

Nordic Ecolabelling for

Small houses, apartment buildings and buildings for schools and pre-schools



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Content

What is a Nordic Swan Ecolabelled building?	4
Why choose the Nordic Swan Ecolabel?	4
What can carry the Nordic Swan Ecolabel?	4
What is subject to the requirements?	6
Who may be licensee?	7
How to apply	7
1 General requirements	9
2 Resource efficiency	10
2.1 Energy and climate	10
2.2 Waste	12
3 Indoor environment	12
4 Chemical products, construction products, construction goods and materials	16
4.1 General	17
4.2 Chemical products	17
4.3 Construction products, construction goods and materials	24
4.4 Timber, bamboo and fibre materials	27
5 Quality management of the construction process	30
6 Quality and regulatory requirements	31
7 Instructions for residents and property managers	32
8 Point-score requirements	33
Regulations for the Nordic Ecolabelling of services	40
Follow-up inspections	40
Criteria version history	40
New criteria	46
Appendix 1 Laboratories and methods for testing and analysis	
Appendix 2 Exemptions from overall responsibility	
Appendix 3 Template for calculation of points	
Appendix 4 Energy Calculation	
Appendix 5 Daylight Calculation	
Appendix 6 Declaration on emissions of formaldehyde	
Appendix 7 Declaration from the manufacturer of the chemical product	
Appendix 8 Construction products, construction goods and construction materials	
Appendix 9 Declaration on substances excluded from construction products, construction goods and materials	
Appendix 10 Declaration on nanoparticles and antibacterial additives in goods	
Appendix 11 Windows and exterior doors	
Appendix 12 Declaration of tree species not permitted to be used in Nordic Swan Ecolabelled buildings	
Appendix 12b Specification of timber from certified forests	
Appendix 13 Use of Ecolabelled construction products	
Appendix 14 Description of Green initiatives	

089 Small houses, apartment buildings and buildings for schools and pre-schools, version 3.15
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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 Swan Ecolabel. These organisations/companies operate the Nordic Ecolabelling system on behalf of their own country's government. For more information, see the websites:

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What is a Nordic Swan Ecolabelled building?

The Nordic Ecolabelling makes requirement of the building's energy use, chemical products, building products/goods and a number of indoor environmental factors that are relevant to health and to the environment. The Nordic Ecolabelling also makes requirements of quality management in the construction process, and the handover of the building to the residents and administration/operations.

Nordic Swan Ecolabelled buildings are assessed on the basis of a lifecycle perspective, and

- has low energy consumption
- fulfil high environmental and health requirements on building products, materials and chemical products
- ensures a good indoor environment and low emissions
- has a quality-assured construction process

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 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.

What can carry the Nordic Swan Ecolabel?

Nordic Ecolabelling's criteria for "Small houses, apartment buildings and buildings for schools and pre-schools" make it possible to achieve the Nordic Swan Ecolabel for the following newly constructed buildings:

- Small houses.
- Apartment buildings.
- Buildings for pre-schools and schools/educational buildings.
- Extensions to existing buildings. The extension must be a residential building, pre-school or school, and only the extension will be ecolabelled.
- 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.

- Cottages/holiday homes and holiday apartments, 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. A cottage/holiday home must fulfil the energy regulations in the national building regulations for small houses for permanent residence, without any simplifications or easing due to size, etc. Holiday apartments must fulfil the requirements for apartment buildings. For further information see O4.
- Homes, pre-schools or schools that are temporary, i.e. constructed for a limited time. These are often called modules, pavilions or annexes.

Small houses include single-family houses, row houses, terraced houses, detached and semi-detached houses if the national building regulations doesn't define it otherwise.

The licence applicant must be able to document to Nordic Ecolabelling that all of the requirements in the criteria are fulfilled. Licence may be granted for:

- A specific type of small house, apartment building, pre-school or school (i.e. concepts).
- Unique small houses, apartment buildings, pre-schools or schools.

Deviations from and variations of the building type (i.e. options or customer adjustments) are permitted provided that the variations also fulfil Nordic Ecolabelling's requirements. This means that both the standard performance and optional of for example kitchen fittings and white goods must fulfil the requirements.

A building is Nordic Swan Ecolabelled on its completion/occupation/implementation. It shall be communicated that the building achieved the Nordic Swan Ecolabel in a specific year: "Nordic Swan Ecolabelled 201X". As required, the current version number of the criteria can be stated. Nordic Ecolabelling is not responsible for the building's fulfilment of the criteria at any later time, such as after renovation.

The following buildings may not be Nordic Swan Ecolabelled:

- Permanent supplementary buildings, such as garages, refuse depots, bicycle storage rooms, sheds and so on must fulfil relevant requirements in the criteria, but may not themselves be Nordic Swan Ecolabelled.
- Separate educational buildings, that to a major extent accommodate laboratories, workshops and similar.
- Separate buildings such as gymnastics halls, sports halls, swimming halls, etc. cannot be ecolabelled either by themselves or as part of the Nordic Swan Ecolabelling of a school building, even if they belong to the school. This means that when a school and a sports hall are built, the school building can be ecolabelled, but not the separate sports hall. On the other hand, exercise rooms, sports rooms and so on that are integrated in the pre-school/school building may be included in the ecolabelling and in such a case must fulfil all relevant requirements.
- Hospitals, other care facilities and care homes that either is not used as permanent homes or is classified as premises may not be Nordic Swan Ecolabelled.

What is subject to the requirements?

It is the building including any permanent supplementary building that is included in the project/assignment and is constructed and marketed as a Nordic Swan Ecolabelled building that are subject to the requirements.

The requirements concern the entire building/building carcass. Commercial areas such as shop premises, hair dresses, offices and similar are excluded. On the other hand, the building's communal areas for residents such as gyms and hobby rooms are included.

Supplementary buildings must fulfil all relevant requirements, but may not receive separate labelling. Supplementary buildings are e.g. garages (whether the garage is a separate structure or directly connected to the building), refuse depots, bicycle storage rooms, sheds and similar items.

A foundation must be insulated against heat loss, moisture penetration and, when required, also protected from radon penetration. Nordic Ecolabelling therefore sets materials and chemicals requirements of the insulation of the foundation/base plate (which may be below the plate, above the plate, or both) and any radon barrier (wherever it is placed). In brief, Nordic Ecolabelling sets requirement for anything above the capillary layer.

Installations up to the building are not included. This e.g. means that electrical cables up to the main fuse box are not included, nor are sewerage pipes through the foundation up to pipes connected from inside the building.

Whenever anything that would normally have been built on site is purchased as pre-fabricated the same requirements apply as if it has been built on site. This is described further in section 4.

The requirements to be fulfilled are those that apply at the time of the commencement of construction, i.e. when the foundation or basement/cellar floor is laid. The only exception is the energy requirement, which is "locked" with the energy calculation in conjunction with the building permit process, and thus applies from the time of receipt of the building permit or when starting clearance is given.

The basic principle is that the licensee is entitled to construct Nordic Swan Ecolabelled buildings in line with a specific version of the criteria for as long as the planned completion of the building or stage of the building takes place before the expiry of the version of the criteria in question.

Who may be licensee?

The rules for Nordic Ecolabelling for 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 small houses, apartment buildings and school and pre-school buildings, the licensee is ideally, either a contractor, property owner, house builder or other party that can take full responsibility for all requirements. This also means that architects or technical consultants can only be licensees if they can take full responsibility for all requirements.

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.

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

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

☒ Enclose

📍 The requirement checked on site.

To be awarded a Nordic Swan Ecolabel licence:

- All obligatory requirements must be fulfilled.
- A minimum number of the total points score must be achieved, see O3. Use Annex 3 to calculate the points score.
- Nordic Ecolabelling must inspect the site.

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

Licence validity

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

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

On-site inspection

In connection to 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.

Enquiries

Please contact Nordic Ecolabelling if you have any questions 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

01 Overall description of the building

The application must include an overall description of the building(s) to be labelled. The description must include:

- Details of the number of storeys, number of square metres of living space in usual terminology, and details of any premises/commercial space.
- Statement that the Nordic Swan Ecolabelled building includes measurement of electricity consumption for each residential unit (also called individual electricity metering). Pre-school and school buildings shall include measurement of the operation's electricity consumption at least for the activities as a whole.
- A description of the building or building type's type of carcass/bearing structure, façade, roof, foundations, heating system and ventilation system.
- Details of any supplementary buildings such as garages, storerooms, bicycle storage rooms, refuse depots, etc.
- Details of any lifts, as well as balconies and terraces.
- Details of any options for various layouts or materials and fittings.
- For pre-schools and schools the activity must shortly be described, as well as the estimated number of departments, grades or similar.

☒ Documented description of the aforementioned items. Drawings, designs, illustrations or other project documentation can make up the basis.

02 Responsibility for Nordic Swan Ecolabelling

The licensee must be responsible for all requirements in the criteria document and for the fulfilment of the requirements, no matter who the work is performed by, until the building is ready for occupation. If subcontractors are used, for example, the licensee is responsible for the sub-contractor being informed of the requirements and being held responsible for their fulfilment.

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.

Reference must be made to requirements O33 and O34.

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

☒ Description as stated above.

03 Points achieved

The licence applicant must receive at least a certain number of points in order to be granted a Nordic Swan Ecolabel licence. The point requirements are stated in chapter 8 of the criteria document.

- For apartment buildings at least 17 out of 44 possible points must be achieved. For Finland only 16 points must be achieved.
- For small houses at least 16 out of 42 possible points must be achieved. For Finland only 15 points must be achieved,
- For pre-school and school buildings at least 15 out of 39 possible points must be achieved. For Finland only 14 points must be achieved.

☒ Description and assessment of the points that the licensee intends to achieve. Appendix 3 can be used.

2 Resource efficiency

2.1 Energy and climate

04 Energy consumption of the building

For Nordic Swan Ecolabelled buildings the energy consumption per year may not exceed:

- *Denmark*: 90% of BR18 or 100% of Low energy class.
 - *Sweden*: 85% of BBR 24 or 90% of BBR 25/BBR26/BBR 29 for apartment buildings and buildings for pre-schools and schools. 80% of BBR 24 or 85% of BBR 25/BBR 26/BBR 29 for small houses.
 - *Norway*: 75% of TEK 10 or 85% of TEK17 for small houses and buildings for pre-schools and schools and 90% of TEK17 for apartment buildings.
 - *Finland*: The requirement for housing is energy class A according to the Ministry of the Environment's regulation for buildings' energy performance (1010/ 2017). For pre-schools and schools applies 85% of the regulations limit of 100 kWh/m². For requirements according to previous regulation, see below*.
- Faroe Islands*: Single-family houses and row houses: 65% of FK17** Apartment buildings: 75% of FK17** For other building types than the ones listed above contact Nordic Ecolabelling.

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

If new national regulations and limits for buildings' energy consumption are introduced during the criteria's term of validity, Nordic Ecolabelling will perform a new assessment of the energy requirement and may adjust the requirement, including the percentage rate, in relation to the new regulations. The adjustment is made in a national consultation round.

For extensions to existing buildings the energy requirement must be fulfilled by the extension. The energy calculation must be made for the extension and fulfil the requirements for new buildings.

No exemptions are made for the energy requirements for log houses or for small buildings (for example < 70 m² in Norway and < 50 m² in Sweden).

A cottage/holiday home must fulfil the regulations for small houses for permanent residence. Holiday apartments must fulfil the requirements for apartment buildings.

The energy calculation must be performed in accordance with:

- BE18 or equivalent in Denmark.
- BBR, valid regulation (BEN) and National practice in the sector for Sweden, see Appendix 4.
- NS 3031 in Norway.
- Ministry of the Environment's regulation for buildings' energy performance or equivalent in Finland.
- FK17 in Faroe Islands.

* *Energy class B according to the Ministry of the Environment's regulation for buildings' energy performance, 2012. For multi-storey apartment buildings connected to district heating the requirement is 85% of the Ministry of the Environment's regulation for buildings' energy performance, 2012.*

** *It is not allowed to use oil boilers as a heating source. The air permeability of the building envelope must not exceed 1 l/s,m².*

- ☒ Energy calculation. 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 consideration).

