Nordic Swan Ecolabelling of

Renovation

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Nordic Ecolabelling

Content

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This document is a translation of an original in Swedish. In case of dispute, the original document should be taken as authoritative.

Addresses

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

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What is a Nordic Swan Ecolabelled renovated building?

Nordic Ecolabelling sets requirements for the renovated building's energy use, environmental survey/analysis prior to renovation, chemical products, construction products, waste management and a number of aspects relating to the indoor environment. The criteria also set requirements for quality management in the renovation process and for the transfer of the renovated building to the property owner.

In the criteria development process, renovation is assessed on the basis of a life cycle perspective and a Nordic Swan Ecolabelled renovation guarantees that:

- The building has a low energy use after renovation.
- The building has a good indoor environment and low emissions of hazardous substances.
- The building has been surveyed and hazardous substances and hazardous waste have been dealt with.
- Construction products, materials and chemical products comply with stringent environmental and health standards.
- The renovation work has focused on reuse of construction components, building products and materials.

Why choose the Nordic Swan Ecolabel?

- The license holder may use the Nordic Swan Ecolabel trademark for marketing. The Nordic Swan Ecolabel is a very well-known and well-reputed trademark in the Nordic region.
- The Nordic Swan Ecolabel is a cost-effective and simple way of communicating environmental work and commitment to customers.
- The Nordic Swan Ecolabel adds value to the renovation process and the renovated building and provides safety to the residents, the pupils and the personnel.
- Environmentally suitable operations prepare the licensee for future environmental legislation.
- The Nordic Swan Ecolabel not only covers environmental issues but also quality requirements, since the environment and quality often go hand in hand. This means that a Nordic Swan Ecolabel licence can also be seen as a mark of quality.

Which renovations can be Nordic Swan Ecolabelled?

Nordic Swan Ecolabelling of the building should be the result of an active process in the form of renovation. It is not possible for existing buildings to be Nordic Swan Ecolabelled.

The following conditions on building types and the scope of the renovation must also be met so that the requirements are adapted, and the renovation is of a certain scope and not too constrained.

Types of buildings

The building must be of any of the following types:

- Single-family homes[1]
- Apartment buildings
- Buildings for pre-schools and schools
- Office buildings[2]
- Homes for the elderly[3]
- Cottages/holiday homes and holiday apartments[4]
- Buildings that are converted into any of these types of buildings

Buildings that cannot comply with one or more of the requirements in the criteria because of their cultural heritage cannot be Nordic Swan Ecolabelled.

The scope of the renovation

In addition, one or more of the following will be met by a Nordic Swan Ecolabelled renovation:

- The scope of the renovation (excluding demolition) must be at least 25% of the value of the building (excluding the land value).

- The renovation covers at least 25% of the surface of the building envelope.

The value of the building should be understood as the cost that a reconstruction of the existing building would amount to. The value of the land on which the building stands is not included. The value of a building is included as a concept in generally established rules for property valuation and is not the same as market value or taxable value.

The building envelope is the outer structure of the building, i.e. the physical barriers that separate the inside from the outside, land or unheated space. The building envelope is usually walls, floors/foundation, roof, windows, and external doors.

Exactly what the renovation project involves and how the work is done will obviously vary from project to project and from building to building. A renovation project is a highly unique undertaking. Renovation work can involve changes to the

[1] Includes single-unit houses, villas, row houses, terraced houses, and semi-detached houses if the relevant country's definition of building types in the building regulations doesn't pose differently.
[2] Includes buidlings for offices and administation of both private and public operations.
[3] Homes for the elderly that are classified as homes in the country´s building code and of the actual municipality. The same applies to residential institutions for persons with physical or mental functional impairment. Shared areas for the home's residents and staff areas are also covered by the Nordic Swan Ecolabel and must fulfill the requirements.
[4] Provided that the building is not excluded from the national building permit regulations, is heated, and has running water and sewage approved according to local regulations. Permanent residential properties must comply with the energy requirement without any simplifications or easing due to size, etc.

building envelope, to technical systems, to the structure, and to the function and appearance of the building. Since Nordic Swan Ecolabelled renovation work needs to be of a certain scope, many of the measures mentioned will probably be included.

It is of critical importance that the renovation process and the renovated building meet all requirements in the criteria document. Please contact you national Nordic Ecolabelling organisation for more information.

Communication difficulties may arise if only parts of the building or only some of the structural framework of the building are renovated as it may be marketed as a Nordic Swan Ecolabelled renovated building. A partial renovation must therefore form a clearly demarcated unit that also constitutes a clear and natural demarcation for the user.

Prior to each application for a Nordic Swan Ecolabelled renovation, the extent of the renovation must be described and lodged with the case officer for approval. Also see Requirement O1. The case cannot be processed until Requirement O1 has been verified and approved.

Special cases

Renovations that result in increased area (extensions) and complete renovations can also be Nordic Swan Ecolabelled, but certain rules apply. See Background document section 7.1.3 for more information.

The following may not be Nordic Swan Ecolabelled

- Buildings that have a very specific use, where the business itself has significant environmental relevance or where other considerations are required, such as hospitals, health care facilities, airports and hotels, or conference, industrial, commercial, agricultural, and historical buildings.
- Renovations that are more limited in terms of the surface of the building envelope or financial scale, compared with what is specified above.
- Renovations by private individuals. On the other hand, purchases by private individuals of renovations carried out by a renovation company (legal entity) are included.
- Renovations of offices that involve an extension that increases the space by more than 10%.
- Existing buildings where no renovation work is done.
- Permanent supplementary buildings such as garages, refuse stores, shed for bicycles, tools etc. meet all relevant requirements, but the supplementary building may not itself be ecolabelled.

The following can be labelled according to the criteria for Nordic Swan Ecolabelled new buildings:

- Newly built small houses, apartment buildings and buildings for schools and pre-schools. See criteria no. 089.
- Extensions to small houses, apartment buildings and buildings for schools and pre-schools. Only the extensions can be Nordic Swan Ecolabelled.

What is subject to the requirements?

The requirements apply to the main building plus any permanent supplementary/auxiliary buildings that are part of the project and that are constructed, renovated, or marketed with the Nordic Swan Ecolabelled renovated main building.

Supplementary buildings are garages (whether free-standing or connected to the building), refuse stores, shed for bicycles, tools etc. If a supplementary building is renovated or newly constructed when the main building is being renovated, it must meet all relevant requirements, but the supplementary building may not itself be ecolabelled. This limitation is the same as in criteria for Nordic Swan Ecolabelled single-family homes, apartment buildings and buildings for pre-schools and schools.

The requirements in the criteria document apply to the entire building/structural framework of the building. Interior spaces that are not residential, office, pre-school, or school premises, such as shop premises, restaurants, hair salons are excluded. An office property can be taken as an example. If there is a restaurant/café and a shop on the ground floor, this part of the building (the space occupied by the restaurant and shop) is not subject to Nordic Ecolabelling's requirements. The only exception to this basic rule is moisture survey, see requirement O5. However, common areas for residents of the building (e.g. gym or hobby room) must comply with Nordic Ecolabelling's requirements.

Installations up to the building are not included. This means, for example, that mains power cables outside the building and cables to the main fuse box are not subject to Nordic Ecolabelling's requirements. Nor are pipes for conveyance of water and wastewater up through the foundation to connecting pipes inside the

Any bomb shelters belonging to the building is only subject to requirements O4, O5, O7 and O12.

Whenever anything that would normally have been built on site is purchased as prefabricated the same requirements apply as if it has been built on site. This is described in more detail in chapter 6.

Standard version and optional extras

The requirements in the criteria document must be met by both the solutions and products contained in a standard solution/version and in any optional extras (i.e. options or customer adjustments).

Licences and licensees

The rules for Nordic Ecolabelling of products state that licensees may be:

- companies that manufacture the products
- companies that are solely responsible for a product within a Nordic country (such as an importer, reseller, distributor, or similar entity)

For the product group of Nordic Swan Ecolabelled renovations, the licensee is normally a building contractor, renovation contractor, property owner, house manufacturer or other party that can take full responsibility for all requirements. This means that architects or technical consultants can only be licensees if they can take full responsibility for all requirements.

A first-time licensee must verify and document all requirements in the criteria in order to obtain their licence. This licence can then be extended with new renovation projects. In practice, this means that the requirements that are specific to the project must be reviewed and checked when undertaking a second project and future projects (extensions), while the conditions that are the same do not need to be re-assessed and verified again.

How to apply

Application and costs

For information about the application process and fees for this product group, please refer to the respective national web site. For addresses see page 3.

What is required?

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

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

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

✉ Enclose

🔑 The requirement checked on site.

To be awarded a Nordic Swan Ecolabel licence:

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

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

License validity

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

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

The building that is renovated becomes Nordic Swan Ecolabelled. The date when the renovated building was Nordic Swan Ecolabelled must be communicated:

"Nordic Swan Ecolabelled renovated building, 20XX". As required, the current version number of the criteria can be stated. Nordic Ecolabelling accepts no responsibility for the building not complying with the criteria at a later date.

On-site inspection

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

Enqueries

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

1 General requirements

O1 Outline description of the renovation project

The application must include a description that includes the following elements for the renovation project and for the renovated building:

- An outline description of the extent, purpose, and objectives of the renovation. The description must show which parts of the building are to be renovated and clearly state if a storey, buildings, or parts of buildings are not included in the renovation work. The description must also include any supplementary buildings that are part of the renovation project or which are to be newly constructed/erected. Heated areas before and after the renovation must be specified.
- A description of the renovated building's carcass/load bearing structure, façade, roof, foundations, heating system, ventilation system and other essential installation systems.
- Floor plans with details of the number of storeys, number of square metres of living space or premises, and details of any premises/commercial space. It must be clearly stated if, during renovation, the floor space of the building is increased (extension) or if the building category is changed (e.g. an office is converted into housing).
- The building's energy consumption before (measured values) and after the renovation (calculated value, also see requirement O14)
- Statement that the renovated building has individual metering and billing for:
    - household electricity for each residential unit in apartment buildings and single-family homes.
    - electricity consumption at least for the operation as a whole (for pre-school and school buildings).
    - electricity consumption per tenant (for office buildings).

✉ Documented description of the aforementioned items. Drawings, designs, illustrations, and other project documentation can constitute the basis.

☒ The extent of the renovation (excluding demolition) either reported as a proportion of the building envelope being renovated or in relation to the building's value (excluding the land value).

O2 Responsibility for Nordic Swan Ecolabelling

The licence applicant must be responsible for all requirements in the criteria document and for compliance with the requirements, no matter who the work is performed by, until the renovation is completed, and the building is ready for occupation.

If subcontractors are used, the licence applicant is responsible for the subcontractor being informed of the requirements and is responsible for ensuring compliance with requirements.

There must be a documentation of the client, (building) contractor, any use of subcontractors, type of contract and responsible contact person towards Nordic Ecolabel for the project.

For more information, see section "License and license holders" above.

Certain exemptions may be made from the basic rule concerning the licensee's responsibility for all requirements. See Appendix 2.

☒ Description as stated above.

2 Prior to renovation work

2.1 Building condition assessment and reuse

O3 Building condition assessment and plan for resource use

Before the actual work of renovating the building has begun at an early stage of the project planning process, a building condition assessment and plan for resource use must be performed.

The building condition assessment

The assessment must at least include:

a) An assessment of the suitability and adaptability of the building for the purposes of the renovation project.

b) The condition and expected useful life of the building, the building elements, and the technical installations.

c) An analysis of the possibility of preserving or reusing building elements, construction materials and technical installations.

The analysis must include at least: carcass, ventilation ducts, stairs, floors, interior and exterior doors, windows, building panels, roof covering, façades, bricks, concrete, structural timber, stone material, fixtures, and sanitary ware.

When decisions on preservation and reuse is taken, the results of both the condition assessment, the environmental survey (O4) and moisture survey (O5) must be included. If building components, material and technical installations are reuses, see also requirement O31 regarding resource-efficient material selection.

Plan for resource use

d) The above items must be made into a plan for the preservation and reuse of the building elements, materials, and installations, either in this project or in other buildings. Also see requirement O6 waste plan and waste management. The resource use plan must include:

- Estimated amounts of the building components/materials.
- Specified space for storage that does not prevent or limit options for reuse.
- If any products or materials are covered by a closed-loop recycling scheme, specify the type of material, receiving facility and approximate quantities.

☒ A building condition assessment for the preservation and reuse of building elements, materials and technical installations that includes a) to c) above.

☒ A plan for preservation and reuse that includes d) above.

2.2 Environmental analysis/survey

Unlike all other requirements on Nordic Swan Ecolabelled renovation, requirement O4 and O5 shall also be met by any bomb shelters belonging to the building,

O4 Environmental analysis/survey and remediation plan

Before the actual work of renovating the building has begun, an environmental analysis/survey must be performed of the building including installations, fixed fittings, and others, where there is suspicion of hazardous waste or hazardous substances. The survey must at least cover the parts of the building that are to be renovated.

The analysis/survey must as a minimum, meet national legislation and should include hazardous waste and the substances listed in Appendix 3. If an environmental analysis/survey has been performed previously, it must not be more than three years old.

The environmental analysis/survey must be performed by a professional who is able to provide the required documentation to verify that qualifying experience.*

The environmental analysis/survey must be documented in a remediation plan including all findings and results of representative material samples and analyses. In cases where PCBs have been identified and remediated in the building during the environmental analysis/survey or in another stage before or during the Nordic Swan Ecolabelled renovation process, PCBs should be measured in the indoor air after remediation. For more information, see requirement O12.

The remediation plan should serve as a basis for the procurement of remediation and demolition services. The remediation plan must include at least the following for each substance/waste covered by the environmental analysis/survey:

a) Identification and statement of presence/location in the building by means of a description, photographs, or drawings.

b) A summary of the total presence of hazardous waste and hazardous substances with a description of how the materials or the substances are to be removed or in other ways handled. This summary must include the type and estimated amount of hazardous waste, the European waste code, and materials with hazardous substances according to Appendix 3.

c) Anything containing hazardous waste or hazardous substances exceeding the levels in Appendix 3, that is to remain or to be encapsulated in the building must be clearly stated. The technical method of encapsulation must also be described along with a risk assessment. See requirement O17 for further details.

d) A description of how the hazardous waste including waste from the removal process (e.g. sand blasting) will be stored, transported, and finally disposed of.

e) A description of measures for protecting the environment and human health and the risk of damage and theft during the remediation process.

* *The person performing the environmental analysis/survey must be qualified to conduct an environmental analysis/survey and be qualified in the area of environmental law, or must have at least three years of relevant experience, e.g. construction, or have experience of having performed at least ten environmental analysis/surveys with an experienced supervisor. The person performing the environmental analysis/survey must have experience of environmental analysis/survey of the type of building in question, and must have knowledge and experience of the health and safety risks associated with the environmental analysis/survey and the removal.*

✉ The procedures for environmental analysis/survey stating the expertise of the appointed surveyor.

✉ Documented remediation plan that covers a) to e) above.

O5 Moisture survey

Before the actual work of renovating the building has begun, a survey should be carried out to assess moisture damage, fungal growth, dry rot fungus, odours and water damage in the building that is to be renovated.

The moisture survey must cover the entire building, as well as areas exempted from other requirements such as shop areas and restaurants:

- foundation/base, cellar or corresponding
- the building envelope (including roof)
- moisture-sensitive elements indoors and outdoors (see Appendix 4)
- interior surfaces that before the renovation were exposed to moisture (wet rooms, kitchens, showers, and washrooms).

The survey shall initially, be performed visually and non-destructively.

The detailed survey must be carried out using destructive sampling, visual inspection with tape, analysis of material samples by microscopy, collection of air samples or another appropriate method. The choice of method must be appropriate to the purpose and the reason for the choice must be given to Nordic Ecolabelling.

If moisture or water damage is identified, it must be remedied/treated during the renovation process.

If any building components are identified as being at risk of moisture damage, they must be addressed during the planning stage and remedied during the renovation process.

If mould removal is necessary, the work must be carried out in compliance with national occupational health and safety guidelines, and with any requirements for remediation to be performed by a licensed/authorized contractor.

The survey can be integrated in the environmental analysis/survey (see Requirement O4) or be undertaken as a separate moisture survey. In both cases is must be performed by a competent moisture technician*.

