

Nordic Ecolabelling for  
**Panels and mouldings for interior use**



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Consultation

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## Addresses

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:

### Denmark

Ecolabelling Denmark  
Fonden Dansk Standard  
Göteborg Plads 1, DK-2150 Nordhavn  
Fischersgade 56, DK-9670 Løgstør  
Tel: +45 72 300 450  
info@ecolabel.dk  
www.svanemaerket.dk

### Iceland

Ecolabelling Iceland  
Norræn Umhverfismerking  
á Íslandi  
Suðurlandsbraut 24  
IS-108 Reykjavík  
Tel: +354 591 20 00  
svanurinn@ust.is  
www.svanurinn.is

### Finland

Ecolabelling Finland  
Annankatu 25, 6. flr  
FI-00100 Helsinki  
Tel: +358 9 61 22 50 00  
joutsen@ecolabel.fi  
www.ecolabel.fi

### Norway

Ecolabelling Norway  
Henrik Ibsens gate 20  
NO-0255 Oslo  
Tel: +47 24 14 46 00  
info@svanemarket.no  
www.svanemarket.no

### Sweden

Ecolabelling Sweden  
Box 38114  
SE-100 64 Stockholm  
Tel: +46 8 55 55 24 00  
info@svanen.se  
www.svanen.se

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## What is a Nordic Swan Ecolabelled panel and moulding for interior use?

Nordic Swan Ecolabelled panels and mouldings for interior use have a reduced environmental and climate impact throughout their lifecycle – and strict requirements for recycled materials, chemicals and quality promote circular economy.

Nordic Swan Ecolabelled panels and mouldings fulfil all requirements for materials in Nordic Ecolabelling criteria for buildings, renovations, floors, and furniture and fitments.

Nordic Swan Ecolabelled panels and mouldings for interior use:

- Are made of a high proportion of renewable and/or recycled materials\*.
- Wood-based panels consist of timber that is legally harvested and certified under a traceability system. Furthermore, at least 70% of the timber is sourced from certified forestry.
- Meet strict requirements for chemicals used in production and for surface treatment. This means, for example, that antibacterial substances and halogenated flame retardants cannot be added.
- Meet strict requirements for emissions of formaldehyde and organic solvents. This is positive for the indoor environment.
- Have reduced climate impact which is achieved by meeting strict requirements for energy consumption.
- Are of good quality and properties are documented. This means that the panels and mouldings comply with harmonised standards in accordance with the Construction Products Regulation (EU/305/2011) or voluntary CE marking according to ETA. It also means that acoustic panels meet strict requirements for sound absorption.

*\* Except from cement-based panels which only consist of a low proportion of fibres.*

## Why choose the Nordic Swan Ecolabel?

- Panels and mouldings for interior use 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 focus 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 panels and mouldings for interior use for future environmental legislation.
- Nordic Ecolabelling provides businesses 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?

Products that may be ecolabelled in this product group (draft for consultation) must be intended for indoor use. Panels can have different applications such as walls, subfloors, ceilings, as well as being used in the production of furniture and interior design. Panels designed for wet room such as bathrooms is also part of the criteria. The products must fall into one of the categories below:

1. Panels made from renewable raw materials according to EN 13986, classes 1 and 2.
2. Melamine faced boards according to EN 14322
3. Laminate such as HPL (High Pressure Laminate) or compact laminate according to the EN 438 series.
4. Panels and mouldings, either of solid wood or consisting of the panel types indicated in any of the other points.
5. CLT (cross laminated timber) according to EN 16351
6. Glulam (glued laminated timber) according to EN 14080
7. Composite construction panels/boards
8. Gypsum plasterboard according to EN 520
9. Cement-based panels according to EN 12467
10. Acoustic ceiling- and wall panels\* for which the main function is acoustic insulation.

*\* Panels either part of the wall or ceiling construction or which is mounted directly on walls or ceilings.*

The product group does not include the following products:

- Panels and moulding for outdoor use e.g., façade and cladding. This includes i.e., wood based panels, defines in EN 13986, class 3. Panels and cladding for exterior use can be labelled according to criteria for 114 Exterior panels and cladding\*.
- A maximum of 10% by weight of the panel or moulding may consist of materials that are not required by the criteria.
- Panels where the main function is insulation against heat or cold loss.
- Hard covering products such as tiles, clinker made of natural stone, agglomerated stone, ceramic or precast concrete/cement.
- Acoustic panels which can be installed directly on an office desk or between office desks (partitions) can be labelled according to the criteria for Nordic Ecolabelling for Furniture and fitments\*.
- Fully prefabricated wall elements e.g., wall systems complete with structural framing, water/air/vapor barrier(s), insulation, and interior/exterior panels.
- Flooring. These can be labelled according to the criteria for Nordic Ecolabelling of Floor coverings\*.

- Kitchen and bathroom worktops. These can be labelled according to the criteria for Nordic Ecolabelling for Furniture and fitments\*.

\* See <https://www.nordic-swan-ecolabel.org/criteria/>

If there is a desire for ecolabelling other types of panels than those covered by the product group definition, 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.

Nordic Ecolabelling determines whether a product can be Nordic Swan Ecolabelled, and under which criteria a product can apply for a licence.

## 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 addresses see page 3.

### What is required?

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

In this criteria document 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 visit 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 page 2 for addresses. Further information and assistance (such as calculation sheets or electronic application help) is available. Visit the relevant national website for further information.

## 1.1 Definitions

The first time a term is used in the document, it is written in **bold font** or with a reference to this definition list.

<b>Words/Terms</b>	<b>Definitions</b>
<b>ADt</b>	ADt is dry, solid content of pulp and paper. ADt for pulp is 90%, while ADt for paper means a solid content of 94%.
<b>Cement-based panels</b>	Example of cement-based panels: - Cement-based panels according to EN13986 - Fibre-cement flat sheets according to EN 12467 - Wood wool cement boards according to EN 13168
<b>CITES</b>	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.
<b>CoC</b>	Chain of Custody – certification that ensures traceability in the supply chain.
<b>COD</b>	Chemical oxygen demand. A measure of how much oxygen is used during chemical degradation of organic matter.
<b>Decor paper</b>	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.
<b>Dry conditions (Service Class 1)</b>	Conditions corresponding to Service Class 1 of EN 1995-1-1 (Eurocode 5) which are characterised by a moisture content in the material corresponding to a temperature of 20°C and a relative humidity in the surrounding air only exceeding 65% for a few weeks per year.
<b>EPD</b>	A product specific EPD according to the standard ISO 14025 and EN 15804 is a third-party verified document based on product category rules (PCR) and life cycle assessment (LCA).
<b>FDG gypsum</b>	FDG gypsum means gypsum from flue gas desulphurisation.
<b>Fibre-cement flat sheets</b>	Defined in EN 12467

<b>FSC</b>	Forest Stewardship Council Certification scheme for forestry and traceability in the supply chain.
<b>Gypsum plasterboard</b>	Gypsum plasterboard means a gypsum-based core material sold in the form of sheets for the purpose of finishing the interior surfaces of walls, ceiling, or floor prior to the application of paint, wallpaper, or other coating. Gypsum plasterboard's purpose can also be acoustic. It includes paper-faced, water-resistant, noise-resistant and fire-resistant and fibre reinforced gypsum board.
<b>Humid conditions (Service Class 2)</b>	Conditions corresponding to Service Class 2 of EN 1995-1-1 (Eurocode 5) which are characterised by a moisture content in the material corresponding to a temperature of 20°C and a relative humidity in the surrounding air only exceeding 85% for a few weeks per year.
<b>IFL</b>	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.
<b>Ingoing substances and impurities</b>	<b>Ingoing substances:</b> 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.  <b>Impurities:</b> 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.
<b>IUCN</b>	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.
<b>Laminate</b>	Laminate means a process in which paper is used in the product, e.g. melamine, HPL or compact laminate.
<b>Lignocellulose raw materials</b>	Lignocellulose refers to plant dry matter (biomass), so called lignocellulosic biomass such as straw, hemp, linen and bagasse
<b>Mineral wool</b>	Insulation wool manufactured from molten rock, slag or glass
<b>Nanomaterial</b>	'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

	<p>these particles in the number-based size distribution fulfil at least one of the following conditions:</p> <p>(a) one or more external dimensions of the particle are in the size range 1 nm to 100 nm;</p> <p>(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;</p> <p>(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.</p>
<b>PEFC</b>	<p>Programme for the Endorsement of Forest Certification</p> <p>Certification scheme for forestry and traceability in the supply chain</p>
<b>VOC</b>	<p>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).</p>
<b>Recycled materials</b>	<p>Recycled materials are defined according to ISO 14021 in the following two categories:</p> <p>"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, reclamation and granulation) before it can be recycled, to be pre-consumer/commercial material. This is whether it is produced in-house or externally.</p> <p>"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.</p> <p>Materials that are approved as input in FSC Recycled and which are covered by the term Reclaimed in FSC are regarded as recycled material.</p>
<b>Self-generated energy</b>	<p>Self-generated energy refers to energy (electricity and heat) not purchased from an external supplier. For example, if the panel production has an energy surplus that is sold as electricity, steam or heat, the sold amount can be deducted from the energy consumption. Internally produced fuel sources and residual products are not regarded as self-generated energy.</p>

<b>Wood based panels</b>	<p>Example of wood-based panels:                      Particleboard                      MDF (Medium Density Fibreboard)                      HDF (High Density Fibreboard)                      MFB (Melamine Faced Board)                      Plywood                      OSB (Oriented Stranded Board)                      Flaxboard                      LVL (Laminated Veneer Lumber)                      SWP (Solid Wood Panel), Kerto LVL products are CE marked according to standard EN 14374.                      Cement bonded particleboard</p>
<b>Wood wool acoustic panels</b>	Defined in EN 13168

## 1.2 Overview of the requirements

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

Requirement area	Requirement/Material	Requirement	Responsibility for documentation
Description of product and production process	General requirements	O1	Product manufacturer
<b>Quality</b>			
Product requirements	Quality and properties	O2	Product manufacturer
Acoustic panels	Acoustic performance	O3	Product manufacturer
<b>Raw materials</b>			
Wood raw material	Wood, cork and bamboo	O4 O5	Product manufacturer/Subcontractor Product manufacturer
	Recycled wood raw material	O6	Product manufacturer/Subcontractor
Lignocellulose raw materials	Lignocellulose raw materials	O7	Product manufacturer/Subcontractor
Paper	Ecolabelled paper	O8	Product manufacturer
	Raw materials, chemicals, and emissions in manufacturing of pulp and paper	O9-O12	Manufacture Product manufacturer of pulp and paper
Textile/fabric	Ecolabelled textile	O13	Product manufacturer
	Fibres in textiles	O14-O16	Product manager/supplier of textile/fibres
Plastic	Recycled plastic raw materials	O17-O20	Product manager/supplier of recycled plastics
Wood plastic composite (WPC)	Raw materials	O21-O23	Product manufacturer
Mineral raw materials	Responsible sourcing	O24	Product manufacturer
	Heavy metals	O25	Supplier of mineral raw materials
Gypsum	Raw materials	O26	Product manufacturer
Mineral wool	Mineral wool raw materials	O27	Product manufacturer
	Mineral wool raw materials	O28	Manufacture of mineral wool
Metal	Aluminium	O29	Supplier of aluminium

<b>Chemicals</b>			
Chemicals in production	Classification of chemical products	O30	Manufacturer/supplier of chemical product
	Classification of ingoing substances	O31	Manufacturer/supplier of chemical product
	Prohibited substances	O32	Manufacturer/supplier of chemical product
	Antibacterial substances	O33	Product manufacturer and manufacturer/supplier of chemical product
	Nanomaterials	O34	Manufacturer/supplier of chemical product
	Preservatives	O35	Manufacturer/supplier of chemical product
	VOCs in adhesives	O36	Manufacturer/supplier of chemical product
	Free formaldehyde	O37	Manufacturer/supplier of chemical product
Chemicals – surface treatment	Plastic foiling	O38	Product manufacturer
	Classification of chemical products	O39	Manufacturer/supplier of chemical product
	UV curing surface treatment system	O40	Supplier/performer of surface treatment
	Classification of ingoing substances	O41	Manufacturer/supplier of chemical product
	Prohibited substances	O42	Manufacturer/supplier of chemical product
	Antibacterial substances	O43	Product manufacturer and manufacturer/supplier of chemical product
	Nanomaterials	O44	Manufacturer/supplier of chemical product
	Preservatives	O45	Manufacturer/supplier of chemical product
	Free formaldehyde	O46	Manufacturer/supplier of chemical product
	Application method and quantity applied – surface treatment	O47	Supplier/performer of surface treatment
	Volatile organic compounds (VOC)	O48	Supplier/performer of surface treatment
<b>Emissions</b>			
Emissions from product	Formaldehyde and VOC emissions	O49	Product manufacturer
Emissions from production – COD	Emissions of COD from wet processes	O50	Product manufacturer
Emissions from production – working environment	Emissions to air from production – HPL and compact laminate	O51	Laminate manufacturer
	Emissions of dust	O52	Product manufacturer
<b>Climate and energy</b>			
Pulp and paper	Pulp and paper production included in HPL and compact laminate	O53	Manufacturer of pulp and paper
Laminate	Laminate	O54	Laminate manufacturer
Wood-based panels	Wood-based panels	O55	Panel manufacturer and wood suppliers (drying process)

Panels from lignocellulose raw materials	Panels – other lignocellulose raw materials	O56	Product manufacturer
CLT and glulam		O57	Product manufacturer and wood suppliers (drying process)
Solid wood panels and mouldings	Solid wood	O58	Product manufacturer and wood suppliers (drying process)
Wood Plastic Composite (WPC)	Wood Plastic Composite panels	O59	Product manufacturer
Gypsum plaster boards	Gypsum plaster boards	O60	Product manufacturer
Mineral wool	Stone- and glass wool	O61	Manufacturer of mineral wool
Mineral wood-based panels	Mineral wood-based panels - acoustic panels	O62	Product manufacturer
Cement	Cement	O63	Manufacturer of cement
Cement-based panels	Cement-based panels	O64	Product manufacturer
Panels made of other materials	Panels made of other materials	O65	Product manufacturer
<b>Circularity</b>			
Information to costumer	Information	O66	Product manufacturer
Maintenance	Maintenance	O67	Product manufacturer
Take-back system		O68	Product manufacturer
<b>Innovation</b>			
	Innovation requirements	O69	Product manufacturer
<b>Other requirements</b>			
	Maintenance of the Nordic Swan Ecolabel licence	O70–O71	Product manufacturer/licensee

### 1.3 Product information

This chapter contains product specification such as description of the product, material composition and production methods/process.

#### O1 Description of the product

Applicants must provide the following information about the product:

- Trade name(s) and brand name(s)
  - Description of the product(s) and materials/raw materials included. The total weight of the product and the weight of the constituent materials/raw materials must be stated.
  - Description of production methods/treatment techniques.
  - Description of subcontractors, including the name of their business, production site, contact and the production steps carried out.
  - Names of chemical products used in the production and any surface treatment (including products used by any subcontractors).
- Description of the points above.
- Product sheets or equivalent information. A flow chart is recommended to explain the production process.

## 1.4 Quality

### O2 Quality and properties

#### **Products covered by a harmonised standard**

Products covered by a harmonised standard in accordance with the Construction Products Regulation (EU/305/2011) must document the features and functions with which the product is marketed.

#### **Products not covered by harmonised standard**

Products not covered by a harmonised product standard must document the features and functions of the product with one of the following options:

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

- ☒ For products covered by a harmonised product standard, state which product standard(s) the product is covered by and submit example of CE marking and the declaration of performance.
- ☒ For products that are not covered by a harmonised standard, a declaration of performance must be submitted in accordance with an ETA or other third-party verification of the product's performance.

