Nordic Ecolabelling for

Textile services

Version 5.0 • date – date

CONSULTATION

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

www.svanemaerket.dk

Iceland

Ecolabelling Iceland

www.svanurinn.is

Finland

Ecolabelling Finland

www.joutsenmerkki.fi

Norway

Ecolabelling Norway

www.svanemerket.no

Sweden

Ecolabelling Sweden

www.svanen.se

1 Environmental communication guideline for Nordic Swan Ecolabel textile services

A Nordic Swan Ecolabelled textile service:

- Reduces climate impact through energy-efficient operations and low-carbon energy use.
- Consumes limited amounts of water, helping to conserve the planet's resources.
- Uses high proportion of ecolabelled chemical products complying with strict environmental and health requirements. For example, biodegradable surfactants and laundry detergents without fragrances or endocrine disruptors.
- Reduces transport emissions through ecodriving, route optimisation and a vehicle fleet with low levels of pollution.
- Purchases a large share of its textiles as ISO 14024 ecolabelled or certified according to recognised standards.
- Prolongs the life of textiles by repairing.

The overall environmental impact in the lifecycle of this product group and Nordic Swan Ecolabel identification of where ecolabelling can have the greatest effect is described in “Environmental impact of textile services”.

2 What can carry the Nordic Swan Ecolabel?

Product group definition

This product group covers the entire textile service. A chain or group with several units may apply for a licence covering one or more units. Each unit must meet the requirements and hold its own licence. If all units within a chain or group in a country are Nordic Swan Ecolabelled, the chain or group may market itself as a Nordic Swan Ecolabelled chain or group in that country.

For cloth hand towel rolls, either the entire laundry may be Nordic Swan Ecolabelled, or only the part of the laundry that handles cloth hand towel rolls.

These criteria do not apply to companies that only offer dry cleaning.

2.1 Justification of the product group definition

Further background for the product group definition

Laundry of cloth hand towel rolls previously had its own separate criteria document, but when these criteria were merged with the criteria for textile services it became possible to Nordic Swan Ecolabel only the part of a laundry that handles cloth hand towel rolls.

In all other cases, the Nordic Swan Ecolabel for textile services covers the entire laundry operation, meaning that it is not permitted to Nordic Swan Ecolabel only selected textile categories or specific service segments within a laundry.

3 How to read this criteria document

The criteria for textile services comprise a combination of obligatory requirements and point score requirements. The letter "O" and a number indicate obligatory requirements. These requirements must always be fulfilled. The letter "P" and a number distinguish point score requirements. Each requirement of this type gives a point score. These scores are then totalled. A minimum total score must be achieved to fulfil the licence constraints.

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.
- A minimum of 18 points must be achieved. Use Table 16 to calculate the points score.
- 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

Textile services operate according to a business model based on the supply of clean textiles. The textile service company owns the laundry facilities and typically purchases and owns the textiles and provides a “clean textiles” service. This includes delivering freshly laundered items and collecting used ones for washing. In other words, the textile service company retains ownership and handles all laundering, while the customer’s role is simply to use the textiles. This product group covers the entire textile service.

Based on the reviewed LCAs, reports, articles and internal knowledge, the operational processes for textile services have the most significant hotspots. The following hotspots were found for textile services:

- energy for washing, drying, ironing
- chemical use (choice and dosage of detergents/chemical products (biodegradability, toxicity))
- water use and wastewater
- transport logistics
- durability/lifetime for textiles (number of use cycles before replacement – the longer textiles last in the service system, the lower the environmental impact per use)
- share of textiles with certified sustainable fibers (organic cotton, recycled polyester, etc.).

The criteria contain requirements in those areas.

The most important changes from the previous generation of the criteria are:

- Dry cleaning may account for no more than 5.0% by weight of the total amount of textiles.
- Halogenated chemical products, such as perchloroethylene, may not be used for dry cleaning.
- The energy factor for electricity has been reduced to 1.2, and the factor for own-produced electricity has also been reduced, to 1.0.
- The factor values for greenhouse gas emissions have been strengthened.
- The factor values for water consumption have been strengthened.
- Selected factor values for chlorine have been strengthened.
- The proportion of ecolabelled chemical products used in the laundry has been increased from 30% to 90%.
- A requirement on repair and maintenance of textiles and mats has been introduced.
- A requirement on textile discard rate has been introduced.
- A requirement on route optimisation has been introduced.

4.1 Changes compared to previous generation

Figure 1 Overview of changes to criteria for textile services generation 5 compared with previous generation 4

Proposed requirement generation 5	Requirement generation 4	Same requirement	Change	New requirement	Comments
O1 Description of the service	O1 Description of the service	X			
O2 Distribution of laundry by textile category	O2 Distribution of laundry between different textile categories		X		The division of cleanroom textiles into two subcategories has been introduced.
O3 Use of non-Nordic Swan Ecolabelled contractors	O3 Non-Nordic Swan Ecolabelled contractors	X			
O4 Dry cleaning	O4 Dry cleaning		X		Dry cleaning may no longer account for more than 5.0% by weight of the total amount of textiles. Halogenated chemical products, such as perchloroethylene, may not be used.
O5 Energy use	O6 Energy use		X		It has been clarified that energy consumption for office facilities and electricity for charging electric vehicles may be excluded from the calculation of $A_{energy.}$ The energy factor for electricity has been reduced from 1.5 to 1.2, and the factor for own-produced electricity has also been reduced, from 1.1 to 1.0. For laundries located in remote areas and without tunnel washers, F_{energy} [kwh/kg] is

					set 1.2 times higher.
P1 Energy use	P2 Energy use	X			
P2 Heat recovery from dryers and wastewater				X	
O6 Greenhouse gas emissions	O7 Greenhouse gas emissions		X		The factor values have been strengthened by 5%. It has been clarified that energy consumption for office facilities and electricity for charging electric vehicles may be excluded from the calculation of $A_{GHG.}$ For laundries located in remote areas and without tunnel washers, F_{GHG} [gCO_2e/kg] is set 1.2 times higher.
P3 Greenhouse gas emissions	P3 Greenhouse gas emissions		X		An indirect strengthening, as the mandatory requirement has been made stricter.
O7 Water consumption	O8 Water consumption		X		The factor values have been strengthened by 20%. For laundries located in remote areas and without tunnel washers, F_{water} [l/kg] is set 1.2 times higher.
P4 Water consumption	P4 Water consumption		X		An indirect strengthening, as the mandatory requirement has been made stricter.
O8 Proportion of ecolabelled chemical products used in the laundry	O18 Proportion of ecolabelled laundry chemicals		X		The proportion of ecolabelled chemical products used in the laundry is increased from 30 % to 90%.

P5 Proportion of ecolabelled chemical products used in the laundry	P8 Points for ecolabelled laundry chemicals		X		
O9 Classification of chemical products used in the laundry	O9 Classification of laundry chemicals	X			
O10 Classification of ingoing substances in chemical products used in the laundry	O10 Classification of constituent substances in laundry chemicals	X			
O11 Chlorine content in chemical products used in the laundry	O13 Restriction on the content of chlorine in laundry chemicals		X		The factor values for textile categories 5-14 have been strengthened by 20%.
P6 Chlorine content in chemical products used in the laundry	P7 Restriction on the content of chlorine in laundry chemicals		X		An indirect strengthening, as the mandatory requirement has been made stricter.
O12 Surfactants - aerobically and anaerobically biodegradable	O16 Wash-active surfactants, ready degradability aerobically and anaerobically	X			
O13 Excluded substances	O17 Substances that must not be included in the laundry chemical	X			
O14 Training in eco-driving	O19 Training in eco-driving		X		The requirement now applies equally to external carriers and the textile service's own employees. Previously, the requirement only applied when entering into new contracts with external carriers.
O15 Existing vehicle fleet	O20 Requirements for vehicles	X			
P7 Existing vehicle fleet	P9 Fuel		X		Points are now awarded based on the share of sustainable vehicles instead of fuel.
O16 New vehicles	O20 Requirements for vehicles		X		The requirement now includes

					several alternative ways to comply.
O17 Route optimisation				X	
O18 Code of Conduct	O21 Code of Conduct	X			
O19 Purchasing of textiles	O22 Purchasing textiles		X		OEKO-TEX® STANDARD 100 has been replaced with OEKO-TEX® Made in Green, which includes stricter environmental and social requirements.
P8 Ecolabelled textiles	P10 Ecolabelled textiles		X		An indirect strengthening, as the mandatory requirement has been made stricter.
O20 Ban on phthalate plasticisers	O23 Ban on phthalate plasticisers	X			
O21 Repair and maintenance of textiles and mats				X	
O22 Measures to extend the lifetime of textiles and reduce discard	P11 Measures to reduce waste disposal of textiles		X		Now an obligatory requirement.
O23 Textile discard rate				X	
O24 Water discharge	O25 Water discharge		X		Strengthened documentation requirement.
P9 Filtration of textile microfibres (microplastics) from process wastewater	P12 Measures for reducing emissions of microplastics in wastewater		X		No specific reduction limit value is now specified.
P10 Loss of fibre fragments				X	
O25 Quality control	O27 Quality control	X			
O26 Contractors/ recruitment agencies	O29 Contractors/recruitment companies		X		It has been clarified that drivers are included in the requirement.
O27 Customer complaints				X	

O28 Achieved points	O38 Obligatory requirement points scored		X		Some point requirements have been removed, while new point requirements have been introduced.
O29 Annual follow-up	O37 Annual follow-up	X			
	P1 Dry Cleaning				Removed
	O5 Sulphur content on fuel				Removed
	O11 Content of substances harmful to the environment in laundry chemicals				Removed
	P5 Content of substances harmful to the environment in laundry chemicals				Removed
	O12 CDV				Removed
	P6 CDV				Removed
	O14 Restriction on the content of phosphorus in laundry				Removed
	O15 Restrictions on anNBO				Removed
	O24 Disposal				Removed
	O26 Plastic take-back				Removed
	O28 Working conditions				Removed
	O30 Organisation and responsibility				Removed
	O31 Documentation				Removed
	O32 Purchasing				Removed
	O33 Changes and nonconformities				Removed
	O34 Training				Removed
	O35 Customer information				Removed
	O36 Legislation and regulations				Removed

5 Requirements and justification of these

5.1 Description of the service

O1 Description of the service

The applicant must provide a description of the textile service to be Nordic Swan Ecolabelled in accordance with Appendix 1. The description must include information about any contractors used for used for laundry or dry-cleaning.

- Appendix 1 or equivalent, completed and signed.

Background to requirement O1 Description of the service

The purpose of the requirement is to provide an overall description of the textile service that is to be Nordic Swan Ecolabelled. This information forms the basis for correct and efficient licence administration.

O2 Distribution of laundry by textile category

The applicant must report the total amount of incoming laundry in kilograms per year, distributed across the textile categories listed in Table 1. A description of the textile categories is provided in Appendix 2.

The textile stock does not need to be owned by the textile service.

The distribution between the textile categories forms the basis for the calculation of requirements related to energy use, greenhouse gas emissions, water consumption and chemical products used in the laundry.

Only laundry delivered to the laundry facility must be included. Relaundering must not be counted.

Table 1 Textile categories

Textile categories	Sub-categories	Kg
1) Workwear for industrial/kitchen/butchering/fishing industry and equivalent use Kitchen textiles (cloths and towels)	White workwear, e.g. from the food industry	
	Kitchen textiles and towels	
	Coloured workwear and other textiles	
	Workwear from the fishing industry	
2) Workwear for institutions/retail/service Shoes	White	
	Other	
3) Hotels	Hotel linen	
	Linen for holiday cottage accommodation	
4) Restaurants	White cloths	
	White napkins	

	Coloured cloths and other textiles	
5) Hospitals/nursing homes	Blood-stained and contaminated textiles	
	Other textiles	
6) Duvets and pillows		
7) Mops and cleaning cloths		
8) Offshore mats		
9) Other mats		
10) Cloth hand towel rolls		
11) Industrial cloths		
12) Dry cleaning		
13) Private clothes from households/institutions	White	
	Other	
14) Other		
15) Cleanroom textiles	Class A-B (ISO 4-6)	
	Class C-D (ISO 7-8)	
TOTAL		
TOTAL excluding dry cleaning		

- Distribution of incoming laundry in kilograms per year between the textile categories listed in Table 1. Nordic Ecolabelling's calculation sheet must be used.
- Data supporting the reported distribution.

Background to requirement O2 Distribution of laundry by textile category

The purpose of the requirement is to provide an overview of the amount and composition of laundry processed by the laundry facility. This information forms the basis for calculating environmental performance requirements related to energy use, greenhouse gas emissions, water consumption and chemical products used in the laundry.

Cleanroom textiles

Cleanroom textiles are washed in a separate process from other types of laundry. A higher level of cleanliness is required in many circumstances, from industries requiring particle-free environments (such as chip manufacturing and pharmaceuticals) to laboratories, hospital surgery suites, and similar settings. Clean room washing is carried out separately from other laundry, with dedicated ventilation and specific wash steps. This requires higher energy and water consumption than conventional laundering.

Cleanroom textiles therefore constitute a separate textile category. They are further divided into two subcategories: Class A–B (ISO 4–6) and Class C–D (ISO 7–8)[1], where the requirements for cleanliness and process control are stricter for Class A–B.

[1] ISO (2015). ISO 14644-1:2015 Cleanrooms and associated controlled environments – Part 1: Classification of air cleanliness by particle concentration. Geneva: International Organization for Standardization.

O3 Use of non-Nordic Swan Ecolabelled contractors

The proportion of laundry carried out by contractors that are not Nordic Swan Ecolabelled must not exceed 1.0% by weight.

All chemical products used when laundering textiles for the Nordic Swan Ecolabelled textile service must comply with requirement O13 (Excluded substances).

- Documentation of the proportion of textiles (% by weight) laundered annually by contractors that are not Nordic Swan Ecolabelled.
- List of chemical products used by contractors that are not Nordic Swan Ecolabelled. If the chemical products are Nordic Swan Ecolabelled or already assessed by Nordic Ecolabelling and permitted for use in Nordic Swan Ecolabelled laundries, no further documentation is required. Otherwise, documentation must be provided in accordance with requirement O13 (Excluded substances).

Background to requirement O3 Use of non-Nordic Swan Ecolabelled contractors

Nordic Ecolabelling sets requirements for chemical products used by subcontractors, even when they handle a small share of the total laundry volume. Although this share may be less than 1% of the laundry's total volume, subcontractors may handle all laundry for an individual customer.

The requirement therefore ensures that chemical requirements also apply to subcontracted laundry and enables clear communication about the substances avoided when choosing Nordic Swan Ecolabelled textile services.

O4 Dry cleaning

This requirement applies to both in-house dry cleaning and dry cleaning carried out by external contractors. The textile service must ensure that:

- Dry cleaning may not account for more than 5.0% by weight of the total amount of textiles.
- Halogenated chemical products, such as perchloroethylene, may not be used.
- All chemical products used for dry cleaning must comply with requirement O13 (Excluded substances).
- The quantity and type of chemical products purchased for dry cleaning, as well as the quantity of used chemical products delivered to approved recipients, must be documented through confirmation from both the chemical supplier and the waste recipient.

A chain or group with several units is allowed to allocate its total amount of dry cleaning across all its Nordic Swan Ecolabelled units.

- The share (%) of textiles that are dry cleaned in relation to the total amount of textiles must be documented, demonstrating that dry cleaning does not exceed 5.0% by weight.
- Quantity and type of chemical products purchased for dry cleaning must be documented by confirmation from the chemical supplier.
- Amount of chemical products used and delivered to approved recipients must be documented by confirmation from waste recipients.

- Documentation in accordance with requirement O13 (Excluded substances).

Background to requirement O4 Dry cleaning

Some textiles cannot withstand water-based washing and therefore require dry cleaning. As these textiles represent only a small share of the total laundry volume, Nordic Ecolabelling sets limited requirements for the dry cleaning process. Halogenated chemical products, such as perchloroethylene, may not be used due to their environmental and health risks; perchloroethylene is, among other things, classified as Carcinogenicity Category 2 (Carc. 2).[2] Furthermore, all chemical products used for dry cleaning must comply with requirement O13 (Excluded substances).

