of isocyanates in areas where employees are working without protective equipment are:

- MDI (CAS No. 101-68-8): Average over an 8-hour period must not exceed 0.005 ppm (0.05 mg/m3)
- TDI (CAS No. 584-84-9 and 91-08-7): Average over an 8-hour period must not exceed 0.005 ppm (0.04 mg/m3)

**If the legislation in the individual country has lower limit values than stated in the requirement, it is the limit values of the legislation that must be met.*

✉ A description of the safety measures taken and the statutory Workplace Exposure Limits for isocyanates in the country of manufacture of the polyurethane material. If the statutory limits are the same or more stringent than the threshold limit values in the requirement, no further documentation is required. If the statutory limits are less stringent, a description of how air concentration levels of isocyanates are measured must be submitted, along with a test report showing compliance with the threshold limit values specified in the requirement.

✉ A description of the safety measures taken when manufacturing as well as welding/installing the polyurethane-based product must be provided by the manufacturer.

1.5.4 Energy and Waste

O37 Energy mapping

An energy audit according to standards ISO 50002 or EN 16247-1 or equivalent, and an energy mapping of the floor covering or flooring underlays manufacturing plant must be conducted by a third party, alternatively verified by a third party.

Furthermore, an action plan resulting from the energy mapping/audit and with purpose to reduce energy consumption must be developed by a third party or verified by a third party.

If a new energy audit and a new energy mapping must be conducted again during the validity of the criteria, new action plans or other up-to-date documents must be sent anew as well. It is the license holder's responsibility to make follow-up plans so that this requirement is always fulfilled.

✉ The energy mapping report and the action plan for the floor covering or flooring underlays manufacturing plant must be sent as well as documentation that they have been done by a third party or alternatively verified by a third party. Documentation created to obtain energy management system certification ISO 50001 can also be sent as an alternative.

O38 Energy consumption

An energy calculation is to be made according to the equation below:

$$E = \frac{A}{20} + \left(5 - \frac{B}{3\ (kWh/m^2)}\right) + \left(5 - \frac{C}{3\ (kWh/m^2)}\right)$$

The E score must reach at least:

- E shall be at least 11.0 for solid wood flooring, parquet flooring, bamboo flooring and cork flooring/underlays.
- E shall be at least 10.0 for laminate flooring and hybrid flooring.
- E shall be at least 9.0 for linoleum flooring, plastic flooring and underlays.

The E score does not have any measurement unit.

The following applies for the individual energy components:

Environmental parameters	Requirement / limit value
A = Proportion of renewable fuel (%)*	Minimum 25%
B = Purchased electricity	Maximum 15 kWh/m^2 per year
C = Fuel consumption	Maximum 15 kWh/m^2 per year

**Renewable fuel must not be based on palm oil, including by-products, residues and waste fractions from palm (e.g., Palm Fatty Acid Distillate: PFAD).*

The requirement for energy consumption includes all the floor covering or flooring underlays manufacturing plant's purchased energy in kWh per m² of product produced per year. The unit kWh/m² was chosen but it can be converted as follows: 1 kWh = 3.6 MJ.

An indicative list of activities that must be included and may not be included in the calculations of the energy consumption can be seen in in Appendix 8. Appendix 9 lists the heating values, i.e., energy content, of different fuels. A licence applicant/holder may also use its own specific fuel values.

*Manufacturers that sell surplus energy, in the form of electricity, steam or heat, m*ust *deduct the quantity sold from the electricity consumption figure, or the fuel consumption figure respectively. Only fuel and electricity that is consumed in the manufacture of the floor coverings or flooring underlays may be included in the calculation.*

Renewable electricity generated onsite (from solar PV panels, wind turbine or geothermal powerplant) is not purchased and may be left out from the calculations of B and E. Onsite means on the property or immediate vicinity of the manufacturing site.

✉ State which types of fuel have been used in the manufacture of the floor covering over the past year, and which fuels are renewable. In cases biodiesel or bioLPG is used as renewable fuel, it must be documented that it is not based on palm oil nor PFAD. State how much electricity has been used and how much floor covering or flooring underlays (m²) has been produced over the past year. Appendix 8 can be used.

✉ State if an energy surplus has been deducted from the plant consumption. State how much renewable electricity is generated onsite (e.g., from solar panels, wind turbine and geothermal powerplant). Data from the energy mapping performed by a third party according to requirement O37 can be used. Appendix 8 can be used.

✉ Enclose the detailed calculations of A, B, C and E. Examples of calculation can be found in Appendix 10. The energy content of different fuels can be found in Appendix 9.

O39 Handling of waste and production waste

The floor coverings or flooring underlays manufacturer must sort waste at source into the fractions that arise during production, including production waste.

Hazardous waste must be treated and dealt with in accordance with the regulations applicable in the country of manufacture.

Furthermore, a plan for handling waste must be drawn up and must include:

- The different waste fractions,
- Initiatives taken to reduce waste generation and to improve production efficiency,

- As well as a description on how the waste is dealt with (e.g., recycling, landfill and incineration). However, production waste must not be landfilled.

🔑 Requirement is also checked on site.

Declaration of hazardous waste, if applicable, and a statement on how hazardous waste is handled in accordance with the regulations applicable in the country of manufacture. Waste handling plan featuring waste fractions, initiatives taken and how the waste fraction is dealt with. Alternatively, an ISO 14001 certificate for the manufacturing plant and an Eco-Management and Audit Scheme (EMAS) certificate for the company can be sent to show compliance with this requirement.

1.6 Packaging

O40 Packaging

The requirement applies to disposable packaging used for packaging of the individual product.

The packaging must be able to be recycled in today's recycling systems.

The following materials are prohibited in packaging:

- chlorinated polymers / plastics such as PVC
- metal*

** Exceptions are given for staples.*

✉ State the type of material used in the packaging. Declaration from the producer of packaging that it can be recycled according to current systems.

✉ Description showing that no disposable packaging is used or declaration from the manufacturer of the product that PVC or metal has not been used in the packaging.

1.7 Use-phase requirements

1.7.1 Emission

O41 Emissions from floor coverings and flooring underlays

Emissions from floor coverings and underlays must not exceed the limit levels in the tables below.

Wood-based products

The tests shall be carried out in accordance with the test method ISO 16000-9 or EN 16516 for TVOC/SVOC/Carcinogenic VOC, and EN 717-1 for formaldehyde. Testing must be done on the final product.

Type of floor covering	**TVOC (C6-C16)** (mg/m^3)	**SVOC (C16-C23)** (mg/m^3)	**Formaldehyde** (mg/m^3)	**Carcinogenic VOC in category 1A and 1B** (mg/m^3)
Bamboo flooring, cork flooring/cork tile flooring and cork-based underlays	0,3	0,03	0,06	0,001
Solid wood flooring	0,3	0,03	0,06	0,001
Multi-layer wood flooring and wood veneer flooring	0,3	0,03	0,06	0,001

Limit value after 28 days according to EN 16516, ISO 16000-9 or EN 717-1. If the limit values in the table are met for a period shorter than 28 days, this is accepted.

Other analysis methods than those stated in the requirement may be used, provided that the correlation between the test methods can be verified by an independent third party.

Other products

The tests shall be carried out in accordance with the test method ISO 16000-9 or EN 16516 and on the final product.

Type of floor covering	**TVOC (C6-C16)** (mg/m^3)	**SVOC (C16-C23)** (mg/m^3)	**Formaldehyde** (mg/m^3)	**Carcinogenic VOC in category 1A and 1B** (mg/m^3)
Multilayer modular flooring, hybrid flooring and other underlays	0,2	0,02	0,01	0,001
Laminate flooring	0,1	0,02	0,03	0,001
Linoleum flooring	0,2	0,03	0,01	0,001
Plastic flooring and plastic underlays	0,1	0,02	0,01	0,001

Limit value after 28 days according to EN 16516,or ISO 16000-9. If the limit values in the table are met for a period shorter than 28 days, this is accepted.

Other analysis methods than those stated in the requirement may be used, provided that the correlation between the test methods can be verified by an independent third party.

✉ Analysis report, including measurement methods, results, and measurement frequency. It must be clearly stated which method/standard that was used, the laboratory that conducted the analysis, and that the analysis laboratory is an independent third party. Please refer to laboratory requirements in Appendix 1.

1.7.2 Quality and durability requirements

O42 Product performance – third-party verification

For products not covered by a harmonised product standard (e.g., flooring underlays) the features and functions for which they are marketed for must be documented. One of the following options must be chosen:

- voluntary CE marking and declaration of performance according to an ETA (European Technical Assessment), or
- the properties of the product can be declared via a corresponding third-party verification of the product's performance. Third-party verification must be approved by Nordic Ecolabelling.

✉ A voluntary CE marking, and declaration of performance must be submitted in accordance with an ETA or other third-party verification of the product's performance.

O43 Quality and Durability of floor coverings

Only the requirements associated with the specific type of flooring must be fulfilled.

The floor covering must be tested according to the relevant quality/durability standard(s) mentioned in the table in appendix 11. According to the

classification standard from the same table in appendix 11, the floor covering must at least achieve the following use of class named in the table below:

Flooring	Limits
Wood veneer floor covering	— the level of use of class 23 for floorings intended for private use — the level of use of class 32 for floorings intended for commercial use.
Factory lacquer solid and multilayer wood floorings	— the level of use of class 23 for floorings intended for private use — the level of use of class 32 for floorings intended for commercial use
Factory oiled, uncoated solid wood and uncoated multilayer wood flooring	
Cork tile floor coverings	— the level of use of class 23 for floorings intended for private use — the level of use of class 32 for floorings intended for commercial use.
Cork floor coverings	
Bamboo floor coverings	— Equilibrium Moisture Content: 8 % at 20 °C and 50 % relative humidity — Resistance to Indentation: ≥ 4 kg/mm^2 for plain and side pressed floor coverings ≥ 9,5 kg/mm^2 for high density floor coverings
Laminate flooring	— the level of use of class 23 for floorings intended for private use — the level of use of class 32 for floorings intended for commercial use.
Linoleum flooring	— the level of use of class 23 for floorings intended for private use — the level of use of class 32 for floorings intended for commercial use.
Plastic flooring	— the level of use of class 23 for floorings intended for private use — the level of use of class 32 for floorings intended for commercial use.
Others (e.g., multilayer Modular floor coverings, hybrid flooring)	— the level of use of class 23 for floorings intended for private use — the level of use of class 32 for floorings intended for commercial use.