**The competent moisture expert technician must have documented knowledge and experience in building techniques, have knowledge of moisture in materials and constructions and the consequences. Furthermore, the expert technician must have at least 2 years' experience in moisture prevention work or moisture damage assessment work and at least 2 years' experience from working in building projects, projecting and/or the management of buildings.*

- ☒ A report from the moisture survey stating whether harmful moisture or water damage has been found, if structures are considered to be well designed and an assessment of the design of any wet rooms.
- ☒ Planned corrective actions to remediate moisture damage that has been found and building components at risk of moisture damage, see Appendix 4.
- ☒ The routines for inventory with the indication of competence of designated moisture expert.
- ☒ Report from any conducted remediation.

3 Resource effective material management

Unlike all other requirements on Nordic Swan Ecolabelled renovation, requirement O7 shall also be met by any bomb shelters belonging to the building,

O6 Waste plan and waste management

In Nordic Swan Ecolabelled renovation there must be a plan and procedures for management of demolition and construction waste. The plan and procedure shall have a focus on circular material flows, both in demolition and in construction phase.

The plan must state for each waste category:

- Information on whether the waste will be reused, material will be recovered, incinerated, or landfilled.
- Expected quantities (data from the remediation plan).
- The waste contractors and consignees/recipients to be used.

The waste plan must be approved by the Nordic Ecolabel before the demolition and remediation work is initiated. The waste plan is normally conducted by the person having performed the environmental analysis/survey and is part of the remediation plan (see O4).

After remediation, verification on waste and waste handling must be documented.

The waste management must include at least the fractions stated in table 1 below.

Table 1: Handling of different waste categories during demolition and construction.

Demolition
Products and materials sorted for reuse (see O3)
Hazardous waste (different types of hazardous waste are separated into different fractions)
Waste fractions with hazardous substances according to Appendix 3.
Electrical waste (different types are separated)
Wood
Plastic for recycling
Scrap and metal for recycling
Filling materials (only natural materials such as soil and stones, Separated into not-contaminated and contaminated fractions
Combustible waste
Mixed waste for sorting
Pure gypsum for recycling (if the recycling facility is within a reasonable distance)
Asphalt is treated for recycling or as hazardous waste
Landfill (sorted)

Construction
Hazardous waste (different types of hazardous waste are separated)
Electrical waste (different types are separated)
Wood
Plastic for recycling (the largest plastic fraction must as a minimum be sorted out)
Scrap and metal for recycling
Gypsum
Packaging materials (e.g. cardboard) for recycling
Filling materials
Combustible
Mixed waste for sorting
Reusable pallets are returned according to the return system
Landfill (sorted)

The table with the different waste fraction is what Nordic Ecolabel demands from the Nordic Swan Ecolabelled renovation. National legislation can put other demands and these shall also be fulfilled.

✉ Waste management plan that contains the data specified above.

✉ Agreements with waste contractor(s) that are able to manage with the categories in the specified way.

✉ Verification of disposed waste.

O7 Follow-up of remediation plan

Remediation and demolition must be followed up and a follow-up plan must be conducted including at least the following:

- Documentation that all of the hazardous substances and hazardous waste identified and documented in the remediation plan have been removed and properly managed (see O4). The item shall also include any new findings during the remediation/demolition.
- Information on the type and amount of hazardous waste and waste with hazardous substances. Deviations from the remediation plan must be described with proper cause.
- Statement of waste code according to the European Waste Catalogue for hazardous waste,
- Details of carrier(s) and consignees of the hazardous waste and waste with hazardous substances.
- Information to show the remediation contractor has followed the procedures to safeguard human health and the environment (see O4be).
- A copy of the documentation and forms sent to the local authority in connection with the remediation process.

✉ A report from the completed remediation process that includes the above points.

🔑 Random checks of receipts from hazardous waste consignees/recipient of hazardous waste.

4 Indoor environment

O8 Indoor air quality

An Indoor Air Quality Plan (IAQP) must be produced to ensure that pollutants and particulate matter do not spread in the indoor air during the renovation process and to ensure that the indoor air of the completed building is safe and healthy.

The licensee must appoint a qualified indoor environment expert* to monitor and document the project for adherence to the plan.

The IAQP must include at least the elements in Appendix 5 and describe procedures and measures for:

a) Ventilation, control, and elimination of pollution sources.

b) Protection of heating, ventilation, and air conditioning systems from contamination during remediation and renovation work.

c) Procedures to ensure adequate venting before the building is commissioned.

National regulatory requirements and guidelines must always be followed to ensure that occupational health and safety is guaranteed and to create a safe and healthy environment inside the renovated building.

If subcontractors are hired for work that affects the quality of the indoor environment, the licence applicant must ensure that subcontractors either adhere to the licence applicant's routines or have their own routines to ensure fulfilment of the items above.

An already established IAQ plan in accordance with Greenguard, LEED or BREEAM can be used as documentation

**The indoor environment expert must have proven expertise and experience of construction technology, have knowledge of indoor environment-related problems and effects of pollutants in the indoor environment. The person must have at least two years' experience of indoor environment work or indoor environment assessments and at least two years' experience of projects involving the construction, planning and/or management of buildings.*

✉ An indoor environment quality plan with procedures and measures that show how a) to c) are met. The plan must cover the items in Appendix 5.

✉ Statement from an appointed qualified indoor environment expert with a description of expertise and experience.

O9 Radon

Radon concentrations in the indoor air of occupiable rooms must not as annual average, exceed each country's legislation on highest permitted concentrations of radon for new-builds and in workplaces.

The threshold limit value must be verified either with new measurements in the renovated building or more radon measurements performed before renovation. A radon measurement may not be more than 5 years old. There must also be documentation stating that the renovation does not contribute to an increased radon exposure.

National regulations and methodologies with specified standards in the field must be complied with.

✉ A measurement report stating radon concentrations, measurement points and the highest readings in occupiable rooms. Reports from radon measurements carried out before renovation must be accompanied by documentation stating that the renovation has not led to higher levels of radon.

✉ Description of (any) radon prevention measures undertaken in the building.

O10 Moisture prevention

To minimise the risk of hazardous moisture in Nordic Swan Ecolabelled buildings, a moisture prevention plan is required that at least includes:

a) Choice of materials and techniques that prevent moisture occurrence.

b) Weather protection and other handling of moisture-sensitive materials and building/construction elements at the construction site.

c) Ensuring that the building and relevant materials dry out sufficiently and statement of the time this is estimated to take.

d) Determination of the highest permitted moisture status of various materials (critical moisture state).

e) A check for moisture and damp is performed by calculating or testing for moisture in concrete by drilling test holes, in built-in wood and in levelling compound in accordance with industry standards or equivalent.

f) A person must be appointed to be responsible for each element of the damp-control plan

A competent moisture expert technician* must be appointed at/by the licensee to monitor/sign the moisture prevention plan and to document adherence to the plan.

If subcontractors are hired for work that affects moisture protection, the licence applicant must ensure that subcontractors either adhere to the licence applicant's routines or have their own routines to ensure that moisture problems are minimised.

The moisture prevention plan can form part of the Indoor Air Quality Plan, see Requirement O8.

**A competent moisture expert technician must have documented knowledge and experience in construction techniques, have knowledge of moisture and the consequences in materials and structures. Furthermore, the expert technician must have at least 2 years' experience of moisture prevention or moisture damage assessment work and at least2 years' experience of projects involving the construction, planning and/or management of buildings.*

National industry regulations must be followed and moisture testing must be carried out in accordance with industry guidelines.

✉ The moisture prevention plan or equivalent document with routines to show how items a) to f) are fulfilled. If subcontractors that are used for work that affects moisture protection have their own routines, these must also be reported.

✉ Statement of moisture expert technician with a description of expertise and experience.

O11 Ventilation

The ventilation system in the Nordic Swan Ecolabelled renovated building must be inspected to ensure its correct performance before it is used. This inspection must ensure at least that:

a) The function and characteristics of the ventilation system are in compliance with current regulations so that the requirement for minimum flows is met.

b) Maintenance and other instructions are easily accessible.

c) The ventilation system otherwise functions as intended.

d) The ventilation system does not contain pollutants that could spread inside the building. (See items a and b in requirement O8 Indoor Air Quality).

In addition:

e) School, pre-school and office buildings must have demand controlled/presence controlled ventilation in all habitable rooms covered by the renovation.

f) National building regulations limit values for air turnover / ventilation volumes in the building must be followed.

This inspection must be carried out on each building that is renovated. For apartment buildings, this can be performed for a representative selection that constitutes at least 10% of the total number of apartments, but always at least one apartment.

In Sweden, the mandatory ventilation control (OVK) is a fully valid function control. The result of the first OVK inspection can be used for verification. Other countries can have guidelines that fully or partly cover the requirement,

✉ Protocol from the function control of ventilation performed showing the result and stating the number of buildings and the proportion of flats in an apartment building.

✉ A description of the type of demand-controlled ventilation.

✉ Reporting on compliance with national building regulations' minimum requirements for air flows.

✉ Reporting that renovated and non-renovated sections do not have shared ventilation systems.

O12 Measurement of PCB levels in indoor air

In cases where PCBs have been identified and remediated in the building during the environmental analysis/survey or in another stage before or during the Nordic Swan Ecolabelled renovation process, PCBs should be measured in the indoor air after remediation.

The air in the buildings where PCBs have previously (not in conjunction with Nordic Swan Ecolabelling) been decontaminated must also be measured to verify that the requirement has been met.

The PCB content must be below 300 ng PCB/m^3 in the indoor air.

The measurement must be conducted in compliance with "Instructions for measuring PCBs in the indoor climate". See www.pcb-guiden.dk. If other test methods are used the methods must be verified by the Nordic Ecolabelling in advance. For test method requirements, see Appendix 1.

The building envelope must be intact or rebuilt tightly insulated before testing.

The requirement shall also be verified by any bomb shelter belonging to the building,

✉ Analysis report showing measured PCB contents in the indoor air expressed as ng PCB/m^3 air.

O13 Noise environment in pre-schools and schools

Pre-school buildings, schools and other education facilities must meet the noise environment class B requirement for reverberation and noise environment class C requirement for other assessed parameters. National standards or guidelines from government authorities for building acoustics must be used.

The requirement does not apply to spaces that are only occupied for short periods of time, e.g. corridors, stairwells, entrance halls, photocopying rooms, changing rooms and toilets.

National noise standards: Sweden SS 25268, Norway NS 8175, Finland SFS 5907. For Denmark, see "Vejledning om lydbestemmelser i Bygningsreglementet 2015 (akustisk Indeklima)" av Trafik- og Byggestyrelsen (Guideline on acoustic criteria in Building Regulations 2015 (acoustic indoor climate) by the Danish Transport, Construction and Housing Authority).

For safety reasons, an entire department at a pre-school is viewed as one room for the airborne sound insulation parameter.

✉ Planned noise level stating the noise class achieved for all parameters in the rooms included in the assessment. Calculation of noise level must be performed by an acoustic technician or other professional with equivalent qualifications.

🔑 Noise environment report to verify the results of planned noise class.

5 Energy use and climate change

O14 The energy requirements of the building after renovation

After renovation, the energy requirements of the building must at least comply with the following:

Denmark: Energy demand 5% better then Renovation Class 2.

Sweden: Energy demand equivalent to maximum permitted in accordance with the BBR 25 for new buildings.

Norway: Energy demand equivalent to maximum permitted in accordance with the TEK 17 for new buildings.

Finland: Energy demand equivalent to maximum 80% of the Ministry of the Environment's regulation (4/2013) on improving the energy efficiency of buildings in conjunction with repair and modification works, for the building category in question.

Locally produced renewable energy: In the Nordic countries, where locally produced renewable energy is included in the energy calculation, electricity produced by local renewable energy sources can at most lower input energy needs by 25 kWh/m² a year.

New national regulations: If new national regulations and thresholds for energy consumption of buildings are introduced during the term of validity of the criteria, Nordic Ecolabelling will perform a new assessment of the energy requirement and may adjust the requirement. The adjustment is made in a national consultation round.

Exemptions or reliefs: Any exemptions or reliefs that can be found from the energy requirements in the building regulations of the different countries may not be used. This applies, for example, to special rules for second homes, timber-frame houses, temporary buildings, or buildings which, due to their size, are exempted from energy requirements.

The energy calculation must be performed in accordance with:

- BE18 or equivalent in Denmark.
- BBR, BEN and National practice in the sector for Sweden, see Appendix 14.
- NS 3031 or with a programme validated in accordance with the NS EN 15265 standard for Norway.

- The Ministry of the Environment's regulation on the energy performance of buildings or the equivalent in Finland.

The transitional periods set by the national authorities also apply to the fulfilment of Nordic Ecolabelling's energy requirements.

☒ Overview of the key energy initiatives that must be undertaken in the renovation process.

☒ Planned energy calculation for the renovated building. If the energy consumption varies with different building configurations it must be specified that each configuration in the application fulfils the requirements. Alternatively, the requirements must be fulfilled for the building configuration that has the greatest energy consumption (a worst-case calculation).

O15 Lighting

Indoor and outdoor lighting in a Nordic Swan Ecolabelled renovated building must be demand responsive/have demand control in accordance with the specifications in the tables below.

Outdoor lighting must meet the requirement in Table 2 below. This requirement applies regardless of whether the outdoor lighting has been replaced or been left intact during renovation.

Table 2: Requirements on outdoor lighting

Type of building	Outdoor lighting
All types of buildings	Demand-responsive lighting on the building or in direct connection to the building. Demand-responsive lighting in garage, courtyard and roads/paths belonging to the building. The energy efficiency of the lighting should be equivalent to LED technology or better.
Exceptions from requirement	Signs and outdoor lighting on private balconies, patios, terraces, etc.

Indoor lighting inside the building must meet the requirements in Table 3 below when indoor lighting has been changed or installed during the renovation process.

Table 3: Requirements on indoor lighting

Type of building	Indoor lighting
Apartment buildings	Demand-responsive lighting in common spaces (entrances, stairwells, washrooms, storage rooms, etc.).
Single-family homes	No requirement.
Buildings for pre-schools and schools	All indoor lighting must be demand-responsive.
Office space	All indoor lighting must be demand-responsive. Lighting in cellular offices/offices with private rooms is exempt from the requirement. Lighting in cellular offices must instead be turned on/off with a light switch in the office room.
Exceptions from requirement	Workplace lighting, worktop lighting and lighting that is fitted into technical installations and equipment. Lighting in cellular offices/offices with private rooms is exempt from the requirement. Lighting in cellular offices must instead be turned on/off with a light switch in the office room.

Management based on time, daylight, acoustics, or movement are examples of automatic demand control/detectors that can be approved. The lighting control must be connected to the fixture and not just in/to the light source.

Lighting of lifts and emergency lighting are generally exempt from the requirement for demand control.

☒ Reporting of demand control for indoor and outdoor lighting in accordance with the requirement.

☒ Reporting light sources for outdoor lighting.

O16 Energy-efficient white goods

New white goods that are installed must meet at least the energy requirements in Tables 4 and 5 below. White goods not listed in any of the tables below are exempt from the requirement. Product types that are not subject to the EU's Energy Labelling Directive (2010/30/EU) are exempt from the requirement.

The requirement applies to white goods purchased from 19 March 20121, when the energy label (EU) 2017/1369 enters into force. Energy Labelling Directive 2010/30/EU applies to dryers and ovens.

Table 4: Requirements on white goods consumer products

Product type/category White goods consumer (Energy labelling regulation in brackets)	Lowest permitted energy class according to the Energy Labelling Directive (2010/30/EU)	Lowest permitted energy class according to the Energy Labelling Regulation 2017/1369/EU
Washing machines (1061/2010/EU)		D
Fridge*		E
Freezer		F
Tumble dryers (392/2012/EU)	A++	
Dishwashers (1059/2010/EU)		E
Ovens (65/2014/EU)	A	
Combined washing machines and tumble dryers (combi-products) (96/60/EU)		E

** At least energy class A is required for wine coolers. For fridges in prefabricated mini kitchens/kitchenettes the requirement of minimum energy class E applies.*

Table 5: Requirements on white goods professional use

Product type/category White goods commercial kitchens/professional use	Requirement
Refrigerators and freezers and combined refrigerator-freezers (1094/2015/EU) for professional use	Lowest energy efficiency class B (refrigerator) and C (freezer and combined cabinet).
Dishwashers	Pre-rinsing with recirculating water or water reused from the dishwasher. Alternatively other type of technology with similar water saving efficiency
Cookers	The cooker should be an induction type stove or other type of technology with similar energy efficiency.
Boiling pans	At least 90% energy efficiency according to EFCEM's Energy Efficiency Standard for boiling pans or equivalent.

