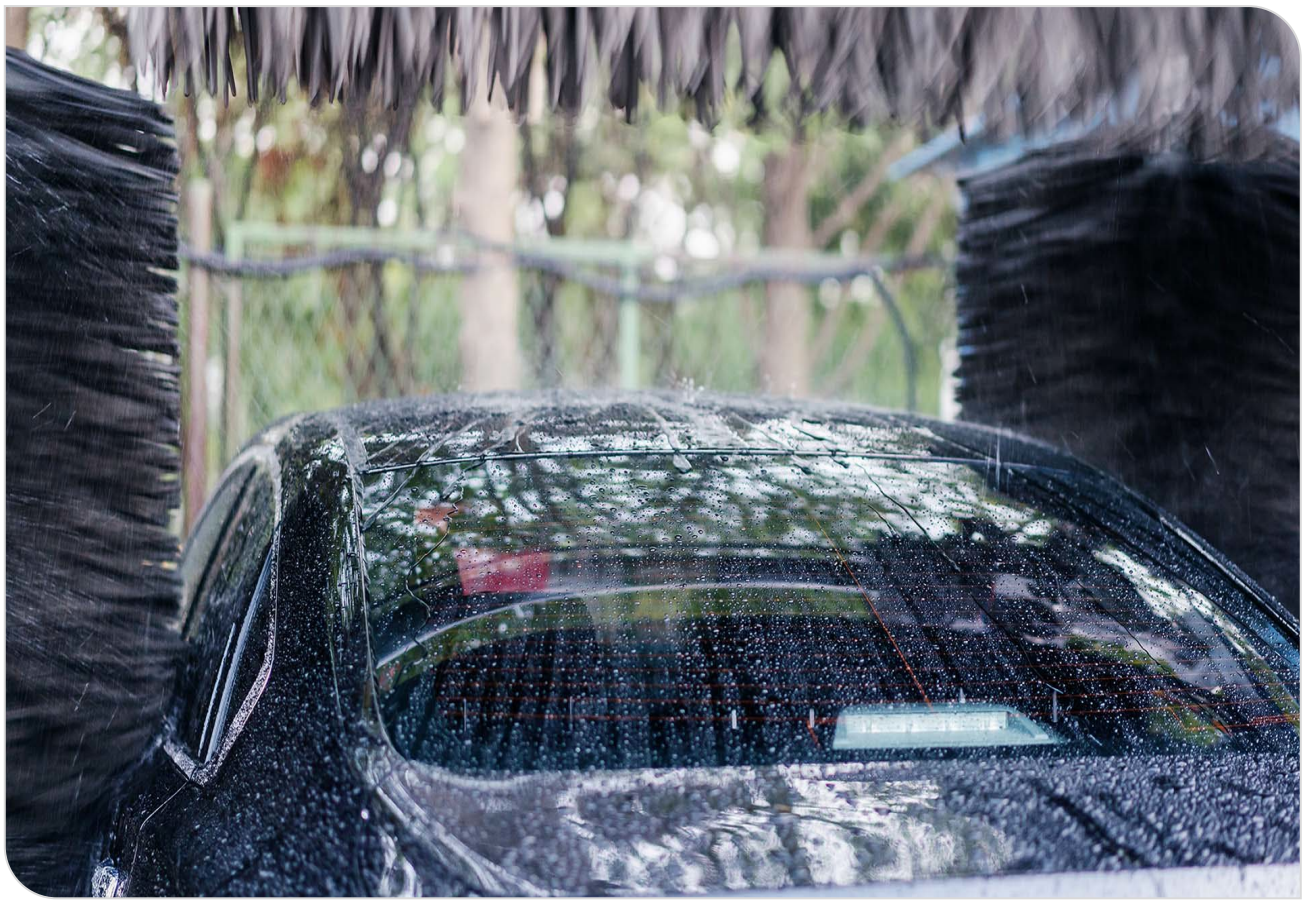
About Nordic Swan Ecolabelled

Wash installations for vehicles



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Nordic Ecolabelling

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 Summary

Wash installations for vehicles affect the environment through considerable consumption of water and chemical products, and through discharge of contaminated wash water and use of energy. Effluents containing undesirable chemicals, metals and oil can be significantly limited by choosing specifically adapted care products, tailoring the wastewater treatment technology to the washing method, and having sound procedures in place for operation and maintenance.

The purpose of this document is to present the background to the criteria for Nordic Swan Ecolabel wash installations for vehicles.

The document explains why Nordic Ecolabelling has chosen to ecolabel wash installations for vehicles and gives the background to the individual requirement. The criteria focus on:

- The design of the wash installation and water treatment unit
- Reduced effluents
- Reduced water consumption
- Requirements regarding chemical products
- Requirements regarding recycling and reuse of packaging for chemical products
- Reduced energy consumption
- Requirements for procedures to ensure proper operation and maintenance

Key changes in this generation are:

- Stricter requirements for effluents and water consumption
- Introduction of a requirement for 100% Nordic Swan Ecolabelled care products and cleaning products for cleaning of wash installations
- Introduction of requirements for recycling and reuse of packaging for chemical products
- Introduction of requirements to reduce the energy consumption.

The requirements regarding chemicals in care products and cleaning products for cleaning of wash installations, have been removed in this revision of the criteria as they are unnecessary due to the new requirement of 100% Nordic Swan Ecolabelled products.

The key changes in the criteria described above will contribute to less environmental impact from wash installations for vehicles certified with the Nordic Swan Ecolabel.

2 Environmental impact of wash installations for vehicles

As a basis for the criteria development, Nordic Ecolabelling has performed a MECO-analysis and a RPS-analysis to evaluate the environmental impact from wash installations for vehicles.

The purpose of the MECO-analysis (materials/resources (M), energy (E), chemicals (C) and other impact areas (O)) is to assess all the relevant environmental aspects throughout the life cycle of the wash installation, ref. MECO-analysis for Transport Wash Installations[1].

Nordic Ecolabelling sets requirements concerning the topics and processes in the life cycle that have a high environmental impact– also called hotspots. A 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.

In the table below, the summary of the RPS is given. The aspects where the assessment concludes with high or medium RPS are marked with green and are those covered by requirements in the criteria.

Table: Summary of the RPS analysis.