### O3 Acoustic panels, acoustic performance

An acoustic panel must achieve a minimum sound absorption class A or B according to EN ISO 354 and EN ISO 11654.

- ☒ Test report according to EN ISO 354 and EN ISO 11654 showing compliance with the requirement.

## 1.5 Raw materials

The requirements in this chapter concern requirements for raw materials used in panels and mouldings.

The requirements only apply to raw materials that are included by **more than 5 wt%** of the panel.

Panels consisting of different types of raw materials need to comply with the specific raw material requirements e.g., a wood wool acoustic panel must comply with requirements for wood raw materials and cement.

### 1.5.1 Wood raw materials

#### O4 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)

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.

\* [https://www.nordic-swan-ecolabel.org/pulp-paper-declaration-portal/what-can-be-declared/forestry-requirements/forestry\\_requirements\\_2020/](https://www.nordic-swan-ecolabel.org/pulp-paper-declaration-portal/what-can-be-declared/forestry-requirements/forestry_requirements_2020/)

- Enter the names of the tree species included in the product.
- Declaration from the applicant/manufacture/supplier that tree species listed on a)–d) are not used in the product.
- If species from the lists b), c) or d) are used:
- Valid FSC/PEFC Chain of Custody certificate from supplier/applicant/manufacture 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/manufacture/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/manufacture/supplier must document that the tree species does not originate from FSC or PEFC certified plantations established after 1994.

## 05 Traceability and certification

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

### **Species name**

The applicant/manufacture 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 particleboards:

- 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\* and
- a minimum of 50% of the wood raw material in Nordic Swan Ecolabelled particleboard must consist of post consumed recycled raw material\*.

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 their accounting system to control and meet the required certified content in Nordic Swan Ecolabelled products.

*\*See Terms and definitions.*

- The names (species names) of the wood raw material, bamboo and cork that are 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% 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% 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.
- Particleboards: The applicant/manufacturer must provide documentary evidence that at least 50% of the wood raw material in Nordic Swan Ecolabelled particleboard consist of post consumed recycled raw 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.

## O6 Chemicals – recycled material in wood-based panels

Recycled material in wood-based panels must meet the requirements of the European Panel Federation's (EPF) Standard for delivery conditions of recycled wood<sup>1</sup>.

This means that the materials must not come from

- Treated wood: wood that contains halogenated organic compounds or heavy metals as a result of treatment with wood preservatives.
- 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.

- Certification or declaration of compliance with the EPF's Standard for delivery conditions of recycled wood.

### 1.5.2 Lignocellulose raw materials (other than wood)

This requirement concerns panels made from lignocellulose raw materials such as straw, flax or hemp.

## O7 Lignocellulose raw materials (other than wood)

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

The renewable raw materials must be waste\* or residual products\* from other production systems, e.g., straw from grain production.

\* *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.*

- Name and geographic origin of the renewable raw materials.
- Description of the raw material showing that it is a residual or waste product.

<sup>1</sup> <https://europanel.org/issues/standards/>, visited December 2022

### 1.5.3 Paper and cellulose fibre

The requirements in this chapter comprise raw materials, chemical and emissions in production of pulp and paper used in panels. Pulp and paper are used in several types of panels such as kraft- and decor paper used in HPL/ compact laminate, layers of paper in gypsum plaster boards and sound absorbing material in acoustic panels.

#### O8 Ecolabelled paper

If the paper is ecolabelled with the Nordic Swan Ecolabel or the EU Ecolabel, all requirements in this chapter 1.5.3 is fulfilled.

- Nordic Swan Ecolabelled or EU Ecolabelled textile: Submit name of paper, manufacturer, and licence number. Appendix 3 may be used.

#### O9 Tree species – restrictions (pulp and paper)

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)

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.

\* [https://www.nordic-swan-ecolabel.org/pulp-paper-declaration-portal/what-can-be-declared/forestry-requirements/forestry\\_requirements\\_2020/](https://www.nordic-swan-ecolabel.org/pulp-paper-declaration-portal/what-can-be-declared/forestry-requirements/forestry_requirements_2020/)

- Enter the names of the tree species included in the product. Appendix 3 may be used.
- Declaration from the applicant/manufacturer/supplier that tree species listed on a)–d) are not used in the product.
- 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.

## O10 Traceability and certification of wood raw materials (pulp and paper)

### Species name

The applicant/manufacturer of the panel (containing pulp or laminate) or pulp/paper supplier must state the name (species name) of the fibre raw material used in the pulp/paper.

### Chain of Custody certification

All wood raw material used in the pulp or laminate must be covered by a valid Chain of Custody certificate in accordance with FSC/PEFC schemes.

The manufacturer/supplier of the pulp or laminate must have valid FSC/PEFC CoC certification.

### Certified fibre raw material

A minimum of 70% by weight/volume of the fibre raw material used in the pulp or laminate must come from forests that are managed in accordance with sustainable forestry management principles that meet the requirements of the FSC or PEFC Chain of Custody schemes, and/or be recycled raw material\*.

The remaining proportion shall be covered by FSC/PEFC's control schemes (FSC controlled wood/PEFC controlled sources) or be recycled material\*.

\* *See Definitions*

- Name (species name) of the fibre raw material used. Appendix 3 may be used.
- The manufacturer/supplier of the pulp and laminate must present a valid FSC/PEFC CoC certificate, which includes all fibre raw material used in the pulp or laminate.
- The panel manufacturer must document that pulp or laminate is purchased from a CoC FSC/PEFC certified subcontractor and provide documentation that the certification requirement of at least 70% certified raw materials has been met, and the remaining proportion is covered by FSC/PEFC's control schemes (FSC controlled wood/PEFC controlled sources. This must be specified on the invoice/delivery note with certification claim.
- Valid Nordic Swan Ecolabel and or EU Ecolabel licence certificate for paper.

## O11 Chemicals in the manufacture of pulp and paper

Chemicals used in the manufacture of pulp and paper must meet the requirements contained in the Chemical Module for Nordic Ecolabelling of paper, Version 3, or later versions.

- Declaration from the manufacture of pulp and paper that the requirement is met. Appendix 3 may be used.

## O12 COD emissions from the production of paper and pulp

COD (Chemical Oxygen Demand) emissions to water must be less than the stated COD value in the table below. A description of the preparation and analysis methods is provided in Appendix 1.

The COD is calculated by adding up COD emissions from pulp and paper:  
COD mass (kg/ADt) + COD emissions paper machine (kg/ADt).

For paper produced from mixtures of chemical, recycled fibre and mechanical pulps, a weighted limit value is calculated from the proportion of the various pulp types. In the weighted calculation, the percentage of COD emissions from the paper machine must be set to 1 kg/ADT.

*For example, for 60% unbleached chemical mass and 40% recycled pulp, the calculation is:  $(14-1 \times 0.6) + (4-1 \times 0.4) = 7.8 + 1.2 = 9.0 \text{ kg/ADT}$*

Pulp types	Total COD emissions for both pulp and paper (kg/ADt)
Unbleached chemical pulp	14.0
CTMP pulp	19.0
TMP/groundwood pulp	7.0
Recycled fibre pulp	4.0

- Information about the types of pulp used in the production of paper. Appendix 3 may be used.
- If pulp that has been checked in accordance with Nordic Ecolabelling's Basic Module for paper is used: Description of the producer, production site and name of the pulp.
- Description of the sampling procedure including measurement methods and measurement results in the last 12 months from the producers of the paper and pulp.
- Calculation from the producers of the paper and pulp showing that the total emissions of COD are below the relevant limit value in the requirement.

### 1.5.4 Textile/fabric

The requirements apply to textiles/fabric used as an outer layer on the panel or textile/fabric used as sound absorbing material in the panel. Textile/fabric can be made from both natural and synthetic fibres such as cotton, viscose, silk, polyester, and wool used in panels.

## O13 Ecolabelled textile

If the textile is ecolabelled with Nordic Swan Ecolabel or EU Ecolabel, all requirements in this chapter 1.5.4 is fulfilled.

- Nordic Swan Ecolabel or EU Ecolabelled textile: Submit name of textile, manufacturer, and licence number.

## O14 Cotton, other natural seed fibers of cellulose or wool

Cotton, other natural seed fibres of cellulose (including kapok) or wool shall not come from genetically modified organisms (GMO) and must be one of the following or a combination (where the different types of certified cotton must add up to 100%) of:

- organically cultivated\* or
- recycled\*\* or
- GOTS certified or
- grown in compliance with one of the following standards: BCI (Better Cotton Initiative), CmiA (Cotton made in Africa) or FairTrade for cotton.

*\*Organic means cotton that is certified organic or is grown during the transition period to organic cultivation in accordance with a standard approved in the IFOAM Family of Standards. See definitions for more details.*

*\*\* see Terms and definitions.*

- A valid certification showing that the cotton in the Nordic Swan Ecolabelled product has been organically grown or grown in compliance with the standards in the requirement. If the GOTS certification is held by the subcontractor, a transaction certificate is required showing that the product being shipped is GOTS certified. Documentation for BCI cotton must show traceability back to the BCI farmers.

Documentation for recycled fibre must be either a or b:

- a) Certificate showing that the raw material is 100% recycled (post- and/or pre-consumer) with Global Recycled Standard certificate 4.0 (or later versions), Recycled Claim Standard (RCS) or other equivalent certification approved by Nordic Ecolabelling.
- b) Present documentation demonstrating that the recycled fibre was purchased as 100% recycled (post- and / or pre-consumer) and state the supplier.

## O15 Recycled fibres: Synthetic fibres

Synthetic fibres must comprise of 100% recycled material\*. This must not include recycled plastic form plants that are EFSA\*\* or FDA\*\*\* approved as food contact material or marketed as compatible with these.

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 stating the producer of the recycled raw material and documenting that the feedstock used in the raw material is 100% recycled material, see definition in requirement.

*\* See Terms and definitions.*

*\*\* In line with Commission Regulation (EC) No 282/2008 of 27 March 2008 on recycled plastic materials and articles intended to come into contact with foods.*

*\*\*\* In line with the Code of Federal Regulations Title 21: Food and Drugs, PART 177 – Indirect food additives: polymers.*

- ☒ Declaration from the producer of the recycled raw material that the raw material is not EFSA or FDA approved, see requirement.
- ☒ a) Certificate from an independent certifier of the supply chain (e.g., Global Recycled Standard or Recycled Claim Standard).
- ☒ b) Documentation from the producer, showing that the feedstock used in the raw material is 100% recycled material, see definition in requirement.
- ☒ Documentation showing that 100% of the synthetic fibers are recycled materials.

## O16 Recycled fibres - test for harmful substances

Recycled fibres shall not contain the following substances above the limits stated in the table below.

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 complied with.

The following are exempted from this requirement:

- Material from PET bottles originally approved for food contact.
- Fibres from chemically recycled polymers, if it can otherwise be documented that the process ensures, that the requirement limits are complied with.
- Fibres, where it can be documented that they originate from type I (according to standard ISO 14024) eco-labelled products.

Substance/substance group	Max. limit	Test method
<b>Extractable metals</b>		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	
<b>Organic tin compounds</b>		
TBT and TPhT	0.5 mg/kg	
<b>Phthalates</b>		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%	

<b>PAHs (Polycyclic aromatic hydrocarbons)</b>		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	
<b>Flame retardants</b>		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	
<b>Chlorophenols</b>		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	
Dichlorophenol	3.0 mg/kg	
Monochlorophenol	3.0 mg/kg	
<b>Per- and polyfluorinated compounds</b>		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	
<b>Dyes</b>		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	

- 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 complied with.
- ☒ When using the exemption for material from PET bottles, this must be documented by the fibre supplier.
- ☒ When using an exemption for fibres from earlier type I ecolabelled textiles, this must be documented by the fibre supplier.

### 1.5.5 Plastic

The requirements in this chapter comprise plastic used in panels e.g., face sheets, layers/membranes or core material used for sound absorbing such as expanded polystyrene (EPS), extruded polystyrene (XPS), polyisocyanurate (PIR) or Polyurethane (PU). Polyester made from recycled plastic must comply with requirements for textile in section 1.5.4.

#### O17 Recycled plastic

100 wt% of the plastic in the panel or moulding must consist of recycled\* plastic. The recycled plastic must not contain:

- recycled plastic from plants that are EFSA\*\* or FDA\*\*\* approved as food contact material or marketed as compatible with these.
- recycled plastic must not be PVC or PVDC.

\* See *Terms and definitions*.

\*\* *In line with Commission Regulation (EC) No 282/2008 of 27 March 2008 on recycled plastic materials and articles intended to come into contact with foods.*

\*\*\* *In line with the Code of Federal Regulations Title 21: Food and Drugs, PART 177 – Indirect food additives: polymers*

- ☒ Manufacturers of recycled raw materials must be stated.
- ☒ Description and documentation from manufacturers of recycled raw materials showing that the plastic is recycled in compliance with the requirement's definition or has Global Recycled Standard certification or EuCertPlast certification, showing that the raw materials are recycled, or other equivalent certification approved by Nordic Ecolabelling.

#### O18 Chemicals in recycled plastics

Recycled plastic must not contain:

- halogenated flame retardants
- cadmium
- lead
- mercury
- chromium VI
- arsenic

- phthalates
  - Impurities up to 100 ppm are permitted.
- ☒ A test report (XRF, X-ray fluorescence or equivalent method) from the supplier of the recycled plastic showing compliance with the requirement. Alternatively, the requirement can be documented with traceability to the source to substantiate that these substances are not included.

## O19 Additives - prohibited substances

Additives in the list below must not be added to plastic (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. The requirement also covers substances that are added during re-compounding of recycled plastic raw materials.

- CMR substances - Carcinogenic, Germ cell mutagenicity, Reproductive toxicity category 1A or B or category 2
  - 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 on the Candidate List\*
- Substances evaluated by the EU to be persistent, bioaccumulative, and toxic (PBT) or very persistent and very bioaccumulative (vPvB), in accordance with the criteria in Annex XIII of REACH\*\*.
- Endocrine disruptors:
  - Substances considered to be potential endocrine disruptors in category 1 or 2 on the EU's priority list of substances for further evaluation of their role in endocrine disruption. See the following link:  
[http://ec.europa.eu/environment/chemicals/endocrine/strategy/being\\_en.htm](http://ec.europa.eu/environment/chemicals/endocrine/strategy/being_en.htm) (Annex L, page 238 onwards)
  - Substances on the EU member state initiative "Endocrine Disruptor Lists", List I and III. See the following links:  
<https://edlists.org/the-ed-lists/list-i-substances-identified-asendocrine-disruptors-by-the-eu> and <https://edlists.org/the-ed-lists/list-iii-substances-identified-asendocrine-disruptors-by-participating-national-authorities>
- Halogenated organic compounds with the following exceptions:
  - 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
- Butylhydroxytoluene (BHT, CAS No. 128-37-0)
- Aziridine and polyaziridines
- Short-chain chlorinated paraffins (C10-C13) and medium-chain chlorinated paraffins (C14-C17).

- Perfluoroalkyl and polyfluoroalkyl substances (PFASs)
- Alkylphenols, alkylphenol ethoxylates (APEO) and other alkylphenol derivatives (APD)\*\*.
- Brominated flame retardants.
- Phthalates\*\*\*\*
- Pigments and additives based on lead, cadmium, arsenic, chromium (VI), mercury and their compounds.
- Bisphenols and bisphenol derivatives
  - Bisphenol A used in the production of epoxy acrylate is not covered by the requirement.
  - 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>
- Organotin compounds.

*\*The Candidate List is available on the ECHA website:*

<http://echa.europa.eu/candidate-list-table>

*\*\*PBT and vPvB in accordance with the criteria in Annex XIII of REACH*

*\*\*\*Alkylphenol derivative*

*\*\*\*\*Phthalates are esters of 1,2 benzenedicarboxylic acid (orthophthalic acid)*

- Safety data sheet for additives in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).
- A declaration from the plastics manufacturer.