☒ For consumer product: report of all new white goods stating the type of white good and energy marking/energy efficiency class in the product sheet, technical manual or similar document.

✉ For commercial kitchen products: Report of all new white goods stating the type of white good and product sheet, technical manual or similar document showing fulfilment of the requirement.

✉ For boiling pans, test results from tests performed in accordance with EFCEM's Energy Efficiency Standard for boiling pans or equivalent.

6 Sustainable products and materials

Introduction

This chapter consists of four sections. The first section covers requirements for a product list and a logbook for the building. The next section contains requirements for the chemical products that are used in the renovation of a Nordic Swan Ecolabelled building. The third section covers requirements for construction - products, construction goods and construction materials. The fourth and final section contains the requirements for timber and bamboo.

The requirements for chemical products, construction products and construction supplies is fully harmonised with corresponding requirements in Nordic Swan Ecolabelled newly-constructed buildings, criteria generation 3. This means that a chemical product or a building product that is approved for use in a Nordic Swan Ecolabelled newly-constructed building is also approved for use in a Nordic Swan Ecolabelled renovation.

Nordic Ecolabelling's Construction Products Portal is the digital management tool for the review and approval of chemical products, construction products, building products and materials. The producer declares its product in the Portal and electronically fills in the appendices required to validate content according to Nordic Ecolabelling's requirements. Nordic Ecolabelling then reviews the product and its declaration. If the product meets Nordic Ecolabelling's requirements and everything is in order, the product is entered onto an approved list and is made visible for all license applicants in the Nordic region.

The requirements must be met for all buildings and building elements covered by the Nordic Swan Ecolabelled renovation. This obviously is the main building(s), plus any supplementary buildings such as a garage, storage room, decking, outdoor furniture, outdoor play equipment, etc. that are part of the Nordic Swan Ecolabelled renovation project and which are erected or marketed with the Nordic Swan Ecolabelled renovated building.

The requirements in this chapter apply to all products and materials that are *newly manufactured* and that are added to the renovated building and any supplementary buildings. They do not apply to existing products and materials that are left or moved inside the renovated building, unless the requirement states otherwise. Requirement O30 is a requirement specifically for re-used products.

In general, the documentation requirement does not apply for ecolabelled products (Nordic Swan Ecolabel and EU Ecolabel). Ecolabelled products automatically meet the requirements and only need to be included in the list of materials/logbook with the license number, product name and manufacturer's name.

Triviality limit

The requirements in this chapter do not need to be met for the products that are used to a very limited extent, such as:

- Touch-up paint for damage to white goods, fittings and similar.
- (Rust protection) paint to restore railings and beams, e.g. after welding and when screw holes have been drilled.
- Products and materials for minor repairs of existing surfaces or other construction components in the building, e.g. repairs to floor coverings, acoustic ceilings, or a damaged plaster wall. A triviality limit is set to a maximum of 5% of the total building area.
- Building fixtures, e.g. locks, handles, hole plates, hinges.
- Nails, screws, nuts, bolts, washers, and similar fasteners.
- Plastic products such as palletising trays, plastic spacers, ground spacers, bends, sleeves, mounting boxes, roof boxes, inflow and outflow pipes for white goods, and so on.

Any other exemption must be communicated to Nordic Ecolabelling for approval.

6.1 Product overview

O17 Product list and logbook of the building

1. There must be a list of the construction products, construction goods, materials and chemical products used in the renovation.
   The product list must include the type of product/product category showing the area of use, product name and name of manufacturers plus supplier if other than the manufacturer.
   The product list must also include the products that Nordic Ecolabelling does not set requirements for: the exception is what falls in the triviality limit.
2. The renovated building must have a digital logbook comprising the products and materials in item 1 above. The logbook shall, beyond what is stated in item 1, also state:
   a. Main constituent elements (applies to construction products, construction goods and materials but not chemical products).
   b. Approximate location in the building.
3. The logbook must also contain information about any unwanted substances or materials left in place which have been identified in the environmental analysis/survey, how they have been encapsulated or otherwise rendered harmless, and their location in the building.

The product log list and logbook shall comprise products, goods and materials used in the building and installed in the building or in its immediate vicinity.

✉ A product list in accordance with 1 and a digital logbook in accordance with 2 and 3. Alternatively, an integrated digital document that covers all three items.

6.2 Chemical products

The term chemical product concerns a chemical substance or a mix of different chemical substances, in liquid, gaseous or solid form, used in construction work at the building site or by manufacturers of prefabricated construction elements. Chemical products used to construct any supplementary buildings, fences, decking,

outdoor furniture, playground equipment and similar items are also included. Examples of chemical products are paint, adhesive, sealant, putty, and dry mortar.

Goods, which form, surface or design is of significance for the function of the good, rather than its chemical composition, is not chemical products. Examples of goods are concrete elements, construction boards and plastic materials. The Nordic Swan Ecolabel requirements on goods are in chapter 6.3.

Requirements must be set for chemical products used during the renovation process, but not for the chemical substances already found in the building. The requirements in Chapter 2.2 Environmental analysis/survey and remediation apply for these.

The requirements for chemical products cover what is incorporated. The requirements do not cover, for example, fuels for construction machinery, marking paint, marking tape that is removed, wood used in casting moulds[5], cable lubricant or cleaning agents. Nor do they include sealing foam, formwork oil, etc. used to seal or lubricate casting moulds.

Nordic Ecolabelling's requirements for chemical products are in harmony with the Nordic chemical and environmental authorities' phase-out substances, but Nordic Ecolabelling does not set any absolute requirements here. Some of the criteria for risk reduction substances are also included. Nordic Ecolabelling's requirements also include endocrine disruptors as the REACH joint chemicals legislation (regulation 1907/2006/EC) does not concern endocrine disruptors for which there are no jointly accepted hazard criteria. Unlike Nordic Ecolabelling, REACH has no separate regulations for nanomaterials.

Definition of constituent substances and impurities

Constituent substances are all substances in the chemical product, including additives (e.g. preservatives and stabilisers) in the raw materials, but do not include impurities.

Impurities are residues from production, including production of raw materials, that are found in the final chemical product in concentrations below 100 ppm (0.01% by weight, 100 mg/kg), but not substances that have been added to a raw material or the product actively and for a particular purpose, irrespective of quantity.

Examples of impurities are residues of reagents, residues of monomers, catalysts, by-products, purification chemicals and detergents for production equipment. Background levels of environmental impurities and carry-over from production lines are also classified as impurities.

Impurities of over 1% concentration in the raw material are, however, regarded as constituent substances, regardless of the concentration in the final chemical product. Substances known to be degradation products of the constituent substances are also themselves considered to be constituent substances.

[5] See requirement O32 for exceptions.

The chemicals requirements are comprehensive. Exemptions for certain situations or certain classifications are therefore sometimes necessary. These exemptions must be specified in the requirement.

Built on site versus prefabricated

Just as in the criteria for new buildings, the basic rule is that when something that would normally be built on site is installed as prefabricated instead, the chemical and material requirements that apply are the same as the requirements for on-site construction. Since the degree of prefabrication may change over time and also vary between the Nordic countries, this list of examples can serve as a guide to what is subject to our requirements of chemical products, whether they are prefabricated or not:

- Bathrooms/bathroom modules.
- Primed and final-coated wooden panels, both externally and internally, and ceilings. On the other hand, primed or final coated mouldings, skirtings, bases and thresholds, or stained loose timber incorporated in the Nordic Swan Ecolabelled building, are not included.
- Surface treatment of indoor staircases.
- Surface treatment of concrete/concrete elements.

Windows, doors, and pre-painted interiors, for example in kitchens and bathrooms, are always purchased prefabricated and are therefore not subject to the requirements for chemical products in section 6.2. On the other hand, there are requirements of these construction products and building materials in section 6.3.

Pipes and wires that are incorporated into prefabricated elements, for example they are cast in concrete elements, are also covered by the requirements in Chapter 6.

The following applies to two-component products with regard to prefabrication:

- the sub-components meet the chemicals requirements, or
- the hardened product complies with the chemicals requirements if it can be documented that protective equipment is used when the sub-components are mixed, and that the ready-mixed product is applied in a closed, well-ventilated system in compliance with national regulations

At the construction site, adequate safety cannot be guaranteed with a closed system, which is why the requirements must always be met by the sub-components. There is one exemption from this basic rule which concerns service areas where two component products, not fulfilling the chemical requirements, can be used under the following circumstances:

- The service is any of the following; fan rooms, substations, lift shafts, machine rooms, electricity centres and other areas to which unauthorized persons do not have access.
- Safety equipment is used when the sub-components are mixed.
- The hardened product is applied during well ventilation fulfilling national legislation on occupational safety and health.

- The use of safe equipment shall be documented, for example by photos. The following applies to concrete and cement

The following applies to concrete and cement

For cement and concrete the requirements for chemical products solely concern any chemical additives (plasticizers, accelerators, pigments, retarding and water proofing additives etc.) Nordic Ecolabelling thus does not pose chemical requirements of the actual cement or concrete.

The requirements on additives apply to additives in unhardened concrete and i prefabricated concrete elements. The requirements do not apply to additives in so called ready-made concrete products/concrete goods such as iso-block, HH-block, leca-block or concrete roof tiles.

For dry mortal, all chemical requirements in chapter 6.2 must be fulfilled since dry mortal is a chemical product as it contains unreacted chemical substances.

O18 Classification of chemical products

Chemical products used in Nordic Swan Ecolabelled renovations must not be classified according to table 6 below. The product must be classified in line with current legislation (CLP Regulation (EC) No 1272/2008 or later).

Table 6: Prohibited classifications of chemical products

Classification under CLP Regulation 1272/2008	
Hazard class and category	**Hazard phrases**
Toxic to aquatic organisms Category acute 1 Chronic 1-2	H400*) **), H410, H411***)
Hazardous to the ozone layer Hazardous to public health	H420
Acute toxicity Categories 1– 3	H300, H310, H330, H301, H311, H331
Specific target organ toxicity (STOT) with single and repeated exposure STOT SE category 1 STOT RE category 1	H370, H371, H372
Carcinogenic Carc 1A/1B/2	H350, H351
Mutagenic Muta. 1A/B/2	H340, H341
Reprotoxicity Repr 1A/1B/2	H360, H361, H362

The classifications in the Table concern all classification variants. For example, H350 also covers classification H350i.

**) Chemical anchors classified as H400, H410 and H411 due to dibenzoyl peroxide (CAS 94-36-0) are allowed.*

) Hardeners for acrylic floor coating, classified H400, H410, and H411 due to dibenzoyl peroxide (CAS 94-36-0) are allowed to use in professional kitchens. In countries with an authorization system, the flooring contractor must be authorized.) The classification H411 is accepted for naphtha-based primers for use in waterproofing assembly (flat roofs, green roofs, courtyards, terraces, and similar applications), and naphtha-based adhesives for cellular rubber insulation*

intended for cooling pipes and ventilation ducts indoors. Proper protective equipment should be used when working with naphtha-based adhesives. The classification H411 is also accepted for primers for expansion joints on concrete, concrete-metal, and metal-metal outwardly/outside on the building and for roof adhesive/adhesive for waterproofing outwardly.

*****) FI: Classifications H351 and H362 for spray polyurethane foams used for sealing of windows when temperature is below 5 °C.*

☒ Declaration from the manufacturer of the chemical product, in accordance with Appendix 7.

☒ Safety data sheet in accordance with the statutory requirement in the country of application, e.g. Annex II to REACH (Council Regulation (EC) no. 1907/2006) for all chemical products.

O19 CMR substances

Chemical substances classified as carcinogenic (Carc), mutagenic (Mut) or reprotoxic (Repr) according to the CLP Regulation 1272/2008 or later may not be constituent in chemical products used in Nordic Swan Ecolabelled renovations. See table 7 below.

Table 7: Non-approved classifications of constituent substances in chemical products

Classification under CLP Regulation 1272/2008	
Hazard class and category	**Hazard phrases**
Carcinogenic Carc. 1A/1B/2	H350, H351
Mutagenic Muta. 1A/1B/2	H340, H341
Reprotoxic Repr. 1A/1B/2	H360, H361, H362

The classifications in the Table concern all classification variants. For example, H350 also covers classification H350i.

Exemptions are made for:

- Tin organic compounds that are governed by O24.
- Free formaldehyde (from formaldehyde not intentionally added or from formaldehyde-releasing substances) in the end-product ≤ 200 ppm (0.02% by weight).
- Desiccant driers classified as reprotoxic category 2 which is found in paint with alkyd-based binders are permitted up to and including 30 June 2017 for outdoor paint (both consumer products and industrial paint). The total content of desiccant with the same classification must also be less than 0.3%. The exemption does not apply to substances on the EU's Candidate List.
- D4 (Octamethyl cyclotetrasiloxane, CAS no. 556-67-2) as a residue from the production of silicon polymers ≤ 1000 ppm.
- Vinyl acetate (CAS no. 108-05-4) as a residual monomer in polymers ≤ 1,000 ppm.
- Glyoxal (CAS no 107-22-2) ≤ 100 ppm (0.01% by weight) in the final product if the pH-value in the final product is higher than pH 8.
- Mineral oil in naphtha-based primers in waterproofing assembly (flat roofs, green roofs, courtyards, terraces and similar applications), in primers for expansion joints on concrete, concrete-metal and metal-metal outwardly/outside on the building and as roof adhesive/adhesive for

waterproofing outwardly. The exemption applies provided that the mineral oil has been tested with the IP 346 method (Determination of polycyclic aromatics in petroleum fractions) showing that the mineral oil contains less than 3% DMSO extract, alternatively that it is shown that the benzene content is lower than 0,1%. This must be verified by the safety data sheet

- TiO_2 which is added in powder form during raw material production.
- The dispersant trimethylolpropane (CAS #: 77-99-6) up to 1% by weight in pigment. Time-limited exception that applies until 2024-06-30.
- Zinc pyrithione (CAS#: 13463-41-7) classified as H360D, is exempted for indoor paint and varnishes until 2023-01-01 for paint bases and standard colours/ready-mixed colours and 2024-01-01 for tinting pastes/tinting systems.
- FI: 4,4´-methylenediphenyl diisocyanate, isomers and homologues (CAS no. 9016-87-9) classified as Carc. 2; H351 in spray polyurethane foams used for sealing of windows when temperature Is below 5 °C.

☒ Declaration from the manufacturer of the chemical product, in accordance with Appendix 7.

☒ Safety data sheet in accordance with the statutory requirement in the country of application, e.g. Annex II to REACH (Council Regulation (EC) no. 1907/2006) for all chemical products.

O20 Preservatives in indoor paints and varnishes

The preservative content of indoor paints and varnishes used in the renovation work are limited according to table 8a and 8b below.

The requirement on classification of the chemical product (O18) and other chemical requirements for constituent substances must also be met for indoor paints and varnishes.

Table 8a: Concentration limits for total amounts of preservatives

Total preservatives	Concentration limit
Paints, varnishes, base paints with tinting paste, etc, intended for indoor use	700 ppm (0.070% by weight)
Wet room paint specifically	2500 ppm (0.25% by weight)

Table 8b: Special restrictions for isothiazolinone compounds

Type of preservatives	Concentration limit
Total amounts of isothiazolinones	500 ppm (0.0500% by weight)
2-Methyl-2H-Isothiazol-3-one (MIT*) (CAS no.: 2682-20-4)	100 ppm (0.0100% by weight)
5-chloro-2-methyl-2H-isothiazolin-3-one/2-methyl-2H-isothiazolin-3-one (CMIT/MIT in a 3:1 ratio) (CAS no.: 55965-84-9)	15 ppm (0.0015% by weight)

The term preservative refers to both in-can and dry-paint film preservatives.

For tinting systems, a worst-case calculation is made for the colour with the most tinting paste in the base paint containing the most preservatives and isothiazolinone compounds.