When calculating the share of dry-cleaned textiles, textiles cleaned on behalf of other Nordic Swan Ecolabelled laundries may be excluded. These volumes are included in the calculations of the respective laundries and excluding them avoids double counting.

5.2 Energy, greenhouse gases and water

O5 Energy use

The amount of energy consumed (A_{energy}) at the laundry must be less than or equal to the to the laundry's threshold value for energy (G_{energy}). The permitted energy use (F_{energy}) varies depending on the textile category, see Table 2. The laundry's G_{energy} and A_{energy} must be calculated on an annual basis.

If energy consumption for the following processes can be separated using metering equipment or relevant calculations, it may be excluded from the calculation of A_{energy}:

- Internal wastewater treatment plant
- 35% of energy consumption for VOC afterburners in laundries that process industrial cloths
- Internal dry cleaning of textiles
- Office facilities
- Electricity for charging electric vehicles

Table 2 Factor values for energy consumption for different textile categories***

Textile categories	Sub-categories	F_{energy} [kwh/kg*]
1) Workwear for industrial/kitchen/butchering/fishing industry and equivalent use Kitchen textiles (cloths and towels)	White workwear, e.g. from the food industry	2.10
	Kitchen textiles and towels	
	Coloured workwear and other textiles	
	Workwear from the fishing industry	2.50

[2] European Chemicals Agency (ECHA). Tetrachloroethylene (Perchloroethylene) – Substance Information. Harmonised CLP classification (Carc. 2, H351). https://www.echa.europa.eu/substance-information/-/substanceinfo/100.004.388

2) Workwear for institutions/retail/service Shoes	White	1.75
	Other	
3) Hotels	Hotel linen	1.45
	Linen for holiday cottage accommodation	1.70
4) Restaurants	White cloths	2.25
	White napkins	
	Coloured cloths and other textiles	
5) Hospitals/nursing homes	Blood-stained and contaminated textiles	2.25
	Other textiles	2.10
6) Duvets and pillows		2.50
7) Mops and cleaning cloths		2.15
8) Offshore mats		0.80
9) Other mats		0.70
10) Cloth hand towel rolls		1.70
11) Industrial cloths		3.10
12) Dry cleaning		-
13) Private clothes from households/institutions	White	2.75
	Other	
14) Other		0.70
15) Cleanroom textiles**	Class A-B (ISO 4-6)	2,85
	Class C-D (ISO 7-8)	2,6

**The number of kilograms of textiles in each category is based on the data provided in requirement O2 (Distribution of laundry by textile category).*

***For cleanroom textiles undergoing autoclaving, 1.15 kWh/kg may be added to the energy factor.*

****For laundries located in remote areas and without tunnel washers, F_{energy} [kwh/kg] is set 1.2 times higher.*

Remote areas are defined as:

Denmark: Not applicable, as the country is geographically small and relatively flat with well-developed infrastructure.

Finland: No generally applicable national definition exists. For ecolabelling, an average population density below 50 inhabitants per km² within the laundry's normal service area (assumed 100 km radius). Individual cities or urban centres are not assessed separately.

Iceland: No single national definition exists; the classification must therefore be clarified with the Nordic Ecolabelling prior to application.

Norway: Fewer than 10,000 inhabitants within the municipal boundaries[3].

[3] Folkehelseinstituttet, Responstider for ambulanser og pasientutfall (2023) https://www.fhi.no/contentassets/17bded8ffdfc49c3ba411b3a42ffaf06/responstider-for-ambulanser-og-pasientutfall-rapport-2022-v2.pdf

Sweden: More than a 45-minute drive to a town with over 3,000 inhabitants and Islands without mainland connection[4].

Calculation of G_{energy} and A_{energy}:

$$G_{energy} = \sum \left[(Proportion)_i \cdot (F_{energy})_i \right]$$

$A_{energy} = 1.2 \cdot A_{electricity} + 1.0 \cdot A_{own\text{-}produced\ renewable\ electricity} + A_{fuel}$

G_{energy} = Threshold value for total energy in kWh/kg of laundry at the laundry

A_{energy} = Energy used in kWh/kg of laundry at the laundry

$(F_{energy})_i$ = Factor value for energy consumption in kWh/kg per textile category.

A_{fuel} = Fuel used in kWh/kg of laundry at the laundry

$A_{electricity}$ = Not own-produced electricity used in kWh/kg of laundry at the laundry

$A_{own\text{-}produced\ renewable\ electricity}$ = Self-produced renewable electricity used in kWh/kg of laundry at the laundry

$(Proportion)_i$ = Proportion of a textile category i, which is attained when the annual quantity of laundry in the category is divided by the total annual amount of laundry.

For guidance on calculating energy consumption in Icelandic laundries, please refer to the background document.

- A calculation showing that A_{energy} is less than or equal to G_{energy}. Nordic Ecolabelling's calculation sheet must be used.
- Data to substantiate the calculation.

P1 Energy use

Points are awarded for energy consumption below the levels specified in Table 3.

Table 3 Points for low energy consumption

Percentage A_{energy} of G_{energy}	Points
A_{energy} less than 50% of G_{energy}	10
A_{energy} less than 60% of G_{energy}	8
A_{energy} less than 70% of G_{energy}	6
A_{energy} less than 80% of G_{energy}	4
A_{energy} less than 90% of G_{energy}	2
A_{energy} less than 95% of G_{energy}	1

- Calculation showing the number of points scored in relation to Table 3. Nordic Ecolabelling's calculation sheet must be used.

Background to requirement O5 and P1 Energy use

[4] Glesbygdsverket, Om Sveriges glesbygder och landsbygder (2007) https://www.tillvaxtanalys.se/download/18.62dd45451715a00666f2764f/1586367601582/fickfakta-om-gles-och-landsbygder-2007-07.pdf

Several life cycle analyses show that energy consumption in the user phase (i.e. for activities that the laundry can directly influence) is high compared with other parts of the life cycle.[5] Laundries use both electricity and heating (different fuels and to a certain extent district heating). To ensure high energy efficiency, the total energy use - including both electricity and fuel - is assessed in relation to the volume and type of textiles washed, as heavily soiled textiles often require higher temperatures and thus more energy.

The requirement level is based on data collected from several laundries in 2025. This data, together with experience from previous criteria generations, shows that the requirement remains challenging to meet and continues to distinguish the environmentally best-performing laundries. Nordic Ecolabelling has therefore chosen not to strengthen the requirement level.

In determining the energy requirement, no account has been taken of the geographical location of the laundry. This may seem unfair, as a laundry in northern Norway could be expected to require more energy for heating than one in southern Spain. However, Nordic Ecolabelling's experience shows that laundry processes generate significant excess heat, meaning that space heating is rarely needed, even during winter.

Energy content and energy and CO_2 factors

The energy content for fuels in Appendix 4 is updated, and the fuel types "coke" and "petroleum coke" has been removed from the table.

In addition, the energy factor for electricity has been updated, and is slightly reduced due to more renewable energy as a power source since the start of generation 4 of the criteria in 2018.

- Energy factor: 1.2 kWh/kWh
- CO_2 factor: 59 g/kWh supplied

In 2010 the electricity factor in Denmark was 2.15 whereas it was 1.33 in 2024[6]. Denmark is the country in the Nordic with the highest level of electricity production based on traditional incineration (typically co-generation), which means that the electricity factor in the other Nordic countries probably is similar or lower. If we take into account that the marginal build out is renewable energy, it can be concluded that the electricity factor can be set to 1.2, when we take into account the perspective of the other Nordic countries and the expected development in the years to come.

District heating

The energy factor for district heating is sat at an average based on national energy factors, and the average CO_2 factor is set at a conservative level to reflect the variations in fuel type

[5] CSR-rapport 2022, Elis Danmark, 2022, https://dk.elis.com/sites/dk.elis.com/files/2023/07/03/Elis%20CSR%20rapport%20-%20final%20version%20230623.pdf;
Nor Tekstil års- og bærekraftsrapport 2024, Nor Tekstil AS, 2025, accessed 8 April 2026, https://static1.squarespace.com/static/519ce8ace4b097f309cb51dd/t/684bd8264415781bcde739e7/1749801014719/nortekstil_a%CC%8Arsrapport2024_140525.pdf

[6] Energistyrelsen, Årlig energistatistik 2024 (Danmark, 2024), accessed 8 April 2026, https://ens.dk/analyser-og-statistik/aarlig-energistatistik

and emissions. The applicant can use a specified CO_2 factor if this can be supplied by the district heating supplier as district heating is typically supplied by one supplier and the energy is produced at a specific site meaning it's possible to provide specified emissions data.

- Energy factor: 1.1 kWh/kWh
- CO_2 factor: 216 g/kWh

Exemptions from the requirement

When washing heavily soiled textiles, it is beneficial to treat the wastewater while the concentration of contaminants is high. For this reason, energy use for internal wastewater treatment plants may be excluded from the calculation of A_{energy}.

When washing industrial cloths, some laundries need to extract air from the entire facility and treat it in an afterburner to prevent VOCs from being released into the environment. This process is energy-intensive, but part of the energy can be recovered as heat for washing water and tumble dryers. To account for this, laundries that process industrial cloths may deduct 35%[7] of this energy use.

Energy use from internal dry cleaning processes may also be excluded from the calculation of A_{energy}, as these are not considered part of the ecolabelled operation.

Energy use for office facilities may also be excluded. Such energy use is not directly related to the core laundry processes and would otherwise distort the assessment of energy efficiency in the ecolabelled service. Excluding it also ensures that laundries are not disadvantaged if office functions are located on-site.

In addition, electricity for charging electric vehicles is excluded in order to support and encourage the transition to low-emission transport.

Self-produced renewable electricity

Some laundries produce part of their own electricity, for example through solar panels. Nordic Ecolabelling wants to encourage such initiatives, even though the overall environmental benefit is not entirely clear. It also remains important that laundries continue to focus on energy efficiency. To balance these aspects, Nordic Ecolabelling allows the CO_2 factor for self-produced renewable electricity to be halved and sets the electricity factor at 1.0 for renewable electricity produced on-site from solar and wind.

Icelandic laundries

[7] The evaluation of generation 2 (Nordic Ecolabelling, 2011) concluded that there was a need to relax the energy requirements for laundries processing industrial cloths, due to their higher energy demand for cleaning technologies. These technologies can contribute to reducing emissions of heavy metals, solvents, oils and other problematic substances from the laundered textiles. Rather than solely relaxing the threshold values, the criteria allow for a larger proportion of the energy used in VOC strippers to be deducted. In this way, only laundries processing industrial cloths that also take measures to reduce solvent emissions to air can benefit from the relaxed requirements.

Iceland has a very special energy situation, and its electricity production is cut off from the rest of the world. In this generation of criteria, electricity consumption in Iceland can be considered with the same factors as self-produced renewable electricity.

Laundries that are located in remote areas and without tunnel washers

In Sweden, Finland and Norway, smaller laundries are often located in remote areas. Using these laundries instead of larger, centrally located ones can significantly reduce transport distances. In addition, their closeness to customers enables better service and greater flexibility. It may also reduce the need for larger textile stocks, which are often required when deliveries from more distant laundries are less frequent. Some studies from laundries indicate that textiles account for approximately 40% of a textile service's environmental footprint.[8]

For laundries in remote areas with a production of less than approximately 600 tonnes per year, it is not economically feasible to invest in tunnel washers, which have lower water and energy use per kg of textiles. This is because there are fewer and smaller customers than in urban areas.

In order for Nordic Ecolabelling to motivate such laundries to make environmental improvements, there is a need for somewhat less stringent limits for energy consumption. For these laundries, F_{energy} [kwh/kg] is therefore set 1.2 times higher. This also applies to the requirements on greenhouse gas emissions and water consumption. Even with these adjusted limits, the requirements can only be met by the best-performing smaller laundries.

In Finland, the definition of remote areas means that the Helsinki–Turku–Tampere urban triangle and its surrounding interconnected areas are classified as densely populated, while regions where the population is concentrated in isolated cities within otherwise sparsely populated areas are not.

P2 Heat recovery from dryers and wastewater

Two points are awarded for heat recovery installed for heat exchange from wastewater, exhaust air from dryers or other sources.

- A description of the measures implemented, and the level of heat recovery achieved.

Background to requirement P2 Heat recovery from dryers and wastewater

Based on Nordic Ecolabelling's experience, several laundries still have potential to reduce energy use through heat recovery. This is particularly relevant for laundries with older equipment, which is generally less energy efficient.

Nordic Ecolabelling therefore aims to motivate more laundries to implement heat recovery measures through a point requirement. Reduced energy use also leads to lower CO_2 emissions and thus a lower environmental impact.

[8] CSR-rapport 2022, Elis Danmark, 2022, https://dk.elis.com/sites/dk.elis.com/files/2023/07/03/Elis%20CSR%20rapport%20-%20final%20version%20230623.pdf;
Nor Tekstil års- og bærekraftsrapport 2024, Nor Tekstil AS, 2025, accessed 8 April 2026, https://static1.squarespace.com/static/519ce8ace4b097f309cb51dd/t/684bd8264415781bcde739e7/1749801014719/nortekstil_a%CC%8Arsrapport2024_140525.pdf.

O6 Greenhouse gas emissions

The amount of greenhouse gases (A_{GHG}) that the laundry releases must be less than or equal to the laundry's threshold value for emissions of greenhouse gases (G_{GHG}). The permitted emissions of greenhouse gases (F_{GHG}) varies depending on the textile category, see Table 4. The laundry's G_{GHG} and A_{GHG} must be calculated on an annual basis.

See Appendix 4 for CO_2 factors for different fuels and energy sources.

If energy consumption for the following processes can be separated using metering equipment or relevant calculations, it may be excluded from the calculation of A_{GHG}:

- Internal wastewater treatment plant
- 35% of energy consumption for VOC afterburners in laundries that process industrial cloths
- Internal dry cleaning of textiles
- Office facilities
- Electricity for charging electric vehicles

Table 4 Factor values for greenhouse gas emissions for different textile categories**

Textile categories	Sub-categories	FGHG[gCO_2e/kg*]
1) Workwear for industrial/kitchen/butchering/fishing industry and equivalent use Kitchen textiles (cloths and towels)	White workwear, e.g. from the food industry	365
	Kitchen textiles and towels	
	Coloured workwear and other textiles	
	Workwear from fishing industry	440
2) Workwear for institutions/retail/service Shoes	White	295
	Other	
3) Hotels	Hotel linen	240
	Linen for holiday cottage accommodation	290
4) Restaurants	White cloths	400
	White napkins	
	Coloured cloths and other textiles	
5) Hospitals/nursing homes	Blood-stained or contaminated textiles	395
	Other textiles	365
6) Duvets and pillows		440
7) Mops and cleaning cloths		375
8) Offshore mats		135
9) Other mats		115
10) Cloth hand towel rolls		285
11) Industrial cloths		560
12) Dry cleaning		-
13) Private clothes from households/institutions	White	490

	Other	
14) Other		115
15) Cleanroom textiles	Class A-B (ISO 4-6)	375
	Class C-D (ISO 7-8)	365

**The number of kilograms of textiles in each category is based on the data provided in requirement O2 (Distribution of laundry by textile category).*

***For laundries located in remote areas and without tunnel washers, F_{GHG} is set 1.2 times higher. See requirement O5 (Energy use) for the definition of remote areas.*

Calculation of G_{GHG} and A_{GHG}:

$$G_{GHG} = \sum [(Proportion)_i \cdot (F_{GHG})_i]$$

A_{GHG} is calculated in line with Appendix 4.

$(F_{GHG})i$ = Factor value for greenhouse gas emissions in g CO_2 equivalents/kg per textile category

A_{GHG} = Amount of CO_2 equivalents from emissions from energy use in g/kg laundry at the laundry

$(Proportion)_i$ = Proportion of a textile category i, which is attained when the annual quantity of laundry in the category is divided by the total annual amount of laundry

G_{GHG} = Threshold value for total CO_2 equivalent emissions in g/kg laundry at the laundry

- A calculation showing that A_{GHG} is less than or equal to G_{GHG}. Nordic Ecolabelling's calculation sheet must be used.

P3 Greenhouse gas emissions

Points are awarded for greenhouse gas emissions below the levels specified in Table 5.