Lifecycle stages	Area and assessment of R, P, S (high, medium or low)	Comments
Raw materials for construction of the wash installation		
	Production of steel, other metals, cement, sand, and crude oil for plastic R: High P: Medium S: Low	Environmental impact from mining/production/extraction of raw material is significant, but the steerability is considered to be low, and thus making requirements within this area is not suitable for the wash installation criteria.
	Energy to produce metals, cement and other raw materials R: High P: Medium S: Low	Energy consumption is a relevant parameter in much of the life cycle of a wash installation. Extracting materials for the installations themselves (extraction of iron and other metals, cement and other raw materials) is considered to consume significant energy although there are little data available on the magnitude of this energy consumption. The steerability is considered to be low, and thus making requirements within this area is not suitable for the wash installation criteria.
	Chemicals used for mining and extraction of raw materials R: High P: Medium S: Low	Chemicals are used in producing materials/mining and in the production of machines/equipment, but the steerability is considered to be low, and thus making requirements within this area is not suitable for the wash installation criteria.
Production		
	Use of materials for building the installation, machinery and water treatment unit R: Medium P: Medium S: Low	There is an environmental impact from the consumption of the use of materials for the installation, machinery and water treatment unit, but the steerability is considered to be low, and thus making requirements within this area is not suitable for the wash installation criteria
	Construction energy. Energy to produce washing and water treatment chemicals R: High	Energy consumption is a relevant parameter in much of the life cycle of a wash installation. Building the installation is considered to consume significant energy as well as the manufacturing of the washing/polishing and water treatment chemicals (although there is little data available on the magnitude of this energy consumption). The steerability is considered to be low, and thus making

[1] MECO for Transport Wash Installations, Anita Øygarden Burgos and Lena Stenseng, 10.05.23

	P: Medium S: Low	requirements within this area is not suitable for the wash installation criteria.
	Production of building materials and chemical building materials R: High P: Medium S: Low	Chemicals are used in building the installations (e.g. in chemical building products). But the steerability is considered to be low, and thus making requirements within this area is not suitable for the wash installation criteria.
	Design and construction of the wash and water treatment installations R: High P: High S: Medium	Measures to reduce effluents containing heavy metals and oil include choosing the right care products and adapting the water treatment technology to the washing method. The water treatment technology must be dimensioned according to the washing method and the washing frequency at the site. It is important that eventual sludge and oil separator (s) are designed for the needed capacity. It is also important to have the right operational and maintenance procedures in place for the wash installation.
Use phase		
	Wear and tear of brushes and mechanical components in the transport wash and water treatment installations R: Medium P: Medium S: Low	There is an environmental impact from the replacement of brushes, mechanical components etc. due to wear and tear, but the steerability is considered to be low, and thus making requirements within this area is not suitable for the wash installation criteria
	Energy consumption for fans, brush machine, pumps, heating of wash installation and water treatment buildings and the water itself, lightning, automatic doors, heating cables etc R: High P: Medium/high S: Medium	Energy consumption is a relevant parameter in much of the life cycle of a wash installation. Operating the facilities (fans, brush machines, pumps, heating the enclosed wash installation and the water, and the water treatment system) consumes energy. In addition, water production and treatment of the wastewater require energy. Nordic Ecolabelling has introduced a new requirement on thermostatically control of heating.
	Water consumption R: High P: High S: High	The amount of water in use when washing a car is up to 400-500 litres. Washing of buses, trucks, trains and other rail transport and airplanes also affects the environment through extensive use of water. In addition, treating/cleaning of water consumes energy and chemcials. The amount of water consumed in washing installations varies depending on the vehicles , whether the washing is manually or automatic and with the geographical location. Total consumption of tap water per washed vehicles is considerably lower in installations where the water is recirculated than in installations where the water is not recirculated, for instance less than 90 litres tap water for cars. It is possible for Nordic Ecolabelling and licensees to steer in the direction of lower water consumption by encouraging wash installations where the water is recirculated. The water consumption requirement for Nordic Swan Ecolabelled wash installations has therefore been set so low that installations must have installed a solution that recirculates treated wastewater in order to fulfil the requirement. In addition, installations are rewarded if they have even lower water consumption
	Consumption of chemical products R: High P: High	Chemicals are consumed in the use phase for operating the installation. Large quantities of care products, cleaning products for cleaning of the wash installation and water treatment products are used to wash and care for the vehicles and the wash installation itself and to operate the water treatment units. Residues of the

	S: High	chemicals end up in the sludge and the wastewater. Raw materials and energy are consumed to produce the chemicals To reduce the amounts of chemicals that are harmful to health and environment ending up in the sludge and wastewater Nordic Ecolabelling has in this generation introduced a new requirement stating that 100% of the care products and the cleaning products used for cleaning of the wash installation, must be ecolabelled.
	Emptying of toilet systems and risk for spread of infections R: High P: Medium S: Medium	A description of the emptying system for toilets on buses, trucks and trains and a description of how customers are informed if there is no emptying system available, is required to avoid possible risk for spread of infections by contamination of the recycled water when empying toilet systems.
	Increased use of tap water and need for double water systems, for cleaning of special vehicles R: High P: Medium S: Medium	A declaration on how the vehicles requiring special hygiene are washed, is required. This is because when vehicles requiring special hygiene are washed, only tap water may be used, i.e., no use of re-circulated water. However, the total emission values per vehicle must be met. If the plant washes both vehicles that demand extra hygiene and vehicles that may be washed with re-circulated water, the plant shall be equipped with a so-called double system.
End of life		
	Sludge and oil disposal R: High P: Medium S: Medium	A sludge and oil separator is considered as the minimum wastewater treatment for wash installations, and this is usually a national regulatory requirement in the Nordics. The only exception is for biological treatment units where a sludge and oil separator is not required. It is important that the eventual sludge and oil separator (s) is dimensioned for the water capacity needed in the wash installation, and that it is emptied according to need. Nordic Ecolabelling requires confirmation of and documentation for that the slugde and oil separator(s) is dimensioned according to the wastewater capacity. Nordic Ecolabelling also requires that a procedure is in place to ensure emptying of the separator according to needs. The sludge from water treatment equipment with possible residuals of chemicals, metals and oil and the oil from the separator must be handled as hazardous waste and must be collected and processed at approved facilities. Nordic Ecolabelling requires documentation for the approval of both the transportation company and the facility.
	Waste handling of packaging for chemical products R: High P: Medium S: Medium	Resources and energy can be saved by recycling or reusing packaging. Therefore, empty packaging from care products, cleaning products for the wash installation and water treatment chemicals must be sorted by source and delivered to a recycling facility for material recycling. Delivery of the empty packaging to a facility for reuse of the packaging itself, will be rewarded by points.
	Emissions from transportation of sludge, oil and general waste R: Medium P: Low S: Low	Waste of sludge and oil from the water treatment equipment must be collected by a contractor and transported to a facility for handling of hazardous waste. The general waste from the operation of the wash installation will also be collected and transported to waste facilities. All this transportation will cause emissions to air. The steerability is considered to be low, and thus making requirements within this area is not suitable for the wash installation criteria
	Chemicals (also including possible microplastic), metals and oil residues in wastewater	Chemicals are consumed in the use phase for operating the installation. Large quantities of care products, cleaning products for cleaning of the wash installation and water treatment products are used to wash the vehicles and the wash installation itself and to operate the water treatment units. Residues of the chemicals end

	R: High P: High S: High	up in the wastewater together with oil and metals residues from the dirt that is cleaned off the vehicles. To reduce the amounts of chemicals that are harmful to health and environment ending up in wastewater Nordic Ecolabelling has in this generation introduced a new requirement stating that 100% of the care products and the cleaning products used for cleaning of the wash installation, must be Nordic Swan Ecolabelled . To reduce the amount of heavy metals and oil residues from the wash installations, Nordic Ecolabelling has introduced stricter maximum levels for effluents of heavy metals and oil. Regarding possible microplastic in the wastewater, Nordic Ecolabelling has performed a search for possible information/reports/test results. Based on the fact that little information was found about possible microplastic in wash installations wastewater, Nordic Ecolabelling has not made a requirement regarding microplastic emissions in this generation of the criteria, but will follow the topic closely

3 Other labels

In Sweden is an industry initiative run by the Organization of Sweden's Service Stations called "Hållbar biltvätt", for which the focus is to prevent people from washing their vehicles on the streets[2], but instead use wash installations and hereby avoid that effluents from the washing water run directly into sewer drains or into the ground. Wash installations can be certified, and criteria includes that the facility is approved by the municipality and/or a paper on the municipality's target values and test of effluents[3].

