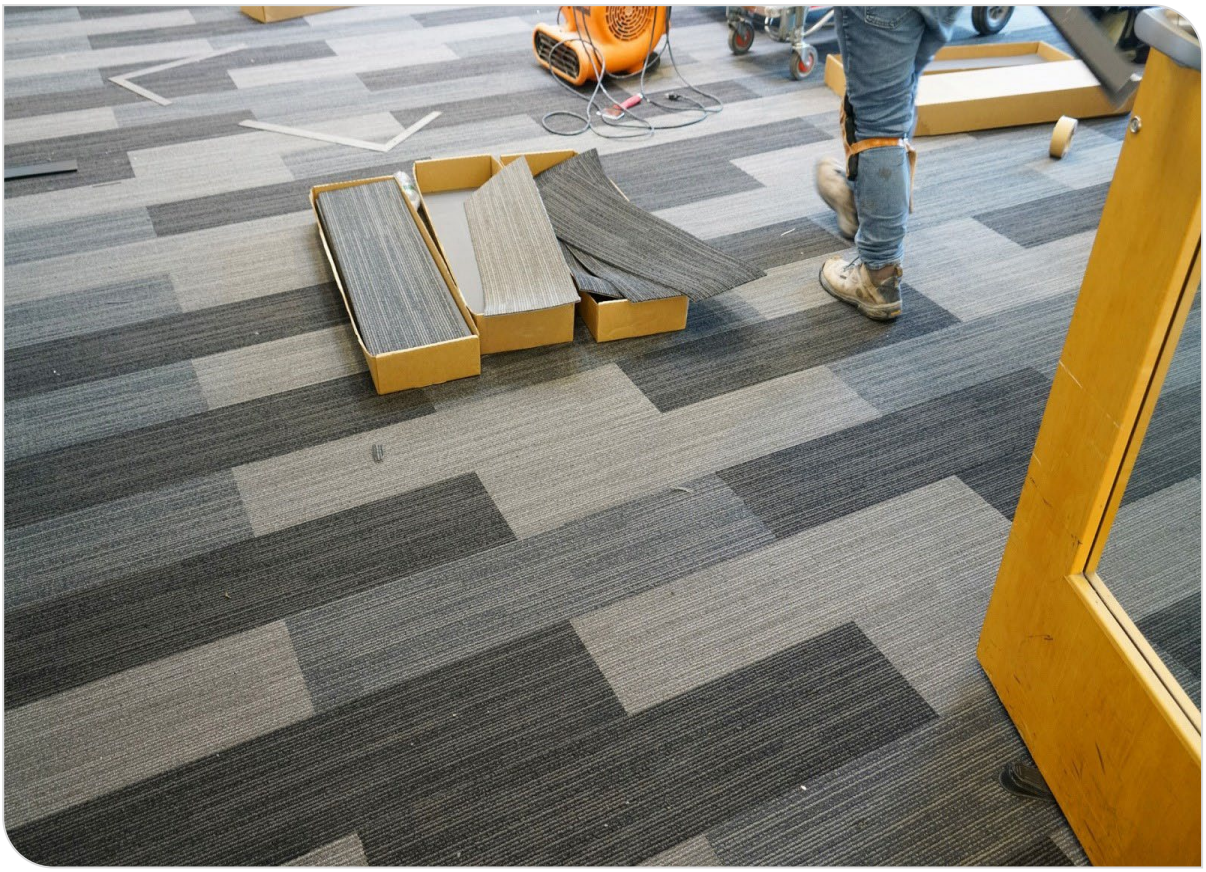
Nordic Ecolabelling for

Textile floor coverings and rugs/mats



Version 2.0 • date – date

CONSULTATION 27 May – 15 August, 2025

Nordic Ecolabelling

Contents

Contact information

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

Denmark

Ecolabelling Denmark

info@ecolabel.dk

www.svanemaerket.dk

Iceland

Ecolabelling Iceland

svanurinn@uos.is

www.svanurinn.is

Finland

Ecolabelling Finland

joutsen@ecolabel.fi

www.joutsenmerkki.fi

Norway

Ecolabelling Norway

info@svanemerket.no

www.svanemerket.no

Sweden

Ecolabelling Sweden

info@svanen.se

www.svanen.se

1 Environmental communication guideline for Nordic Swan Ecolabel textile floor coverings and rugs/mats

Nordic Swan Ecolabel textile floor coverings and rugs/mats have a reduced environmental and climate impact throughout their life cycle. Nordic Ecolabelling has assessed all the relevant environmental aspects throughout the life cycle of these products and made strict requirements concerning the topics and processes in the life cycle where ecolabelling can have the greatest effect. This is described in the chapter "Environmental impact of textile floor coverings and rugs/mats".

Nordic Swan Ecolabel textile floor coverings and rugs/mats:

- Have a low climate impact due to a high proportion of renewable and/or recycled materials.
- Meet strict environmental and health requirements for chemicals used in production.
- Have low emissions to indoor air.
- Contribute to circular economy either by design for separation, material recycling through take-back systems or higher proportion of renewable and/or recycled materials
- Are quality tested to ensure a long lifetime.
- Do not contain problematic materials such as PVC or bitumen.

2 What can carry the Nordic Swan Ecolabel?

Product group definition

Product types that are covered are carpets for indoor use intended to be placed on the floor, i.e. textile floor coverings and floor rugs/mats. Both products fastened to the floor by adhesives, hooks etc. and loose laid products are included and both carpets that cover a floor from wall-to-wall and those covering only parts of a floor. The upper side (which faces upward from the floor) of the product must consist of at least 80% by weight of textile fibres.

Carpets made of materials not covered by these criteria must be assessed by Nordic Ecolabelling before they may be considered for labelling. Nordic Ecolabelling will determine which new materials that may be included in the product group.

2.1 Justification of the product group definition

Product types that are covered are carpets for indoor use intended to be placed on the floor, i.e. textile floor coverings and floor rugs/mats. Both products fastened to the floor by adhesives, hooks etc. and loose laid products are included and both carpets that cover a floor from wall-to-wall and those covering only parts of a floor.

The upper side (which faces upward from the floor) of the product must consist of at least 80% by weight of textile fibres. The background for this limitation is the challenge of making good environmental requirements for rubber/latex materials to minimize the environmental impact from the use of these materials.

Carpets made of materials not covered by these criteria must be assessed by Nordic Ecolabelling before they may be considered for labelling. Nordic Ecolabelling will determine which new materials may be included in the product group.

3 How to read this criteria document

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

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:

- Upload
- Requirement checked on site

To be awarded a Nordic Swan Ecolabel licence:

- All obligatory requirements must be fulfilled.
- Nordic Ecolabelling must inspect the 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.

4 Summary

The Nordic Ecolabelling criteria for textile floor coverings and rugs and mats have been revised to generation 2. Nordic Swan Ecolabelled textile floor coverings and rugs/mats must comply with strict requirements to reduce the environmental and climate impact throughout the whole life cycle. Nordic Swan Ecolabelled textile floor coverings and rugs/mats have a reduced environmental impact due to the high amount of renewable and/or recycled raw material, strict requirements for the fibre and polymer materials and chemicals used, low emissions to indoor air, high durability and long service life and by contribution to circular economy through design for separation and/or material recycling through take-back systems and/or especially high amount of renewable and/or recycled raw material.

Less use of virgin material to produce carpets is the most important environmental aspect to reduce the climate impact in the carpet life cycle. Strict requirements concerning minimum content of renewable and/or recycled material have therefore been established.

As the use of raw materials and chemicals has a large environmental impact, the criteria have strict requirements for fibres, polymers and chemicals used to produce carpets. The criteria have requirements for the following carpet materials: cotton and wool textile fibres, recycled polymers, biobased plastic polymers and typical backing materials like rubber and foam.

The majority of the energy and water consumption from carpet production does not come from the production of the carpets themselves, it comes from the production of the raw materials by suppliers where the steerability for Nordic Ecolabelling is low. Requirements for energy and water consumption have therefore been removed in this generation. Nordic Ecolabelling has strict material requirements to reduce the consumption of virgin materials and, with that, reduces the energy and water consumption in the life cycle of a carpet.

PVC and bitumen are not allowed to be used in Nordic Swan Ecolabelled carpets due to the environmental impact from emissions and use of harmful chemicals during PVC production and due to the health impact from emissions to indoor air from bitumen backings.

Emissions to indoor air is an important health aspect from carpets since they often cover a large share of the indoor area. Nordic Ecolabelling has set strict limits to emissions of VOC and formaldehyde.

Long service life will reduce the environmental impact from carpets significantly. To offer a long service life, Nordic Swan Ecolabelled carpets must document durability according to specific use classes for commercial or domestic use.

The criteria have also been updated to improve the circular economy and increase the material recycling of carpets. New requirements related to design for separation and take-back systems for textile floor coverings have been included in this generation.

For an overview of the changes in this revised generation 2, see the table in section 4.1.

4.1 Changes compared to previous generation

Table A. Overview of changes to criteria for gen. 2 compared with previous gen. 1.

Proposed requirement generation 2	Requirement generation 1	Same requirement	Change	New requirement	Comments
O1	O1		x		Information on material consumption is included.
O2	O2	x			Only minor changes in the text
O3	O3		x		The % recycled/renewable is adjusted
O4	O4	x			
O5	O7	x			
O6	O8	x			
O7	O9	x			
O8	O11, O12, O13		x		The requirement now includes all polymers and only sets requirements for recycled material
O9	O15		x		Updated with more substances
O10				x	Requirement for biobased plastic polymers is included.
O11	O18		x		The limit for content of PAHs and nitrosamines is revised
O12	O17	x			Only minor changes in the text
O13	O20	x			Only minor changes in the text
O14	O21		x		The list of prohibited classifications is extended and old exceptions removed and a new added
O15	O22		x		The list of prohibited classifications is extended, and the exception is removed
O16	O23		x		Updated list according to Nordic Ecolabelling's latest knowledge.
O17	O26	x			
O18	O27		x		Updated definition of nanomaterials
O19	O28		x		Now includes pigments, only metal complex dyes and pigments based on copper (max. 5%) may be used.
O20				x	New circular economy requirement
O21				x	New circular economy requirement
O22				x	New circular economy requirement
O23	O33, O34		x		Two requirements are merged, and the same requirement is for all types of carpets. Limit on carcinogenic VOC is introduced.

Proposed requirement generation 2	Requirement generation 1	Same requirement	Change	New requirement	Comments
O24	O36		x		Use classes are revised and rugs/mats are now included
O25	O35		x		Only minor changes in the text
O26	O37		x		The requirement is changed and is only applicable for rugs/mats for commercial use.
O27	O42		x		Includes information on installation and end-of-life
O28-O30				x	New social and ethical requirements
O31	O43	x			
O32	O44	x			

5 Requirements and justification of requirements

Criteria document: This chapter presents all requirements and the chosen requirement levels.

Background document: This chapter explains the background for all requirements.

Definitions

Table 1 Definitions

Term	Definition/Explanation
Additives in polymers	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.
Carpets	Products for indoor use intended to be placed on the floor i.e. textile floor coverings and floor rugs/mats. Both wall-to-wall and loose products are included. The upper side (which faces upwards from the floor) of the product must consist of at least 80% by weight of textiles. Any possible intermediate carpet layer is not seen as part of the upper side.
COD	Chemical oxygen demand. This is a measure of the amount of oxygen required to chemically oxidize organic and inorganic matter in water. It's an important parameter in water quality testing because it helps determine the level of pollution in water bodies. High COD levels indicate high amount of oxidizable pollutants, which can be harmful to aquatic life and affect water quality.
EFSA	European Food Safety Authority, agency of the European Union that provides independent scientific advice and communication on risks associated with the food chain.
FDA	Food and Drug Administration, U.S. government agency responsible for protecting public health by ensuring the safety, efficacy and security of food, drugs, medical devices, cosmetics and other products.
ILO	International Labour Organization

Impurities in chemicals	**Impurities:** Trace levels of pollutants, contaminants and residues from production, incl. production of raw materials, that remain in the chemical product in concentrations ≤ 1 000 ppm (≤ 0.1000 w%). *Examples of impurities: Background environmental pollutants from feedstock, as well as contaminants and residues from production such as reactants (incl. monomers), reagents, catalysts, by-products, scavengers, detergents for production equipment, carry-over from other or previous production lines.* **Impurities in the raw materials** in concentrations ≥ 10 000 ppm (1.0000 w%) are always regarded as ingoing substances, regardless of the concentration in the chemical product.
Ingoing substances in chemicals	**Ingoing substances:** All substances* in the Nordic Swan Ecolabelled/chemical product regardless of amount, including additives (e.g. preservatives and stabilizers) from the raw materials. Substances released from ingoing substances (e.g. biocidal active substances generated by preservatives, such as formaldehyde) are also regarded as ingoing substances. **N.B. the difference from the definition of substances in the REACH Regulation (EC) No 1907/2006. Whereas a REACH substance encompasses a chemical element or compound as well as its stabilising additives and process impurities, a substance here refers to each of the constituents separately. The constituents of a UVCB substance (Unknown or Variable composition, Complex reaction products or of Biological materials) are also regarded separately, and all known constituents must be regarded.*
Inorganic fillers which are abundant in nature	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 sufficiently abundant. Pigment does not count as fillers, but as additives.
Kaolin	Kaolin is a white, very plastic clay which largely consists of aluminium silicate.
Keratin fiber	Structural proteins that form the key components of hair, nails, feathers, horns and the outer layer of skin.
MECO-analysis	A MECO describes the key areas that have impact on the environment and health throughout the life cycle of the product – including consumption of materials/resources (M), energy (E), chemicals (C) and other impact areas (O).
Organic cotton	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.
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.
PAHs	Polycyclic Aromatic Hydrocarbons (PAHs) are a group of organic compounds composed of multiple aromatic rings. They are primarily produced by the incomplete combustion of organic matter, such as engine exhaust fumes and biomass burning.
PET	Polyethylene terephthalate
Recycled material	Recycled material is defined in line with ISO 14021 which applies the following two categories: "Pre-consumer/commercial" is defined as material that is diverted 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.

	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. "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.
Renewable/biobased material	A renewable material is a material that is composed of biomass and that can be continually replenished, see EN 16575:2014. Biobased material relevant for these criteria is renewable.
Residual products	Ref. EU Directive 2018/2001/EC. Residues come from agriculture, aquaculture, fisheries, and forestry, or they can be processing residues. A processing residual product is a substance that is not one of the end products that the production process directly strives for. Residues must not be a direct target of the process, and the process must not be changed to intentional production of the residual product. Examples of residual products are e.g., straw, husks, pods, the non-edible part of maize, manure, and bagasse. Examples of processing residues are e.g., raw glycerine or brown lye from paper production. Palm Fatty Acid Distillate (PFAD) or Palm Oil Mill Effluent (POME) from palm oil is not considered a residual/waste product and can therefore not be used.
Reused textiles	Reused 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 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.
RPS-analysis	Based on the MECO analysis, an RPS tool is used to identify where ecolabelling can have the greatest effect. R represents the environmental relevance, P is the potential to reduce the environmental impact, and S is the steerability on how compliance with a requirement can be documented and followed up. The criteria contain requirements in those areas in the life cycle that have been found to have a high or medium RPS, since there is potential to achieve reduced environmental impact.
Textile floor coverings/textile floorings	Products for indoor use intended to be placed on the floor **excluding floor rugs and mats.** Both products fastened to the floor by adhesives, hooks etc. and loose laid products are included as long as the carpets may cover a floor from wall-to-wall. Typically, these products are sold on roll or as tiles and/or planks. The upper side (which faces upward from the floor) of the product must consist of at least 80% by weight of textile fibres.

5.1 Description of the product and the production

The product, material composition, manufacturing process and suppliers/production chain must be described to know which requirements need to be met.