05 Lighting management

For any building, outdoor lighting must have automatic demand control. The requirement does not apply to private balconies, patios, terraces and similar.

In apartment buildings, the indoor lighting in general/communal areas such as entrance halls, stairs, laundry rooms, storerooms, etc. must have automatic demand control.

In pre-schools and schools all indoor lighting must have automatic demand control. The requirement does not include workplace lighting, worktop lighting and lighting fitted into technical installations and equipment.

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

Automatic demand control entails automatic light adjustment to match lighting to the requirements. 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 only to/in the light source.

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

06 Energy-efficient white goods

White goods installed in Nordic Swan Ecolabelled buildings must at least fulfil the energy class requirements in Table 1 below. White goods 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 2021, when the energy label (EU) 2017/1369 enters into force. Energy Labeling Directive 2010/30 / EU applies to dryers and ovens.

Table 1. Energy class to be fulfilled

White goods consumer	Lowest permitted energy class according to the Energy Labeling Directive (2010/30 / EU)	Lowest permitted energy class according to the Energy Labeling Regulation 2017/1369/EU
Washing machine		D
Fridge		E
Freezer		F
Combined fridge and freezer		F
Tumble dryer	A++	
Dishwasher		E
Oven	A	
Combined washing machine and tumble dryer		E

For fridges in prefabricated mini kitchens/kitchenettes the requirement of minimum energy class E applies.

- ☒ For all white goods, description of type of white good and related energy labelling/energy class in product specifications or similar.

2.2 Waste

07 Possibility for sorting at source

Sorting vessels with the possibility of sorting at source into at least:

- Four waste fractions to be installed in the Nordic Swan Ecolabelled residential unit, i.e. in flats and small houses.
- Five waste fractions to be installed in or adjacent to the kitchen of the Nordic Swan Ecolabelled school and pre-school.

Residual waste is considered one fraction.

Waste disposal units/waste disposer are only deemed to be a fraction, provided that the food waste that is disposed of is degraded or composted and that the disposal unit installed is approved in accordance with municipal/local sewerage regulations.

Requirement O23 (nano) also applies to waste disposal units.

08 Description of waste collecting vessels/bin units at source, in text or in picture. Waste sorting station

In connection to pre-school and school buildings, as well as apartment buildings with more than eight flats, there must be a waste sorting station with room for at least six waste fractions, for the sorting of e.g:

- Paper
- Coloured and clear glass
- Plastics
- Metal
- Electronic waste
- Cardboard packaging
- Corrugated board
- Organic waste for degradation or composting

☒ Description of the types and numbers of waste fractions and distance from the waste sorting facility to the Nordic Swan Ecolabelled building.

3 Indoor environment

09 Radon

Radon prevention measures shall be undertaken to ensure adherence to national official requirements and limits on radon levels in buildings. The building shall either be constructed radon proof or be built with a lower degree of radon prevention measures, provided that the risk analysis of the presence of radon (both from the ground and from filling materials) supports this.

☒ Description of (any) radon prevention measures undertaken in the building².

☒ If the building is not built radon proof, a risk analysis/assessment shall be conducted, showing the risks of the presence of radon from both the ground and filling materials supporting the level of radon prevention measures. Result from geotechnical surveys shall form the basis for the risk analysis.

O10 Moisture prevention

In order to minimise the risk of harmful damp and moisture in Nordic Swan Ecolabelled buildings, and to ensure a good and healthy indoor environment, there must be a plan or a description for moisture prevention work that as a minimum includes:

- a) selection of damp sensitive materials and technology, relevant for the origin of harmful moisture
- b) weather protection and other handling of materials and building/ construction elements at the construction site
- c) measures taken to ensure that the building dries 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) control of moisture protection by calculating or measuring the moisture in concrete. National guidelines must be followed. If measures are conducted, borehole measurements must be undertaken as surface moisture measurement is not sufficient to determine whether the concrete slab is dry enough.

In addition, a competent moisture expert technician must be nominated to monitor adherence to the moisture prevention 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 competent moisture expert technician must have documented knowledge and experience in building techniques, have knowledge of moisture in materials and constructions and the consequences. In addition, 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.

- The moisture protection plan or equivalent document with routines to show how items a) to e) are fulfilled. If subcontractors used for work that affects moisture protection have their own routines, these must also be reported.
- Statement of the competent moisture expert technician with a description of competence and experience.

O11 Ventilation

Ventilation systems in Nordic Swan Ecolabelled buildings must be function-controlled before the system is taken into use for the first time. The control must include:

- that the ventilation system does not contain pollutants that might be spread in the building
- that instructions and maintenance instructions are easily accessible
- that the ventilation system otherwise functions as intended, and
- that the function and characteristics of the ventilation system are in accordance with the current regulations.

Function control must be performed for each small house and building for pre-schools and schools. For apartment buildings and extensions to apartment buildings, this must be performed for a representative selection that constitutes at least 10% of the total number of flats, but always at least one flat.

Automatic controls for demand management of air volume/ventilation must be installed in buildings for pre-schools and schools.

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.

- ☒ 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.
- ☒ Description of the type of demand-controlled ventilation.

012 Noise environment (solely applies to pre-school and school buildings)

Sweden: Buildings must fulfil noise class B for all parameters assessed according to the valid national standard.

Finland: Reverberation and one additional parameter must fulfil noise class B. All other parameters shall fulfil noise class C.

Denmark: Buildings must fulfil the levels for good noise environment specified in BR18 for all the parameters

Norway: Schools - Sound class C for reverberation time. Preschools - Sound Class B and another optional sound environment parameter. Other sound environment parameters must comply with class C.

Rooms that are occupied temporarily are exempt from the requirement.

National noise standards must be used in Norway, Sweden and Finland. For Denmark, reference is made to "Trafik og Byggestyrelsens vejledning om lydbestemmelser (Akustisk Indeklima)".

Examples of rooms that are occupied temporarily are corridors, entrance halls, photocopying rooms, changing rooms and WCs.

National noise standards: Sweden SS 25268, Norway NS 8175, Finland SFS 5907.

For safety reasons, an entire department is viewed as one room for the airborne sound insulation parameter.

- ☒ Planning/projecting of noise environment with the statement of the noise class achieved for all parameters in assessed rooms. The planning/projecting must be performed by an acoustic technician or another person with equivalent competence.

013 Daylight

In pre-schools* and schools, all common rooms/playrooms, and classrooms are to have either an Average Daylight Factor ($DF_{\text{average}} \geq 2.5\%$) or a Daylight Provision of at least 300 lux (over 50% of daylight hours and minimum 50% of the area of the rooms assessed).

In single-unit houses, row houses and apartment buildings, the National building code requirement for Daylight Factor (DF) or Daylight Provision must be fulfilled in at least one occupiable room per residential unit. If an applicable threshold for either Daylight Factor or Daylight Provision is not stated in the relevant country's building code, compliance can be demonstrated by using the requirement from another Nordic country of choice.

If the Daylight Factor exceeds 5.0% in any rooms in the Nordic Swan Ecolabelled building, the licensee must use calculations or equivalent to verify that the official requirements of the summer indoor temperature are fulfilled. See Appendix 5.

If the pre-school has more than one department, at least one common room per department must fulfil the requirement.

A single-unit house and a flat are considered to be a residential unit. Corridors, hallways, storages, bathrooms and similar are not considered as occupiable room.

A computer program must be used to calculate daylight. See Appendix 5 for calculation variables and methodology. Simplified methods based on window to floor area even with correction factors, (for example fönsterarea-metoden eller 10 %-regeln) are not accepted as a means of compliance.

For apartment buildings, calculation results need only be submitted for a selection of 10 apartments (1 room per apartment). The selection should best support the argument that all apartments in the building have at least one room which meets the daylight criteria. If the number of apartment is less than 10, a calculation for all apartments (1 room per apartment) shall be submitted.

** In pre-schools situated on the ground floor in apartment buildings where the daylight is restricted by the surrounding, common rooms/playrooms may fulfil the Daylight Factor and/or the Daylight Provision requirement in the relevant country's building code.*

- ☒ Calculation results showing the Daylight Factor and/or the Daylight Provision for each of the assessed rooms, with the function of each of the rooms stated. The submitted evidence must include all items listed under "Reporting requirements" in Appendix 5.

O14 Formaldehyde emissions

The requirement concerns all wood-based panels containing more than 3% by weight formaldehyde-based additives. Panels solely marketed as façade panels are exempted.

For wood-based panels that are either building panels (raw or surface treated), panels in floors, panels in doors* or fittings** as well as mouldings, baseboards and frames the average emission of formaldehyde must not exceed 0.124 mg/ m³ air for MDF panels*** and 0.07 mg/m³ air for all other types of panel in accordance with the current version at the time of sampling of EN 717-1.

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).

If the panel has been tested with other test methods than EN 717-1 (Chamber method) the limits can be verified according to any of the methods in Table 2 below or with a certificate according to the bullet list below the table.

For requirements on test methods, see Appendix 1.

Table 2. Nordic Ecolabelling's limits for emissions of formaldehyde with the use of different test methods.

	EN 717-1 (23°C/45% RH)	ISO 16000-9 (23°C/50% RH) Testmethod for M1	ASTM E 1333 (23°C/50% RH)	JIS A 1460
MDF	0.124 mg/m ³	0.05 mg/m ² /h	0.09 ppm	0.90 mg/l
Other panels	0.07 mg/m ³	0.03 mg/m ² /h	0.08 ppm	0.53 mg/l

Nordic Ecolabelling accepts the following certificates as documentation for the requirement:

- E1-certificate for MDF-panels
- M1-certificate for MDF-panels
- CARB PHASE II-certificate for all types of wood-based panels
- Certificate according to Indoor Air Comfort or Indoor Air Comfort Gold for all types of wood-based panels.

** For Finland, frame doors that are fire-protected according to EN16034 instead of emission limit value in the table above must comply with M1.*

*** Fixtures are, for example, kitchen, entrance and bathroom fixtures. Individual fixture details such as a hat or shoe shelf are exempt from the requirement.*

**** The threshold of maximum 0.124 mg/m³ air for MDF boards applies up to and including 2019. After this it can be tightened. HDF is regarded as MDF and must fulfil the same limit.*

If legislation is introduced or tightened, and becomes tighter than Nordic Ecolabelling's requirement levels for formaldehyde during the term of validity of these criteria, requirement O14 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 applied, the laboratory that conducted the analysis, and that the analysis laboratory is an independent third party.

Other analysis methods than those stated in the above table may be used, provided that the correlation between testing methods can be verified by an independent third party. For more information, see Appendix 1.

- ☒ Certificate for products as an alternative to an analysis report. The certificate that is accepted is stated in the requirement text.

4 Chemical products, construction products, construction goods and materials

This chapter consists of four sections. The first section concerns requirements of product list and property logbooks. The next section contains requirements of the chemical products that are used to construct a Nordic Swan Ecolabelled building. Section three comprises the requirements of construction products and materials. Finally, in section four, are the requirements of timber and bamboo.

The requirement must be fulfilled for the Nordic Swan Ecolabelled building, but also for any supplementary building that is included in the Nordic Swan Ecolabelled project/assignment and which is constructed and marketed with the Nordic Swan Ecolabelled building. Examples of supplementary buildings are garages, bicycle storage rooms, refuse depots and, sheds. Fences, wooden decking, outdoor furniture, outdoor playground equipment and similar items, included in the project for the Nordic Swan Ecolabelled building are also covered by the requirements in this chapter.

The requirements comprised what is "incorporated". The requirements do not include fuel for construction machines, marking paint, marking tape that is removed, wood to mould¹, cable lubricant or cleaning agents and similar chemical products. Nor do they include sealing foam, formwork oil, etc. used to seal or lubricate casting moulds.

In general, for ecolabelled products (Nordic Swan Ecolabel and EU Ecolabel) subject to the requirements a documentation requirement will lapse. Nordic Swan Ecolabelled products fulfil the requirements automatically and only need to be included in the list of products/logbook with licence number, product name and manufacturer name.