In Norway there is also an initiative that is taken by employee and employer organisations and is called "Initiativ for bærekraftig bilvask"[4]. The main purpose is to ensure proper working conditions and to focus on orderly relationship between employees and employers.

There are no other ecolabelling systems for wash installations for vehicles in the other Nordic countries.

4 Justification of the requirements

This chapter explains the background to new and revised requirements, the chosen requirement levels and any changes compared with generation 3.

4.1 Definition of the product group

Wash installations for cars, buses, trucks, trains, other rail transport and airplanes can be Nordic Swan Ecolabelled.

[2] https://hallbarbiltvatt.se/
[3] https://hallbarbiltvatt.se/att-bli-medlem/
[4] https://brabilvask.no

The wash installations must be automated and/or manual, pre-programmed installations, meaning that the consumption of water and care products are controlled by time or quantity.

The owner and/or operator of the wash installation (for example a petrol station) is the licensee/license holder.

Licences are issued to each individual wash installation. If a chain/group has several wash installations, a licence will be awarded to each wash installation, on the precondition that each wash installation meets the requirements.

A total supplier of washing units, chemical products and water treatment units may obtain a **basic licence** for their washing technology. If the supplier uses an external chemical supplier, it must be stated on the licence. The wash installation where the initial sampling took place must also be stated on the licence.

Wash installations for containers and for use in other services, such as reconditioning and repairs, are not covered by the criteria. Graffiti wash installations are also not covered by the criteria.

Nordic Ecolabelling was considering including requirements for stationary steam wash in this generation. A criteria set was prepared as a part of the proposal for criteria and sent out in the consultation period. However, we received very few comments which indicates relatively low interest within this segment of the industry today and decided not to include stationary steam wash in the criteria document.

4.2 Definitions

Wash installation	The wash installation means the physical wash hall including washing machines, wastewater treatment, heat system, lighting system, automatic doors, ventilation, etc. It also includes outdoor installation connected to the wash hall, such as outdoor lightning and de-icing facilities.
Care products	Products that have a cleaning function (e.g., degreasers, shampoos, and windscreen washer fluids) and/or polishing function (e.g., waxes or polishes) for the care of cars, buses, trucks, trains and other rail transport and airplanes
Chemical product	In these criteria chemical product means care products, cleaning products for the wash installation and water treatment chemicals.
Car	Car/Passenger car designed for the transportation of no more than 9 people including the driver.
Bus	A vehicle that is registered as a bus for more than 9 persons.
Truck	Truck means a vehicle larger than 3.5 tonnes, with or without trailer.
Basic licence holder	A total supplier of washing units, chemical products and water treatment units may obtain a basic licence for their washing technology. If the supplier uses an external chemical supplier, it must be stated on the licence.
Vehicle unit (vu)	One vehicle unit (vu) is a vehicle, truck, or bus, with a length of 12 metres. - 0.5 vu is a van or minibus, for instance, with a length of about 6 metres. - 1.5 vu is, for instance, an articulated bus or a semi-trailer rig with a length of about 18 metres. - 2 vu is a truck plus trailer with a length of about 24 metres.

4.3 Information regarding basic licence and overview of exemptions

Basic licence:

A total supplier of washing units, chemical products and water treatment units may obtain a basic licence for their washing technology system.

If the supplier uses an external care product supplier, it must be stated on the licence which care product supplier the basic licence holder has a contract with, and which care products are tailored to the treatment technology and wash installation, and thus covered by the basic licence.

When applying for a basic licence, the applicant must refer to a physical wash installation where the initial sampling has been conducted. The installation where the initial sampling took place must also be shown on the licence.

Exemptions for specific types of licence:

The licensees must meet all the requirements in the criteria document, but there are some exemptions shown in the table below.

Table Exemptions for specific types of licence.

Type of licence holder	Exempted from following requirements
Licence holder using a basic licence	- O5 Initial sampling - O9 Water treatment chemicals The licensees that use a basic licence are not required to submit documentation for each requirement above, where the basic licence holder has already submitted documentation.
Basic licence holder	- O11 Recycling of packaging for chemical products - O12 Fossil fuel - O13 Thermostatically control of heating - O14 Automatic door closure - O15 Sludge and oil emptying - O16 Emptying systems for toilets - O17 Special vehicles - O18 Summary of points - O23 Information on use of customers' own products/degreasers - O25 Customer information - P1- P7, all point score requirements But the basic licence holder must document the number of points achieved regarding water consumption (P2).
Licence holder for trains or other rail transport or airplanes	- O4 Manual wash installations - O23 Information on use of customers' own products/degreasers

4.4 Design of the wash installation

Background to requirement O1

Both automated and manual pre-programmed wash installations can be Nordic Swan Ecolabelled. There are many different solutions for treating effluents from wash installations, such as chemical flocculation, biological treatment and filter treatment.

Nordic Ecolabelling consider a system for sludge and oil separation with sand trap to be a minimum requirement for the operation of a wash installation, since this is usually a national regulatory requirement. The only exception is for biological treatment units where a sludge and oil separator is not required. It is up to the owner and/or operator of the wash installation to decide which water treatment solution to use over and above a sludge and oil separator with sand trap.

To achieve a good washing result with a limited environmental impact, it is important that the choice of care products, dosing and application time are tailored to each other, but also to factors such as dirt and temperature. High-pressure washers without brushes normally require a larger dose of care products and more water than machines that wash using brushes. Thus, there is no requirement concerning dosing of care products since Nordic Ecolabelling considers requirements for water consumption and effluents to be more important. In addition, wash installations have automatically controlled dosing, and are set to dose the optimum quantity of care products for the washing method in question giving little steerability in setting dosing requirements.

The wastewater treatment technology must be dimensioned according to the washing method and the washing frequency at the site, to treat the wastewater to a satisfactory level in terms of oil and heavy metal content.

Background to requirement O2

Nordic Ecolabelling wishes to have a good overview of the wash installation and the water treatment system to ensure that the installation functions well. It is also important that the company has a good overview of the installation, the water and wastewater system, and the location of the water meter, energy meter and sampling points.