Note that 2,2'-dithio-di-N-methylbenzamide (DTBMA) must be included in the total amount of isothiazolinones.

* *The abbreviation MI can also be used.*

✉ Declaration from the manufacturer of indoor paints and varnishes, in accordance with Appendix 7.

✉ If preservatives are present, a calculation is required to clearly show compliance with the threshold limit values.

O21 Preservatives in other chemical products for indoor use

The preservative content of other chemical products for indoor use that are used in the renovation work is limited according to table 9 below. There are no special requirements for preservatives for chemical products for outdoor use.

The requirement for product classification (O18) and other chemical requirements for constituent substances must also be met.

Table 9: Limits for preservatives in other chemical products for indoor use

Preservatives	Concentration limit
Total amounts of isothiazolinones*	500 ppm (0.0500% by weight)
5-chloro-2-methyl-2H-isothiazolin-3-one/2-methyl-2H-isothiazolin-3-one (CMIT/MIT in a 3:1 ratio) (CAS no.: 55965-84-9)	15 ppm (0.0015% by weight)
Iodopropynyl butylcarbamate (IPBC) (CAS no.: 55406-53-6)	2000 ppm (0.2% by weight)
Bronopol (CAS no.: 52-51-7)	500 ppm

**Note that 2,2'-dithio-di-N-methylbenzamide (DTBMA) must be included in the total amount of isothiazolinones.*

✉ Declaration from the manufacturer of a chemical product for indoor use, in accordance with Appendix 7.

✉ If preservatives are present, a calculation is required to clearly show compliance with the threshold limit values.

O22 Other substances excluded from use

The following substances must not be constituent in the chemical products used in Nordic Swan Ecolabelled renovation of buildings:

- Substances on the EU Candidate List.*
- Substances evaluated by the EU to be PBT (persistent, bioaccumulative and toxic) or vPvB substances (very persistent and very bioaccumulative), in accordance with the criteria in Appendix XIII of REACH and substances that have not yet been evaluated but which meet these criteria.
- Substances considered to be potential endocrine disruptors in category 1 or 2 on the EU's priority list of substances that are to be investigated further for endocrine disruptive effects.**

In addition, the following substances and substance groups may not be included. There may be overlap between the substances listed below and the substances or groups of substances listed above.

- Short-chain chlorinated paraffins (C10–13) and medium chain chlorinated paraffins (C14–C17).
- Perfluorinated and polyfluorinated alkylated substances (PFAs).
- Alkylphenol ethoxylates (APEO) and other alkylphenol derivatives (substances that release alkylphenols on degradation).
- Brominated flame retardants.
- Phthalates.***

- Bisphenol A, bisphenol S and bisphenol F.
- The heavy metals lead, cadmium, arsenic, chromium (VI), mercury and their compounds.
- Volatile aromatic compounds exceeding 1% by weight****.
- Organic tin compounds. Exemptions are made for dibutyltin (DBT) and dioctyltin (DOT) which are permitted in the following levels in the hardener system sealing systems (both primer and joint product):
    - Maximum 0.2% in polyurethane based products
    - Maximum 0.5% in products of silicon, MS polymers and epoxy polymers.

Volatile aromatic compounds are the aromatic compounds whose highest initial boiling point is 250°C measured at a standard pressure of 101.3 kPa. Volatility for paints and varnishes is instead defined as when the vapour pressure of the aromatic compound is at least 0.01 kPA at 293.15°K.

Note that tributyltin (TBT) and trifenyltenn (TPT) are not permitted regardless of content or product type.

*Phthalates refer to esters having the general chemical structure 1,2-benzenediacarboxylic acid. Non-phthalates such as DINCH (EC No. 431-890-2) and DOTP/DEHT (CAS No. 6422-86-2) are not included in the definition and are not prohibited.**

Excluded are D4 (octamethylcylclotetrasiloxane, CAS No. 556-67-2), D5 (Dekamethylcyclopentasiloxane, CAS No. 541-02-6) and D6 (Dodecamethylcyclohexasiloxane, CAS No. 540-97-6) as residual amount from silicone polymer productions ≤ 1,000 ppm each.

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

*** See Annex 1 – Candidate list of 553 substances at: http://ec.europa.eu/environment/chemicals/endocrine/strategy/being_en.htm*

**** The phthalates DINP (CAS no. 28553-12-0 and 68515-48-0), DIDP (CAS no. 26761-40-0 and 68515-49-1) and DIUP (CAS-nr 85507-79-5) are permitted in sealants and primers for expansion joints in concrete, concrete-metal and metal-metal on the outside of the building, including balconies, exterior corridors and similar structures.*

***** Naphtha based primers for waterproofing assembly (flat roofs, green roofs, courtyards, terraces and similar applications), in primers for expansion joints on concrete, concrete-metal and metal-metal outwardly/outside on the building and roof adhesive/adhesive for waterproofing outwardly may contain up to 20% by weight of volatile aromatic compounds.*

✉ Declaration from the manufacturer of the chemical product, in accordance with Appendix 7.

✉ Safety data sheets according to prevailing European legislation for chemical products.

O23 Nanoparticles in chemical products

Nanoparticles from nanomaterial* must not be constituent in chemical products used in Nordic Swan Ecolabelled renovation, with the following exceptions:

- pigments**
- naturally occurring inorganic fillers***
- synthetic amorphous silica and calcium carbonate****

- polymer dispersions

* *The definition of nanomaterial follows the European Commission's definition from 18 October 2011 (2011/696/EU).*

** *Nano-titanium dioxide is not considered to be a pigment, and is therefore not covered by the requirement.*

*** *This applies to fillers covered by Annex V, item 7 of REACH.*

**** *This applies to traditional synthetic amorphous silica (SiO_2) and calcium carbonate ($CaCO_3$) with or without chemical modification.*

✉ Declaration from the manufacturer of the chemical product, in accordance with Appendix 7.

6.3 Construction products, construction goods and construction materials

The requirements apply (as pointed out at the beginning of chapter 6) to all products, goods and materials that are *newly manufactured* and that are added to the renovated building and any supplementary buildings. There are two exceptions to this rule. Requirement O30 is valid for re-used construction products, fittings and materials and requirement O32 which has to be fulfilled both by virgin wood and re-used wood and re-used wooden products.

The requirements do not apply to existing products and materials that are left or moved inside the renovated building.

The requirement must also be fulfilled for any supplementary building (for example garages, bicycle storage rooms, refuse depots and, sheds) and fences, wooden decking, outdoor furniture, outdoor playground equipment and similar items that is included in the Nordic Swan Ecolabelled renovation project/assignment and which is constructed, renovated, and marketed with the Nordic Swan Ecolabelled renovation.

Nordic Swan Ecolabelled or EU Ecolabelled products automatically meet the requirements. State only the license number, product name and manufacturer's name.

Requirement O24 comprises two parts. First a list of the products, goods, and materials to which the requirement applies. Then the chemical substances that may not be included in these are listed. The term *included* here refers to substances added by a producer or its sub-contractor and that are included in the end-product with more than 100 ppm (0.01% by weight) in the end product.

For clarity, the term construction goods is also used. This includes fittings that are not defined as construction products under the Construction Product Regulation (305/2011/EG).

O24 Excluded substances in construction products, construction goods and materials

The requirement applies to the following product categories if the renovation includes these products (see Appendix 8):

- Sealing products on walls, foundation, and roofing.

- Thermal, acoustic, and technical insulation*).
- Interior and exterior building panels. Does not include panels of solid wood, laminated timber, veneer, OSB, plywood, MDF/HDF and chipboard.
- Wood that is impregnated as protection from rot, blue stain and mould.
- Wood composites
- Interior plastic coverings for floors, ceilings, and walls. Coverings in service areas**) are exempt from the requirement.
- Drainage pipes, heavy current cables, (electrical) conduits and plastic pipes for central vacuum cleaning systems. Products in service areas**) are not included.

The following may not be included in the product categories listed above.

- A substance on the EU Candidate List***).
- Substances evaluated by the EU to be PBT (persistent, bioaccumulative and toxic) or vPvB substances (very persistent and very bioaccumulative), in accordance with the criteria in Appendix XIII of REACH and substances that have not yet been evaluated but which meet these criteria.
- Substances classified as carcinogenic, mutagenic or reprotoxic (CMR) categories 1A and 1B.
- Substances considered to be potential endocrine disruptors in category 1 or 2 on the EU's priority list of substances that are to be investigated further for endocrine disruptive effects****).
- In addition, the following substances and substance groups may not be included. There may be overlap between the substances listed below and the substances or groups of substances listed above.
- Short-chain chlorinated paraffins (C10–C13) and medium chain chlorinated paraffins (C14–C17).
- Perfluorinated and polyfluorinated alkylated substances (PFAs).
- Alkylphenol ethoxylates (APEO) and other alkylphenol derivatives (substances that release alkylphenols on degradation).
- Brominated flame retardants.*****) ******)
- Phthalates.
- The heavy metals lead, cadmium, arsenic, chromium (VI), mercury and their compounds.
- Bisphenol A, bisphenol S and bisphenol F.
- Boric acid, sodium perborate, perboric acid, sodium borate (borax) and any other boron compounds classed as carcinogenic, mutagenic or reprotoxic.
- Tin organic compounds.

**) In EPS and XPS insulation material manufactured by polystyrene, residues of styrene monomer are allowed in maximum I000 ppm in the polystyrene (i.e. in the raw material).*

***) Service areas are fan rooms, substations, lift shafts, machine rooms, electricity centres and other areas to which unauthorised persons do not have access.*

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

*****) See document Annex 1 – Candidate list of 553 substances at the following link: http://ec.europa.eu/environment/chemicals/endocrine/strategy/being_en.htm*

******) Insulation foam, exposed to risk of ignition during the production period (at the construction site or during manufacture of prefabricated construction parts) may, when the fire protection assessment shows medium to high risk, be protected with butadiene styrene brominated copolymers as a flame retardant. Examples of risks of ignition are welding works, electricity errors, halogen lighting, concentrated sunlight and arson. The fire protection assessment must be performed by a qualified construction technician, fire risk expert or similar professional. The licensee must submit a project-specific written application for exception to Nordic Ecolabelling.*

*******) The material in (electrical) conduits may contain brominated flame retardants provided that the following limits are fulfilled:*

- Bromine content (Br) ≤ 0.15%

- Chlorine content (Cl) ≤ 0.15%

- Total content: bromine content (Br) + chlorine content (Cl) ≤ 0.2%

The content must be verified using Ion Chromatography (IC) according to the methods in EN 14582 or modified IC-methods according to EN50642.

✉ Declaration from the manufacturer of the solid building product, in accordance with Appendix 9.

✉ Construction product declaration or equivalent if such has been drawn up for the product, as a supplement to Appendix 9.

O25 Nanoparticles and antibacterial additives in construction products and construction goods

1. Nanoparticles from nanomaterial may not be actively added to the glass on balconies* or the outer glass pane of windows, window doors and exterior doors. The outer glass pane is the side of the glass that comes into contact with the exterior environment.
2. Chemicals or additives, including nanomaterial* added to provide an antibacterial*** or disinfecting surface may not be used in or on:
   - floors/floor coverings
   - wall coverings in ceramic material or stone
   - kitchen and bathroom fittings, such as cabinet doors, worktops, mirrors, shower walls, splashbacks, and kitchen sinks.
   - white goods****
   - ventilation systems for the elements that are in contact with indoor air.

** Glass on balconies includes glass for enclosure of balconies and glass for railings, guide rails and similar functions.*

*** The definition of nanomaterial follows the European Commission's definition from 18 October 2011 (2011/696/EU).*

**** An antibacterial chemical inhibits or stops growth of microorganisms such as bacteria, fungi, or protozoa (single-celled organisms). Silver ions, nano silver, nano gold, and nano copper are considered antibacterial substances.*

***** The requirement does not include biocide-treated articles/components in white goods, for example air filter and door gaskets. Silver ions, nano silver, nano gold and nano copper are however never allowed in white goods.*

✉ Certificate concerning the occurrence of nanoparticles and antibacterial chemicals in accordance with Appendix 10.

✉ Construction product declaration or equivalent if such has been drawn up for the product, as a supplement to Appendix 10.

O26 Formaldehyde emissions

Wood-based products that contain more than 3% by weight of formaldehyde-based additives must meet the thresholds stated in the table below. The requirement includes the following products and materials:

- building panels (raw/untreated or surface treated)
- laminated timber
- ceiling/acoustic panels
- wooden panels and timber cladding for walls and ceilings
- mouldings, skirtings, and baseboards
- panels in flooring
- panels in doors and permanent fittings*

	MDF panels**	**All other types of panels**
Maximum permitted emission of formaldehyde, measured in accordance with the current version of EN 717-1	0.124 mg/m^3 air	0.07mg/m^3 air

If the wood-based panel has been tested using a method other than EN 717-1 (Chamber method), the thresholds can be verified according to any of the test methods in the table in Appendix 1 or with a certificate.

Panels marketed or used solely as façade panels are exempted from the requirement.

Laminated panels do not need to be tested for formaldehyde if a certificate can be provided to show that the level of free formaldehyde in glue with any hardener (i.e. the final glue compound) does not exceed 2,000 ppm (0.2% by weight).

* *Permanent fittings include kitchen, hall and bathroom fittings, shelving, wall sections and wardrobes. Individual fittings, such as a hat or shoe shelf, are exempt from the requirement. For Finland, frame doors that are fire-protected according to EN16034 instead of emission limit value in the table above must comply with M1.*

** *The threshold of maximum 0.124 mg/m^3 air for MDF panels applies through 30 June 2019. After this it can be raised.*

If legislation is introduced or tightened, and becomes stricter than Nordic Ecolabelling's requirement levels for formaldehyde during the term of validity of these criteria, requirement O26 will be adjusted.

☒ Certificate concerning occurrence of formaldehyde-based additives in accordance with Appendix 6.

☒ Analysis report, including measurement methods, measurement results and measurement frequency. It must be clearly stated which method/standard was used, the laboratory that conducted the analysis, and that the analysis laboratory is an independent third party.

☒ Certificate for products as an alternative to an analysis report.

O27 Construction products made of polyvinyl chloride (PVC)

1. Interior surface layers on floors, ceilings and walls added during renovation may not consist of or contain PVC. Exemptions are made for:
    - Watertight layers, wall film, acoustic dampening foam and other surfacing under the surface.

- Surfaces in service areas (fan rooms, substations, lift shafts, machine rooms, distribution boards and other areas to which unauthorised persons do not have access).
- PVC mouldings next to sauna doors are exempted from the requirement.

2. Existing PVC surfaces (floors, walls, and ceilings) in soft PVC must be removed and can not be covered by another finish material.
3. Windows, outer doors and window doors made of (hard) PVC and façade coverings made of (hard) PVC that are added during renovation must contain 30% recycled PVC. The recycled plastic resource may not contain lead or cadmium in levels exceeding 100 ppm. Plastic items ≤ 50 grams are exempt from the requirement.
4. Windows and exterior doors made of metal must comprise a certain proportion of recycled material, as stated below. The requirement concerning the proportion of recycled material does not apply to external cladding of outer wood components for the sole purpose of weather proofing or materials that account for less than 3% by weight of the window's, window door's or outer door's total weight. Nor does the requirement apply to hinges, handles, fittings, stabiliser plates and kick plates.
    - At least 40% of the aluminium in profiles or door leaves must be recycled aluminium.
    - At least 20 % of the steel in profiles or door leaves must be recycled steel. Stainless steel is not permitted.

Windows and exterior doors cover products between an outdoor climate and an indoor climate pursuant to standard EN 14351-1:2006. This means fixed and opening facade and roof windows, window doors and external doors. Even other types of exterior doors that can be subject to various function requirements are include, for example hallway doors, loft space doors, warm store doors, cold store doors and various gates.

Lantern lights regulated by product standard EN 1873, and windows and exterior doors that are resistant to fire pursuant to standard EN 16034 are not included in the requirement.

PVDC (polyvinylidene chloride) is a type of chlorinated plastic (PVC) that is not permitted either.

*** Recycled material is defined as recycled material both from the pre-consumer phase and the post-consumer phase, in accordance with ISO 14021:*

Material in the pre-consumer phase: Material diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it. Nordic Ecolabelling defines rework, regrind or scrap, that cannot be recycled directly in the same process, but requires a reprocessing (eg sorting, reclamation and granulation) before it can be recycled, to be pre-consumer material. This is whether it is produced in-house or externally.