Table 5 Points for low greenhouse gas emissions

Percentage A_{GHG} of G_{GHG}	Points
A_{GHG} is less than 40% of G_{GHG}	10
A_{GHG} is less than 50% of G_{GHG}	8
A_{GHG} is less than 60% of G_{GHG}	6
A_{GHG} is less than 70% of G_{GHG}	4
A_{GHG} is less than 80% of G_{GHG}	2
A_{GHG} is less than 90% of G_{GHG}	1

- Calculation showing the number of points scored in relation to Table 5. Nordic Ecolabelling's calculation sheet must be used.

Background to requirement O6 and P3 Greenhouse gas emissions

Emissions of CO_2 are closely linked to the laundries' energy consumption and Nordic Ecolabelling has chosen to continue with an obligatory limit value for the laundry's CO_2 emissions from fuel and electricity consumed at the laundry.

The requirement level is based on an assumed electricity consumption (approximately 0.2 kWh/kg) and the use of natural gas as fuel. In practice, this means that the CO_2 requirement will often determine the effective energy limit for laundries using fuels with higher carbon intensity than natural gas, such as oil.

Combined with the fact that gas can be used more efficiently in the drying process, this makes it very difficult to meet the requirements if heating oil is the primary energy source. As a result, the Nordic Ecolabelling requirements effectively discourage the use of fuel oil as the main fuel.

See background to requirements O5 and P1 (Energy use) regarding laundries located in remote areas and without tunnel washers.

O7 Water consumption

The volume of water consumed (A_{water}) at the laundry must be less than or equal to the laundry's threshold value for water (G_{water}). The permitted water consumption (F_{water}) varies depending on the textile category, see Table 6. The laundry's G_{water} and A_{water} must be calculated on an annual basis.

Water consumption covers the laundry's total use of mains water and any water sourced from its own well.

Table 6 Factor values for water consumption for different textile categories**

Textile categories	Sub-categories	F_{water} [l/kg*]
1) Workwear for industrial/kitchen/butchering/fishing industry and equivalent use Kitchen textiles (cloths and towels)	White workwear, e.g. from the food industry	15.5
	Kitchen textiles and towels	
	Coloured workwear and other textiles	
	Workwear from fishing industry	
2) Workwear for institutions/retail/service Shoes	White	13.5
	Other	
3) Hotels	Hotel linen	11.0
	Linen for holiday cottage accommodation	
4) Restaurants	White cloths	13.5
	White napkins	
	Coloured cloths and other textiles	
5) Hospitals/nursing homes	Blood-stained and contaminated textiles	11.0
	Other textiles	
6) Duvets and pillows		19.0
7) Mops and cleaning cloths		13.5
8) Offshore mats		5.5
9) Other mats		5.0
10) Cloth hand towel rolls		9.5
11) Industrial cloths		9.0

12) Dry cleaning		0.0
13) Private clothes from households/institutions	White	13.5
	Other	
14) Other		5.0
15) Cleanroom textiles	Class A-B (ISO 4-6)	19.5
	Class C-D (ISO 7-8)	17.0

**The number of kilograms of textiles in each category is based on the data provided in requirement O2 (Distribution of laundry by textile category).*

***For laundries located in remote areas and without tunnel washers, F_{water} is set 1.2 times higher. See requirement O5 (Energy use) for the definition of remote areas.*

Calculation of the laundry's A_{water} and G_{water}:

$$G_{water} = \sum [(Proportion)_i \cdot (F_{water})_i]$$

$(F_{water})_i$ = Factor value for water consumption in litres of water/kg laundry per textile category

$(Proportion)_i$ = Proportion of a textile category i, which is attained when the annual quantity of laundry in the category is divided by the total annual amount of laundry

G_{water} = Threshold value for total water consumption in l/kg of laundry at the laundry

A_{water} = Water used in litres/kg laundry at the laundry

- A calculation showing that A_{water} is less than or equal to G_{water}. Nordic Ecolabelling's calculation sheet must be used.
- Data to substantiate the calculation.

P4 Water consumption

Points are awarded for water consumption below the requirement levels specified in Table 7.

Table 7 Points for low water consumption

Percentage Awater of Gwater	Points
Awater is less than 50% of Gwater	10
Awater is less than 60% of Gwater	8
Awater is less than 70% of Gwater	6
Awater is less than 80% of Gwater	4
Awater is less than 90% of Gwater	2

- Calculation showing the number of points scored in relation to Table 7. Nordic Ecolabelling's Calculation sheet must be used.

Background to requirement O7 and P4 Water consumption

Water is used in laundries each time textiles are washed, and considerable amounts may therefore be consumed over the lifetime of a textile. However, it should be noted that the

laundry's water consumption is not necessarily the dominant factor in a life-cycle perspective. A significant share of textiles contain cotton, which can require substantial amounts of water during cultivation.

Reducing water consumption in laundries can nevertheless bring environmental benefits. Water is a limited resource that should be conserved both globally and in the Nordic region[9]. Efficient water use saves resources and supports circular economy practices through water recirculation. It also reduces energy demand, since less water needs to be heated and heat recovery from hot water becomes easier. Nordic Ecolabelling therefore sets requirements for water consumption in laundries.

The amount of water required depends largely on the type of textile being washed, and the requirements are therefore differentiated. For example, mats generally have lower requirements for washing water quality, which makes it easier to recirculate water and achieve savings. In contrast, bulky items such as pillows expand more in the drum during washing and typically require more water.

At the same time, the water consumption requirement must not be set too low. Excessively low water use may pose hygiene risks, and insufficient rinsing water can result in chemical residues remaining in the textiles after washing.

See background to requirements O5 and P1 (Energy use) regarding laundries located in remote areas and without tunnel washers.

5.3 Chemical products used in the laundry

Chemical products used in the laundry refer to all chemical products that come into contact with textiles before, during, or after processing (for example, impregnation agents, stain removers, and textile dyes).

Chemical products for water treatment are exempted from the chemical requirements.

The use of chemical products shall be reported in Nordic Ecolabelling's calculation sheet. Documentation will be submitted directly and confidentially by the chemical supplier. Based on this documentation, Nordic Ecolabelling can provide licensees with feedback on whether the requirement has been met.

Specialised laundries for industrial cloths with no wastewater discharge are exempt from requirement O8 (Proportion of ecolabelled chemical products used in the laundry) and O12 (Surfactants - aerobically and anaerobically biodegradable).

The requirements in the criteria document and accompanying appendices apply to all ingoing substances in the chemical product. Impurities are not regarded as ingoing substances and are exempt from the requirements.

Ingoing substances and impurities are defined below.

- Ingoing substances: all substances in the chemical product, including additives (e.g. preservatives and stabilisers) in the raw materials. Substances known to

[9] European Environment Agency (2009). Water resources across Europe – confronting water scarcity and drought. Available at: https://www.eea.europa.eu/publications/water-resources-across-europe (Accessed: 2 April 2026).

be released from ingoing substances (e.g. formaldehyde, arylamine, in situ-generated preservatives) are also regarded as ingoing substances.

- Impurities: residuals, pollutants, contaminants etc. from production, incl. production of raw materials that remain in the raw material/ingredient and/or in the in the chemical product in concentrations less than 100.0 ppm (0.01000 w-%, 100 mg/kg) in the chemical product.

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

O8 Proportion of ecolabelled chemical products used in the laundry

At least 90% by weight of the chemical products used in the laundry annually shall be ecolabelled.

Ecolabelled chemical products are defined as products certified by the Nordic Swan Ecolabel, the EU Ecolabel, or Bra Miljöval.

Compliance with this requirement may be calculated using one of the following alternatives:

a) A chain or group with several laundries is allowed to carry out the calculation at group level across all its Nordic Swan Ecolabelled laundries or per individual laundry, as described in alternative b).

b) For individual laundries, chemical products based on peracetic acid, chlorine, hydrogen peroxide, and alkalis may be exempt from the calculation.

Specialised laundries for industrial cloths with no wastewater discharge are exempt from the requirement.

- A calculation shall be submitted, including a summary of product name, type of ecolabel, licence number or statement of licence validity, and annual quantity. Nordic Ecolabelling's calculation sheet shall be used.
- a) Data for all chemical products shall be stated for each laundry. Based on this information, a total calculation for the chain or group shall be produced.
- b) Data for all chemical products shall be stated; however, calculations shall only be produced for chemicals that are not exempt from the requirement.
- For specialised laundries exempt from the requirement: A description of the closed facility shall be provided, including how sludge residues are handled in accordance with current legislation and authority requirements.

P5 Proportion of ecolabelled chemical products used in the laundry

Points are awarded for a proportion of ecolabelled chemical products used in the laundry that exceeds the requirement levels specified in Table 8.

Ecolabelled chemical products are defined as products certified by the Nordic Swan Ecolabel, the EU Ecolabel, or Bra Miljöval.

Table 8 Points for high proportion of ecolabelled chemical products used in the laundry

Proportion of ecolabelled chemical products used in the laundry	Points
95% by weight or higher	2

† Calculation showing the number of points scored in relation to Table 12. Nordic Ecolabelling's Calculation sheet must be used.

Background to requirement O8 and P5 Proportion of ecolabelled chemical products used in the laundry

A large proportion of the chemical products used in the laundry can be ecolabelled under established ecolabelling schemes in the Nordic countries, such as the Nordic Swan Ecolabel, the EU Ecolabel and Bra Miljöval.

Be aware that, for individual laundries, chemical products based on peracetic acid, chlorine, hydrogen peroxide, and alkalis may be exempt from the calculation. Data from current licenses show that many laundries already have a very high proportion of ecolabelled chemical products in use. Nordic Ecolabelling therefore aims to maintain this high level and encourage an increase among laundries where the proportion is currently lower.

O9 Classification of chemical products used in the laundry

The chemical products used in the laundry must not be classified with any of the hazards from CLP Regulation (EC) No 1272/2008 listed below.

Table 9 Excluded hazards

Hazard Class	Hazard Category	Hazard Statement Code
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 Acute Tox. 4 Acute Tox. 4	H300 H310 H330 H301 H311* H331 H312* H332*
Specific target organ toxicity: single or repeated exposure	STOT SE 1 STOT SE 2 STOT RE 1 STOT RE 2	H370 H371 H372 H373**
Aspiration hazard	Asp. Tox. 1	H304**
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

**An exemption applies to products where the classification results from the content of oxalic acid (CAS 144-62-7), peracetic acid (CAS 79-21-0), or hydrogen peroxide (CAS 7722-84-1).*

***An exemption applies to products where the classification results from the content of enzymes, and to products for stain removal that are used directly on the stain before laundering.*

****Includes all classification variants (e.g., H350 also covers H350i).*

- A Safety data sheet (SDS), prepared in accordance with Annex II to REACH Regulation (EC) No 1907/2006 for the chemical products used in the laundry.
- Appendix 5 or equivalent, completed and signed.
- For Nordic Swan Ecolabelled the chemical products used in the laundry, state only the product name and licence number.

Background to requirement O9 Classification of chemical products used in the laundry

Nordic Ecolabelling aims to minimize the health and environmental impact of chemical products used in the laundry. Therefore, chemical products with the following classifications cannot be used in the Nordic Swan Ecolabelled textile services: Acutely toxic, causes damage to organs, aspiration toxic, sensitising, carcinogenic, mutagenic and toxic for reproduction.

As can be noted, products that are classified solely with the hazard statement H302 (harmful if swallowed) are not prohibited according to the table. This is because the criteria apply only to professional use in laundries, which are controlled environments where, for example, children are not present. In addition, dosing is generally carried out using automatic dosing systems, which limits direct handling and means that the risk of ingestion is considered low.

Background to the exemptions

Oxalic acid (H312) is used in laundries to remove stains, such as rust, that commonly occur on textiles and cannot be removed through the standard laundering process. There are currently no suitable alternatives to oxalic acid for this purpose. For this reason, Nordic Ecolabelling has exempted oxalic acid from the health hazard classification requirements. If oxalic acid were to be prohibited, a significant increase in textile waste would be expected, which would have a negative environmental impact.[10]

Peracetic acid, which is formed by the reaction of acetic acid and hydrogen peroxide, is a highly reactive substance with the advantage of providing both bleaching and disinfection at considerably lower temperatures than hydrogen peroxide alone. Its use therefore enables laundering processes to be carried out at reduced washing temperatures, resulting in substantial energy savings. In order not to limit the potential for energy efficiency

[10] Köcher, C., Sales Manager Nordic / Corporate Account Manager Nordic Textile Care, Ecolab (2008). Personal meeting.

improvements, Nordic Ecolabelling has chosen to exempt peracetic acid and hydrogen peroxide from the health hazard classification requirements.

The exemptions for products where the hazard classification is due to enzyme content, and for stain removal agents applied directly to stains prior to laundering, are considered environmentally justified. Enzymes can improve the efficacy of products at low washing temperatures and thus reduce energy consumption. In addition, in some cases, enzymes can replace or reduce the amount of surfactants, which generally have a higher environmental impact. Extending textile lifetime through effective stain removal is preferable to premature disposal and the associated environmental impact.

In professional laundries, the risk of employees ingesting these products is very small, since food is always kept separate from chemicals. For end users, exposure is minimal because the stain removal agents are applied before laundering and are washed out during the process, leaving no realistic risk of ingestion.

O10 Classification of ingoing substances in chemical products used in the laundry

Ingoing substances in chemical products used in the laundry must not be classified with any of the hazards from CLP Regulation (EC) No 1272/2008 listed below.

Table 10 Excluded hazards

Hazard Class	Hazard Category	Hazard Statement 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

** Exemption for carcinogenicity 2 (H351): Complexing agents of the MGDA and GLDA type may contain NTA impurities in the raw material in concentrations of less than 0.2% by weight of the MGDA/GLDA active content, if the concentration of NTA in the cleaning product is below 0.1% by weight.*

***Includes all classification variants (e.g. H350 also covers H350i).*

- Safety data sheet (SDS), prepared in accordance with Annex II to REACH Regulation (EC) No 1907/2006 for each raw material.
- Appendix 5 or equivalent, completed and signed.
- For Nordic Swan Ecolabelled chemical products, state only the product name and licence number.

Background to requirement O10 Classification of ingoing substances in chemical products used in the laundry

Nordic Ecolabelling strives to ensure that the health and environmental impact of the chemical products are as low as possible. The requirement therefore make it clear that

ingoing substances with the following classifications cannot be used in the chemical products: Carcinogenic, mutagenic and toxic for reproduction.

Background to the exemption

Complexing agents of the MGDA and GLDA type may contain NTA impurities in the raw material. NTA as an impurity in complexing agents is therefore, exempted from the requirement, but with the restriction that the concentration must be less than 0.2% in the raw material and less than 0.1% in the product which is best practice in the industry.

O11 Chlorine content in chemical products used in the laundry

For each textile category, the factor values for the chlorine content of chemical products used in the laundry ($F_{chlorine}$) are given in Table 11.

Table 11 Factor values (F) for chlorine

Textile categories	Sub-categories	$F_{chlorine}$ [mg/kg*]
1) Workwear for industrial/kitchen/butchering/fishing industry and equivalent use Kitchen textiles (cloths and towels)	White workwear, e.g. from the food industry	1500
	Kitchen textiles and towels	1875
	Coloured workwear and other textiles	0
	Workwear from the fishing industry	2000
2) Workwear for institutions/retail/service Shoes	White	150
	Other	0
3) Hotels	Hotel linen	115
	Linen for holiday cottage accommodation	
4) Restaurants	White cloths	265
	White napkins	1500
	Coloured cloths and other textiles	0
5) Hospitals/nursing homes	Blood-stained and contaminated textiles	1380
	Other textiles	90
6) Duvets and pillows		0
7) Mops and cleaning cloths		0
8) Offshore mats		0
9) Other mats		0
10) Cloth hand towel rolls		15
11) Industrial cloths		0
12) Dry cleaning		0
13) Private clothes from households/institutions	White	120
	Other	0
14) Other		0
15) Cleanroom textiles	Class A-B (ISO 4-6)	150
	Class C-D (ISO 7-8)	150

**The number of kilograms of textiles in each category is based on the data provided in requirement O2 (Distribution of laundry by textile category).*

Chlorine calculation:

$$G_{chlorine} = \sum [(Proportion)_i \cdot (F_{chlorine})_i]$$

Requirement for chlorine: $A_{chlorine} \leq G_{chlorine}$

$G_{chlorine}$ = The threshold value for the consumption of active chlorine at the laundry, measured in mg of active chlorine per kg of textiles delivered. It is the weighted average of factor values that provides the threshold value for the laundry.