Sludge and oil separator(s) with sand trap and water treatment equipment must not be used to treat surface water (i.e., rainwater and meltwater from nearby roofs and ground). The water treatment equipment is to be designed for the maximum water flows used for washing the vehicles. A water treatment unit will therefore be unable to cope with the addition of rainwater and melting snow from the surrounding area. The channelling of water from these sources can also cause contaminants to be flushed into the drainage system.

Sites with some other activity (such as a workshop) may channel their wastewater to the water treatment unit if the supplier of the treatment system and the authorities approve this.

Sampling points:

In order to check that effluents do not exceed permitted levels, it must be easy to take representative samples from the wastewater. If taking samples is difficult, there is a major risk that the checks will be lacking/insufficient.

The sampling points must be located such that the samples are taken from the wastewater that is channelled away from the wash installation, i.e., after the wastewater treatment system.

The sampling points must be easily accessible, and the location must be clearly marked on a drawing/map of the wash installation.

Water meter:

A water meter is to be located so that it measures all tap water consumption in the wash installation. Water used for cleaning the installation must also be measured. If there is more than one washing unit in the same installation, each unit must have a separate water meter and a separate counting machine for the vehicles.

For the water supply, for any re-circulation of water and for the wastewater from the installation, it must be made clear where the water supply comes in, where it is re-circulated and where it is channelled away from the installation.

Background to requirement O3

Wash installations that re-circulate water are more vulnerable to the occurrence of anaerobic conditions in the system and thus the growth of algae and bacteria. To avoid this, the installation must be designed to prevent such conditions from occurring. One measure, for example, may be to pump air into the water during the water treatment process.

Background to requirement O4

To reduce any health risks, re-circulated water may not be used in manual wash installations. Water from manual wash installations may contain high concentrations of chemicals and microorganisms.

At a manual wash installation vehicles are washed manually by customers or professional cleaners, who decide on how much of washing is needed. Customers/professional cleaners can choose wash programmes (e.g., degreasing, hot wax and/or wax polish). Nordic Ecolabelling would like to see the quantity of water and care products used regulated, and therefore sets the requirement that the use of care products and water consumption must be time-controlled or dosage-controlled.

Wash installations for trains and other rail transport or airplanes are exempt from the requirement since they are generally automated.

4.5 Water consumption and effluents

Background to requirement O5

The purpose of initial sampling is to verify that the installation has technology in place that will function successfully at all times. This check must show that the installation meets the Nordic Swan Ecolabel's effluent requirements over time.

Sampling must be performed between 1st of November – 30th of April, since there is more dirt on the vehicles during this period and installations require higher doses of care products to function satisfactorily. Wash installations that are due for renewal must also perform a new initial sampling when renewing their licence.

Wash installations that make use of a basic licence are exempted from the requirement regarding the initial sampling, since this will already have been performed by the basic licence holder.

Sampling must be performed when at least 10% of the annual vehicles figure have been washed and after emptying the sludge and oil separator. The results from this check will form the basis for a Nordic Swan Ecolabel licence application. The above criteria means that once the sludge and oil separator has been emptied, at least 10% of the annual figure for vehicles must have been washed before the sampling takes place. For example, if a wash installation washes 5,000 vehicles a year, at least 10% (500 off) must have been washed since the most recent emptying and before the sampling is conducted.

This is to ensure that effluent measurements are taken from the water treatment unit after it has been in operation for a while. The measured values will thus prove whether the water treatment unit is working properly or not.

Wastewater samples are taken with automatic and flow proportional equipment or manually from running wastewater. Two wastewater samples must be taken within the period 1st of November – 30th of April, and there must be a minimum of one month between the two samples.

Water consumption is to be measured for seven days during the period 1st of November – 30th of April.

Licence applicants using technology from a basic licence holder, do not need to perform the initial sampling, since it has already been documented that the technology works to a satisfactory degree, and the water consumption has also already been documented.

Background to requirement O6

The most common contaminants from wash installations for vehicles are lead, chromium, nickel, cadmium, and zinc, in addition to mineral oil. In generation 4 of the criteria also limits for antimony and di-2-ethylhexyl phthalate (DEHP) are included. Antimony may be included in the brake pads on cars and trains. Particles of antimony can stick to rims and tires when the brakes are used, and hereafter washed of[5]. The phthalate DEHP may be washed out from plastic part

[5] Råd vid mottagande av avloppsvatten från industri och annan verksamhet, Publikation P95, Svenskt Vatten, Mars 2019 (p95-2019-rad-vid-mottagande-av-avloppsvatten-fran-industri-och-annan-verksamhet.pdf (svensktvatten.se)).

of the car, e.g., from the bumper. Plastic materials are increasingly included in the body parts of cars[6].

The contaminants may come from the dirt washed off, which comprises particles from tyre wear, material from other transport and the roads, plus residues of fuel and exhaust gases. Added to this is the material in the wash installation itself, with galvanised materials and brass parts for example capable of releasing metals. Treatment of wastewater is a key factor in controlling emissions of metals and oil from wash installations. It is important that a Nordic Swan Ecolabelled wash installation's water treatment unit captures as many of these undesirable substances as possible before the wastewater is sent on to the municipal treatment plant. Wastewater from wash installations contains substances that may disrupt the water treatment process in municipal treatment plants and lower the sludge quality. Some substances may also have a negative impact on the ecosystems of the water recipient.

Climatic differences in the Nordic region leads to different washing processes. In Finland, Norway and the majority of Sweden, the vehicles are dirtier during the winter (due to the use of studded tyres) and the use of salt on the roads, which then accumulates in the water systems of the wash installations. The requirement concerning effluents is therefore different for Denmark and the southern part of Sweden (zone 1) than for the rest of the Nordic region (zone 2). For more information about the zones, please see under requirement O7.

When the generation 4 of the criteria were finish, the Danish Environment Agency was about to revised their Connection instructions (Tilslutningsvejledning) and shall hereafter revised Paradigm for car washes (Paradigme for vaskehaller). Therefore, unfortunately, Nordic Ecolabelling cannot use these directly for setting the limits in zone 1 in this generation of the criteria. However, we have received the draft of the suggested limits (unit: µg per liter) for the coming revised Connection instructions from the Danish Environment Agency. From this information and information from the Danish Environment Agency that they have used 150 liters of water per car wash for calculation in the current Paradigm for car washes Nordic Ecolabelling have calculated the limits into the unit mg per car wash. The limits for cars in zone 1 are a little lower than the calculated limits, except for zink which is higher.

