

Nordic Ecolabelling for  
**Textile floor coverings and carpets**



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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:

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## What is a Nordic Swan Ecolabelled Textile floor covering and carpet?

Nordic Swan Ecolabelled textile floor coverings and carpets have reduced environmental impact throughout the lifecycle. Among other things, through strict requirements for fibres and chemicals.

The requirements promote a more circular economy, reduce climate impact, save resources, and must be suited for a long lifetime.

Textile floor coverings and carpets may cover a large proportion of the indoor surface area, e.g., in a home or office. This means that the materials the product contains are important for the indoor environment and for the risk of exposure to undesirable substances.

### **Nordic Swan Ecolabelled textile floor coverings and carpets:**

- Are made from a high proportion of renewable and/or recycled materials.
- Meet strict environmental and health requirements for chemicals used in production.
- Meet either requirements for energy consumption or for energy efficient technology.
- Have low emissions to the air (for products with backing of other materials than textiles).
- Are quality tested to enable a long lifetime.
- Do not contain PVC.

## Why choose the Nordic Swan Ecolabel?

- Textile floor coverings and carpets may use the Nordic Swan Ecolabel trademark for marketing. The Nordic Swan Ecolabel is a very well-known and well-reputed trademark in the Nordic region.
- The Nordic Swan Ecolabel is a simple way of communicating environmental work and commitment to customers.
- The Nordic Swan Ecolabel clarifies the most important environmental impacts and thus shows how a company can cut emissions, resource consumption and waste management.
- Environmentally suitable operations prepare textile floor coverings, carpets, floor rugs and floor mats for future environmental legislation.
- Nordic Ecolabelling can be seen as providing a business with guidance on the work of environmental improvements.

- The Nordic Swan Ecolabel not only covers environmental issues but also quality requirements, since the environment and quality often go hand in hand. This means that a Nordic Swan Ecolabel licence can also be seen as a mark of quality.

## What can carry the Nordic Swan Ecolabel?

Product types that are covered are textile floor coverings, carpets, floor rugs and floor mats. Both loose and wall-to-wall products are included.

The products must be for indoor use and be intended to be placed on the floor.

The upper side (which faces upwards from the floor) of the product must primarily consist of textile fibres.

## 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 a web form and documentation showing that the requirements are fulfilled.

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

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

- ✉ Enclose
- 📁 Upload
- 📄 State data in electronic application
- 📍 Requirement checked on site

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

### Licence validity

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

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

### On-site inspection

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

### Queries

Please contact Nordic Ecolabelling if you have any queries or require further information. See page 3 for addresses. Further information and assistance (such as calculation sheets or electronic application help) may be available. Visit the relevant national website for further information.

## 1.1 Definitions

<b>Recycled material/fibres</b>	<p>Recycled material is defined in the requirement according to ISO 14021, which applies the following two categories:</p> <p>“Pre-consumer/commercial” is defined as material that is recovered from the waste stream during a manufacturing process. Materials that are reworked or reground, or waste that has been produced in a process, and can be recycled within the same manufacturing process that generated it, are not considered to be pre-consumer recovered material.</p> <p>Nordic Ecolabelling considers reworked, reground or scrap material that cannot be recycled directly in the same process, but requires reprocessing (e.g., in the form of sorting, remelting, and granulating) before it can be recycled, to be pre-consumer/commercial material. This is irrespective of whether the processing is done in-house or externally.</p> <p>“Post-consumer/commercial” is defined as material generated by households or commercial, industrial, or institutional facilities in their role as end-users of a product that can no longer be used for its intended purpose. This includes materials from the distribution chain.</p>
<b>Nanomaterials/-particles</b>	<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>
<b>Ingoing substances</b>	<p>All substances in the chemical product regardless of amount, including additives (e.g., preservatives and stabilizers) 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.</p>

<b>Impurities</b>	Residuals, pollutants, contaminants etc. from production, incl. production of raw materials, that remain in the chemical product in concentrations less than 100 ppm (0.0100 w%). Impurities in the raw materials exceeding concentrations of 1000 ppm (0.1000 w%) are always regarded as ingoing substances, regardless of the concentration in the chemical product. Examples of impurities are residues of the following: residues or reagents incl. residues of monomers, catalysts, by-products, scavengers, and detergents for production equipment and carry-over from other or previous production lines.
<b>Additive in polymers</b>	Chemical products added to improve the performance, functionality, and ageing properties of the polymer. Examples of additives are plasticisers, flame retardants, antioxidants, light/heat/thermal stabilisers, pigments, antistatic agents, and acid scavengers.

## 1.2 Description of the product and the production chain

The product, material composition, manufacturing process, suppliers, production chain etc. must be described to aid the assessment of which requirements need to be met.

### O1 Description of the product, material composition and limits

The applicant must submit the following information for each product:

- State product type (e.g., wall-to-wall carpet, floor mat), trade name/ item number, if the product is for consumer or professional market.
- Overview of materials (e.g., polyester, cotton, natural latex etc.) and the composition of the product. Including the following information for each material:
  - a) Trade name/item number and material type.
  - b) Supplier/manufacturer of the material.
  - c) State if material is recycled\* or renewable/bio-based.
  - d) % by weight of the material in the product.
  - e) State if material has undergone finishing such as printing, impregnating or coating.

A material type that is present with a total amount of maximum 5% by weight of the product is exempt from the requirements.

\* See definition in section 1.1.

- Overview of the materials, which must include the information required above.

### O2 Description of the production chain and the manufacturing processes

The production and supply chain can be described using a flow chart, for example as shown in Appendix 1.

Manufacturing processes must be described. For each process the following information must be submitted:

- The manufacturing processes performed, e.g., textile fibre production, textile dyeing or polyurethane foam production
- The company name of the supplier who perform the process
- Production site (full address and country)

- ☒ Submit a description of the production chain and the manufacturing processes (preferably in a flow chart), and state which suppliers perform each process. See the example in Appendix 1.
- ☒ Submit an overview of manufacturing processes with information on the type of process, the company name, production location and contact person for each process performed. See the example in Appendix 1.

## 1.3 Raw materials in general

### O3 Renewable and/or recycled raw materials

The product must meet one of the following three requirements. The product shall consist of:

- a) Minimum 60% by weight of renewable raw materials\*  
or
- b) Minimum 70% by weight recycled materials\*\* and/or re-used textiles\*\*\*  
or
- c) Products that consist of both renewable and recycled material/re-used textiles shall comply with the following formula:

$$(7/6) \times X + Y \geq 70 \% \text{ by weight}$$

X = Percentage by weight of renewable raw materials\*\*\*\*

Y = Percentage by weight of recycled materials/re-used textiles\*\*\*\*\*

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

\* *Renewable raw material is defined as a raw material that is continually and at a relatively fast pace reproduced in nature.*

\*\* *Recycled material is defined in line with ISO 14021, see definition in section 1.1.*

\*\*\* *Re-used textiles are defined here as post-consumer materials or pre-consumer, where it can be documented that the material is a residual material or waste from another business. Fabrics (not made-up) are only counted as reused textiles, if it can be documented that more than two years have elapsed since the fabric was originally produced. For a further definition, see ISO 14021. See also requirement O5 regarding re-used textiles.*

\*\*\*\* *Recycled renewable materials or re-used textiles do not count as both renewable and recycled raw material/re-used textiles.*

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

- ☒ State the % by weight of raw materials in the product that are renewable or recycled, respectively.
- ☒ For alternative c), calculations showing that the requirement is fulfilled.

### O4 Chlorinated plastics

Chlorinated plastics such as PVC (polyvinyl chloride) and PVDC (polyvinylidene chloride) must not be included in Nordic Swan Ecolabelled product.



- Declaration from the product manufacturer that the product is free from chlorinated plastics. Appendix 2 can be used.

## 1.4 Re-design of re-used textiles

Nordic Ecolabelling wishes to promote the re-use of textile. However, to prevent the spread of substances that are harmful to health and the environment, the reused textile used must meet the requirements below. Other newly produced elements of the product must meet the relevant requirements in the criteria.

If the re-used material or the finished product is subject to additional processing with chemical products (e.g. dyes, printing, finishing, etc.), the requirements in sections 1.6 and 1.7 regarding the relevant chemicals must be fulfilled and documented. Reused textiles that are not further processed using chemicals do not need to meet the requirements concerning chemicals used in textile production.

### O5 Re-design of re-used textiles

Re-used textile\* may be used for re-design\*\* of the whole or part of the product if the following are met:

- the material shall not come from workwear and other textiles used in the chemical and oil industry.
- the materials must not contain plastisol print (e.g., PVC, polyvinylchloride), for example in print or coatings.
- before re-design, textiles from the health care sector have been washed at an industrial laundry in a wash, where microorganisms are inactivated. The washing method must either comply with EN 14065: Textiles - Laundry-treated textiles - Control systems for biocontamination or equivalent national certification standard approved by Nordic Ecolabelling\*\*\*.

#### **Further processing of the textile:**

If further processing is carried out with chemical products (e.g., dyeing, printing, finishing, etc.), the requirements in section 1.6 and 1.7 for relevant chemicals must be complied with.