$(Proportion)_i$ = The proportion of textile category i, calculated by dividing the annual quantity of laundry in category i (excluding re-laundering) by the total annual amount of laundry (excluding re-laundering).

$(F_{chlorine})_i$ = The factor value for active chlorine in litres per kg of textiles for the individual textile category i.

$A_{chlorine}$ = The amount of active chlorine used at the laundry, measured in mg per kg of textiles.

- A calculation showing that $A_{chlorine}$ is less than or equal to $G_{chlorine}$. Nordic Ecolabelling's calculation sheet must be used.

P6 Chlorine content in chemical products used in the laundry

Points are awarded for chlorine use below the levels specified in Table 12.

Table 12 Points for low chlorine consumption

Percentage $A_{chlorine}$: ($A_{chlorine}$ /$G_{chlorine}$) * 100%	**Threshold value for chlorine, $G_{chlorine}$**		
	40 ≤ $G_{chlorine}$ ≤ 130	**130 ≤ $G_{chlorine}$ ≤ 660**	**$G_{chlorine}$ > 660**
$A_{chlorine}$ is less than 50% of $G_{chlorine}$ or no chlorine consumption	4	5	6
$A_{chlorine}$ is less than 60% of $G_{chlorine}$ or no chlorine consumption	3	4	5
$A_{chlorine}$ is less than 70% of $G_{chlorine}$	2	3	4
$A_{chlorine}$ is less than 80% of $G_{chlorine}$	1	2	3

- Calculation showing the number of points scored in relation to Table 11. Nordic Ecolabelling’s Calculation sheet must be used.

Background to requirement O11 and P6 Chlorine content in chemical products used in the laundry

Large amounts of active chlorine compounds, such as sodium hypochlorite, have been used in many laundries in the past. Today, consumption has decreased, but Nordic Ecolabelling knows that some laundries still use chlorine unnecessarily or in higher doses than needed.

Active chlorine compounds are toxic to the environment. They are reactive and break down, but when they react with organic substances, they can form organochlorides with harmful environmental effects. On the other hand, chlorine use can sometimes reduce the amount of textiles that are discarded. For example, it can help remove damp stains or other severe stains that require re-laundering with chlorine. This is reflected in the threshold values for chlorine use in different textile categories, which are designed to match actual needs as closely as possible.

Nordic Ecolabelling has set limits on the total consumption of active chlorine per kg of textiles (excluding re-laundering). Note that chlorine used in re-laundering is included in the total amount. The limits are designed so that chlorine is used only where it is genuinely needed, for example for extremely soiled laundry or in re-laundering.

Too strict limits on chlorine could lead to more textiles being discarded, which would increase environmental impacts from cotton production and textile manufacturing.

O12 Surfactants - aerobically and anaerobically biodegradable

All surfactants in the chemical products, irrespective of their function in the product must be readily aerobic biodegradable* and anaerobically biodegradable*.

**In accordance with the DID-list "Detergents Ingredients Database" version 2023 or later, see Appendix 7 for further details. For substances not on the DID-list, or substances where biodegradation data is missing on the DID-list, the parameters must be based on the guidance in part B of the DID-list and associated documentation must be presented.*

Specialised laundries for industrial cloths with no wastewater discharge are exempt from the requirement.

- For Nordic Swan Ecolabelled chemical products, state only the product name and licence number.
- Documentation in accordance with the DID-list and Appendix 7, showing that all surfactants are readily aerobic and anaerobic biodegradable
- For specialised laundries exempt from the requirement: A description of the closed facility shall be provided, including how sludge residues are handled in accordance with current legislation and authority requirements.

Background to requirement O12 Surfactants - aerobically and anaerobically biodegradable

Since 2005, ready biodegradability of surfactants has been a legal requirement for products placed on the European market under the Detergents Regulation.

The detergent regulation prescribes that surfactants must be aerobically biodegradable, but there are opportunities for exemptions from the detergent regulation for products for professional use. Since the possibility exists, we believe it is appropriate to retain the

requirement of aerobic biodegradability of surfactants It is therefore very important to require surfactants to be biodegradable in both aerobic and anaerobic conditions for this product group.

In specialised laundries for industrial cloths with no wastewater discharge, it has not been possible to replace chemical products containing surfactants that are not anaerobically degradable. As these laundries do not discharge wastewater and residues are handled in accordance with current legislation and authority requirements, they are therefore exempted from this requirement.

O13 Excluded substances

The following substances or substance groups must not be present as ingoing substances in the chemical products used in the laundry.

- Alkylphenol ethoxylates (APEOs) and other alkylphenol derivates (APD)
- Boric acid and borates
- Diallyl dimethylammonium chloride (DADMAC, CAS No. 7398-69-8)
- Ethylenediamine tetraacetate (EDTA, CAS No. 60-00-4) and its salts
- Fragrances
- Halogenated flame retardants
- Linear alkylbenzene sulphonates (LAS)
- Nanomaterials/-particles*
- Optical brighteners**
- PBT and vPvB as defined in REACH Annex XIII, including those under ECHA PBT assessment https://echa.europa.eu/da/pbt
- Per- and polyfluoroalkyl substances (PFAS)***

  For impregnating agents used for personal protective equipment (PPE) that require re-impregnation to maintain protection against oil and chemical solvents (e.g. firefighting gear and military uniforms), the licensee may apply for an exemption from the requirement. Applications will be assessed by Nordic Ecolabelling on a case-by-case basis. Applications related only to water-repellent properties will not be approved.

- Potential or identified endocrine disruptors, listed in any of the following "Endocrine Disruptor Lists" List I; II and III

  Note: Substances moved to "Substances no longer on list" and not present on Lists I-III, are no longer excluded, except for those on sublist II where concern remains. Nordic Ecolabelling will assess these on a case-by-case basis.

- Substances on the REACH Candidate list of SVHC substances https://www.echa.europa.eu/candidate-list-table
- Triclosan (CAS No. 3380-34-5)

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

  'Nanomaterial' means a natural, incidental or manufactured material consisting of solid particles that are present, either on their own or as identifiable constituent particles in aggregates or agglomerates, and where 50 % or more of these

particles in the number-based size distribution fulfil at least one of the following conditions:

(a) one or more external dimensions of the particle are in the size range 1 nm to 100 nm;

(b) the particle has an elongated shape, such as a rod, fibre or tube, where two external dimensions are smaller than 1 nm and the other dimension is larger than 100 nm;

(c) the particle has a plate-like shape, where one external dimension is smaller than 1 nm and the other dimensions are larger than 100 nm.

***Optical brighteners that meet the requirements in Appendix 6 can be used.*

****PFAS: as any substance that contains at least one fully fluorinated methyl (CF_3) or methylene (-CF_2-) carbon atom (without any H/Cl/Br/I attached to it).*

- Appendix 5 or equivalent, completed and signed.
- For Nordic Swan Ecolabelled chemical products, state only the product name and licence number.
- When optical brighteners are used: Appendix 6 or equivalent, completed and signed by the raw material manufacturer/supplier.

Background to requirement O13 Excluded substances

Certain problematic substances and substance groups are difficult to exclude through general chemical requirements. To address this, Nordic Ecolabelling has compiled a list of substances that must not be present as ingoing substances in the chemical products used in the laundry.

The purpose of this list is to prohibit substances that are not excluded by other requirements but are associated with environmental and health hazards. Some substances are included for clarity, even if they are already prohibited under other requirements.

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.

Boric acid and borates

Boric acid, borates and perborates have many uses, such as stain removal, oxidizing and bleaching agents and are often used to produce chemical products used in the laundry and can be used in industrial cleaners. They are classified as toxic to reproduction and poses a risk to consumers.

Diallyl dimethylammonium chloride (DADMAC, CAS No. 7398-69-8)

DADMAC is a group of substances with very high ecotoxicity. For this reason, it is often used as a last resort during the summer to protect textiles against damp stains. Nordic Ecolabelling considers that with improved production planning, the use of such environmentally harmful substances could be avoided.

Ethylenediamine tetraacetate (EDTA, CAS No. 60-00-4) and its salts

Ethylenediaminetetraacetic acid (EDTA) and its salts are not readily degradable. For EDTA, the EU's risk assessment states that under the conditions at municipal water treatment plants EDTA is either not broken down or only breaks down to a slight degree. To-date in Europe, EDTA has been replaced in virtually all consumer products by readily biodegradable alternatives such as MGDA (methylglycine diacetic acid) and GLDA (glutamic acid diacetic acid).

Fragrances

Fragrances are used in many products to give them a pleasant scent. However, they often contain substances that are both sensitising and harmful to the environment as they may not be easily biodegradable.

Halogenated flame retardants

Flame retardants are suspected of contributing to a number of unwanted health effects. Several of the substances are suspected of causing birth defects, cancer, and endocrine disrupting effects. Many of them are on the EU candidate list under REACH.

Many brominated flame retardants are persistent and bio accumulative chemicals that can now be found dispersed in nature. The focus on phasing out brominated flame retardants has led to the use of alternatives such as phosphorus and nitrogen-based flame retardants.

Linear alkylbenzene sulphonates (LAS)

LAS is a major anionic surfactant with important applications within household detergents and industrial cleaning agents. LAS is relatively rapidly aerobically degraded, but only very slowly or not at all degraded under anaerobic conditions. LAS is found in significant concentrations in wastewater and sewage sludge[11,12]. In addition, not all wastewaters will be treated at wastewater treatment plants. Due to climate change, sewage overflow has become common, and therefore wastewater will be transferred directly to the environment[13]. To avoid impacting soil and aquatic environments, including estuarine and coastal environments, as a result of wastewater release and sludge application on fields, LAS is excluded from use.

[11] https://mst.dk/media/g11ds2lo/noegletal-for-miljoefarlige-forurenende-stoffer-i-spildevand-fra-renseanlaeg.pdf
[12] https://www2.mst.dk/Udgiv/publikationer/2025/09/978-87-7564-045-4.pdf
[13] https://www2.mst.dk/Udg,iv/publikationer/2022/01/978-87-7038-386-8.pdf

Nanomaterials/-particles

Nanomaterials[14] 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[15],[16],[17]. Nordic Ecolabelling takes these concerns seriously and applies the precautionary principle to exclude potentially hazardous nanomaterials from products.

Optical brighteners

Optical brighteners are not readily biodegradable. They are however photodegradable in the presence of light, which has been showed by different studies. Optical brighteners absorb to the sludge in the water treatment plants, which is not wanted, since there is a wish to keep the sludge as free from chemicals as possible.

Background to the exemption: One of the challenges is that new white textiles are often already treated with optical brighteners by the manufacturer in order to appear “bright white”. Textiles washed without optical brighteners will, over time, appear grey in comparison to new textiles and may therefore be discarded earlier than would otherwise be necessary. This is considered particularly relevant for hotels. The disposal of textiles due to greying results in significant environmental impacts, including increased textile waste and additional textile production. These impacts must be weighed against the disadvantages associated with the use of optical brighteners. Therefore, optical brighteners that meet the requirements in Appendix 6 can be used. It should also be noted that optical brighteners are not prohibited in ecolabelled textiles, either under Nordic Swan Ecolabel or under the EU Ecolabel.

PBT and vPvB as defined in REACH Annex XIII, including those under ECHA PBT assessment

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 and CLP Annex I. 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. Substances under ECHA PBT assessment are

[14] https://www.nordic-swan-ecolabel.org/nordic-ecolabelling/environmental-aspects/chemicals-nano-and-microplastics/nanomaterials/
[15] 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
[16] 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
[17] 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

excluded to limit their release into the environment while under review. Because of their persistence, exposure to PBT/vPvB substances is very difficult to reverse, even if emissions stop.

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.

As of today, achieving repellency for personal protective equipment (PPE) in risk category 3 (the highest risk level) is still difficult using PFAS-free durable water repellents (DWR), and PFAS is needed to ensure the highest level of protection[18]. Therefore, for impregnating agents used for PPE that require re-impregnation to maintain protection against oil and chemical solvents (e.g. firefighting gear and military uniforms), the licence holder may apply for an exemption from the requirement. Applications will be assessed by Nordic Ecolabelling on a case-by-case basis. Applications related only to water-repellent properties will not be approved, since PFAS-free alternatives are available for that purpose.

Potential or identified endocrine disruptors, listed in any of the following "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. Substances listed under List II are excluded because they are under evaluation in an EU legislative process due to explicit concerns about possible endocrine-disrupting properties. Excluding them limits exposure while the evaluation is ongoing.

Substances on the REACH Candidate list of SVHC substances

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 (persistent, bioaccumulative and toxic) and vPvB (very persistent and very bioaccumulative) substances (as defined in REACH Annex XIII and CLP Annex I).

18 Elisabeth Werrmann (RISE), PFAS Compliance and PFAS Alternatives for Textiles, webinar organised by Research Institutes of Sweden (RISE), 21 April 2026.

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.

Triclosan (CAS No. 3380-34-5)

Triclosan is an antibacterial agent used in different products such as toothpaste and deodorants. An antibacterial agent is a substance that inhibits or stops growth of microorganisms such as bacteria, fungi, or protozoa (single-celled organisms) and can be applied on a treated article or constituent in a chemical product. It is suspected that some antibacterial agents are contributing to the increasing resistance to antibiotics in society. Consequently, the bacteria are developing new methods of resisting the effects of the antibiotic. This, in turn, can lead to certain diseases becoming more difficult to treat. Furthermore, they can harm bacteria that are necessary for the treatment of water at water treatment plants. Therefore, products containing antibacterial agents should be avoided.

5.4 Transport

O14 Training in ecodriving

The requirement applies to both the licensee's employed drivers and drivers of subcontractors/contracted carriers used for Nordic Swan Ecolabel textile services.

All motor vehicle drivers (driving licence category B or higher) must be trained in ecodriving. Drivers who have not already completed the training must have done so within 12 months of the licence for Nordic Swan Ecolabel being received. New drivers must be trained within 12 months of starting their job.

The training in ecodriving can be separate, integrated, for example in drivers training or introductory training. The training can be conducted in person (IRL) or, including web-based training courses or as elements included in category B driving license training (completed since 2014).

- For own employed drivers: Training plan that includes driver and date of completed or planned training in ecodriving.
- For subcontractors: Requirements on training in agreements.
- Confirmation from an external/competent trainer that drivers (own and external) have attended a course in ecodriving.
- For external transporters, a copy of contracts must be made available to Nordic Ecolabelling on request.

Background to requirement O14 Training in ecodriving

Fuel consumption can vary greatly between different driving styles. Practising ecodriving is an effective method of reducing emissions in the short term. Another added benefit of

ecodriving is increased road safety. Ecodriving usually saves 16-20% of fuel and equivalent CO_2 emissions. Individuals have saved up to 30% following a course in ecodriving.[19]

O15 Existing vehicle fleet

No vehicles used to transport textiles between the laundry and customers may be more than ten years old, calculated from the first date of registration. Vehicles older than ten years must comply with the latest Euro norm or be equipped with an effective particle filter that fulfils the technical specifications set by the relevant authority.

- A summary of the total fleet, including registration numbers and the first date of registration. For vehicles more than ten years old, documentation showing compliance with the latest Euro norm, or documentation showing that the vehicle is equipped with an effective particle filter that fulfils the technical specifications set by the relevant authority, must be appended.
- A procedure to ensure that external transporters fulfil the requirements when entering into new contracts.
- For external transporters, copies of contracts and a summary of the vehicles used for transport for the Nordic Swan Ecolabelled textile service must be available to Nordic Ecolabelling on request.

Background to requirement O15 Existing vehicle fleet

Over the years, laundries have achieved more energy-efficient production. As a result, the transport of textiles now constitutes a large share of the laundry's total climate impact.[20] It is therefore important to strengthen the requirements for transportation. Since the technology in vehicles is constantly being updated and engines are becoming more efficient, with less pollution, no vehicles must be more than ten years old, or comply with the latest Euro norm or be equipped with an effective particle filter.