Experience from Nordic Swan Ecolabelled wash installations for vehicles shows that the requirement levels for effluents can be tightened in this generation 4 of the criteria. Limit values for all specified substances in effluents, except antimony (for trains), have been tightened, and requirements for DEHP and antimony have been added for all vehiclesation. The level of DEHP has been set at the same level as the Danish municipalities recommend[7]. The level of antimony has been set at the same level as recommended in the guideline for trains in Sweden[8]. In generation 4 of the criteria the limit values for Cd, Zn, Cu, oil and ∑ Pb, Ni and Cr are stricter than in the guidelines for wash installations

[6] Paradigmer for tilslutningstilladelser af spildevand til spildevandskloak for bilvaskehaller og vaskepladser, Vejledning nr. 42, Miljøstyrelsen, Januar 2020 (Rapport (mst.dk)).
[7] Paradigmer for tilslutningstilladelser af spildevand til spildevandskloak for bilvaskehaller og vaskepladser, Vejledning nr. 42, Miljøstyrelsen, Januar 2020 (Rapport (mst.dk)).
[8] Råd vid mottagande av avloppsvatten från industri och annan verksamhet, Publikation P95, Svenskt Vatten, Mars 2019 (p95-2019-rad-vid-mottagande-av-avloppsvatten-fran-industri-och-annan-verksamhet.pdf (svensktvatten.se)).

from Svenskt Vatten[9] and Ministry of Environment of Denmark[10], however the limit is the same for antimony and DEHP.

Sampling is to take place at a point after the wastewater has passed through the water treatment equipment but before the connection to the municipal wastewater network/water recipient, where the collected wastewater from the wash installation passes. Water turbulence is important at the sampling point, to avoid samples from layered water.

The sampling is to be conducted during the period 1st of November – 30th of April, and after at least 10% of the annual vehicles figure has been washed after emptying of the sludge and oil separator.

Background to requirement P1

Phthalates are used chiefly as plasticisers in plastic and can be found in many products that are used on a daily basis. The phthalates can be found in plastic, primarily PVC (for example construction materials, flooring and roofing, cables).

Many phthalate compounds have undesirable effects on health and the environment. Some phthalates are inscribed on the EU's priority list of substances that should be investigated more closely for endocrine disruptive effects. Di-2-ethylhexyl phthalate (DEHP), dibutyl phthalate (DBP) and butyl benzyl phthalate (BBP) are classified as toxic and specifically toxic to reproduction. They may damage fertility and the unborn child. Diisobutyl phthalate (DIBP) is on the EU's Candidate List of Substances of Very High Concern. Di-2-ethylhexyl phthalate (DEHP) has also been recorded in wastewater from wash installations and is suspected to derive from soft PVC materials on the underside of the vehicle. Denmark in particular has been monitoring di-2-ethylhexyl phthalate in effluents from wash installations.

Microplastics[11] are very small fragments of plastic material, less than 5 mm. They can be harmful to health and the environment due to their size, surface properties and resistance to degradation. They have been found at sea in sediments, sludge from water treatment plants, agricultural soil, Arctic Sea ice as well as Antarctic freshwaters. Microplastics have been detected in various aquatic organisms across the food chain, from zooplankton to vertebrates, and in organisms in the soil. Currently, there are insufficient scientific knowledge and disagreement about the effects of microplastics, especially under natural conditions. Nordic Ecolabelling applies the precautionary principle and strives to limit the release of microplastics where possible.

Regarding possible microplastic in the wastewater from wash installations for vehicles, Nordic Ecolabelling has performed a search for possible information/reports/test results. Based on the fact that little information was found about possible microplastic in wash installations wastewater, Nordic Ecolabelling has not made a mandatory requirement regarding microplastic

[9] Råd vid mottagande av avloppsvatten från industri och annan verksamhet, Publikation P95, Svenskt Vatten, Mars 2019 (p95-2019-rad-vid-mottagande-av-avloppsvatten-fran-industri-och-annan-verksamhet.pdf (svensktvatten.se)).
[10] Paradigmer for tilslutningstilladelser af spildevand til spildevandskloak for bilvaskehaller og vaskepladser, Vejledning nr. 42, Miljøstyrelsen, Januar 2020 (Rapport (mst.dk)).
[11] Nordic Swan Ecolabel webtext: https://www.nordic-swan-ecolabel.org/nordic-ecolabelling/environmental-aspects/chemicals-nano-microplastic/microplastics/

emissions in this generation of the criteria but has made a point requirement instead. The selection of the Pyr GC-MS test method is based on its capability to detect minute quantities of particles and its potential for quantifying rubber particles originating from tires and road wear. This method has an advantage over other test methods, like μ-FTIR and μ-Raman, as it can detect microplastics that are concealed amidst a variety of other particles, a common challenge encountered in the analysis of environmentally realistic samples.

A point score requirement is set because Nordic Ecolabelling would like to gain more knowledge about phthalates and microplastic levels in wastewater. Measurements should be taken before and after the water treatment unit, in order to see the effect of the treatment. For most biological treatments it is only possible to take water samples after treatment. It is unknown to Nordic Ecolabelling if water treatment methods are effective in capturing phthalates and microplastics and hope to get more information by setting this point score requirement.

Background to requirement O7

There are wide variations in water consumption, and it is possible for Nordic Ecolabelling to make a difference by requiring reduced water consumption.

In Denmark, water is considered a scarce resource, which means there is a strong commitment to reducing water consumption. Historically there has been less focus on reducing water consumption in Sweden and Finland, and even less focus in Norway. This is reflected in the water treatment technology used and the willingness to invest in water treatment solutions where the water is re-circulated. However, due to climate change, it is likely that all the Nordic countries in the future will experience periods of drought and limited water courses. There should therefore be focus on limiting water consumption in all the Nordic countries.

Climatic differences in the Nordic region leads to different washing processes. In Finland, Norway and the majority of Sweden, the vehicles are dirtier during the winter (due to the use of studded tyres) and the use of salt on the roads, which then accumulates in the water systems of the wash installations. Higher chemical consumption and greater quantities of salt require larger water treatment units and slightly greater water consumption to keep the re-circulated water at a satisfactory level of quality (applies both to biological and chemical water treatment units). The requirement concerning water consumption is therefore different for Denmark and the southern part of Sweden (zone 1) than for the rest of the Nordic region (zone 2).

The distinction between zone 1 and zone 2 is based on the annual average temperature in Sweden. One can see that the highest annual average temperature can be found in Skåne and Blekinge and extends northwards along both the east and west coast. At the same time, the annual average temperature is lower inland[12]. Therefore, region Skåne, region Blekinge, region Halland and

[12] Månads-, årstids- och årskartor, SMHI (Sveriges meteorologiska och hydrologiska institut), https://www.smhi.se/data/meteorologi/kartor/normal/arsmedeltemperatur-normal

region Kalmar län is included in zone 1 whilst the other regions instead belong to zone 2.

Different washing methods involve very different water consumption. High-pressure washing uses as much as 300 litres of water to wash one car. If the installation does not re-circulate water, this represents considerable consumption of tap water. If the installation does re-circulate the water, tap water consumption is around 60-80 litres.

It is important that the quality of the washing is at a satisfactory level. There is a limit for how low the water consumption can be and still maintain a good quality.

The consumption can be significantly reduced by installing water treatment solutions where the water can be re-circulated. The Swedish Environmental Protection Agency assessed that a maximum amount of water sent to the drainage system per washed car of around 50 litres could be obtained with a re-circulation level of 80%[13]. This limit was considered too strict in the requirement in relation to normal water consumption based on license data.