*\* Re-used textiles are defined here as post-consumer materials or pre-consumer, where it can be documented that the material is a residual material or waste from another business. Fabrics (not made-up) are only counted as re-used textiles, if it can be documented that more than two years have elapsed since the fabric was originally produced. For a further definition, see ISO 14021.*

*\*\* Re-design is defined here as changing the original appearance, function, or content of the product. Direct reuse without re-design is not covered here.*

*\*\*\* Examples on equivalent national industry standards: DK: DS 2451-8 Infection control in the health care sector - Part 8: Requirements for laundering and handling of textiles for multiple use. Norway: Norwegian Laundries' Quality Supervision industry standard «Infection control for laundries that process textiles for health care institutions».*

- Documentation showing that the textile being used is reused.
- Textiles from the health care sector: Declaration on that the textile has been washed in an industrial laundry in a microbiological wash in accordance with the requirement.

- Declaration that reused material from the mentioned industries has not been used, and that the material does not contain PVC, for example in plastisol print, coatings.

## 1.5 Textile fibres and polymers

The requirements in this section cover textile fibres and polymers that is present with a total amount of maximum 5% by weight of the product is exempt from the requirements in section 1.5. However, the limit is 15% by weight for requirement O6.

If a textile fibre is certified with the Nordic Swan Ecolabel for Textile, hide/skins, and leather or EU Ecolabel for Textile products, it is exempted from requirements O6-O13 and O16. For the Nordic Swan Ecolabel in addition requirements O18 and O19 are exempted.

### O6 Flax, bamboo and other bast fibres

When growing flax and other bast fibres (hemp, jute, coconut, etc.) the only pesticides which may be used are those permitted under the European Pesticides Regulation (1107/2009/EC).

The production of flax and other bast fibres with water retting is only permitted if the effluent from the process is treated such that the chemical oxygen demand (COD) or the total amount of organically bound carbon (TOC) is reduced to at least:

- 75% for hemp
- 95% for flax and other bast fibres

*Chemical oxygen demand (COD) must be analysed under ISO 6060 or another comparable method. The requirements for analysis laboratory and test methods for COD/TOC are stated in Appendix 3.*

*Analysis of PCOD or BOD can also be used to verify whether a correlation with COD can be demonstrated.*

- Declaration that only approved pesticides are used, Appendix 4 can be used by the fibre supplier.
- Where water retting is used: Analysis report from the producer of the bast fibre showing that the requirement is met, or a valid EU Ecolabel certificate may be used as documentation.

### O7 Cotton and other natural seed fibres of cellulose

Cotton and other natural seed fibres of cellulose (including kapok) must be one of the following or a combination (where the different types of certified cotton must add up to 100%) of:

- recycled\*
- organically cultivated\*\*
- cultivated according to standard BCI (Better Cotton Initiative)
- cultivated according to standard CmiA (Cotton made in Africa)
- cultivated according to standard Fairtrade for cotton

The proportions of the different types of certified cotton must add up to 100% and all documentation shall reference the Control Body or certifier of the different standards.

\* See definition in section 1.1.

*\*\* Organic cotton means cotton fibre that is certified as organic or transitioning to organic according to a standard approved in the IFOAM Family of Standards, such as Regulation (EU) 2018/848, USDA National Organic Program (NOP), APEDA's National Programme for Organic Production (NPOP), China Organic Standard GB/T19630. Also approved are GOTS, OCS 100, OCS blended (shares that are not organic must meet other relevant requirements in this criteria) and DEMETER and certification as "transitioning to organic cultivation". The certification body must have the accreditation required for the standard, such as ISO 17065, NOP or IFOAM.*

- ☒ Recycled fibres: Fulfilment of the requirement is documented for recycled fibre with either a) and/or b) below:
  - 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.
  
- ☒ Organic cotton: Valid certificate showing that the cotton in the Nordic Swan Ecolabelled product was organically cultivated in line with the standards in the requirement. If the supplier is the holder of GOTS certification, the requirement must be documented with a transaction certificate showing that the goods supplied are GOT certified.
  
- ☒ BCI, CmiA or Fairtrade cotton: Documentation showing that the cotton is grown within one of the three standards BCI, CmiA or Fairtrade cotton. All documentation shall reference the Control Body or certifier of the different forms of cotton and be documented:
  - on an annual basis for purchased cotton with transaction records and/or invoices, or
  - on a final product basis (by weight) measured at spinning and/or fabrication.

## 08 Wool and other keratin fibres

Any wool and other keratin fibres used must originate from sheep, camels, alpaca, or goats, and must meet either a), b) or c):

- a) certified organic wool\*
- b) recycled wool\*\*
- c) conventional wool with documentation that the requirement below concerning pesticide content in the raw wool is fulfilled. In addition mulesing is not allowed.
  - Pesticide content in conventional wool:
    - The total content of the following substances may not exceed 0.5 ppm:  $\gamma$ -hexachlorocyclohexane (lindane),  $\alpha$ -hexachlorocyclohexane,  $\beta$ -hexachlorocyclohexane,  $\delta$ -hexachlorocyclohexane, aldrin, dieldrin, endrin, p,p'-DDT and p,p'-DDD.
    - The total content of the following substances may not exceed 2 ppm: diazinon, propetamphos, chlorfenvinphos, dichlorfenthion, chlorpyrifos, fenchlorphos, dicyclanil, diflubenzuron and triflumuron.

- The requirement to test for pesticide residues does not apply if documentation can show which farmers produced at least 75% by weight of the wool or keratin fibres, and those farmers can confirm that the substances named in the requirement have not been used in the areas or on the animals in question.

**Test method:** The tests must be performed in accordance with IWTO Draft Test Method 59: Method for the Determination of Chemical Residues on Greasy Wool or equivalent.

The analysis must be performed on raw wool before wet processing and the test report must be submitted with the application. Thereafter, the applicant must have a procedure in place for annual testing in line with the requirement and for ensuring compliance with the requirement. Nordic Ecolabelling must be informed if the requirement is not fulfilled.

*\* Definition of organic wool: Wool fibre that is certified as organic or transitioning to organic according to a standard approved in the IFOAM Family of Standards, such as Regulation (EU) 2018/848, USDA National Organic Program (NOP), APEDA's National Programme for Organic Production (NPOP), China Organic Standard GB/T19630. Also approved are GOTS and DEMETER and certification as "transitioning to organic cultivation". The certification body must have the accreditation required for the standard, such as ISO 17065, NOP or IFOAM.*

*\*\* See definition in section 1.1.*

- ☒ **Organic wool:** Valid certificate showing that the wool in the Nordic Swan Ecolabelled product was organically cultivated in line with the standards in the requirement. If the supplier is the holder of GOTS certification, the requirement must be documented with a transaction certificate showing that the goods supplied are GOTS certified.
- ☒ **Recycled fibre:** Fulfilment of the requirement is documented for recycled fibre with either a) or b) below:
  - a) Global Recycled Standard certificate 4.0 (or later versions) or Recycled Claim Standard (RCS) certificate showing that the raw material is recycled, or other equivalent certification approved by Nordic Ecolabelling.
  - b) Present documentation demonstrating that the recycled fibre was purchased as recycled and state the supplier.
- ☒ **Conventional wool:** Declaration from the wool supplier that no mulesing has been used. Appendix 4 can be used.
- ☒ **Conventional wool:** Test report showing that the pesticide requirement has been fulfilled, plus a written procedure showing how an annual test is performed in line with the pesticide requirement, along with annual in-house checks of compliance with the requirement. Test results are to be archived and kept available for inspection by Nordic Ecolabelling. An alternative to the pesticide test is a confirmation from the farmers that the stated substances are not used, plus an overview of the proportion of wool concerned.

## 09 COD emissions from wool scouring plants

Emissions of COD (chemical oxygen demand) from wool scouring plants must not exceed (expressed as a 6-month average):

- 45 g/kg for fine wool (merino wool or wool fibre that is 25 microns or thinner)
- 25 g/kg for coarse wool

Wastewater that is sent to municipal or other regional treatment works is exempted.

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

Test method: Test according to ISO 6060.

- Test report from the wool scouring plant showing that the requirement is fulfilled. Alternatively, a valid GOTS or EU Ecolabel certificate may be used as documentation.

## O10 pH value and temperature of wastewater from wool scouring

The pH value of the wastewater released to the surface water must be 6-9 (unless the pH value in the recipient lies outside this interval), and the temperature must be lower than 40°C (unless the temperature in the recipient is higher).

- Test reports from the wool scouring plant showing measurements of the wastewater's pH and temperature. Alternatively, a valid GOTS certificate may be used as documentation.

## O11 Polyamide

Polyamide must meet either a), b) or c):

- a) The annual average emissions to air of nitrous oxide (N<sub>2</sub>O) from the manufacture of monomers must not exceed 10 g/kg manufactured polyamide 6 or 50 g/kg manufactured polyamide 6.6.

Test method: ISO 11564 or equivalent method.

The requirements for analysis laboratory are stated in Appendix 3.

- b) Minimum 20 % by weight of the polyamide fibres must comprise of recycled material\*.