Material in post-consumer phase: Material generated by households or by commercial, industrial, and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

✉ 1: Documentation to show how the requirement is fulfilled, for example a product data sheet, construction product declaration form or similar document.

✉ 3 & 4: Specification of the percentage of the material that is recycled, e.g. a construction product declaration form. Declaration from the manufacturer that the raw material is recycled according to Appendix 11.

✉ 3 & 4: Declaration from the smelting works or equivalent of the percentage recycled metal on an annual basis. Declaration from the PVC supplier of the percentage recycled PVC on an annual basis.

✉ 3: For recycled plastic, a certificate to show compliance with the requirement concerning lead and cadmium according to Appendix 11.

O28 Epoxy relining

Bisphenol-based epoxy must not be used for casting new plastic piping inside existing pipes, so called relining. This ban applies to relining of water pipes and wastewater pipes.

✉ Technical description of a relining method that verifies that the method is epoxy-free.

O29 Copper in domestic water pipes and as façade and roofing material

New domestic water pipes installed during a renovation may not be made of copper. The exception is visible pipe laying/pipework and water fittings' connecting pipes.

Cladding for roofs and façades and products for roofs and façades that are newly installed may not have a copper content of more than 10% by weight.

Closed water piping systems such as water-borne heating systems are not covered by the requirement.

Roof and façade products include roof dewatering products, guttering, exhaust air hoods, eaves netting and roofing profiles.

✉ Documentation to show that the requirement is fulfilled.

O30 Requirements for reused construction products

Reused construction products, fittings, and materials originating from other projects or the recycling market must comply with one of the following requirements:

1. ***Construction products, fittings or materials that should be reused and are included in Appendix 13:*** No further documentation of the content of undesirable substances is required.
2. ***Construction products, fittings or materials that should be reused and are not included in Appendix 13:*** The presence of undesirable substances as per Appendix 3 must be verified.

If tree species on Nordic Ecolabelleing's list of prohibited tree species are reused, requirement O32 must be fulfilled.

✉ 1: Verification that the product, fitting or material is included in Appendix 13.

✉ 2: Analysis report for substances as per Appendix 3.

O31 Resource-efficient material selection

To promote resource-efficient and climate-efficient material selection, at least three of the following measures must be taken.

1. Each product category where at least half of the need for the product category is covered by the Nordic Swan Ecolabelled products or by EU

Ecolabelled products. See Appendix 15 for a product category overview. This measure can be repeated. It then counts as additional measures.

2. At least 20% of the building elements/materials (except the façade) stated in O3 as reusable, are reused either in this or another project.
3. At least 50% of the façade is retained or reused for a different purpose in either this or another project.
4. At least 20% of the need for the product category is covered by reused products listed in Appendix 13 or has verified presence of undesirable substances as per Appendix 3. See requirement O30. This is valid for products originating from other projects or the recycling market.
5. Life cycle design/design for reuse. At least five major components* must be life cycle designed (from planning to execution, with a description of dismantling/removal and options for reuse or recycling).
6. Wood or other renewable material is used in frame/load-bearing structures or as a maintenance free façade**.

* *Components include concrete elements, interior walls, roof coating and fixtures.*

** *Façades that under normal conditions do not require treating or other maintenance using chemical products for at least 10 years.*

✉ Documentation showing that at least three of the above measures have been taken. The documentation must include the information specified for the relevant item/measure.

6.4 Timber, bamboo and fibre materials

The requirements in this section, apply to all products, goods and materials that are newly manufactured and that are added to the renovated building and any supplementary buildings. Requirement O32 also applies to wood and wood products that have been reused.

The requirements do not apply to existing products and materials that are left or moved inside the renovated building,

The requirement must also be fulfilled for any supplementary building (for example garages, bicycle storage rooms, refuse depots and, sheds) and fences, wooden decking, outdoor furniture, outdoor playground equipment and similar items that is included in the Nordic Swan Ecolabelled renovation project/assignment and which is constructed, renovated and marketed with the Nordic Swan Ecolabelled renovation.

Nordic Swan Ecolabelled products automatically meet the requirement. Only the manufacturer, licence number and product name must be stated.

O32 Tree species that may not be used in Nordic Swan Ecolabelled renovations

Tree species listed on Nordic Ecolabelling's list of prohibited tree species (see www.nordic-ecolabel.org/wood/) may not be used in Nordic Swan Ecolabelled renovations, with exemption for reuse. If tree species from the list of prohibited tree species are reused, 100 % of the need must be covered by reused wood. No new wood/wooden products from prohibited tree species must be supplied.

The requirement comprises the Nordic Swan Ecolabelled building, but also any supplementary building (i.e. refuse depots, bicycle storage rooms and sheds) and

decking, fences, outdoor furniture, playground equipment and similar items that is included in the Nordic Swan Ecolabelled project/assignment and constructed together with and marketed with the Nordic Swan Ecolabelled building.

Unlike the rest of the requirements in this chapter, this requirement also covers timber and wood that is used in construction but is not incorporated into the building, for example wood in casting moulds.

✉ Declaration of compliance with the requirement from the licence applicant. Appendix 12 must be used.

✉ If wood/wooden products are reused, the origin (site/building) must be documented. It must also be documented that 100 % of the need are covered by the reused wood/wooden products, thus no new wood from the list of prohibited tree species must be supplied.

O33 Wood raw materials

This requirement applies to the following construction elements of solid wood, laminated timber, bamboo, or plywood/veneer:

- roof trusses
- frames and joists
- interior wall panels and ceilings
- roof underlays and panels for walls and floors
- exterior façades
- timber for balconies, terraces, decking and verandas

The licence applicant may of course include other building parts in the calculation of certified timber.

Nordic Swan Ecolabelled wood products are considered as wood from certified forests.

Chipboard, MDF and similar materials are not included.

Names of species

The licence applicant must state the names (species name) of the wood raw material used in the Nordic Swan Ecolabelled renovation.

Chain of Custody certification

Suppliers of wood raw materials must be Chain of Custody certified by the FSC scheme or the PEFC scheme.

Suppliers who only supply construction elements made of recycled material do not need to have Chain of Custody certification. Definition of recycled material, see below.

As an exception from the general rule, a non-Chain of Custody-certified supplier (for example a joinery) to the licence applicant, can be approved, provided that the supplier can guarantee that the wood raw material is purchased from a Chain of Custody certified wood raw material supplier which can prove that the wood raw material fulfils Nordic Ecolabelling's requirement.

Certified wood raw material

At least 70% of the wood raw material must be certified as recycled material by the FSC scheme or the PEFC scheme*.

The remainder of the raw material in the above listed building elements must be covered by FSC/PEFC's Chain of Custody certification or be classified as recycled materials*.

The requirement must be documented as the amounts of timber purchased on a project basis.

**Recycled material/recycled resource is defined according to ISO 14021.*

Pre-consumer material: Material diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it.

Post-consumer material: Material generated by households or commercial, industrial, and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

Nordic Ecolabelling consider-products from primary wood processing industries (sawdust, wood chips, bark etc.) or residues from forestry (bark, branches, roots, etc.) as recycled material.

✉ Name (species name) of the wood used in the listed building elements.

✉ Valid Chain of Custody Certificate under the FSC or PEFC schemes from suppliers. Suppliers who only supply recycled material do not need to have Chain of Custody certification.

✉ Documentation to show that the requirement for the proportion of certified or recycled material is met by a calculation of the total purchased volumes on a project basis. Volume can be reported as purchased volume or weight, but the units may not be combined. The requirement applies either as a total per building element or combined for the listed building elements. Copy of invoice(s) to confirm the proportion of certified timber purchased for the building/project. If a building product is labelled with the PEFC or FSC logo, it automatically meets the requirement and is documented by means of a photograph.

✉ In the exceptions when the licence applicant has a non-Chain of Custody certified supplier, the supplier shall present invoice(s) for the current wood raw material from the Chain of Custody certified supplier and the valid certification which must be in accordance with the invoice(s). The invoice must state volume certified wood raw material. The licence applicant must have a documented agreement with the supplier which describes how the supplier guarantees that the specified, certified wood raw material on the invoice is delivered to the applicant. The agreement shall also include that the supplier is obliged to report to the applicant if the wood raw material supplier is exchanged. Nordic Ecolabelling can ask for further information.

O34 Durable/resistant wood for outdoor use

Timber impregnated with heavy metals and/or biocides are not allowed in Nordic Swan Ecolabelled buildings and the following structures:

- Supplementary buildings and constructions with at least a roof
- Terraces, decking, balconies, railing, partition walls, staircases, wooden trails, and pergolas
- Fences, acoustic fencing

The requirement does not apply to wood in class B according to the Nordic Wood Preservation Council's classification system or a corresponding classification.

Exemptions from the general ban may be made for:

- wood in contact with fresh water or salt water
- wood in direct contact with the ground
- wood in load-bearing structures where a certain strength is required

- wood above ground where there is a significant risk of rot, i.e., risk classes 4 and 5 in accordance with EN 335.

Regardless of any possible exemption, durable wood for outdoor use must fulfil required O24, Unwanted chemical substances.

Nordic Swan Ecolabelled sustainable durable timber for outdoor use fulfils the requirement and may be used without completing a form. Only the manufacturer, product name and licence number must be stated.

The purpose of the requirement is to limit the use of pressure-treated wood in class M, A and AB, because heavy metals and biocides are used in the treatment process.

Nordiska Träskyddsrådet (NTR) (Nordic Wood Preservation Council) has drawn up an industry standard to define the Nordic wood preservation classes within the framework of current European standards and is a Nordic implementation document for EN 351.

✉ To use an exemption from the general ban, the need for pressure-treated timber must be documented in writing, stating the reason. An approval decision by Nordic Ecolabelling must be obtained.

7 Other sustainability initiatives

O35 Sustainability initiatives

To promote further sustainable measures and initiatives in the Nordic Swan Ecolabelled renovation, at least one of the following points must be implemented.

1. ***Energy-efficient construction sites.*** Measures taken for a more energy-efficient construction site with reduced environmental impacts. The measure must be calculated and show at least a 25% reduction in energy consumption and/or greenhouse gas emissions compared with standard solutions.
2. ***Renewable energy.*** Local renewable source of energy (photovoltaic, solar heating or heat recovery in wastewater) is installed. This should cover at least 10% of the building's electricity requirement, 10% of domestic hot water requirement or 10% of the heating requirement.
3. ***Eco-system services and adaptation for climate change.*** Measures enhancing eco-system services and measures for adaption for climate changes are taken in the renovation project.

   Examples are green roofs/green façades (at least 25% of the total roof or façade area), local management of storm water, recirculation of grey waste water, creation of opportunities for urban cultivation and preservation of natural and cultural values of the site.
4. ***Social sustainability.*** Social sustainability/social investment measures undertaken as part of the renovation project. Examples are dialogue with local residents, new social areas, meeting spaces, appropriate lighting that enhances safety in the area, initiatives to increase employment or other types of special focus on socially disadvantaged or discriminated groups. For example,
5. ***Air quality.*** Measurements of emissions in the indoor environment to ensure they are below the threshold limit values in the following table. The measurements will be carried out after all the construction work has been completed and after the building has been aired and before occupancy.

Compounds to be measured	Limit value	Test standard
TVOC (total volatile organic compounds)	≤ 300 µg/m³	ISO 16000-6 or ISO 16017-2 (8 hours average)
Formaldehyde	≤ 50µg/m³	ISO 16000-3 or ISO 16000-4 (30 minutes average)
Particulate matter/dust	PM10 ≤ 50 µg/m³ PM 2.5 ≤ 15 µg/m³	ISO 7708 or equivalent (8 hours average)

Other measures than those listed below may be acceptable upon approval of Nordic Ecolabelling.

☒ 1. Description of energy measures on the construction site. Calculation of reduction of energy consumption and/or emissions of greenhouse gases.

☒ 2. Description of the type of premises, renewable source of energy and the percentage of the energy requirement expected to be covered. Household or business electricity should not be included. For energy requirements, see the energy calculation in requirement O13.

☒ 3. Description of measures undertaken for eco-system services or climate adaptation.

☒ 4. Description of measures undertaken to strengthen social sustainability.

☒ 5. Analysis report with measurement methods, measurement results and measurement frequency. It must be clearly stated which method/standard was applied, the laboratory that conducted the analysis, and that the analysis laboratory is an independent third party. If the threshold limit value is exceeded, relevant measures must be documented and implemented.

8 Information for property managers and residents/users

O36 FDU documentation

There must be overall general information and specific operation and maintenance instructions for the Nordic Swan Ecolabelled renovation and the renovated building. The aim is to ensure that the property manager, users, and residents are familiar with the building, know how technical installations operate and the need for service and maintenance, and the most appropriate measures from an environmental viewpoint.

Where relevant, the information must describe normal operation, maintenance, and service, whether special expertise or authorisation is required, and whether special products are needed for the purpose.

If special products are recommended, they must meet the requirements for chemical products, building products, construction supplies and materials in the criteria (chapter 7.8), or be ecolabelled with the Nordic Swan Ecolabel or the EU Ecolabel.

The information must include the following, where it is relevant and has been included in the renovation process:

a) The building's heating, ventilation and comfort cooling (if any) systems. The information must explain how to set the systems to achieve maximum energy efficiency and optimum indoor climate. The information

must state where thermostats are located and how they are used, time intervals for service, cleaning and filter replacement.

b) Maintenance and control of electrical installations, including energy meters.

c) Systems for energy efficiency/ energy-saving measures and operational optimisation.

d) The importance of demand controlled/presence-controlled ventilation as a mean to reduce energy consumption.

e) Water consumption and water-saving measures and features.

f) Results of radon tests.

g) Surface treatment of the façade and other weather-exposed wooden parts such as terraces, veranda, wooden railings, etc.

h) Care and maintenance of windows, including solar protection.

i) Maintenance of roof surfacing, including cleaning of gutters and drainpipes.

j) Cleaning and maintenance/surface treatment of floors, walls, and worktops.

k) A description of equipment such as white goods, WCs, light fittings, etc.

l) Information about waste sorting, recycling, and waste management.

✉ Overall general information about the building and specific manuals, operation and maintenance instructions as stated in item a) to l) above.

9 Quality management of the renovation process

O37 Management of requirements for products and materials

The licensee must ensure fulfilment of the requirements in Chapter 6. If the licence applicant uses subcontractors, it must be documented that the subcontractor is aware of and adheres to the requirements.

Construction products, materials and chemical products added to the building via subcontractors must also be controllable, e.g. via agreements and inspection.

✉ Routines or agreements that show how materials requirements O18 to O34 are fulfilled for the entire construction process.

✉ If subcontractors are hired, their routines or agreements for compliance with requirements for products and materials must be reported.

O38 Information to those involved in the renovation process

Employees, including supervisors, site managers, sub suppliers and subcontractors involved in the renovation process must have relevant knowledge to be able to ensure compliance with the requirements in conjunction with Nordic Swan Ecolabelled renovation projects.

Parties that require information on how hazardous waste and chemical products must be handled to avoid risks to people and the environment in another language than that of the country in question must receive this information.

✉ Routine in the quality management system and training programme.

✉ Lists of participants after completion of training.

O39 The contractor's self-monitoring

The contractor must have a documented self-monitoring programme in place throughout the renovation process to safeguard quality and compliance with the requirements of Nordic Ecolabelling.

As a minimum, self-monitoring must include routines for:

a) completed environmental analysis/survey and environmental remediation, including management of any unforeseen/missed substances that are hazardous to health or the environment that were discovered later on during the construction phase

b) moisture damage, mould, and fungal growth

c) plan for Indoor Air Quality/IAQ plan

d) how waste and resource plans have been followed (O3 and O6) and whether the plan has resulted in reuse of construction supplies and materials

e) management of construction and demolition waste at building sites

f) moisture/damp prevention

g) routines for the performance of pre-inspection of the building before independent third-party control/final inspection.

If the items stated below have been included in the renovation they must be included in the self-monitoring:

h) air permeability

i) measurement of PCB levels in indoor air

j) secure execution of water installations

k) radon protection

l) electrical installations

m) ventilation

n) heating system

If the licensee is not the same as the contractor, the contractor's self-monitoring can be used for verification.