P7 Existing vehicle fleet

Points are awarded based on the percentage of vehicles, or alternatively the total kilometres driven, that are powered by electricity, hydrogen, or biogas (CBG, LBG) as specified in Table 13.

Table 13 Points for existing vehicle fleet

Percentage of vehicles, or alternatively the total kilometres driven	Points
2%	1
5%	2
10%	3
20%	4
30%	5

[19] Schjerpen, Mary; NAF (Norsk automobil forbund), phone conversation, September 2016.
[20] Elis Danmark (2022). CSR-rapport 2022. Available at: https://dk.elis.com/sites/dk.elis.com/files/2023/07/03/Elis%20CSR%20rapport%20-%20final%20version%20230623.pdf

40% or more	6

An overview of the entire fleet, specifying which vehicles are powered by electricity, hydrogen, or biogas (CBG, LBG) or fuel together with a calculation of the proportion these represent of the total fleet, or alternatively of the total kilometres driven by the fleet.

Background to requirement P7

Vehicles powered by electricity, hydrogen, or biogas (CBG, LBG) contribute to reduced environmental impact. Points are therefore awarded for their use.

Nearly half of all new vans (box trucks) registered in the Nordic region in 2025 were electric.[21] The development is particularly strong in Norway, but Denmark and other Nordic countries are following closely in electric vehicle sales. Electric vans are especially popular for shorter distances and urban driving.

In Norway, 13% of trucks registered in 2025 were electric[22]. Sweden is one of the leading players in the Nordic region in heavy gas vehicles, powered by a good infrastructure for liquid biogas (CBG/LBG). Scania, headquartered in Sweden, is a major manufacturer of gas trucks.

Although electric trucks are receiving a lot of attention, gas-powered trucks (biogas) are still a very important alternative for long-distance transport where electric range is not sufficient.

O16 Leasing and purchase of vehicles

Newly purchased or leased vehicles used for the transport of textiles must meet one of the following requirements:

- Comply with the latest Euro norm
- Be powered by electricity or hydrogen
- Be powered by biogas gas (CBG, LBG)

Procurement procedures showing that the requirement is fulfilled

Documentation of compliance with the requirement on individual new purchases/new leasings must be available for Nordic Ecolabelling on request.

Background to requirement O16 Leasing and purchase of vehicles

To ensure that Nordic Swan Ecolabelled textile services have a modern fleet with low levels of pollution, newly purchased or leased vehicles must either comply with the latest Euro norm, be powered by electricity, hydrogen, or be powered by biogas (CBG, LBG).

[21] Brede Høgseth Wardrum, “Nearly Half of All New Vans in 2025 Were Electric,” YrkesBil.no, 2 January 2026, accessed 8 April 2026, https://www.yrkesbil.no/elektrisk-ofv-opplysningsradet-for-veitrafikken-registreringer/naer-halvparten-av-alle-nye-varebiler-i-2025-var-elektriske/4156989.
[22] Antall elektriske lastebiler øker i Norge – miljøministeren tror målet om 50 prosent kan nås,” NRK, published 2024, accessed 8 April 2026, https://www.nrk.no/mr/antall-elektriske-lastebiler-oker-i-norge-og-miljoministeren-tror-malet-om-50-prosent-kan-nas-1.17555243.

O17 Route optimisation

The textile service must employ digital route optimisation for all transport of textiles.

The requirement also covers the subcontractors.

Digital route optimisation refers to a digital system that is continuously updated and thus ensures optimal routes that, for example, consider parcel volumes, delivery points, traffic queues and roadworks

- Description of the route optimisation tool(s) used by the licensee and its subcontractors and how they work to make the logistics more efficient.
- Checked on site.

Background to requirement O17 Route optimisation

Digital route planning is a method of planning and optimising the company's routes in a more or less advanced way. Route planning makes transport more resource-efficient, as the distance travelled is optimised, the number of vehicles used can be reduced, the number of stops per trip increases and the load factor increases. For companies with a large proportion of fixed routes, route optimisation can be done with some advance planning. Companies with varying routes, on the other hand, need to run the optimisation over the course of the day.

5.5 Textiles and mats

O18 Code of Conduct

Textile services that only wash clothing for private individuals and do not purchase textiles themselves are exempt from this requirement.

Alternative A:

The business must have a Code of Conduct for the purchasing of textiles that ensures that both the supplier and the textile producer respect and comply with the ten principles of the UN Global Compact*.

If the licensee or the supplier breaches the business's Code of Conduct, the Nordic Swan Ecolabel licence may be revoked.

* The UN Global Compact consists of ten principles covering human rights, labour rights, environmental protection, and anti-corruption. Further information is available at www.unglobalcompact.org.

- A copy of the Code of Conduct that meets the requirement.
- A description of how the business's Code of Conduct is communicated to the supplier and how compliance by the supplier and the textile producer is monitored and verified.

Alternative B:

The business must have a Code of Conduct for the purchasing of textiles based on the International Labour Organization's (ILO) eight core conventions, which cover the following:

- Prohibition of child labour (Convention No. 138 on the minimum age for employment and Convention No. 182 on the worst forms of child labour)

- Freedom of association and the right to collective bargaining (Convention No. 87 on freedom of association and Convention No. 98 on the right to organise and collective bargaining)
- Prohibition of discrimination (Convention No. 100 on equal remuneration and Convention No. 111 on discrimination in respect of employment and occupation)
- Prohibition of forced labour (Convention No. 29 on forced or compulsory labour and Convention No. 105 on the abolition of forced labour)

If the licensee or the supplier breaches the business's Code of Conduct, the Nordic Swan Ecolabel licence may be revoked.

- A copy of the Code of Conduct that meets the requirement.
- A description of how the business's Code of Conduct is communicated to the supplier and how compliance by the supplier and the textile producer is monitored and verified.

Background to requirement O18 Code of Conduct

As much of the global textile production takes place in Asia, working conditions and other social and ethical aspects in the supply chain are important considerations. Nordic Ecolabelling has therefore chosen to include requirements related to the textile service's purchasing of textiles. These requirements apply only to textiles owned by the textile service itself, as Nordic Ecolabelling cannot set requirements for textiles purchased directly by the textile service's customers.

The requirement concerns the business' purchasing policy for textiles. Nordic Ecolabelling aims to reduce the risk of workers in the textile supply chain being exposed to unfair working conditions. Therefore, Nordic Ecolabelling requires businesses to have a Code of Conduct for textile purchasing. The Code of Conduct must set requirements for textile suppliers and producers stating that the ten principles of the UN Global Compact are respected and followed. Alternatively, the Code of Conduct must be based on working conditions that are compatible with the eight core conventions of the International Labour Organization (ILO).

The textile industry often consists of complex global supply chains involving several actors. This limits the possibility to fully verify compliance at all stages of production. Nevertheless, requiring a Code of Conduct ensures that licensees address these issues in their procurement practices and signals the direction in which Nordic Ecolabelling aims to drive development.

O19 Purchasing of textiles

Textile services that only wash clothing for private individuals and do not purchase textiles themselves are exempt from this requirement.

The textile service must live up to the following requirement on an annual basis

$$\frac{(\text{amount}_{\text{ecolabelled}} \bullet 5) + \text{amount}_{\text{OEKO-TEX® MADE IN GREEN}}}{\text{amount}_{\text{workwear}} + \text{amount}_{\text{flatwork}}} * 100 \geq 85\%$$

where

$amount_{ecolabelled}$ is the purchased amount of all ecolabelled textile products

$amount_{OEKO\text{-}TEX®\ MADE\ IN\ GREEN}$ is the purchased amount of all non-ecolabelled textile products that are certified according to OEKO-TEX® MADE IN GREEN

$amount_{workwear}$ is the purchased amount of workwear

$amount_{flatwork}$ is the purchased amount of flatwork that needs to be mangled (bed linen, tablecloths, cloth hand towel rolls, etc.)

Ecolabelled textiles are defined as textiles certified by the Nordic Swan Ecolabel, the EU Ecolabel, Bra Miljöval (Classes 1 and 2), or GOTS.

The calculation can be carried out either based on weight or by economic purchasing volume.

The requirement can be documented and complied with by a chain/group.

- Summary of purchased textiles, including a calculation demonstrating that the requirement is fulfilled. The summary may be based on annual reports from individual suppliers indicating their share of ecolabelled textiles and non-ecolabelled textiles certified according to OEKO-TEX® MADE IN GREEN. Nordic Ecolabelling may carry out spot checks on selected suppliers to verify this data.
- During spot checks, the supplier must be able to provide documentation supporting the reported data, as well as a valid ecolabel certificate or documentation demonstrating compliance with OEKO-TEX® MADE IN GREEN for the products selected by Nordic Ecolabelling.

Background to O19 Purchasing textiles

This requirement concerns the environmental and health properties of textiles. There are significant differences in the availability of ecolabelled and health-labelled products across different textile categories. Therefore, the requirement focuses on new purchases of workwear and flatwork requiring mangling, as a relatively higher proportion of products in these categories can document compliance with ecolabel criteria or OEKO-TEX® MADE IN GREEN.

However, in order to encourage the procurement of textiles with relatively low impact on the environment and health more broadly, all purchases that meet the relevant standards may be included in the calculation. The ecolabelling criteria are life-cycle based and include similar health and quality requirements for the end product as OEKO-TEX® MADE IN GREEN[23]. An ecolabel is therefore considered more comprehensive than OEKO-TEX® MADE IN GREEN and is consequently given a higher weighting. The weighting factor of 5 is a subjectively determined factor.

Ecolabelled textiles are defined as textiles certified by the Nordic Swan Ecolabel, the EU Ecolabel, Bra Miljöval (Classes 1 and 2), or GOTS.

P8 Ecolabelled textiles

Points are awarded for the proportion of ecolabelled textiles purchased, as specified in Table 14.

The percentage of ecolabelled textiles is calculated using the formula

[23] OEKO-TEX® (n.d.). Tailor-made solutions for the textile and leather industry. Available at: https://www.oeko-tex.com/en/ (Accessed: 2 April 2026).

$$\frac{\text{amount}_{\text{ecolabelled}}}{\text{amount}_{\text{workwear}} + \text{amount}_{\text{flatwork}}} * 100$$

where

$\text{amount}_{\text{ecolabelled}}$ is the purchased amount of all ecolabelled textile products

$\text{amount}_{\text{workwear}}$ is the purchased amount of workwear

$\text{amount}_{\text{flatwork}}$ is the purchased amount of flatwork that needs to be mangled (bed linen, tablecloths, cloth hand towel rolls, etc.)

Ecolabelled textiles are defined as textiles certified by the Nordic Swan Ecolabel, the EU Ecolabel, Bra Miljöval (Classes 1 and 2), or GOTS.

The calculation can be carried out either based on weight or by economic purchasing volume.

The requirement can be documented and complied with by a chain/group.

Table 14 Points for purchase of ecolabelled textiles

Proportion of ecolabelled textiles	Points
More than 50%	8
More than 40%	6
More than 30%	4
More than 20%	2
More than 10%	1

- Calculation showing the number of points scored in relation to Table 13. Nordic Ecolabelling's calculation sheet must be used.

Background to P8 Ecolabelled textiles

Experience from licensing within Nordic Ecolabelling shows that textile services contribute significantly to the uptake of ecolabelled textiles.

It is therefore of great importance that the criteria for textile services continue to reward the purchase of ecolabelled textiles.

O20 Ban on phthalate plasticisers

Newly acquired mats must not contain phthalate plasticisers.

- Procedures ensuring that newly acquired mats do not contain phthalate plasticisers.
- A certificate from the mat supplier confirming that mats delivered to Nordic Swan Ecolabelled textile services do not contain phthalate plasticisers.

Background to O20 Ban on phtalate plasticisers

Mats used in textile service systems include both standard mats and customised mats, such as logo mats. These mats typically consist of a textile surface made of cotton and/or synthetic fibres (e.g. polyamide or polyester) and a backing made of nitrile rubber

(acrylonitrile butadiene rubber). Plasticisers are often added to nitrile rubber to provide flexibility[24].

Phthalates are a group of substances commonly used as plasticisers to make plastics and rubber soft and flexible. Since phthalates are not chemically bound to the material, they can migrate from products into the surrounding environment. Humans may be exposed to phthalates through direct contact with products as well as indirectly through, for example, indoor dust or food.

Several phthalates are associated with adverse health effects, particularly reproductive toxicity and endocrine disruption. Some phthalates have therefore been restricted or identified as substances of very high concern (SVHC) under EU chemicals legislation. These include, for example, DEHP (bis(2-ethylhexyl) phthalate), DBP (dibutyl phthalate), BBP (benzyl butyl phthalate) and DiBP (diisobutyl phthalate). Di-isononyl phthalate (DiNP) is sometimes used as a substitute for DEHP, although studies indicate that it may also affect hormonal systems and sexual development[25].

During the last criteria revision, Nordic Ecolabelling has been in contact with major mat producers. This dialogue shows that some manufacturers use phthalates as plasticisers in the rubber backing of mats, while others use alternative plasticisers. This demonstrates that alternatives are available and that the requirement is both relevant and feasible.

From a steerability perspective, textile services regularly purchase new mats. Customised mats are typically replaced on an ongoing basis, while standard mats are often purchased ahead of high-demand seasons. Nordic Ecolabelling therefore considers it relevant to limit the use of phthalates in mats used in textile service systems.

O21 Repair and maintenance of textiles and mats

Textiles

The textile service shall ensure that appropriate equipment and procedures are in place to enable the repair of damaged textiles, with the aim of extending textile lifetime and reducing disposal.

Each laundry facility shall be equipped with functional repair equipment suitable for the types of textiles handled.

Textiles deemed repairable shall be repaired before being considered for disposal.

The textile service shall implement and maintain documented procedures for:

- Inspection of textiles to identify repairable damage
- Decision-making criteria distinguishing repair from disposal
- Execution of repairs
- Handling of textiles that cannot be repaired

T̄ A description of the repair equipment available at each laundry facility.

[24] Tranquilli, J. (2016). Understanding the Composition of a Nitrile (Buna-N) Rubber Compound. Apple Rubber. Available at: https://www.applerubber.com/hot-topics-for-engineers/understanding-the-composition-of-a-nitrile-buna-n-rubber-compound/ (Accessed: 2 April 2026).
[25] Karlstads universitet (2014). Könsutveckling störs vid exponering för ftalater. Available at: https://www.kau.se/nyheter/konsutveckling-stors-vid-exponering-ftalater (Accessed: 18 December 2019).

- A documented repair procedure (routine), including decision criteria for repair vs. disposal.
- Records or examples demonstrating that textile repair is carried out in practice (e.g. repair logs, statistics, or work instructions).
- On-site inspection may be used to verify the presence of equipment and implementation of routines.

Mats

The textile service shall ensure that appropriate equipment and procedures are in place to enable the repair of damaged mats, with the aim of extending product lifetime and reducing disposal.

Repair equipment does not need to be available at each individual laundry facility, provided that mats are sent to and repaired at a facility where such equipment is available.

Mats deemed repairable shall be repaired before being considered for disposal.

The textile service shall implement and maintain documented procedures for:

- Inspection of mats to identify repairable damage
- Decision-making criteria distinguishing repair from disposal
- Execution of repairs
- Handling of mats that cannot be repaired

- A description of the repair equipment available within the service system (including the facility/facilities where mat repair is carried out).
- A documented repair procedure (routine), including decision criteria for repair vs. disposal.
- Records or examples demonstrating that mat repair is carried out in practice (e.g. repair logs, statistics, or work instructions).
- On-site inspection may be used to verify the implementation of routines and, where relevant, the availability of repair equipment at the facility performing the repairs.

O22 Measures to extend the lifetime of textiles and reduce discard

The textile service shall implement at least two measures or initiatives per year aimed at extending the lifetime of textiles and reducing the discard of textiles.

The measures may address different parts of the textile service system, such as purchasing, sorting, washing processes, handling at the customer, or reuse of textiles. The measures shall be planned and followed up.