The traceability of the recycled raw material must be documented with either 1 or 2 below:

1. Global Recycled Standard certificate or Recycled Claim Standard certificate showing that the raw material is recycled, or other equivalent certification approved by Nordic Ecolabelling.
2. By stating the producer of the recycled raw material and documenting that the feedstock used in the raw material is 100% recycled material.

- c) A valid certificate for EU Ecolabel (Commission's decision from 2014) or Blue Angel (DE-UZ 154, 2017).

\* See definition in section 1.1.

- a) Detailed information and/or test report from the manufacturer of the polyamide fibre, showing that the requirement is fulfilled on an annual basis by the manufacturing unit.
- b) Certificate from an independent certifier of the supply chain (e.g., Global Recycled Standard or Recycled Claim Standard) **or** Documentation from the producer, showing that the feedstock used in the raw material is 100% recycled material. **And** calculation showing that minimum 20 wt% of the polyamide fibres are recycled.
- c) A valid certificate for EU Ecolabel (Commission's decision from 2014) or Blue Angel (DE-UZ 154, 2017).

## O12 Polyurethane

Polyurethane must meet either a) or b):

- a) When manufacturing polyurethanes, isocyanate compounds must only be used in closed processes where recommended/prescribed safety equipment is worn.

Halogenated flame retardants must not be used.

- b) The polyurethane fibres must comprise of recycled material\*.

The traceability of the recycled raw material must be documented with either 1 or 2 below:

1. Global Recycled Standard certificate or Recycled Claim Standard certificate showing that the raw material is recycled, or other equivalent certification approved by Nordic Ecolabelling.
2. 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 section 1.1.

- a) Declaration that the requirement is fulfilled. Appendix 4 can be used.
- b) Certificate from an independent certifier of the supply chain (e.g., Global Recycled Standard or Recycled Claim Standard) **or** Documentation from the producer, showing that the feedstock used in the raw material is 100% recycled material.

## O13 Polyester

Polyester must meet either a) or b):

- a) The amount of antimony in polyester fibre measured as an annual average shall not exceed 260 ppm.

Antimony shall be tested using the following method: Direct determination by atomic absorption spectrometry. The test shall be executed on raw fibre prior to wet treatment.

Requirements for analysis laboratories are given in Appendix 3.

- b) The polyester fibres must comprise of recycled material\*.

The traceability of the recycled raw material must be documented with either 1 or 2 below:

1. Global Recycled Standard certificate or Recycled Claim Standard certificate showing that the raw material is recycled, or other equivalent certification approved by Nordic Ecolabelling.
2. 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 section 1.1.

- a) A declaration from the polyester manufacturer that antimony is not used, or a test report showing that the antimony requirement is fulfilled. 0 can be used.
- b) Certificate from an independent certifier of the supply chain (e.g., Global Recycled Standard or Recycled Claim Standard) **or** Documentation from the producer, showing that the feedstock used in the raw material is 100% recycled material.

## O14 Additives in polymer materials

Additives\* in polymer materials shall comply with requirement O23.

The requirement applies to additives irrespective of whether the material is manufactured of virgin or recycled raw materials.

*Polymer materials are rubber materials (elastomers), thermosetting and thermoplastics irrespective of shape (thread-shaped fibres or layers/sheets).*

*\* See definition in section 1.1.*

- ☒ A declaration from the material's manufacturer in accordance with Appendix 5.

## O15 Substances in recycled polymer materials

Recycled polymer materials shall not contain the following substances:

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

Impurities of these substances up to 100 ppm are allowed.

Exemption to the requirement:

- Material from PET bottles original 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 eco-labelled products.

- ☒ Documentation from the manufacturer of recycled plastic showing that the requirement is met. For example, documentation regarding the origin of the plastic or a laboratory test document. Oeko-Tex standard 100 class II certificate for the Nordic Swan Ecolabelled product can also be used for documentation.

- ☒ 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.

## O16 Treatment and coating of fibre and yarn

None of the substances below may occur in any of the preparations/products/formulations used in the treatment of fibres:

- alkylphenol ethoxylates (APEO)
- linear alkylbenzene sulphonates (LAS)
- dihydrogenated tallow dimethyl ammonium chloride (DHTDMAC)
- distearyl dimethyl ammonium chloride (DSDMAC)
- ditallow dimethyl ammonium chloride (DTDMAC)
- ethylenediaminetetraacetic acid (EDTA)
- diethylenetriamine pentaacetate (DTPA)

*Other chemicals/chemical products which are used in the factory, e.g., for the cleaning of production equipment are not included.*

- Declaration from the fibre manufacturer that the requirement is fulfilled. Appendix 4 can be used.

### O17 Emissions to water from production of foam plastic/foam rubber

Emissions of oxygen demanding substances to water from the production of foam plastic/foam rubber must be reduced by 90% measured as COD or TOC. The reduction may be achieved through on-site or off-site treatment. In the case of off-site treatment, the average treatment level of the effluent treatment plant may be used.

*Chemical oxygen demand (COD) must be analysed under ISO 6060. The requirements for analysis laboratory and test methods are stated in Appendix 3.*

- Description of how the effluent from foam plastic production is treated and how COD emissions are measured and monitored.
- Test report showing that the limit value for chemical oxygen demand (COD) is fulfilled.

### O18 Synthetic latex (SBR) and natural latex

Synthetic latex (SBR) must meet a), b) and c) below.

Natural latex must meet a) and c) below.

The impurity limit of 100 ppm does not apply in this requirement.

*The requirements for analysis laboratory are stated in Appendix 3.*

- a) The content of the polycyclic aromatic hydrocarbons (PAHs) below must not exceed 0.2 mg/kg of latex in total.

Substance name	CAS-no
Benzo[A]Pyrene	50-32-8
Benzo[E]Pyrene	192-97-2
Benzo[A]Anthracene	56-55-3
Dibenzo[A,H]Anthracene	53-70-3
Benzo[B]Fluoranthene	205-99-2
Benzo[J]Fluoranthene	205-82-3
Benzo[K]Fluoranthene	207-08-9
Chrysene	218-01-9

Must be tested in accordance with ISO 18287 or ZEK 01.2-08 (GC/MS).

- b) The content of 1,3-butadiene must be less than 1 mg/kg latex.  
Test method: Butadiene can be determined according to EN 13130-4 or similar method.
- c) The concentration of N-nitrosamines\* must not exceed 0.0005 mg/m<sup>3</sup>, measured by the climate chamber test conducted in accordance with the standard ISO 16000-9.  
*\*n-nitrosodimethylamine (NDMA), n-nitrosodiethylamine (NDEA), n-nitrosomethylethylamine (NMEA), n-nitrosodiisopropylamine (NDIPA), n-nitrosodi-n-propylamine (NDPA), n-nitrosodi-n-butylamine (NDBA), n-nitrosopyrrolidine (NPYR), n-nitrosopiperidine (NPIP), n-nitrosomorpholine (NMOR).*

- Test results and test reports according to the requirement

### O19 Polyurethane foam (PU foam)

Tin in its organic form (tin bonded to a carbon atom) is not permitted.

CFC, HCFC, HFC (hydrofluorocarbons) or methylene chloride must not be used as a foaming agent.



Isocyanate compounds may only be used in closed processes where recommended/prescribed safety equipment is worn.

- Declaration from the foam manufacturer/supplier about which blowing agent has been used. Appendix 6 can be used.

## 1.6 Chemicals

The chemical requirements cover all chemicals and chemical products added to the product materials or used in the manufacture of the product, including surface treatments. Here, manufacture is defined as all manufacturing/treatment conducted by the manufacturer, but also by its suppliers of raw materials or constituent products.

The requirements relate to areas such as adhesives, impregnation, pigments, bleaching chemicals, and so on. The requirements also apply to chemicals in the constituent parts of the product, such as latex materials.

There are also specific chemical requirements for dyes and pigments in section 1.7, in addition to the general chemical requirements in this section 1.6.

### O20 Overview of chemicals

All chemical products shall be stated and documented with a safety data sheet. A collective list or separate lists shall be drawn up for each production process and/or supplier.

The following information shall be submitted for each chemical product:

- trade name
- the function of the chemical
- the process step in which the chemical product is used
- the supplier/producer using the chemical product

- List of chemicals for every production process and/or supplier.

- Safety data sheet for every chemical product, in line with Annex II of REACH 1907/2006.

### O21 Classification of chemical products

Chemical products shall not be classified as any of the hazard categories set out in the table below.

CLP Regulation 1272/2008		
Hazard class	Hazard category	Hazard code
Toxic to aquatic life	Aquatic Acute 1	H400
	Aquatic Chronic 1	H410
	Aquatic Chronic 2	H411
Hazardous to the ozone layer	Ozone	H420
Carcinogenicity*	Carc 1A or 1B	H350
	Carc 2	H351
Germ cell mutagenicity*	Muta. 1A or 1B	H340
	Muta. 2	H341
Reproductive toxicity*	Repr. 1A or 1B	H360
	Repr. 2	H361
	Lact.	H362

Acute toxicity	Acute Tox 1 or 2 Acute Tox 3	H300, H310, H330 H301, 311, 331
Specific target organ toxicity with single or repeated exposure	STOT SE 1 STOT RE 1	H370 H372

*\*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.*

### Exceptions:

- Adhesive products that contain isocyanates are exempted from the classification prohibition H351. Isocyanates in the production of polyurethane are regulated in O12.
  - Adhesive products with formaldehyde are exempted from the classification prohibition H350 and H341. Formaldehyde emission from the product is regulated in O33.
  - Exception is made for titanium dioxide (TiO<sub>2</sub>) classified Carc. 2 H351 which is added in powder form during the production of the product if the following is met: It must be added in closed systems, in suspended form or by a method that promotes a "low-dusting" working environment, for example by using protective equipment that significantly reduces dust or completely removes dust from raw materials (e.g., extraction, personal protective equipment and clear safety instructions).
- Declaration from the chemical manufacturer/supplier that the requirement is fulfilled. 0 can be used.
- Exception for TiO<sub>2</sub>: Description of how TiO<sub>2</sub> in powder form is handled during production of the product.

## O22 CMR substances

Chemical products shall not contain any ingoing substances\* that have any of the classifications in the table below.

*\* See the definition of ingoing substances and impurities in section 1.1.*

CLP Regulation 1272/2008		
Hazard class	Hazard category	Hazard code
Carcinogenicity*	Carc. 1A or 1B	H350
Germ cell mutagenicity*	Muta. 1A or 1B	H340
Reproductive toxicity*	Repr. 1A or 1B	H360

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

- **Exemption:** Adhesive products that contain formaldehyde are exempted from the requirement. Formaldehyde emission from the product is regulated in O33.
- Declaration from the chemical manufacturer/supplier, that the requirement is fulfilled. Appendix 5 can be used.

## O23 Prohibited substances

The following substances shall not be additives in materials or an ingoing substance\* in chemical products:

- Substances on the Candidate List (<https://echa.europa.eu/candidate-list-table>). Siloxanes D4, D5 and D6 have their own documentation requirement, see requirement O24.

- Substances that are PBT (Persistent, Bioaccumulative, and Toxic) or vPvB (very Persistent and very Bioaccumulative) as set out in the criteria of REACH Annex XIII.
- Substances considered to be potential endocrine disruptors in category 1 or 2 on the EU's priority list of substances that are to be investigated further for endocrine disruptive effects. See following link:  
[http://ec.europa.eu/environment/chemicals/endocrine/pdf/final\\_report\\_2007.pdf](http://ec.europa.eu/environment/chemicals/endocrine/pdf/final_report_2007.pdf) (Annex L, page 238 onwards).
- Halogenated flame retardants (e.g., short chain chlorinated paraffins).
- Per- and polyfluoroalkyl substances (PFASs), e.g., PFOA and PFOS.
- Heavy metals in dyes and pigments\*\*.
- Phthalates.
- Chlorinated solvents and carriers, including chlorotoluenes, chlorophenols and chlorobenzenes.
- Chlorinated organic bleaching agents.
- Alkylphenol ethoxylates (APEO) and other alkylphenol derivatives.
- Printing paste may not contain more than 5% VOC (volatile organic compounds with a steam pressure exceeding 0.01 kPa at 20°C).

\* See the definition of ingoing substances and impurities in section 1.1.

\*\* Heavy metals are the metals listed here: Metal impurities in dyes and pigments up to the amounts set out in ETAD, Annex 2 "Heavy metal limits for dyes": antimony (50 ppm), arsenic (50 ppm), cadmium (20 ppm), chromium (100 ppm), lead (100 ppm), mercury (4 ppm), zinc (1500 ppm), copper (250 ppm), nickel (200 ppm), tin (250 ppm), barium (100 ppm), cobalt (500 ppm), iron (2500 ppm), manganese (1000 ppm), selenium (20 ppm) and silver (100 ppm).

Exemptions from the requirement are granted for:

- 1) copper, chromium and nickel in metal complex dyes, see requirement O28.
- 2) iron used for colour depigmenting before printing.

- Declaration from the chemical manufacturer/supplier that the requirement is fulfilled. Appendix 5 can be used.

#### O24 Chemicals that contain silicone

D4 (CAS no. 556-67-2), D5 (CAS no. 541-02-6) and D6 (CAS no. 540-97-6) shall only be present in the form of residues from the raw material production, and each shall only be present in amounts up to 1000 ppm in the silicone raw material (the chemical).

- Test from the chemical manufacturer showing that the requirement is met.

#### O25 VOC in adhesives

Adhesives must not contain more than 3% by weight volatile organic compounds (VOC).

- Declaration from the manufacturer/supplier of the chemical product, in accordance with 0. In addition, safety data sheets in line with Annex II of REACH 1907/2006.

#### O26 Antibacterial substances and biocides

The following substances must not be added to fibres or to the finished product for the purpose of achieving a disinfectant or antibacterial treatment or a disinfectant or antibacterial surface:

- Antibacterial substances (including silver ions, nano silver and nano copper)

and/or

- Biocides in the form of pure active substances or as biocidal products.

*Naturally occurring antibacterial effects in materials are not subject to the prohibition.*

- Declaration from the product manufacturer that the requirement has been fulfilled. Appendix 2 can be used.

## O27 Nanomaterials/-particles

Nanomaterials/-particles\* must not be added or be present in the product.

Pigments and polymer dispersions are exempt from the requirement.

\* *Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01), see definition in section 1.1.*

- The product manufacturer must declare that the requirement is fulfilled in line with Appendix 2.
- Declaration in line with 0 from the manufacturer/supplier of the chemical product.

## 1.7 Dyes and pigments

The requirements in this chapter relate to the dyeing of yarn and fibres by the product manufacturers and their suppliers.

### O28 Metal complex dyes

Metal complex dyes are only permitted for the dyeing of wool, wool blend fibres, polyamide and polyamide/regenerated cellulose blend fibres.

Emissions to water from treatment must not exceed:

- 5 mg/kg fibre for copper (Cu)\*
- 3 mg/kg fibre for chromium (Cr)
- 5 mg/kg fibre for nickel (Ni)

Emissions of Cu and Ni are to be analysed in line with ISO 8288 and emissions of Cr are to be analysed in line with EN 1233 or equivalent methods. The requirements for analysis laboratory are stated in Appendix 3.

\* Metal complex dyes based on copper that make up a maximum of 5% by weight of the dye is also accepted.

- Declaration from the dyehouse where metal complex dyes are used and test reports showing fulfilment of the requirement on emission from wastewater treatment. For Metal complex dyes based on copper also documentation (e.g., safety data sheets or declaration) for max. 5 wt% copper in the dye can be used. Appendix 8 can be used.

### O29 Azo dyes

Azo dyes that may release any of the aromatic amines stated in the table below must not be used.

Azo dyes	CAS no.
4-aminobiphenyl	92-67-1
Benzidine	92-87-5
4-chloro-o-toluidine	95-69-2
2-naphthylamine	91-59-8

o-aminoazotoluene	97-56-3
2-amino-4-nitrotoluene	99-55-8
p-chloraniline	106-47-8
2,4-diaminoaniline	615-05-4
4,4'-diaminodiphenylmethane	101-77-9
3,3'-dichlorobenzidine	91-94-1
3,3'-dimethoxybenzidine	119-90-4
3,3'-dimethylbenzidine	119-93-7
3,3'-dimethyl-4,4'-diaminodiphenylmethane	838-88-0
p-cresidine	120-71-8
4,4'-oxydianiline	101-80-4
4,4'-thiodianiline	139-65-1
o-toluidine	95-53-4
2,4-diaminotoluene	95-80-7
2,4,5-trimethylaniline	137-17-7
4-aminoazobenzene	60-09-3
o-anisidine	90-04-0
2,4-xylidine	95-68-1
2,6-xylidine	87-62-7

*Azo dyes are to be analysed in line with EN 14362-1 and EN 14362-3. The requirements for analysis laboratory are stated in Appendix 3.*

- ☒ Declaration from the dye manufacturer that these dyes are not used and/or a test report showing fulfilment of the requirement. Appendix 8 can be used.

### O30 Allergenic dyes

The allergenic dyes listed in the table below must not be used.

Generic Name	CAS no.
Disperse Blue 1	2475-45-8
Disperse Blue 3	2475-46-9
Disperse Blue 7	3179-90-6
Disperse Blue 26	3860-63-7
Disperse Blue 35	12222-75-2
Disperse Blue 102	12222-97-8
Disperse Blue 106	12223-01-7
Disperse Blue 124	61951-51-7
Disperse Brown 1	23355-64-8
Disperse Orange 1	2581-69-3
Disperse Orange 3	730-40-5
Disperse Orange 37	12223-33-5
Disperse Orange 76	
Disperse Orange 149	85136-74-9
Disperse Red 1	2872-52-8
Disperse Red 11	2872-48-2
Disperse Red 17	3179-89-3
Disperse Yellow 1	119-15-3
Disperse Yellow 3	2832-40-8
Disperse Yellow 9	6373-73-5
Disperse Yellow 23	6250-23-3
Disperse Yellow 39	12236-29-2
Disperse Yellow 49	54824-37-2

- Declaration from the dyeworks that these dyes are not used and/or a test report showing fulfilment of the requirement. Appendix 8 can be used.

## 1.8 Energy and water consumption

### O31 Energy consumption for Nordic Swan Ecolabelled product

Products with backing of other materials than textiles must fulfil requirement O31.

Other products must fulfil either requirement O31 or O32.

Energy consumption is calculated as an annual average.

Only the energy used in the final manufacturing of the product shall be included in the energy consumption calculation.

For energy, the chosen unit is kWh/m<sup>2</sup>, but this can be converted as follows: 1 kWh = 3.6 MJ.

An energy calculation is to be made, and the total must amount to at least:

$$E = \frac{A}{20} + \left(5 - \frac{B}{3}\right) + \left(5 - \frac{C}{7}\right)$$

E shall be at least 8.5.

The following applies for the individual energy components:

Environmental parameters	Requirement/limit value
A = Proportion of renewable fuel* (%)	—
B = Electricity consumption (kWh/m <sup>2</sup> )	Maximum 15 kWh/m <sup>2</sup>
C = Fuel consumption (kWh/m <sup>2</sup> )	Maximum 35 kWh/m <sup>2</sup>

*Energy consumption relates to electricity purchased from an external supplier.*

*If the manufacturer has surplus energy and sells this in the form of electricity, steam or heat, the amount sold is deducted from the fuel consumption figure. Only fuel that is actually consumed in the manufacture of the products is to be included in the calculation.*

*The energy content of different fuels can be found in Appendix 9.*

*\* Purchases of green electricity do not count as renewable fuel.*

- Enclose the calculation of E as set out above.
- State which types of fuel have been used in the manufacture of the product over the past year, and which fuels are renewable. State how much electricity has been used and how much product (m<sup>2</sup>) has been produced over the past year. 0 can be used.

### O32 Implementation of BAT for energy and water consumption

Either requirement O31 or O32 must be fulfilled.

The applicant shall demonstrate that the energy used for e.g., washing, drying, bleaching, and curing associated with dyeing, printing and finishing the product is measured and compared with BAT levels or own figures from before implementing efficiency techniques.

This shall be done as a part of an energy management system or a system for the management of CO<sub>2</sub> emissions. The requirement may be documented per process.

The applicant shall demonstrate that the water consumption associated with wet processes such as dyeing, printing, and finishing the product is measured.

There shall also be documentation for that the production facilities have implemented a minimum of BAT water and energy efficiency techniques or measures for in-house production of solar energy, see the table and the extra information about BAT themes below. This applies to the total production volume for the individual production facility.

BAT themes	Production volume	
	<10 tonnes per day	>10 tonnes per day
1. General energy management	Two techniques	Three techniques
2. Washing and rinsing	One technique	Two techniques
3. Drying and curing using stretchers	One technique	Two techniques

BAT themes
<p><b>General techniques</b></p> <ul style="list-style-type: none"> <li>• Measuring how much is consumed and where</li> <li>• Process monitoring and automatic control systems for flow control, filling volumes, temperatures, and timings</li> <li>• Insulating pipes, valves, and flanges</li> <li>• Frequency-controlled electric motors and pumps</li> <li>• Closed design of machines to reduce evaporation losses</li> <li>• Reuse of water and liquids in batch processes</li> <li>• Combining multiple wet treatments into one process</li> <li>• Heat recovery, e.g., from washing, steam condensate, exhaust air from processes, exhaust gases from combustion</li> <li>• Solar thermal panels, solar photovoltaic panels, or a heat recovery system for used hot water, installed within the operation, and generating energy amounting to 30% of what the process requires</li> </ul>
<p><b>Washing and rinsing</b></p> <ul style="list-style-type: none"> <li>• Using cooling water as process water</li> <li>• Replacing overflow tanks with drainage/inlet tanks</li> <li>• Using "intelligent" rinsing technologies with water flow control and counter flow</li> <li>• Installing a heat exchanger</li> </ul>
<p><b>Drying and curing using stretchers</b></p> <ul style="list-style-type: none"> <li>• Optimising air circulation</li> <li>• Insulating the premises</li> <li>• Installing effective burner systems</li> <li>• Installing heat recovery systems</li> </ul>

- ☒ The applicant must compile and submit reports from energy management systems for the individual dyeing, printing, and finishing facilities. ISO 50001 or equivalent systems for energy management or management of CO<sub>2</sub> emissions are accepted as documentation of the energy management system.
- ☒ The applicant must compile and submit measurements of water consumption for the individual dyeing, printing, and finishing facilities.
- ☒ The applicant must submit an overview of the dyeing, printing, and finishing facilities, stating the production volume per day for each process.
- ☒ For each implementation of a BAT technique or process using solar energy produced in-house, the applicant must submit images of the facility, technical

descriptions of the individual technologies and assessments of the energy savings achieved, along with a statement of the process and operation in which the technology has been implemented.

## 1.9 Quality

### O33 Emissions from the product

Products with backing of other materials than textiles must fulfil requirement O33. Other products must fulfil either requirement O33 or O34.

The product is to be tested in accordance with ISO 16000-3/-6/-9/-10 or an equivalent method. Sampling is to be carried out by an accredited third-party.

Emissions from Nordic Swan Ecolabelled product shall not exceed the levels in the table below.

Substances or groups of substances	Limit value after 28 days in $\mu\text{g}/\text{m}^3$ *
TVOC (C6-C16)	160
SVOC (C16-C23)	30
Formaldehyde	30

\* Conversion between  $\mu\text{g}/\text{m}^2\text{h}$  and  $\mu\text{g}/\text{m}^3$ , plus requirements for analysis laboratory described in Appendix 3.

*Other analysis methods can be accepted if they are judged to be equivalent by an independent and competent body.*

- Analysis report showing that the limits in the table above are met. It should be clearly stated which test standard that is used, which laboratory that has performed the analysis and that the laboratory is accredited by an independent third party, see Appendix 3. A valid certificate from relevant indoor climate labels can also be used as documentation if an independent expert confirms that the label fulfils the requirements.

### O34 Formaldehyde emissions from the product

Products with backing of other materials than textiles must fulfil requirement O33. Other products must fulfil either requirement O33 or O34.

The amount of free and partly hydrolysable formaldehyde in the final product shall not exceed 16 ppm.

Test method: The content of formaldehyde shall be tested in accordance with standard EN ISO 14184-1.

- Test report showing that the requirement is fulfilled or a certificate from Oeko-Tex 100 class I Baby or GOTS can also be used as documentation.

### O35 Cleaning quality

Wall-to-wall products are to be tested for cleaning in accordance with the standard INSTA 800 Appendix D1, Method A Carpet Tester or Method B STEPP Tester, and BM Dust Detector. The results shall meet the requirements for dust level 5 as given in Table D.1 of INSTA 800.

*Prior to testing, the floor shall have a dust index of 0.0 before being smudged with a test smudge. See Appendix 3 for complete requirements for testing.*

- Test report showing that the requirement is fulfilled.

### O36 Durability

Products with backing of other materials than textiles must fulfil requirement O36. Other products must fulfil either requirement O36 or O37-O41.



The product must achieve at least the following classes, see also table below:

- User class 33 for products intended for professional/public use.
- User class 22+ for other products intended for private use.

The product is to be tested and classified in accordance with the standards EN 14041 and EN ISO 10874.

The product is to be classified in accordance with EN 1307 (textile flooring with pile), alternatively EN 15114 (textile flooring without pile) or EN 1470 (needle-pile carpets).

If the flooring has been tested according to a test method other than what is specified above, this may be acceptable if the test methods are comparable in the opinion of an independent third party.

Area of use	Class of use	Intensity of use
Private use/Domestic	21	Moderate/light
	22	General/average
	22+	General
	23	Hard
Professional/public use/offices and commercial premises	31	Moderate
	32	General
	33	Hard
	34	Very hard

*The requirements for testing institutes are stated in Appendix 3.*

- ☒ Test report from an independent testing institute that the requirement is fulfilled.

### O37 Dimensional changes during washing and drying

Either requirement O36 or O37-O41 must be fulfilled.

The requirement does not apply to products that is not intended for removal and washing or products with backing of materials other than textile fibres.

Dimensional changes after washing and drying shall not exceed:

- $\pm 2\%$  for woven products of wool blend and synthetic fibres
- $\pm 3\%$  for woven products not covered by the categories above.
- $\pm 5\%$  for knitwear products

Test method:

The tests should be carried out in accordance with EN ISO 6330 “Textiles – Domestic washing and drying procedures for textile testing”, combined with ISO 5077 “Textiles – Determination of dimensional change in washing and drying”.

For professional textiles intended for industrial laundry, the standard ISO 15797 Textiles – “Industrial washing and finishing procedures for testing of workwear”, combined with EN ISO 5077.

- ☒ Test report showing that the requirement is fulfilled.

### O38 Colour fastness to light

Either requirement O36 or O37-O41 must be fulfilled.

The requirement does not apply to white products.

Colour fastness to light must be tested according to EN ISO 105 B02 or equivalent and meet level 5.