If the licence applicant uses subcontractors, it must be documented that the subcontractors are also aware of and comply with the routines.

✉ Description of the self-monitoring routines/system.

✉ Results of the self-monitoring performed for the first Nordic Swan Ecolabelled project must be submitted to Nordic Ecolabelling and thereafter on request.

🔑 It is possible that further self-monitoring results will be inspected on-site.

O40 Inspection of the renovated building

The completed renovation project must be inspected to ensure that all quality requirements have been met. If only part of the building has been renovated, the inspection must include at least the renovated part(s).

The inspection must be performed by an independent third party with relevant expertise.

If the final inspection reveals defects, an action plan must be put into place and the defects must be rectified as agreed between the parties.

Unless stipulated otherwise by the national building regulations, as a minimum the final inspection must include the general status of the building and documentation of any quality breaches and building defects.

✉ Inspection report.

✉ Documentation to reinforce the independence and competence of the person performing the inspection.

10 Quality and regulatory requirements

Quality and regulatory requirements are general requirements that are always included in Nordic Ecolabelling's product criteria. The purpose of these is to ensure that fundamental quality assurance and applicable environmental requirements from the authorities are dealt with appropriately. They must also ensure compliance with Nordic Ecolabelling's requirements for the product throughout the period of validity of the licence.

O41 Documentation

The licensee must save and archive the documentation that is sent in with the application.

🔑 On-site inspection.

O42 Documentation of the renovated buildings

The licensee must have a list of Nordic Swan Ecolabelled renovated buildings. The documentation must be stored by the licensee for at least five years after completion of the work.

🔑 On-site inspection.

O43 Planned changes

Written notice of planned product and marketing changes that affect the Nordic Ecolabelling requirements must be submitted to Nordic Ecolabelling.

✉ Procedures detailing how planned product and marketing changes are dealt with.

O44 Unforeseen non-conformities

A written report of any unforeseen non-conformities that affect Nordic Ecolabelling requirements must be reported to Nordic Ecolabelling in writing, without delay and logged.

✉ Routines describing how unforeseen non-conformities in writing and without delay will be handled.

O45 Complaints

There must be routines in place for documenting, reporting and handling any complaints/claims that arise during the renovation process and concerning the Nordic Swan Ecolabelled renovated buildings. It must be clearly stated that the licence applicant is responsible for the customer and is the party that the customer must contact concerning any complaints and claims.

✉ Routines describing how complaints and claims will be handled.

O46 Laws and regulations

The licensee must ensure compliance with all relevant applicable laws and provisions at all production sites for the Nordic Swan Ecolabelled renovated buildings. e.g. with regard to safety, working environment, environmental legislation and site-specific requirements/concessions.

✉ Duly signed application form.

Follow-up inspections

Nordic Ecolabelling may decide to check whether the licensee fulfils Nordic Ecolabelling's 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 licensee does not meet the requirements.

Regulations for the Nordic Ecolabelling of services

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

The descripted sub text for 102 Renovation is: Renovation of building 20XY

More information on graphical guidelines regulations, regulations and fees can be found at www.svanen.se/regulations/ or at www.nordic-ecolabel.org/regulations/

Criteria version history

Nordic Ecolabelling adopted version 1.0 of the criteria for 102 Renovation on 9 November 2017. The criteria are valid until 31 December 2021.

On September 12, 2018, the Nordic Criterion Group decided to:

- Remove the product category "kitchen fan" from requirement O16 that demands energy labelling class.
- Clarify Appendix 8 that the term electric power cable does not include so-called heating cables (cables that emit heat when voltage is applied).
- Introduce the product type "refrigerator in factory-made minikök / trinettkök" in requirement O16 with minimum energy class A+ required.
- Clarify the definition of retirement homes.

Furthermore, Nordic Ecolabelling approved on 17 October 2018 the exception for DIUP (CAS-nr 85507-79-5) in expansion joints for outdoor use.

The adjustments and changes were published in the new version 1.1.

On the 22 January 2019 Nordic Ecolabelling decided to:

- Adjust requirement O14 regarding renovation class for Denmark’s part.

On the 4 February 2019 Nordic Ecolabelling decided to:

- Exclude D4, D5 and D6 as residual amount from the production of silicone polymers ≤ 1000 ppm each in requirement O22.

The adjustment is published in version 1.2.

Nordic Ecolabelling decided on 16 December 2019 to prolong the criteria with 18 months to the 30 June 2023. The new version is called 1.3.

September 15, 2020, it was decided to introduce exemptions for TiO_2 and TMP in O19 CMR-substances due to new classification.

The adjustments are published in a new version of the criteria named 1.4.

Nordic Ecolabelling decided on 10 January 2023 to update energy classes in O16 according to the new energy directive. Exemptions have been added or changed in O18, O19, O22, O26 and O27; clarification of what the requirement covers has been done in O25, O32, O33 and O34. Furthermore, on February 14, 2023, it was decided to prolong the validity of the criteria by 24 months.

The adjustments are published in a new version of the criteria named 1.5.

New criteria

The following areas will be taken into account in the drafting of the next version of the criteria for Nordic Swan Ecolabelled renovation 2.0:

- Daylight in a renovated building
- Noise environment (residential and office buildings)
- Reuse of concrete
- Limits for tin organic compounds
- Water usage
- Routines to measure air permeability (if the renovation has included measures in the building envelope.
- Stricter follow up on remediation plan during demolition process.
- Review of the exception for phthalates in expansion joints

Appendix 1 Laboratories and methods for testing and analysis

General requirements for testing and analysis laboratories

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

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

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

PCB in indoor air

PCB levels in indoor air shall be measured in compliance with "Instructions for measuring PCBs in the indoor environment". This instruction-document is as far as possible, based on German and International standards and can be downloaded on http://pcb-guiden.dk/pcb_indeluft_komm.

PCB is adsorbed to air borne particles but occurs also in the gas phase. The method that is prescribed in the instruction-document is active sampling with pump and filter to gather PCB adsorbed to air borne particles and a tube with adsorbent to capture more volatile PCB-compounds.

Appendix 1 in Instructions for measuring PCBs in the indoor environment contains an example of a test record to be used,

Formaldehyde in wood-based panels

The Chamber method

The European standard EN 717-1 (The Chamber method) is recommended as an appropriate method to determine formaldehyde emissions from wood-based panels/boards, Results are expressed in mg formaldehyde/m^3 air.

As test method for laminated panels the European standard EN 717-2 can also be used. Note that the results are expressed in mg formaldehyde/m^2h. Any conversion factor must be stated.

Other test methods

An alternative method for EN 717-1 can be relevant standard in the EN 16000-serie with measuring of formaldehyde after 28 days. Subsequently the EN-standard applicable at the time for determining reference emission values must be applied.

Other test methods such as the Perforator method according to the now valid standard ISO 12460-5 or previously valid EN 120-standard, JIS A 1460, ASTM

D6007-2 or equivalent can be used. It must be stated which method has been used and if conversion factors have been used, this must be documented.

Other test methods can be used of the correlation between test methods can be verified by a third party.

Appendix 2 Exemptions from overall responsibility

The basic rule is that the licence applicant is responsible for the fulfilment of all requirements in the criteria. Certain exemptions may be made from this rule with regard to single-family houses, apartment buildings and office buildings see below. *No exemptions* may be made for school buildings and pre-school buildings.

Exemptions from overall responsibility concerning single-family houses, apartment buildings and office buildings:

- The building can be renovated and Nordic Swan Ecolabelled without kitchen fittings. But kitchen fittings that fulfil Nordic Ecolabelling's criteria for Furniture and fittings, as well as white goods that fulfil Nordic Ecolabelling's criteria for White Goods, must be recommended.
- The building can be renovated and Nordic Ecolabelled without painting of interior surfaces (with the exception of wet rooms). But paint that fulfils the EU Ecolabel or Nordic Ecolabelling's criteria for interior paint must be recommended.

Exemptions from overall responsibility concerning single-family houses

The single-family house can be renovated and Nordic Swan Ecolabelled without:

- Fitting of attics/lofts. If the attic is delivered without fitting out, the building envelope must be completed so as to fulfil the energy and impermeability requirements.
- Painting of façades. The building must be primed and have undergone at least one year's exposure without any damage. Paint that fulfils the EU Ecolabel or Nordic Ecolabelling's criteria for exterior paint must be recommended.

Nordic Ecolabelling may approve other exemptions on request.

Appendix 3 Survey of hazardous substances and hazardous waste

Prior to demolition and rehabilitation works, the building including installations, fittings and other that is suspected to contribute to hazardous waste and hazardous substances in the building shall be assessed. The table below gives an overview of the hazardous substances, limits and examples where the substances may be present in construction materials.

The table is divided into two parts:

1. Substances that can be classified as hazardous waste according to national authority regulations.
See national legislation, authority regulations and industry standards for definitions of what constitutes hazardous waste in a building. Substances that are classified as hazardous waste include asbestos, CFC and chrome (see the top line of the table below). There are no threshold limit values for asbestos and CFC. These substances are always classified as hazardous waste. They must be identified and recorded in the same way as other substances.

2. Substances for which Nordic Ecolabelling has set specific threshold limit values.
The threshold limit values are generally stricter than the threshold limit values for hazardous waste in the Nordic countries, but they are not as stringent as the requirements for the respective substances in new building products (Requirements O18 - O27). If the authorities' threshold limit values in the country in question are stricter than those specified in the table, the threshold limit values of the authority shall take precedence. The threshold limit values for hazardous waste are specified in the table for comparison. These represent the threshold limit values from one or more Nordic countries.

The chartered environmental surveyor decides which materials to analyse for the various substances, based on knowledge and experience of the presence of undesirable substances. The analyses must be carried out by an accredited laboratory and, as far as possible, must be accredited analysis methods (see Appendix 1).

Any materials/building elements with undesirable substances exceeding the threshold limit values in the table below must either be removed or encapsulated/rendered harmless. The terms encapsulated/rendered harmless refer to measures taken to prevent the spread of the substances which may be hazardous to human health and the environment. It is important that this is clearly documented in the logbook so that the information is available for future work on the building. Encapsulation/remediation measures to render harmless any identified substances are permitted to enable reuse and to prevent unnecessary and expensive removal of materials.

If a risk assessment shows that a material/building element does *not* constitute a hazard to either human health or the environment, the material/building element may remain in the building without it having to be encapsulated or rendered

harmless in some other way. This applies, for example, to metallic lead and lead and cadmium stabilisers in PVC windows (see the table).

Table. Substances to be assessed with corresponding limits (mg/kg = ppm), examples of occurrence in material or building and measures.

Undesirable/hazardous substances to be assessed	Example of occurrence	Measures
1. Substances classified as hazardous waste according to national legislation and guidelines.		
For example, asbestos, CFC and chromium. Nordic Ecolabelling has stricter limits for single substances, se table rows below.	All installations, fixed fittings and other in the building that can contain the undesirable/hazardous substances.	Legislation, guidelines, and praxis must be followed. Hazardous waste must normally be removed from the building, transported by approved carrier(s) and be handled by approved consignees of hazardous waste
2. Substances for which Nordic Ecolabel has established specific limits		
Lead, metallic No limit for metallic lead. The risk for dispersion/contamination decides actions. Limit for hazardous waste: 2.500 mg/kg	Stained glass Brass and bronze Lead plate as radiation protection Cable shields and sheathing of lead Joints in waste pipes (blydiktning) Lead-acid batteries	If present, the risk of spread must be assessed. If there is a risk of the substance spreading, the lead-containing material must be removed or encapsulated/rendered harmless.
Lead compounds Nordic Ecolabelling limit: 500 mg/kg. Limit for hazardous waste: 1.000-3.000 mg/kg depending on the compound	Sealants Rubber mats Paint layer (dried) which may contain lead (lead white, red lead, etc.) Tiles, clinkers, roof tiles with bly glazes PVC pipe (e.g. drainage pipes) PVC products with lead stabilizers like window frames and carpets	If the concentration exceeds the threshold limit value, the material must be removed or encapsulated/rendered harmless. Exemptions for lead stabilisers in windows made of uPVC. These may be left in place in the building without being encapsulated/rendered harmless.
The brominated flame retardants HexaBDE, PBDEs, oktaBDEsr, HBCD, and HBCDD Nordic Ecolabelling limit: 1.000 mg/kg. Limit for hazardous waste: 1.000-3.000 mg/kg depending on the compound	Rubber foam insulation (black refrigeration insulation) type Armaflex Foam Insulation (such as white soft insulation around the soft copper pipes) Condensation insulation with brominated flame retardants Plastic in old electronics PP or PE plastic e.g. in moulding, plastic parts for fans etc.	If the concentration exceeds the threshold limit value, the material must be removed.

The phthalates DEHP, BBP, DBP, and DIBP Nordic Ecolabelling limit: 1.000 mg/kg. Limit for hazardous waste: 1.000-3.000 mg/kg depending on the compound	Electrical cables Floor adhesive (black glue under linoleum, called "Linolag» Insulation in closed wall and roof Technical insulation Rubber sealing strips Sealant materials (filling agents), foam sealants Flexible PVC exposed to indoor environment (not including the layer below the surface layer) For example Vapor barrier, cable, floor covering, membrane for wet rooms, basements, radon barrier, roofing membrane, wind-proof membrane / barrier plastic mats, pipes, strips, etc	If the concentration exceeds the threshold limit value, the material must be removed or encapsulated/rendered harmless. Interior surface layers of plasticised PVC must always be removed (see Requirement O27).
Cadmium compounds Nordic Ecolabelling limit: 100 mg/kg. Limit for hazardous waste: 1.000-2.500 mg/kg depending on the compound	Drainpipes of plastic with cadmium Electrical cables in yellow, red and orange shades Colour pigments in building materials PVC windows PVC flooring with bright shades of yellow, red, and orange Tiles, clinkers (and other glazed ceramic material) in bright shades of yellow, red and orange. Plastic profiles, plastic pipes, interior fittings made of plastic Stabilizer in plastics	If the concentration exceeds the threshold limit value, the material must be removed or encapsulated/rendered harmless. Exemptions for cadmium stabilisers in windows made of uPVC. These may be left in place in the building without being encapsulated/rendered harmless. Interior surface layers of plasticised PVC must always be removed (see Requirement O27).
Chlorinated paraffins Short-chained chlorinated paraffins (SCCPs, C10-C13) and medium-chained chlorinated paraffins (MCCPs, C14-C17) Nordic Ecolabelling limit: 1.000 mg/kg. Limit for hazardous waste: 2.500 - 10.000 mg/kg depending on the compound	Lighting, spotlights Rubber flooring Insulation, wet room items Cables, insulation pipes (plastic pipes for electrical wiring) Glue, adhesive Paint and varnish Plastic (PVC plastic / vinyl), flooring Sealing materials (filling agents), sealants Windows	If the concentration exceeds the threshold limit value, the material must be removed or encapsulated/rendered harmless. Interior surface layers of plasticised PVC must always be removed (see Requirement O27).
Mercury, metallic No limit for metallic mercury	Deposits in sewer pipes and water traps Electric and electronic waste (for example thermometers, pressure meters and halogen lamps)	If the concentration exceeds the threshold limit value, the material must be removed.

Mercury compounds Nordic Ecolabelling limit: 100 mg/kg. Limit for hazardous waste: 500-2.500 mg/kg	Paint and varnishes Sludge and flushing water with mercury	If the concentration exceeds the threshold limit value, the material must be removed or encapsulated/rendered harmless.
Nonyl- and octylphenols Nordic Ecolabelling limit: 1.000 mg/kg. Limit for hazardous waste: 2.500 mg/kg	Flooring, seamless flooring / epoxy flooring, e.g. for use in fitness rooms, sports halls, industrial halls or the like Adhesives Paints Sealing materials (filling agents), wet room membranes	If the concentration exceeds the threshold limit value, the material must be removed or encapsulated/rendered harmless.
PCBs (polychlorinated biphenyls) in cables, windows ans electric components No Nordic Ecolabelling limit Limit for hazardous waste: 50 mg/kg	Lighting, luminaires Insulating glass, as the seal Cables with PCB-containing oil (more than 2 ppm by weight PCB) Capacitors	If the concentration exceeds the threshold limit value, the material must be removed.
PCBs (polychlorinated biphenyls) in other products Nordic Ecolabelling limit: 0,1 mg/kg internal and 1 mg/kg external* Limit for hazardous waste: 50 mg/kg	Concrete Floor masses Sealant Sealing adhesive Paints Insulating glass, as the seal Adhesives Windows, windows from different periods have used various hazardous substances Flooring	If the concentration exceeds the threshold limit value, the material must be removed or encapsulated/rendered harmless.
Radon	Alum Shale and / or black slate Blue light concrete	If the concentration exceeds the threshold limit value, the material must be removed.