Triviality limit

As a rule of thumb, the requirements in chapter 4, do not have to be fulfilled for the products that are used to a very limited extent or has limited impact on health and the environment. Examples of products for which exemptions can be made:

- Touch-up paint for e.g. 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.
- Building fixtures (e.g. locks, handles, hole plates and 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 similar items.

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

¹ Exemptions, see requirement O27

4.1 General

015 Product list and logbook of the building

1. There must be a list of the construction products, construction goods, materials and chemical products to be used to construct the Nordic Swan Ecolabelled building. The product list must include the name of the manufacturer and name of the product, as well as details of the type of product, showing the area of use.
2. The Nordic Swan Ecolabelled building must have a digital logbook comprising the construction products, construction goods, materials and chemical products used in production. The logbook must state:
 - type of product, product category, product name and manufacturer and supplier if other than manufacturer
 - the main constituent elements (applies to construction products, construction goods and materials)
 - approximate location in the building.

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

- ☒ Product list in accordance with 1 and a digital logbook in accordance with 2. Alternatively, an integrated digital document that covers both 1 and 2.

4.2 Chemical products

The term chemical products concern 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 4.3.

Definition of constituent substances and impurities

Constituent substances are all substances in the chemical product, including additives (e.g. 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 substances.

Built on-site versus prefabricated

In principle, when anything that would normally have been built on site is purchased as prefabricated, the same chemical and material requirements will apply as if it has been built on site. 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 are always assessed to be prefabricated and are therefore not subject to the requirements for chemical products in section 4.2. On the other hand, there are requirements of these construction products and construction materials in section 4.3.

Pipes and wires that are "incorporated" in prefabricated elements, for example casted in concrete elements are also covered by the requirements in chapter 4.

In prefabrication the following is valid for two-component products:

- the sub-components shall comply with the requirements, alternatively
- the hardened two component product comply with the requirements if it can be documented that protective equipment was used when the sub-components were mixed and that the finished two-component product was applied in a closed, well-ventilated system in accordance with national regulations.

On the construction site satisfactory occupational health protection cannot be guaranteed, wherefore the requirements must always be fulfilled 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 area is any of the following; fan rooms, substations, lift shafts, machine rooms, electricity centers, 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 is valid for 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 in 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 mortar, all chemical requirements in chapter 4.2 must be fulfilled since dry mortar is a chemical product as it contains unreacted chemical substances.

O16 Classification of chemical products

Chemical products used in the production of Nordic Swan Ecolabelled buildings must not be classified according to the table 3 below. Classification must be in line with current legislation (CLP Regulation (EC) No 1272/2008).

Table 3. Prohibited classifications of chemical substances

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, H410 and H411 due to dibenzoyl peroxide (CAS 94-36-0) are allowed.*

***) Hardeners for acrylic floor coatings, 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.*



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

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

O17 CMR substances

Chemical substances that are classified as carcinogenic (Carc) mutagenic (Muta.) or reprotoxic (Repr) according to CLP Regulation 1272/2008, may not be constituent in chemical products used in the production of Nordic Swan Ecolabelled buildings, see Table 4 below.

Table 4. Prohibited 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 see O20.
- The level of free formaldehyde (from formaldehyde not intentionally added or from formaldehyde-releasing substances) \leq 200 ppm (0.02% by weight) in the end-product.
- D4 (Octamethyl cyclotetrasiloxane, CAS-no 556-67-2) as a residue from the production of silicon polymers \leq 1000 ppm.
- Vinyl acetate (CAS-no 108-05-4) as a residual monomer in polymers \leq 1000 ppm.
- Glyoxal (CAS-no 107-22-2) \leq 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 30 June 2024.

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.

- ☒ 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.

O18 Preservatives in indoor paints and -varnishes

The amount of preservative/combination of preservatives is limited according to Table 5a and 5b respectively.

The requirement on classification of the chemical product (O16) and other chemical requirements on constituent substances must also be met by indoor paint and indoor varnishes.

Table 5a. Concentration limits for preservatives totally.

Preservatives totally	Concentration limit
Paints, varnishes, base paints with tinting paints etc. for indoor use.	700 ppm (0,07% w/w)
Wet room paint specifically	2500 ppm (0,25% w/w)

Table 6b. Concentration limits for isothiazolinone compounds.

Type of preservatives	Concentration limit
Isothiazolinone compounds totally	500 ppm (0,05% w/w)
2-Methyl-2H-Isotiazol-3-one (MIT*) (CAS-no: 2682-20-4)	100 ppm (0,01% w/w)
5-Chloro-2-Methyl-2H-Isotiazol-3-one/2-Mehtyl-2H-Isotiazol-3-one (CMIT/MIT in mixture 3:1) (CAS-no: 55965-84-9)	15 ppm (0,0015 w/w)

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

For tinting systems a worst case calculation is done with the colour with most tinting paste and the base paint with most environmentally hazardous substances.

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. [7]*

- ☒ Declaration from the manufacturer of the chemical product, in accordance with Appendix 7.
- ☒ If preservatives are present a calculation is required to clearly show that the requirement is fulfilled.

O19 Preservatives in other chemical products for indoor use

The amount of preservative/combination of preservatives in other chemical products for indoor use is limited according to Table 6 below. Chemical products for outdoor use are not restricted regarding preservatives.

The requirement on classification of the chemical product (O16) and other chemical requirements on constituent substances must also be met.

Table 7. Concentration limits for preservatives in other chemical products for indoor use.

Preservatives	Concentration limit
Isothiazolinone compounds totally*	500 ppm (0,05w/w)
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)	15 ppm (0,0015 w/w)
Iodopropynyl butylcarbamate (IPBC) (CAS-no: 55406-53-6)	2000 ppm (0,2% w/w)
Bronopol (CAS-no: 52-51-7)	500 ppm (0,05% w/w)

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

- ☒ Declaration from the manufacturer of the chemical product, in accordance with Appendix 7.
- ☒ If preservatives are present, a calculation is required to clearly show that the requirement is fulfilled.

O20 Other substances excluded from use

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

- Substances on the Candidate List*.
- Substances evaluated by the EU to be PBT substances (persistent, bioaccumulative and toxic) or vPvB substances (very persistent and very bioaccumulative) in accordance with the criteria in Appendix XIII in REACH, including substances those have not been evaluated but are considered to meet the requirements.
- 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 individual substances and substance groups are prohibited or restricted. There may be overlap between the substances listed below and substances categorized over.

- Short-chain chlorinated paraffins (C10-C13) and medium chain chlorinated paraffins (C14-C17).
- Perfluorinated and polyfluorinated alkylated substances (PFAs).
- APEO – alkylphenol ethoxylates 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 >1% by weight****.
- Organic tin compounds. Exemptions are made for dibutyltin (DBT) and dioctyltin (DOT) which are permitted in the following levels in sealing products (the primer and joint product respectively):

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

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.

Phthalates refer to esters having the general chemical structure 1,2-benzenedicarboxylic 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. The Candidate List can be found on the ECHA website at: <http://echa.europa.eu/sv/candidate-list-table>*

Excluded are D4 (octamethylcyclotetrasiloxane, 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 production ≤ 1,000 ppm each.

*** See document Annex 1-Candidate list of 553 substances omn 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), 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.

021 Nanoparticles in chemical products

Nanoparticles from nanomaterial* may not be constituent in chemical products, with the following exemptions:

- 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 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.*

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

4.3 Construction products, construction goods and materials

Requirement O22 comprises of two parts. First a list of construction products, goods and materials to which the requirement applies. Then the chemical substances that may not be constituent are listed.

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 (0.01% by weight).

For clarity the definition construction goods is used, which includes fittings. Fittings are not defined as construction products and are therefore not covered by the Construction Product Regulation (305/2011/EG).

O22 Excluded substances in construction products, construction goods and materials

The requirement applies to the following product categories (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 on facades, terraces, balconies, fences and partition walls.
- Interior plastic coverings for floors, ceilings and walls. Service areas are exempt from the requirement^{**)}
- Drainage pipes, heavy current cables, (electrical) conduits and plastic pipes for central vacuum cleaners. Service areas are exempt from the requirement^{**)}

In the above groups of construction products, the following substances may not be included:

- A substance on the EU's Candidate List^{***)}
- Substances evaluated by the EU to be PBT substances or vPvB substances in accordance with the criteria in Appendix XII in REACH including substances those have not been evaluated but are considered to meet the requirements.
- Substances classified as carcinogenic, mutagenic or toxic for reproduction (CMR) Category 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 individual substances and substance groups are prohibited or restricted. There may be overlap between the substances listed below and substances categorized over.

- 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.

Phthalates refer to esters having the general chemical structure 1,2-benzenedicarboxylic 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.

**) In EPS and XPS insulation material manufactured by polystyrene, residues of styrene monomer are allowed in maximum 1000 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 on the following link: http://ec.europa.eu/environment/archives/docum/pdf/bkh_annex_01.pdf*

******) Insulation foam (EPS and XPS), 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 (CAS 1195978-93-8) 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) $\leq 0.15\%$
- Chlorine content (Cl) $\leq 0.15\%$
- Total content: bromine content (Br) + chlorine content (Cl) $\leq 0.2\%$

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 construction product, construction goods or construction material in accordance with Appendix 9.
- Construction product declaration or corresponding if such is created for the product, as a supplement to Appendix 9.

O23 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 on the outer glass surface of windowpanes on windows, window doors and exterior doors. The outer glass pane is in 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:
 - Floor coverings
 - Wall coverings in ceramic material or stone
 - Kitchen and bathroom fittings such as worktops, splashbacks, cabinet fronts, mirrors and shower walls, kitchen sinks.
 - White goods****
 - Ventilation system regarding the parts in contact with indoor air.
 - Waste disposal units

* Glass on balconies includes both glass for enclosure/glazing 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 corresponding if such is created for the product, as a supplement to Appendix 10.

O24 Surface layers on floors, ceilings and walls

Interior surface layers on floors, roofs and walls may not contain chlorinated plastics (PVC). Other interior surface products in PVC are comprised, such as moldings, skirting, baseboards and interior doors.

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

Watertight layers, wall film, acoustic dampening foam and other surfacing under surface finishes are not subject to the requirement.

PVC moldings next to sauna doors are exempted from the requirement. PVDC (polyvinylidene chloride) is a type of chlorinated plastic (PVC) that is not permitted either.

- Documentation to show how the requirement is fulfilled, for example product data sheet, construction product declaration or similar.

O25 Windows and exterior doors in non-renewable materials

Windows and exterior doors* made from non-renewable materials must comprise a certain proportion of recycled** material, as follows:

- At least 40% of the aluminium in profiles or door leaves must be recycled aluminium
- At least 30% of the PVC in profiles or door leaves must be recycled PVC.
- At least 20 % of the steel in profiles or door leaves must be recycled steel. Stainless steel is not permitted.

Recycled plastic resources may not contain lead or cadmium in levels exceeding 100 ppm. Plastic items ≤ 50 grams are excluded.

The requirement concerning the proportion of recycled material does not apply to:

- external cladding of outer wood components for the purpose of weather proofing
- (plastic) composites as material in frames, sashes and as insulation
- materials that account for less than 3% by weight of the window's, window door's or outer door's total weight
- hinges, handles, fittings, stabiliser plates and kick plates
- window and outer door insulation
- non-renewable components in glass panes/insulation panes.

A Nordic Swan Ecolabelled window, window door and outer door will fulfil the requirement and must only verify the requirement with product name and licence number.

**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. Entrance portions are also comprised.*

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.

*** 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.

- ☒ Specification of the proportion of recycled material used, for example in a construction product declaration. Declaration from the material supplier on the share of recycled material on an annual basis, in accordance with Appendix 11.
- ☒ For recycled plastic, also test results or the equivalent showing that the requirement concerning lead and cadmium is fulfilled in accordance with Appendix 11.

O26 Copper in domestic water pipes and as façade and roofing material

Domestic water pipes may not be made of copper. The exception is visible pipe laying/pipework, water fittings' connecting pipes and domestic water pipes in service areas. Service areas are substations, machine rooms, electricity centers and similar areas. Tap water shutes are not included in the exception.

Cladding for roofs and façades and products for roofs and façades 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 e.g. include roof dewatering products, guttering, exhaust air hoods, eaves netting and roofing profiles.

- ☒ Documentation to show that the requirement is fulfilled.

4.4 Timber, bamboo and fibre materials

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

O27 Tree species not permitted to be used in Nordic Swan Ecolabelled buildings

Tree species listed on Nordic Ecolabelling's list of prohibited tree species (see www.nordic-ecolabel.org/wood/) are not permitted to be used in Nordic Swan Ecolabelled buildings.

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, timber and wood products used in construction but not incorporated in the building, for example wood in casing and mold is covered by this requirement.

- ☒ Declaration from the applicant that the requirement to tree species not permitted to be used in Nordic Swan Ecolabelled building is met. Annex 12 shall be used.

O28 Wood raw material

This requirement applies to the following main construction elements on the Nordic Swan Ecolabelled building and any supplementary buildings, of solid wood, bamboo or plywood/veneer:

- roof trusses
- frames, studs and joists, as well as curtain walls and underlay on roofs
- interior walls
- interior panels
- exterior façades
- timber for balcony, terrace, decking and veranda

The licence applicant may of course include other building parts (such as flooring or building boards) in the calculation of certified timber.

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

Name of species

The applicant must state the name (species name) on the wood raw material used in Nordic Swan Ecolabelled buildings.

Chain of Custody certification

The supplier of wood raw materials must be Chain of Custody certified by the FSC/PEFC schemes.

Suppliers who only deliver recycled material in Nordic Swan Ecolabelled buildings are exempted from the requirement to 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

A minimum of 70% by weight of all wood raw material used in Nordic Swan Ecolabelled buildings, must origin from forestry certified under the FSC or PEFC schemes or be recycled material.

The remaining proportion of wood raw material must be covered by the FSC/PEFC control schemes or be recycled material*.

The requirement must be documented as purchased amount of wood on a project basis.

** Recycled material defined according to ISO 14021 in the following two categories:*

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 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.

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) on the wood raw material used in the construction parts in the bullet list in the requirement.
- ☒ Valid FSC/PEFC Chain of Custody certificate from all suppliers covering all wood raw materials. (Exempted from this requirement are suppliers who only deliver recycled material).
- ☒ Documentation showing that the quantity of certified wood raw material or recycled material is met with a calculation of the total purchased amounts on a project basis. Amount can be reported as purchased volume or weight, but the units may not be combined in the statement. The requirement applies to either per construction element or in total for the listed elements. A copy of invoice(s) to confirm the proportion of certified timber purchased for the building/project. If a construction product is labelled with the FSC- or PEFC-logo (logo licence product) it automatically fulfils the requirement and is documented with a photography/image. Appendix 12b can be used.
- ☒ 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.

O29 Durable/resistant wood

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

Exemptions from the general requirement may be made for:

- Load bearing structures with specific demands on strength: Weather exposed structural timber which is strength classed in accordance with EN 338.
- Wood in direct contact with ground, fresh water or salt water where there is a considerable risk of rotting, i.e. risk classes 4 and 5 according to EN 335.

Regardless of exemptions, durable wood for outdoor use must fulfil requirement O22 Substances excluded from construction products, construction goods and materials.

Nordic Swan Ecolabelled sustainable durable wood 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 aim of the requirement is to limit the use of pressure-impregnated timber in class M, A and AB since heavy metals and biocides are used in the impregnating 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 exemptions from the general prohibition, the need for pressure-impregnated timber must be documented in writing and drawings, stating the reason. An approval decision by Nordic Ecolabelling must be obtained.

5 Quality management of the construction process

030 Air permeability

The licensee must have a routine to measure air permeability in order to ensure that the project designed air permeability requirements are fulfilled. The routine must include defect analysis and corrective measures in cases where the project designed permeability is not achieved in the Nordic Swan Ecolabelled building. The routine may be an element of self-inspection.

For small houses, pre-schools and school buildings air permeability must be measured for each building. For standardised products, air permeability can be measured for a representative selection that amounts to at least 10% of the total number of small houses, pre-schools and school buildings constructed.

For apartment buildings and extensions to apartment buildings, air permeability must be measured for a representative selection that constitutes at least 10% of the total number of flats, but always at least one flat. Both flatwise and stairwise measurement of air permeability is approved.

Where air permeability is measured on a random sample basis, there must be a routine to ensure that other flats or buildings have equivalent air permeability.

- ☒ Routine(s) to measure air permeability comprising measurement method, error analysis when the measured value deviates from the project designed value, and corrective measures.

- ☒ The result of the air permeability testing must be submitted to Nordic Ecolabelling on request.

031 Management of requirements on products and materials

The licensee must ensure fulfilment of the requirements in chapter 4 (requirement O15 up to and including O29). If the licence applicant uses subcontractors, it must be documented that the subcontractor is aware of and adheres to the materials requirement.

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

New products and materials that are added after the licence is granted must be approved by Nordic Ecolabelling if they are subject to the requirements in chapter 4.

- ☒ Routines or agreements that show how materials requirements O15 to O29 are fulfilled for the entire construction process.

- ☒ If subcontractors are hired; their routines or agreement for compliance with requirements on products and materials must be reported.

032 Information to those involved in the construction process

Employees, including supervisors, site managers, sub suppliers and subcontractors involved in the construction process must have the relevant knowledge to be able to ensure fulfilment of the requirements in conjunction with the project design and construction of the Nordic Swan Ecolabelled building.

Parties that require information on how 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.

033 The contractor's self-monitoring

The contractor must have documented self-monitoring during construction, in order to safeguard building quality. As a minimum, self-monitoring must include routines for:

- waste handling at construction sites
- moisture/damp prevention
- secure execution of water installations
- air permeability and testning
- electrical installations
- ventilation
- heating system
- routines for the performance of pre-inspection of the building before independent third-party control/final inspection.

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

- ☒ Description of the self-monitoring routines/system and the party responsible.
- ☒ Results of the self-monitoring performed for the first Nordic Swan Ecolabelled project must be submitted to Nordic Ecolabelling and thereafter on request.
- 🔗 More results of the self-monitoring can be controlled on-site.

034 Inspection of the completed building

The completed building must be inspected for its quality. The inspection must be performed by an independent third party with relevant expertise.

If the final inspection reveals defects, these must be subject to an action plan and the defects must be rectified as agreed between the parties.

For the licensee's first Nordic Swan Ecolabelled building and for the following 25% of the small houses and for all (100%) apartment buildings, pre-school buildings and school buildings, final inspection must be performed. Unless stipulated by legislation or practice in the industry, flats and areas of a building may be inspected on a random basis.

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.

- ☒ Final inspection report.
- ☒ Documentation to reinforce the independence and competence of the person performing the inspection.

6 Quality and regulatory requirements

To ensure that Nordic Ecolabelling's requirements are fulfilled, the following procedures must be implemented.

035 Documentation

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

- 🔗 On-site inspection.

O36 Documentation of the buildings

The licensee must have a list of the constructed Nordic Swan Ecolabelled buildings built. The documentation must be stored by the licensee for at least five years after occupation.



On-site inspection.

O37 Planned changes

Written notice of planned product and market changes that affect Nordic Ecolabelling's requirements must be submitted to Nordic Ecolabelling.



Routines describing how planned product and market changes will be handled.

O38 Unforeseen non-conformities

Unforeseen non-conformities that affect Nordic Ecolabelling's 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.

O39 Complaints

There must be routines for the documentation, reporting and handling of any complaints/claims concerning Nordic Swan Ecolabelled 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.

O40 Laws and regulations

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



Duly signed application form.

7 Instructions for residents and property managers

O41 Operation and maintenance instructions

There must be overall general information and operation and maintenance instructions for the Nordic Swan Ecolabelled building. The aim is to ensure that the property managers of the building and the residents are aware of the building's and technical installations' operation and need for service and maintenance, and the most appropriate measures from an environmental viewpoint.

Where relevant, the information must include normal operation, performance of maintenance or service, whether special expertise or authority is required, and whether special products are required to achieve the objective. If special products are recommended, they must fulfil the requirements on chemical products, construction products, construction goods and materials in chapter 4 of the criteria, or be ecolabelled with the label or the EU Ecolabel.

The information must include the following (where relevant).

- Manual for the heating system and ventilation system stating how the systems are adjusted to achieve the best possible energy efficiency and indoor climate. The manual must include time intervals for service and filter replacement.
- Maintenance and control of electrical installations, including energy meters.

- Description of how the building is protected from radon radiation.
 - Surface treatment of the façade and other weather-exposed wooden parts such as terraces, veranda, wooden railings, etc.
 - Care and maintenance of windows, including solar protection.
 - Maintenance of roof surfacing, including cleaning of gutters and drainpipes.
 - Cleaning and maintenance/surface treatment of floors.
 - A description of such equipment as white goods, WCs, etc.
 - A recommendation to use energy-efficient light sources.
- ☒ Overall general information and operation and maintenance instructions as above.

8 Point-score requirements

All point -score requirements are gathered in this chapter. Requirement O3 in chapter 1 General requirements sets the certain number of points to be achieved to be granted a Nordic Swan Ecolabelling licence.

To achieve points, measures taken on supplementary buildings such as garages, refuse depots, bicycle storage rooms, sheds and similar items can also be counted for.

P1 Energy contributions from local energy sources or energy recovery

Solar collectors, solar cell panels or heat recovery from domestic hot water consumption that are installed and that give an annual energy supplement to the Nordic Swan Ecolabelled building give points as described below.

If the building is supplied with energy from several local, renewable energy sources, points will be added, and maximum 6 points can be achieved.

Solar collectors that are calculated to provide the following share of the buildings' calculated total use of domestic hot water:

- 10 – 25% give 1 point
- 26 – 50% give 2 points
- > 50% give 3 points

Solar cells that are calculated to provide the following share of the buildings' calculated energy use (household electricity is not included):

- 10 – 15% give 1 point
- 16 – 25% give 2 points
- > 25% give 3 points

Heat recovery from wastewater that is calculated to provide the following share of the buildings' calculated total use of domestic hot water:

- 5 – 15% give 1 point
- 16 – 25% give 2 points
- > 25% give 3 points

Local energy sources are defined as an energy source at the building or in its immediate vicinity.

- ☒ Description of the type of local renewable energy source or energy recovery, its location, calculation of annual energy generation and percentage of the calculated energy need relative to calculated or real energy use.

P2 Individual metering of domestic hot water

In buildings with shared hot water supply to several residential units, 1 point is given if the system:

- is equipped with a presentation display so that residents can view their consumption at least every 24 hours.
- or
- for comparison, displays the domestic hot water consumption of other residential units in apartment buildings, either separately or as mean values at least on a monthly basis.

Measuring instruments must be approved in accordance with the measuring instruments directive (MID 2014/32/EG) or an equivalent method/standard, see Appendix 1.

- Description of the system(s) for individual measurement of domestic hot water that are installed.

P3 Calculation of hot water circulation (HWC) losses and buildings' climate imprint

HWC losses

If the hot water circulation (HWC) energy losses are calculated for a project or a standardised building, 1 point is gained.

Standard values or table data are not accepted as calculated values.

The point-score requirement applies solely to apartment buildings or other types of buildings where the national building regulations pose requirements on maximum waiting time for hot water in the tap.

Electricity cable warming the domestic hot water system in the building are not covered by the requirement and cannot be granted points.

Building climate imprint in Finland

If the building's climate imprint is calculated, 1 p is given.

The calculation shall cover the entire life cycle of the building and shall be carried out in accordance with the Finnish Ministry of the Environment's established method for the whole life carbon assessment of buildings

- Energy calculation clearly stating calculated HWC losses
- Climate calculation, where the building's climate imprint is clearly stated

P4 White goods of better energy class

If all products within a product type/category are of higher energy class than the mandatory level, 1 point is gained. A total of maximum 3 points can be given.

Table Mandatory level

White goods consumer	Lowest permitted energy class according to the Energy Labeling Directive (2010/30 / EU)	Lowest permitted energy class according to the Energy Labeling Regulation (2017/1369/EU)
Washing machine		D
Fridge		E
Freezer		F
Combined fridge and freezer		F
Tumble dryer	A++	
Dishwasher		E
Oven	A	
Combined washing machine and tumble dryer		E

- ☒ Reporting of all white goods within a product type/category stating model and energy label/energy class in product specifications, or similar.

P5 Energy efficient sanitary tapware

If all products within each product type/product category have at least the energy class given in accordance with Table 7, points are gained. A total of maximum 3 points can be given.

Table 8. Energy labelled sanitary tapware.

Type/category of sanitary tapware	Energy class	Points
Washbasin and mixer taps	A	2
	B	1
Kitchen taps	A	2
	B	1
Touchless taps	n.a	1
Thermostatic mixers with shower*	A	2
	B	1

As sanitary tapware are included; mixer taps, shower heads and showers mainly used to tap water for personal hygiene, cleaning and cooking and as drinking water.

Flow regulator is permitted. Flow regulators are a (technical) device to limit the water flow to a specific volume and that only allow a greater water flow if this is activated by the user for a certain period in one and the same instance of use.

Bath mixer taps, taps in broom closets, two-handle shower mixers and sanitary fixtures for separate purposes that are not intended for household use are not subject to the requirement.

Energy label shall be granted according to SS 820000 Sanitary fixtures -Method to determine the energy efficiency of mechanical washbasin and mixer taps and SS 820001 Sanitary fixtures -Method to determine the energy efficiency of thermostatic mixers with shower.

** Points are only awarded when a hand shower is installed unless a verification is presented by certification bodies that show that both the roof shower and hand shower function meet the relevant energy class.*

- ☒ Reporting of the type/model/name of sanitary tapware and the energy class label stating the measured energy consumption, certificate number and name of the standard.

P6 Cement and concrete with a reduced energy and climate impact

The requirement recognizes cement and concrete use with a reduced climate impact in two ways. Points can be taken from either A or B.

A) For each product type, points are given if at least half of the requirement within this product type is covered by cement products that contain cement clinker at maximum 70% by weight. A maximum of 2 points can be achieved.

Types of cement or concrete products that give 1 point each:

- Foundations
- Bearing systems and ground/floor decks
- Roof elements
- Wall elements
- Façade elements

- Balcony elements, terraces and verandas

Other types of cement products of equivalent size/scope may be approved by Nordic Ecolabelling.

B) For each measure taken in the building, stated below, one point is given.

- Deliberate work to differentiate concrete quality as required for the building (i.e. different concrete qualities for different construction details).
- Deliberate work with slim/lean concrete structures by taking various measures (high-performance concrete, reinforcement material, reinforcement technique, edge foundations, etc.)

A maximum of 2 points can be achieved.

Cement clinker is defined as the ratio of Portland cement clinker in the cement, in accordance with the definition in EN 197-1. Cement clinker is thus also included in the cement mix in the finished concrete. For concrete, the cement clinker ratio in the cement mix used in the concrete is calculated.

- Overview of cement/concrete products with maximum 70% cement clinker by weight, and calculation showing that the listed cement/concrete products constitute at least half of the product requirement within the product type.
- A) Product sheet stating the cement clinker content for each cement/concrete product that will give points.
- B) Documented measures taken deliberately for the building.

P7 Timber structures

For buildings with renewable materials in carcass or façade the following points are given:

- Bearing systems/joists of wood or other renewable material give one point.
- Bearing walls or bearing roof structures of wood or other renewable material give one point.
- Façades for which more than 50% of the façade area is of maintenance-free wood or another maintenance-free renewable material give one point.

A maximum of 2 points can be achieved.

- A description of the building or building type's materials in the carcass/bearing structure, roof structure and façade, see also O1.
- For maintenance-free façades, the manufacturer must give a written undertaking that it is maintenance-free for at least ten years, in normal conditions.

P8 Noise environment (solely concerns small houses and apartment buildings)

For residential buildings, points are given as stated below.

1 point is given if the building fulfils:

- Recommended supplementary requirements for low frequencies concerning impact noise and/or airborne noise according to the national acoustic environment standard, in combination with sound class C. Applies to Denmark, Norway and Finland.
- Sound class B for two optional acoustic environment parameters. Applies to Sweden.

3 points are given if the building fulfils:

- Sound class B for two optional acoustic environment parameters. Applies to Denmark, Norway and Finland.
- Sound class B for the overall Nordic Swan Ecolabelled building. Applies to Sweden.

National noise standards: Denmark DS 490, Sweden SS 25267, Norway NS 8175 and Finland SFS 5907.

- ☒ Planning/projecting of acoustic level/sound protection stating the sound class designed. The planning/projecting must be performed by an acoustic technician or another person with equivalent competence.

P9 Ecolabelled construction products

Ecolabelled (Nordic Swan Ecolabel or EU Ecolabel) construction products used in a Nordic Swan Ecolabelled building give points.

For each product category:

- 1 point is given if at least 10% of the product requirement is covered by ecolabelled products;
- 3 points are given if at least 50% of the product requirement is covered by ecolabelled products.

Appendix 13 designates the division of product categories. A maximum of 10 points can be achieved.

- ☒ A list of ecolabelled products with related licence number and share of the product requirement. Appendix 13, which manages the division of product categories, must be completed.

P10 Conscious product choice

Substitution of environmentally and health hazardous substances in products give points as stated below. A maximum of 2 points can be achieved.

- If all expansion joints with the highest demand on flexibility is phthalate free, 2 points are given.
- If all conduits are PVC-free and contain a maximum of 0.05 weight% bromine and chlorine respectively, 2 points are given. The content must be verified with ion chromatography method as specified in EN14582.
- If all products within one of the following product categories are PVC-free, 1 point is given:
 - Drainage pipes
 - Heavy current cables
 - Plastic pipes for central vacuum cleaners

See Appendix 8 for what is included in the product categories.

Regardless of point-score the compulsory requirement O22 must of course also be met.

- ☒ Documentation from the licence applicant and from manufacturers of plastic products.

P11 Wooden mouldings from certified forestry

Solid wood moldings certified as sustainable forestry according to FSC or PEFC can give points.

- If at least half of the need for wooden mouldings (mouldings, skirtings, baseboards, level drops and similar) is covered by certified timber products, one point is given.
- If the entire requirement is fulfilled by certified timber products, two points are given. This applies to interior moldings such as floor moldings, floor skirting boards, level wood strips, door and window skirtings, window boarder moldings, ceiling moldings, border moldings, joint moldings dado rails, door frames and thresholds.
- Door frames and thresholds are not included.

Maximum 2 points can be achieved.

Chain of Custody certification

The supplier of wooden mouldings must be Chain of Custody certified by the FSC/PEFC schemes.

Suppliers who only deliver recycled material in the Nordic Swan Ecolabelled buildings are exempted from the requirement to Chain of Custody certification.

Certified wood raw material

A minimum of 70% by weight of the wood raw material in the mouldings must origin from forestry certified under the FSC or PEFC schemes or be recycled material.

The remaining proportion of wood raw material in the mouldings must be covered by the FSC/PEFC control schemes or be recycled material*.

Half of the need is calculated and documented in a suitable way depending on the product type, for example moldings by the metre or in terms of volume.

**Recycled material defined according to ISO 14021, see requirement O28.*

☒ For documentation, see requirement O28

P12 Recycled or reused materials in construction products

For each category of construction product and construction material outside the vapour barrier consisting of at least 25% recycled or reused raw material, 1 point per product is awarded. A maximum of 3 points can be achieved.

Points are not awarded for the following construction products where recycling of material is already established: metals, insulation (glass wool and cellulose), industrial gypsum and wooden fibre products. Reused raw material or products are however not limited.

The recycled resource may not contain any of the following substances at a level >100 ppm:

- halogenated flame retardants
- highly chlorinated short chain (C10-C13) and medium chain (C14-C17) chlorinated paraffins
- cadmium, lead, mercury, chromium VI and arsenic, and compounds of these substances.

For buildings constructed without the need for vapour barrier, products made of recycled material shall still not be for indoor use.

☒ Documentation showing the ratios of recycled resources in construction products or materials.

☒ Documentation of the occurrence of the substances listed in the requirement, for example via an analysis report.

P13 Recycling of building waste

If the ratio of building waste from the construction process that is sorted for recovery or recycling of materials is:

- 50% or higher 1 point is given
- 60% or higher 2 points are given
- 70% or higher 3 points are given.

A maximum of 3 points can be achieved.

The waste that is collected unsorted at the construction site, but which on subsequent sorting could be recycled, can be included in the ratio, if the recycling can be documented in writing.

Building waste is defined as waste occurring in conjunction with construction (work). Waste that occurs when buildings or parts of buildings are torn down is defined as demolition waste and is not normally a part of the calculation according to the requirement.

- ☒ Documented waste volumes that are sorted and collected for recovery or recycling in relation to the total volume of building waste occurring.
- ☒ Contract with waste collectors supporting the possibility to recycle the materials or to reuse the waste fractions.

P14 Green initiatives

Points are given for innovative measures taken in the construction process. A maximum of 3 points can be achieved. The list below shows the measures that are awarded points. Appendix 14 contains a more extensive description. Other measures can be accepted after decision by Nordic Ecolabelling.

Ecosystem services

- Green roofs and façades, i.e. spaces used to grow plants*.
 - 1 point if the green area exceeds 10-25% of the total roof and façade area.
 - 2 points if the green area exceeds 25% of the total roof and façade area.
- Local disposal of surface water** (1 point).
- Opportunities created for urban cultivation, such as via cultivation boxes (1 point).
- Creation of gardens for biological diversity (1 point).
- Creation of habitats for insects, birds, and bats (1 point).

Environmentally friendly transports:

- Making it easier to use bicycles as a means of transport with:
 - Indoor bicycle workshops for residents. (1 point)
 - At least 1.5 bicycle parking spaces per flat are provided and equipped with access to frame locks (1 point). Bicycle stands alone are not deemed to be an innovation.
 - At least 50% of bicycle parking is weather protected (1 point)
- At least one parking space is equipped with access to charge electric vehicles (1 point).

Energy-related measures

- Exterior solar protection (fixed or movable) on all south-facing windows (1 point).
- Intelligent monitoring and display of the residential unit/preschool/school's energy consumption (1 point).
- Introduction of the possibility of energy storage in the building, for flexibility between high-load and low-load situations (1 point).
- All white goods within a product group are connected directly to the district heating network or the domestic hot water network (1 point).

** Species listed in CITES, Annexes I, II and III, may not be used in Nordic Swan Ecolabelled buildings. See the website "The CITES Appendices" www.cites.org/eng/app/index.php*

*** Green roofs/façades cannot also give points as measures for local disposal of surface water.*

- ☒ Documented description of measures.
- ☒ Regulations for the Nordic Ecolabelling of products.

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 when used on for example the website of the licensee.

The described sub text for 089 Small houses, apartment buildings and buildings for schools and pre-schools is: **Building**

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

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.

Criteria version history

Nordic Ecolabelling adopted the criteria for Small houses, apartment buildings and building for schools and pre-schools on March 9, 2016. **The criteria are valid until 31 March 2021.**

On 29 June 2016 the Nordic Criteria Management Group decided to adjust requirement O22 Excluded substances in construction products, construction goods and materials. The sentence that limited the scope to only cover the surface lawyer (what you look at and walk on) has been removed because it had falsely been copied from requirement O24.

On 17 August 2016, the Nordic Criteria Management Group decided on an exception in requirement O16 Classification of chemical products. The exception makes it possible to use chemical anchors classified H400, in installation of reinforcing bars in concrete constructions in apartment buildings.

On 7 September 2016, the Nordic Criteria Management Group decided on an exception in requirement O22 Excluded substances in construction products, construction goods and materials. The exception makes it possible to use foam insulation protected with the flame retardant butadien styrene brominated copolymer, if certain conditions are fulfilled. The exception is limited to 31 December 2017.

The new version of the criteria is 3.1.

On 21 September 2016 the requirement *O12 Noise Environment (solely applies to pre-school and school buildings)* was adjusted. To compensate for differences in the noise standards the requirement is adjusted for Denmark, Norway and Finland in the following way: reverberation and one additional parameter must fulfil noise class B. All other parameters shall fulfil noise class C. At the same time, the reference for Denmark is changed to "Trafik- og Byggestyrelsens vejledning om lydbestemmelser (Akustisk Indeklima)".

On 26 October 2016, the Nordic Criteria Management Group decided on an exception in requirement *O22 Excluded substances in construction products, construction goods and materials*. Due to residual monomer levels in raw material and also in final product (insulation material) an exception to the general rule that impurities are not allowed to exceed 100 ppm is necessary. In EPS and XPS insulation material manufactured by polystyrene, residues of styrene monomer are allowed in maximum 1000 ppm in the polystyrene (i.e. in the raw material).

The same day, the Nordic Criteria Management Group decided on an exception to the general rule that suppliers shall be Chain of Custody Certified, in requirement *O28*. A *non* Chain of Custody certified supplier 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 the Nordic Ecolabelling requirements.

On 16 November 2016, the Nordic Criteria Management Group decided on an adjustment of requirement *O13 Daylight*. Pre-schools situated on the ground floor in apartment buildings where the daylight is restricted by the surrounding, can as an alternative fulfil the daylight factor requirement in the relevant country's building code. At the same time the link to the list of potential endocrine disruptors are updated.

The new version of the criteria is named 3.2.

On 29 March 2017, the Nordic Criteria Management Group decided to lower the point sum to be achieved *in requirement O3* for all building types, but only for Finland. The reason is that Ecolabelled construction products are available to a lower extent in Finland, which makes it more difficult to achieve points.

On 5 May 2017, the Nordic Criteria Management Group decided on the following *minor adjustments* in the criteria:

- Requirement O4 and Appendix 4 are completed with the regulation BEN 1 from the Swedish National Board of Housing, Building and Planning.
- Some clarifications are made in requirement O10 Moisture prevention.
- Text in italics is removed from requirement O15 since it has been experienced as confusing.
- Jointing strips, tape and similar sealing products have been subject to our requirement and are used in a pretty large extent. Thus, the bullet under Triviality limit and Appendix 8 are adjusted.
- 1 point for thermostatic mixers with shower in energy class B is introduced in requirement P5.
- The envelope text under point requirement P11 is removed and the envelope refers to requirement O28 instead.

These adjustments are introduced at the same time as the adjustment in O3, see above.

The new version of the criteria is named 3.3.

On 9 October 2017, the Nordic Criteria Management Group decided on the following minor adjustments in the criteria:

- An exemption in requirement O17, regarding the substance glyoxal (Cas-no 107-22-2) up to maximum 100 ppm in the final product if the pH-value exceeds pH 8 in the final product.
- Primers to expansion joints outwardly on the building may contain up to 15% by weight of volatile aromatic compounds (see requirement O20).
- The exemptions for tin organic catalysts in requirement O20 are adjusted to be based on the content in the hardener system. Two different levels are determined. A lower (0.2%) in polyurethane based products and a higher (0.5%) in products of silicone, MS-polymer, and epoxy polymer.
- Requirement O26 is completed with an exemption for copper in domestic water pipes in service areas such as substations, machine rooms, electricity centres and similar areas.
- Requirement O28 is completed with curtain walls and underlay on roofs to the bullet list of wooden construction parts to be in certified wood raw material from Chain of Custody certified suppliers.

At the same time the text in requirement O2, O14 and P11 were clarified. The introductory texts in sections 4.2 Chemical product and "The following is valid for concrete and cement" were also clarified. The clarification of text implies no change in requirement level but only to increase the clarity.

All adjustments and clarifications are published in the new version of the criteria, which is version 3.4.

On 9 November 2017, the Nordic Ecolabelling Board decided to clarify that the ban on interior surface layers in PVC in Requirement O24 also applies to interior surface layer products such as mouldings, doors, skirtings and interior doors.

On 23 November 2017, the Nordic Criteria Management Group decided to introduce an exemption for two-component products in operations spaces. See the last definition under 4.2, sub-heading "Built on site versus prefabricated".

On 14 December 2017, the Nordic Criteria Management Group decided to extend the criteria by 12 months. The new term of validity of the criteria is through 31 March 2021. It was also decided to make the following adjustments to the criteria:

- Radon concentration requirement O9 was defined more clearly but the requirement level remains the same.
- Daylight requirement O13 and Appendix 5 were defined more clearly to explain how the maximum daylight factor and the risk of over-temperature must be verified.
- Exemptions were added to requirement O16 Classification of chemical products to make it possible to use acrylic flooring as compound flooring in commercial kitchens.
- Two new point options were added and one point option was removed from the P10 point-score requirement. The name of the requirement was also changed to "Conscious product choice".
- Two new appendices were introduced. Appendix 12 b, which is a guide on reporting the proportion of certified wood, and Appendix 14, which provides a more detailed description of Green initiatives.

On 10 January 2018, the Nordic Criteria Management Group decided to adjust requirement O25 "Windows and outer doors of non-renewable materials" relating to aluminium. The

definition of what is considered to be pre-consumer recycled material has been adjusted and the percentage has been changed from 30% to 40%.

On 17 January 2017, the Nordic Criteria Management Group decided to adjust the energy requirement for Finland after a new directive from the Ministry of the Environment of Finland (Miljöministeriet) on the energy performance of buildings came into force. The adjustment has been preceded by a consultation process in Finland.

On 31 January 2018, the Nordic Criteria Management Group decided to adjust the energy requirement for Sweden after new energy regulations came into force in the Swedish Building Regulations BBR 25. The adjustment has been preceded by a consultation process in Sweden.

It was further decided, on the same date, to:

- Permit the use of naphtha-based primers for the installation of waterproofing (gently sloping roofs, green roofs, courtyards/courtyard decks, patios, etc.) for expansion joints outdoors and for roofing adhesives. Requirements O16, O17 and O20 were adjusted.
- Adjust Requirement O22 so that electrical cable conduits may contain a certain concentration of brominated flame retardants. The threshold limit values are specified in the requirement and the content must be verified using ion chromatography.
- Permanent exemption for the specified brominated copolymer of butadiene and styrene in cellular insulation foam, under the conditions stated in Requirement O22.

The prolongation of the validity of the criteria and all the above adjustments are published in a new version named 3.5.

On 13 June 2018, the Nordic Criteria Management Group decided to remove the product category "kitchen extractor hood" from requirement O6 which poses requirement on energy class. The reason is that the motorized extractor hoods of good energy class (A and B) have high flows which leads to an increased energy use of the building. The requirement is contra productive. Non-motorized kitchen fans (connected to the ventilation) are not covered by energy label legislation.

On 19 June 2018, the Nordic Criteria Management Group decided to adjust Appendix 9 by clarifying that electrical cables do not include heating cables (cables that produce heat when energized).

On 20 June 2018, the Nordic Criteria Management Group decided to add the product group "fridges in prefabricated mini kitchens/kitchenettes" to requirement O6 with the requirement of minimum energy class A+.

On 22 August 2018, the Nordic Criteria Management Group decided to clarify the definition of homes for the elderly that can be Nordic Swan Ecolabelled.

The adjustments are published in a new version of the criteria named 3.6.

On 17 October 2018 Nordic Ecolabelling decided to add the phthalate DIUP to the exception for motion joints outdoors.

Furthermore, Nordic Ecolabelling decided on 27 November 2018 to raise the percentages for energy consumption of the building for Sweden in requirement O4. At the same time, the two exceptions are removed for detached houses under 130 square meters and multi-family houses in southern Sweden.

On 12 December 2018 Nordic Ecolabelling decided to prolongate the criteria document until 31 December 2022.

The adjustments are published in a new version of the criteria named 3.7.

On February 4, 2019 Nordic Ecolabelling decided to exempt D4, D5 and D6 as residual quantity from the production of silicone polymers $\leq 1,000$ ppm each. Requirement O4 has been updated for Denmark with reference to new BR18.

May 7, an exception was introduced for Finland. This is due to differences in fire protection rules and classification of exterior doors which are resistant to fire according to EN 16034. Instead of fulfilling emission limits in the above table, tambour doors in Finland must meet class M1.

On June 25, a national adjustment was made for Norway for schools, Schools must comply with Sound Class C for reverberation time.

The adjustments are published in a new version of the criteria named 3.8.

On September 17, 2019, it was decided to clarify that the kitchen sink is covered by the requirement O23 Nanoparticles and antibacterial additives in construction products and construction products.

The adjustment is published in a new version of the criteria named 3.9.

On June 9, 2020, it was decided to introduce the exception that the classification H411 is accepted for naphtha-based adhesive for cellular rubber insulation, requirement O16 Classification of chemical products.

On June 23, 2020, it was decided to maintain requirements in O4 Building's energy use for Sweden as new national energy requirements enter into force.

Adjustments are published in a new version of the criteria named 3.10.

September 15, 2020, it was decided to introduce exemptions for TiO₂ and TMP in O17 CMR-substances due to new classification.

Adjustment is published in a new version of the criteria named 3.11.

In October 2020, it was decided to introduce the term Daylight Provision parallel to the Daylight Factor (DF) as means of compliance with requirement O13 Daylight. In addition Appendix 5 was updated.

November 17, 2020, it was decided to introduce an exemption for PVC in moldings next to sauna doors in requirement O24 Surface layers on floors, ceilings and walls.

15 December, 2020, it was decided to update requirement O6 Energy-efficient white goods and P4 White goods of the best energy class based on the Energy Labeling Regulation (EU) 2017/1369 for relevant products. Further adjustment was made to the requirement on February 23, 2021.

All adjustments are published in a new version of the criteria named 3.12.

March 23, 2021, additional adjustment on requirement O6 Energy-efficient white goods and P4 White goods of the better energy class based on the Energy Labeling Regulation (EU) 2017/1369 for combined fridge and freezer.

Adjustment is published in a new version of the criteria named 3.13.

June 29, 2021, adjustments and clarifications were decided for chapter 4.4 Timber, bamboo and fibre materials. Clarifications regarding the extent of requirement O27 and O28 were made. Requirement O29 Durable/resistant wood for outdoor use was rewritten in order to exclude outdoor furniture and playground equipment. Note that O27 still applies to permanently installed outdoor furniture and playground equipment.

September 28, 2021, requirement O16 Classification of chemical products was updated due to changes in the CLP classification of dibenzoyl peroxide (CAS 94-36-0).

November 8, 2021, it was decided to implement an adjustment for Denmark in requirement O12 Noise environment. The criterion now refers to "good noise environment specified in BR18".

Nordic Ecolabelling decided on 16 November 2021 to prolong the validity of the criteria with 9 months to the 30 September 2023.

The prolongation of the validity of the criteria and all the above adjustments are published in a new version named 3.14.

March 23, 2022, a time based exemption was made for zinc pyrithione in the criteria for product group 096 Indoor pants and varnishes. This exemption is now adopted in requirement O17 CMR substances in these criteria.

December 7, 2021, the time based exemption in requirement O17 CMR substances for the dispersant trimethylol propane was extended.

March 1, 2022, limit values were decided for Faroe Islands in requirement O4 energy consumption of the building.

April 19, 2022 the validity of the criteria was extended by 12 months to September 30 2024.

The prolongation of the validity of the criteria and all the above adjustments are published in a new version named 3.15.

New criteria

- An overview of the energy requirements both regarding buildings, white goods and other energy related products.
- An overview of the material requirements.
- Continuous focus on energy requirements on materials.
- Requirements on metals to enhance recycling.
- Limitation on lead in sanitary tapware to minimize the risk for spread.
- An overview of the point-score requirements.
- 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

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

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

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

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

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/m³ 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/m²h. Any conversion factor must be stated.

Other test methods

An alternative method for EN 717-1 can be relevant standard in the ISO 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 European standard EN 120, 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.

Individual metering of domestic hot water

The measuring instrument for individual metering of domestic hot water must be approved in accordance with the measuring instruments directive (MID) (2004/22/EC) or an equivalent method/standard with the same accuracy. The approval concerns the metering unit and not the communication unit.

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 small houses and apartment buildings, see below. No exemptions may be made for school buildings and pre-school buildings.

Exemptions from overall responsibility concerning small houses and apartment buildings:

- The small house/single-unit house and the apartments can be completed 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 single-unit house and the apartments can be completed and Nordic Ecolabelled without painting of interior surfaces (with the exception of wetrooms). But paint that fulfils the EU Ecolabel or Nordic Ecolabelling's criteria for interior paint must be recommended.

Exemptions from overall responsibility concerning small houses

The house can be completed 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 Template for calculation of points

The table provides an overview over possible points and can be filled in to verify requirement O3.

Apartment buildings or apartment blocks denotes buildings with several residential units under the same roof. Small houses include 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 does not pose differently. The base for scoring is the demarcations and definitions in the relevant country's national building regulations.

No	Requirement	Appliers point	Maximum points apartment buildings	Maximum points small houses	Maximum points scools/pre-schools
P1	Energy contribution from local energy sources or energy recovery		6	6	6
P2	Individual metering of domestic hot water		1	n.a	n.a
P3	Calculation of hot water circulation (HWC) losses		1	n.a	n.a
P4	White goods of best energy class		3	3	3
P5	Energy efficient sanitary tapware		3	3	3
P6	Cement and concrete with a reduced energy and climate impact		2	2	2
P7	Timber structures		2	2	2
P8	Noise environment (solely concerns small houses and apartment buildings)		3	3	n.a
P9	Ecolabelled construction products and goods		10	10	10
P10	Conscious product choice		2	2	2
P11	Wooden mouldings from certified forestry		2	2	2
P11	Recycled or reused materials in construction products		3	3	3
P12	Recycling of building waste		3	3	3
P13	Green initiatives		3	3	3
Sum			44	42	39

Appendix 4 Energy Calculation

Energy calculation for verification of requirement O4 must be performed in accordance with:

Norway

NS 3031 Calculation of energy performance of buildings – Method and data

Denmark

BE18 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

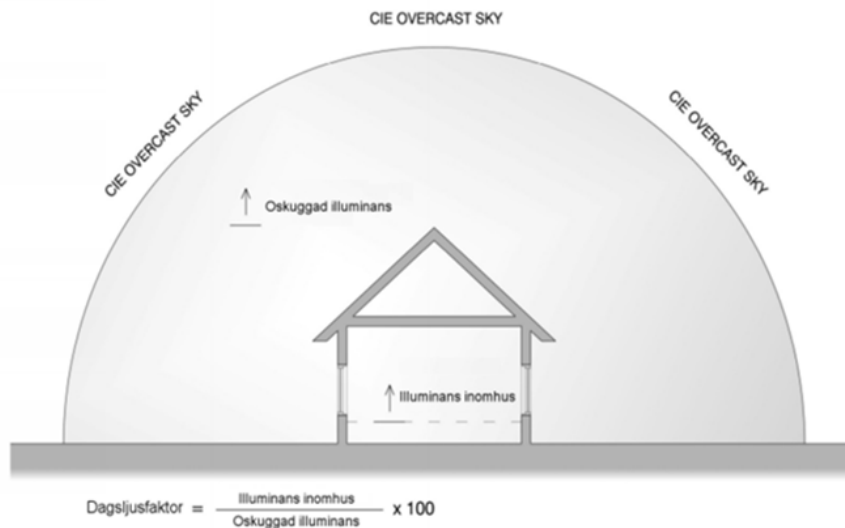
Nordic Ecolabelling does not set requirements for specific software, but to achieve energy calculations of good quality the following applies:

- The current regulation BEN must be followed,
- 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.
- Façades with the highest percentage window area must be placed to face north, unless the position of the building is known at the time of project design.
- Standard values may not be used for thermal bridges. Thermal bridges at connection points such as outer wall-window; outer wall-eaves; outer wall, between joists and external walls-ground slabs must instead be calculated according to the Swedish Standard, SS-EN ISO 13789 Thermal performance of buildings – Transmission and ventilation heat transfer coefficients – Calculation method.
- Data concerning U values and g values for the relevant windows must 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.
- Analogous to Sveby User Related Input Data for homes, no deductions may be made for domestic hot water consumption with individual measurement.
- If a room is optional in a small house, for example, it must not be included to raise the individual heat contribution.
- 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 5 Daylight Calculation

Assessment Metrics

1. Daylight Factor is defined as the relationship between the illuminance at a point inside a room to an unshaded point outside. For Daylight Factor, calculations are carried out under a CIE standard overcast sky.



2. Daylight Provision is the level of illuminance achieved across a fraction of a reference plane for 50% of daylight hours at a particular geographic location. Calculation of Daylight Provision is to be carried out in accordance with CEN 17037:2018 using a standardized climate file for a typical meteorological year. The standardized weather file used for the calculations should be from the nearest location where standardized hourly data is available. Standardized hourly weather data for Europe is available at https://energyplus.net/weather-region/europe_wmo_region_6. For situations where the building is located at distances >100 km from a readily available standardized data set, calculations based on weather data files created in Meteonorm™ are also acceptable.

Software for Calculations

The software used for calculations of Daylight Factor and/or Daylight Provision is to be verified using CIE 171:2006 TEST CASES. Examples of acceptable programs include Velux Daylight Visualizer, and programs based on the Radiance render engine (For example: Climate Studio, Diva, Honeybee/Ladybug, IDA). Calculations based on the split flux method cannot be used as evidence of compliance.

Optical properties of Materials

If a material's reflectance is known, it should be used in the calculations. If the reflectance is unknown, then the following values are to be used:

Surface	Reflectance [%]
Ceiling	80
Walls	80
Floor	30
Window frames/profiles	50
Ground	25
Surroundings	30

- If higher reflectance values than the standard values given in the table above are used in the calculations, evidence must be provided supporting the use of these values.
- Furniture is not to be included in the calculations.
- The light transmission for the glass is to be given according to SS-EN 410 and is to be referred to as LT or τ_v . Note that this is not the same as the energy transmittance T_{uv} or ST/DET/T-value. The effect of the accumulation of dirt and dust on glass (maintenance factor) can be excluded.
- Within the calculation program it is important to represent the window glass as a single plane without thickness even if the glass consists of multiple panes. Within the model, the representative glass plane should be placed matching the outer surface of actual glass construction.
- Operable sunshades can be excluded so long as they do not negatively affect daylight.

Overshadowing objects

Consideration is to be given to all objects which may reduce daylight. This includes adjacent buildings, balconies, access balconies, handrails to balconies, window frames and wall thickness. Also, the placement of the glass within the wall is important. If the thickness of the window frame is unknown, a minimum of 10% area from the window's perimeter can be assumed. This reduction can be made either by modelling a solid area or by reducing the glass' light transmission by at least 10%.

Vegetation, in particular trees, can have strong shading effect. Consideration should only be given to vegetation outside of the project's property line. This is to discourage the practice of removing vegetation to increase daylight access.

When classifying a standardized building design, the specific geometry of surrounding obstructions is unknown. A generic method for modelling surrounding obstructions for such situations is given in figure A below.

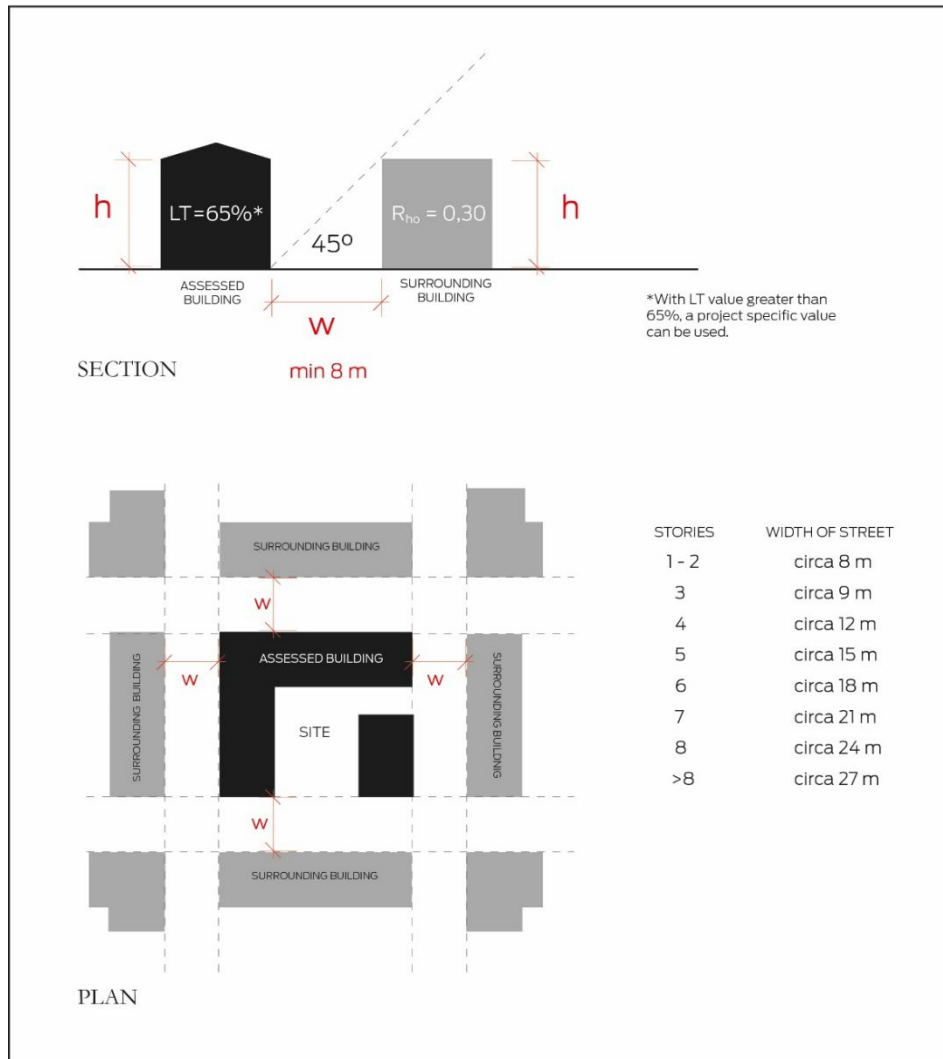


Figure A: Handling of surrounding buildings for classification of generic building designs.

Geometric constraints

The geometric boundary of the model is not to affect the calculation result. For example, a shadowing object cannot be precluded merely because they are far away. Similarly, when simulating a room adjacent a courtyard it is important to consider all glass area within the courtyard as such glass has very low reflectance.

Daylight systems

Daylight harvesting with, for example light pipes, cannot easily be simulated with today's current simulation tools. If such systems are used, then it is recommended that daylight factor be calculated by the system's manufacturer.

Required Evidence

To verify that the Daylight Factor and/or the Daylight Provision requirement is met, the following documentation must be provided:

- Siteplan showing surrounding obstructions.
- Marked up floor plans for each of the building's floors indicating rooms for classification.
- Facade drawings indicating rooms for classification.

- List of material reflectances (with supporting evidence if non-default materials are used).
- Drawings or specifications confirming the LT of window glass.
- Name of the simulation program used to carry out the calculations.
- Daylight Factor or Daylight Provision for each of the selected occupiable rooms.
- For apartment buildings, calculation results need only be submitted for a selection of 10 apartments (1 room per apartment). The selection should best support the argument that all apartments in the building have at least one room which meets the daylight criteria. If the number of apartments is less than 10, a calculation for all apartments (1 room per apartment) shall be submitted.
- In countries where the national requirement is specified as a DF_{point} , it is acceptable to use a DF_{median} .
- The name of the standardized climate file used in the calculations (for calculation of Daylight Provision).
- To verify that there is no risk of the indoor temperature exceeding permitted levels, daylight must also be calculated for the housing unit(s) where there is a risk that the DF is above 5.0%. If the DF is above 5.0%, in the most exposed room, there are three options:
 1. The solar factor must not exceed 0.036. The formula for the solar factor (SF) is $SF = g \times A_{glass} / A_{floor}$. The calculation must be carried out according to the methodology in Feby 12.
 2. The solar gain (SVL) shall not exceed 40 W/m². The solar gain is calculated according to $SVL = 800 \times g \times A_{glass} / A_{golv}$ for rooms with windows in one direction, and according to $SVL = (560 \times g \times A_{glass} + 560 \times g \times A_{glass}) / A_{golv}$ for rooms with windows in two directions. The calculation must be carried out according to the methodology in Feby 18. Maximum solar radiation (800 W/m²) can be replaced with a simulated value. Calculation of maximum solar radiation is performed with climate data for clear skies.
 3. The percentage of people dissatisfied (PPD) shall not exceed 20%. The calculation must be carried out according to the standard SS-EN ISO 7730. The maximum average air velocity should be 0.24 m/s. Other parameters should be Clo = 0.5, Met = 1.2 and RH = 50%.

Appendix 6 Declaration on emissions of formaldehyde

Applies to all wood-based panels/boards used in the production of Nordic Swan Ecolabelled buildings either as (building) panels/boards, boards in floors or boards in fittings. Panels that are not solely marketed as façade panels are exempted.

Product name, Denmark	
Product name, Finland	
Product name, Iceland	
Product name, Norway	
Product name, Sweden	
Manufacturer	
Product description	<input type="checkbox"/> Wood based panels/boards <input type="checkbox"/> Boards in floorings <input type="checkbox"/> Boards in doors and fittings <input type="checkbox"/> Mouldings, baseboards and frames

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 then either bullet 3 or 4 below.

2. For laminated panels/boards:
Does the level of free formaldehyde in glue with any hardener (i.e. the 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

Class M1 for doors resistant to fire according to EN16034 (applies only to tambour doors in Finnish apartment buildings) 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 point 4.

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? Please tick below and attach test results.

EN 717-1:

0.124 mg/m³ air for MDF panels/boards Yes No
 0.07 mg/m³ 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 used in construction work at the 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, Denmark
Chemical product name, Finland
Chemical product name, Iceland
Chemical product name, Norway
Chemical product name, Sweden
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, H410 and H411 due to dibenzoyl peroxide (CAS 94-36-0) are allowed.*

****) Hardeners for acrylic floor coatings, 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.*

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 substances.

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.
- Excluded are D4 (octamethylcyclotetrasiloxane, 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 production $\leq 1,000$ ppm each.
- 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.
- 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 30 June 2024.
- 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.

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-Isothiazol-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 products 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 (PFASs) 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 phtalates 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 tinorganic 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) ans 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-no 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 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 O22 and what is included or exempted.

Product/material and brief description	Covered by requirement O22	Not covered by requirement O22
<p>Fixed sealing products</p> <p>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).</p>	<p>Moisture/vapour barriers, wind barriers and radon barriers on walls, foundation/cellar and roof.</p> <p>For example, roofing foil, roofing membrane/roofing underlay.</p> <p>Wet room panels and fixed sealing layer for wet rooms.</p> <p>Jointing strips, tape and similar sealing products used to seal seams, joints, bushings and connections.</p> <p>Form construction materials that remain after casting/moulding.</p>	<p>Roofs regardless of material, light pipes or heat and smoke vent.</p>
<p>Interior and exterior building panels</p> <p>May consist of many different materials: cement, fibreglass, gypsum, cardboard and carton, often in combination.</p>	<p>Interior building panels for roofs, walls and floors other than wood based panels.</p> <p>Exterior panels and facade panels other than wood based panels.</p>	<p>Wooden panels (solid wood, laminated timber, veneer, plywood, OSB, MDF and chipboard), which instead must fulfil Requirement O14 in chapter 3</p>
<p>Thermal, acoustic and technical insulation.</p> <p>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.</p> <p>The insulation material may also be surfaced and coated with substances to achieve a required function.</p>	<p>All thermal and acoustic insulation of walls, roofs and ground/foundation slabs are included, as well as insulation of basements.</p> <p>Technical insulation is, for examples, the insulation of pipes, ducts and shafts.</p>	<p>Building products that are purchased in "finished" state and which contain insulation, such as windows and outer doors.</p> <p>Vibration-dampening webbing that is often used between building elements must not be deemed to be insulation and is exempt from the requirement.</p>
<p>Impregnated wood</p>	<p>Timber that is impregnated as protection from rot, blue stain and mould.</p>	<p>Pre-impregnated construction supplies such as windows and outer doors.</p> <p>Fire protection impregnated timber.</p>
<p>Wood composites</p> <p>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.</p>	<p>Composite wood used to construct facades, terraces, balconies, fences and partition walls on Nordic Swan Ecolabelled buildings, related courtyards and supplementary buildings.</p>	<p>WPC in outdoor furniture and playground equipment.</p>
The table continues on the next page.		

Product/material and brief description	Covered by requirement O22	Not covered by requirement O22
<p>Interior covering of plastic for floors, ceilings and walls</p>	<p>Concerns both surface layers, i.e. what you "walk on and see" and layers under the surface layer like acoustic dampening foam for example.</p> <p>Wet room wallpaper is included.</p> <p>Fixed sealing layers are covered by fixed sealing products - see above.</p>	<p>Products in technical areas are completely exempt from the requirement.</p> <p>Service areas are fan rooms, substations, lift shafts, machine rooms, electricity centers and other areas to which unauthorized persons do not have access.</p> <p>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 as well as cleaning space for property management.</p> <p>Shower walls are not included.</p>
<p>Drainage pipes, heavy current cables, conduits and plastic pipes for central vacuum cleaners.</p> <p>The products share in common that the material is plastic - traditional chlorinated plastics (PVC).</p>	<p>Pipes for drainage/sewage, pipes for central vacuum cleaners and (electrical) conduits.</p> <p>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.</p>	<p>Products in service areas are completely exempt from the requirement.</p> <p>Cable conduits in ground are not included.</p> <p>The requirement does not include Internet, data, telephony and TV cables.</p> <p>The requirement does not include heating cables, that is cables that produce heat when energized.</p> <p>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.</p>

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:

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

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

Name of the product, Denmark
Name of the product, Finland
Name of the product, Iceland
Name of the product, Norway
Name of the product, Sweden
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 are 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 (PFASs) 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 1000 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 (EPS and XPS), exposed for risks of ignition during 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 butadien 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) $\leq 0.15\%$
- Chlorine content (Cl) $\leq 0.15\%$
- Total content: bromine content (Br) + chlorine content (Cl) $\leq 0.2\%$

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, Denmark
Name of the product, Finland
Name of the product, Iceland
Name of the product, Norway
Name of the product, Sweden

The declaration applies to the following construction products/goods:

<input type="checkbox"/> Floor coverings	<input type="checkbox"/> Wall coverings in ceramic material or stone
<input type="checkbox"/> Kitchen fittings	<input type="checkbox"/> White goods
<input type="checkbox"/> Bathroom fittings	<input type="checkbox"/> Windows
<input type="checkbox"/> Waste disposal units	<input type="checkbox"/> Ventilation system for the elements in contact with the indoor air

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, Denmark
Name of the product, Finland
Name of the product, Iceland
Name of the product, Norway
Name of the product, Sweden
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 (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.

3. Hereby, certifies 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 buildings

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 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 building,

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 12b Specification of timber from certified forests

Applicant/Licensee: _____

Project: _____

Producer	Construction product	Product	Timber	Certification no	Share (%) of certified timber in the product	Total volume (m ³)	Total volume certified timber m ³ *
				Total sum			

Share (%) of timber from certified forestry: _____ %

Amount of timber from certified forestry: _____

Enclosed documents**: _____

** If parts of the original document are specified in kg, the conversion factor must be entered into m³.*

**** Please, enclose the following documents to the specification:**

- *Traceability certificate from the suppliers*
- *Copy of invoice to verify the purchased amount of certified timber*

Signature of licensee / applicant

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

Appendix 13 Use of Ecolabelled construction products

The table shall be used to calculate points for the use of ecolabelled construction products.

For each row in the table, i.e. for every product category, the following point is given:

- 1 point is given if at least 10% of the product requirement is covered by ecolabelled products.
- 3 points are given if at least 50% of the product requirement is covered by ecolabelled products.

A maximum of 10 points can be achieved.

Product category	Trade name	Licence No	Are of use	Share of need(%)	Points
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 (liter, kg or m ² painted area)					
Outdoor paints and varnishes (liter, 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)					
Sanitary tapware (EU Ecolabel (pcs)					
Playground equipment (pcs)					
The table continues on the next page.					

Product category	Trade name	Licence No	Are of use	Share of need(%)	Points
Closed biofuel fireplaces (pcs)				Installation of an Ecolabelled closed biofuel fireplace, boiler or heat pump gives instead a maximum of 1 point per building. If a Nordic Swan Ecolabelled shed or similar 1 point is also given.	
Solid biofuel boilers (pcs)					
Heat pumps (pcs)					
Refuse depots, bicycle sheds and the like see criteria for outdoor furniture and playground equipment				Installation of an ecolabelled depot, shed or similar, 1 point is given.	
Other product groups after approval from Nordic Ecolabelling					

Appendix 14 Description of Green initiatives

This appendix explains in more detail what the different point options in P14 mean and what is needed to obtain points. Points may be obtained for other actions by submitting a written description and motivation to Nordic Ecolabelling for review and approval.

Ecosystem services

Green roofs and façades: 1 point is awarded if more than 10%, and 2 points are awarded if more than 25%, of all façades (excluding doors and windows) and roof surfaces of all buildings in a project are used for growing plants. The same number of points is awarded for intensive and extensive green roofs. A green façade system should have equipment to enable the planting of selected plants on roofs and walls and the plants must be properly looked after.

Local disposal of surface water: To prevent overloading of the wastewater system and to ensure cleaner waterways and water flowing into wetland areas and lakes, a point is awarded for a system that is installed or built in on site that manages some of the stormwater run-off. This could be a drainage and water attenuation system for a green roof, a stormwater storage tank, parking spaces with grid plates to make them permeable, or another system to delay or prevent rain water from running directly into the drains. The measure must be carried out by the licensee to earn points. Points are not awarded for the area's shared measures. The solution for on-site management of stormwater is presented to a case officer for assessment.

Urban cultivation: There must be a designated and adequately equipped area for growing plants on the site of the property. There are no set limits on the size or yields of the garden. Instead, an overall assessment is made of the site, which should be a well-planned concept produced by a garden/landscape expert, and how the garden will be used.

Biodiversity: A well-planned concept produced by a professional landscape architect, for example, should create gardens/recreational zones in the project to increase biological diversity in the residential area. One of the motivations should be the potential to create a habitat that favours a large number of species not normally found in a new-build area. For example, rather than having just a lawn, a meadow could be planted with a variety of species. There are no set requirements about the size of the garden. Instead, an overall assessment is made.

Habitats for insects, birds and bats: At least one beehive, bird box, insect hotel, etc. must be set up for every 10 apartments.

Energy-related measures

Bicycle workshop: At least one room should be designated as a bicycle workshop in each project. The room must be adequately equipped for the repair of bicycles and furnished with at least one bench and a rack. The workshop does not have to be fitted out with tools or pumps to be awarded a point.

Bicycle parking spaces with frame locks: A point is awarded if it is possible to lock a bicycle with a frame lock in all bicycle parking spaces. A storage room that can be locked is not the same as being able to secure a bicycle with a frame lock. Single-family homes must also have a designated area where bicycles can be secured with frame locks. It is not enough to have just a storage room.

Bicycle parking spaces covered for weather protection: 50% means 50% of the standard for bicycle parking in the municipal district. If the municipal district does not have a standard for bicycle parking, 1.5 parking spaces per apartment must be used.

Exterior solar protection: A point is awarded for fixed or adjustable exterior solar protection on all south-facing glass surfaces. This could be anything from overhanging construction components above the window to special window panes that noticeably reduce the refraction of the sunlight through the glass. Points are not awarded for screens installed inside rooms or between glass.

Intelligent monitoring: Energy usage monitoring and display must be available to occupants of apartments upon request. This could be via an app or accessible screen. A monthly summary printed on paper is not enough.