Level 4 is permitted if the product is both lightly dyed (standard depth  $<1/12$  in accordance with 105 A06) and consists of blends with more than 20% wool or other keratin fibres, or of blends with more than 20% linen or other bast fibres.

☒ Test report showing that the requirement is fulfilled.

### O39 Colour fastness to wash and dry cleaning

Either requirement O36 or O37-O41 must be fulfilled.

The requirement does not apply to white products, products that are neither dyed nor printed or products that is not intended for removal and washing or dry cleaning.

Colour fastness to either wash or dry cleaning shall meet the following conditions as a minimum:

- For colour change: level 3-4
- For discolouration: level 3-4

Test method for wash: The tests shall be performed in accordance with ISO 105 C06 (a single wash at the temperature stated on the product), or equivalent.

Test method for dry cleaning: The test must be carried out in accordance with ISO 105 D01

☒ Test report showing that the requirement is fulfilled.

### O40 Colour fastness to rubbing (wet)

Either requirement O36 or O37-O41 must be fulfilled.

The requirement does not apply to white products or products that are neither dyed nor printed.

Colour fastness to wet rubbing shall be at least level 3-4.

Test method: Tests shall be performed in accordance with ISO 105 X12 or equivalent.

☒ Test report showing that the requirement is fulfilled.

### O41 Colour fastness to rubbing (dry)

Either requirement O36 or O37-O41 must be fulfilled.

The requirement does not apply to white products or products that are neither dyed nor printed.

Colour fastness to dry rubbing shall be at least level 4.

Test method: Tests shall be performed in accordance with ISO 105 X12 or equivalent.

☒ Test report showing that the requirement is fulfilled.

## 1.10 Product information

### O42 Product information for wall-to-wall products

The following product information is to be enclosed with the Nordic Swan Ecolabelled wall-to-wall product:

- Recommended cleaning method including cleaning products. If there are suitable Nordic Swan Ecolabelled cleaning products, these are to be recommended.
- The product's areas of use are to be stated. See classes in requirement O36.
- If product is to be glued to the subfloor: Which adhesive is recommended. If there are suitable Nordic Swan Ecolabelled adhesives, these are to be recommended. Recommended methods for laying the wall-to-wall product are also to be provided.

- Enclose a copy of the product information given to customers.

## 2 Licence maintenance

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

### O43 Customer complaints

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

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

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

### O44 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 the product fulfils Nordic Ecolabelling requirements during the licence period. This may involve a site visit, random sampling, or similar test.

The licence may be revoked if it is evident that the product does not meet the requirements.

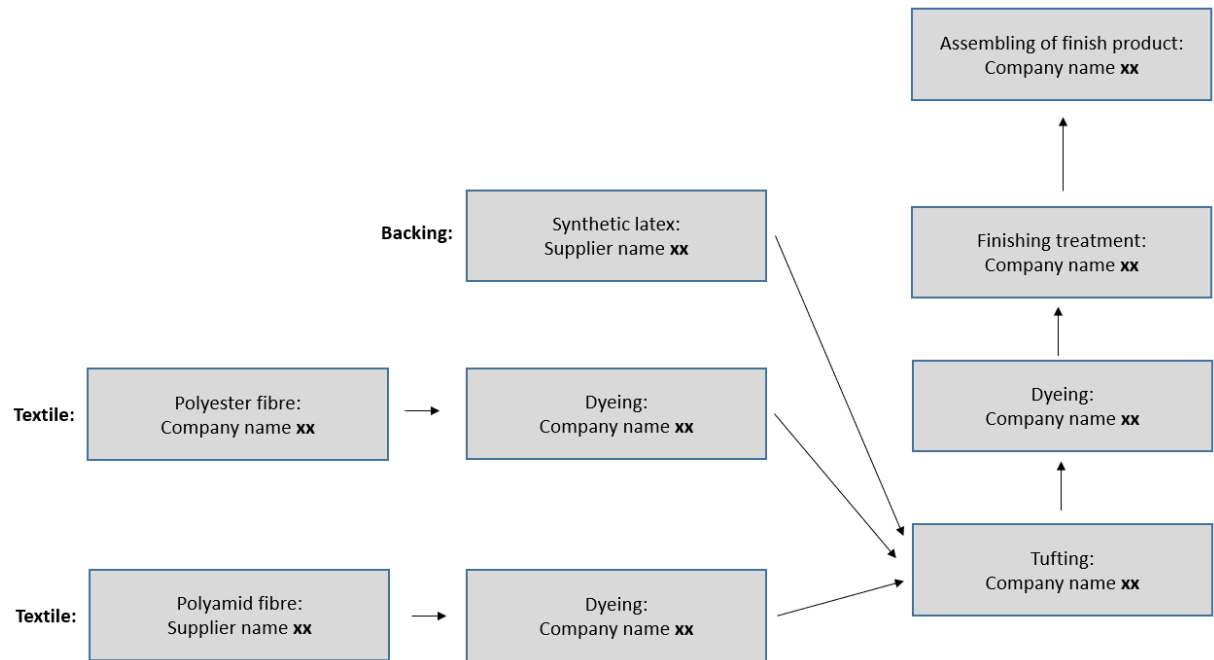
Random samples may also be taken in-store and analysed by an independent laboratory. If the requirements are not met, Nordic Ecolabelling may charge the analysis costs to the licensee.

## Criteria version history

Nordic Ecolabelling adopted version 1.1 of the criteria for Textile floor coverings and carpets on March 22, 2023. The criteria are valid until 1 May 2026.

## Appendix 1 Manufacturing process and suppliers

Example of flow chart:



Suppliers:

Company name	Production site (Full address)	Contact person (Name, email and phone)	Manufacturing process (e.g., dyeing, surface treatment, etc.)

## Appendix 2 Information about the product

This appendix shall be completed and signed by the textile floor covering/carpet/rug/mat manufacturer.

Manufacturer:
Name of the product(s):

### Chlorinated plastics

Is the textile floor covering/carpet/rug/mat free from chlorinated plastics (PVC/vinyl and PVDC/polyvinylidene chloride)?  Yes  No

### Antibacterial substances and biocides

Has any of the below substances been added to fibres or to the finished textile floor covering/carpet/rug/mat surface for the purpose of achieving a disinfectant or antibacterial treatment/surface?  Yes  No

- Antibacterial substances (including silver ions, nano silver, and nano copper)
- Biocides in the form of pure active substances or as biocidal products

Naturally occurring antibacterial effects in materials are not subject to the prohibition.

### Nanomaterials/-particles

Does the textile floor covering/carpet/rug/mat contain Nanomaterials/-particles\*?  Yes  No

Pigments and polymer dispersions are exempt.

*\* Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01), see definition in section 1.1.*

### Signature of textile floor covering/carpet/rug/mat manufacturer:

Date	Company
Signature by contact person	
Name of contact person	Phone and e-mail

## Appendix 3      Laboratories and methods for testing and analysis

### **Requirements for testing and analysis laboratories**

Sampling is to be carried out in a competent manner. The analysis laboratory/testing institute must be impartial and competent.

If accreditation is not separately required, the testing and/or analysis laboratory shall fulfil the general requirements of standard EN ISO 17025 on general requirements for the competence of testing and calibration laboratories or have official GLP status.

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

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

### **Emissions to water, oxygen demanding substances (COD/TOC/BOD)**

Analysis method: Oxygen demanding substances must be analysed in line with the international standard ISO 6060 Water quality-determination of the chemical oxygen demand. If another analysis method is used, the licence applicant must show that it is equivalent. Analysis of PCOD or BOD can also be used to verify whether a correlation with COD can be demonstrated. The measurement method for TOC is ISO 8245 Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon (DOC).

Sampling frequency: Emissions of oxygen demanding substances must be calculated as an annual average and based on at least one representative 24-hour measurement per week. Alternatively, a sampling frequency approved by the authorities can be accepted.

Sampling: Water samples must be taken once the process wastewater has been treated in an internal purification plant, if available. The flow at sampling must be shown. If the process wastewater is treated externally together with other effluent, the documented treatment/efficiency level of the external treatment plant must be deducted from the analysis result. Analyses must be carried out on unfiltered and unsedimented samples in line with the international standard ISO 6060.

### **Conversion between emission rate and concentration in a model room**

SP Technical Research Institute of Sweden has drawn up a report for the Norwegian Green Building Council (NGBC) which compares emissions

requirements at M1 level with other emission tests<sup>1</sup>. Examples of conversion between the different tests are shown.