O1 Description of the product

The applicant must submit the following information for each product:

1. State product type (e.g. textile floor coverings-tiles/planks/on roll, floor rug or mat), trade name/ item number and if the product is for the consumer or the professional market.
2. Composition of the product that is an overview of materials (e.g. wool, polyester, natural latex etc.) and chemicals.

For each **material** the following information must be included:

a) Trade name/item number and material type.

b) Supplier/manufacturer of the material.

c) State if the material is recycled or renewable/biobased.

d) % by weight of the material in the product related to the total weight of the product.

e) State if material has undergone finishing such as printing, impregnating or coating.

f) State whether raw materials, constituent products/fibers and/or carpets have an Oeko-tex standard 100 class I certificate.

For **chemicals**, trade name, function and supplier/manufacturer must be given.

3. For textile floor coverings: Declaration of performance (DoP) in accordance with the EU Construction Products Regulation. For rugs/mats: Technical datasheet
4. Information on material consumption in kg/m2 carpet

- Description and composition of the product according to the list above.
- Oeko-tex standard 100 class I certificate for raw materials, constituent products and/or carpets with such an Oeko-tex certificate.
- Declaration of performance (DoP) for textile floor coverings and technical datasheet for rugs/mats.
- Material consumption in kg/m2 carpet

O2 Description of the production

The manufacturing processes and suppliers/production chain must be described. The description can be done by using a flow chart as shown in Appendix 1. For each manufacturing process, the following information must be submitted:

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

- Submit a description of the manufacturing processes and production chain (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.

Background to requirement O1 and O2

To know which environmental requirements are applicable to a specific carpet, Nordic Ecolabelling needs a description, and the composition of the carpet/overview of materials and chemicals used to produce the carpet, in addition to an overview of the manufacturing processes and suppliers/production chain.

Carpet material extraction, especially energy consumption for fiber extraction and production, represents more than 60%[35] of the total climate impact from textile floor coverings. To reduce the environmental impact of carpets, it is important to reduce the total consumption of raw materials. To learn more about the material consumption in kg/m2 for different carpet types and for different materials, Nordic Ecolabelling requests this information and has introduced this new requirement.

5.2 Material requirements

This chapter covers:

- Two overall material requirements for carpets related to:
  - required content of renewable and/or recycled materials
  - exclusion of chlorinated plastics material
- Material requirements for textile fibres and polymers in carpets. These requirements are applicable for materials that are present with a total amount of >10% by weight of the carpet. If a material is present with a total amount of ≤ 10% by weight of the carpet, the material is exempted from requirements O5-O12. All other requirements must be fulfilled. Materials used in > 10 weight% without any material requirements, is not allowed except for inorganic fillers which are abundant in nature.

The textile fibres and polymers materials covered by these criteria are:

- cotton and other natural seed fibres of cellulose, ref.O5
- wool and other keratin fibres, ref.O6 and O7
- recycled plastic, rubber and foam, ref.O8 and O9
- renewable/biobased plastic materials, ref.O10
- rubber and latex, O11
- foam (e.g. EVA and PUR), O12

If a textile fibre/polymer is certified with the Nordic Swan Ecolabel for Textile, hide/skins and leather, it is exempted from the material requirements for fibres and polymers.

If a textile fibre/polymer is certified with the EU Ecolabel for Textile products, it is exempted from the material requirements for fibres and polymers with the exception of requirements O9 and O11.

O3 Renewable and/or recycled raw materials

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

1. Minimum 70% by weight of renewable materials or

2. Minimum 60% by weight recycled materials and/or reused textiles or

3. Products that consist of both renewable and recycled material/reused textiles shall comply with the following formula:

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

   X = Percentage by weight of renewable raw materials*

   Y = Percentage by weight of recycled raw materials/reused textiles*

Inorganic fillers in the product, which are abundant in nature, may be exempted from the calculation of the weight percentage of renewable and/or recycled raw materials in the carpet**.

** Recycled renewable materials do not count as both renewable and recycled raw material/reused 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 sufficiently abundant. Pigment does not count as fillers, but as additives.*

- State the % by weight of raw materials in the product that are respectively renewable or recycled.
- Calculations showing that the requirement is fulfilled.

Background to requirement O3

Consumption of virgin materials has a huge environmental impact in the life cycle of a carpet, references are made to chapter 6. The purpose of the requirement is to reduce the total environmental impact of the carpet from a life cycle perspective by reducing the consumption of virgin materials and/or non-renewable materials. To fulfil the requirement, a carpet manufacturer must focus on a high portion of renewable materials or recycled materials or a combination of these.

The requirement can be fulfilled in three ways: high content of renewable material, high content of recycled material or a combination of renewable and recycled material.

If a product consists of recycled renewable raw materials, these raw materials cannot be counted as both renewable and recycled but must be counted as one or the other. Recycled raw materials are weighted as slightly better than renewable raw materials from an

environmental point of view, and this is reflected in the relative limit levels of the requirement. The percentage levels have been based on knowledge of product compositions[1]. The percentage levels are considered strict but achievable for the best carpets related to environmental impact.

A textile floor covering carpet typically consists of approximately 20-40% by weight of carpet fibre/yarn[1]. And as much as 60-70% might be backing materials, including an intermediate layer (primary backing) and fillers. Today, several carpet producers are making carpets from recycled materials, examples are recirculated polyamide made from fishing nets and recirculated polyester made from used bottles. To support a reduction in the use of virgin materials, Nordic Ecolabelling do not allow for the use of virgin plastic polymers unless they constitute ≤10% by weight of the carpet.

For backing materials, typical materials on the market are bitumen, PVC, rubber/latex, foam like EVA and PUR, polyester (PET), polyamide (nylon), but also natural materials like jute and wool are used as backing materials[1,2]. Bitumen and PVC are not allowed to be used in Nordic Swan Ecolabel carpets (ref.O4 and O16) due to their environmental impact. Recycled polyester/PET and polyamide are used today in carpet backings[3,4]. For rubber/latex and foam like EVA and PUR, recycled material does not have the needed quality today to be used in carpets, and Nordic Ecolabelling allow for the use of virgin rubber/latex and foam materials.

The requirement also gives the opportunity to discount the fillers in the product from the raw material calculation. However, the prerequisite is that the filler is found in large amounts in nature and, therefore, can be considered sufficiently abundant. This is the case for the fillers normally used, such as kaolin, calcium carbonate, calcium magnesium carbonate, calcium sulphate, silicates and aluminium trihydrate. Pigments are not counted as a filler but as an additive.

O4 Chlorinated plastics

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

- Declaration from the carpet manufacturer that the carpet is free from chlorinated plastics. Appendix 3 can be used.

Background to requirement O4

The environmental impact of PVC is associated primarily with emissions of harmful organic chemicals from the entire production chain, potential use of harmful additives endocrine disrupters such as phthalates and plasticizers and challenges associated with its waste management during production and at its end of life.

[1] Interviews/meetings with carpet producers, spring 2025
[2] What Is The Best Material For Carpet Backing? visited Mars 2025
[3] https://www.egecarpets.com/carpets/carpet-backings/ecotrust, visited January 2025
[4] https://professionals.tarkett.com/en_EU/node/recycling-carpet-tile-materials-closing-loop-10207, visited January 2025

In later years, developments and improvements in the environmental performance of PVC production in Europe includes replacements of heavy metal-based stabilisers like lead (Pb) and cadmium (Cd), which reduced the risk of spreading harmful chemicals when recycling PVC. Soft PVC has the addition of plasticizers, where there has been a shift from phthalates to plasticizers that are less harmful to health.

Modern incineration plants in Europe have effective incineration, and the emissions of polyaromatic hydrocarbons (PAH), benzo-a -pyrene, dioxins and furans have been significantly reduced[5]. Nevertheless, not all the Nordic countries allow the incineration of used PVC due to the amount of air pollution control products needed for neutralization and the resulting solid waste generated during this process. Denmark has a waste legislation which states that all PVC must be sorted for material recycling; if not, then sent to a landfill[6], while plastics must not be landfilled in Sweden.

O5 Cotton and other natural seed fibres of cellulose

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

- recycled
- organic cotton
- 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 portions 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.

- 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 certain standards, ref. Table 1 Definitions. 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.

[5] Vallette, Jim & Murtagh, Connie & Dedeo, Michel & Stamm, Rebecca. (2018). Chlorine and Building Materials A Global Inventory of Production Technologies, Markets, and Pollution Phase 1: Africa, The Americas, and Europe. 2018.

[6] Kortlægning af PVC i Danmark 2018. Miljøprojekt nr. 2049. Miljø- og Fødevareministeriet, Miljøstyrelsen. November 2018

- 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

Background to requirement O5

Cultivation of cotton is linked to serious health and environmental problems caused by using pesticides, fertilisers, irrigation water and monocultures[7],[8],[9]. Pesticides for cotton cultivation accounted for 5.7% of global pesticide sales and 16.1% of insecticide sales in 2014[10]. The environmental impacts of cotton production vary between countries and production systems. Production ranges from highly mechanised in Australia, Brazil and the US to smallholder farms or a mixture of scales in for example India, China, and African countries.

Integrated pest management (IPM) and organic cultivation:

Integrated pest management (IPM)[11] and agro-ecological[12] practises can reduce pesticide use. IPM means that growers must consider all available pest control techniques, for example biological control, crop rotation and resistant varieties, and pesticides must be the last choice. Training of farmers and farm workers and use of protective equipment are also important.

In organic farming IPM is required along with other practises that promote soil health and biodiversity, and synthetic pesticides and fertilisers are prohibited[13].

IPM is required by law in some countries, for example in all the EU. Voluntary private certification schemes and national programs promoting IPM also exist. The sustainability standards Fairtrade, CmiA and BCI encourage IPM and prohibit certain hazardous pesticides, including those on the Stockholm Convention and Rotterdam Convention lists and those classified by WHO as 1a and 1b.

[7] Pesticide Action Network UK (2018) Is cotton conquering its chemical addiction? A review of pesticide uses in global cotton production. https://issuu.com/pan-uk/docs/cottons_chemical_addiction_-_update?e=28041656/62705601

[8] European Commission, Joint Research Centre (2013) Revision of the European Ecolabel and Green Public Procurement (GPP) Criteria for Textile Products – Technical report and criteria proposal, Working document, Institute for Prospective Technological Studies (IPTS).

[9] Kooistra K, Termorshuizen A, Pyburn R (2006) The sustainability of cotton – consequences for man and the environment. Wageningen University & Research, report no. 223.

[10] Pesticide Action Network UK (2018) Is cotton conquering its chemical addiction? A review of pesticide use in global cotton production. https://issuu.com/pan-uk/docs/cottons_chemical_addiction_-_update?e=28041656/62705601

[11] https://www.fao.org/pest-and-pesticide-management/ipm/principles-and-practices/en/

[12] https://www.fao.org/agroecology/overview/en/

[13] Nordic Swan Ecolabel: Organic farming (accessed 02.09.2022) https://www.nordic-ecolabel.org/nordic-swan-ecolabel/environmental-aspects/sustainable-raw-materials-and-biodiversity/organic-farming/

The share of the total area of cotton harvested globally in 2019 was for BCI 12.6 %, CmiA 4.2%, organic 1.1% and Fairtrade 0.1%[14]. Because the supply of organic cotton is low and it is more expensive, many textile producers prefer conventional cotton to be more competitive.

Recycled cotton fibre:

This is cotton fibre that is recovered from used clothing and textiles from consumers or industrial waste (post- or pre-consumer textile waste). Industrial textile waste may be surplus material from the production of yarns, textiles, and textile products, for example selvedge from weaving and fabric remnants from factory cutting rooms. The textiles are stripped and pulled into fibres, which are then carded and spun into new yarn. Recycled cotton may also be blended with virgin fibres to improve yarn strength[15].

O6 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 where mulesing is not used and with documentation that the following requirement concerning pesticide content in the raw wool is fulfilled:

1. The total content of the following substances may not exceed 0.5 ppm: γ-hexachlorocyclohexane (lindane), α-hexachlorocyclohexane, β-hexachlorocyclohexane, δ-hexachlorocyclohexane, aldrin, dieldrin, endrin, p,p'-DDT and p,p'-DDD.
2. The total content of the following substances may not exceed 2 ppm: diazinon, propetamphos, chlorfenvinphos, dichlorfenthion, chlorpyriphos, fenchlorphos, dicyclanil, diflubenzuron and triflumuron.
3. 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.
4. 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.
5. 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.

[14] International Trade Centre (ITC), International Institute for Sustainable Development (IISD), Research Institute of Organic Agriculture (FiBL), State Secretariat for Economic Affairs (SECO) (2021) State of Sustainable Markets 2021. https://standardsmap.org/en/trends

[15] Wikipedia - Cotton recycling, https://en.wikipedia.org/wiki/Cotton recycling (accessed 26.08.2019).

- Organic wool: Valid certificate showing that the wool in the Nordic Swan Ecolabelled product was organically cultivated in line with certain standards, ref. Table 1 Definitions. 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: Fulfilment of a) and b) below:

  a) Declaration from the wool supplier that no mulesing has been used.

  b) 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 portion of wool concerned.

Background to requirement O6

The requirement only accepts wool fibre from sheep and other keratin fibres from camels, alpaca, and goats.

Wastewater from washing wool (scouring) often contains large quantities of pesticides that are used to treat sheep. Pesticide residues can have a significant environmental impact if discharged into the aquatic environment. At the same time, pesticides such as organochlorine compounds, which are known to be toxic, non-readily degradable and bio accumulative, may also harm the environment while active in the wool. Despite a ban, this type of pesticide is still used[16]. Wool scouring firms and exporters of wool have the greatest scope to control the use of pesticides for ectoparasites by issuing absolute requirements to the wool producers (farmers). This requirement can therefore be documented by at least 75% of the wool farmers declaring that they do not use the above-mentioned pesticides. Organic wool automatically meets the requirement. According to the International Wool Textile Organization (IWTO), in 2015 less than 1% of global sheep farming was organic[17]. Since wool at the same time accounted for only 1% of the total fibre production (figures from 2017), the total amount of organic wool is not that extensive. The judgement has therefore been made that only accepting organic wool would be too tough a requirement.

[16] Ravindran, J. et al., Organochlorine pesticides, their toxic effects on living organisms and their fate in the environment, Interdiscip Toxicol. 2016 Dec; 9(3-4): 90-100.
[17] International Wool Textile Organization (IWTO), “Wool Production.” Accessed 07.09.2017: http://www.iwto.org/wool-production

Test method IWTO DTM-59: 2009; Method for the Determination of Chemical Residues on Greasy Wool[18]. This method tests for the presence of four groups of pesticide residues: organochlorine compounds, organophosphates, synthetic pyrethroids and insect growth regulators.

O7 COD effluents from wool scouring plants

Effluents 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 must be according to ISO 6060.

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

Background to requirement O7

The requirement has been harmonised with requirements set by both the EU Ecolabel and GOTS.

The requirement is split into differentiated requirement levels for fine and coarse wool. Dirt, grease, and suint that are washed out before the wool can be further processed can pollute wastewater discharged into the environment. COD indicates the amount of oxygen consumed through complete oxidation of the organic material under aerobic conditions. The higher the COD emissions, the more oxygen consumption the discharge will cause and the greater the risk of oxygen deficiency in the aquatic environment. This potential environmental impact can be significantly reduced by removing dirt, grease, and suint from the wool, with the resource-efficient bonus of maximising their value as by-products. Removing dirt and grease from the wool also helps to minimise energy consumption and the need for detergents in the wool scouring plant[19].

[18] https://www.iwto.org/sites/default/files/images/iwto_news/image/INDEX-Red%20Book%202015.pdf accessed 13.05.2019.
[19] Revision of the EU Green Public Procurement (GPP) Criteria for Textile Products and Services, Technical report with final criteria, JRC 2017.

O8 Recycled plastic, rubber and foam

Recycled polymer materials must not have undergone any recycling process approved by EFSA's* and/or FDA's** and must meet either requirement a) or b) below.

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

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

** In line with article 9 from Commission Regulation (EC) No 2022/1616 of 22 September 2022 on recycled plastic materials and articles intended to come into contact with foods*

*** 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 polymer material that the material has not undergone any recycling process approved by EFSA or FDA.
- a) Certificate from an independent certifier of the supply chain (e.g., Global Recycled Standard or Recycled Claim Standard).

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

Background to requirement O8

Nordic Ecolabelling wishes to support a circular economy by encouraging the use of recycled materials over virgin raw material – in this case crude oil. Substantial environmental potential is expected in the future with regard to reduce resource consumption and greenhouse gas emissions. However, availability and access to recycled polymers of good quality and purity is still challenging.

The requirement states that the feedstock used in the recycled raw material must be traceable. Without traceability, it is difficult to ensure that the material really is recycled. Traceability can be documented with a certificate from a third-party certifier of the supply chain, such as the Global Recycled Standard, for example. The Global Recycled Standard (GRS) is an international, voluntary standard that sets requirements for third-party certification of recycled content and chain of custody in the supply chain. This standard restricts the use of undesirable chemicals in the manufacture of new products, but the standard does not cover chemicals that may enter via the recycled materials and thus gives no guarantee about what may be present in the finished GRS product[20]. It is up to Nordic Ecolabelling to assess whether additional certification systems for recycled content can be accepted. Alternatively, traceability may be documented by the producer of the recycled raw material declaring that 100% recycled feedstock has been used.

[20] Recycled Claim Standard (RCS) + Global Recycled Standard (GRS) - Textile Exchange

O9 Prohibited substances in recycled plastic, rubber and foam

Recycled polymer materials both synthetic and natural must not contain the following substances:

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

Impurities up to 100 ppm are permitted.

Materials with alternative documentation requirements:

- 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.

t̄ A test report (XRF, X-ray fluorescence, GC-MS or equivalent method) from the supplier of the recycled polymer material showing compliance with the requirement.

Alternatively, the requirement can be documented with traceability to the source to substantiate that these substances are not included.

Alternatively, an Oeko-tex standard 100 class I certificate for the raw material or the carpet can also be used as documentation.

t̄ For materials with alternative documentation requirements:

- When using the exemption for material from PET bottles, this must be documented by the fibre supplier.
- When using chemically recycled polymers, documentation showing that the recycling process ensures that the requirement is complied with.

When using an exemption for fibres from earlier type I ecolabelled textiles, this must be documented by the fibre supplier.

Background to requirement O9

The requirement applies to chemicals contained in the recycled plastic raw material and not chemicals that are added through regranulation. There are separate requirements for this.

The requirement must be documented with a test report using X-ray fluorescence (XRF), GC-MS or equivalent methods, or traceability to the source that substantiates that the specified substances are not included. The aim of the requirement is to capture the “worst substances”. There are different practices in the industry for testing substances in recycled plastics. Some manufacturers rely on questionnaires/declarations from their subcontractors and follow them up with chemical analyses if it is considered likely that the plastic contains substances of concern. Some manufacturers of recycled plastic have XRF (X-ray fluorescence spectrometer) equipment for testing the plastic to see whether it can meet the given requirement (a level of 100 ppm can be achieved). Although this will entail extra documentation work, it shows that it is possible to set such a requirement. Using recycled plastic is good as it helps reduce resource use and stimulates a circular economy. At the same time, there is no wish to recycle chemicals that are harmful to health and the environment.

Phthalates and 8 specific polycyclic aromatic hydrocarbons (PAH) have been added to the requirement in this generation. All 8 PAHs are listed in annex XVII in REACH due to risks to human health. PAHs have been found in plastic packaging made of recycled plastic (PE and PP)[21].

O10 Renewable/biobased plastic materials

Raw materials used in the production of biobased polymers must meet the following requirements.

Palm oil and soy

Palm oil (incl. PFAD (Palm Fatty Acid Distillate)), soybean oil and soy flour must not be used as raw material.

Other raw materials

The origin of the raw materials must either comply with a) or b):

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

b) Certified by one of the following certification schemes:

- Bonsucro EU
- ISCC EU or ISCC Plus
- A standard/certification scheme that meets the requirements in Appendix 4.

Primary feedstock must in addition not be genetically modified according to EU directive 2001/18/EC.

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

[21] https://www2.mst.dk/Udgiv/publications/2023/04/978-87-7038-507-7.pdf

- Declaration by the producer of the polymer, that palm oil (incl. PFAD (Palm Fatty Acid Distillate)), soybean oil and soy flour are not used as raw materials for the biobased polymer.
- For waste and residual products: Documentation from the polymer producer which shows that the requirement's definition of waste or residual products is met, as well as traceability stating where the waste or residual product comes from.
- For certified raw materials: Indicate which certification system the raw materials are certified by. A copy of a valid CoC certificate/certificate number from the supplier.
- For certified raw materials: Documentation in form of invoices or delivery notes documenting the purchase of certified bio-based polymer for use in Nordic Swan Ecolabelled products.
- For certified raw materials: Declaration stating that the primary feedstock has not been genetically modified (this also applies to mass balance approach).

Background to requirement O10

Renewable raw materials can have a potential to give better environmental impact than fossil alternatives, but it depends on many parameters such as type of crop, where it is cultivated, cultivation conditions, land use change, further processing of the renewables and waste. Converting forest to cropland can have a huge impact on climate change and biodiversity. So, the possible benefits of replacing fossil-based raw materials with renewable raw materials will vary much and depend on responsible farming/forestry practices.

The establishment of palm oil and soybean plantations has led to vast areas of deforestation and destruction of natural habitats, thereby driving the loss of biodiversity in some of the world´s most precious places like the amazon and Cerrado in Brazil and Borneo in Indonesia[22]. Voluntary certification schemes for palm and soy are not yet considered good enough (by Nordic Ecolabelling) to protect against deforestation, and palm oil, soybean oil and soy flour are therefore banned as raw materials for bio-based polymers. This also applies to waste or residual product from the palm oil production such as palm Fatty Acid Distillate (PFAD) or Palm Oil Mill Effluent (POME).

Other renewable raw materials must be a) waste or residual products from i.e., agriculture, fishing, forestry or processing residual product defined in accordance with (EU) Renewable Energy Directive 2018/2001 or b) certified according to approved certifications schemes. Certified virgin raw materials must also not be genetically modified.

Nordic Ecolabelling has so far recognised Bonsucro EU and ISCC EU/Plus as valid certification schemes. The supplier of the bio-based polymer must have a valid chain of custody (CoC) certificate according to the standard by which the raw material is certified. Traceability must at least be ensured by mass balance. Book and claim systems are not accepted. The ban on GMO also applies when mass balance is used i.e. that GMOs may not be included in the specific mass balance system.

Nordic Ecolabelling emphasizes the precautionary principle and discourages the use of GMOs that are commercially available today. Nordic Ecolabelling is concerned about the consequences when genetically modified plants, animals and microorganisms are

[22] https://www.worldwildlife.org/stories/deforestation-fronts, visited May 2024

propagated in nature. However, Nordic Ecolabelling is not against genetic engineering or GMOs as such, and we believe that GMOs should be assessed on a case-by-case basis. For more information on Nordic Swan Ecolabelling's approach on GMO: https://www.nordic-swan-ecolabel.org/nordic-ecolabelling/environmental-aspects/

O11 Rubber, synthetic latex and natural latex

Virgin synthetic and natural rubber and latex must meet the following requirements. Natural rubber/latex is exempted from the requirement for content of 1,3-butadiene.

1,3-butadiene

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

PAHs

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

The requirement concerns the following PAHs:

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

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

Nitrosamines

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

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

↑ Test results and test reports according to the requirement

Background requirement to O11

A number of synthetic latex materials are made of substances that are hazardous to the environment and human health, for example substances that are suspected to cause cancer. One substance that acts as a monomer in the production of latex is 1,3-butadiene (CAS No. 106-99-0) which has H340 and H350 classifications. There is therefore a requirement for content of butadiene to be tested to ensure that the monomer content in the final latex is low.

There are more than 100 PAHs compounds. Several of the PAHs are carcinogenic and classed as Carc. 1B. PAHs can be found in plastic and rubber parts in a wide range of consumer products. They are present as impurities in some of the raw materials used to produce such products, namely in plasticising and process oils and in carbon black, which is used as a dye, amongst other things. The substances are not intentionally added to the products in question, and they have no specific function as constituent ingredients of the plastic or rubber parts. Plasticising and process oils are mineral oils that are produced from crude oil. Carbon black is the product of incomplete combustion or thermal decomposition processes of heavy oils. The PAH-requirement is harmonized with the levels in Oeko-tex 100 standard class II.

Nitrosamines and nitrosamine-soluble substances are suspected to be carcinogenic. Nitrosamines are by-products formed in the production of rubber.

The requirement has been changed and harmonized with the level of requirements in the criteria for floor coverings.

O12 Foam

Production plants for virgin foam must meet this requirement for COD-effluents to water. Effluents of oxygen demanding substances to water from the production of plastic/rubber foam (e.g. EVA and PUR), must be reduced by 90% measured as COD*. 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.

**COD must be analysed according to ISO 6060.*

- ☐ Description of how the COD effluents from foam production is treated and how COD effluents are measured and monitored.
- ☐ Test report showing that the limit value for COD is fulfilled.

Background requirements to O12

There are several different types of backing material for carpets, but plastic/rubber foam is typically used as backing material[1]. Since there are environmental impact associated with the wastewater COD effluents from the production of foam like polyurethane and latex, Nordic Ecolabelling sets requirements concerning these effluents. Nordic Ecolabelling requires effluents of oxygen demanding substances in the wastewater from the foam production to be low.

5.3 Chemical requirements

The chemical requirements apply to all ingoing substances in the chemical products added to the product materials or used in the manufacture of the product such as surface treatments, adhesives, impregnation, pigments, bleaching chemicals and so on. Here, manufacture is defined as all manufacturing/treatment conducted by the manufacturer, but also by its suppliers of raw materials or constituent products.

Impurities are not regarded as ingoing substances and are exempt from the requirements. Ingoing substances and impurities are defined in the definitions section.

In addition to the general chemical requirements applicable for all chemicals, there are also specific chemical requirements for some specific chemicals, ref. O17, O18 and O19.

Additives in polymer materials shall comply with requirement O16. The requirement applies to additives irrespective of whether the material is manufactured of virgin or recycled raw materials.

For raw materials, constituent products and/or carpets with an Oeko-tex standard 100 class I certificate, this certificate will be sufficient documentation for the following chemical requirements O14, O15, O16, O18 (only exemption for the documentation from supplier) and O19.

O13 Overview of chemicals

An overview/a comprehensive list or separate lists of chemicals used shall be made for each production process and/or supplier with the following information 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.

All chemical products shall be stated and documented with a safety data sheet.

- List of chemicals for every production process and/or supplier.
- A safety data sheet for the product in compliance with current European legislation (Annex II of REACH, Regulation (EC) No. 1907/2006).
- If an Oeko-tex certificate will be used to document the chemical requirements: Oeko-tex standard 100 class I certificate for the raw materials, constituent products and/or carpets in question

Background to requirement O13

To get an overview of the chemicals used and their basic safety and environmental properties, a list of all the chemicals used in the various processes in the production and their corresponding safety data sheets, must be submitted.

As it might be challenging to get the required documentation for all the chemical requirements back in the carpet supply chain, Nordic Ecolabelling accept an Oeko-tex standard 100 certificate as alternative documentation to our own Appendix 4. The Oeko-tex standard 100 is a label for textile products and their raw materials which are tested for harmful substances[23]. The label has 4 product classes based on skin contact/exposure. The more intensive the skin contact is, the stricter the requirements and laboratory tests are. Nordic Ecolabelling require an Oeko-tex standard 100 certificate according to class I which is for products in contact with baby skin and therefore is the class with the strictest chemical requirements. Normally, carpets and their raw materials will be certified according to Oeko-tex class III which is for products with no direct contact with skin.

O14 Classification of chemical products

Chemical products used in the production of the Nordic Swan Ecolabelled product must not be classified with the hazard codes listed in the table below, in accordance with CLP Regulation (EC) 1272/2008.

Table 2 Prohibited classifications of chemical products

Classification	Hazard class and category	Hazard code
Hazardous to the aquatic environment	Aquatic Acute 1 Aquatic Chronic 1 Aquatic Chronic 2	H400 H410 H411
Hazardous to the ozone layer	Ozone	H420
Acute toxicity	Acute Tox 1 or 2 Acute Tox 1 or 2 Acute Tox 1 or 2 Acute Tox 3 Acute Tox 3 Acute Tox 3	H300 H310 H330 H301 H311 H331
Specific target organ toxicity – single or repeated exposure	STOT SE 1 STOT RE 1	H370 H372
Respiratory or skin sensitisation	Resp. Sens. 1, 1A or 1B Skin Sens. 1, 1A or 1B	H334 H317
Carcinogenicity*	Carc. 1A or 1B Carc. 2	H350 H351
Germ cell mutagenicity*	Muta. 1A or 1B Muta. 2	H340 H341
Reproductive toxicity*	Repr. 1A or 1B Repr. 2 Lact.	H360 H361 H362

[23] OEKO-TEX® STANDARD 100, visited February 2025

Endocrine disruption for human health	ED HH 1 ED HH 2	EUH380 EUH381
Endocrine disruption for the environment	ED ENV 1 ED ENV 2	EUH430 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

**Including all combinations of stated exposure route and stated specific effect. For example, H350 also covers the classification H350i. Note that the responsibility for correct classification lies with the manufacturer.*

Exemptions apply for:

- Non-disperse dyes classified as H334 and/or H317, provided that non-dusting formulations are used or that automatic dosing is used.
    - If manual filling of automatic dosing systems is used, the manual handling must be carried out using the correct personal protective equipment in accordance with the safety data sheet (SDS) and/or by using technical measures such as local extraction/ventilation.

- A declaration from the chemical manufacturer or supplier, in accordance with Appendix 4.
- For exempted non-disperse dyes:
    - Declaration according to Appendix 4 that non-dusting formulations of these are used or that automatic dosing is used with or without manual filling.
    - If manual filling of automatic dosing systems is used: Routine for the use of personal protective equipment describing manually handling of dusty colours and/or a description of technical measures such as local extraction/ventilation.

Background to requirement O14

Nordic Ecolabelling strives to ensure that the health and environmental impact of the products are as low as possible. The requirements therefore make it clear that products classified as very toxic, toxic, harmful to health, sensitizing, causes damage to organs, carcinogenic, mutagenic, toxic for reproduction, endocrine disruptors, persistent, bioaccumulative or mobile and toxic, hazardous to the aquatic environment and hazardous to the ozone layer cannot be used.

O15 Classification of ingoing substances

Ingoing substances in the chemical product used in production must not be classified with the hazard codes listed in the table below, in accordance with CLP Regulation (EC)1272/2008.

Table 3 Prohibited classifications of ingoing substances

CLP Regulation 1272/2008		
Hazard statement	**Hazard class and category**	**Hazard code**
Carcinogenicity*	Carc. 1A or 1B Carc. 2	H350 H351
Germ cell mutagenicity*	Muta. 1A or 1B Muta. 2	H340 H341
Reproductive toxicity*	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	EUH430 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

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

*** See also requirement O16 or additional requirements on potential or identified endocrine disruptors and PBT/vPvB substances.*

- A declaration from the chemical manufacturer or supplier, in accordance with Appendix 4.

Background to requirement O15

This is a standard requirement, that is set by the precautionary principle and is only partially adapted to the product group. The requirement is intended to exclude problematic substances that are not necessarily found in products on the market today.

Excluding carcinogenic, mutagenic, reproduction toxic (CMR), sensitizing substances and endocrine disruptors is an important parameter from a health perspective. For products that can be partly ingested, this also applies to substances that are fatal if swallowed. The list includes classifications that are standard to include in all product groups if we do not get information that they are irrelevant, as we apply the precautionary principle. In that way we include unknown or new problematic ingoing substances or impurities that might be present in cosmetic products.

The new CLP classifications for endocrine disruptors, PBT/vPvB and PMT/vPvM (environmental toxicity, persistency, mobility and bioaccumulation) are included. The inclusion of PMT and vPvM substances is crucial due to their persistence, mobility and potential impact on water quality. The new rules are in force as of 20 April 2023. From this day on, the Member States can make proposals for harmonised classification and labelling (CLP) with the new hazard classes and manufacturers,

importers, downstream users and distributors can self-classify their substances and mixtures accordingly.

There are transitional periods from the entry into force of the Delegated Regulation, during which manufacturers, importers, downstream users and distributors are not yet required to classify their substances or mixtures according to the new hazard classes. During these periods, the new hazard classes can be applied on a voluntary basis. If applied to an ingoing substance it is excluded in these criteria.

O16 Prohibited substances

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

- Substances on the REACH Candidate list of SVHC substances http://echa.europa.eu/candidate-list-table
- PBT and vPvB substances in accordance with REACH Annex XIII, including substances under investigation according to the ECHA PBT assessment list https://echa.europa.eu/da/pbt

  Potential or identified endocrine disruptors according to any of the EU member state initiative "Endocrine Disruptor Lists" List I; II; and III

  N.B. A substance which is transferred to one of the corresponding sublists called “Substances no longer on list” and no longer appears on any of List I-III, is no longer excluded. The exemption is those substances on sublist II which were evaluated and where concern for endocrine disruption may still remain. Nordic Ecolabelling will evaluate the circumstances case-by-case, based on the background information indicated on the sublist.

- Halogenated organic compounds

  Exemptions* for:

  Pigments that meet the EU’s requirement concerning colourants in food packaging under Resolution AP (89) point 2.5.

  **Perfluorinated and Polyfluorinated alkyl substances are covered by their own bulletin and are not included in the exemption*.
- Per- and polyfluoroalkyl substances (PFAS)*

  **PFASs are defined as fluorinated substances that contain at least one fully fluorinated methyl or methylene carbon atom (without any H/Cl/Br/I atom attached to it), i.e., with a few noted exceptions, any chemical with at least a perfluorinated methyl group (–CF3) or a perfluorinated methylene group (–CF2–) is a PFAS, as described in the OECD recommendations.*
- Bitumen (CAS no.8052-42-4)
- Aziridine (CAS No. 151-56-4) and polyazidirines

- Bisphenols and bisphenol derivatives, defined as the 34 bisphenols that have been identified by ECHA[24] for further EU regulatory risk management because they are known or potential endocrine disruptors for the environment or for human health, or can be identified as toxic for reproduction
- Organotin compounds
- Alkylphenols (AP) (e.g. butylated hydroxy anisole (BHA, CAS No. 25013-16-5), alkylphenol ethoxylates (APEO), and other alkylphenol derivates (APD)
- Phthalates
- Pigments, dyes and additives containing lead, tin, cadmium, chromium VI and mercury, and their compounds
- D4 (octamethylcyclotetrasiloxane, CAS No. 556-67-2), D5 (decamethylcyclopentasiloxane, CAS No. 541-02-6), D6 (dodecamethylcyclohexasiloxane, CAS No. 540-97-6)
- Azo dyes that may release aromatic amines with carcinogenic properties listed in Appendix 5.

- A declaration from the chemical manufacturer or supplier, in accordance with Appendix 4.

Background to requirement O16

Alkylphenols (AP) (e.g. butylated hydroxy anisole (BHA, CAS No. 25013-16-5), alkylphenol ethoxylates (APEO) and other alkylphenol derivates (APD)

The non-ionic APEO group of surfactants are produced in large volumes and their uses lead to widespread release to the aquatic environment. APEOs are highly toxic to aquatic organisms and degrade to more environmentally persistent compounds (APDs). Ethoxylated nonylphenol and several other alkylphenols are included in the Candidate List due to endocrine disrupting properties.

Aziridine (CAS No. 151-56-4) and polyaziridines

Aziridine and polyazirdines have a broad range of applications, included in textile chemicals, adhesives, binders, lubricants, cosmetics and more. Furthermore, they are alkylating agents and is of specific concern due to their potential to link to DNA, therefore both toxic and carcinogenic.

Azo dyes that may release aromatic amines with carcinogenic properties

Aromatic amines released by azo dyes may be carcinogenic, allergenic, irritating, and toxic.

[24] EC/List No. 201-245-8 (BPA), 201-025-1 (BPB), 401-720-1 (4,4'-Isobutylethylidenediphenol), 216-036-7 (BPAF) and its 8 salts (278-305-5; 425-060-9; 443-330-4; 468-740-0; 469-080-6; 479-100-5; 943-265-6; 947-368-7), 201-250-5 (BPS), 201-240-0 (BPC), 204-279-1 (TBMD), 201-618-5 (6,6'-di-tert-butyl-4,4'-butylidenedi-m-cresol), 242-895-2, 248-607-1, 405-520-5 (D8), 217-121-1 (DAB), 227-033-5 (TMBPA), 210-658-2 (BPF), 411-570-9, 277-962-5 (contains BPS, 500-086-4 (contains BPA), 500-263-6 (contains BPA), 500-607-5 (contains BPA), 701-362-9, 904-653-0 (contains BPA), 908-912-9 (contains BPF), 926-571-4 (contains BPA), 931-252-8 (contains BPA), 941-992-3 (contains BPS), 943-503-9 (contains BPA).
[1] Assessment of regulatory needs: Bisphenols. ECHA – 16 December 2021: Section 2.1: Bisphenols for which further EU RRM is proposed https://echa.europa.eu/documents/10162/5e60f2fe-12d0-7f6b-5868-f199cfd7f984

Bisphenols and bisphenol derivatives

Several bisphenols with the general bisphenol structure and 'bisphenol derivatives' which have constituents with structural properties common to bisphenols are now prohibited. Based on the potential for widespread use and available information on potential endocrine disruptors, reproductive toxicity and PBT/vPvB properties, 34 substances were identified in need for further regulatory risk management in EU[25].

Bitumen (CAS no.8052-42-4)

Bitumen (CAS no.8052-42-4) is a petroleum-based product that provides stability and moisture resistance, making it suitable for carpet backing. It is often used in commercial settings where durability is crucial[2.] There are several environmental concerns related to the production and use of bitumen. Among others bitumen can release volatile organic compounds (VOCs) and PAHs and other harmful chemicals, which may affect indoor air quality, and carpets with bitumen backing are challenging to recycle, leading to decreased material recycling and increased possible contamination of soil and water from landfill waste.

D4 (octamethylcyclotetrasiloxane, CAS No. 556-67-2), D5 (decamethylcyclopentasiloxane, CAS No. 541-02-6), D6 (dodecamethylcyclohexasiloxane, CAS No. 540-97-6)

Cyclosiloxanes are substances used as an intermediate or basic raw material in the production of silicone rubbers, gels and resins. D4, D5 and D6 are substances with PBT and/or vPvB properties and gives rise to specific concern based on their potential to accumulate in the environment.

Halogenated organic compounds

Halogenated organic compounds is a large group of substances that are harmful to both the environment and human health. They are often carcinogenic, highly toxic to aquatic organisms and very persistent to degradation.

Organotin compounds

Organotin compounds mainly originated from antifouling paints, but more commonly used as catalysts in industrial production, stabilizers, biocides and surface disinfectants. Organotin compounds are harmful and toxic to the aquatic organisms at low concentration and have been linked to adverse effects in humans, such as reproductive toxicity and therefore many of these compounds are listed as substances of very high concern.

PBT and vPvB substances in accordance with REACH Annex XIII

PBT and vPvB are abbreviations for substances that are persistent, bioaccumulative and toxic, and very persistent and very bioaccumulative, respectively, in accordance with REACH Annex XIII. This means that they are not biodegradable and that they accumulate in living organisms. Based on these adverse characteristics they pose a threat to the environment and human health. They are prohibited in all Nordic Swan Ecolabel products.

[25] Assessment of regulatory needs: Bisphenols. ECHA – 16 December 2021: Section 2.1: Bisphenols for which further EU RRM is proposed https://echa.europa.eu/documents/10162/5e60f2fe-12d0-7f6b-5868-f199cfd7f984

Pigments, dyes and additives containing lead, tin, cadmium, chromium VI and mercury, and their compounds

Heavy metals such as cadmium, lead and mercury may be found as impurities in certain dyes, pigments and additives used for carpets. These metals can accumulate in the body over time and are highly toxic with irreversible effects, including damage to the nervous system (lead and mercury) or kidneys (cadmium). Cadmium is also known to cause cancer. Cadmium is classified as carcinogenic, mutagenic, reprotoxic, toxic and toxic for aquatic organisms. Chromium is allergenic, carcinogenic, and toxic for aquatic organisms. The use of cadmium, mercury and lead has become more limited, but controlling for them remains relevant[26].

Phthalates

A number of phthalates are identified as endocrine disruptors and some of them are classified as reprotoxic. For these reasons several phthalates are included in the Candidate list.

Based on their hazardous properties phthalates pose a threat to the environment and human health and there is a ban on this group of substances.

Potential or identified endocrine disruptors according to any of the EU member state initiative "Endocrine Disruptor Lists" List I; II; and III

Endocrine disruptors (EDs) are chemicals that alter the functioning of the endocrine (hormone) system and consequently cause adverse health effects. The term potential EDs is used for chemicals with properties that make them suspected to be EDs. The hormone system regulates many vital processes in living organisms and when normal signalling is disturbed, adverse effects may

result. EDs raise high concern for their risk of causing serious negative impact on the environment as well as on human health specifically. Special concern is raised for effects on reproduction and development and about possible links to increases in public health diseases. While effects in wildlife populations have been confirmed, evidence is pointing to effects also in humans.

Per- and polyfluoroalkyl substances (PFAS)

Per- and polyfluoroalkyl substances (PFAS) are used in many types of products due to their water and dirt repellent properties. These compounds constitute a group of substances that have highly problematic intrinsic hazardous properties. They are extremely persistent and accumulate in the body. They are spread all over the globe, from the large oceans to the Arctic, and are found in e.g. wild birds and fish and their eggs. Also shorter chain compounds (2–6 carbon atoms) have been discovered in nature. The substances in this group are suspected to be endocrine disruptors, carcinogenic and to have a negative impact on the human immune system. PFOA, APFO (ammoniumpentadecafluorooctanoate) and certain fluoro acids are included in the Candidate List due to being reprotoxic, as well as having PBT properties.

Substances on the REACH Candidate list of SVHC

The Candidate List identifies substances of very high concern which fulfil the criteria in article 57 of the REACH Regulation (EC 1907/2006). The list includes carcinogenic; mutagenic; and reprotoxic substances (CMR, categories 1A and 1B in accordance with the CLP Regulation); and PBT

[26] Investigation of chemical substances in consumer products, Danish Environmental Protection Agency 2011.

(persistent, bioaccumulative and toxic) and vPvB (very persistent and very bioaccumulative) substances (as defined in REACH Annex XIII). In addition, two more substance groups are included if they are of equivalent level of concern (ELoC) as the ones previously mentioned. These are endocrine disruptors and substances which are environmentally hazardous without fulfilling the requirements for PBT or vPvB. Based on these adverse characteristics, Nordic Ecolabelling prohibits substances on the Candidate List. This means that we act ahead of the legislation and ban the substances before they are subject to authorisation and restriction in accordance with REACH.

O17 Antibacterial substances and biocides

The following substances, which may have a biocidal and/or antibacterial effect in fibre or the finished carpet, are not permitted:

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

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

Declaration from the carpet manufacturer that the requirement has been fulfilled. Appendix 3 can be used.

Background to requirement O17

Biocidal products and antibacterial products are not desirable in Nordic Swan Ecolabel products, and the requirement excludes both chemical and physical treatments. Frequent use of antibacterial substances in ordinary consumer products may contribute to increased resistance in bacteria and the eradication of necessary bacteria, and Nordic Ecolabelling does not wish to contribute to this. These substances are increasingly being added to consumer products – everything from textiles to kitchen equipment. One of the substances often being added is nano silver. Nano silver is harmful for the aquatic environment[27]. Particular attention is being paid to nanometals such as nano silver and nano copper since they occur in many products.

These nanomaterials are added to achieve an antibacterial effect. There has been particular concern that emissions of nano silver into wastewater and other dispersal could eliminate desirable bacteria and cause resistance in bacteria. Another example of antibacterial substances that must not be used are organotin compounds and chlorophenols, which are used, for example, during the transport and storage of textiles.

Preservatives used in chemical raw materials (“in can” preservatives), for example in adhesives or surface treatments, are not subject to this prohibition. Here, the purpose of the biocide is to preserve the chemical product during storage. Naturally occurring antibacterial effects in materials (for example bamboo) are also not subject to the prohibition.

O18 Nanomaterials

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

** 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*

[27] Silverläckan, En rapport om silver i sportkläder 2018, Svenskt Vatten

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.

- Appendix 3 or equivalent declaration from the manufacturer of the product.
- A declaration from the chemical manufacturer or supplier, in accordance with Appendix 4.

Background to requirement O18

Nanomaterials[28] are a diverse group of materials under the size of 100 nm. Due to their small size and large surface area nanoparticles are often more reactive and may have other properties compared to larger particles of the same material. Further, different sizes, shapes, surface modifications and coatings can also change their physical and chemical properties. Nanoparticles can cross biological membranes and thus be taken up by cells and organs. One of the main concerns are linked to free nanoparticles, as some of these – when inhaled – can reach deep into the lungs, where the uptake into the blood is more likely.

There is concern among public authorities, scientists, environmental organisations, and others about the insufficient knowledge regarding the potential detrimental effects on health and the environment[29],[30],[31]. Nordic Ecolabelling takes these concerns seriously and applies the precautionary principle to exclude potentially hazardous nanomaterials from products.

O19 Metal complex dyes and pigments

Only metal complex dyes and pigments based on copper that make up a maximum of 5% by weight may be used.

- A declaration from the chemical manufacturer or supplier, in accordance with Appendix 4.
- Technical datasheets or test reports showing fulfilments of the requirement.

[28] https://www.nordic-swan-ecolabel.org/nordic-ecolabelling/environmental-aspects/chemicals-nano-and-microplastics/nanomaterials/
[29] UNEP (2017) Frontiers 2017 Emerging Issues of Environmental Concern. United Nations Environment Programme, Nairobi. https://wedocs.unep.org/bitstream/handle/20.500.11822/22255/Frontiers_2017_EN.pdf
[30] Parliamentary Assembly of the Council of Europe (2013) Nanotechnology: balancing benefits and risks to public health and the environment. http://assembly.coe.int/CommitteeDocs/2013/Asocdocinf03_2013.pdf
[31] SCCS (Scientific Committee on Consumer Safety) (2019) Guidance on the Safety Assessment of Nanomaterials in Cosmetics. SCCS/1611/19. https://ec.europa.eu/health/sites/health/files/scientific_committees/consumer_safety/docs/sccs_o_233.pdf

Background to requirement O19

Metal complex dyes are problematic because they contain undesirable heavy metals. The requirement prohibits the use of metal complex dyes and pigments containing, for example, chromium, cobalt, and nickel. It also restricts the scope to use copper, which occurs widely in metal complex dyes. Copper should be avoided in the aquatic environment, but it is not harmful to health unless ingested. Because of its high fixation ratio and colour fastness, copper in metal complex dyes is acceptable in small quantities (max. 5 weight% in the dye).

In general terms, metal complex dyes have a high fixation ratio (85-98%) and good fade resistance. The good fade resistance may help to give the carpet a long life[32].

5.4 Circular economy requirements

Producers of textile floor coverings of tiles and/or planks are required to document two of the circular economy requirements in this chapter where requirement O21 is mandatory.

Producers of textile floor coverings on roll are required to document two of the circular economy requirements in this chapter.

Producers of rugs and mats are required to document one of the circular economy requirements in this chapter.

O20 Design for separation

The carpet must be designed in such a way that the main material types can be separated, e.g. by separating textile fibres from backing, to facilitate recycling at the carpet's end-of-life. To show that the material types can be separated, the manufacturer must conduct tests at the manufacturing site (or an associated facility) where the main materials are separated and subsequently recycled.

- Documentation showing that materials can be separated and recycled.

Background to requirement O20

Carpets are composed of various materials, making it challenging to promote end-of-life treatments beyond landfill disposal and energy recovery. However, separating the main materials enables recycling. The main materials in question are usually textile fibres and backing. This also allows for the reuse of valuable resources where the materials can again be used in the production of either new carpets or other products. One key component in this process is to design the carpet in a way that facilitates the separation of these materials. It is also important to consider which materials or combinations of materials are suitable for recycling.

Additionally, it is crucial to document proof of concept by demonstrating that the carpet can be separated and that the resulting materials are of sufficient quality for recycling. If proof of concept cannot be documented, there is a risk that the separation of the main materials will not result in adequate material quality. The focus in this requirement is the **possibility** for

[32] “Brancheorientering for tekstilfarvning og –tryk”, Orientering fra Miljøstyrelsen, Nr. 7 2010

material separation of the carpet, but it is not a requirement for having a fully operational recycling process like in O21.

The textile floor cover industry in the Nordic countries has for a long-time developed methods to facilitate reuse and strengthen their work within sustainability[33,34]. This is why the textile floor covering producers must document two of three circular economy requirements.

O21 Take-back system

The manufacturer must have a fully operational take-back system for used carpets in order to reuse the carpet or recycle the carpet material. The take-back system must, as a minimum, cover the Nordic Swan Ecolabelled carpets.

- Reuse of carpet: The manufacturer must have a take-back system for removal, cleaning, sorting, repairing, testing and control of Nordic Swan Ecolabelled carpets for them to be approved for reuse.
- Recycling of carpet material: All new Nordic Swan Ecolabelled carpets produced must contain, on average, more than 35% by weight post-consumer recycled carpet material from reprocessed products collected via the take-back system. Alternatively, the manufacturer must fulfil the minimum requirement of post-consumer recycled content by documenting that all new carpets (not only the Nordic Swan Ecolabelled) contain, on average, more than 35% by weight post-consumer recycled carpet material from reprocessed products collected via the take-back system.

A description of the take-back system must include:

- Information on the website explaining the process of the take-back system, including a description of how the carpets are transported and who organises the transport (the manufacturer or customer).
- Inspection or control of the materials, including which parameters are controlled.
- A description of how the carpets are prepared for reuse or recycling. If the preparation includes the separation of materials and different methods of recycling, this must be included in the description.
- For recycling of carpet material: Details of how 35% by weight of recycled materials are included in new carpets, including traceability throughout the manufacturing process.

Inorganic fillers in the product, which are abundant in nature may be exempted from the calculation of the weight percentage of the post-consumer recycled carpet material.

T̄ A description of the take-back system, including all bullet points.

Background to requirement O21

From an environmental perspective there is much to be gained by reusing products, such as carpets. Reusing carpets, with minimal modification, reduces the use of resources to a minimum. If possible, this is preferable over the more energy-intensive processes related to recycling. Even though reuse is the best environmental solution, it is often not possible

[33] https://prosjekt.tarkett.no/nb_NO/node/global-oppvarming-15202
[34] https://www.egecarpets.dk/baeredygtighed/vores-baeredygtige-ambitioner

because of the quality of the carpet or because the take-back systems for reuse are not fully functional. Material recycling is, therefore, a reasonable option for keeping materials in circulation for longer.

The initial step for improving carpet recycling is to separate the various primary materials, which is introduced as a new requirement in these criteria; references are made to O21. Separating materials differs from having a fully functional system where materials are recycled and reused on an industrial scale. Therefore, this new requirement for a take-back system has been introduced. Manufacturers who seek the use of post-consumer recycled materials of good quality and purity will also benefit from arranging a take-back system, as they have full control of the recycled output material.

Typically, the different materials undergo appropriate recycling schemes, either at the factory or at a specialist site[1,33,34]. The recycling process must be conducted in such a way that the quality of the recycled raw material is sufficient to replace virgin raw materials. By relying more heavily on recycled raw materials, the manufacturer can avoid the use of virgin raw materials and reduce the climate impact of the production of carpets considerably[35]. Recycled materials are in this context considered post-consumer recycled materials and not pre-consumer waste from the production. Nordic Ecolabelling does not aim to dictate which materials must be replaced with recycled content, other than it must be post-consumer, but prefers to allow manufacturers to find the best solutions for their processes and products. The manufacturer can therefore choose if the recycled content should be used in, e.g. the backing or the textile fibres. This requirement promotes keeping materials in circulation for longer and reduces the amounts of materials going to landfills and/or energy recovery processes, irrespective of the type of material.

There are two ways of documenting the minimum amount of recycled content. The requirement states that either new Nordic Swan Ecolabelled carpets or all new carpets from the manufacturer must contain a minimum of 35%[1] by weight recycled content. This minimum content can only be documented through the post-consumer recycled carpet material from reprocessed products collected via the system, as this is an essential part of having an operational take-back system.

O22 Increased use of renewable and/or recycled raw materials

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

1. Minimum 85% by weight of renewable materials or
2. Minimum 75% by weight recycled materials and/or reused textiles or
3. Products that consist of both renewable and recycled material/reused textiles shall comply with the following formula:

   $X + (8,5/7,5) \times Y \geq 85\%$ by weight

   X = Percentage by weight of renewable raw materials*

   Y = Percentage by weight of recycled raw materials/reused textiles*

[35] “MECO textile floor coverings and carpets 2024”, A.Ø. Burgos and M.K. Eriksen, August 2024

Inorganic fillers in the product which are abundant in nature may be exempted from the calculation of the weight percentage of renewable and/or recycled raw materials the carpet**.

** Recycled renewable materials do not count as both renewable and recycled raw material/reused 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 sufficiently abundant. Pigment does not count as fillers, but as additives.*

- State the % by weight of raw materials in the product that are respectively renewable or recycled.
- Calculations showing that the requirement is fulfilled.

Background to requirement O22

The purpose of the requirement is to reduce the total environmental impact of the carpet from a life cycle perspective by reducing the consumption of virgin materials. To fulfil the requirement, a carpet manufacturer must focus on a high portion of renewable materials or recycled materials. References are made to the background of requirement O3.

This requirement differs from O3 by not being mandatory but being one of three available requirements within the chapter of circular economy requirements. Here the carpet industry is rewarded for a higher percentage of either renewable raw material or recycled content than the obligatory requirement.

5.5 Emissions to indoor air and quality requirements

Requirements O23 and O24 must be documented for all carpet types, that is textile floor coverings, rugs and mats. Requirement O25 must only be documented for textile flooring coverings, and requirement O26 must only be documented for rugs and mats.

O23 Emissions to indoor air from the product

Emissions from all carpets must not exceed the limit values in Table 4. The tests shall be carried out in accordance with ISO 16000-3/-6/-9 or EN 16516 and must be performed by an independent third party.

Table 4 Limit values for carpet emissions

Substances	Limit value after 28 days in ug/m3*
TVOC (C6-C16)	100
SVOC (C16-C23)	10
Formaldehyde	10
Carcinogenic VOC in category 1A and 1B	1

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

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

- Analysis report, including the 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. Please refer to the laboratory requirements in Appendix 2.

Background to requirement O23

In the previous generation, there were two requirements related to emissions, whereas the applicant could document either depending on it being textile floor coverings or rugs and mats. In this generation, there is only one requirement related to emissions, which applies to all products. The requirement aims to ensure that the products have a minimum of emissions known to be harmful to the indoor environment, as well as be aligned with the EU Taxonomy Annex 2.

All limit values have been tightened for TVOC (Total Volatile Organic Compounds), SVOC (Semi Volatile Organic Compounds) and formaldehyde. The tightening of limits and implementation of carcinogenic VOC is based on the EU Taxonomy, BREEAM-NOR v.6.0, M1 and the GUT label. Limit values of TVOC, SVOC, carcinogenic VOC and formaldehyde are equal to or below the limit values required for building products by BREEAM-NOR v.6.0 Basic level which is their strictest emission level. This means that all Nordic Ecolabelled carpets fulfil the emission requirements from the latest standard BREEAM-NOR v.6.1.1[36]. Nordic Ecolabelled carpets also fulfil the emission requirement for TVOC from the GUT[37] label, which is even stricter than BREEAM-NOR v.6.1.1. The carcinogenic VOC limit value is based on the sum of carcinogenic in category 1A and 1B, as defined in Annex VI of CLP Regulation (EC) 1272/2008.

The requirements for emission testing of carcinogenic substances (test according to EN 165616) are aligned with the EU Taxonomy. In the EU Taxonomy the emissions of formaldehyde must be performed according to Annex XVII in REACH (the conditions listed are aligned with EN 717-1), while for the carpet industry, EN 16516 is most commonly used. While referring to different standards, the limit value of 10 ug/m3 in this requirement is stricter than the EU Taxonomy (60 ug/m3). As the building industry in both Sweden and Denmark accepts EN 16516 for Taxonomy alignment with regard to formaldehyde it is interpreted that the level defined in this requirement is in alignment with the EU Taxonomy. M1 certification scheme also performed tests according to EN 16516 and states that they support the objectives of the EU Taxonomy[38]. Nordic Ecolabelling therefore, sees it sufficient to require tests according to the industry standard.

In this revision, it has not been deemed relevant to introduce requirements related to odour testing, as is part of the certification scheme in the GUT label and M1. As of today, odour tests are not directly comparable according to Eurofins[39]. However, standard ISO 16000-28 is dealing with odour testing. It may thus be relevant in the next revision to consider expanding the requirement with an odour limit value if odour tests have become more comparable.

[36] https://byggalliansen.no/wp-content/uploads/2025/01/BREEAM-NOR-6.1.1-English.pdf
[37] https://gut-prodis.eu/en/emission-test/
[38] https://ymparisto.rakennustieto.fi/en/emission-classification-of-building-materials#M1-luokiteltu-tuote-tukee
[39] Correspondence with Eurofins, November 2013.

O24 Durability and classification of carpets

Carpets must be classified in accordance with EN 1307, and must at least achieve the following classes:

- Use class 33 for textile floor coverings intended for commercial use.
- Use class 32 for rugs and mats intended for commercial use.
- Use class 23 for both textile floor coverings and rugs and mats intended for domestic use.

Testing must be performed by an independent, accredited testing institute. Internal test laboratories can be approved under given conditions, see Appendix 2.

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

In cases where the carpet is intended for both commercial and domestic use, the product must meet the higher requirements for commercial use.

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

t̄ Technical data sheet, declaration of performance or other documents where the use class is clearly stated.

Background to requirement O24

Increasing the service life of carpets reduces the environmental impact of carpet production, especially the climate impact will be reduced by a reduced need of virgin materials and then reduction of raw material extraction. The main parameters that affect the service life of a carpet are the wear resistance of the top layer, the intensity of usage and maintenance.

The use class is an easy way to communicate qualities of durability to a customer, and it is standardized throughout the industry. The classification is performed through the standard EN 1307 and its related standards. A classification for either commercial or domestic use can then be determined based on the tested performance. Durability should be adapted to the environment in which the product is intended to be used, therefore there are two different use classes presented for commercial use and domestic use for Nordic Ecolabelled textile floor coverings. It has also been identified that rugs and mats often don’t obtain the same use classes as textile floor coverings, especially related to commercial use. The requirement therefore introduces a separate use class level for commercial use of rugs/mats, while keeping the same use class for all carpet types for domestic use.

O25 Cleaning quality of textile floor coverings

Textile floor coverings 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 2 for complete testing requirements.

- Test report showing that the requirement is fulfilled.

Background to requirement O25

The requirement has not been changed since the previous version. The requirement aims to ensure that the product can be cleaned thoroughly and to ensure a good indoor climate. According to studies you may find more dust and allergens in textile floor coverings compared to smooth floors, it is therefore essential that the textile floor coverings are easy to clean[40].

INSTA 800 is a Scandinavian standard/system for assessing the cleaning quality in a room. The cleaning quality is checked by measuring both before and after cleaning. INSTA 800 measurements include dust deposits in the textile floor covering before and after vacuuming. The measurements are then converted into a dust index that ranges from 1 to 5, with 5 being the best possible result.

The standard can also be used on new textile floor coverings assuming that there are set reference levels explaining how the textile floor covering shall be contaminated before testing is performed. In Appendix 2 of the criteria, a reference level of 30% dust index is set before the cleaning test is carried out. How textile floor covering shall be contaminated before testing is also specified. This is to ensure reproducible measurements/tests. Sampling and evaluation should be based on the measurements described in D.1 to INSTA 800.

O26 Cleaning quality for rugs and mats

Rugs and mats for commercial use must withstand industrial washing and drying at the following settings:

- Minimum 60 degrees Celsius.
- Centrifugation at 400G.
- Drying in a tumble dryer.

Dimensional changes after industrial washing and drying shall not exceed ± 5%. This must be tested according to ISO 15797 and EN ISO 5077.

Testing must be performed by an independent, accredited testing institute. Internal test laboratories can be approved under given conditions, see Appendix 2.

- Test reports, or similar, showing that the rugs and mats can be washed industrially with the stated settings.
- Test report showing that dimensional changes are ± 5%.

[40] Bakke, Jan Vilhelm & Ovrevik, Johan & Schwarze, Per & Hongslo, Jan & Nilsen, Steinar & Becher, Rune. (2016). 46 ALLERGI I PRAKXSIS 2/2016. Allergi i praksis. 46-54.

Background to requirement O26

This requirement now covers more than just dimensional changes and includes minimum requirements for industrial washing settings.

The objective of this requirement is to ensure high-quality Nordic Swan Ecolabel rugs and mats for commercial use. If a product can be cleaned thoroughly in an industrial washery while not causing the rugs and mats to change dimensions, it is considered to have a potentially prolonged lifetime.

The requirement is currently limited to rugs and mats for commercial use. Rugs and mats for commercial use require higher durability and must most likely withstand more dirt throughout their use. Because of this it's essential that it can be washed and setting requirements to how it can be washed industrially. Rugs and mats used in domestic settings are not as prone to these circumcises, and it is therefore not required that they can be washed industrially. This is instead handled in the requirement related to customer information, where the manufacturer must inform the buyer of how the carpet is best maintained, including cleaning.

O27 Customer information

Manufacturers of Nordic Swan Ecolabelled products must make the following information available to customers through a website or brochure:

- Information on how to maintain the carpet. This includes the recommended method and frequency of cleaning. If cleaning products are recommended, they must preferably be Nordic Swan Ecolabelled.
- The use class of the product.
- Instructions on how to install textile floor coverings. This does not apply to mats and rugs.
- If the carpet is glued to the subfloor, the manufacturer must recommend an adhesive. The adhesive must preferably be Nordic Swan Ecolabelled.
- Information on how the carpet should be handled at end-of-life. There must be information for products that are suitable for recycling through a take-back system.

T̄ Documentation showing where all bullet points above are made available.

Background to requirement O28

To enable a long service life for carpets, which is an important environmental aspect, the customers must obtain information about the products, correct installation and recommended maintenance. This also includes informing the customer of potential take-back systems to promote recycling as an end-of-life treatment.

This requirement also includes that the manufacturer must inform the customer of how the carpet may be cleaned. This is especially important for rugs and mats for domestic use, as these criteria don’t have a separate requirement for cleaning.

5.6 Social and ethical requirements

Carpets with production and/or supplier sites in a region and/or country with not a low risk for breach on human rights, must comply with the requirements in this section. Refer Appendix 7 for guidance on assessment of risk.

The requirements in this section are meant to prevent and address adverse impacts across the value chain of licensed products. The requirements are grounded in key international standards on human rights due diligence adopted by the UN and the OECD. These soft law standards are referenced in the draft due diligence obligation in the EU, meant to ensure coherence for companies across existing and proposed EU initiatives on responsible business conduct.

The requirements are also in step with existing practice in the sector, including the risk-based approach to tackle the most salient risks to people. Licensees are given a broad range of approaches to manage sustainability risk, and for the Nordic Ecolabelling to assess compliance, rather than a heavy reliance on contractual assurances and audits/verifications.

O28 Human rights due diligence

The licensee shall employ ongoing risk-based due diligence in line with the methodology and expectations in the UN Guiding Principles and the OECD Guidelines, which includes the fundamental ILO Conventions, for carpet production sites and dyeing plants, see specific requirements in O29 and O30.

The licensee shall inform suppliers what is expected of them, including a commitment to support supplier's compliance by engaging in responsible purchasing practices.

The licensee is responsible for engaging with the suppliers to remediate any labour issues that may arise during production and for taking commercially reasonable efforts to ensure compliance with the UN Guiding Principles and OECD Guidelines, and local labour and safety laws.

The licensee shall strive for a 'responsible exit' where human rights impacts are severe, and the licensee lacks leverage to address them. Before ceasing business, the licensee shall consider any additional human rights consequences of such termination.

The Nordic Ecolabel may withdraw the license as a last resort, if the licensee cannot show evidence that they are engaging to influence the relevant entities that are causing harm.

See Appendix 8 for resources to develop a human rights due diligence policy.

- Signed application form.
- Nordic Ecolabelling may request copies of written efforts to engage, influence, support, reward and verify improvements at sites if needed, as per Compliance Action Plans (CAPs) from audits, certification or multi-stakeholder initiatives or other social compliance and safety monitoring programmes.

Background to requirement O28

The human rights due diligence should be aligned to expectations set out in the UN Guiding Principles on Business and Human Rights[41], and with the Organisation for Economic Co-operation and Development's Guidelines for Multinational Enterprises[42], clarified in plain-language explanations in the OECD Due Diligence Guidance for Responsible Business Conduct[43] to help promote a common understanding on due diligence compliant with that of the UNGPs. See also the OECD's sector-specific guidance[44].

The Guiding Principles were unanimously adopted by the UN Human Rights Council in June 2011. In line with the Guiding Principles, companies have a responsibility to undertake due diligence in their value chains to ensure respect for human rights. The human rights benchmarks are expressed in the International Bill of Human Rights and International Labour Organization Declaration on Fundamental Principles and Rights at Work (which sets out the ILO core conventions). Companies are asked to employ ongoing risk-based due diligence to identify, prevent, and mitigate actual and potential adverse impacts on human rights based on its own activities, and those which may be directly linked to its operations, products, or services by its business relations. The scope of due diligence depends on the nature of the human rights risk and the company's connection to it (see Principle 13).

The licensee should, in good faith, take informed steps to implement due diligence by applying a risk-based approach; the Guiding Principles expect companies to prioritize attention to the likely risk of severe harm (salient risks), to make it manageable. The licensees must be open and responsive to issues that may arise in their supply chains.

The EU Commission's proposal for a Corporate Sustainability Due Diligence Directive (CS3D)[45] references the Guiding Principles and OECD guidance. The CS3D takes a comprehensive approach and ties social aspects in the supply chain with delivering on the EU's Green Deal[46]. The Directive aims to ensure coherence for companies and avoid fragmentation of due diligence requirements in the single market resulting from EU member states "acting on their own"[47].

See also requirement O2, which asks for verified value chain mapping in production (carpet production sites and dyeing plants) and to connect the product with the actual raw material used.

---

[41] United Nations Guiding Principles on Business and Human Rights ("UNGPs"), 2011, see https://www.ohchr.org/sites/default/files/documents/publications/guidingprinciplesbusinesshr_en.pdf

[42] Organisation for Economic Co-operation and Development (OECD)'s 2011 Guidelines for Multinational Enterprises, see https://www.oecd.org/corporate/mne/, revised in 2023.

[43] Organisation for Economic Co-operation and Development (OECD)'s 2018 Due Diligence Guidance for Responsible Business Conduct ("OECD Due Diligence Guidance"), see https://www.oecd.org/investment/due-diligence-guidance-for-responsible-business-conduct.htm

[44] Organisation for Economic Co-operation and Development (OECD)'s Due Diligence Guidance for Responsible Supply Chains in the Garment & Footwear Sector, see https://www.oecd.org/industry/inv/mne/responsible-supply-chains-textile-garment-sector.htm

[45] See https://eur-lex.europa.eu/resource.html?uri=cellar:bc4dcea4-9584-11ec-b4e4-01aa75ed71a1.0001.02/DOC_1&format=PDF

[46] Communication from the Commission to the European Parliament the European Council, the Council, the European Economic and Social Committee and the Committee of the Region "The European Green Deal" (COM/2019/640 final).

[47] CS3D, see Explanatory Memorandum p. 3.

O29 Preventive safety measures

The licensee shall, in countries or regions where it is available, commit to only source products/services from sites participating in the International Accord for Health and Safety in the Textile and Garment Industry.

- Signed application form to join the International Accord if relevant to source from sites in countries or regions covered by the Accord.

Background to requirement O29

As of early 2023, the International Accord for Health and Safety in the Textile and Garment Industry is available in Bangladesh and Pakistan[48]. The International Accord began as the Accord on Fire and Building Safety in Bangladesh in 2013.

The Rana Plaza textiles factories building collapse in Bangladesh in 2012, showed the need in this sourcing country for buyers to check they are buying from structurally safe buildings. Structural safety assessments can be extremely expensive and are not generally included in social audits of labour standards, so the Bangladesh Accord on building safety was created as a collaboration to share assessment costs between many buyers and suppliers. In addition, it's leadership by trade unions with buyers allows workers to raise safety issues which can arise when new heavy machinery is added to floors or other safety factors change. A considerable proportion (over 3000) of all textile export factories in Bangladesh are assessed through this programme, and it is free to check on the Accord website that sites are deemed safe by the programme. The Accord is now extended to Pakistan.

O30 Assessment of safety and labour conditions

The licensee shall conduct regular risk assessment of the supply chain, updated whenever significant new risks arise, at least every 12 months, that includes:

- Desk-based assessment of the latest human right and environment-related context in the region or country, sector, and production type, and any indicators of risk at the sites; and
- Initial onsite assessment of the actual situation at sites.

The licensee needs to consider their own potential contributions to adverse impacts (for example their own purchasing practices) and whether there are adequate incentives for a supplier to share rather than hide problems from them.

See Appendix 7 for resources for a desk-based assessment. See Appendix 9 for guidance on measures to verify compliance and respect for human rights onsite.

The onsite assessment can be done through either a), b) or c):

a) Reviewing a report from a recent (past 3 months) assessment by the multi-stakeholder initiative programme. See Appendix 10 for approved programmes.

b) Reviewing a social audit from another buyer from the same supplier/site, provided it meets the audit methodology requirements, see below.

[48] See https://internationalaccord.org/

c) Commissioning a social audit. Nordic Ecolabelling will accept audits conducted using SLCP (Social and Labor Convergence Program) or SMETA (based on the ETI Base Code). SA8000 (first year) or a BSCI audit (first year) will be accepted if the report is provided in full (as well as the certificate) and if the audit has been conducted within the last year.

- Submit the site(s) initial assessment or monitoring report(s) of actual site labour conditions (options a-c above).
- If the exemption is applicable, submit the desk-based risk assessment together with verification of contact with a relevant trade union.

Background to requirement O30

See Appendix 7 and Appendix 9 in the criteria.

5.7 Licence maintenance

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

O31 Customer complaints

The licensee must guarantee that the quality of the Nordic Swan Ecolabel 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.

Background to requirement O31

Nordic Ecolabelling requires that your company has implemented a customer complaint handling system. To document your company's customer complaint handling, you must upload your company's routine describing these activities. The routine should be dated and signed and will normally be part of your company's quality management system.

If your company does not have a routine for customer complaint handling, it is possible to upload a description of how your company perform these activities. During the on-site visit, Nordic Ecolabelling will check that the customer complaint handling is implemented in your company as described. The customer complaints archive will also be checked during the visit.

O32 Traceability

The licensee must be able to trace the Nordic Swan Ecolabel 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.

Background to requirement O32

Nordic Ecolabelling requires that your company has implemented a traceability system. To document your company's product traceability, you must upload your company's routine describing these activities. The routine should be dated and signed and will normally be part of your company's quality management system.

If your company does not have a routine for product traceability, it is possible to upload a description of how your company perform these activities. During the on-site visit, Nordic Ecolabelling will check that the product traceability is implemented in your company as described.

6 Environmental impact of textile floor coverings and rugs/mats

The relevant environmental impacts found in the life cycle of Textile floor coverings and rugs/mats are set out in a MECO analysis[35] and summarized in a MECO table, ref. Appendix 11. A MECO describes the key areas that have impact on the environment and health throughout the life cycle of the product – including consumption of materials/resources (M), energy (E), chemicals (C) and other impact areas (O).

Nordic Ecolabelling sets requirements concerning the topics and processes in the life cycle that have a high environmental impact – also called hotspots. Based on the MECO analysis, an RPS tool is used to identify where ecolabelling can have the greatest effect. R represents the environmental relevance, P is the potential to reduce the environmental impact, and S is the steerability on how compliance with a requirement can be documented and followed up. The criteria contain requirements in those areas in the life cycle that have been found to have a high or medium RPS, since there is potential to achieve reduced environmental impact.

Table B below, presents the summary of the RPS analysis. The aspects where the assessment concludes with high or medium RPS are those covered by requirements in the criteria. The MECO and the RPS analyses are based on Life Cycle Assessments (LCAs), Environmental Product Declarations (EPDs), the background document for the previous version of the criteria and other documentation describing environmental impact from carpets[49,50]. The LCAs and EPDs are made for textile floor coverings, but it is assumed that the environmental impacts for these types of carpets, are applicable for rugs and mats also.

[49] "Kortlægning og risikovurdering af kemiske stoffer i gulvtæpper til børn", Helene Bendstrup Klinke et.al., Miljøstyrelsen, 2016

[50] The Textile Industry's Climate Reckoning: A Path to Circularity and Low-Carbon Energy | Ethos, 11.03.2025

RPS analysis

Table B. Summary of the RPS analysis

Life cycle stages	Area and assessment of R, P, S (high, medium or low)	Comments
Raw materials		
	Material consumption R: High P: Medium S: High	RPS = high The consumption of raw materials has a high environmental impact due to depletion of fossil resources, consumption of energy and water, land use etc. To reduce the environmental impact from the use/consumption of materials, Nordic Ecolabelling sets strict requirements to the minimum required content of renewable and/or recycled raw materials to reduce the consumption of virgin materials in carpets and has also textile fiber/polymer requirements supporting use of renewable and recycled fibers/polymers. LCAs and EPDs show that there might be slightly differences in the material consumption due to type of carpets (wall-to-wall/tiles), type of production (woven/tufted) and type of material (synthetic/wool). The potential to set requirements to lower the amount of material used (kg/m^2), is reduced by the fact that the amount of material used, might be related to quality/lifetime of a carpet, type/function and the amount of glue/chemicals needed for installation. But to get information about the material used per area for different carpet types, Nordic Ecolabelling has introduced an information requirement for material consumption (kg/m2) in this generation.
	Energy consumption R: High P: Medium/high S: Low	RPS = medium/low The consumption of energy to extract and produce raw materials and in the carpet production phase has a high environmental impact and might represent more than 60% of the total climate impact for a carpet. LCAs and EPDs show that the consumption is between 83-510 MJ/m2, and that there are slightly differences in the energy consumption due to type of production (woven/tufted) and type of material (syntetic/wool). The majority of the energy consumption is for the material extraction and not for the carpet production itself, and therefore the steerability is low. Based on low steerability, Nordic Ecolabelling has removed the energy requirements in this generation and has instead imposed strict material requirements to reduce the production of virgin carpet material which again will reduce the energy consumption from raw material production.
	Water consumption R: Medium P: Medium S: Low	RPS = medium/low The consumption of water to extract materials and to produce carpets also has considerably environmental impact. LCAs and EPDs show that there might be slightly differences in the water consumption due to the type of carpets (wall-to-wall/tiles) and type of material (synthetic/wool). The majority of the water consumption is for the material extraction and not for the carpet production and the steerability is low.

		Based on low steerability, Nordic Ecolabelling has removed the water reduction requirements in this generation and has instead imposed strict material requirements to reduce the production of virgin carpet material which again will reduce the water consumption from carpet production.
	Use of chemicals R: High P: High S: Medium	RPS = high/medium Many health and/or environmental hazardous chemicals are used for raw material production for carpets. The use of these chemicals might cause possible health impact in the use phase and challenges for recycling of carpet material by end-of-life. The steerability may vary back in the supply chain according to production method. Nordic Ecolabelling sets strict requirements to all chemical products used in the production of raw materials to reduce the environmental and health impact from carpets in the whole life cycle. As it might be challenging to get the required documentation for all the chemical requirements back in the carpet supply chain, Nordic Ecolabelling accept an Oeko-tex standard 100 certificate class I as alternative documentation to our own chemical appendix. Also refer the other life cycle stages for more description of impact from the use of chemicals.
	Emissions to air R: Medium P: Low S: Low	RPS = low/medium Production of carpets made of virgin plastic fibres might lead to release of problematic compounds such as NOx and VOC into the air. From production of nylon (polyamide 6 and 66), the greenhouse gas N2O is released. Nordic Ecolabelling only allow for the use of virgin plastic fibers if the material constitute less than 10 weight% of the carpet.
	Discharge of wastewater R: Medium P: Medium S: Medium	RPS = medium Production of carpets might lead to discharge of wastewater with high content of organic matter like lanolin from wool washing or organic matter from foam production. The high content of organic matter gives high COD (chemical oxygen demand) which might cause challenges for wastewater treatment plants and/or the aquatic environment. Nordic Ecolabelling sets limits for the COD in the wastewater from wool scouring plants and from foam production plants.
	Animal welfare R: Medium P: Medium S: Medium	RPS = medium Use of mulesing might be used in relation to wool production. Nordic Ecolabelling requires that mulesing is not allowed to protect animal welfare. The wool supplier must declare that mulesing has not been used in the production of conventional wool.
Production/distribution		
	Use of chemicals R: High P: High S: High	RPS = high Use of chemicals for dyeing, gluing, as flame retardant and anti-dirt impregnation causing possible health impact in the use phase and challenges for recycling of carpet material by end-of-life.

		Nordic Ecolabelling sets strict requirements to all chemical products including dyes used to produce carpets to reduce the environmental and health impact from carpets in the whole life cycle, see the other life cycle stages for more description.
	Working conditions R: Medium P: Medium S: Low	RPS = medium/low Several carpet producers have their productions sites in Europe, but carpets might be produced in areas where working conditions might be unsatisfactory and not according to International Labour Organization (ILO) minimum requirements. Nordic Ecolabelling sets social and ethical requirements for carpets producers for production in areas with not low risk for violation of human rights to ensure satisfactory working conditions.
Use phase		
	Electricity consumption for cleaning R: Low P: Low S: Low	RPS = low Electricity is used for cleaning of carpets, typically 1-11 MJ/m2. The environmental impact of this energy use is low compared to the energy used for the extraction of materials and production of carpets, and the steerability of setting requirements for electricity used for cleaning of carpets, is low.
	Emissions of chemicals to indoor air and chemical content in indoor dust and dirt R: High P: High S: High	RPS = high Chemicals causing health impact are used to produce carpets. Chemicals are used as ingredients and dyes both for the upper textile side and for the backing material and for gluing, impregnation and lamination of carpets. Residual chemicals like lubricants and oils from machinery used during production can also remain in the carpets. The use of these chemicals might cause emissions of VOCs to indoor air and content of among others PFAS and phthalater in indoor air and indoor dust/dirt. Nordic Ecolabelling sets strict requirements to all chemical products including dyes used to produce carpets to reduce exposure to health hazards from chemicals in the use phase. Nordic Ecolabelling also sets requirements for and have limits for VOC- and formaldehyde emissions from the products. Use of adhesives for installation of wall-to-wall carpets, where 10 times as much glue is necessary for carpets on roll compared to tiles, will also result in chemicals in the indoor environment. But the steerability to impose requirements is low. It is difficult to set requirements other than a requirement for installation information that must include a recommended adhesive, and if there are suitable Nordic Swan Ecolabelled adhesives, these are to be recommended.
	Use of detergents for cleaning R: Medium P: Medium S: Low	RPS = low The use of detergents for cleaning is causing discharge of detergent chemicals to water. The steerability of imposing requirements for detergents to be used for cleaning of carpets, is low. It is difficult to set requirements other than a requirement for the maintenance information for the carpets. This information must include recommendation for cleaning frequency, cleaning method and cleaning products, and if there are

		suitable Nordic Swan Ecolabelled cleaning products, these are to be recommended.
	Poor quality and short lifetime R: High P: High S: High	RPS = high In general, more durable products reduce environmental impacts because of the less frequent need for replacement, and possibilities to repair the carpets will extend the carpet lifetime. LCAs document that there are better possibilities for repairing for carpet tiles than carpet on roll. The systems established today are mainly for repairing and reuse of textile floor tiles covering whole floors and not for repairing/replacement of single tiles or rugs/mats. Nordic Ecolabelling sets requirements for durability testing according to specified use classes for commercial and domestic use and has also for this criteria generation, introduced a requirement for carpet manufacturers of carpet tiles to offer a take-back program for repairing and reuse of carpets tiles and/or material recycling.
End-of-life		
	Incineration/landfill instead of recycling and/or reuse R: High P: Medium S: Medium	RPS = medium/high From a climate/environmental perspective, recycling of carpet material/fibres and/or reuse of carpets by end-of-life is preferable over the traditional and most used end-of-life option, incineration/landfill (In Europe, only 1-3% of carpets are recycled). As extraction of new carpet material has a huge environmental impact, it is important to increase the reuse of the carpets and the recycling of carpet textile fibers and backing materials into new fibers or downcycled to filler material. This can be done through take-back programs offered by the carpet manufacturers. The manufacturer should offer to take back carpets by end-of-life to refurbish/repair (if needed) and then offer reuse of the carpets or if not possible to refurbish/repair the carpets, then recycle the carpet material. Nordic Ecolabelling has in this generation of the criteria introduced a new requirement for carpet take-back program offered by the manufacturer for carpets tiles/planks. Nordic Ecolabelling has also in this generation of the criteria introduced a new circular requirement for design for separation for carpets tiles/planks and on roll.
	Recycling of problematic chemicals R: High P: Medium S: Medium	RPS = medium/high The use of health and environmental hazardous chemicals might cause challenges for recycling of carpet material by end-of-life as there is a risk of recycling problematic chemicals, such as flame retardants, into new products. Nordic Ecolabelling sets strict requirements to all chemical products, including flame retardants, used to produce carpets to reduce the risk for recycling of health and environmental hazardous chemicals into new carpets by recycling of carpet material.

7 Criteria version history

Nordic Ecolabelling adopted version 2.0 of the criteria for textile floor coverings and rugs/mats on DAY MONTH YEAR. The criteria are valid until DAY MONTH YEAR.

8 How to apply and regulations for the Nordic Ecolabelling

Application and costs

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

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

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 prolonged or adjusted, in which case the licence is automatically prolonged, 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 on-site inspection visit/-s 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.

Follow-up inspections

Nordic Ecolabelling may decide to check whether licence holders fulfil 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 licence holders do 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.

Queries

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

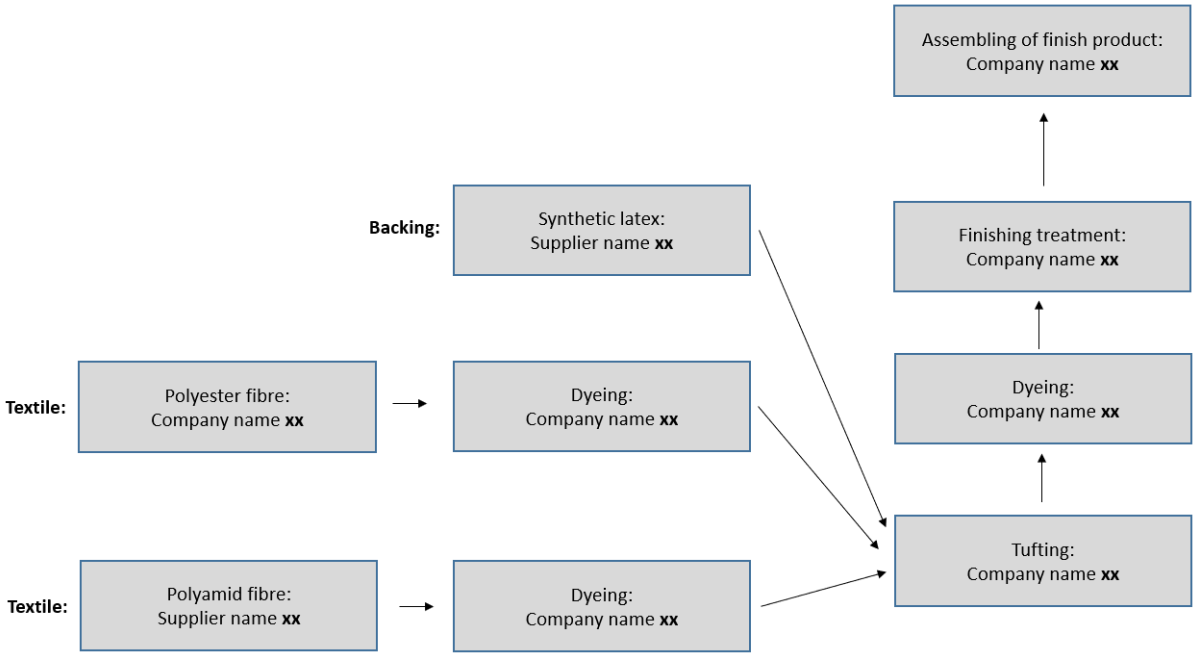
Regulations for the Nordic Ecolabelling of products

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

Appendix 1 Manufacturing process and suppliers

Example of flow chart for the manufacturing process:



List of suppliers:

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

Appendix 2 Laboratories and methods for testing and analysis

General requirements for test and analysis laboratories

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

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

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

Test method for COD effluents

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: Effluents 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.

Cleaning quality of textile floor coverings

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/m2 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).

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 3 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 (see a and b below) 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

a) Antibacterial substances (including silver ions, nano silver and nano copper)
b) 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

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

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

Appendix 4 Directions for raw material standards and certification schemes

Nordic Ecolabelling sets requirements on the standards to which feedstock is certified. These requirements are described below. Each individual raw material standard or certification scheme is reviewed by Nordic Ecolabelling as to fulfilment of the requirements. When a raw material standard is revised, it is re-reviewed.

Requirements on raw material standards

- The standard must balance economic, ecological and social interests and comply with the Rio Declaration's forestry principles, Agenda 21 and the Forest Principles, and respect relevant international conventions and agreements.
- The standard must contain absolute requirements and promote and contribute towards sustainable cultivation of raw materials. Nordic Ecolabelling places special emphasis on the standard including effective requirements to protect the forest from illegal felling and that the requirements protect the biodiversity of the forest.
- The standard must be available to the general public. The standard must have been developed in an open process in which stakeholders with ecological, economic and social interests have been invited to participate.

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

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

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

Requirements on certification system

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

Requirements on certification body

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

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

Requirements on Chain of Custody (CoC) certification

- Chain of Custody certification must be issued by an accredited, competent third party (as for forest certification).
- The system shall stipulate requirements regarding the chain of custody that assure traceability, documentation and controls throughout the production chain.

Documentation

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

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

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

Appendix 5 Declaration of chemicals

Appendix 6 Carcinogenic aromatic amines released from azo dyes

Carcinogene aromatic amines	CAS no
4-aminodiphenyl	92-67-1
Benzidine	92-87-5
4-chlor-o-toluidine	95-69-2
2-naphthylamine	91-59-8
o-amino-azotoluene	97-56-3
2-amino-4-nitrotoluene	99-55-8
p-chloraniline	106-47-8
2,4-diaminoanisol	615-05-4
4,4´-diaminodiphenylmethane	101-77-9
3,3´-dichlorbenzidine	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
4,4'-methylene-bis-(2-chloro-aniline)	101-14-4
2-amino-5-nitroanisole	97-52-9
m-nitroaniline	99-09-2
2-amino-4-nitrophenol	99-57-0
m-phenylenediamine	108-45-2
2-amino-5-nitrothiazole	121-66-4
2-amino-5-nitrophenol	121-88-0
p-aminophenol	123-30-80
p-phenetidine	156-43-4
2-methyl-pphenylenediamine; 2,5diaminotoluene	615-50-9
2-methyl-pphenylenediamine; 2,5diaminotoluene	95-70-5
2-methyl-pphenylenediamine; 2,5diaminotoluene	25376-45-8
6-chloro-2,4-dinitroaniline	3531-19-9

Appendix 7 Human rights and environmental risk assessments

Assess the country and sector risk
Licensees are asked to assess the latest human rights and environment-related context, to consider whether compliance with the fundamental ILO conventions (and assessing for that) at the sites is possible.

- For an overview of ratifications by country of fundamental ILO Conventions, see https://www.ilo.org/dyn/normlex/en/f?p=1000:11001:::NO:::. For example consult the list of countries that have not ratified the Convention No. 98 concerning right to organise and collective bargaining, see https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11310:0::NO:11310:P11310_INSTRUMENT_ID:312243:NO, and see overview of ratifications of fundamental instruments by number of ratifications, available at https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:10011:0::NO::P10011_DISPLAY_BY,P10011_CONVENTION_TYPE_CODE:2,F.
- For a rank of countries' respect for workers' rights, see the latest edition of the International Trade Union Confederation Global Rights Index, available at https://www.ituc-csi.org/2022-global-rights-index-en.
- For country-specific human rights reviews, see Human Rights Watch's reports, available at https://www.hrw.org/countries, and see Amnesty Internationals' reports, available at https://www.amnesty.org/en/countries/.
- For updates with focus on textile and apparel manufacturing, see FairWear Foundations' country reports, available at https://www.fairwear.org/programmes/countries and see ETI's country risk reports, available at https://www.ethicaltrade.org/blog. ILO Better Work has occasional country apparel sector labour conditions reports, available at https://betterwork.org/.
- For resources on modern slavery risks, see the US State Department and Verité's responsible sourcing tool, available at https://www.responsiblesourcingtool.org/workerprotection, see the US Department of Labor's list of goods and their source countries which it is reason to believe is produced by child labour or forced labour, available at https://www.dol.gov/agencies/ilab/reports/child-labor/list-of-goods; see the US State Department's yearly Trafficking in Persons Report, available at https://www.state.gov/reports/2022trafficking-in-persons-report/; see the International Organisation for Migration (IOM) global data hub on human trafficking, available at https://www.ctdatacollaborative.org/, and the most recent global and regional estimates on forced labour, including high risk countries and regions on pp. 52-57, available at https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---ipec/documents/publication/wcms_854733.pdf.
- For proposed legislation to prohibit products made with forced labour from the EU market, see the European Commission, Proposal for a regulation of the European Parliament of the Council on prohibiting products made with forced labour on the Union market, 14 September 2022, available at https://ec.europa.eu/transparency/documents-register/api/files/COM(2022)453_0/090166e5f14084e6?rendition=false, and the issued

guidance p. 5 on country risk factors for forced labour, available at https://trade.ec.europa.eu/doclib/docs/2021/july/tradoc_159709.pdf.

- For US restrictions on supply chains and investment links to Xinjiang, China, see the Uyghur Forced Labor Prevention Act, available at https://www.cbp.gov/trade/forced-labor/UFLPA, and see the US State Department's Xinjiang Supply Chain Business Advisory, available at https://www.state.gov/xinjiang-supply-chain-business-advisory/.
- For datasets summarising views on the quality of governance of countries, see the Worldwide Governance Indicators, available at http://info.worldbank.org/governance/wgi.

Assess the supplier risk

This guide lists sector MSI (multi-stakeholder initiative) resources you can use for free:

- Licensees can engage trade unions in their home country or in a sourcing country to ask about working conditions, and if there have been any reports of human rights issues from the sourcing supplier.
- Licensees can check if other brands or MSIs are buying from, and hence may be social auditing, assessing or training factories in labour standards and open to brand collaboration, by checking the Open Apparel Registry/Open Supply Hub, available at https://staging.openapparel.org/ and https://opensupplyhub.org.
- Some larger suppliers may also be found in the Business Human Rights Resource Centre database search engine of companies, available at https://www.business-humanrights.org/en/companies/.
- For factories over 100 employees, check if a supplier already has an update on the Social Labour Convergence Programme (SCLP) data collection tool, available at https://slcp.zendesk.com/hc/en-us/articles/360023740474-Data-Collection-Tool-1-4.
- For sites in countries covered by the ILO Better Work programme, consult the Transparency Portal to verify that the factory has no outstanding salient risks of harm, available at https://portal.betterwork.org/transparency/compliance.
- For China, consult the China Labour Bulletin, available at https://clb.org.hk/, and the Australian Strategic Policy Institute report website, available at https://www.aspi.org.au/report/uyghurs-sale, to verify that the factory is not reported for conditions that strongly suggest forced labour.
- In general, consult Worker Rights Consortium, available at https://www.workersrights.org/our-work/factory-investigations/, and manufacturing assessments by Fair Labour Association (FLA), available at https://www.fairlabor.org/accountability/assessments/assessments-manufacturing/?report_type=workplace-monitoring%7Cthird-party-complaint, to see if the supplier site(s) are listed. FLA ongoingly report on breaches of workers' rights under the ILO conventions.
- If a factory indicates it has SA8000 certification, this can be checked at https://sa-intl.org/sa8000-search/. SAI have indicated they are launching a Buyer Engagement Tool, whereby buyers can see issues found, and be supported to engage the supplier to help influence and reward remediation improvements needed.
- For emissions data from 70 000+ individual sources and countries, see the Climate Trace database, available at http://www.climatetrace.org/map.

For environmental risk, see the pollution databases (water and air) of the Institute of Public and Environmental Affairs (IPA) for relevant Asia sites, available at http://wwwen.ipe.org.cn/AirMap_fxy/AirMap.html?q=1.

Workforce profile of supplier site(s)

Licensees are advised to gather employment site details as part of an initial desk-based assessment of vendor or site risks, with

- numbers of workers, and % line workers, including numbers and sources of any foreign migrant or contract workers, or in large countries, i.e., China and India, domestic migrants
- the languages spoken on site with by how many employees
- gender breakdown
- about unions active onsite

If the site has migrant workers (domestic or foreign), heightened due diligence (including consulting experts such as MSIs listed above) and monitoring, will be needed.

Useful resources:

Current good practice is to follow guidance from the Transparency Pledge, available at https://transparencypledge.org/, and disclose supply chain information at the open Data Standard, available at https://odsas.org/

Appendix 8 Due diligence policy resources

Many companies in the textile/apparel industry are part of multi-stakeholder initiatives (MSIs) that provide practical trainings and guidance on how to do human rights due diligence on supply chains in the sector. These include the Ethical Trading Initiatives (ETIs) of UK, Denmark, Norway and Sweden, Fair Wear Foundation (Dutch based), the amfori BSCI, the US based Social Accountability Intl (SA8000) and Fair Labour Association (FLA).

- For resources on responsible purchasing practices, see the Common Framework for Responsible Purchasing Practices (CFRPP, the Common Framework), available at https://www.cfrpp.org/, including a summary of available training, available at https://static1.squarespace.com/static/601a4cf430876663b0f9c870/t/62de57432fbbd85a1ffca83a/1658738504465/Summary+training+LIC.pdf.
- For specific guidance on how textile companies can undertake human rights due diligence, see the Fair Wear Foundation's "Brand Performance Check Guide", available at https://api.fairwear.org/wp-content/uploads/2022/05/Brand-performance-check-guide-2022.pdf or see the ETIs website, available at https://www.ethicaltrade.org/issuesdue-diligence/resources-human-rights-due-diligence.
- For policy statement guidance and sectoral guidance, see OCED Due Diligence Guidance for garment and footwear, available at https://mneguidelines.oecd.org/oecd-due-diligence-guidance-garment-footwear.pdf, section 1.1. and 3.2.1 respectively.
- For a model template for a human rights policy, see Building Blocks for Schedule P, (P, as in Policy), available at https://www.americanbar.org/content/dam/aba/administrative/human_rights/contractual-clauses-project/schedulep.pdf, or, for practical examples, see Appendix B Examples of Policy Commitments to the 2016 report Doing Business with Respect for Human Rights: A Guidance Tool for Companies, by the Global Compact Network Netherlands, Oxfam and Shift, available at https://shiftproject.org/wp-content/uploads/2020/01/business_respect_human_rights_full-1.pdf%20.
- For multilanguage versions of a supplier code of conduct, founded on the ILO Conventions, see the ETI Base Code, available at https://www.ethicaltrade.org/resources/eti-base-code-poster, see SAI (SA8000), available at https://sa-intl.org/resources/sa8000-standard/sa8000-translations/, or see Fairwear's Code of Labour Practices (CoLP) https://www.fairwear.org/about-us/labour-standards.
- For a guide on identifying salient risks, see the 2017 UN Guiding Principles Reporting Framework, a collaboration between the Shift Project (the leading centre of expertise on the UN Guiding Principles) and the international accounting firm, Mazars LLP, available at https://www.ungpreporting.org/.

For guidance on how to calculate and benchmark wages, see the Anker methodology, available at https://globallivingwage.org/about/anker-methodology/, or see the Asia Floor Wage, available at https://asia.floorwage.org/living-wage/calculating-a-living-wage/, or use a process such as ACT membership, Fair Wear Foundation Fair Wage Ladder, Fairtrade Textile Standard, or FLA's Fair Compensation Scheme.

Appendix 9 Measures to verify compliance/human rights at sites

To avoid unnecessary costs, and varying audit quality and the failure to resolve systemic issues, Nordic Ecolabelling encourages Licensees to take part in multi-stakeholder initiatives (MSIs) that guides improvements and deliver ongoing monitoring and collaboration.

Where MSIs are not easily available, suppliers assessed for labour standards might have been audited frequently, also some may have engaged in improvement trainings or initiatives. To help reduce duplicative audit fatigue, or even training fatigue, check if sites have had recent trainings or ongoing programmes.

If another buyer has recently assessed the site, consider brand collaboration to reduce duplication. Suppliers have an incentive to help with contact between buyers, as company resources would be saved with social compliance monitoring. Also sharing audit reports with other brands can influence supplier improvements on salient risks. Other shared benefits include verification funding for follow-up audits using all buyer codes. It could also be possible to fund an independent worker helpline service or jointly promote and deliver trainings.

Resources on the growing consensus of ineffectiveness of private regulation:

See Research Brief by Cornell University's School of Industrial and Labor Relations on unreliable data in audits, https://theconversation.com/why-apparel-brands-efforts-to-police-their-supply-chains-arent-working-136821 and https://cornell.app.box.com/s/swgaexrjs1bne4tk4magraf14894hpr7. Researchers found that over 50% of the 31,652 factory audits conducted in China and India over a seven-year period were based on falsified or unreliable information.

Another investigation by South China Morning, see https://www.scmp.com/economy/china-economy/article/3118683/bribes-fake-factories-and-forged-documents-buccaneering?module=perpetual_scroll_0&pgtype=article&campaign=3118683, shows that more than 90 percent of factories audited on the amfori BSCI platform in 2020 had falsified records.

Also Human Rights Watch comment on insufficient third-party auditing for human rights issues, at https://www.hrw.org/report/2016/05/30/human-rights-supply-chains/call-binding-global-standard-due-diligence; also https://www.hrw.org/news/2020/10/07/social-audit-reforms-and-labor-rights-ruse, also https://www.hrw.org/news/2018/10/08/germany-paved-way-revamping-social-audits-italy-should-follow, and there are limits with audits to detect sexual harassment and other gender-based violence, including limitations of on-site interviews - https://www.hrw.org/news/2019/02/12/combating-sexual-harassment-garment-industry.

The SA8000 standard provides guidance on delivering good working conditions, and there is various SAI run programmes to assist factory learning and improvement. However, research has shown social certification programmes can cause sites to not disclose the true status of human rights conditions.

Suppliers who genuinely gain high standards certifications such as SA8000 should be rewarded. However, certification as a business requirement for a large deal, may place greater stress on supply chain partners and lower the chances of buyer awareness of any

adverse human rights impacts of social compliance. There have been alleged risks of falsification of these certificates and corruption. See the 2018 article SA8000: The “Gold Standard” for Failing Workers? by the Worker-Driven Social Responsibility Network, on SAI’s SA8000 certification programme, available at https://wsr-network.org/resource/sa8000-the-gold-standard-for-failing-workers/. It goes through studies showing lack of empirical evidence to support that SAI and SA8000 deliver meaningful change for workers in global supply chains. It states SA8000 is seen as ineffective due to its “voluntary compliance, dependence on flawed social audits, failure to address price pressure, and lack of worker participation.” Better mechanisms with binding and enforceable agreements between worker organizations and global corporations, e.g., the International Accord, is needed.

Programmes such as ILO Better Work with its extensive factory training calendar acknowledge that many factories don’t know how to fix all problems identified. Collaboration is needed.

Appendix 10 Approved multi-stakeholder initiative (MSIs) programmes

Nordic Ecolabelling asks Licensees to use approved multi-stakeholder initiative programmes, brand collaboration on audit/report sharing, or commissioning a social audit for baseline assessments of sites.

Approved multi-stakeholder initiative (MSI) programmes:

- If the site participates in the ILO Better Work programme or has SA8000 certification, the Licensee should purchase the Better Work or SA8000 monitoring access, see https://sa-intl.org/, and use this to first assess and engage the supplier on compliance, then after approval, review reports of their compliance monitoring visits, and engage as needed towards sustained compliance

  ILO Better Work run country programmes in Bangladesh, Cambodia, Egypt, Ethiopia, Haiti, Indonesia, Jordan, Nicaragua, Pakistan, and Vietnam. The programme provides long-term support of worker rights and transparent ongoing monitoring of factories, by building local government capacity in labour standards monitoring, see https://betterwork.org/.

  SA8000 or other certification of labour conditions is not discouraged but should only be accepted as supplier assessment as part of the requirements to take appropriate measures to identify actual and potential adverse human rights impacts arising from supply chains (for background, see Appendix 9 Measures to verify compliance/human rights at sites.

- If the site has in the past year been audited by a Fair Wear or Fair Labor Association member, then the Licensee is encouraged to request social audit report sharing, to align any needed non-compliance remediation (i.e., brand collaboration).

- If a factory is in the Fairtrade Textile Programme, the Licensee should gain site social assessment report from Fairtrade, see https://www.fairtrade.net/about/the-fairtrade-textile-programme.

- For factories with over 100 employees, the Licensee should check if the supplier already has had an assessment in the past year per the Social Labour Convergence Programme data collection tool, available at https://slcp.zendesk.com/hc/en-us/articles/360023740474-Data-Collection-Tool-1-4. If yes, the Licensee needs access to reduce social audit duplication. The SLCP and Sustainable Apparel Coalition (SAC) also coordinate assessment of support facilities such as sub-contracted laundries, printing, embroidery, etc. See https://openapparel.org/ to find sites already assessed by SAC standards (search in contributor “Higgs”).

- As BSCI, Sedex and WRAP do not have worker representative leadership, the Licensee can use a social audit to BSCI or Sedex or WRAP standard from the past year *if* additional monitoring is initiated, such as to use a relevant trade union in the country or region to report worker issues and/or a locally run independent worker helpline service that reports to the Licensee.

- For apparel factories in Leicester, UK, assessments by Fast Forward will be accepted.

Some factories may run under other monitoring and improvement programmes by ILO Score, Impact, Verite, ReAssurance, or other dedicated experts on labour conditions. Licensees who wish to have these or other labour standards improvement programmes or partners considered, should find out which buyer introduced these, if they can gain access to the programme reports and support them.

Please contact Nordic Ecolabelling to discuss whether these can be approved.

Appendix 11 MECO scheme

Functional Unit: 1m² flooring	Raw material	Production	Use	End-of-life
Material	Extraction of material resources: • *Synthetic fibers*: Nylon (polyamid 6 and 6.6), polypropyelene fibers, polyester fibers • *Natural fibers*: Wool, cotton • *Backing material*: Latex, limestone, bitumen, aluminium hydroxide, polymer dispersion, non wowen (PET/PP), glass fibers Polyester and nylon fibers can be 100% recycled, as well as polyester backing material	Design choices related to type of materials as well as weight of the pile and the backing, respectively. The total weight can range from 0,9-4,5 kg/m², where carpet tiles often have a heavier backing than wall-to-wall carpets, and wool carpets often have a heavier pile than synthetic carpets.		• Possibility of the fibers or backing materials to be recycled into new fibers or fertilizer (wool), or downcycled to filler material. • Type of material that the recycled elements of the carpet is recycled into (replace virgin fibers in carpets or possible downcycling)
Energy	Consumption of energy to extract materials and produce the carpet: - *All fibers* between 83-510 MJ/m² - *Synthetic fibers* between 83–338 MJ/m² - *70-80% wool fiber* Presentation last saved: Just now		• Use of electricity for cleaning (1-11 MJ/m²).	• Substitution of energy from incineration, relevant for plastic materials (nylon, polyester, polypropylene) with high energy content. • Energy consumption during recycling
		Production method. Tufted carpets has slightly higher energy consumption than woven carpets.		
Chemicals and emissions	• Polyester and nylon fibers can be 100% recycled, posing a risk of reintroducing problematic chemicals from a previous life cycle. • Antimony trioxide in the manufacture of polyester • Release of nitrogen dioxide (N2O) from polyamide 6 and polyamide 66 production. • Chemicals, such as organo phosphats, used in wool production to avoid parasites. • Discharge/high COD from wool washing due to wool's high content of lanolin and from backing material production with foam.	• Use of chemicals for dyeing, gluing, as flame retardant* and anti-dirt impregnation causing possible health impact in the use phase and challenges for recycling of carpet material by end-of-life.	• Health effects due to emissions of chemicals to the indoor air and due to exposure to chemical content in indoor dust and dirt • Use of detergents for cleaning causing discharge of detergent chemicals • Use of adhesives for installation of wall-to-wall carpets, where 10 times as much glue is necessary for carpets on roll compared to tiles.	• Risk of recycling problematic chemicals, such as flame retardants, into new products.
Others	• Water consumption for extraction and production. Water consumption is often higher for the extraction and production of wool carpets.		• Cleaning behavior: Times a carpet are cleaned, and method used to clean the carpet (vacuum, rising, etc.). • Quality and lifetime • Possibilities for repair (better possibilities for carpet tiles than carpet on roll)	
	• Animal welfare in relation to wool production/mulesing • Depletion of fossil resources (synthetic fibers) • Land use changes and biodiversity loss related to bioplastic (PLA or bio-Nylon) • Risk of overgrazing by e.g., hillsides and the resulting risk of erosion, from wool production. On the other side, in many countries there are challenges with overgrowth of the landscape, and grazing animals will reduce this problem.	• Working conditions		

MECO references

- Summary of EPDs. Links are provided on the following slide
- EPiC (2019) – Nylon and wool carpet
- Sim and Prabhu (2018) – Energy and CO2-footprint of wool and nylon carpets
- Rajagopalan et al. (2012) – LCA of green product labeling systems for residential construction
- Minne and Srittenden (2015) - Impact of maintenance on life cycle impact and cost assessment for residential flooring options
- MST (2006) - Bilag 6: Gulvtæppe af nylon og polypropylen: https://www2.mst.dk/udgiv/publikationer/2006/87-7614-956-0/html/kap13.htm
- Arapaha (2024) – Arapaha, the impact of our products. Company LCA: https://arapaha.com/lca/
- Background document for 113 Criteria for textile floor coverings and carpets, Nordic Ecolabelling, 22.03.2023, version 1.0
- ”Kortlægning og risikovurdering af kemiske stoffer i gulvtæpper til børn”, Helene Bendstrup Klinke et.al., Miljøstyrelsen, 2016
- “Identifying Greener Carpet”, U.S. Environmental Protection Agency, Identifying Greener Carpet | US EPA, visited August 2024
- “Flame retardants”, GUT homepage, Flame retardants in the manufacture of carpets (gut-prodis.eu), visited August 2024

Links to EPD studies

- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/0747_MOD350/3700.pdf
- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/0691_MOD350/3700.pdf
- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/0692_MOD350/3700.pdf
- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/0735_MOD350/3700.pdf
- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/1071_MOD350/3700.pdf
- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/1070_WT/3700.pdf
- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/0796_WT/3700.pdf
- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/1098_MOD350/3700.pdf
- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/1097_AB/3700.pdf
- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/440_WT/3700.pdf
- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/1015_AB/3700.pdf
- https://api.environdec.com/api/v1/EPDLibrary/Files/c7cbd621-c91b-4a42-08c5-08dc685f3598/Data
- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/0676_MOD350/3700.pdf
- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/1300M_MOD350/3700.pdf
- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/1015_WT/3700.pdf
- https://api.environdec.com/api/v1/EPDLibrary/Files/5605ec4d-0bed-4ed1-3f1d-08dc5384dbad/Data
- https://www.egecarpets.com/Files/Files/Ecom/Specs/Dokumenter/1300_WT/3700.pdf
- https://api.environdec.com/api/v1/EPDLibrary/Files/60f298ae-e068-499d-3f0e-08dc5384dbad/Data
- https://api.environdec.com/api/v1/EPDLibrary/Files/a6c46fa7-c2e6-4d85-3f12-08dc5384dbad/Data
- https://api.environdec.com/api/v1/EPDLibrary/Files/98be8c20-5b62-483e-611f-08dc646df636/Data
- https://api.environdec.com/api/v1/EPDLibrary/Files/f19afa54-310f-4122-9ad5-08db7e35bd3c/Data
- https://api.environdec.com/api/v1/EPDLibrary/Files/f7c8e8d1-381e-428c-611a-08dc646df636/Data