* Measured inside the material or in a finish, depending on where the concentration was deemed to be the highest. The limit is the one used in the Danish regulation "Restproduktbekendtgørelsen" from December 2016.

Appendix 4 Moisture survey

The following structures at risk of moisture problems should be examined if they exist:

- Watertight layers in wet rooms
- Watertight layers on roofs, balconies, and terraces
- Water-conducting pipes
- Extra-insulated attic joists
- Ventilated attics
- Gently sloping roofs
- Outdoor-air-ventilated crawl spaces
- Ground slabs with insulation on top
- Single-stage sealed façades with moisture-sensitive material

Appendix 5 IAQ-plan

The indoor air quality plan shall at least include the following:

- Placing and shaping of the buildings ventilation system to improve air quality and to minimize air pollution according to EN 13779:2007 Annex A.2 or other relevant standard.
- The usage of guidelines for clean building process and cleaning used in the building period.
- Inspection of ventilation in use affected by the renovation.
- Storage and handling of materials and construction product according to the producer's specification to protect from particles, condensation, or other contamination.
- Flushing with clean outdoor air minimum two weeks before inhabitation.
- Installation of new air filters before and after building flush out. The filters of outdoor air should be adapted to outdoor air quality (ODA 1-3) and be minimum IDA 2 for indoor air according to table A.5 in EN 13779 or/either in accordance to EN 779. Only valid for FTX.

Appendix 6 Declaration on emissions of formaldehyde

The declaration applies to the following products:

- building panels (raw/untreated or surface treated)
- laminated timber
- ceiling/acoustic panels
- wooden panels and timber cladding for walls and ceilings
- mouldings, skirtings, and baseboards
- panels in flooring
- panels in doors and permanent fittings

Panels that are not solely marketed as façade panels are exempted.

Product name		
Manufacturer		
Product description	☐ Building panels/boards ☐ Laminated timber ☐ Ceiling/acoustic panels ☐ Moulding, skirtings and baseboards	☐ Wooden panels and timber for walls and ceilings ☐ Boards in floorings ☐ Boards in doors and fittings

1. Does the wood board/panel contain more than 3% by weight of formaldehyde-based additives? Yes ☐ No ☐

If yes, fill in bullet 2 and bullet 3 or 4 below.

2. <u>For laminated panels/boards</u>:
Does the level of free formaldehyde in glue with any hardener (i.e. final glue compound) exceed 2,000 ppm (0.2% by weight)? Yes ☐ No ☐

If yes, fill in bullet 3 or 4 below.

3. Is the product certified with any of the following certifications?

* E1 or M1 for MDF-boards Yes ☐ No ☐
* CARB PHASE II or Indoor Air Comfort GOLD/Indoor Air Comfort for all types of boards? Yes ☐ No ☐

If yes, what certification is held?

_____

_____

If no, please fill in paragraph 4 on the next page.

4. Does the emission of free formaldehyde exceed the below stated limit, in accordance with the current version of the standard at the time of sampling.

EN 717-1:
0.124 mg/m^3 air for MDF panels/boards
Yes ☐ No ☐
0.07 mg/m^3 air for all other types of panels/boards Yes ☐ No ☐

ISO 16000-9, M1, Eurofins or equivalent:
0,05 mg/m2/h for MDF-boards Yes ☐ No ☐
0,03 mg/m2/h for all other boards Yes ☐ No ☐

ASTM E1333:
0,09 ppm for MDF-boards Yes ☐ No ☐
0,08 ppm for all other boards Yes ☐ No ☐

JIS A1460:
0,90 mg/l for MDF-boards Yes ☐ No ☐
0,53 mg/l for all other boards
Yes ☐ No ☐

ISO 12460-5 alternatively EN 120:
8 mg/100 g dry substance for MDF-boards
Yes ☐ No ☐
4 mg/100 g dry substance for all other boards Yes ☐ No ☐

Signature of panel/board manufacturer

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

A correct signed declaration can result in the acceptance of use of the construction product in Nordic Swan Ecolabelled buildings. This shall not be mixed up with the Nordic Swan Ecolabelling of the construction product

Appendix 7 Declaration from the manufacturer of the chemical product

The appendix applies to all chemical products (liquid or gaseous uncured chemical products) that are used in construction work at a building site or by manufacturers of prefabricated construction elements. Chemical products used to construct any supplementary buildings or to construct fences, decking, outdoor furniture, playground equipment and similar are also included.

This appendix is completed and signed by the chemical supplier based to the best of his/her knowledge at the time of the application, also based on tests and/or declarations from raw material manufacturers, with reservations for new advances and new knowledge. Should such knowledge arise, the undersigned is obliged to submit an updated declaration to Nordic Ecolabelling.

Chemical product name
Manufacturer
Type of chemical product (e.g. adhesive, paint) and its area of use

1. Classification of chemical products

Is the chemical product classified according to the table below? Yes ☐ No ☐

If yes, which classification? _____

_____

Classification under CLP Regulation 1272/2008	
Hazard class and category	**Hazard phrases**
Toxic to aquatic organisms Category acute 1 Chronic 1-2	H400*) **), H410, H411***)
Hazardous to the ozone layer	H420
Acute toxicity Category 1-3	H300, H310, H330, H301, H311, H331,
Specific target organ toxicity (STOT) with single and repeated exposure STOT SE category 1 STOT RE category 1	H370, H372
Carcinogenic Carc. 1A/1B/2	H350, H351
Mutagenic Muta. 1A/B/2	H340, H341
Toxic for reproduction Repr. 1A/1B/2	H360, H361, H362

The classifications in the Table concern all classification variants. For example, H350 also covers classification H350i.

**) Chemical anchors classified H400, are allowed in the installation of reinforcing bars in concrete constructions in apartment buildings.*

***) Sub-components in acrylic floor coatings, classified H400 are allowed to use in caterers. The Nordic countries with an authorization system, the flooring contractor must be authorized.*

****) The classification H411 is accepted for naphtha-based primers for use in waterproofing assembly (flat roofs, green roofs, courtyards, terraces and similar applications). The classification H411 is also accepted for primers for expansion joints on concrete, concrete-metal and metal-metal outwardly/outside on the building and for roof adhesive/adhesive for waterproofing outwardly.*

2. Constituent substances

Definition of constituent substances

Constituent substances are all substances in the chemical products, including additives (such as preservatives and stabilizers) in the raw materials, but do not include impurities.

Impurities are residues from production including production of raw materials which may be found in the final chemical product at concentrations below 100 ppm (0.01 w/w, 100 mg/kg), but not substances that have been added to a raw material or the product actively and for a particular purpose, irrespective of quantity.

Examples of impurities are residues or reagents, residues of monomers, catalysts, by-products, purification chemicals and detergents for production equipment. Background levels of environmental contamination and carry-overs from production are also examples of impurities.

Impurities of over 1% concentration in the raw material are, however, regarded as constituent substances, regardless of the concentration in the final chemical product Substances known to be degradation products of the constituent substances are also themselves considered to be constituent sub-stances.

3. CMR-substances

a) Are any of the following substances constituent in the chemical product? Yes ☐ No ☐

Classification under CLP Regulation 1272/2008	
Hazard class and category	**Hazard phrases**
Carcinogenic Carc. 1A/1B/2	H350, H351
Mutagenic Muta. 1A/1B/2	H340, H341
Reprotoxic Repr. 1A/1B/2	H360, H361, H362

The classifications in the Table concern all classification variants. For example, H350 also covers classification H350i.

Exemptions are made for:

- Tin organic compounds, see requirement O20.

- The level of free formaldehyde (from formaldehyde not intentionally added or from formaldehyde-releasing substances) in the end-product must not exceed 200 ppm (0.02% by weight).

- Desiccant driers classified as reprotoxic category 2 in paint containing alkyd-based binders are permitted up to and including 30 June 2017 for outdoor paint (both consumer products and industrial paint). The total content of desiccant with the same classification must also be less than 0.3%. The exemption does not apply to substances on the EU's Candidate List.

- D4 (Octamethyl cyclotetrasiloxane, CAS-no 556-67-2) as a residue from the production of silicon polymers ≤ 1000 ppm.

- Vinyl acetate (CAS-no 108-05-4) as a residual monomer i polymers ≤ 1000 ppm.

- Glyoxal (CAs.no 107-22-2) ≤ 100 ppm (0.01% by weight) in the final product if the pH-value in the final product is higher than pH 8.

- Mineral oil in naphtha-based primers in waterproofing assembly (flat roofs, green roofs, courtyards, terraces, and similar applications), in primers for expansion joints on concrete, concrete-metal and metal-metal outwardly/outside on the building and as roof adhesive/adhesive for waterproofing outwardly. The exemption applies provided that the mineral oil has been tested with the IP 346 method (Determination of polycyclic aromatics in petroleum fractions) showing that the mineral oil contains less than 3% DMSO extract, alternatively that it is shown that the benzene content is lower than 0,1%. This must be verified by the safety data sheet.

- TiO2 which is added in powder form during raw material production.

- The dispersant trimethylolpropane (CAS #: 77-99-6) up to 1% by weight in pigment. Time-limited exception that applies until 2022-05-31.

b) If yes, specify classification and the quantity as a percentage by weight of each substance:

_____

_____

c) Is the declaration about CMR substances done for a hardened two-component product? Yes ☐ No ☐

d) If yes, is safety equipment used when the hardener is mixed with the paint/lacquer and is the application of the finished two-component product done in a closed, well-ventilated system according to national regulations? Yes ☐ No ☐

4. Preservatives in indoor paints and -varnishes

Are any of the following preservatives/combinations of preservatives constituent in indoor paint and varnishes?

- Isothiazolinone compounds totally exceeding 500 ppm Yes ☐ No ☐
- MIT* (2-Methyl-2H-Isothiazol-3-one CAS-no 2682-20-4) exceeding 100 ppm Yes ☐ No ☐
- A mixture (3:1) of CMIT/MIT (5-Chloro-2-Methyl-2H-Isothiazol-3-one/2-Methyl-2H-Isothiazo-3-one CAS-no 55965-84-9) exceeding 15 ppm? Yes ☐ No ☐
- Preservatives totally exceeding:
  – 2500 ppm for wet room paint Yes ☐ No ☐
  – 700 ppm for all other indoor paints and-varnishes Yes ☐ No ☐

The term preservative refers to both preservatives for tinned products (in-can) and preservatives for the surface finish.

Note that Dithio-2,2'-bis-benzmethylamide (DTBMA) is to be included in the total amount of isothiazolinones.

* *Note that the shortening MI may also be used.*

5. Preservatives in other chemical produtcs for indoor use

Are any of the following preservatives/combinations of preservatives constituent in any other chemical product for indoor use?

- Isothiazolinone compounds totally exceeding 500 ppm Yes ☐ No ☐
- A mixture (3:1) of CMIT/MIT (5-Chloro-2-Methyl-2H-Isothiazol-3-one/2-Methyl-2H-Isothiazol-3-one CAS-no 55965-84-9) exceeding 15 ppm Yes ☐ No ☐
- Iodopropynyl butylcarbamate (IPBC) exceeding 2000 ppm Yes ☐ No ☐
- Bronopol (CAS-no 52-51-7) exceeding 500 ppm
  Yes ☐ No ☐

The term preservative refers to both preservatives for tinned products (in-can) and preservatives for the surface finish.

Note that Dithio-2,2'-bis-benzmethylamide (DTBMA) is to be included in the total amount of isothiazolinones.

6. Other substances excluded from use

Are any of the following substances constituent in chemical product?

- Substances on the Candidate List* Yes ☐ No ☐
- Substances evaluated by the EU to be PBT substances or vPvB substances in accordance with the criteria in Appendix XIII in REACH including substances those has not been evaluated but are considered to meet the requirements. Yes ☐ No ☐
- Substances considered to be potential endocrine disruptors in category 1 or 2 on the EU's priority list of substances that are to be investigated further for endocrine disruptive effects** Yes ☐ No ☐
- Short-chain chlorinated paraffins (C10-C13) and medium chain chlorinated paraffins (C14-C17) Yes ☐ No ☐
- Perfluorinated and polyfluorinated alkylated substances (PFAs) Yes ☐ No ☐
- APEO – alkylphenol ethoxylates and other alkylphenol derivatives (substances that release alkylphenols on degradation) Yes ☐ No ☐
- Brominated flame retardants Yes ☐ No ☐
- Phthalates*** Yes ☐ No ☐
  If Yes, Specify the phthalates in the product (name and CAS-no) _____
- Bisphenol A, bisphenol S and bisphenol F Yes ☐ No ☐
- The heavy metals lead, cadmium, arsenic, chromium (VI), mercury and their compounds Yes ☐ No ☐
- Volatile aromatic compounds > 1% by weight**** Yes ☐ No ☐
- Organic tin compounds Yes ☐ No ☐

- Does any of the exemptions for dibutyltin (DBT) and dioctyltin (DOT) in sealing products (the primer and joint product respectively) stated below need to be used: Yes ☐ No ☐

    - Maximum 0.5% in silane hardener systems.
    - Maximum 0.2% in other hardener systems.

Please state type of polymer and/or product:

_____

Please state type and content of inorganic compound:

_____%

Volatile aromatic compounds are any aromatic compound having an initial boiling point less than or equal to 250°C measured at a standard pressure of 101.3 kPa. For paints and varnishes volatile aromatic compounds are instead defines as aromatic compounds having a boiler pressure of at least 0, 01 kPa at 293.15 K.

Note that Tributyltin (TBT) and Triphenyltin (TPT) are not accepted regardless of content or product type.

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

*** See document Annex 1-Candidate list of 553 substances on the following link: http://ec.europa.eu/environment/archives/docum/pdf/bkh_annex_01.pdf*

**** The phthalates DINP (CAS-no 28553-12-0 and 68515-48-0), DIDP (CAS-no 26761-40-0 and 68515-49-1 and DIUP (CAS-nr 85507-79-5) are however permitted in sealants and primers in expansion joints on concrete, concrete-metal and metal-metal outwardly/outside on the building including the use on balconies, exterior corridors and similar applications.*

***** Naphtha-based primers for waterproofing assembly (flat roofs, green roofs, courtyards, terraces and similar applications, primers in expansion joints on concrete, concrete-metal and metal-metal outwardly/outside on the building and roof adhesive/adhesive for waterproofing outwardly may contain up to 20% by weight of volatile aromatic compounds.*

7. Nanoparticles in chemical products

Are nanoparticles (from nanomaterial*)) constituent in chemical product? Yes ☐ No ☐

Exemptions are made for:

- Pigments**)
- Naturally occurring inorganic fillers***)
- Synthetic amorphous silica and calcium carbonate*)***)
- Polymer dispersions

**) The definition of nanomaterial follows the European Commission's definition of nanomaterial of 18 October 2011 (2011/696/EU): "A nanomaterial is a natural, incidental or purposely manufactured material containing particles, in an unbound state or as an*

aggregate or as an agglomerate and when, for at least 50% of the particles in the number size distribution, one or more external dimensions is in the size range 1-100nm."

***) Nano-titanium dioxide is not considered to be a pigment, and is therefore not covered by the requirement.*

****) This applies to fillers covered by Annex V, item 7 of REACH.*

*****) This applies to traditional synthetic amorphous silica (SiO2) and calcium carbonate (CaCO3) with or without chemical modification.*

Signature of chemical product manufacturer

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

A correct signed declaration can result in the acceptance of use of the construction product in Nordic Swan Ecolabelled buildings. This shall not be mixed up with the Nordic Swan Ecolabelling of the construction product.

Appendix 8 Construction products, construction goods and construction materials

The Table contains more detailed information of the product groups that must verify requirement O24 and what is included or exempted.

Product/material and brief description	Covered by requirement O24	Not covered by requirement O24
Fixed sealing products The purpose is to seal from mainly wind and moisture, but also noise and fire. Sealing product is often placed on both sides of the insulation of walls, ground, and roof. Sealing products may consist of various materials (cardboard, plastic, fibreglass, etc., often in combination).	Moisture/vapour barriers, wind barriers and radon barriers on walls, foundation/cellar, and roof. For example, roofing foil, roofing membrane/roofing underlay. Wet room panels and fixed sealing layer for wet rooms. Jointing strips, tape and similar sealing products used to seal seams, joints, bushings and connections. Form construction materials that remain after casting/moulding	Roofs regardless of material, light pipes or heat and smoke vent.
Interior and exterior building panels May consist of many different materials: cement, fibreglass, gypsum, cardboard and carton, often in combination.	Interior building panels for roofs, walls and floors other than wood based panels. Exterior panels and facade panels other than wood-based panels.	Wooden panels (solid wood, laminated timber, veneer, plywood, OSB, MDF and chipboard), which instead must fulfil Requirement O26.
Thermal, acoustic, and technical insulation. Intended to avoid heat loss, avoid condensation, dampen noise, etc. Examples of insulation material are mineral wool (stone or glass), cellular plastic, cellulose fibre and light clinker. The material often contains additives for flameproofing, dust control or mould protection. The insulation material may also be surfaced and coated with substances to achieve a required function.	All thermal and acoustic insulation of walls, roofs and ground/foundation slabs are included, as well as insulation of basements. Technical insulation is, for examples, the insulation of pipes, ducts, and shafts.	Building products that are purchased in "finished" state and which contain insulation, such as windows and outer doors. Vibration-dampening webbing that is often used between building elements must not be deemed to be insulation and is exempt from the requirement.
Impregnated wood	Timber that is impregnated as protection from rot, blue stain and mould.	Pre-impregnated construction supplies such as windows and outer doors. Fire protection impregnated timber.
Wood composites A material that is normally a mix of wood fibre/woodmeal and (thermo) plastic (WPC). It is used for façades, boards, outdoor decking/ balconies, fences, etc. The term composite should not be confused with sandwich structure.	Composite wood used to construct Nordic Swan Ecolabelled buildings and related courtyards, play areas or supplementary buildings.	
The table continues on the next page.		

Product/material and brief description	Covered by requirement O24	Not covered by requirement O24
Interior covering of plastic for floors, ceilings, and walls	Concerns both surface layers, i.e. what you "walk on and see" and layers under the surface layer like acoustic dampening foam for example. Wet room wallpaper is included. Fixed sealing layers are covered by fixed sealing products - see above.	Products in service areas are completely exempt from the requirement. Service areas are fan rooms, substations, lift shafts, machine rooms, electricity centres and other areas to which unauthorized persons do not have access. The following are not service areas: all living areas and communal areas such as dressing rooms, shower rooms, stairways, entrance areas, storerooms, corridors in basements/galleries, pram rooms and bicycle rooms. Shower walls are not included.
Drainage pipes, heavy current cables, conduits, and plastic pipes for central vacuum cleaners. The products have in common that the material is plastic - traditional chlorinated plastics (PVC).	Pipes for drainage/sewage, pipes for central vacuum cleaners and (electrical) conduits. Heavy current cables/electricity cables for nominal voltage equivalent to or more than 50 V AC voltage or 120 V DC voltage. This means that the requirement includes electricity wires/cables for plugs and for apparatus such as fittings with 230 V, white goods, heat pumps, etc.	Products in technical areas are completely exempt from the requirement. Cable conduits in ground are not included. The requirement does not include Internet, data, telephony, and TV cables. The requirement does not include heating cables, that is cables that produce heat when energized. Plastic products such as palletising trays, plastic spacers, ground spacers, bends, sleeves, mounting boxes, roof boxes, inflow and outflow pipes for white goods, and so on.

Appendix 9 Declaration on substances excluded from construction products, construction goods and materials

The declaration applies to manufacturers of any of the following building products, goods and building materials:

☐ Sealing products (such as vapour, wind and radon barriers, fixed waterproofing of wet rooms, roof surfacing and roofing membrane).	☐ Thermal, acoustic and technical insulation.
☐ Interior and exterior building panels (besides panels of solid wood, laminated timber, veneer, OSB, plywood, MDF/HDF and chipboard)	☐ Interior plastic coverings for floors, ceilings and walls*
☐ Wood composites	☐ Wood that is impregnated as protection from rot, blue stain and mould.
☐ Drainage pipes*	☐ (Electrical) conduits*
☐ Electricity cables*	☐ Other. Please specify:
☐ Plastic pipes for central vacuum cleaners*	_____

* *Service areas are exempt from the requirement. Service areas are fan rooms, substations, lift shafts, machine rooms, electricity centres and other areas to which unauthorized persons do not have access.*

Name of the product
Manufacturer

This declaration is completed and signed by the manufacturer of the building product or building material based on the knowledge at the time of the application, based on tests and/or declarations from raw material manufacturers, with reservations for new advances and new knowledge. Should such knowledge arise, the undersigned is obliged to submit an updated declaration to Nordic Ecolabelling.

By included is meant substances added by the producer or its sub suppliers and that are included in the end-product with more than 100 ppm.

Are any of the following substances included in the building product/material?

- Substances on the EU´s Candidate List*) Yes ☐ No ☐
- Substances evaluated by the EU to be PBT substances or vPvB substances in accordance with the criteria in Appendix XIII in REACH including substances that has not been evaluated but är considered to meet the requirements. Yes ☐ No ☐
- Substances classified as carcinogenic, mutagenic or toxic for reproduction (CMR) Category 1A and 1B.**) Yes ☐ No ☐
- Substances considered to be potential endocrine disruptors in category 1 or 2 on the EU's priority list of substances that are to be investigated further for endocrine disruptive effects***) Yes ☐ No ☐

- Short-chain chlorinated paraffins (C10-C13) and medium chain chlorinated paraffins (C14-C17) Yes ☐ No ☐
- Perfluorinated and polyfluorinated alkylated substances (PFAs) Yes ☐ No ☐
- Alkylphenol ethoxylates (APEO) and other alkylphenol derivatives (substances that release alkylphenols on degradation) Yes ☐ No ☐
- Brominated flame retardants****) *****) Yes ☐ No ☐
- Phthalates Yes ☐ No ☐
- The heavy metals lead, cadmium, arsenic, chromium (VI), mercury and their compounds Yes ☐ No ☐
- Bisphenol A, bisphenol S and bisphenol F Yes ☐ No ☐
- Boric acid, sodium perborate, perboric acid, sodium borate (borax) and any other boron compounds classed as carcinogenic, mutagenic or reprotoxic Yes ☐ No ☐
- Tin organic compounds Yes ☐ No ☐

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

***) In EPS and XPS insulation material manufactured by polystyrene, residues of styrene monomer are allowed in maximum l000 ppm in the polystyrene (i.e. in the raw material).*

****) See document Annex 1-Candidate list of 553 substances on the following link: http://ec.europa.eu/environment/archives/docum/pdf/bkh_annex_01.pdf*

*****) Insulation foam, exposed for risks of ignition during the production (at the construction site or during manufacturing of prefabricated construction parts) may, when the fire protection assessment show medium to high risk of fire, be protected with butadiene styrene brominated copolymer as flame retardant. Examples of risks of ignition are welding works, electricity errors, halogen lighting or concentrated sunlight. The fire protection assessment shall be performed by a competent expert technician (construction expert, fire risk expert or person with similar competence). The licensee must apply in written and project specific for exception, to Nordic Ecolabelling.*

******) The material in (electrical) conduits may contain brominated flame retardants provided that the following limits are fulfilled:*

- *Bromine content (Br) ≤ 0.15%*
- *Chlorine content (Cl) ≤ 0.15%*
- *Total content: bromine content (Br) + chlorine content (Cl) ≤ 0.2%*

The content must be verified using Ion Chromatography (IC) according to the methods in EN 14582 or modified IC-methods according to EN50642.

Signature of manufacturer of the construction product/goods/material

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

A correct signed declaration can result in the acceptance of use of the construction product in Nordic Swan Ecolabelled buildings. This shall not be mixed up with the Nordic Swan Ecolabelling of the construction product.

Appendix 10 Declaration on nanoparticles and antibacterial additives in goods

Manufacturer
Name of the product

The declaration applies to the following construction products/goods:

☐ Windows, window doors or exterior doors	☐ White goods
☐ Floor coverings	☐ Bathroom fittings
☐ Wall coverings in ceramic material or stone	☐ Ventilation system for the elements in contact with the indoor air
☐ Kitchen fittings	

Appendix to be completed by windows, window doors and exterior doors:

Are nanoparticles from nanomaterial* actively added to the outer glass surface of windowpanes on balconies, windows, window doors or exterior doors? The outer glass pane is in contact with the exterior environment. Glass on balconies includes both glass for enclosure/glazing of balconies and glass for railings, guide rails and similar functions. Yes ☐ No ☐

If yes, for what purpose? _____

Appendix to be completed by floor coverings, wall coverings, kitchen and bathroom fittings, white goods, ventilation systems and waste disposal units:

Are chemicals or additives, including nanomaterial* added to provide an antibacterial** or disinfecting surface ? Yes ☐ No ☐

If yes, for what purpose? _____

The requirement does not include biocide-treated articles/components in white goods, for example air filter and door gaskets. Silver ions, nano silver, nano gold and nano copper are however never allowed in white goods.

** The definition of nanomaterial follows the European Commission's definition from 18 October 2011 (2011/696/EU). "A nanomaterial is a natural, incidental or purposely manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and when, for at least 50% of the particles in the number size distribution, one or more external dimensions is in the size rang 1-100nm."*

*** An antibacterial chemical inhibits or stops growth of microorganisms such as bacteria, fungi or protozoa (single-celled organisms). Silver ions, nano silver, nano gold and nano copper are considered to be antibacterial substances.*

Signature of manufacturer

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

A correct signed declaration can result in the acceptance of use of the construction product in Nordic Swan Ecolabelled buildings. This shall not be mixed up with the Nordic Swan Ecolabelling of the construction product.

Appendix 11 Windows and exterior doors

The appendix applies to all windows, window doors and exterior doors which to a major extent consist of non-renewable material in profiles and door leaves. The first part shall be declared by the manufacturer of the window, window doors or the exterior door. The second part shall be declared by the supplier of the material.

Manufacturer
Name of the product
Product description:

1. Which material do the window profile and/or door leaves consist of?

PVC Yes ☐ No ☐
Aluminium Yes ☐ No ☐
Steel Yes ☐ No ☐

Other? Please state: _____

Signature of manufacturer

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

A correct signed declaration can result in the acceptance of use of the construction product in Nordic Swan Ecolabelled buildings. This shall not be mixed up with the Nordic Swan Ecolabelling of the construction product.

2. Is the above stated material recycled* to minimum the following extent?

30% for PVC Yes ☐ No ☐
40% for Aluminium Yes ☐ No ☐
20% for steel Yes ☐ No ☐

Other; please state percentage: _____

* *Recycled material is defined as recycled material both from the pre-consumer phase and the post-consumer phase, in accordance with ISO 14021:*

Material in the pre-consumer phase: Material diverted from the waste stream during a manufacturing process. Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it. Nordic Ecolabelling defines rework, regrind or scrap, that cannot be recycled directly in the same process, but requires a reprocessing (e.g. sorting, reclamation and granulation) before it can be recycled, to be pre-consumer material. This is whether it is produced in-house or externally.

Material in post-consumer phase: Material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

3. Hereby, I certify that the recycled PVC, does not contain lead or cadmium in levels exceeding 100 ppm. Yes ☐ No ☐

Signature of material supplier

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

A correct signed declaration can result in the acceptance of use of the construction product in Nordic Swan Ecolabelled buildings. This shall not be mixed up with the Nordic Swan Ecolabelling of the construction product.

Appendix 12 Declaration of tree species not permitted to be used in Nordic Swan Ecolabelled renovation

Name of the Nordic Swan Ecolabel applicant	Project
Product group/-type:	
Version and date of the list of prohibited tree species used:	

It is hereby declared that tree species listed in the list of prohibited tree species (Nordic Ecolabelling – Prohibited Wood) is not used in the Nordic Swan Ecolabelled renovation of the main building, in supplementary buildings (for example refuse depots, bicycle sheds and sheds) or in decking, fences, outdoor furniture, playground equipment and similar that is included in the Nordic Swan Ecolabelled project/assignment and is constructed and marketed together with the Nordic Swan Ecolabelled renovation,

Tree species on the list, may not be used in the production, even if the tree is not incorporated in the Nordic Swan Ecolabelled building.

The list of prohibited tree species is located on the website: www.nordic-ecolabel.org/wood/

Nordic Ecolabelling may request further information if in doubt about specific tree species.

Signature of applicant

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

Appendix 13 Products that can be reused with no further control

No additional requirements for controls of undesirable substances are made for construction products, fittings and materials products found in this Appendix since the products, on good grounds, are considered not to be controversial and not to contain any of the listed undesirable/hazardous substances.

Please observe the rules for reuse of wood-based products stated in Requirement O30.

- Interior walls from office and commercial spaces (glass sections, both with and without frames).
- Grating and wrought iron (e.g. spiral staircases, accessibility ramps, storeroom latticework and door grilles)
- Interior doors, both wood and glass (but not leaded glass).
- Wooden flooring and interior wooden panels from which the old finish has been removed
- HVAC ware (WC bowls, washbasins, and utility sinks)
- Products carrying ecolabels (Nordic Swan Ecolabel and EU Ecolabel).

Nordic Ecolabelling will assess any other products and materials that are suggested for inclusion on the list.

Appendix 14 Energy Calculation

Energy calculation for verification of requirement O14 must be performed in accordance with:

Norway

NS 3031 Calculation of energy performance of buildings – Method and data or with a program validated in accordance with NS EN 15256.

Denmark

BE10 or equivalent, concerning instructions and input data.

Finland

The Ministry of the Environment's regulation on the energy performance of buildings or equivalent concerning instructions and input data.

Sweden

Nordic Ecolabelling does not set requirements for specific software, but to achieve energy calculations of good quality the following applies:

- Valid regulation from Boverket, National Board of Housing, Building and Planning regarding energy calculation of verification
- The calculation must be made using a dynamic energy calculation program, i.e. a program that takes account of variations in e.g. temperature over time. Examples of dynamic energy calculation programs are IDA ICE, VIP+ and BV2.
- The energy calculation program must be adapted to the type of building.
- Standard values may be used for thermal bridges.
- Data concerning U values and g values for the relevant windows must be used if they are known. Otherwise estimated values can be used.
- Air gaps with façade trim are not included in the calculation of the outer wall's U value.
- Cold wind resistance must follow Table 3 of SS-EN ISO 6946 Building components and building elements – Thermal resistance and thermal transmittance – Calculation method.
- User input data must be taken from the current edition of Sveby User Related Input Data for homes, or the relevant parts of Sveby User Related Input Data for offices, unless other more customised user input data is appropriate.
- COP from exhaust air heat pump and effectiveness of heat exchangers shall preferably be based on the measured annual value, taking account of relative humidity.

Appendix 15 Use of Ecolabelled construction products

The Table shall be used for the optional measures in requirement O30 regarding the use of Ecolabelled construction products. Each row in the table corresponds to a product category.

Product category	Trade name	Licence No	Are of use	Share of need(%)
Wood-based board /panels for indoor use (m^2 or kg)				
Façade panels (m^2 or kg)				
Acoustic panels (m^2 or kg)				
Windows and Exterior doors (pcs)				
Flooring (m^2) Floor coverings (EU Ecolabel) (m^2)				
Fittings (including kitchen cabinets, wardrobes, and bathroom fittings) (pcs)				
White Goods (pcs)				
Indoor paints and varnishes (litre, kg or m^2 painted area)				
Outdoor paints and varnishes (litre, kg or m^2 painted area)				
Chemical building products (kg or m^2 of treated surface)				
Durable wood for outdoor use (m^2 or kg)				
Outdoor furniture (pcs)				
Playground equipment (pcs)				
Closed biofuel fireplaces (pcs)				
Solid biofuel boilers (pcs)				
Heat pumps (pcs)				
Refuse depots, bicycle sheds and the like see criteria for outdoor furniture and playground equipment				
Other product groups after approval from the Nordic Ecolabelling				