At wash installations for buses and trucks, it is generally the case that tap water is only used for brush washes and re-circulated water for undercarriage cleaning for high-pressure washers. This tends to give a consumption figure of 150-250 litres per 12 metres (1 vehicle unit). If tap water is also used for high-pressure washers, water consumption rises to around 1100 litres per wash. In general, truck use more water than washing of cars. Buses are often washed every day, so they are not so dirty as trucks and the washing goes quickly.

Most truck wash halls have combined manual and automatic washing, e.g., flushing (to remove sand, gravel and dirt), which may be manual, and then automatic washing. The water consumption from all parts must be included in the calculation of water consumption. Most trucks have the size of 1½ vehicle unit.

Water used to fill up the system after emptying can be excluded from the calculation of water consumed, on condition that no water escapes during filling and that the installation can prove when the system has been emptied (for example via a receipt or similar document).

If rainwater is collected and used for washing, the rainwater can be excluded from the calculation of water consumed. Use of rainwater limits the use of tap water and may also limit the load on sewage systems during heavy rain, which are becoming more frequently in the Nordic countries due to climate changes. If rainwater is used and deducted from the water consumption, this must be stated in the application.

Requirements have been set for sampling points and sampling periods.

Water consumption is calculated as the number of litres of tap water consumed per wash, calculated as an annual average. The figure for tap water consumption is shown on water meters connected to the wash installation.

[13] Utvärdering av miljöanpassade fordonstvättar ut ett bredare perspektiv, IVL Rapport B1554, IVL Svenska Miljöinstitutet AB, 2004.

The water consumption in manual wash installations may, for example, be controlled by having water consumption pre-programmed. To reduce the risk of health hazards, re-circulated water is not to be used in installations for manual washing. Re-circulated water may contain high concentrations of chemicals and microorganisms.

During the initial sampling, the water consumption is measured over a period of 7 days. Water consumption per transport is calculated by dividing water consumption over the period of a week (7 days) by the number of transports that were washed during that same period.

The limit value for water consumption for trains and other rail transport is based on data gathered from a handful of train wash installations in the Nordic region. The requirement means that the water must be recycled. Water vapour used for de-icing should not be included in the calculation.

The limit value for water consumption for airplanes is set as the same level as for trains and other rail transport. The water consumption shall be calculated per 12 meters of airplane body length.

Background to requirement P2

Nordic Ecolabelling wishes to focus on the water consumption of the wash installation and the licensee to be more aware of the installation's water consumption and opportunities to reduce it. Therefore, up to 3 points may be achieved for water consumption below the mandatory requirement O7.

If rainwater is collected and used for washing, the rainwater can be excluded from the calculation of water consumed. Use of rainwater limits the use of tap water and may also limit the load on sewage systems during heavy rain, which are becoming more frequently in the Nordic countries due to climate changes. If rainwater is used and deducted from the water consumption, this must be stated in the application.

4.6 Chemical products

Background to requirement O8

Chemical products are used to clean and/or polish the vehicles, to clean the wash installation itself and to treat the water. Chemical products used in conjunction with the washing process include:

- Cold degreasers
- Water-based degreasers (alkaline and non-alkaline)
- Micro-emulsions
- Shampoo and wash & wax shampoo
- Waxes
- Rinsing and drying agents
- Cleaning products
- Water treatment products

Even if chemical products used at a Nordic Swan Ecolabelled wash installation are not discharged directly into the drainage system, due to the water treatment system that all Nordic Swan Ecolabelled wash installations are required to have, Nordic Ecolabelling considers it important not to use chemical substances that can have long-term damaging effects. The reasons for this are:

- Treated water from the wash installation will be channelled into the municipal drainage system or the water recipient.
- The wash installations are generally not entirely sealed. The contaminants that are separated in the water treatment units must generally be handled by a dedicated facility as hazardous waste.

The care products play a crucial role in ensuring that the vehicles are cleaned properly. However, they must not cause effluents containing substances that are harmful to health or the environment, and nor must they risk jeopardising the operation of the installation's water treatment unit or the municipal water treatment plant.

The choice of care products is usually determined by the kind of installation the customer has and thus which care products are tailored to the installation, and what agreements the supplier has with suppliers. The wash installation operator (licensee) may not decide which products are to be used, as this can be governed by agreements between the equipment supplier and the care product supplier.

Automated wash installations almost always use a series of care products that are tailored to each other. This means that it is not possible to simply replace single products in a series with another product. Entire series are often Nordic Swan Ecolabelled. Suppliers also have series where none of the products are Nordic Swan Ecolabelled.

To reduce the health- and environmental impact from chemicals, Nordic Ecolabelling wishes to encourage care product manufacturers to Nordic Swan Ecolabel their products.

Therefore, the following requirement has been introduced: 100% of the care products and cleaning products for the wash installation itself to be used in a Nordic Swan Ecolabelled wash installation, must be Nordic Swan Ecolabelled.

Care and cleaning products for vehicles is not available with other type 1 ecolabels like EU Ecolabel or Blue Angel. Consequently, only Nordic Swan Ecolabelled products, are allowed. However, if other type I Ecolabels were to develop criteria and have licensed products for care and cleaning products for vehicles, Nordic Ecolabelling will, on request, assess the criteria and may accept the ecolabel if the requirements are equivalent to the requirements in the Nordic Swan Ecolabel.

A few times per year, typically 2-4 times annually, the wash installation itself and/or brushes used in the wash installation, need to be cleaned with special cleaning chemicals which are not ecolabelled. Such special cleaning chemicals used in small amounts, are excluded from the requirement of being Nordic Swan Ecolabelled due to limited environmental impact. Chemicals for graffiti removal cannot be Nordic Swan Ecolabelled and are also excluded from the requirement. Water treatment products cannot be Nordic Swan Ecolabelled but must meet the requirements in O9.

To ensure correct operation, it is important for the wash installation and for Nordic Ecolabelling to have an overview of the chemicals used in the operation of the installation.

Background to requirement O9

Experience from Nordic Swan Ecolabelled wash installations for vehicles shows that methods for combating microorganisms, which can cause problems such as unpleasant odours, include treatment using ozone (O_3), hydrogen peroxide (H_2O_2), sodium hypochlorite or UV radiation. Sodium hypochlorite in combination with organic matter in the water can cause unwanted organochlorides, such as organochlorine metabolites. Sodium hydroxide is used for pH regulation.

Sodium hypochlorite (which is an antibacterial agent) is considered inappropriate due to the risk of forming organochlorine metabolites. Chemical products for water treatment must therefore not contain organochlorine substances or reactive chlorine compounds that may form organochlorine metabolites.

Background to requirement O10

Up-to-date safety data sheets must be available for all the chemical products used at the installation. This is to ensure that the operators at the wash installation have available information regarding required personal protective

equipment, possible health hazards, proper storing etc. related to the chemical products in use.

Background to requirement P3

By only applying the amount of care products that is actually needed depending on the dirtiness of each specific vehicle, the amount of care products can be saved and hereby resources are saved.

4.7 Packaging

Background to requirement O11

To promote a circular economy, as much as possible of the material used for packaging needs to be recycled and kept in the material loop. This is to decrease the need of new resources and use of more energy, which is needed to produce new packaging.

Background to requirement P4

By reusing the packaging, even more resources and energy are saved compared to recycling of the packaging material and is thus an even better alternative for a circular economy. Most of the manufacturers of the care products, cleaning products for the wash installation itself and water treatment chemicals have, per today, not a functional working method on collecting packaging for reuse. However, there are a few companies that are collecting larger packaging to recondition and reuse them. Nordic Ecolabelling wants to reward this type of initiatives. To obtain points the packaging must be sent for reuse.

Direct refilling from tank truck is a method that is beneficial for eliminating packaging and therefore contributes to less use of materials.

4.8 Energy

Background to requirement O12

The requirement is set because Nordic Ecolabelling wishes to encourage a fossil-free operation.

The requirement does not apply to electricity from the grid or to district heating since the owner and/or operator of the wash installation cannot influence the fuel composition in the energy transformation. Regarding electricity, Nordic Swan Ecolabel does not recognize purchasing of green electricity documented with EU guarantees of origin as a way to promote fossil free electricity. Natural gas counts as fossil, but biogas may be used.

Background to requirement O13

One of the main sources of energy consumption in washing hall is heating. Therefore, the heating system of the wash hall should be thermostatically controlled to a maximum temperature of 15 °C. With a setting of maximum of 15 °C the actual temperature in the wash hall will be lower because of lost of heat each time door opens. But a thermostatically setting of maximum 15 °C is a

suitable temperature for maintaining function of washing installations and water treatment systems[14].

Cooling of the wash hall is not allowed, as it is assessed not necessary.

Background to requirement O14

In order to achieve satisfactory performance in the wash halls during the winter, a certain temperature must be maintained in the enclosed facility. To avoid unnecessary heating of the premises, particularly during the winter, enclosed wash halls must have a system of automatic door closure for periods where heating is required for satisfactory operation. This means that during warmer periods, for example in the summer, the doors to the wash installation do not need to be controlled automatically. For drive through wash halls a lot of the heat is quickly lost if doors in both ends are open at the same time, therefore doors must not be open at the same time.

Wash installations with fixed washing equipment, where trains, other rail transport and airplanes are driven through during the washing process, are exempt from the requirement. This is because the doors must remain open so that the airplanes and trains can run through the installation while being washed.

Also, wash tunnels for cars are exempt from the requirement. This is because multiple vehicles can be washed simultaneously, moving through the tunnel on a conveyor system. The doors are controlled automatically by the wash system and open and close as vehicles enter and exit. Due to the continuous flow of vehicles, the timing of door openings varies, and the doors are not designed to prevent one from opening while the other is open.

Background to requirement P5

Through energy mapping and energy audits, energy action plans can be implemented to identify issues related to low energy efficiency. They allow to set goals that can be considered as proven energy reduction commitments. By working with certifications of the wash installation in accordance with e.g., ISO 50001, or other acknowledged energy assessment standards, the hall is recognized as working with international climate goals to reduce its energy demand and/or implement energy efficient measures by introducing operational changes.

An energy mapping performed by a specialised third party allows trustworthy and efficient data extraction, and open possibilities to set more comprehensive energy requirements in the future.

Energy may be saved in the wash installation in various ways e.g., optimizing the dryer and other high energy demands in the wash installation, lowering the hall temperature, heat exchange ventilation, ensuring that doors are not open in both ends at the same time to avoid heat losses in the wash installation,

[14] Information from several license holders, January 2024.

thermostatically controlled frost protection for wash installations, automatic light control, LED lighting etc.

One energy audit and action plan can be conducted that covers several halls if at least washing technology, age of washing technology, isolation of the hall buildings and heating system are similar. If it is considered that the halls are very similar regarding areas that can affect energy consumption, then it will be possible to do one energy audit and action plan covering these halls.

Background to requirement P6

Nordic Ecolabelling wishes to focus on the energy consumption of the wash installation and urges the licensee to be more aware of the installation's energy consumption and opportunities to reduce it.

Data representing the energy consumption (kWh) is required per functional unit (washed car or 12 meters of washed train/airplane) in order to assess the energy consumption of the wash installation. However, also the size in m3 of the wash installation must be stated as this also may be a unit to assess the energy consumption of the wash installation. To be able to document the requirement the energy consumption of the wash installation must be measured separately from e.g., connected shops or workshops.

Nordic Ecolabelling intends to set a mandatory requirement to energy consumption in the next revision.

Background to requirement P7

The wash installation can achieve points by installed solar PV panels and producing its own electricity . PV is an abbreviation for PhotoVoltaic, which is materials and devices that convert sunlight into electrical energy.

The solar PV panels must be installed on the building, or in the immediate vicinity of the wash installation. To achieve points, the electricity must be used for operating the wash installation. In periods of surplus electricity, the electricity can be used elsewhere on the premises or be sold to the grid owner.

The locally produced electricity is set relative to the total electricity demand, and not the total energy demand, since solar PV replaces shares in the electricity demand and no other form of energy.

4.9 Special requirements

Background to requirement O15

To reduce the risk of tanks and containers in water treatment units with re-circulated water being contaminated with bacteria or heavy metals from sludge tanker trucks when emptying sludge and oil, the company that owns the sludge tanker truck must guarantee that the truck is not contaminated with heavy metals or bacteria.

It is important that sludge, oil, and other contaminants separated from the water treatment equipment, is processed in an environmentally appropriate way. This means that the collection contractors and the facilities that will be processing the waste must be officially licensed to do so. If the final processing of the waste is not correct/satisfactory, this undermines the purpose of water treatment at the wash installation since the environmental problem and environmental impact is simply shifted from the wash installation to the waste processing facility.

Background to requirement O16

To reduce the risk of the re-circulated water being contaminated with bacteria from toilets in buses, motorhomes, trains, or other rail transport there must be an emptying system in place that ensures toilet emptying without cross contamination. If there are no facilities for emptying toilets, the customer must be informed that their toilet cannot be emptied at the installation due to the dangers of spreading infections.

Background to requirement O17

Regulation (EC) No 852/2004 on the hygiene of foodstuffs aims to provide a higher level of protection for human life and health. Under the regulation, vehicles used for transporting food must be kept clean and in good condition, such that food is protected from contamination.

Since re-circulated water from vehicle wash installations is more prone to anaerobic conditions and thus blooms of algae and bacteria, only tap water is to be used to wash vehicles that require special hygiene levels.

4.10 Summary of points

Background to requirement O18

Point score requirements are set to make the criteria more flexible and to reward installations that have a better performance or introduce extra environmental measures.

Basic licence holders, who cannot achieve points on the requirements P1-P7 must still report on how many points are achieved in terms of water consumption (O7 and P2).

For newly built installations and refurbished installations that receive a licence outside the sampling period 1st of November – 30th of April, it must be documented in the next sampling period that the installation qualifies for enough points.

A maximum of 17 points can be achieved for automatic installations or combined automated and manual wash installations, a minimum of 5 points must be achieved. Manual installations can achieve a maximum of 16 points, a minimum of 4 points must be achieved.

4.11 Licence maintenance

Background to requirement O19

A responsible person is required to ensure that Nordic Ecolabelling's requirements are fulfilled throughout the entire validity period of the licence and to ensure that the annual follow-up and reporting is completed. The company may comprise several departments but should appoint just one person to be responsible for the licence and in contact with Nordic Ecolabelling. The company may internally split responsibility between different departments and several people.

A large turnover of staff can be a challenge in the industry. When a person who has had responsibility for producing documentation and carrying out annual reporting leaves, important experience may be lost. Passing on information and knowledge about the Nordic Swan Ecolabel to their successor, is thus vital.

Background to requirement O20

Many washing machines and water treatment units are so technically advanced that they require operation and maintenance of both the washing function and water treatment to be conducted in line with the supplier's instructions. Experience shows that this is a critical point for both the washing results and the quantity of effluents from the wash installations.

In addition to the often technical operational and maintenance instructions that come with washing and water treatment equipment for wash installations, there must be instructions in place that are tailored to the staff who are responsible for day-to-day operations. The instructions must be easy to understand and cover both the washing machine and the water treatment equipment including emptying of the sludge and oil separator(s).

The instructions shall/should state which actions/measures the staff are responsible for and which actions require the services of the relevant supplier. It must be made clear what procedures are in place to deal with non-conformities and changes, as well as operational stoppages, and how these are reported to Nordic Ecolabelling. The instructions shall also specify how often the system should be emptied and what indicates the need for emptying. It is of special importance that the sludge and oil separator(s) is emptied frequently to ensure a proper operation of the wash installation and the water treatment unit.

Background to requirement O21

Many washing machines and water treatment units are so technically advanced that they require operation and maintenance of both the washing function and water treatment to be conducted in line with the supplier's instructions. It is essential to ensure that employees involved in the daily operations have received proper training to fulfil their obligations. This is essential for both the washing results and the quantity of effluents from the wash installations.

Background to requirement O22

Chemical products must be stored in a way that contains discharges and allows minor spills to be channelled via the water treatment unit. In the event of major unexpected discharge, it must be possible to collect the chemical products, for example in the water treatment system's tanks or to tanks on an adjacent floor. Alternatively, the chemical products must be contained separately, for example in a bund that is able to contain the volume of the largest container plus 10% of the sum of the other stored volumes. Floor drains in storage rooms for chemical products must be connected to the water treatment system for the wash installation.

It is important that employees who are handling chemical products use personal protective equipment according to the recommendations in the safety data sheets.

Background to requirement O23

The customers must be informed that use of their own degreasers is not permitted. The water treatment system is tailored to a particular type of chemical products, so the use of other product types will disrupt the treatment process.

It is difficult to control whether the customers use own products, so it is important to inform about that this is not permitted. Use of own products is not applicable for trains, other rail transport and airplanes.

Background to requirement O24

After being washed in the installation the vehicles shall be as clean as if it had been washed in some other wash installation that uses equivalent methods of washing.

The definition of a "clean car/bus etc." is not easy since it is often a case of subjective judgements. The Nordic Swan Ecolabelled care products have already proven that they have satisfactory performance but, when washing in the wash installation, the whole picture must be considered.

In the absence of reliable and standardised testing methods for performance, the business must itself evaluate how the wash installation is just as good as other installations.

Nordic Ecolabelling requires that the company has implemented a customer complaint handling system to monitor the quality of the cleaning in the wash installation. To document your company's customer complaint handling, you must send in 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 send in 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.

Background to requirement O25

As part of the motivation for customers to use a Nordic Swan Ecolabelled wash installation, it is important to inform the customers of the fact that the installation is ecolabelled and what that implies when it comes to environmental impact.

Background to requirement O26

To monitor that all environmental requirements for the wash installation, are in line with the Nordic Swan Ecolabel requirements, information about the water consumption, energy consumption, effluents of ∑ Pb, Ni, Cr plus Cd, Zn, Cu, Sb, DEHP and oil and an overview of all chemical products used and the dates for sludge and oil emptying, must be compiled and sent to Nordic Ecolabelling annually by end of April.

A licence holder that is using a basic licence is exempted from the effluent requirement, as it is seen as sufficient that the basic licence holder is taking samples from the reference installation that is included in the basic licence and from 10% of the installations that make use of the basic license.

5 Changes compared to previous generation

Figure 1 Overview of changes to criteria for Wash installations for vehicles generation 4 compared with previous generation 3.

Requirement generation 4	Requirement generation 3	Same requirement	Change	New requirement	Comment
O1	O1	X			Slight adjustment.
O2	O2	X			Slight adjustment.
O3	O3	X			-
O4	O4	X			-
O5	O5		X		It is now not possibel to award a license out side the sampling period.
O6	O6		X		Max level of effluent tightened. DEHP and Sb added. Geographic zones instead of countries.
O7	O7		X		Max water consumption tightened for the southern Sweden. Geographic zones instead of countries.

O8	O8		X		The amount of Nordic Swan Ecolabelled care products and cleaning products for cleaning of the wash installation is tightened to 100%.
O9	O9	X			-
-	O10-O23				Deleted because all care products and cleaning products for cleaning of the wash installation must now be Nordic Swan Ecolabelled.
O10	O35	X			-
-	O24	X			Deleted because all care products and cleaning products for cleaning of the wash installation must now be Nordic Swan Ecolabelled.
O11	P5	X			Slight adjustment.
O12				X	-
O13				X	-
O14	O25		X		Added that drive through enclosed wash halls the doors in each end must not be open at the same time.
O15	O26		X		Now documentation that both the collection contractor and the process facility are approved by the authorities to handle this type of waste are needed.
O16	O27	X			-
O17	O28	X			-
O18	Section 1.6		X		Points requirements and numbers of points needed changed.
O19	O31		X		Now only regarding responsible person for annual follow-up and fulfilment of requirements.
O20	O32		X		Several updates.
O21	O33	X			-
O22	O34		X		Design of packaging has been deleted. Personal protective equipment according to safety data sheets has been added.
O23	O36	X			-
O24	O37 and O29		X		Now system for handling and archiving customer complaints, instead of same quality as other wash installation using same washing method.
O25	O41	X			-
O26	O43 and O29		X		Now also dates for emptying of sludge and oil for the last 12 months must be included in the annual follow-up.
-	O30, O38-O40 and O42				Deleted.
P1		X			DEHP now under O6.
P2				X	-
P3				X	-
P4				X	-
P5	P2		X		Now more specific and comprehensive requirement.

P6				X	-
P7				X	-