## O20 Manufacture of ESP, XPS, PIR and Polyurethane (PU)

CFC, HCFC, HFC, methylene chloride or other halogenated organic compounds must not be used as blowing agents.

Protective measures must be taken when handling isocyanates to reduce employee exposure as far as possible. 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/m<sup>3</sup>)
- 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/m<sup>3</sup>)

*\*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 declaration from the manufacturer of EXP, XPS, PIR or polyurethane PU foam stating which blowing agent has been used.
- A description of the safety measures taken and the statutory Workplace Exposure Limits for isocyanates in the country of manufacture. 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.

### 1.5.6 Wood-plastic composite material (WPC)

The requirement in this chapter comprise panels made of wood-plastic composite (WPC) and covers requirements for wood- and plastic raw materials, additives added to the production process and material recovery of WPC. WPC panels shall not comply with other requirements for wood raw materials in section 1.5.1 or plastic in section 1.5.5.

#### O21 Wood fibre and plastic

The subsidiary requirements below must be fulfilled by the raw materials of plastic and wood fibre in the wood-plastic composite material:

- a) The plastic raw material in WPC must be 100% post-consumer recycled plastic.
- b) The recycled plastic must not be PVC, PVDC or PET.
- c) The wood/cellulose fibre must be 100% post-consumer recycled materials. In addition, the wood/cellulose fibre must not originate from wood impregnated with biocides or heavy metals.

☒ From the manufacturer of WPC:

- For Plastic raw materials: State the proportion and type of post-consumer recycled plastic according to the requirement.
- For wood/cellulose fibres: State the proportion of post-consumer recycled wood/cellulose fibres according to the requirement.

☒ From the supplier of recycled plastic raw materials.

- Declaration that the plastic is 100% post-consumer recycled and does not contain PVC, PVDC or PET.

#### O22 Additives - prohibited substances

Additives in the list below must not be added during WPC production. The requirement applies to additives actively added to the polymer raw material in the master batch or compound in production of plastic. The requirement also covers substances that are added during re-compounding of recycled plastic raw materials.

- CMR substances - Carcinogenic, Germ cell mutagenicity, Reproductive toxicity category 1A or B or category 2
  - An exemption is made for titanium dioxid (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 on the Candidate List\*
- Substances evaluated by the EU to be persistent, bioaccumulative, and toxic (PBT) or very persistent and very bioaccumulative (vPvB), in accordance with the criteria in Annex XIII of REACH\*\*.

- Endocrine disruptors:
  - Substances considered to be potential endocrine disruptors in category 1 or 2 on the EU's priority list of substances for further evaluation of their role in endocrine disruption. See the following link:  
[http://ec.europa.eu/environment/chemicals/endocrine/strategy/being\\_en.htm](http://ec.europa.eu/environment/chemicals/endocrine/strategy/being_en.htm) (Annex L, page 238 onwards)
  - Substances on the EU member state initiative "Endocrine Disruptor Lists", List I and III. See the following links:  
<https://edlists.org/the-ed-lists/list-i-substances-identified-asendocrine-disruptors-by-the-eu> and <https://edlists.org/the-ed-lists/list-iii-substances-identified-asendocrine-disruptors-by-participating-national-authorities>
- Halogenated organic compounds with the following exceptions:
  - 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
- Butylhydroxytoluene (BHT, CAS No. 128-37-0)
- Aziridine and polyaziridines
- Short-chain chlorinated paraffins (C10-C13) and medium-chain chlorinated paraffins (C14-C17).
- Perfluoroalkyl and polyfluoroalkyl substances (PFASs), e.g., PFOA and PFOS
- Alkylphenols, alkylphenol ethoxylates (APEO) and other alkylphenol derivatives (APD)\*\*.
- Brominated flame retardants.
- Phthalates\*\*\*\*
- Pigments and additives based on lead, cadmium, arsenic, chromium (VI), mercury and their compounds.
- Bisphenols and bisphenol derivatives
  - Bisphenol A used in the production of epoxy acrylate is not covered by the requirement.
  - 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>
- Organotin compounds.

*\*The Candidate List is available on the ECHA website:*

*<http://echa.europa.eu/candidate-list-table>*

*\*\*PBT and vPvB in accordance with the criteria in Annex XIII of REACH*

*\*\*\*Alkylphenol derivative*

*\*\*\*\* Phthalates are esters of 1,2 benzenedicarboxylic acid (orthophthalic acid)*

- Safety data sheet for additives in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).
- A declaration from the plastics/rubber/silicon manufacturer.

### O23 Material recovery in WPC

- a) The products must be labelled with information about composite material and main component parts. The labelling must be placed in the product sheet/technical documentation and on the actual WPC material/profile.
- b) The WPC-manufacturer must offer the possibility to return waste material after use (cut-offs, leftovers, demolition waste, returns, incorrect orders, etc.) to fully reintroduce this into the production of new wood-plastic composite. This service must be communicated to customers.
- An image of the labelling stating composite material and the main component parts. The labelling must be placed in the product sheet/technical documentation and on the actual WPC material/profile.
- Declaration from the WPC manufacturer describing the possibility to return waste material after use (cut-offs, leftovers, demolition waste, returns, incorrect orders) to be recycled in the production of new wood plastic composite. Example on how this is communicated to customers.

## 1.5.7 Mineral raw materials

The requirement in this chapter covers sourcing of virgin mineral raw materials and content of heavy metals in the mineral raw materials. The requirements apply to virgin minerals such as gypsum, limestone, volcanic rocks, and silica used in panels such as gypsum plasterboards, cement-based panels and acoustic panels containing mineral wool.

### O24 Responsible sourcing of virgin mineral raw materials

The licensee must:

- have a supply chain policy/code of conduct for responsible sourcing of mineral raw materials such as gypsum, limestone, volcanic rocks, and silica. The policy must concern biodiversity and deforestation risk - reducing impact to biodiversity along the whole supply chain. The policy must be both public and communicated to the supply chain.
- have a process to identify all specific mining operations (quarries) where the minerals are extracted from.
- ensure that virgin mineral raw materials used in panels come from mining operations (quarries) with documented biodiversity management and rehabilitation plans.
- The most recent version of the public policy and a description of how it is communicated to the supply chain.
- List of mining operations supplying virgin minerals to the ecolabelled panel.
- Documentation/description of the supplying mining operations biodiversity management and rehabilitation plans.

## O25 Heavy metals

Mineral raw materials or mineral biproducts must not exceed the quantities of heavy metals indicated in the table below in accordance with indicated test method:

Heavy metal	Partial opening of the test sample EN 259 Maximum content mg/kg	Total opening of the test sample EN 13656 Maximum content mg/kg
Arsenic	10	30
Lead	25	25
Cadmium	1	10
Mercury	0,5	0,5
Chrome (total)	300	300

- The declaration from the raw materials producer/-refiner, containing measurement results, measurement methods and measurement frequency.

## 1.5.8 Gypsum

### O26 Recycled gypsum plasterboard

At least 30% by weight of the gypsum in the product must consist of recycled gypsum\*

The requirement may be documented as an annual average of the production of Nordic Swan Ecolabelled plasterboards.

*\*Waste gypsum from demolition, recycling stations and building construction waste. (FDG gypsum or synthetic gypsum is not defined as recycled gypsum)*

- Documentation (calculation) from the applicant showing that the requirement for share of recycled gypsum has been reached.

## 1.5.9 Mineral wool

The requirements in this chapter comprise mineral wool (stone- and glass wool).

### O27 Recycled mineral wool

At least 45% by weight of the stone wool in the product must consist of recycled materials\*

At least 85% by weight of the glass wool in the product must consist of recycled materials\*

The requirement may be documented as an annual average of the production of mineral wool used in Nordic Swan Ecolabelled panels.

\*See terms and definitions

- Documentation (calculation) from the applicant showing that the requirement for share of recycled glass- or stone wool has been reached.

### O28 Additives - prohibited substances

Additives in the list below must not be added the production of mineral wool such as oils, bonding agents, and stabilisers:

- CMR substances - Carcinogenic, Germ cell mutagenicity, Reproductive toxicity category 1A or B or category 2
  - An exemption is made for titanium dioxid (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 on the Candidate List\*
- Substances evaluated by the EU to be persistent, bioaccumulative, and toxic (PBT) or very persistent and very bioaccumulative (vPvB), in accordance with the criteria in Annex XIII of REACH\*\*.
- Endocrine disruptors:
  - Substances considered to be potential endocrine disruptors in category 1 or 2 on the EU's priority list of substances for further evaluation of their role in endocrine disruption. See the following link:  
[http://ec.europa.eu/environment/chemicals/endocrine/strategy/being\\_en.htm](http://ec.europa.eu/environment/chemicals/endocrine/strategy/being_en.htm) (Annex L, page 238 onwards)
  - Substances on the EU member state initiative "Endocrine Disruptor Lists", List I and III. See the following links:  
<https://edlists.org/the-ed-lists/list-i-substances-identified-asendocrine-disruptors-by-the-eu> and <https://edlists.org/the-ed-lists/list-iii-substances-identified-asendocrine-disruptors-by-participating-national-authorities>
- Halogenated organic compounds with the following exceptions:
  - 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
- Butylhydroxytoluene (BHT, CAS No. 128-37-0)
- Aziridine and polyaziridines
- Short-chain chlorinated paraffins (C10-C13) and medium-chain chlorinated paraffins (C14-C17).
- Perfluoroalkyl and polyfluoroalkyl substances (PFASs)
- Alkylphenols, alkylphenol ethoxylates (APEO) and other alkylphenol derivates (APD)\*\*\*
- Brominated flame retardants.
- Phthalates\*\*\*\*
- Pigments and additives based on lead, cadmium, arsenic, chromium (VI), mercury and their compounds.
- Bisphenols and bisphenol derivatives
  - Bisphenol A used in the production of epoxy acrylate is not covered by the requirement.
  - 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>

- Organotin compounds.

*\*The Candidate List is available on the ECHA website:*

<http://echa.europa.eu/candidate-list-table>

*\*\*PBT and vPvB in accordance with the criteria in Annex XIII of REACH*

*\*\*\*Alkylphenol derivative*

*\*\*\*\* Phthalates are esters of 1,2 benzenedicarboxylic acid (orthophthalic acid)*

- Safety data sheet for additives in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).
- A declaration from the manufacturer of mineral wool.

### 1.5.10 Metal - aluminium

The requirement in this chapter applies to aluminium such as aluminium used as frames in acoustic panels.

#### O29 Production of aluminium

The requirement can be met by documenting either A) High proportion recycled or B) Primary aluminium production. (B consist of 4 alternatives):

##### **A) High proportion recycled**

A minimum of 75% by weight of aluminium must be recycled.

*Recycled aluminium is defined as both pre- and post-consumed, cf. definition in ISO 14021.*

The requirement can be verified either by:

- A signed agreement between the aluminium supplier and the manufacturer of the Nordic Swan Ecolabelled product stating that the requirement is met, or
- eBVD or EPD based on product-specific data/data from the aluminium producer's own production specifically stating the content of recycled aluminium in the product, or
- Valid Hydro Circal certificate.

Or

##### **B) Primary aluminium production**

The requirement can be met by one of the 4 alternatives (1-4) below:

The requirement can be verified using either: direct traceability through the supply chain, mass balance approach<sup>2</sup> or by all major suppliers<sup>3</sup>.

### **1. Aluminium production – active sustainability strategy**

Aluminium used in the Nordic Swan Ecolabelled product comes from a primary aluminium producer who has an active sustainability strategy focusing on reducing energy consumption and greenhouse gas emissions. The strategy for reducing energy consumption and greenhouse gas emissions shall be quantitative and time-based, and they shall be determined by the company management.

Or

### **2. Aluminium production – low direct climate effecting emissions**

Aluminium used in the Nordic Swan Ecolabelled product comes from a primary aluminium producer whose direct climate-affecting emissions from primary aluminium production does not exceed 1,5 tonnes of CO<sub>2</sub>e/ton of aluminium produced.

or

### **3. Aluminium production – low electricity consumption for electrolysis**

Aluminium used in the Nordic Swan Ecolabelled product comes from a primary aluminium producer whose electricity consumption for electrolysis does not exceed 15.3 MWh / ton produced aluminium.

or

### **4. Aluminium production – ASI certified site**

A minimum of 50% by weight of aluminium used in the Nordic Swan Ecolabelled product comes from a production site that are certified to the ASI Performance standard<sup>4</sup>.

### **High proportion recycled (A):**

- Alternative 1: There must be a signed agreement between the producer of aluminium/supplier of aluminium and the manufacturer of the Nordic Swan Ecolabelled product stating that the requirement is met. The declaration from the supplier of aluminium can be based on purchase records/average data from several aluminium suppliers.
- Alternative 2: eBVD or EPD can be used as documentation if these are based on product-specific data/data from the aluminium producer's own production and specifically state the content of recycled aluminium in the product.

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<sup>2</sup> In case of several potential aluminium producers, the supplier of the metal components can verify the requirement by using a mass balance approach if there is an account documenting the annual volumes purchased from the individual aluminium producers. The volumes must correspond to volumes sold to the producer of Nordic Swan Ecolabelled product (e.g., cannot sell a larger volume than the corresponding quantity purchased from the individual aluminium producers)

<sup>3</sup> All major suppliers are compliant with one of the 3 alternatives. Major suppliers are here defined as suppliers delivering 75% of the total volume (w/w) of aluminium components in the Nordic Swan Ecolabelled product.

<sup>4</sup> <https://aluminium-stewardship.org/asi-standards/asi-performance-standard> (visited November 2022)

- Alternative 3: Valid Hydro Circal certificate<sup>5</sup>.

### **Primary aluminium production (B):**

Alternative 1:

- Enclose latest sustainability strategy report or equivalent documentation from the producer of primary aluminium showing fulfilment of the requirement. The producer of primary aluminium can also present specific targets from annual business report with reference to specific numbers and assumptions. Average numbers from the producer of primary aluminium with several steel melting plants is accepted.
- Information on type of traceability used to document the requirement.

Alternative 2:

- Declaration that the requirement is met, as well as calculation and indication of direct emissions in tonnes of CO<sub>2</sub>e/ton of aluminium produced.
- Information on type of traceability used to document the requirement.

Alternative 3:

- Declaration that the requirement is met, as well as calculation and indication of electricity consumption in MWh/ton produced aluminium.
- Information on type of traceability used to document the requirement.

Alternative 4:

- Enclose valid ASI Performance certificate from the primary aluminium producer.
- Information from the supplier/manufacturer of the constituent aluminium part about which aluminium parts are from certified aluminium production (purchase records).
- Information from the supplier/manufacturer of the constituent aluminium parts on type of traceability used to document the requirement.
- Documentation from the manufacturer of the Nordic Swan Ecolabelled product that the requirement for share of purchased aluminium from certified aluminium producers is fulfilled – e.g., invoices or other documentation from suppliers.

## 1.6 Chemicals

The requirements in this chapter apply to chemical products, used in the production of the Nordic Swan Ecolabelled product, such as adhesives, resins and waxes, as well as to surface treatments. The chapter is divided into 2 sub-sections:

- Requirements concerning chemicals in the production of the Nordic Swan Ecolabelled product, such as adhesives, resins and waxes, Section 1.6.1.
- Requirements concerning chemical products used for surface treatment\*, Section 1.6.2.

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<sup>5</sup> <https://www.hydro.com/en-DK/about-hydro/publications/certificates/> (November 2022)

*\*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 in Sections 1.6.1.*

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

## 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 exempt from the requirements. Ingoing substances and impurities are defined as below, unless stated otherwise.

- **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.

### 1.6.1 Chemicals used in the production of panels

The requirements in this chapter concern chemicals used in the production of the Nordic Swan Ecolabelled product itself such as adhesives, resins or additives.

#### O30 Classification of chemical products

Chemical products 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	H400
	Aquatic Chronic 1	H410
	Aquatic Chronic 2	H411
	Ozone	H420
Acute toxicity	Acute Tox 1 or 2	H300
	Acute Tox 1 or 2	H310
	Acute Tox 1 or 2	H330
	Acute Tox 3	H301
	Acute Tox 3	H311
	Acute Tox 3	H331
Specific target organ toxicity – single exposure/repeated exposure	STOT SE 1	H370
	STOT RE 1	H372

Carcinogenic <sup>1</sup>	Carc. 1A or 1B Carc. 2	H350 H351
Germ cell mutagenic <sup>1</sup>	Mut. 1A or 1B Mut. 2	H340 H341
Reproductive toxicity <sup>1</sup>	Repr. 1A or 1B Repr. 2 Lact.	H360 H361 H362

<sup>1</sup> 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).
- Classifications H350, H341, H301, H311 and H331 for adhesive products and resins containing formaldehyde (CAS no. 50-00-0). Formaldehyde emissions are regulated in a separate requirement.
- Classifications H341, H301 and H331 for resins containing a maximum of 10% by weight of phenol (CAS no. 108-95-2) used in laminate and plywood.
- 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 products are exempted from classification H411 under the following conditions: There must be a controlled closed process where no discharge to recipient takes place. Spillage and general waste (e.g. cleaning residue) must be collected in containers approved for hazardous waste and handled by a waste contractor.

- A declaration from the chemical manufacturer or supplier. Appendix 4 may be used.
- 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 general waste are handled, including information about who receives the general waste.

### O31 Classification of ingoing substances

Ingoing substances in the chemical product used in production must not be classified as in the table below.

CLP Regulation 1272/2008		
Hazard statement	Hazard class and category	Hazard code
Carcinogenic <sup>1</sup>	Carc. 1A or 1B Carc. 2	H350 H351
Germ cell mutagenic <sup>1</sup>	Mut. 1A or 1B Mut. 2	H340 H341

Reproductive toxicity <sup>1</sup>	Repr. 1A or 1B Repr. 2 Lact.	H360 H361 H362
Endocrine disruption for human health	ED HH 1 ED HH 2	EUH380 EUH381
Endocrine disruption for the environment	ED ENV 1 ED ENV 2	EUH431 EUH431
Persistent, Bioaccumulative and Toxic properties Very Persistent, Very Bioaccumulative properties	PBT vPvB	EUH440 EUH441
Persistent, Mobile and Toxic properties Very Persistent, Very Mobile properties	PMT vPvM	EUH450 EUH451

<sup>1</sup> Including all combinations of stated exposure route and stated specific effect. For example, H350 also covers the classification H350i.

Exemptions apply for:

- Adhesive 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 a separate requirement.
  - Resin containing maximum 10% by weight of phenol (CAS no. 108-95-2) classified as H341 used in laminate and plywood.
  - 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 is exempted with time limits up to and including 31.12.2024.
- A declaration from the chemical manufacturer or supplier. Appendix 4 may be used.
- A safety data sheet for the product in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).

## O32 Prohibited substances

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

- Substances on the Candidate List\*
  - Exemption applies to melamine (CAS No. 108-78-1)
- Substances that have been judged in the EU to be PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative)\*\*
- Halogenated organic compounds.
  - Exemptions apply for Bronopol, IPBC and CMIT/MIT (3:1). These are set out in requirement O35.

- Per- and polyfluoroalkyl substances (PFASs), e.g., PFOA and PFOS
- Butylhydroxytoluene (BHT, CAS No. 128-37-0)
- Aziridine and polyaziridines
- Bisphenols and bisphenol derivatives
  - Bisphenol A used in the production of epoxy acrylate is not covered by the requirement.
  - 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>
- APEO (alkylphenol ethoxylates) and APD (alkylphenol derivatives/alkylphenols) \*\*\*
- Phthalates\*\*\*\*
- Pigments and additives based on lead, tin, cadmium, chromium VI and mercury, and their compounds
- 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.*

*\* The Candidate List can be found on the ECHA website:  
<http://echa.europa.eu/candidate-list-table>*

*\*\* PBT and vPvB in accordance with the criteria in Annex XIII of REACH*

*\*\*\* Alkylphenol derivatives are defined as substances that release alkylphenols when they break down.*

*\*\*\*\* Phthalates are esters of 1,2-benzenedicarboxylic acid (orthophthalic acid).*

- A declaration from the manufacturer/supplier of the chemical product. Appendix 4 may be used.
- A safety data sheet for the product in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).

### O33 Antibacterial substances

Chemical products and nanomaterials\* with antibacterial or disinfectant properties must not be added during production.

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. Appendix 4 may be used.
- Declaration from the manufacturer/supplier of the chemical product that the product does not contain nanomaterials with antibacterial or disinfecting properties.

### O34 Nanomaterials

The chemical product must not contain nanomaterials\*.

Exemptions apply for:

- Pigments. This exemption does not include pigments added for purposes other than colouring.
- Naturally occurring inorganic fillers\*\*
- Synthetic amorphous silica (SAS). This exemption applies to non-modified SAS.
- 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 point 7 in REACH.*

- A declaration from the chemical manufacturer that the chemical product does not contain any nanomaterial. Appendix 4 may be used.

### O35 Preservatives

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

Preservative	Limit value
Bronopol	≤ 500 ppm (0.05% by weight)
IPBC (iodopropynyl butylcarbamate)	≤ 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)	≤ 15 ppm (0.0015% by weight)
MIT (2-methyl-2H-isothiazol-3-one)	≤ 100 ppm (0.01% by weight)
Total amount of isothiazolinones	≤ 500 ppm (0.05% by weight).

- A declaration from the chemical manufacturer or supplier. Appendix 4 may be used.

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

### O36 Volatile organic compounds in adhesives

Volatile organic compounds (VOC), including volatile aromatic compounds (VAH), may be present in the adhesive to a maximum of 3% by weight.

VAHs may be present in the adhesive to a maximum of 0.1% by weight.

Resin used in the production of laminate is exempted from the requirement that the laminate must meet later requirements for VOC emissions.

*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. Appendix 4 may be used.

### O37 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 later requirements concerning emissions of formaldehyde.

- A declaration from the manufacturer/supplier of the chemical product that the requirement is fulfilled. Appendix 4 may be used.

## 1.6.2 Surface treatment

The requirements in this chapter apply to surface treatment\* products such as lacquers, oils, paints, and stains. There are also requirements for foiling with plastic. Any filler used is also covered by these requirements.

*\*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 in Sections 1.6.1.*

### O38 Plastic foiling

The type of plastic used for wrapping the surface must be stated.

Foiling with chlorinated plastics such as PVC is not permitted.

Adhesives used for foiling must fulfil the requirements in Sections 1.6.1.

- State plastic type for foiling.

### O39 Classification of chemical products

The chemical products used for surface treatment must not have any of the classifications in the table below.

CLP Regulation 1272/2008		
Hazard statement	Hazard class and category	Hazard code
Toxic to the environment*	Aquatic Acute 1	H400
	Aquatic Chronic 1	H410
	Aquatic Chronic 2	H411
	Ozone	H420
Acute toxicity	Acute Tox 1 or 2	H300
	Acute Tox 1 or 2	H310
	Acute Tox 1 or 2	H330
	Acute Tox 3	H301
	Acute Tox 3	H311
	Acute Tox 3	H331
Specific target organ toxicity – single exposure/repeated exposure	STOT SE 1	H370
	STOT RE 1	H372
Respiratory sensitisation	Resp. Sens. 1, 1A or 1B	H334
Carcinogenic <sup>1</sup>	Carc. 1A or 1B	H350
	Carc. 2	H351
Germ cell mutagenic <sup>1</sup>	Mut. 1A or 1B	H340
	Mut. 2	H341
Reproductive toxicity <sup>1</sup>	Repr. 1A or 1B	H360
	Repr. 2	H361
	Lact.	H362

<sup>1</sup> Including all combinations of stated exposure route and stated specific effect. For example, H350 also covers the classification H350i.

\* Exceptions are made for UV curing surface treatment products classified as environmentally hazardous if requirement O40 is fulfilled.

Note that responsibility for correct classification lies with the manufacturer.

- 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 of the chemical products used in the surface treatment (system). Appendix 5 may be used.

### O40 UV curing surface treatment system

UV curing surface treatment products must be applied to the material in a controlled closed process where no discharge to recipient takes place. Spillage and general waste (e.g., cleaning residue) must be collected in containers approved for hazardous waste and handled by a waste contractor.

- Description of the process and how waste and residual waste are handled, including information on who receives the residual waste from the performer of the surface treatment.

## O41 Classification of ingoing substances

Ingoing substances in the chemical product that is used for the surface treatment must not have the classifications in the table below:

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

<sup>1</sup> Including all combinations of stated exposure route and stated specific effect. For example, H350 also covers the classification H350i.

Exemptions apply for:

- Photo initiators classified as H351, H341 or H361
  - Titanium dioxide (CAS no. 13463-67-7) classified as H351
  - 1,1,1-Trimethylolpropane (TMP, CAS no. 77-99-6) classified as H361 is exempted with time limits up to and including 31.12.2024.
  - Mequinol (CAS no. 150-76-5) classified as H361
  - The hardener in two-component UV products can be exempted from the requirement if the following is met: it must be documented that the workers are not exposed to the components, e.g. by using safety equipment when mixing or that the mixing takes place automatically without exposure of the workers and that the application of the finished two-component system is done in a closed system.
- 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).
- A declaration from the manufacturer of the chemical product(s) used in the surface treatment. Appendix 5 may be used.
- Exemption for two-component products: description of the application system and how workers are protected from exposure.

## O42 Prohibited substances

The chemical product must not contain the following substances:

- Substances on the Candidate List\*
- Substances that have been judged in the EU to be PBT (Persistent, Bioaccumulative and Toxic) or vPvB (very Persistent and very Bioaccumulative)\*\*
- Halogenated organic compounds with the following exceptions:
  - The preservatives bronopol, IPBC and CMIT/MIT (3:1). These are addressed in a separate requirement, see O45.
  - Halogenated organic pigments that comply with the Council of Europe recommendation “Resolution AP (89) 1 on the use of colourants in plastic materials coming into contact with food”, point 2.5
- Epoxy acrylate used in UV curing surface treatment products
- Per- and polyfluoroalkyl substances (PFASs), e.g., PFOA and PFOS
- Aziridine and polyaziridines
  - An exemption is made for aziridines/polyaziridines if the substance is not classified as carcinogenic, mutagenic or reprotoxic from any manufacturer or in ECHA.
- Bisphenols and bisphenol derivatives
  - Bisphenol A used in the production of epoxy acrylate is not covered by the requirement.
  - 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>
- APEO (alkylphenol ethoxylates) and APD (alkylphenol derivatives)/alkylphenols \*\*\*
- Phthalates\*\*\*\*
- Pigments and additives based on lead, tin, cadmium, chromium VI and mercury, and their compounds
- Volatile aromatic hydrocarbons (VAH). They are permitted in the chemical product as an impurity at a level of not more than 1% by weight
- Endocrine disruptors: Substances on the EU member state initiative “Endocrine Disruptor Lists”, List I, List II and List III. See links below.
  - An exemption is made for BHT that is included in UV curing lacquers and paints. If BHT receives a harmonised classification that means the substance does not meet the requirements in the criteria document, the exemption will lapse.

*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.*

*\* The Candidate List can be found on the ECHA website:*

*<http://echa.europa.eu/candidate-list-table>*

*\*\* PBT and vPvB in accordance with the criteria in Annex XIII of REACH*

*\*\*\* Alkylphenol derivatives are defined as substances that release alkylphenols when they break down.*

*\*\*\*\* Phthalates are esters of 1,2-benzenedicarboxylic acid (orthophthalic acid).*

- Safety data sheet for each chemical product used in surface treatment in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).
- Declaration from the manufacturer of the chemical product(s) used in the surface treatment. Appendix 5 may be used.

#### O43 Antibacterial substances

Chemical products and nanomaterials\* with antibacterial or disinfectant properties must not be added to the finished product.

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 to the finished product.
- Declaration from the manufacturer/supplier of the chemical product that the product does not contain nanomaterials with antibacterial or disinfecting properties. Appendix 5 may be used.

#### O44 Nanomaterials

The chemical product must not contain nanomaterials\*.

Exemptions apply for:

- Pigments. This exemption does not include pigments added for purposes other than colouring.

- Naturally occurring inorganic fillers\*\*
- Synthetic amorphous silica (SAS). This exemption applies to non-modified SAS.
- 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 point 7 in REACH.*

- A declaration from the chemical manufacturer that the chemical product does not contain any nanomaterial. Appendix 5 may be used.

## O45 Preservatives

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

Preservative	Limit value
Bronopol	≤ 500 ppm (0.05% by weight)
IPBC (iodopropynyl butylcarbamate)	≤ 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)	≤ 15 ppm (0.0015% by weight)
MIT (2-methyl-2H-isothiazol-3-one)	≤ 100 ppm (0.01% by weight)
Total amount of isothiazolinones	≤ 500 ppm (0.05% by weight).

- A declaration from the chemical manufacturer or supplier.
- A safety data sheet for the product in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).

## O46 Free formaldehyde

The content of free formaldehyde in each individual chemical product used for surface treatment must not exceed 0.02% by weight (200 ppm).

- Declaration from the manufacture of the chemical product(s) in the surface treatment system. Appendix 5 may be used.

## O47 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<sup>2</sup>), 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.

#### O48 Quantity of applied volatile organic compounds (VOC)

In the surface treatment system, the chemical products that are used must meet one of the following alternatives in each surface treatment system:

- a) The total VOC content must not exceed 5% by weight, or
- b) The total amount of VOCs applied must not exceed 10 g/m<sup>2</sup> treated surface.

The total amount of VOCs in option b) is calculated using the following formula:

$$\frac{\text{Applisert mengde av overflatebehandlingsprodukt} \left(\frac{\text{g}}{\text{m}^2}\right) \times \text{Andel VOC i overflatebehandlingsproduktet} (\%)}{\text{Overflatebehandlingens virkningsgrad}(\%)}$$

For both alternatives, it is the VOC content of the chemical products in their uncured form that must meet the requirement. If the chemical products require dilution, the calculation must be based on the content in the diluted product.

- 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 quantity of VOCs in each product.
- A calculation from the performer of the surface treatment showing that alternative b) in the requirement is met if the surface treatment system does not meet alternative a).

## 1.7 Emissions

The requirements in this chapter cover different types of emissions. Emissions from the product (1.7.1), from the production process (COD 1.7.2) and in the working environment (1.7.3) are subject to requirements.

### 1.7.1 Emissions from the product

#### O49 Formaldehyde and VOC emissions

##### **Formaldehyd emissions from panels**

The requirement covers all panels and boards containing formaldehyde-based additives. The test shall be carried out in accordance with the test method\* EN 16516 or ISO 16000-3 or other equivalent standardised test conditions and determination methods.

The average emission of formaldehyde must not exceed the limit value for the type of panel according to table below:

Type of panel	Limit value after 28 days** (mg/m <sup>3</sup> ) according to EN 16516.
Wood-based panels and panels based on non-renewable raw materials	0,06 mg/m <sup>3</sup>
Laminates***	0,02 mg/m <sup>3</sup>

## VOC emissions from panels

Emissions from panels must not exceed the limit values according to table below. The test shall be carried out in accordance with the test method EN 16516 or ISO 16000-3:201188 or other equivalent standardised test conditions and determination methods.

Substance or group of substances	Limit value after 28 days** (mg/m <sup>3</sup> ) according to EN 16516.
TVOC (C6-C16)	0,16
SVOC (C16-C23)	0,03
Carcinogenic VOC in category 1A and 1B	0,001

\* *The methods and limit values are based on the EU commission published regulation amending Annex XVII of the REACH Regulation (EC) No 1907/2006. This requirement will be updated following the development of this regulation.*

\*\* *If the limit values in the table are met for a period shorter than 28 days, this is accepted.*

\*\*\* *Emissions from panels coated with laminate (including melamine), HPL, compact laminate, surface-treated panels/mouldings and panels based on lignocellulose raw materials, such as straw or linen.*

- Analysis report, including measurement methods, results and measurement frequency. 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 the test methods can be verified by an independent third party.

## 1.7.2 Emissions from the production – COD

### O50 Emissions of COD from wet processes

The requirement covers wet processes in panel production. COD (Chemical Oxygen Demand) emissions to water must be maximum 20 g COD/kg product (unfiltered sample).

A description of the preparation and analysis methods is given in Appendix 1.

- Measurement results including information on sampling programmes and measurement methods for the past 12 months and measurement frequency.

### 1.7.3 Emissions from the production – working environment

#### O51 Emissions to air from production of laminate in HPL and compact laminate

Laminate produced with resins containing formaldehyde and phenol must adhere to the following hygienic limit values for emissions to air in the workplace\*:

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

#### O52 Emissions of dust

The following limit values for emissions to indoor air must not be exceeded during the manufacture of panels/mouldings in relation to the working environment.

The requirement relates to panels/moulding in which the content of mineral raw materials or wood raw materials individually accounts for more than 5 % by weight of the panel/moulding:

- Mineral dust, inert: 10 mg/m<sup>3</sup>
- Mineral dust, inert, breathable: 5 mg/m<sup>3</sup>
- Mineral wool: 1 fibre/cm<sup>3</sup>
- Wood dust, breathable: 2 mg/m<sup>3</sup>
- Organic dust, total: 5 mg/m<sup>3</sup>

If the legislation in the individual country has a lower limit value than stated in the requirement, the legal limit value must be complied with

- Test report showing compliance with the limit value. 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 requirement in the country where 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.

## 1.8 Climate and energy

This chapter contains requirements for the energy consumption in the production of the different types of panels and specific type of raw materials used in the panels.

The energy consumption is calculated as MJ/kg panel/product produced, and encompasses all energy used from **gate to gate** (phase A3 in EPDs) at the panel production site. Energy consumption also needs to be calculated for specific type of raw materials such as pulp/paper, resin/glue, laminate, cement, and mineral wool used in panels.

The requirements must be documented in the form of energy consumed (actual energy used in production) without the use of primary energy factors.

The requirement may be documented either just for the specific production of the ecolabelled panel or for the company's total annual production.

**System boundary for the requirement:** Energy consumption for extraction of raw materials, transports of raw materials is not part of the energy requirement. The energy requirements do not apply to raw materials that are included by less than **5 wt%** of the panel.

Further descriptions of how the energy calculation should be carried out can be found in Appendices 3.

### 1.8.1 Panels made from renewable raw materials

The requirements apply to energy consumption in the production of; kraft paper and paper pulp used in HPL, compact laminate, wood-based panels, panels made from other lignocellulose raw materials, CLT, glulam and solid wood panels/mouldings.

#### O53 Energy consumption in the production of kraft paper and pulp that is included in HPL, compact laminate, acoustic- or gypsum plasterboards

The requirement covers pulp and paper used in the production of kraft paper.

The requirement does not cover the production of decor paper.

The following requirements must be met:

$$P_{\text{electricity(total)}}^* < 2.5$$

$$P_{\text{fuel(total)}}^* < 2.5$$

For paper consisting solely of TPM/GW\* produced on-site, the limit value for  $P_{\text{fuel(total)}}$  is 1.25

*\*P is the energy score for the paper and pulp production. The energy scores from the production of both the paper and the pulps are included in  $P_{\text{electricity(total)}}$  and  $P_{\text{fuel(total)}}$ . A more detailed description of how the calculation should be carried out can be found in Appendix 2.*

*TMP/GW = Thermomechanical pulp/groundwood*

- If pulp that has been checked in accordance with Nordic Ecolabelling's Basic Module for paper is used: Description of the producer, production site and name of the pulp.

- ☒ Calculation from the producers of the paper and pulp showing that the point limit is fulfilled. A calculation sheet has been developed for the energy calculation, which can be obtained from Nordic Ecolabelling.

#### O54 Energy consumption – laminate production

Energy consumption in the production of laminate must not exceed the following limit values:

Panel type	Energy consumption MJ/kg panel
Compact laminate HPL ≥ 2 mm included	14 MJ/kg
Other types of laminate ≤ 2 mm HPL ≤ 2 mm included	8 MJ/kg

A detailed description of how to perform the calculation is given in Appendix 6.

- ☒ Calculation showing compliance with the requirement. The calculation must contain information about the quantity of panels produced, electricity and fuel consumed, and which fuel sources have been used.

#### O55 Energy consumption – wood-based panels

Energy consumption in the production of these panels must not exceed the limit values given in the table below:

Panel type	Energy consumption MJ/kg panel
Particleboard	6 MJ/kg
MDF and HDF	7 MJ/kg
Wood-based panels – wet process	13 MJ/kg
OSB	4 MJ/kg
Plywood	9 MJ/kg
LVL	9 MJ/kg
SWP	5 MJ/kg

If a type of wood-based panel is laminated, the wood-based panel must fulfil the requirement limit here, while the laminate must fulfil the requirements for laminate in O54. Melamine-coated wood panels must only fulfil the requirement limit here.

Mouldings in same materials as shown in the table are also covered by the requirement limits.

A detailed description of how to perform the energy calculation is given in Appendix 6.

- ☒ Calculation showing compliance with the requirement. The calculation must contain information about the quantity of panels produced, electricity and fuel consumed, and which fuel sources have been used.

#### O56 Energy consumption – panels made from other lignocellulose raw materials

Energy consumption in the production of panels based on other renewable raw materials, such as straw, linen or hemp, must not exceed 1 MJ/kg.

A detailed description of how to perform the calculation is given in Appendix 6.

- Calculation showing compliance with the requirement. The calculation must contain information about the quantity of panels produced, electricity and fuel consumed, and which fuel sources have been used.

#### O57 Energy consumption - CLT and glulam (cross and glued laminated timber)

The energy consumption in production of CLT and Glulam must not exceed 5 MJ/kg.

A detailed description of how to perform the calculation is given in Appendix 6.

- Calculation showing compliance with the requirement. The calculation must include information about suppliers, the quantity from each supplier and the consumption of electricity and fuel, as well as the fuel sources used.

#### O58 Energy consumption - Solid wood panels and mouldings

The energy consumption in production of solid wood panels/mouldings must not exceed 1350 MJ/m<sup>3</sup>.

*The calculation includes energy consumption for drying, sawing, and planing wood that is included in the solid wood panel/moulding.*

The limit value can be met per supplier or as an overall average of the suppliers.

- Calculation showing compliance with the requirement. The calculation must include information about suppliers, the quantity from each supplier and the consumption of electricity and fuel, as well as the fuel sources used.

### 1.8.2 Panels made from mineral- and non-renewable raw materials

The requirements apply to energy consumption in the production of; wood plastic composite panels, gypsum plaster boards, mineral wool, mineral wool-based panels, cement, cement-based panels and panels made from other materials.

#### O59 Energy consumption - Wood Plastic Composite panels (WPC)

The energy consumption in production of wood plastic composite panels must not exceed 1 MJ/kg.

*The requirement includes energy use (electricity and heat) from gate to gate at the production site e.g., pumping, refining, forming, heating, pressing, drying, cutting and packaging. For more information, see Appendix 6.*

- Calculation showing compliance with the requirement. The calculation must contain information about the quantity of panels produced, electricity and fuel consumed, and which fuel sources have been used.

#### O60 Energy consumption - gypsum plasterboards

The energy consumption in production of gypsum plasterboard must not exceed 3 MJ/kg plasterboard.

*The requirement includes energy use (electricity and heat) from gate to gate at the production site e.g., pumping, refining, forming, heating, pressing, drying, cutting and packaging. The requirement does not include extraction of resources and transport. Paper or mineral wool has its own energy requirements in O53.*

- ☒ Calculation showing compliance with the requirement. The calculation must contain information about the quantity of panels produced, electricity and fuel consumed, and which fuel sources have been used. A detailed description of how to perform the calculation is given in Appendix 6.

## 061 Energy consumption - mineral wool

The requirement covers part A) energy consumption in mineral wool production such as glass- and stone mineral wool and part B) fossil fuels.

### A) Energy consumption

The energy consumption in production of stone wool must not exceed 11 MJ/kg board.

The energy consumption in production of glass wool (incl. fiber glass) must not exceed 15 MJ/kg board.

*The requirement does not include extraction of resources and transport.*

### B) Fossil fuels

Fossil oil and coal must not be used as fuels\* for production of process heat in the production of glass- and stone wool.

*Necessary use of fossil oil e.g., in planned maintenance stops, emergency maintenance stops, as a reserve and tip fuel (peak load fuel) or at start-ups for regulation of the combustion temperature in a heat and co-generation boiler is allowed.*

*\*Use of natural gas and liquefied petroleum gas (LPG) is allowed.*

- ☒ A) Calculation showing compliance with the requirement. The calculation must contain information about the quantity of mineral wool panels produced, electricity and fuel consumed, and which fuel sources have been used.
- ☒ B) The mineral wool manufacturer shall confirm that fossil oil and/or coal are not used as fuels to produce process heat in the production of glass-and stone wool.

## 062 Energy consumption - mineral wool-based panel (incl. facing/finishing)

The energy consumption in production of mineral wool-based panels must not exceed 4 MJ/kg panel.

*The requirement includes energy use (electricity and heat) from gate to gate at the production site e.g., cutting, facing the mineral wool, surface coating and packaging. Manufacturing of mineral wool or fleece/glass fleece and transport is not part of the requirement.*

A detailed description of how to perform the calculation is given in Appendix 6.

- ☒ Calculation showing compliance with the requirement. The calculation must contain information about the quantity of panels produced, electricity and fuel consumed, and which fuel sources have been used.

## 063 Energy consumption - Cement

Cement defined according to EN 197-1 must comply with the following requirements, A and B:

A) The total global warming potential (GWP) for system boundaries A1 (Raw material supply), A2 (Transport), A3 (Manufacturing) according to EN 15804+A2 shall not exceed the values given in table below.

**Table 1:** Limit values for product-specific emissions for cement. Product specific GWP<sub>tot</sub> for the cradle to gate system boundary (A1-A3)

Cement/hydraulic binder type	GWP <sub>tot</sub>
White cement clinker	0.973tCO <sub>2</sub> e/tonne white cement clinker
Grey cement clinker	0.722tCO <sub>2</sub> e/tonne grey cement clinker
Lime	0.746tCO <sub>2</sub> e/tonne lime

B) Fossil oil and coal must not be used as fuels\* for production of process heat in the production of cement.

*Necessary use of fossil oil e.g., in planned maintenance stops, emergency maintenance stops, as a reserve and tip fuel (peak load fuel) or at start-ups for regulation of the combustion temperature in a heat and co-generation boiler is allowed.*

*\*Use of natural gas and liquefied petroleum gas (LPG) is allowed.*

- A) Product-Specific Type III Environmental Product Declaration (EPD) in accordance with EN 15804+A2 & ISO 14025 / ISO 21930 and PCR/c-PCR showing that the GWP limit is met.
- B) The cement manufacturer shall confirm that fossil oil and/or coal are not used as fuels to produce process heat in the production of cement.
- Documentation from the license holder showing that the specific cement is used in the product.

#### O64 Energy consumption - cement-based panels

The energy consumption in production of fibre cement flat sheets must not exceed 2 MJ/kg panel.

The energy consumption in production of wood wool boards/panels must not exceed 3 MJ/kg board/panel.

*The requirement includes energy use (electricity and heat) from gate to gate at the production site e.g., pumping, refining, forming, pressing, drying, cutting and packaging. Manufacturing of cement and transport is not part of the requirement.*

A detailed description of how to perform the calculation is given in Appendix 6.

- Calculation showing compliance with the requirement. The calculation must contain information about the quantity of panels produced, electricity and fuel consumed, and which fuel sources have been used.

#### O65 Energy consumption - panels made from other materials

The energy consumption in production of panels made from other materials\* must not exceed 4 MJ/kg panel.

*\* Other material covered by the criteria such as plastic, textile or aluminium.*

*The requirement includes energy use (electricity and heat) from gate to gate at the production site e.g., site e.g., pumping, refining, forming (production of felt board), pressing, drying, gluing/laminating different types of material layers*

*together, cutting and packaging. Manufacturing of polymer/PET granulate/PET fibre production is not part of the requirement.*

A detailed description of how to perform the calculation is given in Appendix 6.

- ☒ Calculation showing compliance with the requirement. The calculation must contain information about the quantity of panels produced, electricity and fuel consumed, and which fuel sources have been used.

## 1.9 Circularity

The requirements in this chapter concern resource efficiency that have the function to increase the circularity of panels and mouldings. These requirements deal with instructions, maintenance, and take-back systems.

### O66 Information for consumers

*Consumer means both private consumers and professional operators.*

The following product information should accompany the product and/or be available for download on the manufacturer's website:

- How the product is to be stored before assembly, e.g., at the construction site.
- Instructions for assembly and instructions for any surface treatment after installation.
- Information about which materials are used in the panels (raw materials and chemicals).
- Specify the standards by which the product is tested.

The information must be available in the language of each country in which the Nordic Swan Ecolabelled product is marketed.

- ☒ Product information intended for customers.

### O67 Maintenance

For products that are used as the outermost layer on e.g., a wall or ceiling or otherwise have a surface directly facing the consumer, the following must be included:

- Cleaning instructions
- Information on maintenance that includes which care products are suitable for the product (paints, oils, etc.) and how often these products should be used.
- The information can either be supplied with the product or consumers can be referred to information on the manufacturer's website.

- ☒ Cleaning and maintenance instructions and how these are communicated to the customer.

### O68 Take-back system

This requirement does not include panels collected in already functioning return systems such as wood-based panels and gypsum plasterboards.

The manufactures of panels must:

- offer a system for taking back products, e.g., old used panels, incorrect deliveries, faulted product, panels not used in the construction process and so on,

or

- be in a process/test/pilot face to establish a system for taking back products, e.g., old used panels, incorrect deliveries, faulted product, panels not used in the construction process and so on.

☒ Description of the offered take-back system or planned/tested take-back system.

## 1.10 Innovation

The requirement in this chapter covers various areas where Nordic Ecolabelling sees an opportunity to promote manufacturers that contribute to innovation, e.g. by using bio-based raw materials for adhesive production; to the circular economy or reduced greenhouse gas emissions; and to measures concerning biodiversity. One of the points must be fulfilled, and the manufacturer can decide which measure they wish to fulfil. This offers flexibility. Nordic Ecolabelling would also like to provide signals as to what may become mandatory in the next revision of the criteria.

### O69 Innovation in production

The applicant/producer must fulfil at least one of the following 10 options:

Area	Options
Chemicals	Adhesives and/or surface treatment products, such as paints, lacquers, or stains, used in the production of the Nordic Swan Ecolabelled product are Nordic Swan Ecolabelled.
	No adhesives based on urea-formaldehyde or isocyanate are used in the production of the Nordic Swan Ecolabelled product.
	The binder in the adhesive used in the production of the Nordic Swan Ecolabelled product contains one or more components that are made of renewable raw materials.
Raw materials and biodiversity	A minimum 100% by weight of the wood raw material, bamboo and cork used in the Nordic Swan Ecolabelled 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.
	A minimum 55% by weight of the wood raw material, bamboo and cork used in the Nordic Swan Ecolabelled product (production line) is post-consumer* recycled wood/paper raw material.
Climate	The production (production line) of the Nordic Swan Ecolabelled product, is fossil-free*. * Fossil-free means that the energy used for the production of heat, steam or pressure on the production line is not based on fossil energy sources such as oil, diesel and natural gas. Electricity is not covered by the requirement.
	Energy consumption in the production of the Nordic Swan Ecolabelled product is at least 10% lower than the limit values specified in section 3.9.
	The manufacturer has its own energy production, e.g., solar panels, solar collectors or its own wind turbine, which is used for the manufacturing of the Nordic Swan Ecolabelled panels, mouldings or glulam. This does not apply to heat pumps.
	100% of the purchased electricity is ecolabelled according to Bra Miljöval, EKO Energy or similar*
End of life - circular economy	The manufacturer of panels has a fully operational take-back system and new panels contains min. 5% post-consumer recycled material from reprocessed own products collected via the system.

*\* Ecolabels for electricity are assessed according to the guidelines which are located here (link). Bra Miljöval and EKO Energy are assessed and approved.*

- Documentation in relation to the above-mentioned alternatives in the requirement.

## 2 Licence maintenance

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

### 070 Customer complaints

The licensee must guarantee that the quality of the Nordic Swan Ecolabelled product 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.

### 071 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.

More information on graphical guidelines, regulations and fees can be found at [www.nordic-swan-ecolabel.org/regulations](http://www.nordic-swan-ecolabel.org/regulations)

## Follow-up inspections

Nordic Ecolabelling may decide to check whether panels and mouldings for interior use 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 panels and mouldings for interior use does not meet the requirements.

## Criteria version history

Nordic Ecolabelling adopted version 7.0 of the criteria for panels and mouldings for interior use on DAY MONTH YEAR. The criteria are valid until DAY MONTH YEAR.

## New criteria

As part of any future evaluation of the criteria, it will be relevant to consider the following:

- Product definition - new types of panels and mouldings for interior use
- Resources/use of raw materials
- Energy consumption in both production of relevant raw materials and production of panels
- Emissions from production of panels and from the panels
- End of life

## 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 laboratory can be approved if it is accredited and complies with the requirements of the standard EN ISO 17025.

When testing quality and performance properties, the applicant's own laboratory can be approved even if it is not accredited. The following applies:

- The laboratory has a certified quality system (ISO 9001) which includes testing, and
- The laboratory can show that the test results obtained are similar to the results from an accredited test laboratory through initial tests performed as parallel tests. Parallel tests must as a minimum be performed when test standards are updated, and
- The laboratory performs the tests in accordance with an established plan for the current test standard and documents the selection of products in a product series for worst case tests, and
- An independent inspection body shall, on the basis of test reports, confirm that the manufacturer's test results are consistent with the results of an accredited laboratory. This can, for example, be evaluated as part of an inspection of the laboratory's quality system carried out by the inspection body for certification of the quality system.

### **Emissions of formaldehyde and VOC from panels O49**

The test shall be carried out in accordance with the test method\* EN 16516 or ISO 16000-3 or other equivalent standardised test conditions and determination methods.

\* The methods and limit values are based on the EU commission published regulation amending Annex XVII of the REACH Regulation (EC) No 1907/2006. This requirement will be updated following the development of this regulation.

### **Test method for COD emissions O50**

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 O51 and O52**

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 Energy calculation guidelines for pulp and paper production

### Energy calculation guidelines

Use of energy in the form of fuel and electricity is subject to requirements. Through information on the actual energy consumption during production in relation to set reference values, an energy point is calculated.

The energy calculation covers the entire paper product; both the paper production and the pulps used. Fillers in paper and transport of raw materials as well as within the factory area shall not be included in the energy calculation.

### Non-integrated pulp mill

#### *Electricity*

The calculations must include both purchased and on-site produced electricity.

Electricity = on-site produced electricity + purchased electricity - sold electricity.

The calculation of electricity consumption must be based on invoices and readings from electricity meters. On-site produced electricity is documented using readings from electricity meters. The requirement covers all processes from debarking to drying the pulp. An exemption applies to electricity for offices or lighting in the factory area. The average electricity consumption can be used for all pulps if the pulp mill only produces pulps of equivalent quality using the same type of process.

#### *Fuel*

The calculation must include both purchased fuel and fuel produced at the plant, divided into renewable and fossil fuels. The pulp producer must report the fuel used for on-site generated electricity and should deduct the fuel for electricity before reporting it to the paper manufacturer. The paper manufacturer deducts the fuel consumption from internally produced electricity using a factor of 1.25 in its own energy calculation.

Fuel pulp = fuel produced at the plant + purchased fuel - sold fuel \* (sold fuel and/or heat/0,8)

The amount of fuel purchased must be adjusted to the quantities at the start and end of the current year. Consumption of internally produced fuel from bark, shavings and other wood residues is calculated using the thermal values for the fuels used or measured.

#### *\*Excess energy*

Excess energy sold in the form of electricity, steam or heat is subtracted from the total consumption. The amount of fuel used to produce electricity or heat is calculated by dividing the sold electricity or heat by 0.8. This is equivalent to an average efficiency for the total production of electricity and heat.

Alternatively, the actual efficiency of the plant in the conversion of fuel to heat energy can be used.

### *Verification*

An overview of the factory's energy supply system showing the number of boilers, with information about the boiler effect and which fuel is used.

Report on the amount of purchased, on-site produced and sold electricity.

Report on the amount of purchased, on-site produced and sold fuel/heat

Conversion factors and efficiency must be stated if thermal energy has been re-calculated to fuel.

The calculation sheet produced by Nordic Ecolabelling can be used.

## **Non-integrated paper mill**

### *Electricity*

The calculations must include both purchased and on-site produced electricity.

Electricity = on-site produced electricity + purchased electricity - sold electricity.

The calculation of electricity consumption must be based on invoices and readings from electricity meters. On-site produced electricity is documented using readings from electricity meters. The requirement covers all processes from pulping to drying the base paper. An exemption applies to electricity for offices or lighting in the factory area. The average electricity consumption can be used for all paper if the paper mill only produces paper of equivalent quality using the same type of process.

### *Fuel*

All purchased fuel must be included in the calculations, divided into fossil and renewable fuels.

Fuel paper = purchased fuel - sold heat converted to excess energy\*

The amount of purchased fuel must be adjusted to the quantities at the start and end of the current year.

### *\*Excess energy*

Excess energy sold in the form of electricity, steam or heat is subtracted from the total consumption. The amount of fuel used to generate electricity or heat that is sold off is calculated by dividing the sold electricity or heat by 0.8. The coefficient of 0.8 is equivalent to the average energy efficiency for total heat and electricity production. Alternatively, the actual energy efficiency of the plant in the conversion of fuel to heat energy can be used.

### *Verification*

An overview of the paper machinery's energy supply system showing the number of boilers, with information about the boiler effect and which fuel is used.

Report on the amount of purchased, on-site produced and sold electricity.

Report on the amount of purchased, on-site produced and sold fuel/heat

Conversion factors and efficiency must be stated if thermal energy has been re-calculated to fuel.

The calculation sheet produced by Nordic Ecolabelling can be used.

### **Steam**

If excess steam from another production process is used (e.g. from another industry), the energy content of the steam must be included in the calculation. In this case, Table 1, the steam table should be used. If steam from electric boilers is used, the energy content must be converted to fuel in the same way, but the energy content must be multiplied by 1.25.

### **Energy calculation, paper production**

#### *Energy score for paper production*

Energy scores for  $P_{\text{paper}(\text{electricity})}$  and  $P_{\text{paper}(\text{fuel})}$  for paper production are calculated using the following formulas:

$$P_{\text{paper\_electricity}} = \frac{\text{Electricity}_{\text{consumed}}}{\text{Electricity}_{\text{reference}}}$$

$$P_{\text{paper\_fuel}} = \frac{\text{Fuel}_{\text{consumed}} - 1.25 \cdot \text{in-house generated electricity}}{\text{Fuel}_{\text{reference}}}$$

The following reference values for kraft paper must be used:

$\text{Electricity}_{\text{reference}} = 1600 \text{ kWh/ADt}$

$\text{Fuel}_{\text{reference}} = 2100 \text{ kWh/ADt}$

### *Verification*

Calculation of energy score. The calculation sheet produced by Nordic Ecolabelling can be used.

### **Energy score when a mixture of different pulp types are used**

The following formulas are used to calculate the energy score when a mixture of different pulp types are used:

$$P_{\text{pulp\_electricity}} = \sum_{i=1}^n P_{\text{pulp\_electricity}_i} \cdot \text{pulp}_i$$

$$P_{pulp\_fuel} = \sum_{i=1}^n P_{pulp\_fuel\_i} \cdot pulp_i$$

$Pulp_i$  is the percentage of the individual pulp relative to the total pulp mixture. Due to wastage and differences in water content, the sum total of the pulp may be greater than 1.  $P_{pulp(electricity)_i}$  is the energy score for electricity for pulp  $i$ .  $P_{pulp(fuel)_i}$  is the energy score for fuel for pulp  $i$ .

#### *Verification*

Calculation of energy score. The calculation sheet produced by Nordic Ecolabelling can be used.

### **Total energy score for paper and pulp production**

The total energy score for both electricity and fuel consumption for the paper production, including pulp production, is calculated using the formulas below:

$$P_{electricity} = P_{electricity\_pulp} + P_{electricity\_paper}$$

$$P_{fuel} = P_{fuel\_pulp} + P_{fuel\_paper}$$

The amount of fuel used to produce electricity in the pulp mill must be deducted by the paper manufacturer from the values received from the pulp producer using a factor of 1.25.

Worst case calculations must be included to show that each pulp recipe meets the requirements if no specific calculations are reported for each pulp mixture.

#### *Verification*

The documentation must include calculations with sub-totals. The base values used for consumed fuel and electricity must be stated. Worst case calculations must be included to show that each pulp recipe meets the requirements if no specific pulp-mixture calculations are reported for each pulp mixture present. The calculation sheet produced by Nordic Ecolabelling can be used.

### **Energy score for pulp production**

Energy scores for  $P_{pulp(electricity)}$  and  $P_{pulp(fuel)}$  for paper production are calculated using the following formulas:

$$P_{pulp\_electricity\_i} = \frac{Electricity_{consumed}}{Electricity_{reference}}$$

$$P_{pulp\_fuel\_i} = \frac{Fuel_{consumed} - 1.25 \cdot in-house\ generated\ electricity}{Fuel_{reference}}$$

The table below shows the reference values for electricity and fuel:

**Table 1 Reference values pulp**

Process	Fuel kWh/t, Ref. value	Electricity kWh/t, Ref. value
Bleached chemical pulp	3600	650
Dried, bleached chemical pulp	4600	700
Unbleached chemical pulp	3200	550
Dried, bleached chemical pulp	4200	600
NSSC	3200	700
Dried NCCS	4100	750
CTMP	N/A	1500
Dried CTMP	900	1500
DIP	300	450
Dried DIP	1200	500
TMP	N/A	2200
Dried TMP	900	2250
Slip	N/A	2000
Dried slip	900	2050

### Verification

Calculation of energy score. The calculation sheet produced by Nordic Ecolabelling can be used.

**Table 2 Steam table**

Enthalpy in gauged steam,  $h''$ , as a function of absolute pressure, p or temperature, t. Enthalpy is divided by an efficiency of 0.9 and added to the heat consumption.

p Bar	t 0C	$h''$ KJ/kg	p bar	t 0C	$h''$ KJ/kg
0.50	81.3	2646.0	16.0	201.4	2791.7
0.60	86.0	2653.6	17.0	204.3	2793.4
0.80	93.5	2665.8	18.0	207.1	2794.8
1.00	99.6	2675.4	19.0	209.8	2796.1
1.20	104.8	2683.4	20.0	212.4	2797.2
1.40	109.3	2690.3	22.0	217.2	2799.1
1.60	113.3	2696.2	24.0	221.8	2800.4
1.80	116.9	2701.5	26.0	226.0	2801.4
2.00	120.2	2706.3	28.0	230.1	2802.0
2.50	127.4	2716.4	30.0	233.0	2802.3
3.00	133.5	2724.7	32.0	237.5	2802.3
3.50	138.9	2731.6	34.0	240.9	2802.1
4.00	143.6	2737.6	36.0	244.1	2801.7
4.50	147.9	2742.9	38.0	247.3	2801.1
5.00	151.8	2747.5	40.0	250.3	2800.3
6.00	158.8	2755.5	45.0	257.4	2797.7
7.00	165.0	2762.0	50.0	263.9	2794.2
8.00	170.4	2767.5	55.0	269.9	2789.9
9.00	175.4	2772.1	60.0	275.6	2785.0
10.00	179.9	2776.2	65.0	280.8	2779.5
11.00	184.0	2779.7	70.0	285.8	2773.5
12.00	188.0	2782.7	80.0	295.0	2759.9
13.00	191.6	2785.4	90.0	303.3	2744.6
14.00	195.0	2787.8	100.0	311.0	2727.7
15.00	198.3	2789.9	110.0	318.1	2709.3

Source: *Thermal Engineering Data, which refers to Schmidt, E.: Properties of water and Steam in SI.Units, 1969. Springer-Verlag and R. Oldenbourg 1969.*

## Appendix 3 Declaration by the manufacturer of pulp and paper

To be used in conjunction with an application for a licence for the Nordic Swan Ecolabel of Panels and Mouldings for interior use.

*Pulp and paper are used in several types of panels such as kraft- and décor paper used in HPL/compact laminate, outer layer in gypsum plaster boards and sound absorbing material in acoustic panels.*

Product name (pulp):
Product name (paper):
Manufacturer (pulp and/or paper):

O8 Ecolabelled paper	Yes	No
Is the paper ecolabelled with Nordic Swan Ecolabel or EU Ecolabel?	<input type="checkbox"/>	<input type="checkbox"/>
If yes, please state valid licence number: _____		

O9 Tree species - restrictions	Yes	No
Are any of the prohibited and restricted wood species (listed in the list of prohibited and restricted tree species) used in the pulp and paper?	<input type="checkbox"/>	<input type="checkbox"/>
Eucalyptus and Acacia used for pulp and paper production is exempted from the list.		
The list of prohibited and restricted tree species is located on the website: <a href="https://www.nordic-swan-ecolabel.org/forestry-requirements-2020">Forestry requirements 2020 (nordic-swan-ecolabel.org)</a>		
If yes, please state tree species/trade name/scientific name: _____ _____		

O10 Traceability and certification of wood raw materials	Yes	No
Please state the name (species name/scientific name) of the fibre raw materials used in the production of pulp/paper: _____ _____ _____		
The pulp and paper manufacturer must be Chain of Custody certified according to FSC or PEFC. All fibres used in the pulp and paper shall be covered by valid Chain of Custody certificate issued by FSC or PEFC.	<input type="checkbox"/>	<input type="checkbox"/>
Are the pulp and paper covered by valid Chain of Custody certificate issued by FSC or PEFC?		
Please present valid FSC/PEFC Chain of Custody certificate covering alle fibre raw materials used in the pulp/paper (e.g., via link to website).		

Minimum 70% of the fibre raw material that is used in the paper shall originate from forestry certified under the FSC or PEFC schemes or be labelled FSC or PEFC recycled.

The remaining proportion of fibre raw material must be covered by the FSC/PEFC control schemes (FSC controlled wood/PEFC controlled sources).

Please enclose documentation that the paper is labelled with FSC/PEFC or e.g., third party-controlled balance sheet from CoC credit account system or a rolling average of the certification percentage on a product line showing that the quantity of certified fibre raw material in the paper is met.

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

O11 Chemical used in the manufacture of pulp and paper	Yes	No																						
<p>Chemicals use in the manufacture of pulp and paper must meet the requirements contained in the Chemical Module for Nordic Ecolabelling of paper, Version 3 or later.</p> <p>The criteria is located on the website: <a href="https://www.nordic-swan-ecolabel.org/criteria/copy-and-printing-paper-044/">https://www.nordic-swan-ecolabel.org/criteria/copy-and-printing-paper-044/</a></p> <p>Overview of chemical requirements for pulp and paper:</p> <table border="1" data-bbox="256 891 1061 1451"> <thead> <tr> <th>Chemicals</th> <th>Requirements, Chemical Module, generation 3</th> </tr> </thead> <tbody> <tr> <td>All production chemicals - Classification (O1) - Prohibited substances (O2)</td> <td>O1 and O2</td> </tr> <tr> <td>Cleaning agents and dispersants</td> <td>O3</td> </tr> <tr> <td>Deinking chemicals</td> <td>O4</td> </tr> <tr> <td>Biocidal products and slimicides</td> <td>O5</td> </tr> <tr> <td>Retention agents and flocculants</td> <td>O6</td> </tr> <tr> <td>Wet strength agents</td> <td>O7</td> </tr> <tr> <td>Foam inhibitors and defoamers</td> <td>O8</td> </tr> <tr> <td>Paper colourants - Metals (O9) - Amines and phthalates (O10)</td> <td>O9 and O10</td> </tr> <tr> <td>Adhesives</td> <td>O11</td> </tr> <tr> <td>Starch - GMO</td> <td>O12</td> </tr> </tbody> </table>	Chemicals	Requirements, Chemical Module, generation 3	All production chemicals - Classification (O1) - Prohibited substances (O2)	O1 and O2	Cleaning agents and dispersants	O3	Deinking chemicals	O4	Biocidal products and slimicides	O5	Retention agents and flocculants	O6	Wet strength agents	O7	Foam inhibitors and defoamers	O8	Paper colourants - Metals (O9) - Amines and phthalates (O10)	O9 and O10	Adhesives	O11	Starch - GMO	O12		
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Adhesives	O11																							
Starch - GMO	O12																							
<p>Does the pulp and paper comply with the chemical requirements?</p> <p>Comments: _____ _____ _____</p>	<input type="checkbox"/>	<input type="checkbox"/>																						

O12 COD emissions from the production of pulp and paper	Yes	No
<p>COD (Chemical Oxygen Demand) emissions to water must be less than the stated COD value in the table below.</p> <p>The COD is calculated by adding up COD emissions from both pulp and paper: COD mass (kg/ADt) + COD emissions paper machine (kg/ADt).</p> <p>For paper produced from mixtures of chemical, recycled fibre and mechanical pulps, a weighted limit value is calculated from the proportion of the various pulp types. In the weighted</p>		

<p>calculation, the percentage of COD emissions from the paper machine must be set to 1 kg/ADT. For example, for 60% unbleached chemical mass and 40% recycled pulp, the calculation is: <math>(14-1 \times 0.6) + (4-1 \times 0.4) = 7.8 + 1.2 = 9.0</math> kg/ADT</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 50%; padding: 5px;">Pulp types</th> <th style="width: 50%; padding: 5px;">Total COD emissions for both pulp and paper (kg/ADt)</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Unbleached chemical pulp</td> <td style="padding: 5px;">14.0</td> </tr> <tr> <td style="padding: 5px;">CTMP pulp</td> <td style="padding: 5px;">19.0</td> </tr> <tr> <td style="padding: 5px;">TMP/groundwood pulp</td> <td style="padding: 5px;">7.0</td> </tr> <tr> <td style="padding: 5px;">Recycled fibre pulp</td> <td style="padding: 5px;">4.0</td> </tr> </tbody> </table>	Pulp types	Total COD emissions for both pulp and paper (kg/ADt)	Unbleached chemical pulp	14.0	CTMP pulp	19.0	TMP/groundwood pulp	7.0	Recycled fibre pulp	4.0		
Pulp types	Total COD emissions for both pulp and paper (kg/ADt)											
Unbleached chemical pulp	14.0											
CTMP pulp	19.0											
TMP/groundwood pulp	7.0											
Recycled fibre pulp	4.0											
<p>Does the pulp and paper comply with the COD requirement?</p> <p>Please enclose documentation/calculation showing that the total emissions of COD are below the relevant limit values indicated in the table a bow.</p> <p>Comments: _____ _____ _____ _____</p>	<input type="checkbox"/>	<input type="checkbox"/>										
<p><b>Test method for COD emissions</b> 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).</p> <p><b>Sample frequency:</b> 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.</p>												

We declare that the requirements have been met and that the information provided is correct. In the event of any change to the composition of the product, that impacts the product's fulfilment of the requirements, a new declaration of fulfilment of the requirements is to be submitted to Nordic Ecolabelling.

**Signature of pulp/paper manufacturer**

Place and date:	Company name/stamp:
Person responsible:	Signature of responsible person:
Phone:	E-mail:

## Appendix 4 Chemicals used in production of panels

To be used in conjunction with an application for a license for the Nordic Swan Ecolabel of Panels and Mouldings for interior use.

Declaration is made by the chemical manufacturer or supplier based to the best of their knowledge at the given time and available knowledge on the chemical product with reservations for new advances/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 of the Nordic Swan Ecolabelled panels and mouldings for interior use (incl. laminate and melamine), such as adhesives, resins, and waxes.

*Chemical products used in the manufacture of paper, and to print patterns on the decor paper, need not be declared. Neither need auxiliary substances such as lubricants and detergents be declared.*

Name of chemical product:

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Function of the chemical product:

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Ingoing substances in the raw material/ingredient (chemical name, CAS-number, amount in weight-%):

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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 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.*

<b>O30 Classification of chemical products used in the production</b>		
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
H400 –Toxic to the environment, Aquatic Acute 1	<input type="checkbox"/>	<input type="checkbox"/>
H410 – Toxic to the environment Aquatic Chronic 1	<input type="checkbox"/>	<input type="checkbox"/>
H411 – Toxic to the environment Aquatic Chronic 2	<input type="checkbox"/>	<input type="checkbox"/>
H420 – Toxic to the environment Ozone	<input type="checkbox"/>	<input type="checkbox"/>
H300–Acute toxicity; Acute Tox 1 or 2	<input type="checkbox"/>	<input type="checkbox"/>
H310– Acute toxicity; Acute Tox 1 or 2	<input type="checkbox"/>	<input type="checkbox"/>
H330– Acute toxicity; Acute Tox 1 or 2	<input type="checkbox"/>	<input type="checkbox"/>
H301– Acute toxicity; Acute Tox 3	<input type="checkbox"/>	<input type="checkbox"/>
H311– Acute toxicity; Acute Tox 3	<input type="checkbox"/>	<input type="checkbox"/>
H331– Acute toxicity; Acute Tox 3	<input type="checkbox"/>	<input type="checkbox"/>
H370 – Specific organic toxicity, STOT SE 1	<input type="checkbox"/>	<input type="checkbox"/>
H372 – Specific organic toxicity, STOT RE 1	<input type="checkbox"/>	<input type="checkbox"/>
H350 –Carcinogenic, Carc. 1A or1B	<input type="checkbox"/>	<input type="checkbox"/>
H351 – Carcinogenic, Carc. 2	<input type="checkbox"/>	<input type="checkbox"/>
H340 –Germ cell mutagenic, Mut. 1A and 1B	<input type="checkbox"/>	<input type="checkbox"/>
H341 – Germ cell mutagenic, Mut. 2	<input type="checkbox"/>	<input type="checkbox"/>
H360 –Reproductive toxicity,, Repr. 1A or1B	<input type="checkbox"/>	<input type="checkbox"/>
H361 – Reproductive toxicity,, Repr 2	<input type="checkbox"/>	<input type="checkbox"/>
H362 – Reproductive toxicity, Lact.	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>The following are exempted from the requirement:</b></p> <ul style="list-style-type: none"> <li>- Classification H351 for adhesive products containing methylene diphenyl diisocyanate (MDI).</li> <li>- Classifications H350, H341, H301, H311 and H331 for adhesive products and resins containing formaldehyde (CAS no. 50-00-0). Formaldehyde emissions are regulated in a separate requirement.</li> <li>- Classifications H341, H301 and H331 for resins containing a maximum of 10% by weight of phenol (CAS no. 108-95-2) used in laminate and plywood.</li> <li>- Classifications H301, H311, H331 and H370 for resins containing a maximum of 10% by weight of methanol (CAS no. 67-56-1).</li> <li>- Classifications H351 and H361 for resins containing melamine (CAS no. 108-78-1).</li> <li>- UV curing products are exempted from classification H411 under the following conditions: There must be a controlled closed process where no discharge to recipient takes place. Spillage and general waste (e.g., cleaning residue) must be collected in containers approved for hazardous waste and handled by a waste contractor.</li> </ul>		

**If yes**, please state the CAS no., 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 or if the above-mentioned exceptions apply.

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<b>O31 Classification of ingoing substances</b>		
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 and 1B	<input type="checkbox"/>	<input type="checkbox"/>
H351 – Carcinogenic, Carc. 2	<input type="checkbox"/>	<input type="checkbox"/>
H340 – Germ cell mutagenic, Mut. 1A or 1B	<input type="checkbox"/>	<input type="checkbox"/>
H341 – Germ cell mutagenic, Mut. 2	<input type="checkbox"/>	<input type="checkbox"/>
H360 – Reproductive toxicity, Repr. 1A and 1B	<input type="checkbox"/>	<input type="checkbox"/>
H361 – Reproductive toxicity, Repr. 2	<input type="checkbox"/>	<input type="checkbox"/>
H362 – Reproductive toxicity, Lact.	<input type="checkbox"/>	<input type="checkbox"/>
EUH380 - Endocrine disruption for human health, ED HH1	<input type="checkbox"/>	<input type="checkbox"/>
EUH381 - Endocrine disruption for human health, ED HH2	<input type="checkbox"/>	<input type="checkbox"/>
EUH431 - Endocrine disruption for the environment, ED ENV 1	<input type="checkbox"/>	<input type="checkbox"/>
EUH431 - Endocrine disruption for the environment, ED ENV 2	<input type="checkbox"/>	<input type="checkbox"/>
EUH440 - Persistent, Bioaccumulative and Toxic properties, PTB	<input type="checkbox"/>	<input type="checkbox"/>
EUH411 - Very Persistent, Very Bioaccumulative properties, vPvB	<input type="checkbox"/>	<input type="checkbox"/>
EUH450 - Persistent, Mobile and Toxic properties, PMT	<input type="checkbox"/>	<input type="checkbox"/>
EUH451 - Very Persistent, Very Mobile properties, vPvM	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>The following are exempted from the requirement:</b></p> <ul style="list-style-type: none"> <li>- Adhesive containing methylene diphenyl diisocyanate (MDI) classified as H351.</li> <li>- Adhesive and resin containing formaldehyde (CAS no. 50-00-0) classified as H350 and H341. Formaldehyde emissions are regulated in a separate requirement.</li> <li>- Resin containing maximum 10% by weight of phenol (CAS no. 108-95-2) classified as H341 used in laminate and plywood.</li> <li>- Resin containing melamine (CAS no. 108-78-1) classified as H351 and H361.</li> <li>- Titanium dioxide (CAS no. 13463-67-7) classified as H351.</li> <li>- 1,1,1-Trimethylolpropane (TMP, CAS no. 77-99-6) classified as H361 is exempted with time limits up to and including 31.12.2024.</li> </ul>		

**If yes**, please state the CAS no., 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 or if the above-mentioned exceptions apply.

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<b>O32 Prohibited substances</b>		
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: <a href="http://echa.europa.eu/candidate-list-table">http://echa.europa.eu/candidate-list-table</a> - Exemption applies to melamine (CAS No. 108-78-1)	<input type="checkbox"/>	<input type="checkbox"/>
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	<input type="checkbox"/>	<input type="checkbox"/>
Halogenated organic compounds - Exemptions apply for bronopol, IPBC, MIT and CMIT/MIT (3:1). These are addressed in a separate requirement, see requirement O35).	<input type="checkbox"/>	<input type="checkbox"/>

Per- and polyfluoroalkyl substances (PFASs), e.g., PFOA and PFOS	<input type="checkbox"/>	<input type="checkbox"/>
Butylhydroxytoluene (BHT, CAS No. 128-37-0)	<input type="checkbox"/>	<input type="checkbox"/>
Aziridine and polyaziridines	<input type="checkbox"/>	<input type="checkbox"/>
Bisphenols and bisphenol derivatives - Bisphenol A used in the production of epoxy acrylate is not covered by the requirement. - Assessment of regulatory needs: Bisphenols. ECHA- 16 December 2021: Section 2.1: Bisphenols for which further EU RRM is proposed – restriction <a href="https://echa.europa.eu/documents/10162/c2a8b29d-0e2d-7df8-dac1-2433e2477b02">https://echa.europa.eu/documents/10162/c2a8b29d-0e2d-7df8-dac1-2433e2477b02</a>	<input type="checkbox"/>	<input type="checkbox"/>
APEO (alkylphenol ethoxylates) and APD (alkylphenol derivatives/alkylphenols) Alkylphenol derivatives are defined as substances that release alkylphenols when they break down.	<input type="checkbox"/>	<input type="checkbox"/>
Phthalates - Phthalates are esters of 1,2-benzenedicarboxylic acid (orthophthalic acid).	<input type="checkbox"/>	<input type="checkbox"/>
Pigments and dditives based on lead, tin, cadmium, chromium VI and mercury, and their compounds.	<input type="checkbox"/>	<input type="checkbox"/>
Endocrine disruptors: Substances on the EU member state initiative “Endocrine Disruptor Lists”, List I, List II and List III, see following links: List I: <a href="https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu">https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu</a> List II: <a href="https://edlists.org/the-ed-lists/list-ii-substances-under-eu-investigation-endocrine-disruption">https://edlists.org/the-ed-lists/list-ii-substances-under-eu-investigation-endocrine-disruption</a> List III: <a href="https://edlists.org/the-ed-lists/list-iii-substances-identified-as-endocrine-disruptors-by-participating-national-authorities">https://edlists.org/the-ed-lists/list-iii-substances-identified-as-endocrine-disruptors-by-participating-national-authorities</a> 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.	<input type="checkbox"/>	<input type="checkbox"/>

**If yes**, please state the CAS no., 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 or if the above-mentioned exceptions apply.

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<b>O33 Antibacterial substances</b>		
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).	<input type="checkbox"/>	<input type="checkbox"/>
The following is exempted from the requirement: - Preservatives used to preserve the chemical product, so-called in-can preservatives.		

**If yes**, please state the CAS no., 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 or if the above-mentioned exceptions apply.

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<b>O34 Nanomaterials</b>		
Please state:	Yes	No
Does the chemical product contain nanomaterials/-particles?	<input type="checkbox"/>	<input type="checkbox"/>
<p>Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01):</p> <p>'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:</p> <p>(a) one or more external dimensions of the particle are in the size range 1 nm to 100 nm;</p> <p>(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;</p> <p>(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.</p>		
<p>The following are exempted from the requirement:</p> <ul style="list-style-type: none"> <li>- Pigments. This exemption does not include pigments added for purposes other than colouring.</li> <li>- Naturally occurring inorganic fillers in accordance with annex V point 7 in REACH.</li> <li>- Synthetic amorphous silica (SAS). This exemption applies to non-modified SAS.</li> <li>- Polymer dispersions</li> </ul>		

If **yes**, please state the CAS no., 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 or if the above-mentioned exceptions apply.

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<b>O35 Preservatives</b>			
Please state if content of preservatives exceeds the limit values below		Yes	No
<b>Preservative:</b>	<b>Limit value</b>		
Bronopol	< 500 ppm (0.05% by weight)	<input type="checkbox"/>	<input type="checkbox"/>
IPBC (iodopropynyl butylcarbamate)	< 2000 ppm (0.20% by weight)	<input type="checkbox"/>	<input type="checkbox"/>
Mixture (3:1) of CMIT/MIT (5 chloro-2-methyl-4-isothiazolin-3-one / 2-methyl-4-isothiazolin-3-one)	≤ 15 ppm (0.0015 % by weight)	<input type="checkbox"/>	<input type="checkbox"/>
MIT (2-methyl-2H-isothiazol-3-one)	≤ 15 ppm (0.0015 % by weight)	<input type="checkbox"/>	<input type="checkbox"/>
Total amount of isothiazolinones	≤ 500 ppm (0.05% by weight).	<input type="checkbox"/>	<input type="checkbox"/>

If **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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<b>O36 Volatile organic compounds in additives</b>		
Please state:	Yes	No
Does the additive contain any VOC (volatile organic compound) and/or VAH (volatile aromatic compound)?	<input type="checkbox"/>	<input type="checkbox"/>
<p>Volatile organic compounds (VOC), including volatile aromatic compounds (VAH), may be present in the adhesive to a maximum of 3% by weight.</p>		
Does the additive comply with the requirement?	<input type="checkbox"/>	<input type="checkbox"/>

<p>VAHs may be present in the adhesive to a maximum of 0.1% by weight. VOC may be present in the chemical product to a maximum of 1% by weight and VAH of 0.1% of weight. 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.</p>		
<p>The following are exempted from the requirement: Resin used in the production of laminate is exempted from the requirement provided that the laminate meets the emission requirements in O49.</p>		

**If yes**, please state the CAS no., 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 or if the above-mentioned exceptions apply.

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<b>O37 Free formaldehyde</b>		
Please state:	Yes	No
<p>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?</p> <p>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.</p> <p>The following are exempted from the requirement: Resin used in the production of laminate is exempted from the requirement provided that the laminate meets the emission requirements in O49.</p>	<input type="checkbox"/>	<input type="checkbox"/>

**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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**Signature of chemical product manufacturer**

Date	Company
Signature by contact person	
Name of contact person	Phone

## Appendix 5 Chemicals used in surface treatments

To be used in conjunction with an application for a license for the Nordic Swan Ecolabel of Panels and Mouldings for interior use.

Declaration is made by the chemical manufacturer or supplier based to the best of their knowledge at the given time and available knowledge on the chemical product with reservations for new advances/knowledge. Should such new knowledge arise, the undersigned is obliged to submit an updated declaration to Nordic Ecolabelling.

This declaration shall be filled for surface treatment products used in the production of the Nordic Swan Ecolabelled panels and mouldings for interior use such as lacquers, oils, paints, and stains. Any filler used shall also be declared.

*Lamination (thin layer of laminate < 2 mm, including melamine) on another panel is not considered to be surface treatment.*

Name of chemical product:

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Function of the chemical product:

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Ingoing substances in the raw material/ingredient (chemical name, CAS-number, amount in weight-%):

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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 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.*

<b>O39 Classification of chemical products used in the production</b>		
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
H400 –Toxic to the environment, Aquatic Acute 1	<input type="checkbox"/>	<input type="checkbox"/>
H410 – Toxic to the environment Aquatic Chronic 1	<input type="checkbox"/>	<input type="checkbox"/>
H411 – Toxic to the environment Aquatic Chronic 2	<input type="checkbox"/>	<input type="checkbox"/>
H420 – Toxic to the environment Ozone	<input type="checkbox"/>	<input type="checkbox"/>
H300–Acute toxicity; Acute Tox 1 or 2	<input type="checkbox"/>	<input type="checkbox"/>
H310– Acute toxicity; Acute Tox 1 or 2	<input type="checkbox"/>	<input type="checkbox"/>
H330– Acute toxicity; Acute Tox 1 or 2	<input type="checkbox"/>	<input type="checkbox"/>
H301– Acute toxicity; Acute Tox 3	<input type="checkbox"/>	<input type="checkbox"/>
H311– Acute toxicity; Acute Tox 3	<input type="checkbox"/>	<input type="checkbox"/>
H331– Acute toxicity; Acute Tox 3	<input type="checkbox"/>	<input type="checkbox"/>
H370 – Specific organic toxicity, STOT SE 1	<input type="checkbox"/>	<input type="checkbox"/>
H372 – Specific organic toxicity, STOT RE 1	<input type="checkbox"/>	<input type="checkbox"/>
H350 –Carcinogenic, Carc. 1A or1B	<input type="checkbox"/>	<input type="checkbox"/>
H351 – Carcinogenic, Carc. 2	<input type="checkbox"/>	<input type="checkbox"/>
H340 –Germ cell mutagenic, Mut. 1A and 1B	<input type="checkbox"/>	<input type="checkbox"/>
H341 – Germ cell mutagenic, Mut. 2	<input type="checkbox"/>	<input type="checkbox"/>
H360 –Reproductive toxicity,, Repr. 1A or1B	<input type="checkbox"/>	<input type="checkbox"/>
H361 – Reproductive toxicity,, Repr 2	<input type="checkbox"/>	<input type="checkbox"/>
H362 – Reproductive toxicity, Lact.	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>The following are exempted from the requirement:</b></p> <p>- UV curing products are exempted from classification as environmentally hazardous under the following conditions: There must be a controlled closed process where no discharge to recipient takes place. Spillage and general waste (e.g., cleaning residue) must be collected in containers approved for hazardous waste and handled by a waste contractor.</p>		

If yes, please state the CAS no., 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 or if the above-mentioned exceptions apply.

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<b>O41 Classification of ingoing substances</b>		
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 and 1B	<input type="checkbox"/>	<input type="checkbox"/>
H351 – Carcinogenic, Carc. 2	<input type="checkbox"/>	<input type="checkbox"/>
H340 – Germ cell mutagenic, Mut. 1A or 1B	<input type="checkbox"/>	<input type="checkbox"/>
H341 – Germ cell mutagenic, Mut. 2	<input type="checkbox"/>	<input type="checkbox"/>
H360 – Reproductive toxicity, Repr. 1A and 1B	<input type="checkbox"/>	<input type="checkbox"/>
H361 – Reproductive toxicity, Repr. 2	<input type="checkbox"/>	<input type="checkbox"/>

H362 – Reproductive toxicity, Lact.	<input type="checkbox"/>	<input type="checkbox"/>
EUH380 - Endocrine disruption for human health, ED HH1	<input type="checkbox"/>	<input type="checkbox"/>
EUH381 - Endocrine disruption for human health, ED HH2	<input type="checkbox"/>	<input type="checkbox"/>
EUH431 - Endocrine disruption for the environment, ED ENV 1	<input type="checkbox"/>	<input type="checkbox"/>
EUH431 - Endocrine disruption for the environment, ED ENV 2	<input type="checkbox"/>	<input type="checkbox"/>
EUH440 - Persistent, Bioaccumulative and Toxic properties, PTB	<input type="checkbox"/>	<input type="checkbox"/>
EUH411 - Very Persistent, Very Bioaccumulative properties, vPvB	<input type="checkbox"/>	<input type="checkbox"/>
EUH450 - Persistent, Mobile and Toxic properties, PMT	<input type="checkbox"/>	<input type="checkbox"/>
EUH451 - Very Persistent, Very Mobile properties, vPvM	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>The following are exempted from the requirement:</b></p> <ul style="list-style-type: none"> <li>- Photo initiators classified H351, H341 or H361</li> <li>- Titanium dioxide (CAS no. 13463-67-7) classified as H351.</li> <li>- 1,1,1-Trimethylolpropane (TMP, CAS no. 77-99-6) classified as H361 is exempted with time limits up to and including 31.12.2024.</li> <li>- Mequinal (CAS no. 150-76-5) classified as H361</li> <li>- The hardener in two-component UV products can be exempted from the requirement if the following is met: it must be documented that the workers are not exposed to the components, e.g. by using safety equipment when mixing or that the mixing takes place automatically without exposure of the workers and that the application of the finished two-component system is done in a closed system.</li> </ul>		

**If yes**, please state the CAS no., 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 or if the above-mentioned exceptions apply.

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<b>O42 Prohibited substances</b>		
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: <a href="http://echa.europa.eu/candidate-list-table">http://echa.europa.eu/candidate-list-table</a>	<input type="checkbox"/>	<input type="checkbox"/>
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	<input type="checkbox"/>	<input type="checkbox"/>
Halogenated organic compounds - Exemptions apply for bronopol, IPBC, MIT and CMIT/MIT (3:1). These are addressed in a separate requirement, see requirement O45).	<input type="checkbox"/>	<input type="checkbox"/>
Per- and polyfluoroalkyl substances (PFASs), e.g., PFOA and PFOS	<input type="checkbox"/>	<input type="checkbox"/>
Butylhydroxytoluene (BHT, CAS No. 128-37-0)	<input type="checkbox"/>	<input type="checkbox"/>
Aziridine and polyaziridines	<input type="checkbox"/>	<input type="checkbox"/>
Bisphenols and bisphenol derivatives - Bisphenol A used in the production of epoxy acrylate is not covered by the requirement. - Assessment of regulatory needs: Bisphenols. ECHA- 16 December 2021: Section 2.1: Bisphenols for which further EU RRM is proposed – restriction <a href="https://echa.europa.eu/documents/10162/c2a8b29d-0e2d-7df8-dac1-2433e2477b02">https://echa.europa.eu/documents/10162/c2a8b29d-0e2d-7df8-dac1-2433e2477b02</a>	<input type="checkbox"/>	<input type="checkbox"/>
APEO (alkylphenol ethoxylates) and APD (alkylphenol derivatives/alkylphenols) Alkylphenol derivatives are defined as substances that release alkylphenols when they break down.	<input type="checkbox"/>	<input type="checkbox"/>
Phthalates - Phthalates are esters of 1,2-benzenedicarboxylic acid (orthophthalic acid).	<input type="checkbox"/>	<input type="checkbox"/>

Pigments and dditives based on lead, tin, cadmium, chromium VI and mercury, and their compounds.	<input type="checkbox"/>	<input type="checkbox"/>
Endocrine disruptors: Substances on the EU member state initiative "Endocrine Disruptor Lists", List I, List II and List III, see following links: List I: <a href="https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu">https://edlists.org/the-ed-lists/list-i-substances-identified-as-endocrine-disruptors-by-the-eu</a> List II: <a href="https://edlists.org/the-ed-lists/list-ii-substances-under-eu-investigation-endocrine-disruption">https://edlists.org/the-ed-lists/list-ii-substances-under-eu-investigation-endocrine-disruption</a> List III: <a href="https://edlists.org/the-ed-lists/list-iii-substances-identified-as-endocrine-disruptors-by-participating-national-authorities">https://edlists.org/the-ed-lists/list-iii-substances-identified-as-endocrine-disruptors-by-participating-national-authorities</a> 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.	<input type="checkbox"/>	<input type="checkbox"/>

**If yes**, please state the CAS no., 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 or if the above-mentioned exceptions apply.

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<b>O43 Antibacterial substances</b>		
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).	<input type="checkbox"/>	<input type="checkbox"/>
The following is exempted from the requirement: - Preservatives used to preserve the chemical product, so-called in-can preservatives.		

**If yes**, please state the CAS no., 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 or if the above-mentioned exceptions apply.

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<b>O44 Nanomaterials</b>		
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.	<input type="checkbox"/>	<input type="checkbox"/>

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 (SAS). This exemption applies to non-modified SAS.
- Polymer dispersions

If **yes**, please state the CAS no., 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 or if the above-mentioned exceptions apply.

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<b>O45 Preservatives</b>			
Please state if content of preservatives exceeds the limit values below		Yes	No
Preservative:	Limit value		
Bronopol	< 500 ppm (0.05% by weight)	<input type="checkbox"/>	<input type="checkbox"/>
IPBC (iodopropynyl butylcarbamate)	< 2000 ppm (0.20% by weight)	<input type="checkbox"/>	<input type="checkbox"/>
Mixture (3:1) of CMIT/MIT (5 chloro-2-methyl-4-isothiazolin-3-one / 2-methyl-4-isothiazolin-3-one)	≤ 15 ppm (0.0015 % by weight)	<input type="checkbox"/>	<input type="checkbox"/>
MIT (2-methyl-2H-isothiazol-3-one)	≤ 15 ppm (0.0015 % by weight)	<input type="checkbox"/>	<input type="checkbox"/>
Total amount of isothiazolinones	≤ 500 ppm (0.05% by weight).	<input type="checkbox"/>	<input type="checkbox"/>

If **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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<b>O46 Free formaldehyde</b>		
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.	<input type="checkbox"/>	<input type="checkbox"/>

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 exception apply.

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## Appendix 6 Energy calculations

### **Energy calculation for production of panels made from renewable raw materials; wood- and lignocellulose based panels, CLT, glulam and laminate.**

The following applies to the energy calculation in the production of wood- and lignocellulose panels and mouldings, CLT, glulam and laminate:

1. Energy consumption is calculated as an annual average for either just the ecolabelled production or for the whole enterprise that is relevant for Nordic Swan Ecolabelled panels, CLT, glulam and laminate.
2. Energy consumption calculated as MJ/kg per panel/product must include the primary panel production and production of the main raw materials contained in the panel/product. The main raw materials are raw materials that make up more than 5% by weight of the finished panel/product (e.g., wood fibre and adhesive).
3. Processes included in the calculation:
4. Chipping, refining, drying, blending (production of any adhesive; see 4), forming, pressing, any lamination of the panel, cooling, trimming, sanding, and packaging. If any drying process of the wood raw materials takes place at subcontractors (sawmills) this should be part of the calculations.
5. In the case of the production of chemical products, for example adhesive, the energy accounts must be based on data for production. The energy content of the raw material must not be included in the calculation. In exceptional cases a standard value of 15 MJ/kg (solution for use) for adhesive may be used, broken down as 12 MJ/kg for fuel and 3 MJ/kg for electricity purchased from an outside supplier (4:1).

*Example of a calculation using the standard value for adhesives:*

*A panel contains 12% adhesive (solution for use). This represents 0.12 kg of adhesive solution for use per kilogram of panel. Applying the standard value in the calculation of energy points for adhesive results in 0.12 kg adhesive/ kg panel x 15 MJ/ kg adhesive = 1.8 MJ/ kg panel.*

6. Energy consumption in the production of laminate (compact laminate and HPL) includes the production of resin/glue, the process of handling paper (dipping in resin/drying process), stacking of paper/laminate, pressing, heating, cooling, trimming, sanding and packaging. Production of paper has its own requirement.
7. The calculation includes the actual energy consumed (electricity and heat) in production without the use of primary energy factors. Self-produced energy and excess energy that is sold off should be stated but does not count as consumed energy in the calculation.

**System boundary for the requirement:** Energy consumption for obtaining raw material, transport of raw materials to sawmill/panel and any surface treatment (paint) is not included in the calculation.

**Energy calculation for production of panels made from mineral- and non renewable raw materials; WPC-panels, gypsum plasterboards, mineral wool-based acoustic panels, cement-based panels, panels made from other materials and production of mineral wool and cement.**

The following applies to the energy calculation in the production of WPC-panels, gypsum plasterboards, mineral wool-based acoustic panels, cement base panels, panels made from other materials and production of the raw materials: mineral wool, cement, paper and laminate.

1. Energy consumption is calculated as an annual average for either just the ecolabelled production or for the whole production site that is relevant for Nordic Swan Ecolabelled panels.
2. The energy consumption is calculated as MJ/kg product produces, and encompasses all energy used from **gate to gate** (phase A3 in EPDs) at the panel production site. Energy consumption also needs to be calculated for production of the following raw materials: cement, mineral wool, paper, and laminate (if they comprise more than 5 wt% of the plate).
3. Processes included in the calculation:
4. Raw material preparation (crushing/grinding/chipping), refining, blending, forming, heating, pressing, gluing/laminating different types of material layers together, facing the panels (paint), cooling, trimming, and packaging.
5. The calculation includes the actual energy consumed (electricity and heat) in production without the use of primary energy factors. Self-produced energy and excess energy that is sold off should be stated but does not count as consumed energy in the calculation.
6. **System boundary for the requirement:** Energy consumption for extraction of raw materials and transports of raw materials is not part of the energy requirement. The energy requirement for production of raw materials do not apply to raw materials that are included by less than **5 wt%** of the panel.