- At the time of application, the applicant must describe at least two measures or initiatives that have been implemented or are planned to be implemented to extend the lifetime of textiles and reduce textile discard. The documentation shall include:
  - a description of the measure
  - the purpose of the measure
  - when the measure was implemented or is planned to be implemented
- Procedures for continuous improvement, including a plan to implement and follow up at least two new measures or initiatives per year.

O23 Textile discard rate

The textile discard rate for each textile category shall not exceed the limit values specified in Table 15.

The textile service shall annually calculate the textile discard rate for each textile category as:

$$Discarded\ textiles\ /\ Total\ amount\ of\ textiles\ washed$$

where:

discarded textiles = textiles that are removed from service (kg/year)*

processed textiles = the total amount of textiles washed by the laundry (kg/year)

The requirement shall be fulfilled separately for each textile category and shall not exceed the limit values specified in Table 15.

**Textiles that are reassigned to another use or customer segment, for example from hotel use to healthcare use, shall not be considered discarded as long as they remain in active use and are not removed from service.*

Table 15 Limit values for different textile categories

Textile category	Limit value
Flatwork	0,01
Workwear	0,01
Mats	0,005
Cloth hand towel rolls	0,005
Other	0,005

For each textile category, documentation showing:

- annual quantity of discarded textiles (kg)
- total amount of textiles washed (kg)
- calculation of the discard rate.

Background to requirement O21 Repair and maintenance of textiles and mats, O22 Measures to extend the lifetime of textiles and reduce discard and O23 Textile discard rate

Textile production has significant environmental impacts, including high resource use, chemical consumption, and climate emissions.[26] Extending the lifetime of textiles and reduce discard is therefore a key strategy for reducing the overall environmental footprint of textile services.[27]

In many textile service operations, textiles are discarded due to minor damage that could be repaired with relatively simple measures. By ensuring that repair equipment and structured

[26] Niinimäki, K. et al. (2020). The environmental price of fast fashion. Nature Reviews Earth & Environment, 1, pp. 189–200.
[27] Sandin, G. and Peters, G.M. (2018). Environmental impact of textile reuse and recycling – A review. Journal of Cleaner Production, 184, pp. 353–365.

routines are in place, textile services can significantly reduce textile waste, lower procurement needs, and improve resource efficiency.

In addition to repair, the textile service shall implement at least two measures or initiatives per year aimed at extending the lifetime of textiles and reducing textile discard.

Regarding the textile discard rate, the limit values have been developed based on licence data from generation 4 of the criteria and in dialogue with the industry, in order to reflect achievable performance levels while encouraging further improvement.

5.6 Emissions and plastic waste

O24 Water discharge

Water discharge from the laundry must comply with all requirements and conditions imposed by municipal and regional authorities. This covers conditions linked to permits or approval of running the business and orders and other decisions from environmental agencies concerned.

If more than 5% by weight of the laundry consists of industrial cloths, the wastewater must be treated before it is discharged into the municipal drainage system. The sludge from the laundry's water treatment plant must be treated as environmentally hazardous waste and its treatment must be approved by the country's environmental authorities.

- Documentation to show that the plant meets any requirements from the authorities. Alternatively, documentation from the authorities to show that there are no requirements governing the laundry's discharge of wastewater.
- Laundries that wash industrial cloths must state which laws/regulations apply and how these are complied with. Documentation of procedures for treating wastewater before discharge into municipal drainage systems and handling of sludge.

Background to requirement O24 Water discharge

Requirements on discharges set by municipalities/authorities

Requirements on discharges are set by municipalities/authorities in all the Nordic countries. However, these requirements may vary widely depending on the municipality or the regional authority, production volumes, discharge volumes, what is laundered and the recipient. The requirements can be set in relation to pH, BOD/COD, temperature, oil, nitrogen, phosphorus etc. The laundries find it a challenge that these requirements are set in relation to concentration (mg/l) – instead of total emissions. This can penalise laundries that comply with the Nordic Swan Ecolabel's criteria on low water consumption (and thus have higher concentrations per litre of wastewater) and energy consumption.

Wastewater treatment

This varies depending on requirements set by the municipality and the production. The vast majority of laundries are connected to municipal treatment works Some only have filtration of coarse particles, while newer facilities have tanks to provide more homogenous water to the wastewater system.

Can Nordic Ecolabelling set requirements on treating wastewater?

There is little to indicate that municipal water treatment works are not in a position to handle wastewater from laundries so as to fulfil requirements set on emissions from water treatment plants. Internal water treatment plants are assumed to cost NOK 5–10 million. It would be difficult to set general Nordic Swan Ecolabel requirements due to major variation in local requirements and variation in production types and amounts.

P9 Filtration of textile microfibres (microplastics) from process wastewater

Four points are awarded if the laundry has installed filtration or equivalent technology to remove textile fibres from process wastewater before discharge to the sewer system or wastewater treatment plant.

The filtration system shall:

- Be installed on wastewater streams originating from textile washing processes before discharge to sewer or external treatment.
- Have a nominal filtration size of ≤40 µm or provide equivalent fibre removal performance.
- Be dimensioned for continuous operation under normal operating conditions of the laundry.
- Be designed and operated to ensure that collected fibres and particles are retained and not returned to the wastewater stream.

The requirement applies to wastewater generated from washing and rinsing processes. Filtration may be implemented as a centralised system for the process wastewater stream or as filtration units connected to individual washing lines or machines.

T̄ The applicant shall provide:

- A technical description of the installed filtration system, including type of filtration technology and location in the process.
- Specification of the nominal filtration size (µm) or equivalent performance specification.
- Documentation showing that the system is dimensioned for the laundry's processing capacity.

Background to P9 Filtration of textile microfibres (microplastics) from process wastewater

Synthetic textiles such as polyester, polyamide and acrylic can release small plastic fibres during washing.[28] These fibres are a form of microplastics[29] and may be transported via wastewater to municipal wastewater treatment plants and ultimately to aquatic environments.[30]

Although municipal wastewater treatment plants remove a large share of microplastics from wastewater, most particles are transferred to sewage sludge. When sludge is applied to

[28] Microplastic Fibre Fragment Loss from Textiles | Nordic Ecolabelling
[29] Microplastics – Policies & Definitions | Nordic Ecolabelling
[30] Henry, B., Laitala, K. and Klepp, I.G. (2019). Microfibres from apparel and home textiles: Prospects for including microplastics in environmental sustainability assessment. Science of the Total Environment, 652, pp. 483–494. https://doi.org/10.1016/j.scitotenv.2018.10.166

land, microplastics may be introduced into terrestrial environments. Measures that reduce emissions of microplastics at the source can therefore contribute to improved sludge quality and reduced environmental dispersion of microplastics.[31]

Both household laundry and industrial laundering have been identified as sources of microplastic emissions. Industrial laundries handle large volumes of textiles and may therefore function as point sources of fibre emissions to the wastewater system.

Research shows that technical solutions such as filtration can significantly reduce the number of textile fibres released from washing processes. Mechanical filtration and membrane-based technologies have demonstrated substantial reductions of fibres in laundry wastewater.[32]

At the same time, standardised analytical methods for measuring microplastics in wastewater are still under development, and monitoring methods are often complex and costly. For this reason, the requirement focuses on the implementation of preventive technical measures rather than emission limits.

A filtration size of approximately 40 µm has been identified in studies as a practical level for capturing a significant share of textile fibres while maintaining robust operation in industrial systems. Smaller filtration sizes may provide higher removal efficiency but can increase the risk of clogging and operational complexity.[33]

By requiring filtration or equivalent technology, the Nordic Swan Ecolabel aims to reduce the release of textile microfibres at source from industrial laundry processes.

P10 Loss of fibre fragments

Two points are awarded if the textile service requires its textile suppliers to test textiles consisting of at least 50% by weight of synthetic fibres for loss of fibre fragments in accordance with the test method described in Appendix 8. Alternatively, the licence holder may perform the testing.

The textile must achieve a rating of A on the MLC-Index® (see Appendix 8).

- Test report showing that the requirement is fulfilled. The analysis laboratory must fulfil the requirements in Appendix 7.

Background to P10 Loss of fibre fragments

Loss of fibre fragments from washing of textiles is an area of great focus because this can lead to microplastic contamination of the environment. Recognized standardized test methods have been developed for determining the loss of fibre fragments when washing

[31] Svenskt Vatten (2022). En kunskapssammanställning om mikroplastutsläpp från kommunalt avloppsvatten i Sverige. Bilaga 2 till slutrapport från beställargruppen. Available at: https://www.svensktvatten.se/globalassets/dokument/avlopp-och-miljo/bestallargrupp/slutrapport-bestallargrupp-2022_bilaga2.pdf (Accessed: 2 April 2026).
[32] RISE Research Institutes of Sweden (2023). Upstream mitigation of microplastics at an industrial laundry and impact at the wastewater treatment plant. Available at: https://www.ri.se/en/infrastructure/water/project/mitigating-microplastics-purification-at-an-industrial-laundry (Accessed: 2 April 2026)
[33] RISE Research Institutes of Sweden (2023). Upstream mitigation of microplastics at an industrial laundry and impact at the wastewater treatment plant. Available at: https://www.ri.se/en/infrastructure/water/project/mitigating-microplastics-purification-at-an-industrial-laundry (Accessed: 2 April 2026).

textiles in household washing machines. However, these methods are not adapted to industrial settings. Instead, Nordic Ecolabelling use a test method developed by the Weber & Leucht Laboratory. This method is aligned with AATCC TM-212 and EN ISO 4484-1 but is developed specifically for the purpose of testing the release of fibre fragments during the service life of cleaning textiles. The test allows for classification on an index, The MLC-Index®.

The requirement may be supplemented with additional test methods following consultation.

5.7 Quality control of laundries

O25 Quality control

Alternative A:
The textile service must comply with the quality and occupational health and safety requirements set by the national laundry association or the national quality body for laundries.

Laundries in countries without a national quality body may have quality control carried out by a recognised quality body in another Nordic country.

- A certificate issued by the national laundry association or a copy of a quality control report demonstrating compliance with the requirements.

Alternative B:
The textile service may choose one of the following options:

- Comply with the requirements of RAL GZ 992 (Professional Linen Care – Quality Assurance), with the exception of the requirements on sorting.
- Be certified in accordance with ISO 9001 (Quality management systems – Requirements) and externally verified in accordance with EN 14065 (Textiles – Laundry-processed textiles – Biocontamination control system). Under this option, specific requirements for bacteriological and visual cleanliness must be defined.

- A copy of a quality control report issued by an external and impartial inspector demonstrating that the requirements are met.
- Where relevant, additional documentation for laundries supplying hospitals.

Background to O25 Quality control

To ensure reasonable quality and a sound working environment, in addition to the requirements on chemical products used in the laundry, laundries must as a minimum comply with the quality and occupational health and safety requirements of relevant industry associations.

To avoid making the Nordic Swan Ecolabel exclusive to members of national industry associations, Nordic Ecolabelling also accepts compliance with the German standard RAL GZ-992 (Professional Linen Care – Quality Assurance) as an alternative. Nordic Ecolabelling has also chosen to accept certification according to ISO 9001 (Quality Management) in combination with EN 14065 (Textiles – Laundry processed textiles – Biocontamination

control system) on an equal footing, provided that the management system at the same time sets concrete targets for both bacteriological and visual purity.

Iceland lacks a national laundry organisation and a national quality control system. Icelandic laundries can therefore have quality control carried out by a quality body in one of the other Nordic countries.

5.8 Working conditions

O26 Contractors/recruitment agencies

Contractors or recruitment agencies providing labour for production or transport must comply with the following requirements:

- The work must be carried out by the contractor's own employees. The contractor may not engage subcontractors.
- The contractor must be registered for VAT and as an employer for social security contributions and payroll taxes. In Finland, the contractor must also be registered in the prepayment register (“ennakkoperintä”).
- The contractor must not have outstanding tax liabilities or unpaid statutory charges.

- Confirmation from the contractor that the work is carried out solely by the contractor’s own employees and that no subcontractors are engaged.
- Documentation from the relevant tax authority confirming that the contractor is registered for VAT and as an employer for social security contributions and payroll taxes. In Finland, registration in the prepayment register (“ennakkoperintä”) must also be confirmed.
- Documentation from the relevant tax authority confirming that the contractor has no outstanding tax liabilities or unpaid statutory charges.

Background to requirement O26 Contractors/recruitment agencies

The use of contractors and recruitment agencies can increase the risk of non-compliant practices related to employment conditions, tax obligations and transparency in the supply chain. This requirement aims to ensure that contractors operate in accordance with basic legal obligations and that the use of subcontracting is limited and transparent. No requirements regarding employment conditions are placed on the licence holder’s own employees, based on an assessment of limited steerability and lower risk, for example in comparison with cleaning services. Employment conditions are generally regulated through national legislation and, in many cases, collective agreements. Furthermore, the licence holder has direct employer responsibility and is subject to public oversight, which reduces the added value of additional requirement in this area, compared to outsourced services such as transport.

5.9 Licence maintenance

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

O27 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 O27 Customer complaints

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.

5.10 Summary of points

O28 Achieved points

The textile service must achieve at least 18 points.

The following table provides a summary of the areas in which points can be awarded.

Table 16 Points compilation

Point requirements	Points earned	Maximum points
P1 Energy use		10
P2 Heat recovery from dryers and wastewater		2
P3 Greenhouse gas emissions		10
P4 Water consumption		10
P5 Proportion of ecolabelled chemical products used in the laundry		2
P6 Chlorine content in chemical products used in the laundry		6
P7 Existing vehicle fleet		6
P8 Ecolabelled textiles		10
P9 Filtration of textile microfibres (microplastics) from process wastewater		4
P10 Loss of fibre fragments		2
Total		**62**

- Compilation of points according to Table 16.

Background to requirement O28 Achieved points

In addition to the obligatory requirements, a points system has been established, allowing a textile service that performs well in one area to perform less well in others, provided that the overall environmental impact remains low. The purpose of this approach is to ensure strong potential for product development and innovation, while maintaining the usability of the criteria and a low overall environmental impact.

Compared with generation 4, it has become more challenging to achieve many of the points, as the basis for point allocation, the obligatory requirements, has been tightened in several areas, including greenhouse gas emissions, water consumption and chlorine use. In addition, some point requirements have been removed, while new point requirements have been introduced. In this generation of the criteria, the textile service must achieve at least 18 of 60 points.

5.11 Annual follow-up

O29 Annual follow-up

The textile service shall ensure that all requirements are continuously fulfilled. An annual review of operations shall be carried out at least once per year (within six months of the financial year-end).

Nordic Ecolabelling may request documentation from the internal audit and verify compliance with selected or all requirements. The textile service will be notified in advance of any inspection.

- Licence follow-up procedure.

Background to requirement O29 Annual follow up

To ensure that the textile service complies with the requirements throughout the licensing period, it is important that they regularly follow up on this.

6 Environmental impact of textile services

The relevant environmental impacts found in the life cycle of textile services are set out in a MECO scheme below. A MECO describes the key areas that have impact on the environment and health throughout the life cycle of the service – 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 high RPS, since there is potential to achieve positive environmental gains.

Functional unit/scope of the MECO analysis

Description of quantitative/qualitative MECO analysis

The MECO analysis shows a combination of a quantitative and qualitative hotspot in the life cycle. The analysis is based on scientific recognized sources, such as quantitative life cycle studies, license data, reports and articles.

Description of the scope/functional unit of the MECO analysis

Textile services operate according to a business model based on the supply of clean textiles, see illustration below. The textile service company owns the laundry facilities and typically purchases and owns the textiles, and provides a “clean textiles” service. This includes delivering freshly laundered items and collecting used ones for washing. In other words, the textile service company retains ownership and handles all laundering, while the customer’s role is simply to use the textiles.

This product group covers the entire textile service, which includes for example purchasing, washing, repairing, renting, managing and logistics of textiles for professional customers. It includes activities such as washing, drying, ironing, repairing and replacing. This can include products such as workwear, hotel textiles, healthcare textiles, mats, mops and hygiene textiles. In healthcare and food industry textile services also ensures hygiene standards.

These criteria do not apply to companies that only offer dry cleaning.

See illustration of the scope of textile services including processes and resources below.

Figure 2 Illustration of business model on the supply of clean textiles.