Other relevant standards might be accepted if the testing institute is able to provide documentation to show that the chosen test is equivalent and will give approximately the same results.

Testing must be performed by an independent, accredited testing institute. Internal test laboratories can be approved under given conditions, see Appendix 1.

The testing must be carried out in accordance with the applicable version of the standard. If a standard is revised and updated during the period of validity of the license, it is the licensee's responsibility to ensure that the requirements of the new applicable version of the standard are met.

In cases where the floor covering is intended for both private and commercial use, the product must meet the higher requirements, that is the ones that apply to commercial use.

✉ Technical data sheet, declaration of performance or other documents where the parameters, the standards/test methods and the level of use of class are clearly stated.

✉ A test report showing that relevant requirement levels have been met. It must be clearly stated which method/standard was used, the laboratory that conducted the analysis, and that the analysis laboratory is an independent third party. Other analysis methods than those stated in the requirement may be used, provided that the correlation between test methods can be verified by an independent third party.

O44 Quality and Durability of flooring underlays

Underlays must follow the standards for testing stated in the latest version of the relevant technical bulletin, and meet the requirements listed in the table below.

Testing must be performed by an independent, accredited testing institute. Internal test laboratories can be approved under given conditions, see Appendix 1.

The testing must be carried out in accordance with the applicable version of the standard or technical bulletin. If a technical bulletin or standard is revised and updated during the period of validity of the license, it is the licensee's responsibility to ensure that the requirements of the new applicable version of the standard or technical bulletin are met.

If the underlay is intended to be used underneath several different types of flooring, only one of the relevant bulletins can be chosen to prove its good performance.

Underlay type	Standards/Technical Bulletin	Requirement level
Underlay materials under wood flooring. (Flooring types EN ISO 14354 and EN ISO 13489)	Technical Bulletin from European Parquet Federation (FEP).[5] The test methods are described in the standard EN 16354 “Laminate floor coverings - Underlays - Specifications, requirements and test methods”.	Underlays intended for private use must fulfil the minimum requirements. Underlays intended for commercial use must fulfil the higher requirements.
Underlay Materials under Laminate Floor Coverings. (Flooring type EN 13329)	Technical Bulletin from European Producers of Laminate Flooring (EPLF).[6] The test methods are described in the standard EN 16354 “Laminate floor coverings - Underlays - Specifications, requirements and test methods”.	
Underlay Materials under Multilayer Modular Floor Coverings. (Flooring types EN 16511).	Technical Bulletin from Multilayer Modular Flooring Association (MMFA).[7] The test methods are described in the technical bulletin.	

In cases where the underlay product is intended for both private and commercial use, the product must meet the higher requirements, that is the ones that apply to commercial use.

The performance of underlay materials used under other flooring types (e.g., plastic and linoleum floorings) must be tested according to test methods described in a relevant standard or selected by an independent test institute. The selected test method must consider the intended use area of the floor. For instance, corkment underlays must follow the standard EN 12455.

✉ Technical data sheet, declaration of performance or other documents where the parameters and the standards/test methods are clearly stated.

✉ A test report showing that relevant requirement levels have been met. It must be clearly stated which method/standard was used, the laboratory that conducted the analysis, and that the analysis laboratory is an independent third party. Other analysis methods than those stated in the requirement may be used, provided that the correlation between test methods can be verified by an independent third party.

[5] https://drive.google.com/file/d/1g82Y5cBEWFVZjumWXdgq9Eh1ltE4Vt9R/view
[6] https://eplf.com/storage/files/tb_-_eplf_underlay_materials_under_laminate_floor_coverings_2019-02_en_.pdf
[7] https://mmfa.eu/wp-content/uploads/2020/12/TB1-Underlay-Materials-under-MMF-Floor-Coverings_2020-12_EN.pdf

O45 Wet room approval

Floor coverings marketed and sold for wet rooms are to be approved for their intended use in wet rooms according to the national industry standard:

- approved as a surface layer in wet rooms and/or
- approved as a waterproof barrier in wet rooms, (acting as a barrier behind ceramic materials and natural stone)

Installation instructions tailored to wet rooms are to accompany the flooring and be made available on the manufacturer's website.

✉ Approval according to national industry standards.

✉ Installation instructions that accompany the flooring and are available on the website.

1.8 Circular requirements

O46 Labelling and traceability

Underlays, and floor coverings that are not glue down or that can be loose-lay installed , must be labelled with a batch code/production code and the name of the manufacturer or the name of the supplier. Marking systems, such as QR code and more advanced technologies may also be used.

✉ Picture or description of how the labelling is done and explanation on how the traceability between the license holder and the product is ensured.

O47 Warranty and Reparability

Warranty:

A warranty of at least 5 years must be provided with the purchase of a floor covering or flooring underlay.

The warranty must apply from the delivery date and must be communicated (see requirement O49). The warranty must be included in the product price.

By warranty is meant an agreement between buyer and seller that goes beyond the legal guarantee and where the seller/manufacturer must offer to repair or replace parts that are damaged or not working properly. This warranty is provided without prejudice to the legal obligations of the manufacturer and seller under national law.

Reparability:

Underlays are exempted from points a) and b) in this requirement.

Information must be included in the consumer instructions or the manufacturer's website to be accessible to the users and installers.

a) It must be possible to repair minor damage by, for instance, refurbishing/refinishing the top layer of the floor covering. A maintenance plan/schedule stating the different measures that can be taken over the years to prolong the service life of the floor covering must be provided with the purchase of a floor covering.

b) Floor coverings that are not glued down, must be designed for disassembly in order to repair major damages and facilitate reuse, replacement, and recycling. Disassembly and replacement operations must possible of being carried out using common and basic manual or electrical tools.

Floor coverings that can be both installed as permanently glued down and in a floating/loose-lay fashion must fulfil both Reparability requirements a) and b).

Recommendation of keeping spare floor covering elements for possible event of repair and/or replace/re-install must be provided (See requirement O49).

✉ A copy of the warranty that indicates the terms and conditions of the extended product guarantee shown in the product information documentation and meeting the requirement must be provided (see example in Appendix 13).

✉ a) A description of a generic maintenance plan/schedule must be made available (see example in Appendix 14). The maintenance plan may be included in the maintenance instructions or any other document providing product information.

✉ b) A copy of the repair document or any other material where the information on design for repair must be provided. Simple and illustrated instructions regarding the disassembly and replacement of damaged elements must be provided.

O48 Recyclability

To ensure material recycling, the following is required:

a) The linoleum and plastic floor coverings manufacturers must offer that installation waste is material recycled. Installation waste must be recyclable.

b) For products other than wood floorings (solid wood, multi-layer wood and wood veneer), the manufacturer must have a technology enabling recycling of its own post-consumer material into new floor coverings, new flooring underlays or new products of equivalent value (downcycling is not allowed).

✉ a) Description of the processes to recycle post-installation waste.

✉ b) Documentation/flow-charts that show how the post-consumer material from worn-out product can be used in the manufacturing of new products. Nordic Ecolabelling assesses whether downcycling has occurred or not.

O49 Product information

The Nordic Ecolabelled product must be sold with the relevant information on the packaging or any other documentation accompanying the product or on the manufacturer's website and be accessible to the users and installers. Only the requirements associated with the specific type of product have to be fulfilled.

Recommendations for the installation:

- Recommended upper limit for the subfloor's relative humidity and temperature when laying the floor covering.
- Floating installation is recommended whenever possible. Reference must be made to the necessary preparation of the underlaying surface, and the auxiliary materials needed. For instance, suitable type I Ecolabel Flooring underlays are to be recommended, if possible.
- If a glued down installation is recommended due to the possible longer duration, recommendation of using a type I Ecolabel adhesive/glue or a low emission adhesive complying with EMICODE EC1 or equivalent, if suitable, must be included. Method in case the flooring must be welded together.
- Illustrated assembly and disassembly instructions as stated in the requirement O46 Warranty and Reparability.

Recommendation for the surface treatment for uncoated floor coverings and floorings needing an oiled surface:

- Recommended type/quantity of oil or lacquer for oiled and untreated wood floorings so they can achieve their intended durability. See requirement Durability of floor coverings O43 for more information.
- Recommended finish products (e.g., oil, lacquer and other surface treatments) in case of flooring refurbishment. If there are suitable type I Ecolabel finish products or low emitting coating products in accordance with the Directive 2004/42/EC, these are to be recommended.
- Information about how the service life of the flooring can be extended through renovation e.g., sanding and surface treatment.

Recommendations for the use, cleaning and maintenance of the product.

- The flooring's areas of may be stated. See requirement Durability of floor coverings O43 for more information.
- Recommended cleaning method including cleaning products. If there are suitable type I Ecolabel cleaning products, these are to be recommended.
- Maintenance plan/schedule or instructions according to requirement Warranty and Reparability O46.

Information related to reparability:

- Recommended repair methods to restore the floor coverings after having suffered some damage (scratches, broken click, stain, etc…) according to requirement Warranty and Reparability O46.
- Information about the duration of the extended warranty. Recommendation of keeping spare floor covering elements for possible event of repair and/or replace/re-install must be written. See requirement Warranty and Reparability O46 for more information.
- Information on how to contact the customer service should be included in the document. The contact information refers to the phone, email address or even postal address of the license holder/flooring manufacturer.

Information related to end-of-use of the product:

- Instruction on how packaging waste must be sorted.
- Instruction on how the flooring/underlay must be handled or sorted when the customer wants to remove it.
- If there is a take-back system in place (for the product or the installation waste), the customer must have the possibility to reach the floor covering's manufacturer (e.g., via phone number or email address of the customer service) and use the system.

✉ Enclose a copy of the product information given to customers. All product information digitally accessible is also accepted (e.g., guide, instructions, manuals, links to diverse webpages).

1.9 Innovation

O50 Innovation

The applicant/manufacturer must fulfil at least two (in total) of the following 21 innovations coupled to the four different areas in the table below:

Area	Requirement
Chemicals	Chemical products eligible or Nordic Swan Ecolabelling (e.g., adhesives and surface treatment products), used in the production of the Nordic Swan Ecolabel product are Nordic Swan Ecolabel.
	30% of the binder in the chemical product (e.g., adhesive or surface treatment) used in the production of the Nordic Swan Ecolabel product is made of renewable raw materials and fulfil requirements O14.
	None of the ingoing substances that are contained in the chemical products used in the production of the Nordic Swan Ecolabel product are classified as SVHC or CMR.
	For non-UV cured surface treatments: the quantity of environmentally harmful substances (classified as H410, H411 or H412), calculated in a wet state, applied in the surface treatment system is below than 40 g/m^2.
	The concentrations of substances classified as CMR and/or environmental hazardous, in the final cured/hardened chemical product (such as acrylate monomers and photoinitiators in UV-cured chemical products) used in the production of the Nordic Swan Ecolabel product, is below 100 ppm according to analytical content tests (e.g., LC-MS, GC-MS) performed by a third party.
	The quantity of applied VOCs in the surface treatment system does not exceed 1g/m^2.
	TVOC and SVOC values for the Nordic Ecolabel product are at least 50% lower than the thresholds given in requirement O41.
Raw materials and Biodiversity	100% by weight of the wood raw material, bamboo and cork used in the Nordic Swan Ecolabel product (production line) comes from forests that are managed in accordance with sustainable forestry management principles/recycled wood raw material as defined by FSC or PEFC and is covered by a valid Chain of Custody certificate in accordance with the FSC/PEFC schemes.
	Linoleum, laminate, plastic, hybrid floorings or underlays contain at least 20% pre- and/or post-consumer recycled material.
	All fillers used in plastic, linoleum floorings and underlays are sourced as pre- or post-consumer recycled material.
	None of the additives (added to materials, see requirement O20) used in the Nordic Ecolabel product are classified as environmentally hazardous according to CLP.
Climate	The action plan to optimize energy consumption/efficiency developed after the last energy audit has been fully implemented in accordance to recognized energy management system (all actions have been taken and changes made are already operational).
	Energy consumption for the manufacture of chemicals used in the construction of the final floor covering (e.g., adhesive, resin, filler and surface treatment) has been included in the energy consumption calculation.
	The E-score from the energy consumption requirement is at least: - 14 for solid wood, - 13 for parquet flooring, laminate flooring, hybrid flooring, bamboo flooring and cork flooring, - 11 for linoleum flooring, plastic flooring and underlays.
	The share of electricity produced from renewable energy sources (e.g., solar panels or its own wind turbine) and generated at the manufacturing site stands for at least 10% of the plant annual electricity consumption.
	100% of the purchased electricity is ecolabelled according to Bra Miljöval, EKO Energy or similar*.
Circular Economy	Floorings that need to be glued down are made fully traceable through the use of new technologies without affecting their recyclability.
	The solid wood or multilayer parquet is certified according to the FEP Parquet Refinishable Program administered by the European Parquet Federation (FEP).[8]
	Manufacturer of wood floorings (solid wood, parquet or veneer) have developed a process to recycle/reuse these products and the new Nordic Ecolabel flooring contains at least 10% recycled/reused flooring material.
	The pre- and post-consumer recycled fractions used in the Nordic Ecolabel product are regularly tested for relevant SVHC and CMRs.
	The flooring manufacturer has a fully operational take-back system and new floorings (not necessarily Nordic Ecolabelled floorings) contain more than 10% of post-consumer recycled flooring material from reprocessed own products collected via the system.

[8] FEP is launching its Parquet Refinishable Program | Parquet.net

** Ecolabels for electricity must follow Nordic Ecolabelling's guidelines for certification systems. Bra Miljöval-el/Good Environmental Choice and EKOEnergy follow the guidelines and are approved.*

✉ Documentation in relation to the above-mentioned alternatives in the requirement. The innovations shall be presented in line with the table above.

2 Licence maintenance

The purpose of the licence maintenance is to ensure that fundamental quality assurance is dealt with appropriately.

O51 Customer complaints

The licensee must guarantee that the quality of the Nordic Swan Ecolabelled product or service does not deteriorate during the validity period of the licence. Therefore, the licensee must keep an archive over customer complaints.

Note that the original routine must be in one Nordic language or in English.

✉ Upload your company's routine for handling and archiving customer complaints.

O52 Traceability

The licensee must be able to trace the Nordic Swan Ecolabelled products in the production. A manufactured / sold product should be able to trace back to the occasion (time and date) and the location (specific factory) and, in relevant cases, also which machine / production line where it was produced. In addition, it should be possible to connect the product with the actual raw material used.

You can upload your company's routine or a description of the actions to ensure traceability in your company.

✉ Please upload your routine or a description.

Regulations for the Nordic Ecolabelling of products

When the Nordic Swan Ecolabel is used on products the licence number shall be included.

The descriptive subtitle for 029 Floor coverings and flooring underlays is:

Floor coverings and flooring underlays

More information on graphical guidelines, regulations and fees can be found at https://www.nordic-swan-ecolabel.org/regulations/

Follow-up inspections

Nordic Ecolabelling may decide to check whether the floor covering or flooring underlays fulfils Nordic Ecolabelling requirements during the licence period. This may involve a site visit, random sampling or similar test.

The licence may be revoked if it is evident that the floor covering or flooring underlays fulfils does not meet the requirements.

Random samples may also be taken in-store and analysed by an independent laboratory. If the requirements are not met, Nordic Ecolabelling may charge the analysis costs to the licensee.

Criteria version history

Nordic Ecolabelling adopted version 7.0 of the criteria for floor coverings and flooring underlays on 05th of December 2023. The criteria are valid until 31st of December 2028.

New criteria

- The ban on PVC and PVC products could be questioned again.
- Information and data collected for requirements on energy mapping (O37) and on energy consumption (O38) could be used to create a new requirement set on the overall energy consumption of the manufacturing plant.
- The requirements set on surface treatments and related to curing products could be adjusted to consider all incoming substances reclassifications. New requirements set on the cured products and looking into the quantity of unreacted monomers/substances left in the chemical could be implemented. In the case of UV curing products, the efficiency of the whole system, including UV-lamps, could be investigated.
- Inspiration can be taken from the innovation requirements to formulate new requirements related to the areas: chemicals, raw materials, energy and circular economy.

- Requirement on fully functional take back systems for both floor coverings and flooring underlays could be implemented. Investigation on the possibility of having flooring on a leasing agreement and having a “product inspection” requirement could be performed. This way, the floor covering manufacturer and the temporary owner are legally bound and may work on increasing the product life service and the product circularity together.

- Investigation could be conducted regarding setting a requirement on water consumption during manufacturing of floor coverings/flooring underlays.

- A preliminary study on floor covering installation materials can be conducted to see if products such as levelling compounds, adhesives and welding rods may be Nordic Ecolabelled.

Appendix 1 Laboratories and methods for testing and analysis

General requirements for test and analysis laboratories

Tests must be carried out in a correct and competent way. The analysis laboratory/test institute must be impartial and professional. If accreditation is not separately required, the test and/or analysis laboratory must comply with the general requirements of the EN ISO 17025 standard for the quality control of test and calibration laboratories or have official GLP status.

The applicant's own testing laboratory may be approved for analysis and testing if:

- the authorities monitor the sampling and analysis process, or if
- the manufacturer has a quality management system encompassing sampling and analysis and has been certified to ISO 9001 or ISO 9002, or if
- the manufacturer can demonstrate agreement between a first-time test conducted at the manufacturer's own laboratory and testing carried out in parallel at an independent test institute, and that the manufacturer takes samples according to a set sampling plan.

Test method for COD emissions

COD content shall be tested in accordance with ISO 6060 (Water quality — Determination of the chemical oxygen demand) or equivalent. If another analysis method is used, the licensee must show that it is equivalent. An analysis of PCOD or BOD may also be used as verification if a correlation with COD can be demonstrated. The method for measuring TOC is ISO 8245 Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon (DOC).

Sample frequency: Emissions to water are calculated as the annual average value and are based on at least one representative daily sample per week. Alternatively, a sampling frequency set by the authorities may also be approved.

Sampling: Water samples must be taken after the process wastewater has been treated in any internal water treatment plant. The flow at the time of sampling must be indicated. If the process wastewater is externally purified with other wastewater, the analysis result should be reduced by the documented efficiency of the COD in the external water treatment plant. The analyses must be carried out on unfiltered and unsedimented samples in accordance with standard ISO 6060.

Working environment – emissions to air

Air measurements must be carried out in accordance with standardised test methods in this area, such as EN 689 Workplace exposure – Measurement of exposure by inhalation to chemical agents – Strategy for testing compliance with occupational exposure limit values; EN 482 Workplace exposure – Procedures for the determination of the concentration of chemical agents – Basic performance requirements; or equivalent method approved by Nordic Ecolabelling. EN 14042 Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

Appendix 2 Description of the product and material composition

This appendix shall be completed and signed by the floor coverings/flooring underlays manufacturer:

Floor coverings/flooring underlays manufacturer:
Name of the brand/trade name(s):
Flooring type (e.g., wood, laminate, linoleum, plastic, hybrid) or underlay type:
The market the product is intended for (private use, commercial use, or both):

O1 Description of the product, material composition and trivial limits and O4 Share of renewable and/or recycled raw materials

Please describe in the table below:

- **The materials involved and the percentage composition of the material in the floor covering/flooring underlay and the name of all the suppliers of materials.**
- **The function of every material/component (e.g. fillers and surface treatment agents).**
- **Share of renewable and/or recycled raw materials.**

Supplier	Material/component	Function	Weight in kg	Weight %	Share of renewable raw material (%)	Share of recycled raw material (%)

O5 Chlorinated plastics in floor coverings and flooring underlays		
Please state:	Yes	No
Does the flooring/underlay contain chlorinated plastics such as PVC (polyvinyl chloride) and PVDC (polyvinylidene chloride)?	☐	☐

O23 Antibacterial substances		
Please state:	Yes	No
Have chemical products and nanomaterials* with antibacterial or disinfectant properties been added during production, during surface treatment process or to the finished product/finished ingoing elements (e.g., HDF or backing foam)?	☐	☐
The term antibacterial means chemical products that prevent or inhibit growth of microorganisms, such as bacteria or fungi. Silver ions, silver nanoparticles, gold nanoparticles and copper nanoparticles are classed as antibacterial agents. *The requirement does not apply to preservatives used to preserve the chemical product, so-called in-can preservatives.* ** Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01).*		

Signature of the manufacturer of floor coverings/flooring underlays:

Date	Company
Signature by contact person	
Name of contact person	Phone

Appendix 3a Specification of wood raw materials (supplier)

Manufacturer of floor coverings/flooring underlays
Product/wood raw material
Manufacturer/supplier of wood raw material

Specification of wood raw materials			
Please state (the table below can be used if a supplier supplies more than one product):			
Component/part of floor covering/flooring underlay *	**Supplier of wood raw material**	**Type of wood (in a nordic language)**	**Geographical origin (country/state and region/province/district)**

** The column is filled in by the manufacturer of floor coverings/flooring underlays.*

Signature of manufacturer or supplier of wood raw material

Date and place	Company
Signature, contact person	
Clarification of name	Phone and e-mail address

Appendix 3b Basis for calculation of certified amount wood raw material

To verify that, at least 70% of the wood raw material shall be derived from areas where forestry operations are certified pursuant to a forestry standard and certification system that meet the criteria stated in Appendix 4 the:

- Table and calculation below, shall be filled in by the manufacturer of floor coverings/flooring underlays.
- Documentation shall be submitted, to verify that certified wood is delivered to the manufacturer of the Nordic Swan Ecolabelled product. For example, a copy of a contract and/or specified invoices.

Financial figures are not relevant and are not necessary to be cleared.

O16 Traceability and certification					
Please state:					
Supplier	**Type of wood**	**Amount ***	**Geographical origin (country/ state and region/ province)**	**Forest standard. Type of certification management system (FSC, PEFC)**	**Quantity (%) of timber from certified forests used in the product**

**Either volume or weight can be used as long as the same unit is used all through the table.*

$$\text{The amount of timber derived from certified forests} = \frac{\text{Timber derived from certified forests}}{\text{Total amount timber in the floor covering/flooring underlay}}$$

Signature of manufacturer for floor coverings/flooring underlays

Date and place	Company
Signature, contact person	
Clarification of name	Phone and e-mail address

Appendix 3c Declaration of tree species not permitted or restricted to be used in Nordic Swan Ecolabelled floor coverings/flooring underlays

Manufacturer of floor coverings/flooring underlays
Product group/type
Version and date of the list of prohibited tree species used

It is hereby declared that tree species listed in the list of prohibited and restricted tree species (Nordic Ecolabelling – Prohibited and Restricted Wood) is not used in the floor coverings/flooring underlays.

The list of prohibited and restricted tree species is located on the website: [Forestry requirements 2020 (nordic-swan-ecolabel.org)]

Nordic Ecolabelling may request further information if in doubt about specific tree species.

Applicant's signature

Date and place	Company
Signature, contact person	
Clarification of name	Phone and e-mail address

Appendix 4 Directions for forestry certification

Nordic Ecolabelling sets requirements on the standards to which forestry is certified. These requirements are described below. Each individual national forestry standard and each certification system is reviewed by Nordic Ecolabelling as to fulfilment of the requirements. When a forestry standard is revised, it is re-reviewed.

Requirements on forestry standards

The standard must balance economic, ecological and social interests and comply with the Rio Declaration's forestry principles, Agenda 21 and the Forest Principles, and respect relevant international conventions and agreements.

The standard must contain absolute requirements and promote and contribute towards sustainable forestry. Nordic Ecolabelling places special emphasis on the standard including effective requirements to protect the forest from illegal felling and that the requirements protect the biodiversity of the forest.

The standard must be available to the general public. The standard must have been developed in an open process in which stakeholders with ecological, economic and social interests have been invited to participate.

The requirements related to forestry standards are formulated as process requirements. The basis is that if stakeholders agree on the economic, social and environmental aspects of the forestry standard, this safeguards an acceptable requirement level.

If a forestry standard is developed or approved by stakeholders with ecological, economic and social interests, the standard may maintain an acceptable standard. Accordingly, Nordic Ecolabelling requires that the standard balances these three interests and that representatives from all three areas are invited to participate in development of the forestry standard.

The standard must set absolute requirements that must be fulfilled for the certification of the forestry. This ensures that the forest management fulfils an acceptable level regarding the environment. When Nordic Ecolabelling requires that the standard shall "promote and contribute towards sustainable forestry", the standard must be assessed and revised regularly to initiate process improvement and successively reduce environmental impact.

Requirements on certification system

The certification system must be open, have significant national or international credibility and be able to verify that the requirements in the forestry standard are fulfilled.

Requirements on certification body

The certification body must be independent, credible, and capable of verifying that the requirements of the standard have been fulfilled. The certification body must also be able to communicate the results and to facilitate the effective implementation of the standard.

The purpose of certification is to ensure that the requirements regarding forestry standards are fulfilled.

The certification system must be designed to verify that the requirements of the forest standard are fulfilled. The method used for certification must be repeatable and applicable to forestry. Certification must be in respect to a specific forestry standard. The forest must be inspected prior to certification.

Requirements on Chain of Custody (CoC) certification

Chain of Custody certification must be issued by an accredited, competent third party (as for forest certification).

The system shall stipulate requirements regarding the chain of custody that assure traceability, documentation, and controls throughout the production chain.

If recycled fibre, wood shavings or sawdust are used, the pulp manufacturer must verify that this originates from recycled materials.

Requirements on organic production

With regard to certified organic fibre raw material or production that is in the transition to organic production, the vegetable raw materials must be produced and checked in accordance with Council Regulation (EEC) No 2092/91 or 834/2007, or produced and checked in an equivalent way according to an equivalent regulatory system such as KRAV, SKAL, IMO or OCIA.

NB! Bamboo may either be certified according to a sustainable forestry standard or organic production.

Documentation

Copy of forestry/ fibre raw material standard, name, address, and telephone number to the organization who has worked out the standard and audit rapports.

References to persons who represent stakeholders with ecological, economic and social interests who have been invited to participate.

Nordic Ecolabelling may request further documents to examine whether the requirements of the forestry standard and certification system in question can be approved.

Appendix 5 Additives used in the production of plastic, rubber, foam and recycled composite

To be used in conjunction with an application for a license for the Nordic Swan Ecolabelling of floor coverings and flooring underlays.

This appendix shall be completed and signed by the manufacturer of the additive based to the best of their knowledge at the given time, also based on information from raw material manufacturers, recipe, and available knowledge on the material with reservations for new advances and new knowledge. Should such new knowledge arise, the undersigned is obliged to submit an updated declaration to Nordic Ecolabelling.

This appendix shall be filled for additives to plastic, rubber, and foam (both virgin and recycled plastic) The requirement applies to additives actively added to the polymer raw material in the master batch or compound in production of plastic, rubber and foam. The requirement also covers substances that are added during re-compounding of recycled plastic, foam or rubber raw materials.

This appendix shall also be filled for additives used during recycled composite material production (e.g., pigments, UV-stabilizers and bonding agents). The appendix applies to additives actively added

Manufacturer of the additive:
Name of the additive:
Function of the additive:

O20/O22 Prohibited substances		
Does the material contain any of the following substance groups?	Yes	No
Substances on the Candidate List - The Candidate List can be found on the ECHA website: http://echa.europa.eu/candidate-list-table - Exemption applies to melamine (CAS No. 108-78-1) - D4 (CAS No. 556-67-2), D5 (CAS No. 541-02-6) or D6 (CAS No. 540-97-6) must only be included in the form of residues from raw material production and are allowed in concentrations up to 1000 ppm each in the silicone raw material.	☐	☐
CMR substances - Carcinogenic, Germ cell mutagenicity, Reproductive toxicity category 1A or B or category 2 (including all combinations of stated exposure route and stated specific effect) - An exemption is made for titanium dioxide (CAS No. 13463-67-7) classified H351 - An exemption is made for 1,1,1-Trimethylolpropane (TMP, CAS No. 77-99-6) classified H361	☐	☐
Substances that have been judged in the EU to be PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative) - PBT and vPvB in accordance with the criteria in Annex XIII of REACH	☐	☐

Substances classified with hazard classes: - EUH440 - Persistent, Bioaccumulative and Toxic properties, PBT - EUH441 - Very Persistent, Very Bioaccumulative properties, vPvB - EUH450 - Persistent, Mobile and Toxic properties, PMT - EUH451 - Very Persistent, Very Mobile properties, vPvM	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐
Endocrine disruptors: Substances on the EU member state initiative “Endocrine Disruptor Lists”, List I, List II and List III, see following links: List I: https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu List II: https://edlists.org/the-ed-lists/list-ii-substances-under-eu-investigation-endocrine-disruption List III: https://edlists.org/the-ed-lists/list-iii-substances-identified-as-endocrine-disruptors-by-participating-national-authorities *Substances that are transferred to one of the corresponding sub-lists “Substances no longer on list” and that no longer feature on Lists I–III are not prohibited. However, this does not apply to the substances listed in Sub-List II that were evaluated on the basis of regulations or directives that do not have provisions for identifying endocrine disruptors (e.g., the Cosmetics Regulation). These substances may have endocrine disrupting properties. Nordic Ecolabelling will assess these substances on a case-by-case basis, based on the background information provided in sub-List II.*	☐	☐
Substances classified with hazard classes: - EUH380, EUH381 - Endocrine disruption for human health, ED HH 1 or ED HH 2 - EUH340, EUH341 - Endocrine disruption for the environment, ED ENV 1 or ED ENV 2	☐ ☐	☐ ☐
Halogenated organic compounds, such as short-chain chlorinated paraffins (C10-C13), medium-chain chlorinated paraffins (C14-C17) and halogenated flame retardants, with the following exemptions: - Halogenated organic pigments that comply with the Council of Europe recommendation "Resolution AP (89) 1 on the use of colorants in plastic materials coming into contact with food", point 2.5	☐	☐
Per- and polyfluoroalkyl substances (PFASs), e.g., PFOA and PFOS	☐	☐
Butylhydroxytoluene (BHT, CAS No. 128-37-0)	☐	☐
34 bisphenols that have been identified by ECHA for further EU regulatory risk management that are known or potential endocrine disruptors for the environment or for human health, or that can be identified as toxic for reproduction. Assessment of regulatory needs: Bisphenols. ECHA – 16 December 2021: Section 2.1: Bisphenols for which further EU RRM is proposed – restriction https://echa.europa.eu/documents/10162/c2a8b29d-0e2d-7df8-dac1-2433e2477b02 Bisphenol A used in the production of epoxy acrylate is not covered by the requirement.	☐	☐
Organotin compounds	☐	☐
APEO (alkylphenol ethoxylates) and APD (alkylphenol derivatives/alkylphenols) - Alkylphenol derivatives are defined as substances that release alkyphenols when they break down. - An exemption is made for sterically hindered phenolic antioxidants with molecular weight (MW) >600 g/mol.	☐	☐
Phthalates - Phthalates are esters of 1,2-benzenedicarboxylic acid (orthophthalic acid).	☐	☐

Pigments, dyes, and additives based on lead, tin, cadmium, chromium VI and mercury, and their compounds.	☐	☐
Nanomaterials and nanoparticles - *Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01). Pigments are exempted from the requirement.*	☐	☐

If the answer to any of the above questions is Yes, state the CAS no. (where possible), chemical name and level (in ppm, % by weight or mg / kg). Also state whether the substance is contained in the form of an impurity or an added substance. Please state also if the above-mentioned exceptions apply.

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Signature of the manufacturer of the additive:

Date	Company
Signature by contact person	
Name of contact person	Phone

Appendix 6 Chemical products

To be used in conjunction with an application for a license for the Nordic Swan Ecolabelling of floor coverings and flooring underlays.

This appendix shall be completed and signed by the manufacturer of the chemical product based to the best of their knowledge at the given time, also based on information from raw material manufacturers, recipe, and available knowledge on the chemical product with reservations for new advances and new knowledge. Should such new knowledge arise, the undersigned is obliged to submit an updated declaration to Nordic Ecolabelling.

This declaration shall be filled for chemical products used in the production/assembly of the Nordic Swan Ecolabelled floor coverings or flooring underlays, such as adhesives, resins, sealants, or waxes, as well as lacquers, oils, paints, stains or fillers. The requirements also apply to chemicals used at the production site of subcontractors manufacturing finished layers/elements such as manufactured board and backing foam.

Lamination (thin layer of laminate < 2 mm, including melamine) on another panel is not considered to be surface treatment. For a wood-based panel with laminate, both elements must fulfil the requirements for the relevant panel type individually, i.e. the wood-based panel and laminate must both meet the requirements for chemicals.

Chemical products used in the manufacture of paper, and to print patterns on the decor paper, need not be declared. Auxiliary substances such as lubricants and detergents need not be declared.

Manufacturer of the chemical product:
Name of the chemical product:
Function of the chemical product:

The requirements in the criteria document and accompanying appendices apply to all ingoing substances in the Nordic Swan Ecolabelled product. Impurities are not regarded as ingoing substances and are exempt from the requirements. Ingoing substances and impurities are defined below, unless stated otherwise in the requirements.

Ingoing substances: *all substances in the chemical product regardless of amount, including additives (e.g. preservatives and stabilizers) from the raw materials. Substances known to be released from ingoing substances (e.g. formaldehyde, arylamine, in situ-generated preservatives) are also regarded as ingoing substances.*

Impurities: *Residues from production, incl. raw material production, which remain in the chemical product at concentrations below 1000 ppm (0.1000% by weight).*

Examples of impurities are residues of reagents incl. residues of monomers, catalysts, by-products, scavengers (i.e. chemicals that are used to eliminate/minimize undesirable substances), detergents for production equipment and carry-over from other or previous production lines.

O24 Antibacterial substances		
Please state:	Yes	No
Does the chemical product contain nanomaterials* with antibacterial or disinfecting properties? *The term antibacterial means chemical products that prevent or inhibit growth of microorganisms, such as bacteria or fungi. Silver ions, silver nanoparticles, gold nanoparticles and copper nanoparticles are classed as antibacterial agents.* ** Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01).*	☐	☐
The following is exempted from the requirement: - *Preservatives used to preserve the chemical product, so-called in-can preservatives.*		

If the answer to any of the above questions is Yes, state the CAS no. (where possible), chemical name and level (in ppm, % by weight or mg / kg). Also state whether the substance is contained in the form of an impurity or an added substance. Please state also if the above-mentioned exception applies.

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O25 Classification of chemical products		
Is the chemical product classified with any of the hazard phrases below? *Including all combinations of stated exposure routes and stated specific effect.* *For example, H350 also covers classification H350i.*	Yes	No
H400 –Toxic to the environment, Aquatic Acute 1	☐	☐
H410 – Toxic to the environment Aquatic Chronic 1	☐	☐
H411 – Toxic to the environment Aquatic Chronic 2	☐	☐
H420 – Toxic to the environment Ozone	☐	☐
H300–Acute toxicity; Acute Tox 1 or 2	☐	☐
H310– Acute toxicity; Acute Tox 1 or 2	☐	☐
H330– Acute toxicity; Acute Tox 1 or 2	☐	☐
H301– Acute toxicity; Acute Tox 3	☐	☐
H311– Acute toxicity; Acute Tox 3	☐	☐
H331– Acute toxicity; Acute Tox 3	☐	☐
H370 – Specific organic toxicity, STOT SE 1	☐	☐
H372 – Specific organic toxicity, STOT RE 1	☐	☐
H350 –Carcinogenic, Carc. 1A or1B	☐	☐
H351 – Carcinogenic, Carc. 2	☐	☐

H340 –Germ cell mutagenic, Mut. 1A and 1B	☐	☐
H341 – Germ cell mutagenic, Mut. 2	☐	☐
H360 –Reproductive toxicity, Repr. 1A or1B	☐	☐
H361 – Reproductive toxicity, Repr 2	☐	☐
H362 – Reproductive toxicity, Lact.	☐	☐

The following are exempted from the requirement:

- *Classification H351 for adhesive products containing methylene diphenyl diisocyanate (MDI). Isocyanates in the production of polyurethane and polyurethane foam are regulated in separate requirement O36.*
- *Classifications H350, H341, H301, H311 and H331 for adhesive products and resins containing formaldehyde (CAS no. 50-00-0). Formaldehyde emissions are regulated in O31 and O41.*
- *Classifications H341, H301 and H331 for resins containing a maximum of 10% by weight of phenol (CAS no. 108-95-2).*
- *Classifications H301, H311, H331 and H370 for resins containing a maximum of 10% by weight of methanol (CAS no. 67-56-1).*
- *Classifications H351 and H361 for resins containing melamine (CAS no. 108-78-1).*
- *UV curing surface treatment products classified as environmentally hazardous, if UV curing surface treatment products are applied to the material during a controlled closed process where no discharge to recipient takes place. Spills and residual waste (e.g., residues from cleaning) must be collected in containers that are approved for hazardous waste and handled by a waste contractor.*

If the answer to any of the above questions is Yes, state the CAS no. (where possible), chemical name and level (in ppm, % by weight or mg / kg). Also state whether the substance is contained in the form of an impurity or an added substance. Please state also if the above-mentioned exceptions apply.

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O26 Classification of ingoing substances		
Does the chemical product contain substances classified with any of the hazard phrases below? *Including all combinations of stated exposure routes and stated specific effect.* *For example, H350 also covers classification H350i.*	Yes	No
H350 – Carcinogenic, Car 1A or 1B	☐	☐
H351 – Carcinogenic, Carc. 2	☐	☐
H340 – Germ cell mutagenic, Mut. 1A or 1B	☐	☐
H341 – Germ cell mutagenic, Mut. 2	☐	☐
H360 – Reproductive toxicity, Repr. 1A or 1B	☐	☐
H361 – Reproductive toxicity, Repr. 2	☐	☐
H362 – Reproductive toxicity, Lact.	☐	☐
EUH380 - Endocrine disruption for human health, ED HH 1	☐	☐
EUH381 - Endocrine disruption for human health, ED HH 2	☐	☐
EUH340 - Endocrine disruption for the environment, ED ENV 1	☐	☐
EUH341 - Endocrine disruption for the environment, ED ENV 2	☐	☐
EUH440 - Persistent, Bioaccumulative and Toxic properties, PBT	☐	☐
EUH441 - Very Persistent, Very Bioaccumulative properties, vPvB	☐	☐
EUH450 - Persistent, Mobile and Toxic properties, PMT	☐	☐
EUH451 - Very Persistent, Very Mobile properties, vPvM	☐	☐

For two-component products it is the added ingredients in the separate components that shall comply with the requirement. Alternatively, if it can be documented that protective equipment was worn when the hardener was mixed with the paint/varnish and the finished two-component product was applied in a closed system, the requirement may apply to the hardened product.	Yes ☐	No ☐
Is the declaration about CMR substances done for a hardened two component product?	☐	☐
If yes, the chemical product is part of a two-component product, is safety equipment used when the hardener is mixed with the paint/lacquer and is the application of the finished two-component product done in a closed system?	☐	☐

The following are exempted from the requirement:

- *Photo initiators classified H351, H341 or H361*
- *Chemical products containing methylene diphenyl diisocyanate (MDI) classified as H351.*
- *Adhesive and resin containing formaldehyde (CAS no. 50-00-0) classified as H350 and H341. Formaldehyde emissions are regulated in O31 and O41.*
- *Resin containing maximum 10% by weight of phenol (CAS no. 108-95-2) classified as H341.*
- *Resin containing melamine (CAS no. 108-78-1) classified as H351 and H361.*
- *Titanium dioxide (CAS no. 13463-67-7) classified as H351.*
- *1,1,1-Trimethylolpropane (TMP, CAS no. 77-99-6) classified as H361.*
- *VAH (volatile aromatic compounds) in chemical products. VAH content is regulated in requirements O30 and O34.*

If the answer to any of the above questions is Yes, state the CAS no. (where possible), chemical name and level (in ppm, % by weight or mg / kg). Also state whether the substance is contained in the form of an impurity or an added substance. Please state also if the above-mentioned exceptions apply.

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O27 Preservatives			
Please state if content of preservatives exceeds the limit values below		Yes	No
Preservative:	**Limit value**		
Bronopol (CAS 52-51-7)	≤ 500 ppm (0.05% by weight)	☐	☐
IPBC (iodopropynyl butylcarbamate, CAS 55406-53-6)	≤ 2000 ppm (0.20% by weight)	☐	☐
Mixture (3:1) of CMIT/MIT (5 chloro-2-methyl-4-isothiazolin-3-one / 2-methyl-4-isothiazolin-3-one, CAS 55965-84-9)	≤ 15 ppm (0.0015 % by weight)	☐	☐
MIT (2-methyl-2H-isothiazol-3-one, CAS 2682-20-4)	≤ 200 ppm (0.0015 % by weight)	☐	☐
Total amount of isothiazolinones	≤ 500 ppm (0.05% by weight).	☐	☐

If the answer to any of the above questions is Yes, state the CAS no. (where possible), chemical name and level (in ppm, % by weight or mg / kg) for each preservative.

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O28 Prohibited substances		
Does the chemical product contain any of the following substance groups?	**Yes**	**No**
Substances on the Candidate List	☐	☐

- The Candidate List can be found on the ECHA website: http://echa.europa.eu/candidate-list-table - Exemption applies to melamine (CAS No. 108-78-1) - D4 (CAS No. 556-67-2), D5 (CAS No. 541-02-6) or D6 (CAS No. 540-97-6) must only be included in the form of residues from raw material production and are allowed in concentrations up to 1000 ppm each in the silicone raw material.		
Substances that have been judged in the EU to be PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative) - PBT and vPvB in accordance with the criteria in Annex XIII of REACH	☐	☐
Endocrine disruptors: Substances on the EU member state initiative "Endocrine Disruptor Lists", *List I, List II and List III, see following links:* *List I: https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu* *List II: https://edlists.org/the-ed-lists/list-ii-substances-under-eu-investigation-endocrine-disruption* *List III: https://edlists.org/the-ed-lists/list-iii-substances-identified-as-endocrine-disruptors-by-participating-national-authorities* *Substances that are transferred to one of the corresponding sub-lists "Substances no longer on list" and that no longer feature on Lists I–III are not prohibited. However, this does not apply to the substances listed in Sub-List II that were evaluated on the basis of regulations or directives that do not have provisions for identifying endocrine disruptors (e.g., the Cosmetics Regulation). These substances may have endocrine disrupting properties. Nordic Ecolabelling will assess these substances on a case-by-case basis, based on the background information provided in sub-List II.*	☐	☐
Halogenated organic compounds, such as short-chain chlorinated paraffins (C10-C13), medium-chain chlorinated paraffins (C14-C17). - Halogenated organic pigments that comply with the Council of Europe recommendation "Resolution AP (89) 1 on the use of colorants in plastic materials coming into contact with food", point 2.5. - Exemptions apply for bronopol, IPBC, MIT and CMIT/MIT (3:1). These are addressed in a separate requirement, see requirement O26). - Exemption applies also for epoxy acrylate used in UV curing products.	☐	☐
Per- and polyfluoroalkyl substances (PFASs), e.g., PFOA and PFOS	☐	☐
Butylhydroxytoluene (BHT, CAS No. 128-37-0) - An exemption is made for BHT that is included in UV curing chemical products. If BHT receives a harmonized classification that means the substance does not meet the requirements anymore and the exemption will be removed.	☐	☐
Aziridine and polyazidirines - An exemption is made for aziridines/polyaziridines, if the substance is not classified as carcinogenic, mutagenic or reprotoxic from any manufacturer or in ECHA	☐	☐
34 bisphenols that have been identified by ECHA for further EU regulatory risk management that are known or potential endocrine disruptors for the environment or for human health, or that can be identified as toxic for reproduction. Assessment of regulatory needs: Bisphenols. ECHA – 16 December 2021: Section 2.1: Bisphenols for which further EU RRM is proposed – restriction https://echa.europa.eu/documents/10162/c2a8b29d-0e2d-7df8-dac1-2433e2477b02 - Bisphenol A used in the production of epoxy acrylate is not covered by the requirement. -	☐	☐
Organotin compounds	☐	☐
APEO (alkylphenol ethoxylates) and APD (alkylphenol derivatives/alkylphenols) - Alkylphenol derivatives are defined as substances that release alkyphenols when they break down. - An exemption is made for sterically hindered phenolic antioxidants with molecular weight (MW) >600 g/mole.	☐	☐

Phthalates - Phthalates are esters of 1,2-benzenedicarboxylic acid (orthophthalic acid).	☐	☐
Pigments, dyes and additives based on lead, tin, cadmium, chromium VI and mercury, and their compounds.	☐	☐

If the answer to any of the above questions is Yes, state the CAS no. (where possible), chemical name and level (in ppm, % by weight or mg / kg). Also state whether the substance is contained in the form of an impurity or an added substance. Please state also if the above-mentioned exceptions apply.

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O29 Nanomaterials		
Please state:	Yes	No
Does the chemical product contain nanomaterials/-particles? *Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01):* *'Nanomaterial' means a natural, incidental, or manufactured material consisting of solid particles that are present, either on their own or as identifiable constituent particles in aggregates or agglomerates, and where 50 % or more of these particles in the number-based size distribution fulfil at least one of the following conditions:* *(a) one or more external dimensions of the particle are in the size range 1 nm to 100 nm;* *(b) the particle has an elongated shape, such as a rod, fibre or tube, where two external dimensions are smaller than 1 nm and the other dimension is larger than 100 nm;* *(c) the particle has a plate-like shape, where one external dimension is smaller than 1 nm and the other dimensions are larger than 100 nm.*	☐	☐

The following are exempted from the requirement:

- *Pigments. This exemption does not include pigments added for purposes other than colouring.*
- *Naturally occurring inorganic fillers in accordance with annex V point 7 in REACH.*
- *Synthetic amorphous silica. This applies to non-modified synthetic amorphous silica*. Chemically modified colloidal silica can be included in the products *as long as the silica particles form aggregates in the* final *product.* Any *surface treatment must meet the chemical requirements in O26 (Classification of ingoing substances) and O28 (Prohibited substances).*
- *Polymer dispersions*

If the answer to any of the above questions is Yes, state the CAS no. (where possible), chemical name and level (in ppm, % by weight or mg / kg). Also state whether the substance is contained in the form of an impurity or an added substance. Please state also if the above-mentioned exceptions apply.

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O30 Volatile organic compounds Please state:
Amount of volatile organic compounds (VOC) in the chemical product (weight -%):
Amount of volatile aromatic compounds (VAH) in the chemical product (weight -%):
Volatile organic compounds (VOC), including volatile aromatic compounds (VAH), may be present in the chemical product to a maximum of 1% by weight. In adhesives, volatile organic compounds (VOC) may be present to a maximum of 3% by weight. However, volatile aromatic compounds (VAH) may be to a maximum of 0,1% by weight. ***The following are exempted from the requirement:*** - *Chemicals used for surface treatments are exempted from the requirement and must instead fulfil requirement O34.* - *Resin used in the production of laminate is exempted from the requirement provided that the laminate flooring meets the emission requirements O35 and O41.* *Volatile organic compounds (VOC) are defined as any organic compound having an initial boiling point less than or equal to 250°C measured at a standard pressure of 101.3 kPa. This definition is the same as in the Paints Directive (2004/42/EC).*

Please state the CAS no. (where possible), chemical name and level (in ppm, % by weight or mg / kg). Also state whether the substance is contained in the form of an impurity or an added substance. Please state also if the above-mentioned exceptions apply.

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O31 Free formaldehyde		
Please state:	Yes	No
Does the content of free formaldehyde (from formaldehyde not deliberately added or from formaldehyde-releasing substances) exceed 0.02% by weight (200 ppm) in the chemical product? For adhesive products, up to 0.2% by weight (2000 ppm) of free formaldehyde is permitted. The requirement applies to the pure adhesive before mixing with any hardener. Resin used in the production of laminate is exempted from the requirement if the laminate fulfils requirement concerning emissions of formaldehyde (see requirement O35 and O41).	☐	☐

If yes, please specify source of formaldehyde, i.e., actively added or because of release or decomposition from another substance and theoretical amount of formaldehyde in the product. Please state also if the above-mentioned exceptions apply.

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O33 Environmentally harmful products and substances in surface treatments		
Please state:	Yes	No
Does the chemical product contain substances classified with hazard phrases H410, H411 or H412?	☐	☐

If the answer to the above questions is Yes, state the CAS no. (where possible), each constituent classified substance, the concentration in the chemical product must be stated as a percentage by weight. Also state whether the substance is contained in the form of an impurity or an added substance.

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O34 Quantity of applied volatile organic compounds (VOC) in surface treatments		
Please state:	Yes	No
Does the chemical product contain VOC in its uncured form?	☐	☐
If the chemical product contains VOC in its uncured form; please state the VOC content in %.		

Signature of the manufacturer of the chemical product:

Date	Company
Signature by contact person	
Name of contact person	Phone

Appendix 7 Chemical requirements applicable only to surface treatment

This declaration shall be completed and signed by the surface treatment contractor.

Surface treatment contractor:
Name of the product:

O32 Application method and quantity applied – surface treatment
Give a short description of the surface treatment:
Number of coats: _____ Quantity applied (g/m2): _____ Application method(s): _____

O33 Environmentally harmful products and substances in surface treatment systems, alternative b)		
Please state:	Yes	No
Is the quantity of environmentally harmful substances applied in the surface treatment system not more than 60 g/m^2, calculated in a wet state?	☐	☐
Please state the quantity of environmentally harmful substances applied in the surface treatment system (g/m^2)		
Follow a calculation example in "Appendix 7, continuation" and instruction below: 1) First, the formula below must be used first to calculate the amount of environmentally harmful substances in the respective surface treatment product (%): **100*H410 + 10*H411 + H412** *H410 is the concentration of substances classified as H410 in percent* *H411 is the concentration of substances classified as H411 in percent* *H412 is the concentration of substances classified as H412 in percent*		

All environmentally harmful substances included in the unhardened chemical products are to be included in the calculation (Chronic 1 with H410, Chronic 2 with H411, Chronic 3 with H412).

2) Thereafter, the amount of applied substances in the surface treatment system is calculated according to below equation:

$$\text{Applied quantity of respective product (g/m2)} \times \frac{\text{Proportion of environmentally harmful substances in product (\%)}}{\text{Surface treatment efficacy (\%)}}$$

O34 Quantity of applied volatile organic compounds (VOC)		
Please state either alternative a) or alternative b):	Yes	No
Alternative a) Is the total content of volatile organic compounds (VOC), including VAH, in surface treatment products below 5% by weight in total? Follow a calculation example in "Appendix 7, continuation".	☐	☐
Please state the VOC in weight in total:		
Alternative b) Does the total amount of VOC compounds of the chemical products used in the surface treatment system exceed 2g/m^2 of treated surface? The applied amount of VOCs is calculated using the following formula: $\text{Applied quantity (g/m2)} \times \frac{\text{Proportion VOC in surface treatment (\%)}}{\text{Surface treatment efficacy (\%)}}$ It is the VOC content of the chemical products in their uncured form that must meet the requirement. If the products require dilution, the calculation must be based on the content in the diluted product. Follow a calculation example in "Appendix 7, continuation".	☐	☐
Please state the VOC content in g/m^2:		

Signature of surface treatment contractor

Date	Company
Signature by contact person	
Name of contact person	Phone

Appendix 7, continuation:

Calculation example for the sum of environmentally harmful substances (O33):

The manufacturer of flooring uses three products in the surface treatment system and roller coating technique is used (efficiency rate 95 %).

In surface treatment is used three products with following quantities:
Product A: applied with 10 g/m^2
Product B: applied with 20 g/m^2
Product C: applied with 10 g/m^2

First, the environmental hazardousness is weighted for each surface treatment chemical product according to the weight equation in O33:

Product	Content of env.hazardous substances (%)			
	H410	H411	H412	= weighted env.hazardous content (%) calculated with formula 100*H410 + 10*H411 + H412
A	0	1	0	10
B	0	18	0,5	180,5
C	1	5	1	151

Thereafter the sum of the applied environmental hazardous substances in the surface treatment system is calculated using the above presented weighted content for each product (with consideration taken for the efficacy of the application method). Equation below is used:

$$\text{Applied quantity of respective product (g/m2)} \times \frac{\text{Proportion of environmentally harmful substances in product (\%)}}{\text{Surface treatment efficacy (\%)}}$$

Hence:

Product	Applied quantity (g/m^2)	Weighted env.hazardous content (%), see above	Applied amount env.hazardous substances (g/m^2)
A	10	10	1
B	20	180,5	36,1
C	10	151	15,1
Total application of env. hazardous substances:			52,2 g/m^2
Total application of env. hazardous substances (considering application method efficacy):			54,9 g/m^2

The surface treatment system has therefore applied a weighted total sum env. hazardous substances of 54,9g/m^2 which fulfils the limit value of 60g/m^2.

Calculation example for applied sum of VOC (O34) in surface treatment systems:

The quantity of applied volatile organic compounds (VOC) is defined either by a) calculating the total content of volatile organic compounds (VOC), including VAH, in surface treatment products or alternatively by b) using the equation in the requirement O34.

Alternative a):

Product	Applied quantity (g/m²)	VOC % in product	Applied VOC (g/m²)
A	48	2,42	1,16
B	26	5,39	1,40
C	52	3,86	2,01
Sum	126		4,57
Quantity of applied volatile organic compounds (VOC) total weight % = 4,57/126 = 3,63 %			

The surface treatment system has therefore the total content of volatile organic compounds (VOC) by weight total of 3,63% which fulfils the limit value of 5 %.

Alternative b):

Product	Applied quantity (g/m²)	VOC % in product	Roller coating efficiency rate 95 %	$\text{Applied quantity (g/m2)} \times \frac{\text{Proportion VOC in surface treatment (\%)}}{\text{Surface treatment efficacy (\%)}}$
A	10	0,12	0,95	1,26
B	20	0,01	0,95	0,21
C	10	0,04	0,95	0,42
Quantity of applied volatile organic compounds (VOC) total				1,89

The surface treatment system has therefore the quantity of applied volatile organic compounds (VOC) total of 1,89 g/m² which fulfils the limit value of 2 g/m².

Appendix 8 Declaration of energy consumption

floor coverings/flooring underlays manufacturer:
Name of product:

Indicative list of activities that must be included and may not be included in the calculations of the energy consumption requirement:

Product type	Conditions for the electricity and fuel consumption (indicative list)	
	Included	**Not included**
Solid wood floorings	— drying, grinding and sawing — sizing and trimming — sanding — coating — packaging — and any other activity needed for manufacturing	— activities occurring at the lumber mill (e.g., sawing, edging, trimming, drying and planing of the logs/lumber) and before such as felling and limbing. — manufacture of adhesives, lacquers or any other in-can preparation — manufacture of bought-out parts/layers that stands for less than 5 w% of the final floor covering (for instance, the manufacture of structural and decorative papers in laminate flooring is not to be included). — energy consumed in the quality control activities. — indirect electricity and fuel consumption (e.g., heating outside the manufacturing plant, lighting, internal/external transportation, etc.).
Multi-layer wood floorings	— drying, grinding and sawing — sizing and trimming — sanding — pressing — coating — packaging — and any other activity needed for manufacturing	
Cork and cork tile floor coverings Bamboo floor coverings	— drying, grinding and sawing — sizing and trimming — sanding — pressing — manufacturing of the core board if used in its structure — coating — packaging — and any other activity needed for manufacturing	
Laminate floorings	— manufacturing of the core board — impregnation process of the décor, overlay and backing paper — pressing — sizing — packaging — and any other activity needed for manufacturing	
Linoleum flooring	— oxidation to linoleum cement — mixing — calendaring — drying and curing — finishing — cutting — packaging — and any other activity needed for manufacturing	
Plastic flooring	— manufacturing of the binder(s) — extrusion — mixing — calendaring — finishing	

	— pressing/shaping and cutting — packaging — and any other activity needed for manufacturing	
Others (e.g., multilayer Modular floor coverings, hybrid floorings)	— manufacturing of the core board, binder or any main layer standing for more than 25 % of the final flooring — gluing/laminating/pressing the different elements together — sanding, coating and/or finishing — cutting and shaping — packaging — and any other activity needed for manufacturing	
Underlays	— manufacturing of the final product	

Please declare the following energy data, based on annual average figures. Different delimitations for the energy consumption calculation are relevant for different floor types:

Declare the electricity consumption used in the production of the floor covering or flooring underlays [kWh/MJ] and declare how much renewable electricity is generated onsite (e.g., from solar panels, wind turbine and geothermal powerplant):

_____

_____

Declare the fuel consumption for each fuel type used in the production of the floor covering or flooring underlays [kWh/MJ]:

_____

_____

_____

_____

Declare, if relevant, an energy surplus [kWh/MJ], and declare the production quantity of the floor covering or flooring underlays [m^2]:

_____

_____

Signature of floor covering/flooring underlay manufacturer

Date	Company
Signature by contact person	
Name of contact person	Phone

Appendix 9 Energy content of fuel

The energy content of fuel is calculated based on the table below:

Standard fuel values (1 kWh = 3.6 MJ):

Energy source/ Fuel type	Energy content FIN[1)] GJ/ton	Energy content SE[2)] GJ/ton	Energy content DK[3)] GJ/ton	Energy content NO[4)] GJ/ton	2012/27/EC Energy content* GJ
Petrol	44,3	43,7 (37,8 MJ/l)	43,8	43,9	44,0
Diesel	42,8	43,3 (35,3 MJ/l)	42,7	43,1	
LPG	46,2	46,0	46,0	46,1	45,2
Eo1 oil	42,8	40,6 (35,8 MJ/l, EO-1)	-	43,1	42,3
Eo5 oil	41,1 (sulphur<1 %)	43,1 (40,5 MJ/l, EO-5)	40,65 (fuel oil)	40,6	440,0
Natural gas	36,0 (GJ/1000 m^3)	44,1 (GJ/1000 m^3)	39,55 (GJ/1000 m^3)	40,3 (GJ/1000 Sm^3)	47,2
Power station coal	25,0	27,2	24,23	28,1	28,5
Pellets (7% W)	16,0	16,8	17,5	16,8	16,8
Peat	10,1 - 12,3	9,3 - 12,8 (50 % - 35 % W)	-	-	7,8 - 3,8
Straw (15% W)	13,5		14,5		
Biogas	23,0 (GJ/1000 m^3)		23,0 (GJ/1000 m^3)		
Wood chips (45% W)	10,5		9,3		13,8 (25 %W)
Waste wood	12,0	12,1 (30 % W)	14,7	16,25 - 18 (dry)	

** Energy efficiency directive, 2012/27/EC, Annex IV, «Energy content of selected fuels for end use».*

1) Statistikscentralen i Finland, Fuel classification 2013.

2) Värmeforsk, Miljöfaktaboken 2011.

3) Energistyrelsen, Energy statistic 2012

4) Statistisk Centralbyrå. Notater Documents 30/2013. The Norwegian Emission Inventory 2013.

(% W) is the percentage by weight of water in the fuel and given the letter f in the formulas below. If nothing else is stated, f = 0% W and the ash content is average.

Formula for calculating the energy content of woodchips[9]:

The energy content of woodchips depends on the water content. An example of how to calculate the energy content of woodchips is given below.

[9] Reference: Centre for Biomass Technology, c/o dk-TEKNIK (tel. +45 39 555 999): Videnblad fact sheet 125.2 (in Danish) first published 29 June 1998, revised 26 March 1999.

The energy content of dry wood is 19.0 MJ/kg.

Energy is required to evaporate the water in the wood. This energy reduces the heat value of the woodchips. The energy content can be calculated as:

19.0 MJ/kg – 21.442 * f /100 = MJ/kg, where f is the water content in %W of the wood.

The factor "21.442" is the sum of water's heat of evaporation (2.442 MJ/kg) and the energy content of dry wood (19.0 MJ/kg).

If the applicant can refer to laboratory analyses of the heat value of a fuel, Nordic Ecolabelling may consider using this heat value for calculating the energy content.

Appendix 10 Example of energy consumption calculation

A company produces laminate floorings and wants to apply for the Nordic Ecolabel. The company had installed PV panels several years ago, but additionally it buys gas and biomass every year to provide the production lines with electricity and heat. The consumption of fuels and electricity as well as the energy consumption and production of flooring for the last three years is summarized in the Table below:

Electricity and fuel purchase, production and electricity generation of a company:

Year	Production floor (m^2)	Electricity purchase (kWh)	Renewable electricity generated onsite (kWh)	Fuel purchase	
				Gas (kWh)	Wood chip (t, f=20%)
2020	1 780 685	10 399 200	1 559 880	753230	956
2021	1 856 956	11 036 987	1 655 548	775369	965
2022	1 653 269	9 856 321	1 478 448	725849	949
Average	1 763 637	10 430 836	1 564 625	751483	957

Calculation of B:

The value for the B factor, the annual purchased electricity in kWh/m^2, can be calculated from Table 2: **B** = 10430836/1763637 = **5,9 kWh/m^2**. Indeed, as stated in the requirement O33, the renewable electricity generated onsite is not to be included in the calculation of B. According to the calculation, the value for B is **< 15 kWh/m^2** and meets the requirement.

Calculation of C:

The annual gas purchase in kWh/m^2 is: 751483/1763637 = 0,43 kWh/m^2. The annual wood chips purchase in kWh/m^2 is: (957000*14,7)/(3,6*1763637) = 2,22 kWh/m^2. Indeed, according to Appendix 11 and the standard fuel value for wood chips with a moisture content of 20% is: 19.0 – 21,442*20/100 = 14,7 MJ/kg. The factor of 3,6 is present to convert the value from MJ to kWh. The sum of the fuel purchase in kWh/m^2 is the value to be used as C in the formula: **C** = 0,43 + 2,22 = **2,65 kWh/m^2**. According to the calculation, the value for C is **< 15 kWh/m^2** and meets the requirement.

Calculation of A:

The share of renewable fuel purchased annually is: **A** = 2,22/(2,22 + 0,43) = **84%**. According to the calculation, the value for A is **> 25%** and meets the requirement.

Calculation of E:

Now that all factors have been calculated, E can be deducted: E = (84/20) + (5 – 5,9/3) + (5 – 2,65/3) = 4,2 + 3,0 + 4,1 = **11,3**. According to the calculation, the value for E is **> 10** (limit value for laminate flooring) and meets the requirement.

Appendix 11 Standards for quality and durability testing of floor coverings

Table 1 Standards to be used to test each floor covering type:

Flooring type	Standards/Test method	Classification
Wood veneer floor covering	Flooring must comply with and be tested according to standard EN 14354.	EN ISO 10874
Factory lacquer solid and multilayer wood floorings	Flooring must comply with and be tested according to standard EN 13489. Thickness of the top layer Wood hardness of the surface layer must be tested. * Additionally, at least the following parameters must be tested: - Elasticity of the lacquer according to EN 13696. - EN 13442 Resistance to chemical agents.	EN 685 CTBA*
Factory oiled, uncoated solid wood and uncoated multilayer wood flooring	Flooring must comply with and be tested according to standard EN 13489. Thickness of the top layer Wood hardness of the surface layer must be tested. * Good maintenance instructions and maintenance advice to prolong the lifespan of the flooring must be made available to the customer (see requirement O49 product information).	
Cork tile floor coverings	Flooring must comply with and be tested according to standard EN 12104.	EN ISO 10874
Cork floor coverings	Flooring must comply with and be tested according to standard EN 16511. At least the following parameters must be tested: - Wearing group according to EN 660-1 for wearing group - Effect of a castor chair according to EN 425 - Resistance to furniture leg movement according to EN 425 - Residual indentation according to ISO 24343-1.	
Bamboo floor coverings	Flooring must comply with and be tested according to standard EN 17009 or EN 14354. At least the following parameters must be tested: - Resistance to indentation according to EN 1534 EN - Elasticity of the lacquer according to EN 13696.	– See table in requirement O43 for classification and limits.
Laminate flooring	Flooring must comply with and be tested according to standard EN 13329.	EN ISO 10874
Linoleum flooring	Flooring must comply with and be tested according to standard EN ISO 24011.	EN ISO 10874
Plastic flooring (PVC-free)	Flooring must comply with and be tested according to standard ISO 19322, EN 16776 or EN 14565.	EN ISO 10874
Others (e.g., multilayer Modular floor coverings, hybrid flooring)	Flooring must comply with and be tested according to standard EN 16511 or EN 17142.	EN ISO 10874

** CTBA Revetments interiors Parquet 71.01[10] (see appendix 12).*

[10] https://catalogue-bois-construction.fr/wp-content/uploads/2017/05/Performances-techniques-planchers-et-revetement-de-sol-int%C3%A9rieurs-1.pdf

Table 2 Class of use according to standard EN ISO 10874

Area of use	Use class	Intensity level
Domestic (bedrooms, living rooms, entrance and corridors)	21	Moderate/light
	22	General/average
	22+	General
	23	Heavy
Commercial (hotels, offices, boutiques, schools, halls and department stores)	31	Moderate
	32	General
	33	Heavy
	34	Very heavy
Industrial (assembly, storage rooms and production halls)	41	Moderate
	42	General
	43	Heavy

Appendix 12 Relevant information from standard EN 685 (translation from French)

Classification of wood hardness according to the tree/wood species, and correlations between the use classes in the EN 685 standard and the thickness of the top wear layer depending on the tree/wood species used is found in CTBA Revetments interiors Parquet 71.01.

In Europe, since 1996, the NF EN 685 (or EN ISO 10874) standard identifies classes of use for floor coverings. These classes are identified by number and/or symbol. The tens digit corresponds to the nature of the room: 2 = domestic, 3 = commercial and 4 = industrial. The number of units corresponds to the intensity of the traffic: 1 = moderate, 2 = general, 3 = high and 4 = very high.

In France, this classification has been adopted for parquet floors in the XP B 53-669 standard. As part of the revision of the XP B 53669 standard, a coherent set of characterization of the finish was introduced. Parquet floors not coated with a finish and with a top layer as indicated in the Table below are classified as the following:

Correspondence between tree species hardness classes, minimum top layer thickness and floor coverings classes of use:

Tree species hardness classes	**Class of unfinished parquet floors according to minimum top layer thickness (mm)**			
	≥ 2,5	**≥ 3,2**	**≥ 4,5**	**≥ 7**
A[1)]	21	21	22	22
B[2)]	21	22	23	31
C[3)]	23	31	33	34
D[4)]	31	33	34	41

[1)] Class A corresponds to a hardness between 10 N/mm^2 and 20 N/mm^2. Tree species in this class are notably and conventionally: *Alnus*, *Pinus sylvestris*, *Picea abies* and *Abies*.

[2)] Class B corresponds to a hardness between 20 N/mm^2 and 30 N/mm^2. Tree species in this class are notably and conventionally: *Betula, Guarea cedrata, Larix decidua, Castanea sativa, Prunus avium, Pinus pinaster, Entandrophragma utile* and *Tectona grandis*.

[3)] Class C corresponds to a hardness between 30 N/mm^2 and 40 N/mm^2. Tree species in this class are notably and conventionally: *Pericopsis elata, Dicorynia guianensis, Carpinus, Quercus, Acer, Eucalyptus, Fraxinus, Fagus, Chlorophora excelsa, Tieghemella heckelii, Baillonella toxisperma, Distemonanthus benthamianus, Juglans L.,* and *Ulmus*.

[4)] Class D corresponds to a hardness greater than 40 N/mm^2. Tree species in this class are in particular and conventionally: *Afzelia, Myrocarpus fastigiatus, Handroanthus, Hymenaea, Intsia* and *Millettia laurentii*.

Appendix 13 Example of extended product warranty

The extension of the product warranty must be free of cost and under the same conditions of the legal one.

Example of clauses to be included in the extended warranty (requirement O46)

Extended warranty

1. **Who is covered?**

The extended warranty is given only to the original retail purchaser of the product and is our warranties.

2. **What are you responsible for under extended warranties?**

To be covered under the extended warrant, the consumer needs to retain the sales slip and make sure that the flooring is properly installed in accordance with the installation instruction provided with the flooring. The consumer must also properly care for the new flooring following the maintenance instructions that are provided with the flooring.

3. **What is not covered by the extended warranties?**

The extended warranties do not cover conditions caused by improper use or maintenance, such as a) reduction in gloss, marks, scuffs, scratches, gouges, dents or cuts, including those caused by pets, b) damaged caused by negligence, accidents, misuse or abuse (e.g., dragging object across the floor without proper protection), c) wear caused by pebbles, sand or abrasives…

4. **What should the customer do if s/he has a problem?**

Contact either of the company or the retailers they have agreement with.

5. **Other issues**

The number of years that the extended warranty covers should be indicated. The number of years should exceed five years and depends on the type of floor covering and finish. E.g., residential finish engineered wooden floor coverings can vary between 50 and 15 years depending on the wood used as raw material and the finished applied. Solid wooden floor coverings can be twice and even three types sanding. If done by professionals, this can extend the life of the floorings.

Appendix 14 Example of maintenance schedule

Example of a maintenance plan/schedule for requirement O47

Condition	Action	Incidence for Domestic use	Incidence for Commercial use	Incidence for Highest traffic
− Loose dirt − Bonded dirt − Care	Refresh (follow the maintenance and care instructions provided with the floor covering).	− 1-2 times a week − Weekly − Bi-monthly	− 3-5 times a week − Weekly − Monthly	− Daily − 2 times a week − Weekly
Stubborn stains	Revive (follow the maintenance and care instructions provided with the floor covering). Contact the flooring manufacturer if necessary.	Once a year	3-4 times a year	4-6 times a year
Scratches	Contact the flooring manufacturer to plan maintenance. Recoat is recommended or, Repair (use wax or filler) or Replace the affected part.	Usually after 5-10 years	Usually after 3-5 years	Usually after 2-3 years
Worn	Contact the flooring manufacturer to plan more extensive maintenance. Renew the surface coating or Repair/Replace the broken part is recommended or, Replace the flooring.	Usually after 10 years	Usually after 5 years	Usually after 3 years