Information from this report can be used as the basis for converting the requirement limits for C (concentration in the model room, µg/m<sup>3</sup>) to E (emission rate, µg/m<sup>2</sup>h) to for requirement O34. The conversion assumes that the sampling is carried out in line with ISO 16000-9 or -10 at a temperature of 23 ± 2°C and a relative humidity of 50 ± 5%. The following formula is used:

$$C = \frac{E}{q} = \frac{EA}{nV}$$

C = concentration of a VOC in the model room (µg/m<sup>3</sup>)

E = area specific emission rate (µg/m<sup>2</sup>h)

q = area specific air flow rate (m<sup>3</sup>/m<sup>2</sup>h)

A = area of sample in the model room (m<sup>2</sup>)

n = air exchange rate, in changes per hour

V = volume of the model room, in m<sup>3</sup>

SP's report states that if a measurement is taken in line with ISO 16000-9 or -10, the concentration is calculated based on a model room with a volume of 17.4 m<sup>3</sup> and an air exchange rate of 0.5 h<sup>-1</sup>. The floor area is 7 m<sup>2</sup> and the room height 2.4 to 2.5 m. This means that for flooring products q, "area specific air flow rate" is 1.25 m<sup>3</sup>/m<sup>2</sup>h. Since 1 January 2014, M1 has referred on its website<sup>2</sup> to a model room of 30 m<sup>3</sup>, but for floor coverings the ratio will remain the same<sup>3</sup>. The floor area is 12 m<sup>2</sup>, making q 1.25. This change to the model room is in line with the standard CEN/TS 16516:2013. The following conversions can be made for the levels in O33:

Substances or groups of substances	Limit value after 28 days in µg/m <sup>3</sup> (concentration)	Conversion to emissionrate after 28 days in µg/m <sup>2</sup> h
TVOC (C6-C16)	160	198 (comparable to M1 level, 200)
SVOC (C16-C23)	30	37
Formaldehyde	30	37

## Cleaning quality of wall-to-wall products

Prior to testing, the carpet's cleanliness shall be examined by Method A or Method B. If the result gives a dust index exceeding 0.0 the carpet shall be cleaned by vacuuming until the result is dust index 0.0.

The carpet should be smudged with 2.0 g/m<sup>2</sup> test dust of type "AC Spark Plug, Fine Air Cleaner Test dust from natural Arizona dust", which shall give a dust index of about 30% (Method A)/ approx. 1.5% (method B).

<sup>1</sup> Emission test methods in BREEAM-NOR and comparisons with other emission test methods, SP Technical Research Institute of Sweden, 2013, [http://ngbc.no/sites/default/files/SP-rapport%20om%20emisjonskrav%20i%20BREEAM-NOR%20vs%20andre%20ordninger\\_3.pdf](http://ngbc.no/sites/default/files/SP-rapport%20om%20emisjonskrav%20i%20BREEAM-NOR%20vs%20andre%20ordninger_3.pdf)

<sup>2</sup> [www.rakennustieto.fi](http://www.rakennustieto.fi)

<sup>3</sup> Korrespondens med SP Technical Research Institute of Sweden, januari 2014

The carpet shall be vacuumed with a Nilfisk Advance GU 350A vacuum cleaner (900 W) or equivalent, with carpet nozzle (without brushes). Nozzles shall run 1x over the surface with a speed of 0.1 m/sec.

Residual dust is measured by Method A or Method B.



## Appendix 4 Textile fibres

This appendix shall be completed and signed by the fibre supplier.

Manufacturer/supplier:
Name of the product(s):

### Flax, bamboo and other bast fibres

Are all pesticides used, permitted under the European Pesticides Regulation (1107/2009/EC)?

 Yes

 No

### Conventional wool

Is mulesing used?

 Yes

 No

### Polyurethane

Are isocyanates used in a closed process?

 Yes

 No

Is prescribed protective equipment used?

 Yes

 No

Are halogenated flame retardants used in the polyurethane material?

 Yes

 No

### Polyester

Does the amount of antimony in the polyester fibre measured as an annual average exceed 260 ppm?

 Yes

 No

Alternatively attach a test report showing that the requirement is fulfilled.

*Test method: Direct determination by atomic absorption spectrometry. The test shall be executed on raw fibre prior to wet treatment.*

*Requirements for analysis laboratories are given in Appendix 3.*

### Chemical additives in fibre production

Does any of the substances below occur in any of the preparations/products/formulations used in fibre production?

 Yes

 No

- alkylphenol ethoxylates (APEO)
- linear alkylbenzene sulphonates (LAS)
- dihydrogenated tallow dimethyl ammonium chloride (DHTDMAC)
- distearyl dimethyl ammonium chloride (DSDMAC)
- ditallow dimethyl ammonium chloride (DTDMAC)
- ethylenediaminetetraacetic acid (EDTA)
- diethylenetriamine pentaacetate (DTPA)

**Signature of fibre supplier:**

Date	Company
Signature by contact person	
Name of contact person	Phone and e-mail

## Appendix 5 Declaration on the contents of chemical products or product material

Applies to all substances, chemicals and chemicals products added to the textile floor covering/carpet/rug/mat material or used in the manufacture of the textile floor covering/carpet/rug/mat, including surface treatments. Applies also to any textile floor covering/carpet/rug/mat material that is manufactured from virgin and recycled plastic and rubber. Here, manufacture is defined as all manufacturing/treatment conducted by the textile floor covering/carpet/rug/mat manufacturer, but also by its suppliers of raw materials or constituent products.

This declaration is completed and signed by the chemical product or material supplier/manufacturer based on the knowledge at the time of the application, based on tests and/or declarations from raw material manufacturers, with reservations for new advances and new knowledge.

Product name:
Manufacturer/supplier:
Product's function (e.g., adhesive, surface treatment):

*Ingoing substances: All substances in the chemical product regardless of amount, including additives (e.g., preservatives and stabilizers) 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: Residuals, pollutants, contaminants etc. from production, incl. production of raw materials, that remain in the chemical product in concentrations less than 100 ppm.*

*Impurities in the raw materials exceeding concentrations of 1000 ppm are always regarded as ingoing substances, regardless of the concentration in the chemical product.*

*Examples of impurities are residues of the following: residues or reagents incl. residues of monomers, catalysts, by-products, scavengers, and detergents for production equipment and carry-over from other or previous production lines.*

### CMR substances

Does the chemical product contain any ingoing substances that have any of the classifications in the table below?  Yes  No

CLP Regulation 1272/2008		
Hazard class	Hazard category	Hazard code
Carcinogenicity*	Carc. 1A or 1B	H350
Germ cell mutagenicity*	Muta. 1A or 1B	H340
Reproductive toxicity*	Repr. 1A or 1B	H360

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

**Exemption:** Adhesive products that contain formaldehyde are exempted from the requirement.

If yes, please state classification and name of substance:

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### Prohibited substances

Does the chemical product contain ingoing substances or is textile floor covering/carpet/rug/mat material being added any of the following:

- Substances on the Candidate List\*  Yes  No

*Siloxanes D4, D5 and D6 have their own documentation requirement, see below under chemicals that contain silicone.*

- Persistent, bioaccumulative and toxic (PBT) organic substances\*\*  Yes  No
- Very persistent and very bioaccumulative (vPvB) organic substances\*\*  Yes  No
- Substances considered to be potential endocrine disruptors in category 1 or 2 on the EU's priority list of substances that are to be investigated further for endocrine disruptive effects\*\*\*  Yes  No
- Halogenated flame retardants (e.g., short chain chlorinated paraffins)  Yes  No
- Per- and polyfluoroalkyl substances (PFASs), e.g., PFOA and PFOS  Yes  No
- Heavy metals in dyes and pigments\*\*\*\*  Yes  No
- Phthalates  Yes  No
- Chlorinated solvents and carriers, including chlorotoluenes, chlorophenols and chlorobenzenes  Yes  No
- Chlorinated organic bleaching agents  Yes  No
- APEO – alkylphenol ethoxylates and alkylphenol derivatives (substances that release alkylphenols on degradation)  Yes  No
- Printing paste may not contain more than 5% VOC (volatile organic compounds with a steam pressure exceeding 0.01 kPa at 20°C). Is the content of VOC below 5%?  Yes  No  Not applicable

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

\*\* PBT and vPvB substances are defined in Annex XIII of REACH (Regulation (EC) No 1907/2006). Substances that meet, or substances that form substances that meet, the PBT or vPvB criteria are listed at <http://esis.jrc.ec.europa.eu/index.php?PGM=pbt>. Substances that are “deferred” or substances “under evaluation” are not considered to have PBT or vPvB properties.

\*\*\* See following link: [http://ec.europa.eu/environment/chemicals/endocrine/pdf/final\\_report\\_2007.pdf](http://ec.europa.eu/environment/chemicals/endocrine/pdf/final_report_2007.pdf) (Annex L, page 238 onwards).

\*\*\*\* Heavy metals are the metals listed here: Metal impurities in dyes and pigments up to the amounts set out in ETAD, Annex 2 "Heavy metal limits for dyes": antimony (50 ppm), arsenic (50 ppm), cadmium (20 ppm), chromium (100 ppm), lead (100 ppm), mercury (4 ppm), zinc (1500 ppm), copper (250 ppm), nickel (200 ppm), tin (250 ppm), barium (100 ppm), cobalt (500 ppm), iron (2500 ppm), manganese (1000 ppm), selenium (20 ppm) and silver (100 ppm).

Exemptions are granted for:

1) copper, chromium and nickel in metal complex dyes, see requirement O28.

2) iron used for colour depigmenting before printing.

### Chemicals that contain silicone

Does the chemical product contain silicone?  Yes  No

D4 (CAS no. 556-67-2), D5 (CAS no. 541-02-6) and D6 (CAS no. 540-97-6) shall only be present in the form of residues from the raw material production, and each shall only be present in amounts up to 1000 ppm in the silicone raw material (the chemical).

If yes, is D4, D5 and/or D6 present in the form of residues from the raw material production and is the amounts maximum 1000 ppm?  Yes  No

If yes, is test report showing the present of D4, D5 and D6 attached?  Yes  No

### VOC in adhesives

Does the adhesive contain VOC (volatile organic compounds) in more than 3% by weight?  Yes  No  
 Not applicable

### Nanomaterials/-particles

Does the chemical product contain Nanomaterials/-particles\*?  Yes  No

Pigments and polymer dispersions are exempt.

\*Nanomaterials/-particles are defined according to the EU Commission Recommendation on the Definition of Nanomaterial (2022/C 229/01), see definition in section 1.1.

### Signature of chemical product or material manufacturer

Date	Company
Signature by contact person	
Name of contact person	Phone

## Appendix 6 Polyurethane foam (PU foam)

This appendix shall be completed and signed by the foamed material manufacturer/supplier.

Manufacturer/supplier:
Name of product:

### Tin in its organic form:

Is tin in its organic form (tin bonded to a carbon atom) used?  Yes  No

### Blowing agents:

Is CFC, HCFC, HFC (hydrofluorocarbons) or methylene chloride used as blowing agents in the production of the PU foam?  Yes  No

Describe the expansion process:

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### Isocyanates:

Are isocyanates used in a closed process?  Yes  No

Is prescribed protective equipment used?  Yes  No

Are requirements from authorities regarding the use of isocyanates followed?  Yes  No

If no, please explain:

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**Signature of foam material manufacturer/supplier:**

Date	Company
Signature by contact person	
Name of contact person	Phone and e-mail

## Appendix 7 Classification of chemical products

Cover all chemicals and chemical products added to the textile floor covering/carpet/rug/mat material or used in the manufacture of the textile floor covering/carpet/rug/mat, including surface treatments. Here, manufacture is defined as all manufacturing/treatment conducted by the manufacturer, but also by its suppliers of raw materials or constituent products.

This appendix is completed and signed by the chemical manufacturer/supplier based to the best of his/her knowledge at the time of the application, also based on tests and/or declarations from raw material manufacturers, with reservations for new advances and new knowledge.

Chemical product name:
Manufacturer/supplier:
Type of chemical product (e.g., adhesive, surface treatment):

### Classification of chemical products

Is the chemical product classified according to any in the table below?

Yes  No

If yes, which classification? \_\_\_\_\_

CLP Regulation 1272/2008		
Hazard class	Hazard category	Hazard code
Toxic to aquatic life	Aquatic Acute 1	H400
	Aquatic Chronic 1	H410
	Aquatic Chronic 2	H411
Hazardous to the ozone layer	Ozone	H420
Carcinogenicity*	Carc 1A or 1B	H350
	Carc 2	H351
Germ cell mutagenicity*	Muta. 1A or 1B	H340
	Muta. 2	H341
Reproductive toxicity*	Repr. 1A or 1B	H360
	Repr. 2	H361
	Lact.	H362
Acute toxicity	Acute Tox 1 or 2	H300, H310, H330
	Acute Tox 3	H301, 311, 331
Specific target organ toxicity with single or repeated exposure	STOT SE 1	H370
	STOT RE 1	H372

*\*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.*



**Exceptions:**

- Adhesive products that contain isocyanates are exempted from the classification prohibition H351.
- Adhesive products with formaldehyde are exempted from the classification prohibition H350 and H341.
- Exception is made for titanium dioxide (TiO<sub>2</sub>) classified Carc. 2 H351 which is added in powder form during the production of the product if the following is met: It must be added in closed systems, in suspended form or by a method that promotes a "low-dusting" working environment, for example by using protective equipment that significantly reduces dust or completely removes dust from raw materials (e.g., extraction, personal protective equipment and clear safety instructions).

If titanium dioxide (TiO<sub>2</sub>) is used, please description how TiO<sub>2</sub> in powder form is handled during production of the product:

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**Signature of chemical product manufacturer:**

Date	Company
Signature by contact person	
Name of contact person	Phone and e-mail

## Appendix 8 Dyes and pigments

This declaration shall be completed and signed by the dyehouse.

### Metal complex dyes

Are metal complex dyes used?  Yes  No

If yes, for which fibres are metal complex dyes used?

\_\_\_\_\_

If yes, how high are the emissions to water from treatment?

- Copper\* (in mg/kg fibre):

\_\_\_\_\_

- Chromium (in mg/kg fibre):

\_\_\_\_\_

- Nickel (in mg/kg fibre):

\_\_\_\_\_

Please enclose test report according to ISO 8288 for emissions of Cu and Ni and EN 1233 for emissions of Cr or equivalent methods. The requirements for analysis laboratory are stated in Appendix 3.

Is test report enclosed?  Yes  No

\* Metal complex dyes based on copper that make up a maximum of 5% by weight of the dye is also accepted. In this case, does the copper make up maximum of 5% by weight of the dye?  Yes  No

Please enclose documentation e.g., safety data sheets or declaration from metal complex dye manufacturer/supplier.

Is documentation for max %wt of Cu enclosed?  Yes  No

### Azo dyes

Are any Azo dyes that may release any of the aromatic amines stated in the table below used?  Yes  No

If Yes, which? \_\_\_\_\_

\_\_\_\_\_

Azo dyes	CAS no.
4-aminobiphenyl	92-67-1
Benzidine	92-87-5
4-chloro-o-toluidine	95-69-2
2-naphthylamine	91-59-8
o-aminoazotoluene	97-56-3
2-amino-4-nitrotoluene	99-55-8
p-chloraniline	106-47-8

2,4-diaminoanisole	615-05-4
4,4'-diaminodiphenylmethane	101-77-9
3,3'-dichlorobenzidine	91-94-1
3,3'-dimethoxybenzidine	119-90-4
3,3'-dimethylbenzidine	119-93-7
3,3'-dimethyl-4,4'-diaminodiphenylmethane	838-88-0
p-cresidine	120-71-8
4,4'-oxydianiline	101-80-4
4,4'-thiodianiline	139-65-1
o-toluidine	95-53-4
2,4-diaminotoluene	95-80-7
2,4,5-trimethylaniline	137-17-7
4-aminoazobenzene	60-09-3
o-anisidine	90-04-0
2,4-xylidine	95-68-1
2,6-xylidine	87-62-7

### Allergenic dyes

Are any of the dyes listed in the table below used?  Yes  No

If Yes, which? \_\_\_\_\_

Generic Name	CAS no.
Disperse Blue 1	2475-45-8
Disperse Blue 3	2475-46-9
Disperse Blue 7	3179-90-6
Disperse Blue 26	3860-63-7
Disperse Blue 35	12222-75-2
Disperse Blue 102	12222-97-8
Disperse Blue 106	12223-01-7
Disperse Blue 124	61951-51-7
Disperse Brown 1	23355-64-8
Disperse Orange 1	2581-69-3
Disperse Orange 3	730-40-5
Disperse Orange 37	12223-33-5
Disperse Orange 76	
Disperse Orange 149	85136-74-9
Disperse Red 1	2872-52-8
Disperse Red 11	2872-48-2
Disperse Red 17	3179-89-3
Disperse Yellow 1	119-15-3
Disperse Yellow 3	2832-40-8
Disperse Yellow 9	6373-73-5
Disperse Yellow 23	6250-23-3
Disperse Yellow 39	12236-29-2
Disperse Yellow 49	54824-37-2

**Signature of dye manufacturer**

Date	Company
Signature by contact person	
Name of contact person	Phone and e-mail

## Appendix 9 Energy content of fuel

The energy content of fuel is calculated based on the table below. If electrical energy is produced on-site, one of the following methods can be used for calculating fuel consumption:

- Actual annual consumption of fuel.
- Consumption of electricity produced on-site multiplied by 1.25.

**Standard fuel values. Values are given in GJ/ton unless otherwise stated. (1 kWh = 3.6 MJ)**

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

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

1) Statistiska centralen i Finland, Fuel classification 2013.

2) Värmeforsk, Miljöfaktaboken 2011.

3) Energistyrelsen, Energy statistic 2012

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

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

**Formula for calculating the energy content of woodchips:<sup>a)</sup>**

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

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

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

$19.0 \text{ MJ/kg} - 21.442 * f / 100 = \text{MJ/kg}$ , where f is the water content in %W of the wood.

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

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

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

## Appendix 10 Declaration of energy consumption

Textile floor covering/carpet/rug/mat manufacturer:
Name of product:

Please declare following energy data, based on annual average figures.

Only the energy used in the final manufacturing of the product/in the product factory is included in the energy consumption.

Energy consumption in the manufacture of adhesives used in the manufacture of the product is not included in the calculation.

Declare the electricity consumption used in the production of the product [kWh/MJ]:

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Declare the fuel consumption for each fuel type used in the production of the product [kWh/MJ]:

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Declare the production quantity of the product [m<sup>2</sup>]:

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### Signature of textile floor covering/carpet/rug/mat manufacturer

Date	Company
Signature by contact person	
Name of contact person	Phone and e-mail