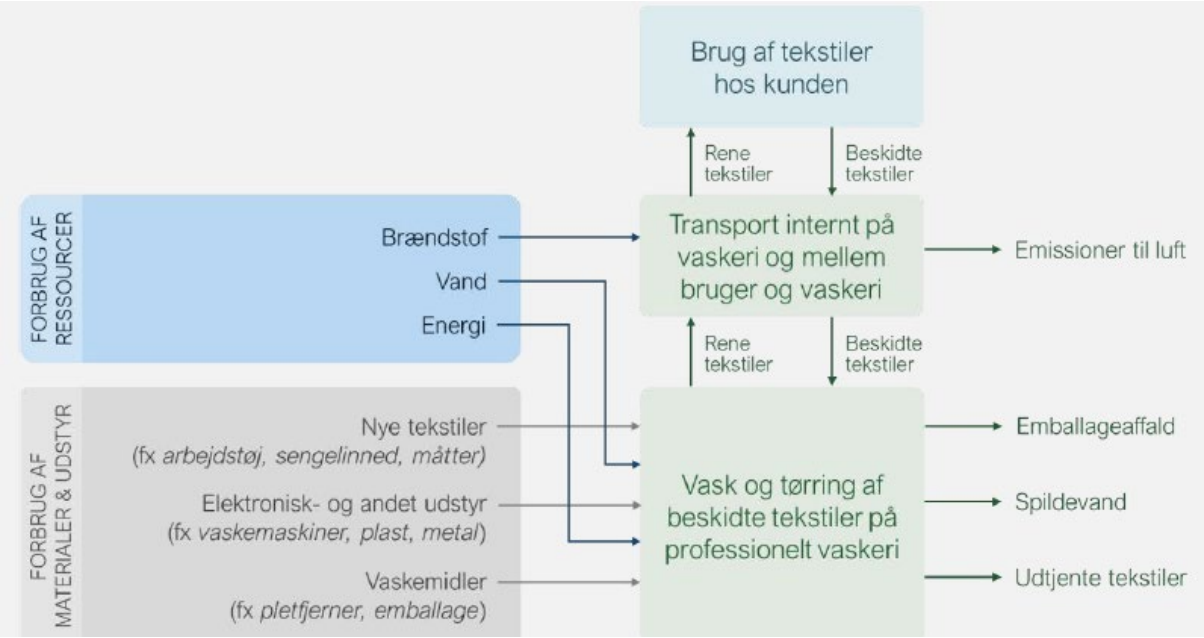

Figure 3 Illustration of the scope of textile services including processes and resources. (Skov Hansen et al (2025). Miljø- og klimaeffekter ved at vælge Svanemærket i offentlige indkøb)

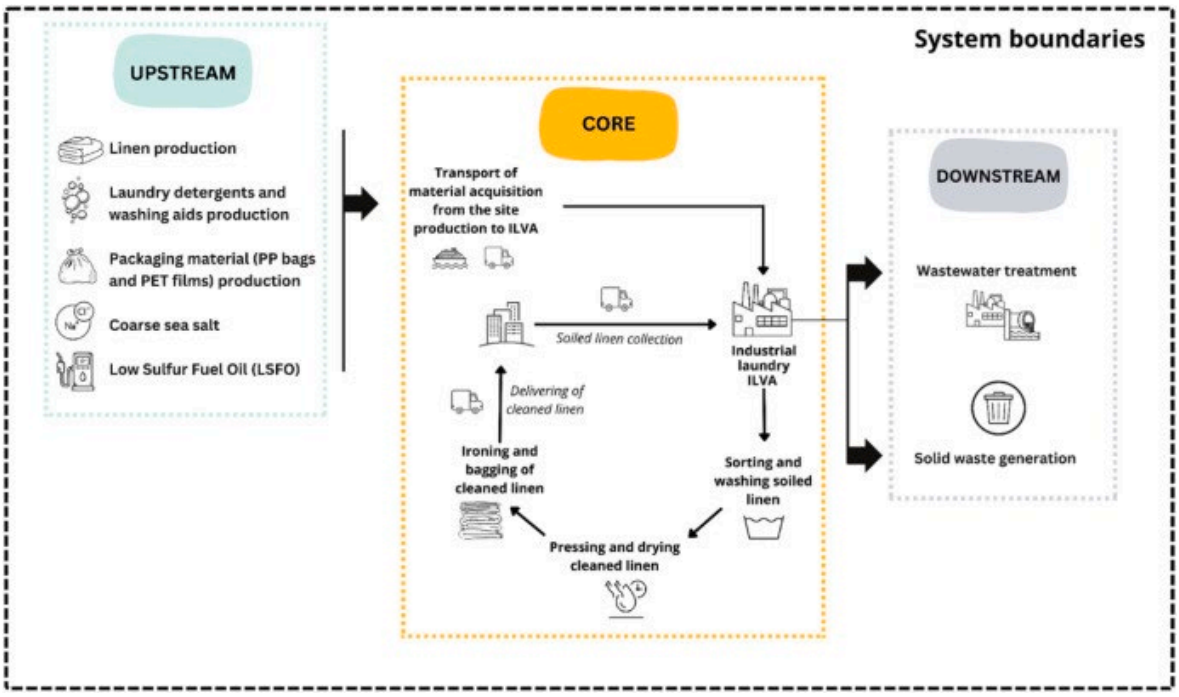

Figure 4 Illustration of the scope of textile services including processes and resources. (Mezzanotte et al (2025). Life Cycle Assessment of an industrial laundry: A case study in the Italian context)

Qualitative and quantitative hotspots

Based on the reviewed LCAs, reports, articles and internal knowledge, the operational processes for textile services have the most significant hotspots. The following hotspots were found for textile services:

- energy for washing, drying, ironing
- chemical use (choice and dosage of detergents/chemical products (biodegradability, toxicity))
- water use and wastewater
- transport logistics
- durability/lifetime for textiles (number of use cycles before replacement – the longer textiles last in the service system, the lower the environmental impact per use)
- share of textiles with certified sustainable fibers (organic cotton, recycled polyester, etc.).

Many studies implies that textile reuse and recycling in general reduce environmental impact compared to incineration and landfilling, and that reuse is more beneficial than recycling. Energy consumption is a key factor in the environmental performance of the laundry. Installation of photovoltaic panels has led to relevant improvements in some cases. When looking at climate impact, purchasing of textiles and heating of water during the washing process are the two life-cycle stages that have the greatest influence. However, it is important to note that the environmental impact of textile services depends on the products washed. Washing hospital textiles requires higher temperatures and more energy, due to hygiene standards, compared to items like floor mats, which can be washed using reused water at lower temperatures and with less use of chemical products.

The most affected impact categories are global warming, human health, fine particulate formation, carcinogenic and non-carcinogenic toxicity, and fossil resource depletion. A key opportunity for mitigating these impacts lies in reducing energy consumption and transitioning to renewable energy sources. Also, use of chemical products permitting lower water temperature is important.

Based on the reviewed LCAs, literature and EPDs, the following functional units were found for Textile services:

- Energy consumption per kg textile (kWh/kg)
- Water consumption per kg textile (L/kg)
- Emissions from logistics (ton CO_2e/kg)
- Emissions per employee (kg CO_2/employee/year)
- Emissions per bed (kg CO_2/bed/year)
- Emissions per company (tons CO_2-eq. for an entire company)
- Emissions per workwear (g CO_2-eq./kg of workwear washed once)

RPS scheme

Life cycle stages	Area and assessment of R, P, S (high, medium or low)	Comments
Upstream (purchasing of textiles, chemical products, etc.)		
	Purchasing of new textiles - Growing of cotton - Extraction of crude oil and refining into polyester - Spinning, weaving, dyeing, drying, bleaching - Regenerated cellulose production - Pesticides related to cotton cultivation - Chemical emissions from textile production - Water use - Land use change - Biodiversity loss - Social impacts R: High P: Medium-high S: Medium	Relevance: The production of new textiles involves significant environmental and social impacts across the value chain, including raw material production (e.g. cotton cultivation, polyester production and regenerated cellulose), and textile processing (e.g. spinning, weaving, dyeing and finishing). Key impacts include pesticide use, chemical emissions, high water consumption, land use change, biodiversity loss and social risks. Potential: The use of ecolabelled or OEKO-TEX® Made in Green certified textiles can reduce impacts related to chemicals, water use and social conditions. Reducing the overall consumption of new textiles also lowers the environmental impact. However, availability of certified textiles varies between product categories. Steerability: The textile service typically purchases and owns the majority of the textiles it processes and provides to customers. However, textile services typically procure textiles through wholesalers with global supply chains, which limits direct influence over upstream production.
	Purchasing of packaging materials (PP bags, PET films, etc.)	This aspect has been assessed but is not considered a priority for criteria development due to its relatively limited environmental significance compared to other areas.
	Purchasing of chemical products used in the laundry - Extraction of relevant raw materials - Manufacturing of chemical products used in the laundry	This aspect is partly addressed through existing requirements related to chemical use (e.g. classification, excluded substances and ecolabelling). The potential and steerability for additional upstream requirements are limited, and the area is therefore not prioritised for further criteria development.
	Extraction of primary energy sources for electricity and fuel	This aspect is not prioritised for upstream criteria development, as the potential and steerability are limited and the environmental impact is more effectively addressed through requirements on energy use and sourcing in later life cycle stages.
	Generation and distributing of electricity	This aspect is not prioritised for upstream criteria development, as the potential and steerability are limited and the environmental impact is more effectively addressed through requirements on energy use and electricity sourcing in later life cycle stages.
	Energy for synthetic fiber production	This aspect is considered part of the overall environmental impact of textile production and is therefore addressed through requirements related to purchasing of textiles.
	Exposure to hazardous chemicals in the work environment or nearby communities	This aspect is of high relevance and is partly addressed indirectly through requirements on

		chemical products and ecolabelled textiles, which include criteria on hazardous substances and working conditions. The additional potential and steerability as a separate upstream area are limited.
Production / service (operational processes)		
	Textiles wear out gradually - Durability and quality strongly affect lifetime of textiles - Permissible washing temperature - Use of chemical products R: High P: Medium-high S: Medium-high	Relevance: Textiles wear out during use, and longer lifetimes reduce the need for new textiles and thereby lower resource use, energy consumption, water use and chemical emissions. Potential: There is significant potential to reduce environmental impact by extending textile lifetimes through improved durability and management practices. Washing methods, temperature and chemical use influence textile wear. Repair of damaged textiles and other measures can further support longer lifetimes. However, textile lifetimes may also be influenced by customer-driven factors such as changes in contracts or textile collections, which can limit the actual use phase. Steerability: Textile services can influence textile lifetime through washing processes, chemical use, temperature and maintenance routines. They can also implement repair and other measures to extend the lifetime of textiles. However, customer requirements and changes in contracts or textile collections can limit the extent to which lifetimes can be optimised.
	Energy use (electricity and fuels) - washing process - heating - drying process - ironing process R: High P: High S: High	Relevance: Energy use is a key factor in the environmental performance of laundries. It is required for washing, heating, drying and finishing processes, and directly contributes to greenhouse gas emissions. Potential: There is significant potential to reduce energy use, as large variations exist between laundries. Optimisation of washing temperatures, load efficiency, heat recovery and energy-efficient equipment can substantially lower consumption and emissions. Steerability: Laundries have a high degree of control over their energy use through process optimisation, equipment maintenance and technology choices. Energy consumption is also easy to monitor, supporting continuous improvement.
	Chemical consumption during washing process (detergents, bleach, softeners, disinfectants) R: High P: High S: High	Relevance: Chemical use in the washing process is a key environmental aspect, contributing to water pollution and resource use. It may also affect occupational exposure if not properly managed. The choice and amount of chemicals also influence washing performance and energy use. Potential: There is significant potential to reduce environmental impact through optimised dosing,

		selection of less hazardous chemicals and improved process control. Steerability: Textile services have a high degree of control through product choice, dosing systems and process optimisation. Chemical use is measurable and can be continuously improved.
	Water consumption during washing process R: High P: High S: High	Relevance: Water use is a key environmental aspect in laundries, contributing to resource consumption and influencing energy use and chemical discharge. Potential: There is significant potential to reduce water use, as large variations exist between laundries. Efficiency measures and improved process control can substantially lower consumption. Steerability: Laundries have a high degree of control over water use through process optimisation, equipment choice and reuse of process water. Water consumption is also easy to monitor and track.
	Release of microplastics and microfibres R: Medium-high P: Medium S: Medium	Relevance: The release of microplastics and microfibres from laundry processes is environmentally relevant, as these particles can be harmful to health and the environment due to their small size, surface properties, resistance to degradation and because they can carry harmful chemicals. Potential: There is potential to reduce emissions of microplastics and microfibres through both technical measures at the laundry and through textile choices with lower fibre shedding. Upstream fibre removal technologies such as filtration or equivalent separation systems have been shown to substantially reduce fibre releases from process wastewater. In addition, requiring textiles with documented low fibre loss can reduce the generation of fibre fragments at source. However, available technologies can be costly and require significant space in the laundry. Steerability: Textile services can influence the release of microplastics by choosing textiles with lower fibre shedding and by installing filtration or equivalent technologies to remove fibres from process wastewater. While requirements for textile performance are within the textile service's control, the installation of wastewater treatment solutions may be limited by technical, spatial and economic conditions in existing facilities.
	Working conditions for own employees and subcontractors/recruitment companies R: Medium P: Medium S: Medium-high	Relevance: While working conditions are an important aspect, the risk level in the textile service sector is generally lower and more regulated compared to sectors such as cleaning services The use of contractors and recruitment agencies may involve risks related to employment conditions, tax compliance and transparency though.

		Potential: There is potential to reduce the risk of non-compliant practices by limiting subcontracting and requiring contractors to fulfil basic legal obligations. This supports fair competition and responsible labour practices. Steerability: Textile services typically have control over the contractors and recruitment agencies they engage. Compliance can be verified through standard documentation based on existing legal requirements, resulting in medium to high steerability.
Distribution		
	Packaging	Packaging used during distribution is considered to have a relatively limited environmental impact compared to other areas. The potential for further improvement is therefore low, and the aspect is not prioritised for criteria development.
	Fuel for transport (GHG emissions) R: Medium-high P: High S: Medium	Relevance: Transport of textiles generates greenhouse gas emissions, mainly from fossil fuels, and contributes to the overall climate impact of textile services. However, its relative contribution is generally lower than core operational processes. Potential: There is potential to reduce emissions through eco-driving, improved route optimisation, and requirements on both existing vehicles and the procurement of new, more fuel-efficient or low-emission vehicles. Steerability: Textile services can influence transport emissions through driver training in eco-driving, route optimisation, and requirements on vehicle performance for both existing and newly purchased vehicles. However, factors such as customer requirements and logistics constraints limit full control.
End of life		
	Loss of resources - Around 87% of textile waste ends up incinerated or landfilled globally - Limited textile recycling - Downcycling - Waste from packaging Export of textile waste globally (emissions to air and water, social impacts, landfills, dump sites, plastic pollution etc.) R: High P: Medium S: Medium	Relevance: A large share of textile waste is currently incinerated or landfilled, resulting in loss of valuable materials and embedded resources. Reuse offers the greatest potential to reduce environmental impacts, while recycling systems remain limited. Potential: There is potential to reduce resource loss by increasing reuse and improving sorting and collection of discarded textiles. Steerability: Textile services can influence the handling of discarded textiles, for example through reuse and sorting practices. However, external waste systems limit full control.
	Waste water from washing/drying processes (containing detergents, chemicals, oils, grease, and dirt from the textiles being washed) that can harm	Relevance: Wastewater from laundry processes contains chemicals and contaminants that can harm aquatic life and contribute to eutrophication. It also affects water resource use and treatment systems.

	aquatic life and contribute to eutrophication. R: High P: High S: High	Potential: There is significant potential to reduce environmental impact through improved wastewater management, including limiting hazardous substances, monitoring discharges and increasing water reuse. Steerability: Textile services can influence wastewater impacts through compliance with discharge requirements, monitoring of wastewater quality and implementation of treatment and reuse systems.

MECO scheme

	Upstream **(purchasing of textiles, chemical products, etc.)**	**Production / service** **(operational processes)**	**Distribution**	**End of life**
Material	Purchasing of new textiles - Growing of cotton - Extraction of crude oil and refining into polyester - Spinning, weaving, dyeing, drying, bleaching - Regenerated cellulose production Purchasing of packaging materials (PP bags, PET films, etc.) Purchasing of chemical products used in the laundry - Extraction of relevant raw materials - Manufacturing of chemical products used in the laundry	Textiles wear out gradually - Wear and tear during operational processes. - Permissible washing temperature - Use of chemical products	Packaging	Loss of resources - Around 87% of textile waste ends up incinerated or landfilled globally (4) - Limited textile recycling - Downcycling - Waste from packaging
Energy	Extraction of primary energy sources for electricity and fuel Generation and distributing of electricity Energy for synthetic fiber production	Energy use (electricity and fuels) - washing process - heating - drying process - ironing process	Fuel for transport (GHG emissions) - Type of vehicle - Type of fuel - Optimized route - Driver training	Preparing for reuse of textiles (CO_2-eq. savings) (7): Textiles: -2384 to -4486 $kgCO_2$-eq./tonne textile Mechanical recycling of textiles (CO_2-eq. savings) (7): Cotton: -677 $kgCO_2$-eq./tonne

				Viscose: -1235 $kgCO_2$-eq./tonne Polycotton: -396 $kgCO_2$-eq./tonne Polyamide: -1334 $kgCO_2$-eq./tonne Chemical recycling of polyester Depolymerisation: -1149 $kgCO_2$-eq./tonne
Chemicals	Exposure to hazardous chemicals in the work environment or nearby communities Purchasing of new textiles - Pesticides related to cotton cultivation - Chemical emissions from textile production	Chemical consumption during washing process (detergents, bleach, softeners, disinfectants)		Waste water from washing/drying processes (containing detergents, chemicals, oils, grease, and dirt from the textiles being washed) that can harm aquatic life and contribute to eutrophication.
Other	Purchasing of new textiles - Water use - Land use change - Biodiversity loss - Social impacts	Water consumption during washing process Release of microplastics and other microfibres Working conditions for own employees and subcontractors/recruitment companies		Export of textile waste globally (emissions to air and water, social impacts, landfills, dump sites, plastic pollution etc.)

Sources for MECO

(1) Henry et al. (2019). Microfibres from apparel and home textiles. Environmental Pollution.

(2) Shen et al. (2010). Life Cycle Assessment of man-made cellulose fibres.

(3) Sandin & Peters (2018). Environmental impact of textile reuse and recycling – A review. J. Cleaner Production.

(4) Ellen MacArthur Foundation (2017). A New Textiles Economy.

(5) Mezzanotte et al (2025). Life Cycle Assessment of an industrial laundry: A case study in the Italian context (link)

(6) Skov Hansen et al (2025). Miljø- og klimaeffekter ved at vælge Svanemærket i offentlige indkøb

(7) Solis et al (2024). Management of textile waste in Europe: An environmental and a socio-economic assessment of current and future scenarios (link)

(8) Solis et al (2024). Contribution of waste management to a sustainable textile sector (link)

(9) John et al (2024) Carbon footprint of hospital laundry: a life-cycle assessment (link)

7 Future criteria generation

Points will be added after the consultation

8 Criteria version history

This chapter will be developed after the consultation.

9 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.

Responsibility for Compliance with Applicable Legislation

When applying for the Nordic Swan Ecolabel, the applicant/licensee confirms compliance with all current regulatory requirements related to both the exterior and interior environment in connection with the production and handling of the product(s) covered by the application. Furthermore, the applicant declares that all applicable regulatory requirements within the Nordic region are met for the product(s). Compliance with these regulations is a prerequisite for obtaining a 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.

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.

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

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

Regulations for the Nordic Ecolabelling of services

To easily identify Nordic Swan Ecolabel services, the licence number and a descriptive sub text shall always accompany the Nordic Swan Ecolabel.

The descriptive sub text for 075 Textile services is: **Textile service**

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

Appendix 1 Description of the service

This appendix will be developed after the consultation.

Appendix 2 Textile categories

Textile categories	Description
1) Workwear for industrial/kitchen/butchering/fishing industry and equivalent use Kitchen textiles	Workwear from mechanical industry, offshore industry, food industry, fishing industry, pharmaceutical industry, and military clothing, as well as bags for outdoor use and workwear for butchers, chefs, etc. Floor cloths, kitchen workwear, kitchen towels, dishcloths, and similar items from restaurants and catering services. These textiles are often heavily soiled and can be difficult to clean.
2) Workwear for institutions/retail/service Shoes	Workwear from service companies, shops, hotels, hospitals*, care homes*, and other institutions. Military clothing intended for indoor use. Shoes, particularly industrial footwear. These textiles are often less heavily soiled than in the previous category. **It is optional whether workwear for hospitals or care homes should be placed in category 2 or 5.*
3) Hotels	Hotel linen: Bed linen and towels from hotels, guest houses, and similar facilities. These textiles are lightly soiled as they have not been used much before washing. Linen for holiday cottage accommodation: Bed linen and towels from holiday cottages, long-term hotel rentals, refugee homes, construction barracks, offshore facilities, and similar places. These textiles are used for one to two weeks and are considerably more soiled than traditional hotel linen.
4) Restaurants	Tablecloths, napkins, and similar items from restaurants and catering services. These textiles often have a medium degree of soiling, and stains may require relaundering.
5) Hospitals/nursing homes	Textiles such as bed linen, mattress toppers, surgery textiles, barrier sheets, and patient clothing from hospitals, care homes, and similar institutions. There is variation in the degree of soiling, but on average it is medium.
6) Duvets and pillows	Duvets, pillows, sleeping bags, and mattress rolls from hospitals, care homes, hotels, holiday accommodations, and similar places. These textiles often have a large volume per kilogram, resulting in a lower filling proportion. Water removal before drying is difficult, increasing energy consumption for tumble dryers.
7) Mops and cleaning cloths	Mops and cloths used for cleaning. They are often impregnated after laundering to improve dirt resistance.
8) Offshore mats	Mats used in the offshore industry, as well as other heavily soiled mats, even when used on land.
9) Other mats	Entrance mats and similar items used to trap dirt and water.
10) Cloth hand towel rolls	Cotton cloth hand towel rolls for toilets and similar use.

11) Industrial cloths	Textiles used for wiping in the graphics and mechanical industries, among others. These textiles are often heavily stained with ink, oil, metal shavings, etc.
12) Dry cleaning	All textiles that are dry cleaned internally or externally, including private clothing. This often involves fragile materials that cannot withstand water washing.
13) Private clothes from households/institutions	Clothes from private individuals who hire a company to do their laundry.
14) Other	Textiles that do not fit into any of the above categories and generally represent a smaller proportion of the laundry's total volume.
15) Cleanroom textiles	Cleanroom textiles are washed in a separate process from other types of laundry. A higher level of cleanliness is required in many circumstances, from industries requiring particle-free environments (such as chip manufacturing and pharmaceuticals) to laboratories, hospital surgery suites, and similar settings. Clean room washing is carried out separately from other laundry, with dedicated ventilation and specific wash steps. For some clean room textiles autoclaving is part of the process.

Appendix 3 Dry cleaning subcontractor

This appendix will be developed after the consultation.

Appendix 4 Energy content and energy and CO_2 factors

Fuel	Energy content	Unit	CO_2 factor	Unit
Natural gas	11,00*	kWh/m^3-N	205.0	g/kWh
Fuel oil	11.67**	kWh/kg	267.3	g/kWh
LPG	12.78**	kWh/kg	234.4	g/kWh
Straw	3.89**	kWh/kg	0	g/kWh
Pellets	4.72**	kWh/kg	0	g/kWh
Wood waste	3.61**	kWh/kg	0	g/kWh
Wood chips (dry)	0.76**	kWh/dm^3 wood chip volume	0	g/kWh
Biogas	6.39*	kWh/m^3	0	g/kWh
BioLPG	25,9[34]	kWh/m^3-N	0	
Bio oil (bio fuel oil)	10,28[35]	kWh/kg	0	
Energy source	**Energy factor**	**Unit**	**CO_2 factor**	**Unit**
District heating	1.1	kWh/kWh	216**	g/kWh
Electricity	1.2	kWh/kWh	59***[36]	g/kWh supplied

*If the physical product delivered is not 100% biogas, but e.g. a mixture from the grid, the energy factor for natural gas or the actual gas delivered shall be used in the calculation.

**If the fuel supplier can provide more specific data, this may be used instead. Documented biogas content in natural gas can be applied when calculating CO_2 emissions.

***The factor is based on all electricity being supplied via the electricity grid. For self-generated electricity (on own land or at own plant) from renewable energy sources, the factor may be halved to 29.5 g/kWh.

If data from the supplier is unavailable, the following standard density factors may be used:

Natural gas: 0.85 kg/m³n

Light fuel oil: 0.89 kg/litre

Heavy fuel oil: 0.98 kg/litre

Data from the supplier (lower heating value) may be used for fuels not included in the table.

[34] https://www.flogas.no/wp-content/uploads/2025/01/Produktdatablad-Flogas-Biopropan_NO.pdf
[35] https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A02018L2001-20220607
[36] https://www.sverigesallmannytta.se/ny-emissionsfaktor-for-nordisk-elmix-utslappen-har-minskat/

Appendix 5 Declaration from the manufacturer of the chemical product

This appendix will be developed after the consultation.

Appendix 6 Declaration from raw material manufacturer/supplier of optical brighteners

This appendix will be developed after the consultation.

Appendix 7 Analysis, test methods and calculations

This appendix will be developed after the consultation.

Appendix 8 Testing description to evaluate microplastic release

Testing description to evaluate microplastic release from textiles based on life cycle simulation in accordance with ISO 23231 (developed by the Weber & Leucht laboratory)

a) Scope of testing procedure:

The aim of the test program is to determine the release of microplastic particles from textiles.

Reuse requires that the products are subjected to a washing and abrasion simulation. This is necessary so that the lifetime-related microplastic release of a product can be evaluated. For this purpose, this test program describes test scenarios corresponding to the lifetime simulation, measurement methods of microplastic release and a possible classification by the MLC-Index®.

b) References:

- ISO 23231:2008-09 Textiles - Determination of dimensional change of fabrics - Accelerated machine method
- AATCC 20A: Test Method for Fiber Analysis: Quantitative
- AATCC TM212-2021, Test Method for Fiber Fragment Release During Home Laundering
- AATCC 135, Test Method for Dimensional Changes of Fabrics after Home Laundering
- EN ISO 6330:2022-03 Textiles - Domestic washing and drying procedures for textile testing (ISO 6330:2021)
- VDA 19 Inspection of Technical Cleanliness - Particulate Contamination of Functionally - Relevant Automotive Components
- DIN CEN ISO/TR 21960:2021-02 Plastics - Environmental aspects - State of knowledge and methodology
- EN ISO 4484-1:2021-11- Draft- Textiles and textile products - Microplastics from textile sources - Part 1: Determination of material loss from fabrics during washing (ISO/DIS 4484-1:2021); German and English version prEN ISO 4484-1:2021
- EN ISO 4484-2:2021-07 - Draft - Textiles and textile products - Microplastics from textile sources - Part 2: Qualitative and quantitative evaluation of microplastics (ISO/DIS 4484-2:2021); German and English version prEN ISO 4484-2:2021
- EN ISO 5077:2008-04 Textiles - Determination of dimensional change in washing and drying

c) Test program:

The test program includes the following elementary procedures:

- Sample preparation
- Life cycle simulation according to ISO 23231 or alternative methods
- Determination of microplastic release
- Calculation of the MLC-Index®

- Protocol/Reporting

Sample preparation:

End products or ready-made test samples consisting of the textile layers used (if necessary, also foam layers) with have identical structure of the end product but on a reduced scale can be tested. The reduced scale is to be adapted to the selected testing method in such a way that the samples can be tested realistically in the selected life cycle simulation method. A picture documentation of the final product and the reduced test specimen shall be prepared.

Dimensions of test specimens for ISO 23231 with 5-chamber model:

Note: The selected fabrication technique has a significant influence on the result, therefore the identical product design must be used for scaled test specimens. The conformity with the final product needs to be checked for scaled samples and deviations should be noted in the test report.

The exact dimensions of each individual sample must be determined in accordance to EN ISO 5077 before treatment, so that the MLC-Index® in relation to the total area of the textile can be calculated later (length/L and width/W).

Life cycle simulation according to ISO 23231:

In each case 5 samples are treated according to ISO 23231. The accelerated washing procedure consists of washing and drying according to ISO 23231 and must be repeated 20 times (20 complete washing and drying cycles) in order to calculate the MLC-Index®.

Washing program number 3 (see program table of instrument manual). Program 3 represents the equivalent of AATCC 135: 5 home laundries.

The simulation takes place without detergent. However, detergent may be used in accordance with the manufacturer's recommendations (type and dosage must be noted in the test report). The washing temperature to be used is 60°C +/- 2°C.

All 5 chambers are filled with one type of sample (each of the same product). This is therefore a 5-specimen-determination, whereby the entire treatment water from treatment run 1 to 20 is collected and examined.

To determine the microfiber loss, complete washing liquor must be collected and subjected to subsequent filtration. A suitable requirement and information for the implementation can be taken from AATCC TM212-2021. Deviating filtration systems shall be described in the test report and the filtration performance with respect to particle size classes shall be documented.

Determination of microplastic release:

The determination of the microplastic release includes all 20 reversing washing cycles. At least two measurement methods are combined for the determination:

- Fiber Fragment Release according to AATCC TM-212-2021 or prEN ISO 4484-1.
- Estimated determination of microplastic release according to VDA 19, AATCC TM-20A, EN ISO 4484-2 or other equivalent imaging and spectroscopic coupling methods of the filters from AATCC TM-212-2021 or prEN 4484-1.

Both measurement results allow the calculation of the microplastic release from textile source, which is given in g per sample. The imaging method allows a percentage estimation of the microplastic release related to the identified fiber types as well as residual dirt particles. The percentage filter coverage as well as the classification can be carried out, for example, by means of VDA 19.

Calculation example:

Mean value g/sample acc. to AATCC TM 212: 0,25 g

Percentage estimate of all detectable components:

85.2% PET (5.2 µm to 1,002 µm)

10,8% PA (24,5 µm to 504,9 µm)

2.0% Cotton

2.0% Residual dirt

Percentage total identified microplastics from textile source: 96 %

Estimated total mass of microplastics from textile source:

(0,25g / 100) * 96 = **0.24 g (mL)**

d) Calculation of MLC-Index®:

The MLC-Index® describes the microplastic release in mg/m² cleaning textile surface during a lifetime simulation of 20 treatment cycles (ct) according to ISO 23231 (accelerated test of abrasion as well as washing resistance).

Calculation of the MLC-® index:

MLC-Index®:

Microplastic (M) loss (L) of cleaning textiles (C) of one square meter of the cleaning textile surface:

$$\text{MLC-Index} = \frac{m_L}{L \times W \times c_t}$$

m_L	Micropolymer weight loss total after c_t
L	Length of cleaning textiles
W	Width of cleaning textile
C_t	Total tested cleaning/laundry cycles (25 cycles accelerated testing ISO 23231)

Result: MLC-INDEX®: ____ mg/m²

e) Report:

The test report should include the following information:

- Image documentation of the tested samples
- Sample name
- Test date
- Information on the inspection body and responsible persons
- If necessary, deviations from the final product in the case of manufactured and scaled sample specimens.

- Indication of all reference standards used for lifetime simulation and determination of microplastic release from textile source.
- Measurement results of all specimens of length, width, and calculated specimen surfaces
- Estimated total mass of microplastic release from textile source (mL in g)
- Calculated MLC-Index® in mg/m²
- Comprehensible information on the basis of calculation
- Estimation of the measurement uncertainty
- Information on the calibration of the measuring device and the recovery rate of the selected filtration system and the coupled detection method
- Information of particle range and limit of detection of used microplastic detection method
- Deviations from reference standards

f) Rating / Interpretation of MLC-Index®:

This rating scale is from class A to class C, whereby A indicates low-emission textiles and C covers textiles with rather above average emissions.

Rating Scale: