

Nordic Ecolabelling for

Furniture and fitments



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This document is a translation of an original in norwegian. 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 Nordic Swan Ecolabelled furniture/fitments?

The Nordic Swan Ecolabel is an official label and a standard specifying absolute requirements. Nordic Swan Ecolabelled furniture and fitments have the lowest environmental impact in their category. The requirements are based on a life-cycle assessment of the product and requirements are imposed to production, use and waste. The requirements promote the use of certified wood raw materials and recycled plastics and metals and use of fewer substances that are harmful to health and environment, a high degree of durability and recyclability.

The individual manufacturer might gain information through the Nordic Swan Ecolabel requirements as to how they can contribute to the development of a sustainable society.

Why choose the Nordic Swan Ecolabel?

- Nordic Swan Ecolabelling can be viewed as a guide to the work on bringing environmental improvements to the business. With the Nordic Swan Ecolabel the company knows from the outset which environmental impacts are the most important and accordingly how emissions, resource consumption and waste generation can be reduced.
- The Nordic Swan Ecolabel represents a simple way of communicating a company's environmental commitment to its customers.
- Adopting the Nordic Swan Ecolabel enables manufacturers to reach not only a growing group of private individuals, but also public sector purchasers seeking to take account of environmental factors.
- An environmental adapted production will be improved on future environmental requirements from the authorities. More specifically, Nordic Swan Ecolabelled furniture/fitments will promote:
 1. Sustainable wood in the production
 2. Minimum impact from substances that are harmful to health and the environment
 3. Reduced climate and energy impact
 4. High quality and documented fitness for use.

What furniture/fitments are qualified for a Nordic Swan Ecolabel?

Furniture, fitments, doors and lamps for indoor use may be Nordic Swan Ecolabelled.

In order for a product to be marketed as Nordic Swan Ecolabelled, the whole product shall be approved, for example a bed may only be marketed as ecolabelled, if both the mattress and the bed end are approved.

Building products (e.g. walls, stairs, mouldings, plates and boardsplate materials), sanitary equipment, carpets, pillows¹, textiles, office equipment and other products that primary have another function than a piece of furniture, as well as furniture for outdoor use are outside the definition of this product group.

Separate criteria have been drafted for outdoor furniture, textiles and panels and are available upon application to one of the secretariats or can be downloaded from one of our websites.

How to apply

Licence applications may be submitted by manufacturers, importers, wholesalers and dealers.

To qualify for an ecolabel a product must meet all the general requirements as well as relevant product-specific requirements. Each requirement is labelled with the letter R (for requirement) followed by the relevant number.

All information submitted to Nordic Ecolabelling will be treated confidentially. Sub-suppliers may submit documentation directly to Nordic Ecolabelling, where the information will be kept confidential with respect to the applicant.

Icons used in the text

Each requirement is accompanied by a description of how the requirement is to be documented. Various icons are also used to make this process easier. These icons are:

- ☒ Enclose, what kind of documentation is needed
- 📄 Means that the company's routines for environmental and quality system have to be submitted

Application

Applications are made to the national ecolabelling organisation and the application is valid for 12 months. Applications may be processed by another ecolabelling organisation according to agreement between the organisations. The applicant is notified of this. Companies located outside the Nordic countries make applications to the national ecolabelling organisation of the primary market.

¹ Pillows may be Nordic Swan Ecolabelled after the criteria for furniture and fittings, if they are part of an overall furniture license, together with eg. beds or mattresses and if the padding material is the same type.

The application must consist of a completed application form together with all of the documentation required to demonstrate compliance with the requirements specified in the criteria document (this is specified for each requirement). The application form must specify in which Nordic countries the products in question are to be sold and the estimated turnover from the products in each country.

Further information and assistance may be available. Visit the relevant national website for information.

Sales in the Nordic region

Once granted, a licence is valid throughout the Nordic region. The licence document specifies in which Nordic countries the products are sold according to the information provided on the application. The products are published on Nordic Ecolabelling's website(s). The licensee undertakes to inform Nordic Ecolabelling of any changes as to where the product is sold. If the product is to be sold in other Nordic countries than those initially specified in the application, the licensee must provide written notification of this and submit any extra documentation required to Nordic Ecolabelling in the country that issued the license.

On-site inspections

Before a licence is granted, Nordic Ecolabelling will conduct an on-site inspection to verify that the requirements have been fulfilled. During the inspection, the data used in calculations, original copies of submitted documentation, measurement certificates, purchasing statistics and the like confirming adherence to the requirements must be available for examination.

Costs

An application fee is payable by companies applying for a licence. In addition, an annual fee is payable based on the company's turnover of the Nordic Swan Ecolabelled furniture/fitments.

Inquiries

Nordic Ecolabelling will be happy to answer any queries you may have. Please see the address list on page 2.

1 Materials

Where a licence is held for other Nordic Swan Ecolabelled products that may form part of furniture and fitments, for example textiles, it will not be necessary to document the individual requirements relating to such products.

Where many types of products with different compositions are produced the materials in the products may be approved on the basis of a specific list of materials. Combination of materials must fulfil the requirements of the criteria and in the case of the individual products, all requirements must be fulfilled. If a licence is already held, an application may be submitted for the inclusion of new materials in the form of an extension of the licence.

Some requirements may be documented on an annual basis at factory level. For example, a furniture manufacturer may document the requirements applicable to wood from certified forestry operations (R9) on the basis of the proportional content based on one year's consumption. The following other requirements may also be documented on an annual basis: R7, R9, R11, R14, R15, R16, R27, R28, R35 and R52.

Table 1 gives an overview of which criteria the different parts of the furniture shall fulfil.

Table 1. Overview of materials and the chapters in which the requirements are specified

Material	Level	Requirement	Form	Quantities	Relevant
Chemical products	General, and even for the production of some constituent substances	R3 – R6	2a,		Yes <input type="checkbox"/> No <input type="checkbox"/>
Wood	General	R7, R8	3a and 3b		Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 10 w/w%	R9	3a and 3b		Yes <input type="checkbox"/> No <input type="checkbox"/>
Wood-based panels	General (more than 5 w/w%)	R10 - R13	2a, 3a, 3b and 3.1 in Appendix 1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 10 w/w%	R14 – R15	3a, 3b, 4a and 3.2 in Appendix 1		Yes <input type="checkbox"/> No <input type="checkbox"/>
Surface treatment of wood and wood-based panels	More than 5 w/w%	R16 – R19	2a		Yes <input type="checkbox"/> No <input type="checkbox"/>
High Pressure Laminate	More than 10 W/W% HPL in the product	R20			Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 10 W/W% paper/pulp in the panel	R21 and R22			Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 30 W/W% paper/pulp in the panel	R23	4b		Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 10 W/W% HPL in the product	R24 and R25			Yes <input type="checkbox"/> No <input type="checkbox"/>
Metal	General	R26	5		Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 50 w/w%	R27, R28	5		Yes <input type="checkbox"/> No <input type="checkbox"/>
Surface treatment of metal	General	R29, R30	2a and 5		Yes <input type="checkbox"/> No <input type="checkbox"/>
Plastic	General	R31 – R34	2b and 6		Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 10 w/w%	R35	6		Yes <input type="checkbox"/> No <input type="checkbox"/>
Padding materials	More than 1 w/w%	R31 – R35	2b and 7		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Synthetic latex and natural latex	R40, R41	7		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Polyurethane	R42	7		Yes <input type="checkbox"/> No <input type="checkbox"/>
Mineral raw material for sound isolation	More than 5 w/w%	R43	-		Yes <input type="checkbox"/> No <input type="checkbox"/>
Textiles	More than 1 w/w%	R44 – R52	8		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Properties in use seating furniture	R53 - R59			Yes <input type="checkbox"/> No <input type="checkbox"/>
Glass	Glass	R60	9		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Mirror glass and laminated glass	R61, R62	9		Yes <input type="checkbox"/> No <input type="checkbox"/>
Light sources	Light sources	R63	-		Yes <input type="checkbox"/> No <input type="checkbox"/>
Linoleum	More than 5 w/w%	R64	-		Yes <input type="checkbox"/> No <input type="checkbox"/>
Other requirements	General	R65 – R69	6.1 and 6.2 in appendix 1		Yes <input type="checkbox"/> No <input type="checkbox"/>

Are the requirements met?

Yes No

R1 Quantity and relevance of combination of materials.

Describe the combination of various materials and small parts in the furniture/fitment. Small parts are screws, bolts, plugs, fittings, buttons, zip fasteners etc.

Determine the weight in kilos of the individual material. Small parts may be exempted from weighing.

Submit an overview of the suppliers of the various materials.

Cross off the total quantities of each material in table 1 in order to provide an overview of which requirements are relevant.

Materials for which no requirements are imposed (for example stone or ceramics) must not be present individually in a proportion that exceeds 5 % by weight. In total the furniture may contain up to 10 % by weight of such materials.

- Complete table 1 and form 1 in appendix 2 based on information on material combinations.

Appendix no. _____

2 Environmental requirements

2.1 Chemical products

Are the requirements met?

The requirement includes all chemical products used in the furniture/fitment or used in the factory/production site, including surface treatment. When indicated this requirement also applies to chemical products in the production of material which is used in the furniture/fitment.

The requirement applies to products such as glue, varnish, staining, primer, filler, oil, soap, joint filler, sealants, colour products, binding agents, pigments, bleaching chemicals and the like. Auxiliary substances such as lubricating oil and cleaning detergents are not included in the requirements.

Concerning chemicals used in the production of constituent materials the following applies:

- Wood-based panels: R3 through R5 applies
- Metals and surface treatment with metals (metallization): exemptions for R3, R4, R5 and R6. The criteria R3 through R6 applies for all other types of surface treatment of other metals.
- Plastics: exemptions for R3, R5 and R6, but additives in plastics shall fulfill R4.
- Padding materials: exemptions for R3, R5 and R6, but additives in padding materials shall fulfill R4.
- Textiles, skin and leather: generally exemptions for R3, R4, R5 and R6, but the impregnation shall fulfill R6, and colours, pigments and auxiliary chemicals shall fulfill R3.

More details are supplied together with the criteria for the materials in question. Here you may also find separate criteria for the chemicals used in the production of the materials.

R2 Ecolabelled chemical products

Yes No

Is the chemical product Nordic Swan Ecolabelled?
If yes, omit the requirements R3, R4, R5 and R6.

- Name, manufacturer and licence number for the chemical product.

Appendix no. _____

R3 Classification

Yes No

Chemical products used in the production of Nordic Swan Ecolabelled furniture and fitments must not be classified in accordance with table 2 below.

Exceptions: in requirement R19 (quantity of environmentally harmful products applied), and R12 (wood-based panels) exemptions are granted for classification in the hazard class environmentally harmful. Exemptions are also given for classification R40 (category 3)/ H351 (category 2) for classified adhesives that contain isocyanate and/or formaldehyde.

Table 2. Classification of chemical products

Classification	Associated hazard symbol and R-phrases*	CLP-regulation 1272/2008*
Environmental hazard	N with R50, R50/53, R51/53 and/or R59.	H400 very toxic to aquatic life, Category 1 acute H410 very toxic to aquatic life with long-lasting effects, Category 1 chronic H411 toxic to aquatic life with long-lasting effects, Category 2 chronic and/or EUH059 hazardous to the ozone layer
Highly toxic	Tx (T+ in Norway) with R26, R27, R28 and/or R39	H330 fatal to inhale, Category 1 and 2 H310 Fatal in contact with skin Category 1 and 2 H300 fatal if swallowed Category 1 and 2 and/or H370 Causes damage to organs, Category 1
Toxic	T with R23, R24, R25, R39 and/or R48	H330 fatal to inhale, Category 2 H331 Toxic if inhaled, Category 3 H311 Toxic in contact with skin, Category 3 H301 Toxic if swallowed, Category 3 H370 causes damage to organs Category 1 and/or H372 causes damage to organs through prolonged or repeated exposure, Category 1
Carcinogenic	T with R45 or R49. Or Xn with R40	H350 May cause cancer, Category 1A/B H350i may cause cancer by inhalation Category 1B and/or H351 Suspected to cause cancer, Category 2
Mutagenic	T with R46 or Xn with R68	H340 May cause genetic defects, Category 1A/B H341 Suspected to causing genetic defects, Category 2
Toxic for reproduction	T with R60 and/or R61. Or Xn with R62 and/or R63.	H360F May damage fertility Category 1A/B and/or H360D may damage the unborn child, Category 1A/B H361f Suspected to damaging fertility Category 2 and/or H361d Suspected to damaging the unborn child, Category 2

* Classification in accordance with the EU Dangerous Substances Directive 67/548/EEC with subsequent amendments and adjustments and/or CLP regulation 1272/2008 with subsequent amendments and adjustments. In the transition period until the 1st of June 2015, the classification can be according to EU Substance Directive or according to CLP. After the transition period, only classification according to CLP is valid. A list of R phrases and their meanings can be found in Form 2b in Appendix 2.

Please note that the producer is responsible for correct classification.

- Declaration in accordance with Form 2a in Appendix 2 by the manufacturer or raw material supplier. Appendix no. _____
- Product safety data sheets/product sheets in accordance with the legislation in force in the country of application for example Appendix II of REACH (Directive 1907/2006/EC) for each product. Appendix no. _____

R4 Contents and additives.

Yes No

The following must not be present in/added to the chemical product or material¹. In the case of materials and surface treatment the requirement applies if specified in the individual sub-chapters (Chapter 2.3-2.11) of the environmental requirements in Chapter 2. The individual sub-chapters indicate how far back in the production the requirement should be documented.

- halogenated organic compounds² in general (includes chlorinated polymers). For example: PVC, organic chloroparaffins, fluorine compounds, flame-retardants and organic bleaching agents. The biocides bronopol and CMIT in combination with MIT is exempted and has its own limits, see below
- PFOA³ (perfluorooctanoic acid and salts/esters thereof) and PFOS (perfluorooctane sulphonic acid and compounds thereof)
- bisphenol A
- the biocides chlorophenols (their salts and esters), and dimethylphumarate
- bronopol Cas. No. 52-51-7 in more than 0,05% by weight
- isothiazoliner in excess of 0,05% by weight
- the mixture (3:1) of CMIT/MIT (5-chloro-2-methyl-4-isothiazolin-3-one Cas. No. 247-500-7; 2-methyl-4-isothiazolin-3-one Cas. No. 220-239-6) in excess of 0,0015% by weight
- alkylphenols, alkylphenoxyethoxylates or other alkylphenol derivatives⁴
- phthalates
- aziridine and polyaziridines
- carcinogenic⁵, mutagen and reproduction damaging compounds (category I and II according to 67/548/EC) or (Category 1A and 1B according to CLP-regulation 1272/2008)
- pigments and additives based on lead, tin, cadmium, chromium VI, and mercury or their compounds
- the content of aromatic solvents must not be present in the chemical product in quantities in excess of 1% by weight
- the content of volatile organic compounds⁶ (VOC) in glue must not exceed 3% by weight
- no biocides must be applied to the surface of the final product or part of the final products with the intention to add a disinfective or antibacterial effect.

¹Additives includes all substances in the product including additives (e.g. pigments) in the ingredients, non-pollutants from the raw material production process. Pollutants are traces of substances from the raw material production process present in the finished product in concentrations of less than 100 ppm (0.01 w/w %, 100 mg/kg), but no substances added to a raw material or product deliberately and for a purpose, irrespective of quantity. Declaration is made by the chemical supplier based to the best of his/her knowledge at the given time, also based on information from raw material manufacturers, recipe and available knowledge on the chemical product with reservations for new advances and new knowledge. Should such new knowledge arise, the undersigned is obliged to submit an updated declaration to Nordic Ecolabelling.

²Exceptions are given to producers of mattresses and padded furniture for adhesives with additives containing polychloroprene if the emission of the rest monomer chloroprene (2-chloro-1,3-butadiene) is $\leq 1 \mu\text{g}/\text{m}^3$ after 3 days, measured with the chamber method EN ISO 16000 (see point 5, appendix 1). The exception is valid from 10 May 2012 until 30 June 2016. The exception is not valid for mattresses designed for children. Exception is also given for using epoxy acrylate in UV-curing coatings.

³Note the national legislations concerning PFOA in the Nordic countries. In Norway PFOA is regulated in «Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter (produktforskriften)», §2- 32.

⁴Alkylphenol derivatives are defined as substances that shed alkylphenols during degradation.

⁵Exceptions are given for formaldehyde impurities in new produced polymer. For a formaldehyde requirement, see requirement K5.

⁶Organic solvents are defined as solvents with a boiling point of $< 250 \text{ }^\circ\text{C}$ at 0.013 kPa.

For each chemical product/raw material present in the furniture or surface treatment documentation must be submitted from the chemical supplier in accordance with Form 2a in Appendix 2. Appendix no. _____

R5 Free formaldehyde

Yes No

The quantity of free formaldehyde in chemical products used in the production of Nordic Swan Ecolabelled furniture/fitments may be up to 0.2% by weight (2000 ppm), with the exception of adhesive which is mixed with a hardener.

For adhesives mixed with a hardener the limit of 0.2% by weight (2000 ppm) free formaldehyde is for the final mixture.

Declaration in accordance with Form 2a of Appendix 2 by the manufacturer or raw material supplier. Appendix no. _____

R6 Nano particles

Yes No

Nano metals, nano minerals, nano carbon compounds and/or nano fluoride compounds must not be actively added to chemical products.

For these purposes, Nano particles are counted as microscopic particles where at least one of the dimensions is less than 100 nm. Nano metals include nano silver, nano gold and nano copper. Traces of particles in nanosize, which is not added to achieve a specific function in the product is not covered by the criteria.

Declaration in accordance with Form 2a of Appendix 2 from the manufacturer or raw material supplier. Appendix no. _____

2.2 Wood, willow and bamboo

Are the requirements met?

The requirements in Chapter 2.2 apply to products made of wood, willow and bamboo. Other corresponding raw materials may be included by submitting a request to Nordic Ecolabelling. Furniture parts of recycled wood are exempt from the requirements R7 to R9 in this section.

R7 Origin and traceability

Yes No

This requirement concerns all product parts containing wood, willow and/or bamboo. The applicant must state the type of raw material (for example pine or bamboo), latin name, quantity, geographic origin (country/state and region/provins) and suppliers for the wood, willow or bamboo raw materials.

The licence holder must have written procedures covering sustainable wood supplies and a documented system for tracing the origin of raw materials. Nordic Ecolabelling may request further documentation in the event of uncertainty about the origin of the raw material

Wood, willow and bamboo must not originate from:

- Protected areas or areas treated by means of an official procedure with a view to achieving protected status.
- Areas in which rights of title or of use are unresolved.
- Unlawfully harvested wood and fibre raw materials.
- Genetically modified trees and plants.

Type the latin name, quantity and geographical origin (country/state and region/province) of the raw materials used. Nordic Ecolabelling may request further documentation in the event of uncertainty about the origin of the raw material. Form 3a is to be filled in by the raw material supplier/furniture producer and form 3b is to be filled in by the furniture producer/applicant. Appendix no. _____

- A written procedure measuring traceability to the origin of the raw materials. The procedures must include an updated list of all suppliers of raw materials used in the product. Form 3b is to be filled in by the furniture producer/ applicant.

Appendix no. _____

R8 Biocides

Yes No

After felling wood must not be treated with insecticides classified by WHO as type 1A and type 1B.

This requirement applies to the treatment of timber after felling.

WHO classification: An overview can be found at: http://www.who.int/ipcs/publications/pesticides_hazard/en, "The WHO recommended classification of pesticides by hazard and guidelines to classification 2009" or by contacting one of the secretariats.

- Information from the supplier of the timber of the insecticides that are used and a declaration in accordance with Form 3a for each individual product.

Appendix no. _____

Requirements applicable where the product contains more than 10% by weight wood

R9 Wood from certified forestry

Yes No

This requirement applies to solid wood, laminated wood and veneer. Willow and bamboo are not included.

70% by weight of all purchased pine, spruce, birch and tropical timber must derive from certified forestry operations.

50% by weight of other types of wood must derive from certified forestry operations.

The requirement may be documented as purchased wood on an annual basis for the various types of wood used. Certification must be performed by a third party on the basis of a current forestry standard that fulfils the requirements applicable to standards and certification systems contained in Form 3c.

- Proportion (%) of certified wood used in the applicant's Nordic Swan Ecolabelled production on an annual basis. Form 3b is to be filled in by the furniture producer and information for form 3a can be used

Appendix no. _____

- Copy of a certificate(s) signed and authorized by a certification body.

Appendix no. _____

Nordic Ecolabelling may request additional information in order to assess whether the requirements applicable to standards, certification systems and certified proportion have been met. For example a copy of the approval report issued by the certification body, a copy of the forestry standard including the name, address and telephone number of the organization that drafted the standard as well as references to persons representing parties and interest groupings invited to participate in the development of the forestry standard.

2.3 Panels made of wood, willow and bamboo

The requirements in Chapter 2.3 apply to wood-based panels such as chipboard, fibreboard (including MDF and HDF panels), OBS (Oriented Strand Board), veneer boards (plywood and parallel-laminated veneer) and solid wood panels corresponding to non-bearing laminate panels or hobby panels. The requirements also include corresponding products made of willow and bamboo. Other equivalent raw materials may be included by submitting a request to Nordic Ecolabelling. The requirement includes panel present in the products in a quantity in excess of 5% by weight.

Are the requirements met?

R10 Nordic Swan Ecolabelled panels

Yes No

Is the panel Nordic Swan Ecolabelled?
If yes, omit the requirements in Chapters 2.2 and 2.3.

Name, manufacturer and licence number of the panel.

Appendix no. _____

R11 Origin and traceability

Yes No

This requirement concerns all panels containing wood, willow, bamboo or fibre products thereof. The applicant must state the type of raw material (for example pine or bamboo), latin name, quantity, geographic origin (country/ state and region/provins) and suppliers for the wood, willow or bamboo raw materials.

Wood and fibre raw materials must not originate in:

- Protected areas or areas treated by means of an official procedure with a view to achieving protected status.
- Areas in which rights of title or of use are unresolved.
- Unlawfully harvested wood and fibre raw materials.
- Genetically modified trees and plants.

The licence holder must have written procedures covering sustainable wood and fibre raw material supplies and a documented system for tracing the origin of fibre raw materials.

Sawdust, wood chips, waste wood, untreated demolition wood and recycled fibres from other industrial activities, such as sawmills, are covered by this requirement but shall only comply with the last documentation requirement (written procedure ensuring traceability).

Type and latin namne, quantity and geographical origin (country/state and region/province) of the wood and fibre raw materials used. This does not include sawdust, wood chips, waste wood, untreated demolition wood and recycled fibres from other industrial activities, such as sawmill. Nordic Ecolabelling may request further documentation in the event of uncertainty about the origin of the raw material. Form 3a is to be filled in by the raw material supplier/furniture producer and form 3b is to be filled in by the furniture producer/applicant.

Appendix no. _____

A written procedure ensuring traceability to the origin of the raw materials. The procedures must include an updated list of all suppliers of raw materials used in the product. Sawdust, wood chips, waste wood, untreated demolition wood and recycled fibres from other industrial activities, such as sawmills, are covered by this requirement. Form 3b is to be filled in by the furniture producer/applicant.

Appendix no. _____

R12 Chemical products and additives

Yes No

Chemical products and additives/constituent substances used in the production of wood-based panels must satisfy the requirements of R3, R4 and R5 in Chapter 2.1. Exception is given for the amount of environmental harmful chemical products (classified with R50, R50/53, R51/53 and/or R59) less than 0.5 g/kg panel. Ammonia classified as R50 is not included in the amount of added environmentally harmful substances.

Declaration by the manufacturer in accordance with Form 2a in Appendix 2 and calculation of the amount of added environmentally hazardous substances according to the requirement.

Appendix no. _____

Product safety data sheet / product sheet in accordance with current legislation in the country of application, for example Appendix II of REACH (Directive 1907/2006/EC) for each product.

Appendix no. _____

R13 FormaldehydeYes No

In the case of panels that contain formaldehyde-based additives or where the surface treatment includes formaldehyde one of the following two requirements must be fulfilled:

- 1) The average content of free formaldehyde must not exceed 5 mg formaldehyde/100 g dry product for MDF panels and 4 mg/100 g dry product for all other panels as determined by the current version of EN 120 (the perforator method) of similar methods approved by the Nordic Ecolabel (se point 3, Appendix 1).

The requirements apply to wood panels with a moisture content of $H = 6.5\%$.

If the panels have a different moisture content within the range 3 – 10%, analysed perforator value must be multiplied by Factor F derived from the following formulae:

$$\begin{array}{ll} \text{For chipboard panels:} & F = -0.133 H + 1.86 \\ \text{For MDF:} & F = -0,121 H + 1.78. \end{array}$$

- 2) Average emissions of formaldehyde must not exceed 0.124 mg/m³ air for MDF panels and 0.07 mg/m³ air for all other panels as determined by the current version of EN 717-1 of similar methods approved by the Nordic Ecolabel (se point 3, Appendix 1).

- Analysis report describing measurement methods, measurement results and measurement frequency. It shall clearly be stated which method is used, who has performed the analyses and be documented that the test institution is an independent third party (see point 1, Appendix 1).

Appendix no. _____

Requirements applicable if the product contains more than 10% by weight wood-based panels

R14 Wood from certified forestryYes No

This requirement applies to solid wood, laminated wood and veneer. A minimum of 50% by weight of wood for wood-based panels must derive from certified forestry operations.

The requirement may be documented as purchased wood on an annual basis for the various types of wood used. Certification must be performed by a third party on the basis of a current forestry standard that fulfils the requirements applicable to standards and certification systems contained in Form 3c.

Willow, bamboo, sawdust, wood chips, waste wood, untreated demolition wood and recycled fibres from other industrial activities, such as sawmills, are not covered by this requirement.

- Proportion (%) of certified wood used in the applicant's Nordic Swan Ecolabelled production on an annual basis. Form 3b is to be filled in by the furniture producer and information for form 3a can be used.

Appendix no. _____

- Copy of a forest certificate signed and authorized by a certification body.

Appendix no. _____

Nordic Ecolabelling may request additional information in order to assess whether the requirements applicable to standards, certification systems and certified proportion have been met. For example a copy of the approval report issued by the certification body, a copy of the forestry standard including the name, address and telephone number of the organization that drafted the standard as well as references to persons representing parties and interest groupings invited to participate in the development of the forestry standard.

R15 Energy consumption and raw material origins of wood-based panels (including products based on willow and bamboo)

Yes No

The energy consumed in the production of the wood-based panel must be less than or equal to the requirement specified in the table for electricity and fuel consumption.

Table 3. Environmental parameters and energy calculation requirements

Environmental parameter	Requirement
A = Wood raw material from certified sustainable forestry (%) ¹	-
B = Proportion of recycled raw material (%) ²	-
C = Proportion of renewable fuel (%) ³	-
D = Electricity consumption (kWh/m ²)	Max 1 kWh/kg
E = Fuel consumption (kWh/m ²)	Max 3.4 kWh/kg

¹annualized percentage of wood from certified forests; requirements in regard to wood from certified forests is described in R14.

²Recycled raw material = waste products of other industries, recycled post-consumer material.

³Definition of renewable fuel = the energy giving raw material is not fossil based or peat.

The total score P calculated using the environmental parameters in Table 3 must be calculated using the formulae below. To meet the requirement the points score:

P must be at least 9.5 in the case of chipboard

P must be at least 8.0 in the case of other wood-based panels

$$P = \frac{A}{25} + \frac{B}{25} + \frac{C}{25} + \left(4 - \frac{D}{0,25}\right) + \left(4 - \frac{E}{0,85}\right)$$

Origin of raw materials

In the case of fibre from timber, the part of wood raw material from certified sustainable forestry must be calculated as an annual average. Secondary products such as woodchips and sawdust from other production are counted as recycled wood raw materials.

Energy consumption (electricity and fuel)

Renewable fuels are defined as non-fossil fuels (peat is defined as fossil fuel).

Energy consumption is calculated as the annual average. Energy consumption calculated as kWh/kg panel must include the primary panel production and production of the actual applicable ingoing primary raw materials. Primary raw materials are raw materials present in quantities in excess of 5% by weight of the finished panel (for example wood-fibre and glue). Energy consumed in extracting the raw material must not be included.

In the case of panel production energy calculations must be based on data from and including raw material processing (ingoing conveyor belt on the production line) up to and including the finished product before surface treatment, if applicable. Energy consumed during surface treatment shall not be included.

In the case of production of chemical products, for example glue, the energy calculation must be based on data from production. The energy content of the raw material shall not be included. In exceptional cases a standard value of 15 MJ/kg (solution in use) may be used in the case of adhesives, broken down as 12 MJ/kg for fuel and 3 MJ/kg for purchased electricity (4:1).

The energy content of various fuels can be found in Form 4 in Appendix 2.

If the manufacturer has a surplus of energy and sells this off in the form of electricity, steam or heat, the quantity sold must be deducted from the fuel consumption figure. The calculation must include only fuel that is in fact used in panel production.

Electricity consumption is electricity purchased from an external supplier.

- Submit the calculation of P in accordance with the above requirements.

Appendix no. _____

Wood raw material must be documented as in R11.

Specify the types of fuels used in the production of the panel during the course of last year and which of these fuels are renewable. Specify the quantity of electricity used and the quantity of panel (kg or m³) produced during the last year.

2.4 Surface treatment of wood, willow and bamboo

Are the requirements met?

The requirements in Chapter 2.4 of the criteria document apply to the surface treatment of wood, willow and bamboo as well as materials based on these raw materials. The requirements apply only if the materials to which surface treatment is applied are present in the finished furniture in quantities in excess of 5% by weight. For the purposes of these requirements, laminate is regarded as surface treatment.

R16 Chemical products and additives

Yes No

Chemical products and additives used in surface treatment in the production of wood and wood-based materials must satisfy the requirements specified in R3, R4 and R5 in Chapter 2.1.

Exceptions are made for chemical products and additives that are classified as environmentally harmful, see table 5. These substances are covered by R19.

- Declaration given by the manufacturer in accordance with Form 2a in Appendix 2.

Appendix no. _____

- Product safety sheet/product sheets in accordance with the applicable legislation in the country of application, for example Appendix II to REACH (Directive 1907/2006/EC) for each product.

Appendix no. _____

R17 Quantity applied and method of application

Yes No

The number of coats, quantity applied (g/m²) and the method(s) of application must be documented.

The following degrees of effectiveness¹ are used for the purpose of calculation:

Spraying device without recycling, 50%

Spraying device with recycling, 70%

Electrostatic spraying 65%

Spraying, bell/disk, 80%

Roller varnishing 95%

Blanket varnishing 95%

Vacuum varnishing 95%

Dipping 95%

Rinsing 95%

¹ The degrees of effectiveness are standard values. Other degrees of effectiveness may be used if they can be documented

- Number of coats, method(s) of application and quantity applied per coat per m² of surface area.

Appendix no. _____

R18 Quantity of organic solvents appliedYes No

The quantity applied will be shown in the calculations in R17 and the quantity of organic solvent is calculated using Form 2a or an equivalent (e.g. % by weight of organic solvent). The quantity applied must not exceed the thresholds specified in the table below. An exemption from this requirement will be granted if the total quantity of VOC in the applied products is < 5% by weight.

Table 4. Requirements applicable to the quantity of organic solvents used in various product groups.

Product group	Quantity organic solvent ¹ (g/m ²)
Bedroom furniture, reception room furniture, doors, MDF panels and contoured surfaces ²	< 10
Tables, chairs and other product groups	< 30
Contract furniture and furniture of high quality ³	< 60

¹ Organic solvents are defined as solvents with a boiling point < 250 °C at 101,3 kPa (1 atm).

² Contoured surfaces are paper, sheets, thin sheets of wood (0.5 – 2 mm) and laminates applied to wood as a surface.

³ This product group refers to the surface treatment of furniture intended for purposes that can be documented to have a special need for enhanced wear properties and a long lifetime. The requirements as to strength, safety and stability must be of the highest level relative to the standards specified in the table in Appendix 1, Section 6.1. Durability must follow the standards specified in the table in Appendix 1, Section 6.2 and must be at level 5 or higher. Examples of furniture categories with these properties include furniture for use in hospitals, kindergartens, schools, teaching, offices or furniture for other long-term public/private activities. Nordic Ecolabelling reserves the right in the individual case to determine whether a licence application will be included by this product group.



A separate calculation showing the values in g/m² within the applicable product groups. The basis for calculation is provided in requirement R17 and Form 2a.

Appendix no. _____

The quantity of organic solvents is calculated on the basis of the information contained in Form 2a. The quantity may also be calculated as the total of the organic solvents (upper percentage specification) given in the datasheet for the product. If applicable, information from a chemical manufacturer in the form of a recipe may be submitted directly to Nordic Ecolabelling.

R19 Quantity of environmentally harmful products appliedYes No

One of the two options must be fulfilled:

1) chemical products must not be classified according to table 5

or

2) the total quantity of products applied as surface treatment classified as environmentally harmful in table 5 must be less than 10 g/m² surface. In cases where UV-varnishes are used the total quantity must be less than 14 g/m² surface.

In the calculation of the applied amount the degrees of effectiveness listed in R17 must be used.

All environmentally harmful substances which is included in the unhardened chemical product shall be included in the calculation.

Table 5. Classification of environmental harmfulness

Classification	Hazard symbol and risk phrase	CLP regulation 1272/2008*
Environmentally harmful	N with R50	Very toxic to aquatic life. Category Acute 1 with H400
	N with R50/53	Very toxic to aquatic life. Category Chronic 1 with H410
	N with R51/53	Very toxic to aquatic life. Category Chronic 2 with H411
	R52/53	Very toxic to aquatic life. Category Chronic 3 with H412
	R53	Very toxic to aquatic life. Category chronic 4 with H413
	N with R59	Ozone with EUH 059

* Classification in accordance with the EU Dangerous Substances Directive 67/548/EEC with subsequent amendments and adjustments and/or CLP regulation 1272/2008 with subsequent amendments and adjustments. In the transition period until the 1st of June 2015, the classification can be according to EU Substance Directive or according to CLP. After the transition period, only classification according to CLP is valid. A list of R-phrases and wording is listed in appendix 2 form 2b.

1) Product safety sheet/product sheets in accordance with the applicable legislation in the country of application, for example Appendix II to REACH (Directive 1907/2006/EC) for each product. Appendix no. _____

2) Declaration from the producer of the surface treatment products regarding content of environmentally harmful substances and a calculation showing the total quantity of environmentally harmful substances as g/m². A similar calculation example for VOC is shown in Form 2a. Appendix no. _____

The total quantity of environmentally harmful substances can be calculated based on the information in Form 2a. The quantity may also be calculated as the total of the environmentally harmful substances (upper percentage specification) given in the datasheet for the product. If applicable, information from a chemical manufacturer in the form of a recipe may be submitted directly to Nordic Ecolabelling.

2.5 Highpressure laminate (HPL) panels

Are the requirements met? Yes No

The following requirements include HPL panels when the high-pressure laminate material represents more than 10% by weight of the finished ecolabelled product. The requirements include only the high-pressure laminate. Any wood-based panel is covered by the requirements of section 2.2.

R20 Ecolabelled product

Yes No

If the product is ecolabelled, all requirements in section 2.5 (R20, R21, R22, R23 and R24) are automatically fulfilled.

If the product is ecolabelled, the product type and manufacturer and licence number must be specified. Appendix no. _____

R21 Wood fibre and waste wood in paper, cardboard and pulp

Yes No

The requirement includes raw materials purchased as wood fibers in paper, cardboard and pulp, that individually represents more than 10 percent by weight of the finished panel. The requirement does not apply paper labels attached to the product. One of the three following requirements opportunities have to be met.

Nordic Swan Ecolabelled paper products as well as pulp and paper controlled under the existing Nordic Swan Ecolabel basic module for paper, is automatically approved in this requirement.

Annually, at least:

1. 30% of the fibre raw material in paper, cardboard or pulp must come from forest areas in which operation has been certified under the forestry standard and certification system stated in Appendix 4c or which is certified as organically cultivated or where cultivation is in the process of being converted to organic production,

or

2. 70% of the fibre raw material in paper, cardboard or pulp must be recycled fibre or bi-products such as shavings or sawdust,

or

3. a combination of 1 and 2. If the fibre raw material in paper, cardboard or pulp consists of less than 70% recycled fibre, the proportion of fibre raw material from certified areas must be calculated according to the following formula:

Requirement for proportion of fibre raw material from certified areas in paper, cardboard or pulp (Y):

$$Y (\%) \geq 30 - 0.4x$$

where x = proportion of recycled fibre or bi-products such as shavings and sawdust.

- The declaration and any calculations from the supplier of the paper, cardboard or pulp that the requirement has been satisfied. The declaration must contain the name of the paper, cardboard or pulp. Appendix 2d may be used.

Appendix no. _____

- Where points 1 or 3 apply, the paper, cardboard or pulp manufacturer must send a copy of the relevant forestry certificate which complies with the guidelines for forest certification and organic cultivation, as described in Appendix 2c.

Appendix no. _____

- By using the Nordic Swan Ecolabelled paper, cardboard or pulp submit trade name and license number of the product. When using products controlled by the existing Nordic Swan Ecolabel paper basic module the producer, production plant, name of mass or paper quality and grammage shall be described.

Appendix no. _____

R22 Emissions of COD from paper and cardboard production

Yes No

The total emissions of acid-consuming organic material (COD - chemical oxygen demand) to water must be less than the specified COD value in Table 3 for the paper or cardboard used (for unfiltered sample). Each type of pulp has its own level in the requirement. The COD emission from pulp production must be included in the total COD calculation for the paper or cardboard used.

COD emissions are thus calculated by adding the emissions COD mass kg/ADT (weighted mean of incoming pulps) + COD emission paper machine kg/t.

Nordic Swan Ecolabelled paper products as well as pulp and paper controlled under the existing Nordic Swan Ecolabel basic module for paper, is automatically approved in this requirement.

Table 6 COD requirement levels for different pulp and paper types

Pulp type	Total COD level kg/ADt for pulp and paper
Bleached chemical pulp (sulphate and other chemical pulps except sulphite pulp)	22.0
Bleached chemical pulp (sulphite pulp)	29.0
Unbleached chemical pulp	14.0
CTMP pulp	19.0
TMP/Groundwood pulp	7.0
Recycled fibre pulp	4.0

- ☒ Submit a description of the sampling programme, including measurement methods, measurement results from previous 12 months and measurement frequency, see also Section 1 of Appendix 1. Appendix no. _____
- ☒ By using the Nordic Swan Ecolabelled paper, cardboard or pulp submit trade name and license number of the product. When using products controlled by the existing Nordic Swan Ecolabel paper basic module the producer, production plant, name of mass or paper quality and grammage shall be described. Appendix no. _____

Yes No

R23 Energy requirements for paper and pulp production

The requirement covers paper and pulp which individually are present at more than 30% by weight in the finished panel.

Nordic Swan Ecolabelled paper products as well as pulp and paper controlled under the existing Nordic Swan Ecolabel basic module for paper, is automatically approved in this requirement.

The following requirements must be satisfied for paper or pulp:

$$P_{\text{electricity(total)}} < 1.25$$

$$P_{\text{fuel(total)}} < 1.25$$

P stands for energy point for paper/pulp production. In $P_{\text{electricity(total)}}$ and $P_{\text{fuel(total)}}$ energy points are included from both paper production and the pulps used in the paper. See further explanation in Appendix 2e.

- ☒ The pulp and paper manufacturer must submit a calculation according to Appendix 2e which shows that the point limits are being satisfied. The calculation sheet developed by Nordic Ecolabelling must be used for the calculation. Appendix no. _____
- ☒ By using the Nordic Swan Ecolabelled paper, cardboard or pulp submit trade name and license number of the product. When using products controlled by the existing Nordic Swan Ecolabel paper basic module the producer, production plant, name of mass or paper quality and grammage shall be described. Appendix no. _____

Yes No

R24 Energy requirements for HPL panel production

The requirement covers the applied energy for production of the panel and may be documented either for the ecolabelled panel production or for the company's total annual production of HPL panels.

HPL panels ≤ 2 mm thin:

No more than 18 MJ/kg panel may be used for producing the panel.

HPL panels ≤ 2 mm thick:

No more than 14 MJ/kg panel may be used for producing the panel.

The requirement does not include extraction of resources or production of incoming raw materials. Paper has its own energy requirements in R23. Self-produced energy and resold surplus energy should be stated, but will not count as applied energy in the calculation.

- A calculation should be submitted documenting compliance with the requirement. The calculation must contain information about: quantity of produced panels, sub-divided into thick and thin, applied electricity and fuel, and which fuel sources are being used.

Appendix no. _____

R25 Emissions from HPL production

Yes No

In the case of production in countries where the mandatory national requirements are less stringent than the emission levels in this requirement, it must be documented that the following emissions levels have not been exceeded.

The requirement relates to panels in which the content of HPL (High Pressure Laminate) accounts for more than 10% by weight of the panel.

The following limit values for emissions to air at the workplace may not be exceeded during production of HPL (High Pressure Laminate):

The limit value is expressed in relation to a reference period of 8 hours' time-weighted average (TWA):

Limit value for formaldehyde cas. no. 50-00-0: 0.5 ppm or 0.6 mg/m³

Limit value for phenol cas. no. 108-95-2: 2 ppm or 8 mg/m³

The limit value is expressed in relation to a short-term value of max. 15 min.:

Limit value for formaldehyde cas. no. 50-00-0: 1.0 ppm or 1.2 mg/m³

Limit value for phenol cas. no. 108-95-2: 4 ppm or 16 mg/m³

- Air measurements for phenol and formaldehyde for the past 12 months, containing a description of the sampling programme, including measurement methods and measurement frequency. For analysis methods, see Appendix 1.

Appendix no. _____

Or

- Description of mandatory national regulatory requirements, showing that the requirement automatically is followed.

Appendix no. _____

2.6 Metals, separability and recycling

Are the requirements met?

Metal parts that weigh less than 50 grams are exempt from requirements R27 to R30. The exemption does not apply to coating with cadmium in R30. Coating with cadmium is forbidden by the authorities in the Nordic countries.

R26 Recycling of materials

Yes No

The metal in the product must be separable from other materials (does not include surface treatment) without the use of specialist tools.

- Description of how the metals can be separated from other materials, Form 5.

Appendix no. _____

Requirements where the product contains more than 50% by weight metal

Product, with more than 50% by weight metal, shall either fulfil R22 or R23.

R27 Recycled metal (alternative 1)

Yes No

At least 50% by weight of aluminum and 20% by weight of other metals in the product must comprise recycled metal. Alternatively, the smelting plant that supplies the metal must utilise at least 50% recycled aluminum and 20% recycled metal (other) in production on an annual basis.

Recycled metal is defined here as both pre-consumer and post-consumer as defined by the ISO 14021.

Declaration from the furniture manufacturer, Form 5.

Appendix no. _____

Declaration from the smelting plant.

Appendix no. _____

R28 Recycled metal (alternative 2)

Yes No

Aluminum and other metals in combination shall meet the following requirements for recycled metal:

$$re_{Al} * kg_{Al} + re_{Me} * kg_{Me} \geq 0,5 * kg_{Al} + 0,2 * kg_{Me}$$

Where:

kg_{Al} og kg_{Me} are the weight of aluminum and other metals in kg respectively.
 re_{Al} og re_{Me} are the proportion of recycled aluminum and other metals respectively. This is to be given as a number between 0 and 1 (corresponds to 0% to 100%).

The proportion of recycled material can be documented for the actual share of the product or on an annual basis for the smelting plant. If declared on an annual basis the smelting plant, that supplies the aluminum / metal, shall declare the recycling rate. Recycled metal is defined here as both pre-consumer and post-consumer as defined by the ISO standard 14021.

Declaration from the furniture manufacturer , Form 5.

Appendix no. _____

Declaration from the smelting plant.

Appendix no. _____

The surface treatment of metals

R29 Chemical products and additives

Yes No

Chemical products and additives used in the pre-treatment and surface treatment of metals must fulfil requirements R3 and R6 in Chapter 2.1. Exceptions are given for R3, R4, R5 and R6 in the metal production and the coating of the metal (metallisation). Documentation is specified in Chapter 2.1 and Form 2a.

Declaration in accordance with Form 2a in Appendix 2 from the manufacturer.

Appendix no. _____

Product safety datasheet/product sheet in accordance with the applicable legislation in the country of application, for example Appendix II of REACH (Directive 907/2006/EC) for each product.

Appendix no. _____

R30 Coating

Yes No

Metals must not be coated with cadmium, chromium, nickel, zinc and their compounds.

In exceptional cases the surface treatment of metal surfaces with chromium, nickel or zinc may be permitted in the case of small parts (for example screws, bolts, mechanisms) where this is necessary because of heavy physical wear. In exceptional cases the surface treatment of metal surfaces with chromium, nickel or zinc may be permitted on chair legs and fold up tables if this furniture fulfils the standards for use in public environments (see the table in section 6.1 appendix 1). See R66 for a closer description. The exception will not include parts that are designed to come into frequent contact with skin (applies for nickel), and moreover parts treated in this way must be recyclable.

The chrome plating process must be based on 3-valent chromium and 6-valent chromium must not be used.

The chrome plating, nickel plating and zinc plating processes must use techniques for cleaning, ion exchange and membrane techniques or equivalent techniques in order to recycle the chemical products as extensively as possible.

The emissions from the surface treatment process must be recycled or destroyed. The system must be closed and have no waste outlet system with the exception of zinc where emissions must not exceed:

Zinc: 0.5 mg/l

If zink is emitted test method EN ISO 11885 has to be used.

Emissions to water are calculated as a yearly middle value and based on minimum one representative daily sample per week. Samples of process water shall be taken after external treatment, and analyses shall be carried out on unfiltered sample. Sampling frequency set by the authorities, can be approved.

Declaration from the furniture manufacturer or supplier of surface treated metals, Form 5. Appendix no. _____

In the case of surface treatment with chrome, nickel or zinc:

The need for this type of surface treatment must be documented using tests or a report documenting that the metal surface is exposed to heavy physical wear. Standards for public environment (specified in Section 6.1 in Appendix 1) can be used. Appendix no. _____

2.7 Plastic and rubber

Are the requirements met?

Polymer materials used as padding materials and textiles (Chapters 2.8 and 2.10 must not be included in the % by weight limit on plastic materials and are not encompassed by the requirements applicable to plastic. Polyurethane foam (PUR-foam) shall fulfil the criteria for padding material in chapter 2.8.

Small plastic parts (for example tiny screws, pins and fittings) is not included in the % by weight limit and are not encompassed by the requirements applicable to plastic in this chapter. Wires with weightshare up to 5% by weight of the product are not encompassed by the requirements of chapter 2.7.

R31 Description of material and labelling of plastic

Yes No

Details must be provided of the types of plastic, fillers and reinforcements used in plastic parts. Parts made of plastic and weighing more than 50 g must be visibly labelled in accordance with ISO 11469.

Parts made of PVC shall not be used.

Report on plastic parts in accordance with Form 6 of Appendix 2. Appendix no. _____

R32 Additives

Yes No

Additives in plastic and rubber must satisfy the requirement R4 in Chapter 2.1. The requirement applies to additives actively added to the polymer raw material in the master batch or compound in production of plastic or rubber. Documentation is provided in Chapter 2.1 and Form 2b.

Declaration in accordance with Form 2a in Appendix 2 from the manufacturer. Appendix no. _____

R33 Nitrosamines in rubber

Yes No

The content of nitrosamines or nitrosamines soluble substances must not exceed 0.01 mg/kg and 0.1 mg/kg rubber, respectively.

Declaration from the furniture manufacturer or supplier of plastic/plastic parts in accordance with Form 6 in Appendix 2. Appendix no. _____

R34 Surface treatment

Yes No

The surface treatment of plastic materials may be permitted if documentation can be submitted showing that this does not impact on the possibility for recycling and that the surface treatment fulfils the requirement in R4.

Declaration from the furniture manufacturer and documentation showing Appendix no. _____

that the surface treatment does not impact on the possibility for recycling according to Form 6. The surface treatment must fulfil the requirements in R4 according to Form 2b.

Requirements where the product contains more than 10% by weight plastic

The various types of plastic materials present in quantities in excess of 1% by weight of the weight of the plastic materials must be summarised. If in total they may get more than 10% by weight of the furniture, the following requirements must be fulfilled:

R35 Recycled/recovered materials

Yes No

The plastic materials used in furniture and fitments must consist of at least 50% by weight recycled materials.

Recycled plastic of polypropylene(PP), polyethylene(PE) and polyethylene terephthalate (PET) shall consist of post consumer materials. Other plastic can also consist of recycled production off-cuts from outside suppliers.

Recycled plastic is defined as post consumer recycled material or recycled production off-cuts from outside suppliers.

Recycled plastic must not contain halogenated flame retardants. Nevertheless, impurities are permitted in quantities of up to 100 ppm.

- Declaration from the plastic supplier that the raw material is recycled and the proportion of recycled plastic material, Form 6.

Appendix no. _____

2.8 Padding materials

Are the requirements met?

The requirements of Chapter 2.8 apply to padding materials which represents more than 1% by weight in the product.

R36 Ecolabelled padding materials (mattresses)

Yes No

Is the padding materials Nordic Ecolabelled or labelled with the EU Ecolabel? If yes, submit documentation and omit the rest of the requirements in Chapter 2.8.

- Name, manufacturer, production site and licence number/standard contract number for the textile.

Appendix no. _____

R37 Chemical additives

Yes No

Chemical additives used in the production of padding materials must fulfil requirement R4 in Chapter 2.1. Documentation is provided in Chapter 2.1 and Form 2b.

- Declaration in accordance with Form 2b and Form 7 in Appendix 2 from the manufacturer.

Appendix no. _____

- Product safety datasheet/product sheet in accordance with current legislation in the country of application, e.g. Appendix II of REACH (Directive 1907/2006/ECF) for each product.

Appendix no. _____

- R38 Dyes** Yes No
 Dyes may be used only to distinguish between different qualities (e.g. hard and soft foam) within the same type of padding material. Metal complex dyes and dyes classified in accordance with R3 must not be used.
- Declaration in accordance with Form 2a and Form 7 in Appendix 2 from the manufacturer. Appendix no. _____

- R39 Formaldehyde** Yes No
 Formaldehyde emissions must be less than 20 ppm in the case of padding materials according to EN ISO 14184-1 or similar method approved by the Nordic Ecolabelling. Alternatively, evaporation must not exceed 0.005 mg/m³ measured in climate chamber testing according to ENV 13419-1.
- The manufacturer must either declare that no products containing formaldehyde have been used or include an analysis report showing the presence measured in accordance with Section 4 of Appendix 1. Appendix no. _____

Synthetic latex (SBR) and natural latex

- R40 Butadiene content** Yes No
 The content of butadiene must be less than 1 mg/kg latex.
- The latex manufacturer must state the test results in accordance with the measurement method specified in Section 4 of Appendix 1. Appendix no. _____

- R41 Nitrosamines** Yes No
 The concentration of N nitrosamines must not exceed 0.0005mg/m³ measured using climate chamber testing.
- The latex manufacturer must state the test results in accordance with the test method specified in Section 4 of Appendix 1. Appendix no. _____

Polyurethane

- R42 Blowing agents and isocyanate compounds** Yes No
 CFC, HCFC, HFC, methylene chloride and halogenated organic compounds must not be used as blowing agents.
- Isocyanate compounds must only be used in a closed process with the prescribed protective equipment and in accordance with regulatory requirements.
- Declaration in accordance with Form 7 in Appendix 2. Appendix no. _____

2.9 Mineral raw materials for sound insulation Are the requirements met?

- R43 Mineral raw materials for sound insulation** Yes No
 The requirement applies to the use of more than 5% by weight mineral based raw materials in the product. Mineral raw materials for sound insulation must be approved as incoming material into a license for Nordic Ecolabelled acoustic panel in accordance with the criteria for Nordic Ecolabelling of building boards.
- Name, manufacturer, production site and license number for the acoustic panel. Appendix no. _____

2.10 Requirements for textiles, hides and leather

Are the requirements met?

Textiles encompass synthetic materials, natural fibres, hide and leather. For textiles that make up more than 1% by weight of the furniture, at least 80% by weight of the fibre material in the textiles must fulfil the requirements (this means that if a fibre mix comprises of 80% wool and 20% polyester, the wool fibres must fulfil the requirements below or 20% polyester and 60% wool must fulfil the requirements). The requirements apply both to the textiles used on sitting furniture (furniture textiles) and other textiles used in the furniture. The textile requirements are generally exempted from the general chemical requirements (R3 – R5) in Chapter 2.1, but shall fulfill requirement R6 in Chapter 2.1.

R44 Ecolabelled textile

Yes No

Is the textile Nordic Ecolabelled or labelled with the EU Ecolabel?
If yes, submit documentation of this and omit the remainder of the requirements in Chapter 3.0.

Name, manufacturer, production site and license number/standard contract number of the textile.

Appendix no. _____

R45 Hide and leather

Yes No

Hide and leather that makes up more than 1% by weight of the furniture must be Nordic Swan Ecolabelled or fulfil the requirements applicable to the Nordic Ecolabelling of "Textiles, skins and leather", version 3.2 or later version.

Name, manufacturer and licence number of the hide or leather. If applicable, documentation in accordance with the criteria document "The Nordic Ecolabelling of textiles, skins and leather", version 3.2. or later version.

Appendix no. _____

R46 Flame retardants, biocides and surface treatment

Yes No

The textile must not contain halogenated flame retardants, biocides or halogenated surface treatment agents.

Surface Treatment must fulfil requirement R6 regarding nano particles in Chapter 2.1.

Declaration from the textile manufacturer in accordance with Form 8.

Appendix no. _____

R47 Dyes, pigments and auxiliary chemicals

Yes No

Dyes, pigments or auxiliary chemicals classified in accordance with Table 2 in R3 must not be used.

Declaration from textile manufacturer in accordance with Form 8.

Appendix no. _____

Safety datasheet in accordance with current legislation in the country of application, for example Annex II of REACH (Regulation 1907/2006/EC) for each product.

Appendix no. _____

R48 Chrome mordant dyeing

Yes No

Chrome mordant dyeing is not permitted.

Declaration from the textile supplier in accordance with Form 8.

Appendix no. _____

R49 Metal complex dyes

Yes No

The use of metal complex dyes is not permitted. Wool, wool/viscose, polyamide or silk are exempt from this requirement. Emissions of Cu, Cr and Ni to water shall not exceed: 75 mg/kg (Cu), 50 mg/kg (Cr), 75 mg/kg (Ni) after treatment.

Declaration from the textile supplier in accordance with Form 8.

Appendix no. _____

- R50 Auxiliary chemicals** Yes No
 The requirement applies to auxiliary chemicals used by dyeing or finishing textile. Alkylphenol ethoxylates (APEO), linear alkylbenzene sulphonates (LAS), dimethylbis (hydrogenated tallow) ammoniumchloride (DHTDMAC), distearyl dimethylammoniumchloride (DSDMAC), ditallowalkyl dimethylammoniumchloride (DTDMAC), ethylene diamine tetraacetate (EDTA) and diethylene triaminepentaacetic acid (DTPA) must not be used and must not make up part of any of the preparations used.
- Declaration from the textile supplier in accordance with Form 8. Appendix no. _____
- R51 Formaldehyde** Yes No
 Emissions of formaldehyde must not exceed 20 ppm for textiles according to EN ISO 14184-1 or similar method approved by the Nordic Ecolabel. Alternatively, evaporation must not exceed 0.005 mg/m³ measured in a climate chamber test according to ENV 13419-1.
- Analysis report showing occurrence measured in accordance with Section 4 of Appendix 1. Appendix no. _____
- R52 Wastewater discharges from wet processing** Yes No
 A. The chemical oxygen demand in the emission water discharged from wet processes (except greasy wool scouring sites and flax retting sites) shall when discharged after treatment (whether onsite or offsite) be less than 20 g COD/kg textile, expressed as an annual average. See the calculation example in form 8.
 B. If the effluent is treated onsite and released directly to nature, it must also have a pH value between 6 and 9 (unless the pH values in the recipients are higher or lower) and a temperature of less than 40°C (unless the temperature in the recipient environment is higher).
- Application including detailed documentation and analysis reports (ISO6060 or an equivalent must be used) showing that the products fulfil this criterion and a declaration of compliance. Appendix no. _____

2.10.1 The properties of the textile for seating

Are the requirements met?

These requirements apply only to seating. The documentation requirements for all requirements in 2.10.1 are specified below, and reference is made to Section 4.2 of Appendix 1 for standards.

- R53 Durability** Yes No
 Furniture textiles, i.e. textiles for seating, must have abrasive resistance corresponding to the rupture of the maximum of two threads at a minimum of 20,000 wear revolutions for domestic use and 40,000 for public use.
- R54 Pilling** Yes No
 The furniture textile must have a pilling resistance factor of at least 4.
- R55 Dimensional changes** Yes No
 Dimensional changes for washable textiles made of natural fibres must be less than 0.5%. If the textile fits the filling after washing, higher values may be accepted.
- The applicant shall provide analysis reports showing that the fabric meets the requirements for use in accordance with Section 4.2 of Appendix 1. Appendix no. _____

- R56 Colour fastness to washing** Yes No
- The colour fastness of the textile to washing must be at least level 3-4 for colour change and at least 3-4 for staining. This requirement does not apply to products clearly labelled "dry clean only" or the equivalent (insofar as it is normal practice for such products to be labelled this way), to white products or products that are neither dyed nor printed, or to non-washable furniture textiles.
- The applicant shall provide analysis reports showing that the fabric meets the requirements for use in accordance with Section 4.2 of Appendix 1. Alternatively, an Oeko-Tex® 100 certificate used as documentation. Appendix no. _____
- R57 Wet rubbing** Yes No
- Colour fastness to wet rubbing must be at least level 2-3. This requirement does not apply to white products or to products that are neither dyed nor printed.
- The applicant shall provide analysis reports showing that the fabric meets the requirements for use in accordance with Section 4.2 of Appendix 1. Alternatively, an Oeko-Tex® 100 certificate used as documentation. Appendix no. _____
- R58 Dry rubbing** Yes No
- Colour fastness to dry rubbing must be at least level 4. This requirement does not apply to white products or to products that are neither dyed nor printed.
- The applicant shall provide analysis reports showing that the fabric meets the requirements for use in accordance with Section 4.2 of Appendix 1. Alternatively, an Oeko-Tex® 100 certificate used as documentation. Appendix no. _____
- R59 Colourfastness to light** Yes No
- Colourfastness to light must be at least level 5.
- Level 4 is permitted only where textile intended for light coloured furniture (standard depth < 1/12) and made of more than 20% wool or other keratin fibres, of more than 20% silk or of more than 20% linen or other bast fibres. This requirement does not apply to mattresses and mattress covers.
- The application must include analysis reports showing that the material fulfils the requirements applicable to the area of use in accordance with Section 4.2 of Appendix 1. Appendix no. _____
- 2.11 Glass/mirror glass and laminated glass** Are the requirements met?
- R60 Glass** Yes No
- Lead glazing, crystal glass and wire reinforced glass must not be used in the furniture.
- Glass used in the furniture must be readily replaceable should it be damaged or smashed.
- Declaration from the furniture manufacturer with the accompanying instructions for use containing guidance on how to replace damaged glass. Appendix no. _____

- R61 Mirror glass** Yes No
- Mirror glass may be present as part of the furniture or fitment.
- The metal coating used in mirror glass must not contain lead (Pb) and/or cobber (Cu) in excess of 0.2% by weight.
- Mirror glass used in the furniture must be readily replaceable should it be damaged or smashed.
- Test results and test method used by the mirror glass manufacturer or if applicable declaration that no lead or copper are used in the metal coating (Form 9). Accompanying instructions for use containing guidance on how to replace damaged mirror glass. Appendix no. _____
- R62 Laminated glass** Yes No
- Laminated glass may be used in furniture if documentation can be submitted showing that laminated glass can be recycled.
- Laminated glass used in the furniture must be readily replaceable should it be damaged or smashed.
- Declaration from the furniture manufacturer with the accompanying instructions for use containing guidance on how to replace damaged glass. Appendix no. _____
- Declaration from a recycling plant that laminated glass can be recycled and a description of how this is done. Appendix no. _____

2.12 Lighting sources in furniture and fitments

Are the requirements met?

- R63 Lighting sources** Yes No
- Fittings must be equipped with light sources in energy class A or B. In the case of reflector lamps (directional lamps) LED or other effective reflector lamps must be used.
- Energy classification in accordance with Commission Directive 98/11/EG for household lamps.*
- Effective reflector lamps means all reflector lamps that are better than normal halogen reflector lamps. For example, what is termed IRC or ES technology will be approved.*
- Description of the type of lamp and documentation of energy class. Appendix no. _____

2.13 Linoleum

Are the requirements met?

- R64 Linoleum** Yes No
- The requirement applies to the use of more than 5% by weight linoleum in the product.
- The linoleum must be approved as incoming material into a license for Nordic Ecolabelled floors under the criteria for Nordic Ecolabelling of floors.
- Name, manufacturer, production site and license number for the linoleum floor. Appendix no. _____

3 Other requirements applicable to ecolabelled products

3.1 Waste minimization

Are the requirements met?

R65 Recycling systems for products and packaging

Yes No

Relevant national rules, statutes and/or industry specific agreements concerning recycling schemes for products and packaging must be fulfilled in the Nordic country/countries in which the ecolabelled product is on sale.

- Copy of the agreement and/or copies of invoices relating to recycling systems for products and packaging.

Appendix no. _____

3.2 Fitness for use

Are the requirements met?

R66 Fitness for use

Yes No

This requirement is a general requirement applicable to seating, tables, internal doors, kitchen cabinets and other cabinets.

The product for which an ecolabelling licence is sought must fulfil the requirements applicable to durability, strength, safety and stability provided for in the European standards relevant to the areas of use of the product. Other relevant standards may be accepted if the test institution can document that the chosen test provides roughly the same result. If no relevant European standard exists, then national or other international standards must be used. The test must be performed by an independent test institution.

The test stages in the relevant standard must be followed and selected in relation to the area of use for which the furniture is sold or marketed, assuming that the standard includes test stages.

The requirements as to strength, safety and stability must primarily follow the standards specified in the table in Appendix 1, Section 6.1. If the product fulfils the requirements of a standard other than EN or ISO, the test institution must provide an account of how the standard relates to the aforementioned requirements. In the case of products for which no relevant standards exist, an independent relevant test institution may assess the safety, durability and function of the product on the basis of its design and materials used.

In the case of varnished, film and laminate-finished surfaces the surface must fulfil the following durability requirements. The requirements do not apply to untreated, soap, wax and oil-finished surfaces. Furthermore the requirement does not apply to doors for indoor use. The level of the requirements refers to the test methods specified in the table in Section 6.2 of Appendix 1.

Table 7. Requirements applicable to various furniture groups

Seating	Seat and arm rests	Requirement level 2
Storage units	External horizontal surfaces (up to 1.25 m), shelves and bases	Requirement level 3
Table tops	Private use and normal contract use	Requirement level 4
	Tough contract use (restaurants/cafes)	Requirement level 5
Kitchens	Internal surfaces, including drawer bottoms, excluding shelves and bottoms	Requirement level 1
	External horizontal surfaces, shelves and bottoms	Requirement level 3
	Worktops	Requirement level 6

A general rule for selection of products for testing shall be based on the test standard. Tests shall be conducted within the product family to which the product belongs unless otherwise described. The weakest and most critical elements in terms of stability must be selected for testing, e.g. the widest or the shortest possible distance between hedges, drawers with the largest dimensions and longest travel, tables with the longest free spans, etc.

- Information on the function end user for which the product was tested and the standard used, the test institution and test report. If applicable, details of how national standards relate to the requirements of ISO or EN. Relevant standards are shown in the tables in Section 6.1 and 6.2 of Appendix 1.

Appendix no. _____

Alternative (if no relevant standards exist):

Information on the test institution, test report and the assessment criteria.

The test institution must provide details of variations within the product group represented by the tested products and verify that the product is representative.

3.3 Instructions

Are the requirements met?

R67 Instructions

Yes No

The instructions must include:

- Guidance on cleaning and maintaining the product with specific instructions for the various materials in the product.
- Illustrated assembly instructions if the furniture or fitment is so constructed that it needs to be assembled.
- Information on the materials used in the product and how these can be recycled or if applicable processed in some other environmentally responsible way.
- In the case of light fittings: A recommendation that Nordic Swan Ecolabelled low-energy light bulbs, or other low-energy light bulbs with a low mercury content in the fitting, be used.

- User instructions.

Appendix no. _____

3.4 Requirements from the authorities as to safety, working environment and the external environment

Are the requirements met?

R68 The requirements from the authorities

Yes No

The licensee is responsible for ensuring that all ecolabelled products and the production thereof fulfil all applicable provisions relating to the working environment, legislation and concessions in the various countries of production.

3.5 Environmental and quality assurance

Are the requirements met?

R69 Environmental and quality assurance

Yes No

Producers who hold an ecolabelling licence themselves or through vendors/importers must have documented procedures and instructions in place that:

- ensure that the requirements in the ecolabelling criteria are fulfilled
- ensure that the requirements are verifiable during the licence's validity period
- ensure the quality of ecolabelled products encompassed by the licence
- outline the ways in which the organization for environmental assurance is structured to ensure that the requirements in the ecolabelling criteria are fulfilled
- a contact person for the ecolabelling organization is appointed.



A description of the ways in which the ecolabelling requirements are followed up, documented and reported in the daily production must including details of the following:

Appendix no. _____

- 1) the organizational structure, quality manager, contact person and other responsible persons and their areas of responsibility
- 2) procedures for processing and reporting unforeseen deviations from the ecolabelling requirements
- 3) procedures for documenting and reporting planned production changes that will affect assessment of whether the ecolabelling criteria are fulfilled
- 4) the contact person's procedures for reporting 2) and 3) to the ecolabelling organization (external routines for reporting to the ecolabelling organization)
- 5) procedures for documenting, reporting and processing complaints on ecolabelled products
- 6) traceability of ecolabelled products in the production line.

The licence holder needs an acceptance in writing from the ecolabelling organization before any changes on the product with any reference to the requirements in the criteria document, can be carried out.

Regulations for the Nordic Ecolabelling of products and services

More information about regulations, fees and graphical guidelines can be found at <http://www.svanen.se/en/For-Companies/Download/Regulations/> or at <http://www.nordic-ecolabel.org/downloads/regulations/>

The validity of the criteria document

This criteria document was adopted by the Nordic Ecolabelling Board on 17 March 2011 and will remain in force up to and including 30 of June 2015.

On 16 February 2012 the Secretariat Manager's meeting decided to adopt changes regarding formaldehyde (R13) and metal complex dyes (R44). The new version is called 4.1.

On 10 May 2012 the Secretariat Manager's meeting decided to adopt changes regarding contents and additives (R4). The new version is called 4.2.

On 11 October 2012 the Secretariat Manager's meeting decided to adopt changes regarding a clarification about pillows in the product definition. The new version is called 4.3.

On 15 November 2012 the Secretariat Manager's meeting decided to adopt the following: Change regarding formaldehyde (R13) and exemption for requirements R22 to R25 for metal parts weighing less than 50 grams. The new version is called 4.4.

On 19 June 2013 the Secretariat Manager's meeting decided to adopt the following: Expansion of an exception of the requirement for additives (K4) and the triviality limit of 1% for the requirements in Chapter 2.7 Padding materials. The new version is called 4.5.

On 25 September 2013 the Secretariat Manager's meeting decided to prolong the criteria document until 31 December 2017. The new version is called 4.6.

On 12 November 2013 the Secretariat Manager's meeting decided to adopt the following: Change regarding the requirements for recycled metal (R22 and R23) and adjustments in the reference to test standards in Appendix 1, Section 4.2 for textile requirements (R48-R54). The new version is called 4.7.

On 18 December 2013 the Secretariat Manager's meeting decided to adopt the following: New requirement for mineral raw materials for sound insulation (R39) and new requirements for linoleum (R60). The new version is called 4.8. The background is updated.

On 13 May 2014 the Board of Directors decided to adopt the following: Requirement R4: Extension of the exemption for the use of adhesives with polychloroprene additive for mattresses and upholstered furniture manufacturers. The new version is called 4.9.

On 29 April May 2015 the Nordic Criteria Managers decided per capsulam to adopt the following: Requirement R4: Extension for one year of the exemption for the use of adhesives with polychloroprene additive for mattresses and upholstered furniture manufacturers. On 17 November 2014 the Board of Directors decided to remove the general part of requirement R67 Marketing. The new version is called 4.10.

On 5 November 2015 the Nordic Ecolabelling Board decided the following: extension of the criteria for 18 months to 30 June 2019. Editorial changes in the evaluation of generation 4 criteria, R16, R35, R62 and R67 are removed, new requirements for HPL panels are inserted, and an exception for minor bronopol in requirement R4 Contents and additives. The new version is called 4.11.

The Nordic criteria group decided on 22 June 2016 and on 11 October 2016 the following adjustments in requirements K4: Extension of exemption for the use of adhesives with polychloroprene additive for mattresses and upholstered furniture manufacturers until generation 4 expires. In addition, there is inserted an exception for formaldehyde impurities in new produced polymer and exemption for the use of epoxy acrylate in UV curing coatings. The new version is 4.12.

During the period of validity the Nordic Ecolabelling Board may decide corrections, clarifications and/or prolongations by publishing a new version of the criteria document. This will normally not affect already approved licences.

The Board of Nordic Ecolabelling shall give notice no later than 12 months before the expiry date of the criteria which criteria will apply thereafter.

Future criteria

The next revision of the criteria will consider the following areas:

- New requirements aimed at reducing climate and energy effects
- Transport requirements
- Emissions of VOC at factory level
- SVHC (substances of very high concern) – criteria for chemicals

Appendix 1 Testing and control

1 Requirements as regards test institution

Sampling for testing must be performed in a competent manner. The laboratory/test institution must be impartial and competent. The unprocessed data must be available for checking by the ecolabelling organization.

The laboratory performing the analysis must fulfil the general requirements contained in standard EN ISO 17025 or be an official GLP-approved laboratory. The applicant will be liable for costs in connection with documentation and analyses.

The manufacturer's own laboratory may be approved to perform analyses and tests if:

- The analyses and tests are monitored by the authorities, or if
- The manufacturer has a quality assurance system encompassing sampling and analyses and has been certified to ISO 9001 or if
- The manufacturer can demonstrate that it is consistent with the initial analysis/testing performed as a parallel analysis/test by an accredited laboratory and the manufacturer's own laboratory and that the manufacturer takes samples in accordance with a predetermined sampling.

2 Follow-up inspection

Products for which an ecolabelling licence has been granted may be checked by an impartial test institution. Responsibility for submitting products for checking rests with the ecolabelling organization. These checks may take the form of a spot check taken from goods on sale. The licensee will be liable for the costs if it is found that the licensee has provided definitely incorrect information to the ecolabelling organization. If not, the costs will be borne by the ecolabelling organization.

3 Wood and woodbased plates and boardss

3.1 Formaldehyde

For the purpose of determining the content of free formaldehyde, the most recent applicable European standard for the perforator method is to be used. This must at all times be followed by the applicable EN 120 standard until and if the method is replaced by a different EN method. Other test methods such as JIS A 1460 or similar can be used on request to the Nordic Ecolabel. It shall be reported which method is used and conversion factors shall be documented if such are used.

As a suitable chamber method for plates and boardss of wood and mineral wool, the European Standard: ENV 717 – 1 is recommended. This must at all times be followed by the EN standard applicable from time to time for reference determination of emission value. Other test methods, such as ASTM D 6007-2 or similar, may be approved by the Nordic Ecolabel. The method used must be reported and conversion factors shall be documented if such are used.

The test method for analysis of emissions for classification M1 is given in “Emission Classification of Building Material” (http://www.rts.fi/emission_classification_of_building_materials.htm).

The sampling frequency for the three aforementioned tests are given in the standard (the Perforator method), statutory provisions in the individual Nordic countries (Climate Chamber method, ENV-717-1) and in the rules of the Finnish classification system.

3.2 Emissions from production of wood based plates and boards (COD)

Test method:	When measuring oxygen demanding organic material to water, chemical oxygen demand (COD) ISO 6060 2nd Ed. 1989, NS 4748 alternatively DS 217, SFS 3020, SFS 5504, SS028142, DIN 38409, part 41, NFT 90101, ASTM D 1252 83 or test kits using potassium dichromate as an oxidizing agent (and with silver sulphate as a catalyst), e.g Dr Lange, Hack or WTW “Determination of the chemical oxygen demand” or similar.
Sample frequency:	Emissions to water are calculated as a yearly mean value and based on minimum one representative daily sample per week.
Sampling:	Samples of process water shall be taken after external treatment, and analyses shall be carried out on unfiltered sample. Sampling frequency set by the authorities, can be approved.

4 Padding materials and textiles

4.1 Substances harmful to health and the environment

One kilogram of each type of padding material/textile shall be sent to an analysis laboratory. For products that have the same fibre composition or the same chemical content and have been subjected to the same chemical treatment, but which differ in design, one sample for analysis is adequate.

Butadiene

Determination of 1.3 butadiene in latex: Milling and weighing of sample. Sampling by headspace sampler. Analysis by gas chromatography and detection by flame-ionisation detector.

Formaldehyde

Formaldehyde emissions from padding materials and textiles.

Formaldehyde emissions are determined using the analysis method in EN ISO 14184 or similar method (e.g. Japanese law no. 112:1972) approved by Nordic Ecolabelling. It shall be reported which method is used and conversion factors shall be documented if such are used.

Nitrosamines

The concentration of Nitrosamines shall be provided in a test report.

A test report in which chamber test ENV 13419-1 is used must be submitted. The test must be performed no later than one week after the foam was produced. The latex sample must be packaged separately in aluminium foil and

vacuum packed in polyethylene. The packaged sample must be stored at room temperature for at least 24 hours and then unpacked and transferred without delay to the test chamber.

Test conditions: The latex sample must be placed in a sample holder with air contact on all sides. The climate conditions in the chamber must comply with ENV 13419-1. To facilitate comparison of test results the area-specific ventilation rate ($q = n/l$) must be 1 and the ventilation rate must be in the range 0.5-1. Sampling must commence 24 hours after chamber loading and be completed no later than 30 hours after chamber loading.

The following method must be used for the sampling and analysis of air samples: Hauptverband der gewerblichen Berufsgenossenschaften ZH ISO 1/120.23 (or equivalent).

Metal complex dyes based on copper, chromium or nickel

Testmethods: ISO 8288 for Cu, ISO 9174 for Ni and prEN 1233 for Cr.

4.2 Durability, textiles

- Abrasion resistance is determined using EN ISO 12947-2.
- Pilling is determined using the EN ISO 12945-2, or an equivalent standard.
- Dimensional change is determined using ISO 6330, ISO 5077 and ISO 3759.
- Colour fastness to wash is determined using the following method: ISO 105 C06.
- Colour fastness to wet rubbing: ISO 105 X12 Colour fastness to rubbing
- Colour fastness to dry rubbing: ISO 105 X12 Colour fastness to rubbing.
- Colour fastness to light is determined by ISO 105 B02.

4.3 Emissions to water (COD), textiles

Test methods: Determination of oxygen demanding organic material to water, in accordance with ISO 6060 or equivalent.

Sampling frequency: Emissions to water are calculated as a yearly mean value and based on minimum one representative daily sample per week.

Sampling: Samples of process water shall be taken after external treatment, and analyses shall be carried out on unfiltered sample. Sampling frequency set by the authorities can be approved.

5 Adhesives

5.1 Free formaldehyde

To determine the free formaldehyde emissions from liquid adhesive, the EN standard EN 1243:1998. Adhesives - Determination of free formaldehyde in amino and aminoformaldehyde. CEN/TC 193 – Adhesives shall be used.

5.2 Rest Momomers

To determinate the chloroprene (2-chloro-1,3-butadiene) content in adhesives the chamber method EN ISO 16000 is to be used

6 Strength, safety, stability and durability

6.1 Standards for various furniture types

The requirements do not apply to doors for internal use.

Table A. Standards for various furniture categories.

Fitness for use	Furniture category	Standard
Domestic environment	Seating	EN 12520:2010
		EN 1728:2000
		EN 1022:2005
	Tables	EN 12521:2010
		EN 1730:2000
	Storage units, kitchen and bathrooms	EN 14749:2005
		ISO 7170:2005.
		EN 14072:2003
	Beds and mattresses	EN 1725:1998
		EN 1957:2000
		EN 1022:2005
	Bunk beds and high beds	EN 747-1:2007
EN 747-2:2007		
Public environment	Seating	EN 15373:2007
		EN 1728:2000
		EN 1022:2005
		EN 1335-1:2000
		EN 1335-3:2000
	Table	EN 15372:2008
		EN 1730:2000
	Storage units	Revision of relevant standard is ongoing. When updated standard is available, this shall be used.
	Beds and mattresses	EN 1725:1998
		EN 1957:2000
		EN 1022:2005
	Bunk beds and high beds	EN 13453-1:2004
		EN 13453-2:2004
School furniture (chairs and tables)	EN 1729-1:2006	
	EN 1729-2:2006	
Office environment	Office work chairs	EN 1335-2:2009
		EN 1335-3:2009
		EN 12529:1998
	Work tables and desks (for sitting)	EN 527-2:2002
		EN 527-3:2003
	Work tables and desks (for standing)	Revision of relevant standard is ongoing. When updated standard is available, this shall be used.
	Storage furniture	EN 14073-2:2004
		EN 14073-3:2004
EN 14074:2004		
ISO 7170:2005		

6.2 Durability of varnished, film-covered and laminated surfaces

The requirements do not apply to untreated surfaces or surfaces treated with soap, wax or oil.

Table B. Requirements for durability/resistance

Requirement category			Requirement levels					
Test		Test methods	1	2	3	4	5	6
Water	1)	EN 12720	6 h	16 h	16 h	24 h	24 h	24 h
Grease	1)	EN 12720	24 h	24 h	24 h	24 h	24 h	24 h
Grease + scratches	1)	SS 83 91 22	-	-	-	24 h + 3 N	24 h + 3 N	24 h + 3 N
Scratches	2)	SS 83 91 17	-	3 N	3 N	5 N	5 N	5 N
Alcohol	1)	EN 12720	-	-	-	1 h	1 h	1 h
Coffee	1)	EN 12720	-	1 h*	1 h	1 h	1 h	1 h
Heat, dry	1)	EN 12722	-	-	-	70°C	70°C	-
Heat,dry	1)	EN 12722	-	-	-	-	-	180°C
Heat, humid	1)	EN 12721	-	-	-	-	-	85°C
Heat against edge	1)	NS 8061	-	-	-	-	-	85°C
Water against edge (kitchen only)	1)	SS 83 91 20 NS 8062 DS2175		-	1 h***	-	-	-
Perspiration - acid and alkaline	1)	ISO 105E04	-	1 h**	-	-	-	-

1) Result 4 – Assessment after 24 hours – will be acceptable for the purpose of assessment

2) Permitted width of scratch max. 0.5 mm. Penetration of varnish coat not acceptable.

* Relevant for storage units - outside horizontal surfaces ≤ 1 250 mm above floor level

** Relevant for armrests

*** Relevant for doors and drawer fronts

Appendix 2 Forms

Skema 1 Erklæring af trævarer

Træsort (latin- og nordisk navn)	Geografisk oprindelse (land, delstat)	Certificering (se krav næste side)	Leverandør (se krav næste side)

Er nogen af trævarerne overbeholdt med beskyttelsesmiddel eller fældning?
 Hvis ja: Ja Nej

Er deklarationsmåden i henhold til WMO som type 1A eller 1B?
 (Se overgrænser for på www.ecolabel.eu)
 Er overgrænser for på www.ecolabel.eu "The WMO non-wooden classification of products by hazard and pollution to climate 2008" eller ved lavere end at de enkelte råvarer er: Ja Nej

Indsend 15 punkters sikkerhedsudvalget af lign. dokumentation Blag nr. _____

Leverandørens navn:

(Navn)	(Sikkerheds)
(Sikkerheds)	(Navn)

Forberedelse af Erklæring af trævarer 2010

Form 1 Overview of materials from producer

Form for overview of materials (Chapter 1)

Producer:	Signatory
Product	Total weight in kg

Table 1 below shall give a general overview over which requirements that are relevant for the furniture or fitment. The weight and composition of each material can decide which requirements that apply. Applicants must fill in table 1.

Table 1 Overview of materials and chapters where the requirements are specified

Material	Level	Requirement	Form	Quantities (kg and weight %)	Relevant
Chemical products	General, and even for the production of some constituent substances	R3 – R6	2a		Yes <input type="checkbox"/> No <input type="checkbox"/>
Wood	General	R7, R8	3a and 3b		Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 10 w/w%	R9	3a and 3b		Yes <input type="checkbox"/> No <input type="checkbox"/>
Wood-based panels	General (more than 5 w/w%)	R10-R13	2a, 3a, 3b and 3.1 in Appendix 1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 10 w/w%	R14 – R15	3a, 3b, 4a and 3.2 in Appendix 1		Yes <input type="checkbox"/> No <input type="checkbox"/>
Surface treatment of wood and wood-based panels	More than 5 w/w%	R16–R19	2a		Yes <input type="checkbox"/> No <input type="checkbox"/>
High Pressure Laminate	More than 10 w/w% HPL in the product	R20			Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 10 w/w% paper/pulp in the panel	R21 and R22			Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 30 w/w% paper/pulp in the panel	R23	4b		Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 10 w/w% HPL in the product	R24 and R25			Yes <input type="checkbox"/> No <input type="checkbox"/>
Metal	General	R26	5		Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 50 w/w%	R27, R28	5		Yes <input type="checkbox"/> No <input type="checkbox"/>
Surface treatment of metal	General	R29, R30	2a and 5		Yes <input type="checkbox"/> No <input type="checkbox"/>
Plastic	General	R31 - R34	2b and 6		Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 10 w/w%	R35	6		Yes <input type="checkbox"/> No <input type="checkbox"/>
Padding materials	More than 1 w/w%	R36 - R39	2b and 7		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Synthetic latex and natural latex	R40, R41	7		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Polyurethane	R42	7		Yes <input type="checkbox"/> No <input type="checkbox"/>
Mineral raw materials for sound insulation	More than 5 w/w%	R43	-		Yes <input type="checkbox"/> No <input type="checkbox"/>
Textiles	More than 1 w/w%	R44 - R52	8		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Properties in use seating furniture	R53 - R59			Yes <input type="checkbox"/> No <input type="checkbox"/>
Glass	Glass	R60	9		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Mirror glass and laminated glass	R61, R62	9		Yes <input type="checkbox"/> No <input type="checkbox"/>
Light sources	Light sources	R63	-		Yes <input type="checkbox"/> No <input type="checkbox"/>
Linoleum	More than 1 w/w%	R64	-		Yes <input type="checkbox"/> No <input type="checkbox"/>
Other requirements	General	R65 - R69	6.1 and 6.2 in Appendix 1		Yes <input type="checkbox"/> No <input type="checkbox"/>

The table below shall give an overview over the following:

- All suppliers of products/materials that are a part of the furniture/fitment.
- Which furniture part the product is a part of (for example frame for a mattress, mattress, legs, seat, back etc.).
- What type of material/product that is used (for example textile, padding materials, metals, plastics, varnishes, glue etc.). If relevant, which composition the material has (for example for textiles, padding and plastic).
- Weight in kg for each material and weight %. The total weight for the furniture/fitment is given in the first table of Form 1.

Nordic Ecolabel will also accept complete worksheets or similar from the applicant as long as all required information is given. However, Table 1 above must always be filled in.

Table 2 Overview of suppliers, furniture parts, weights and compositions of the products/materials

Supplier	Furniture part	Material/product and composition	Weight in kg	weight %
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

Form 2 Classification and additives

Form 2a for requirements R3, R4, R5 and R6.(Chapter 2.1)

The form used for chemical products and chemical additives in wood-based panels.

The name and area of use of the chemical product/raw material

Manufacturer of the chemical product or supplier of chemical raw material :

Classification of chemical products

Exceptions from the following classification may occur in the individual requirement.

Classification	Associated hazard symbol and R-phrases ¹	CLP-regulation 1272/2008 ¹
Environmental hazard	N with R50, R50/53, R51/53 and/or R59	H400 Very toxic to aquatic life, Category 1 acute; H410 Very toxic to aquatic life with long-lasting effects, Category 1 chronic; H411 Toxic to aquatic life with long-lasting effects, Category 2 chronic; and/or EUH059 hazardous to the ozone layer
Highly toxic	Tx (T+ in Norway) with R26, R27, R28 and/or R39	H330 Fatal to inhale, Category 1 and 2; H310 Fatal in contact with skin, Category 1 and 2; H300 Fatal if swallowed, Category 1 and 2; and/or H370 Causes damage to organs, Category 1
Toxic	T with R23, R24, R25, R39 and/or R48	H330 Fatal to inhale, with Category 2; H331 Toxic if inhaled, Category 3; H311 Toxic in contact with skin, Category 3; H301 Toxic if swallowed, Category 3; H370 Causes damage to organs, Category 1; and/or H372 causes damage to organs through prolonged or repeated exposure, Category 1
Carcinogenic	T with R45 or R49 Or Xn with R40 ²	H350 May cause cancer, Category 1A/1B; H350i May cause cancer by inhalation, Category 1B; Or H351 Suspected to cause cancer, Category 2
Mutagenic	T with R46 or Xn with R68	H340 May cause genetic defects, Category 1A/1B; H341 Suspected to causing genetic defects, Category 2
Reproductive toxicity	T with R60 and/or R61 Or Xn with R62 and/or R63	H360F May damage fertility, Category 1A/1B and/or H360D May damage the unborn child, Category 1A/1B H361f Suspected to damaging fertility, Category 2 and/or H361d Suspected to damaging the unborn child, Category 2

¹ Products shall not be classified in accordance with the table above, and in accordance with the EU directive 67/548/EEC with subsequent amendments and adaptations or/and CLP -regulation 1272/2008 with subsequent amendments. In the transition period e.g. until 1th June 2015, the Dangerous Substances Directive or the CLP-regulation can be used. After the transition period only the CLP-regulation will be used. A list of R-sentences and their meaning is given in form 2b in appendix 2.

² For adhesives with isocyanate and formaldehyde, exception is given for classification as R40/H351.

Please note that the producer is responsible for correct classification.

Is the product/raw material classified in accordance with the above table?

Yes No

Product safety data sheets/product sheets in accordance with the legislation in force in the country of application for example Appendix II of REACH (Directive 1907/2006/EC) for each product.

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Information from the chemical producer in the form of a recipe may be submitted directly to Nordic Ecolabelling and will be treated confidentially.

The content and additives to chemical products and materials

The declaration applies to all additives.

Additives are all substances in the product, including additives (e.g. pigments) in the ingredients, not pollutants from the production of raw materials. Pollutants are traces from raw material production present in the finished product in concentrations of less than 100 ppm (0.01% by weight, 100 mg/kg), but not products that have been added to a raw material or product deliberately and for a purpose, irrespective of quantity. Declaration is made by the chemical supplier based to the best of his/her knowledge at the given time, also based on information from raw material manufacturers, recipe and available knowledge on the chemical product with reservations for new advances and new knowledge. Should such new knowledge arise, the undersigned is obliged to submit an updated declaration to Nordic Ecolabelling.

Does the product/raw material contain free formaldehyde?
If yes, specify quantity in % by weight:

Yes No

Does the product/raw material contain volatile aromatic compounds (VAC)?
If yes, specify chemical name, CAS number and quantity in % by weight:

Yes No

Does the surface treatment of the product/raw material contain volatile organic compounds (VOC)?
If yes, specify chemical name, CAS number and quantity in % by weight:

Yes No

Does the product/raw material contain substances classified as environmentally dangerous in the surface treatment in accordance with any of the following risk phrases: N; R50, R50/53, R51/53, R52/53, R53 eller R59 (H400, H410, H411, H412, H413, EUH059)?
If yes, specify chemical name, CAS number and quantity in % by weight:

Yes No

Does the product/raw material contain isothiazolines or a mixture of CMIT/MIT (mixing ratio 3:1)?
If yes, specify chemical name, CAS number and quantity in % by weight:

Yes No

Does the product/raw material contain nano-metals, -minerals, -carbon compounds and/or -fluorine compounds? Yes No
 If yes, specify chemical name, CAS number and quantity in % by weight:

Is the product an adhesive containing volatile organic compounds (VOC)? Yes No
 If yes, specify chemical name, CAS number and quantity in % by weight:

Are the following constituent substances added to the product:

Halogenated organic compounds in general. For example PVC, chloroparaffins, fluorine compounds, flame-retardants and bleaching chemicals? Yes No

If yes, is it because of chlorine in epoxy acrylate in UV-curing products? Yes No

PFOA (Perfluorooctanoic acid), PFOS (Perfluor octane sulfonic acid) or compounds thereof? Yes No

Bisphenol A? Yes No

Biocidene: chlorophenols (their salts and esters) or dimethylfumarates*? Yes No

Bronopol cas nr. 52-51-7 in more than 0.05% by weight? Yes No

Phthalates? Yes No

Aziridine and/or polyaziridine? Yes No

Carcinogenic, mutagen and reproduction damaging compounds (Category 1 and 2 according to 67/548/EC) or (Category 1A and 1B according to CLP-regulation 12727/2008)? Yes No

Pigments/ additives based on lead, tin, cadmium, chromium VI and mercury and their compounds? Yes No

Does the chemical product contain alkylphenols, alkylphenoethoxylates or other alkylphenol derivatives? Yes No

Have biocides been added to the finished surface of the furniture or parts of it, in order to give disinfecting or antibacterial effect? Yes No

** This also applies to transport and storage of products and semi-finished products*

Example of calculation of quantity of VOC applied in R18 and accordingly for criteria R20:

The manufacturer has disclosed consumption of varnish of 120 g/m² and spraying equipment with recycling (70%) as the means of application. Form 2a states that the varnish in total contains 6% organic solvents.

The calculation will be: $(120/0.7) \times 0.06 = 10.3 \text{ g/m}^2$ organic solvents.

Signature of manufacturer or raw material producer:

Date	Company name
Signatory	Telephone

Form 2. Classification and additives

Form 2b for R4 additives in plastic and fabric materials

The form used for chemical additives in plastics/plastic granules or stopping materials

The name and area of use of the material:

Manufacturer of the material:

The declaration applies to all additives.

Additives are all substances in the product, including additives (e.g. pigments) in the ingredients, not pollutants from the production of raw materials. Pollutants are traces from raw material production present in the finished product in concentrations of less than 100 ppm (0.01 % by weight, 100 mg/kg), but not products that have been added to a raw material or product deliberately and for a purpose, irrespective of quantity. Declaration is made by the chemical supplier based to the best of his/her knowledge at the given time, also based on information from raw material manufacturers, recipe and available knowledge on the chemical product with reservations for new advances and new knowledge. Should such new knowledge arise, the undersigned is obliged to submit an updated declaration to Nordic Ecolabelling.

Does the product/raw material contain volatile aromatic compounds (VAC)?

Yes No

If yes, specify chemical name, CAS number and quantity in % by weight:

Does the surface treatment of the product/raw material contain volatile organic compounds (VOC)?

Yes No

If yes, specify chemical name, CAS number and quantity in % by weight:

Does the product/raw material contain isothiazolines or a mixture of CMIT/MIT (mixing ratio 3:1)?

Yes No

If yes, specify chemical name, CAS number and quantity in % by weight:

Are the following constituent substances added to the product:

Halogenated organic compounds in general. For example PVC, chloroparaffins, fluorine compounds, flame-retardants and bleaching chemicals? Yes No

PFOA (Perfluorooctanoic acid), PFOS (Perfluor octane sulfonic acid) or compounds thereof? Yes No

Bisphenol A? Yes No

Biocides: chlorophenols (their salts and esters) or dimethylfumarates*? Yes No

Bronopol cas. No 52-51-7 in more than 0.05% by weight? Yes No

Phthalates? Yes No

Aziridine and/or polyaziridine? Yes No

Carcinogenic, mutagen and reproduction damaging compounds (Category 1 and 2 according to 67/548/EC) and (Category 1A and 1B according to CLP-regulation 1272/2008) Yes No

Pigments/ additives based on lead, tin, cadmium, chromium VI and mercury and their compounds? Yes No

Does the chemical product contain alkylphenols, alkylphenoethoxylates or other alkylphenol derivates? Yes No

Have biocides been added to the finished surface of the furniture or parts of it, in order to give disinfecting or antibacterial effect? Yes No

**This also applies to transport and storage of products and to semi-finished products*

Signature of manufacturer or raw material producer:

Date	Company name
Signatory	Telephone

Form 2c Overview of R-phrases

Overview of R-phrases and associated names

Environmentally dangerous

- R50: Very toxic to aquatic organisms
- R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
- R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
- R52: Harmful to aquatic life
- R53: May cause long-lasting effects to aquatic life
- R52/53: Harmful to aquatic life with long-lasting effects
- R59: Dangerous for the ozone layer
- H400: Very toxic to aquatic life
- H410: Very toxic to aquatic life with long-lasting effects
- H411: Toxic to aquatic life with long-lasting effects and/or EUH059 hazardous to the ozone layer
- H412: Harmful to aquatic life with long-lasting effects
- H413: May cause long-lasting effects to aquatic life
- EUH 059: Hazardous to the ozone layer

Very toxic/toxic

- R23: Toxic by inhalation
- R24: Toxic in contact with skin
- R25: Toxic if swallowed
- R26: Very toxic by inhalation
- R27: Very toxic in contact with skin
- R28: Very toxic if swallowed
- R39: Danger of very serious irreversible effects
- R48: Danger of serious damage to health by prolonged exposure
- H331: Toxic if inhaled
- H311: Toxic in contact with skin
- H301: Toxic if swallowed
- H330: Fatal if inhaled
- H310: Fatal in contact with skin
- H300: Fatal if swallowed
- H370: Causes damage to organs
- H372: Causes damage to organs

Carcinogenic

- R33: Danger of cumulative effects
- R40: Limited evidence of a carcinogenic effect
- R45: May cause cancer
- R49: May cause cancer by inhalation
- R46: May cause heritable genetic damage
- R60: May impair fertility
- R61: May cause harm to the unborn child
- R62: Possible risk of impaired fertility
- R63: Possible risk of harm to the unborn child
- R68: Possible risk of irreversible effects
- H350: May cause cancer
- H351: Suspected of causing cancer
- H340 May cause genetic defects
- H341 Suspected of causing genetic defects
- H360: May damage fertility. May damage the unborn child
- H361: Suspected of damaging fertility. Suspected of damaging the unborn child.

**Form 3a Wood, willow and bamboo
Origin, traceability and certified raw material**

(To be filled in by supplier or producer)

Supplier/Producer:
Product type (for example wood chips, veneer, timber, solid wood):

For documenting the wood raw material:

- Type of wood/willow/bamboo and geographical origin (country/state and region/province):
- Copy of certificate(s) of forestry certification and type of standard:
- Proportion (%) wood from certified forestry in product:
- Copies of invoices may be used as documentation

Table 1 Overview of origin, traceability and certification

Type of raw material*	Geographical origin (country/state and region/provins)	Forest Management (nr.) Chain of Custody (nr.)	Prop. (%) wood from certified forestry in product

*Describe the type of raw material (example: pine, spruce, bamboo) and give the latin name

Are any of the above-mentioned raw wood materials treated with pesticides classified by WHO as type 1A and/or type 1B after felling?

Yes No

Supplier's/producer's signature:

Date	Company name
Signatory	Telephone

Form 3b Wood, willow and bamboo
Description and proportion of certified raw material

(To be filled in by the furniture producer)

Documentation of the raw material:

- Give a detailed description of the chain of suppliers from felling of the raw material to the furniture producer

- Alternatively, submit a separate flow diagram showing the chain of suppliers from felling of the raw material to the furniture producer

Table 1: Raw materials purchased by the furniture supplier on a yearly basis.
Applies to both certified and non-certified materials

Type of raw material*	Supplier	Quantity (m ³ /year)	Proportion (%) wood from certified forestry
Total			

*Describe the type of raw material (example: pine, spruce, bamboo) and give the latin name

Furniture producer's signature:

Date	Company name
Signatory	Telephone

Form 3c Forestry certification requirements

Forestry certification requirements

Wood used in the product must be certified by a third party on the basis of a current applicable forestry standard, complying with the requirements placed on standard and certification system.

The following requirements apply to standards and certification systems that are acceptable to Nordic Ecolabelling.

The standards

- 1) The standard must balance economic, ecological and social interests and comply with the Rio Declaration's forestry principles, Agenda 21 and the Forest Principles and respect relevant international conventions and agreements.
- 2) The standard must contain absolute requirements and promote and be directed towards sustainable forestry.
- 3) The standard must be widely accepted nationally or internationally and be developed as a part of an open process in which ecological, economic and social interests are invited to participate.

The certification system

The certification system must be transparent, have broad national and international credibility and be capable of verifying that the requirements of the forestry standard (see above) have been met.

The certification body

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

Form 4a Calculation of energy consumption

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Calculation of energy consumption

Energy consumption, kWh/kg plates and boards, must encompass the primary plates and boards production and the production of the constituent key raw materials. Key raw materials are defined as raw materials that exceed 5% by weight of the finished product. Energy consumption during extraction of raw materials is not to be included.

The energy account for the plates and boards production must be based on data from the handling of raw materials (incoming conveyor belt on the production line) to the finished product before surface treatment, if any. Energy consumption during surface treatment is not included.

Purchased electricity is defined as electricity purchased from external suppliers. Electricity generated on the premises must be added to the fuel consumption. For the total consumption of fuels, both purchased fuels and residual products is included.

If part of the energy consumption results in the sale of energy in the form of for example electricity, steam or heat, this part of energy consumption must be deducted from total consumption as sold.

Example of calculation for a chipboard plate:

A = Wood raw material from certified sustainable forestry: 0%

B = Recycled raw material: 50% (sawdust)

C = Proportion of renewable fuel: 80%

D = Electricity consumed: 0.5 kWh/kg.

E = Fuel consumed: 1.3 kWh/kg

$$P = \frac{0}{25} + \frac{50}{25} + \frac{80}{25} + \left(4 \cdot \frac{0,5}{0,25}\right) + \left(4 \cdot \frac{1,3}{0,85}\right)$$

= 0+2+3.2+2+2.5= 9.7 → The chipboard plate fulfils the requirement!

The energy content of fuel must be calculated from the data given in the table below.

If electrical energy is produced on the premises the consumption of fuel can be calculated in one of the following ways:

- The actual consumption of fuel calculated on annual basis
- Consumption of on-site electrical energy is multiplied with 1.25

Form 4a

Page 2 (2)

Theoretical energy content and emission factors.

Sources: Statistics Norway: Energy statistics 1995, SFT Report 9513: Incinerators. Guidance for case officers and SFT: Emission coefficients (Audun Rosland, 1987).

Energy source	Theoretical energy content GJ/tons	Density ¹	Theoretical energy content MWh/m ^{3 2}	Energy content GJ/unit ³	Tons CO ₂ per ton energy raw material	Ton CO ₂ per m ^{3 4}	Ton CO ₂ per GJ
Coal (anthrasite)	28.1	-	7.8	28.1	2.42	-	0.08612
Coke (from coal)	28.5	-	7.9	28.5	3.19	-	0.11193
Wood fuel	16.8	0.5	4.7	8.4	0	0	0
Waste liquer (non-volatile)	14	-	3.9	14	0	0	0
Wood waste (dry)	16.8	-	4.7	16.8	0	0	0
Crude oil	43	0.85	10.2	36.6	3.2	2.72	0.074
Natural gas	49.2	0.85	11.6	0.042	2.75	2.34	0.056
LPG	46.1	0.51	6.5	23.5	3	1.53	0.065
Petrol	43.9	0.74	9.0	32.5	3.13	2.32	0.071
Paraffin	43.1	0.79	9.5	34.0	3.15	2.49	0.073
Light fuel oil	43.1	0.84	10.1	36.2	3.17	2.66	0.074
Diesel	43.1	0.84	10.1	36.2	3.17	2.66	0.074
Marine gas oil	43.1	0.84	10.1	36.2	3.17	2.66	0.074
Heavy crude oil	40.6	0.97	10.9	39.4	3.2	3.10	0.079

1 All figures in tonnes except for Wood Fuel, where figures are in tonnes per firm cubic meter (ton/fm³) and Natural Gas which is in kg per standard cubic meter (kg/Sm³).

2 All figures in MWh/m³, except for Natural Gas which is given in kWh/Sm³ and Coal, Coke, Wood Fuel, Waste liquer and Waste wood which are given in MWh/ton.

3 All figures in GJ/m³ except for Coal, Coke, Waste liquer and Waste wood which are in GJ/ton, Natural Gas which is given in GJ/Sm³ and Wood Fuel in GJ/fm³.

4 Natural Gas in kg/Sm³.

In the case of the production of chemical products, for example adhesive, the energy accounts must be based on data for production. The energy content of the raw material must not be included in the calculation. In exceptional cases a standard value of 15 MJ/kg (solution for use) for adhesive may be used, broken down as 12 MJ/kg for fuel and 3 MJ/kg for electricity purchased from an outside supplier (4:1).

Example of a calculation using the standard value for adhesives:

A panel contains 12% adhesive (solution for use). This represents 0.12 kg of adhesive (solution for use per kilogram of panel). Applying the standard value in the calculation of energy points for adhesive results in:

0.12 kg adhesive/ kg panel x 15 MJ/ kg adhesive = 1.8 MJ/ kg panel.

Conversion to kWh per kg panel: (1.8 MJ/kg panel)/3.6 = 0,5 kWh/kg panel

Ratio (4:1) for fuel and el: 0.4 kWh fuel/kg panel and 0.1 kWh el/kg panel

Form 4b Energy requirements for paper and pulp production

4b.1 Guidelines for energy calculation

Requirements are laid down for the application of energy in the form of fuel or electricity. The starting point is information about the actual energy consumption from production compared to a documented reference value. The quotient of these values is stated as energy points.

The energy calculations cover all the paper products: both paper production and the pulp employed. In the case of paper, the calculations are performed without regard to fillers. Energy consumption for transporting the raw materials and for conversion and packing are not included in the energy calculation.

Applied energy:

State the total energy consumption for the paper or pulp production processes per tonne of product, broken down into fuel and electricity.

Fuel:

With regard to fuel, bought-in fuel, internally produced fuel and residual products should all be stated. This means, for example, that lye, bark and wood chips must be included to the extent that their heating values contribute to energy supplies for the process. Fuel used both for heat production and internal electricity production must be stated. Fuel consumption is calculated from the effective heating value of the dry substance. The calculations may derive from internally measured heating values or values according to table 4b.4. If the fuel is damp, the calculation method in table 4b.5 may be used.

As fuel can also be used for electricity production internally, in such cases corresponding amounts of fuel must be subtracted from the actual fuel consumption ($=1.25 \cdot$ internally produced electricity). This will avoid the double counting of energy information for fuel used for internal electricity production.

Electricity:

Both bought-in and internally produced electricity must be included in the calculations.

- The calculation of electricity and fuel consumption must be based on invoices and readings from in-house electricity meters. The calculated points level must then be forwarded by the pulp producer to the paper producer and to Nordic Ecolabelling. The paper producer can then carry out a calculation of the total energy points for the finished paper. The calculation includes the energy points for all pulps used and energy points for paper production.

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Internally produced electricity can be documented by readings from in-house electricity meters. In the case of bought-in fuel, the amount purchased must be reconciled with the amounts at the start and end of the year in question. Internal consumption of residual products such as lye, bark, wood chips, etc. is calculated from the estimated heating values of the fuels used (see Table 4b.4.1 in chapter 4b.4). Hence, the total consumption of electricity and fuel is reported.

Steam:

If surplus steam from another production process is used (e.g. from another industry), the energy content of the steam must be included in the calculation. In this case, the steam table in this form should be used. If steam from electric boilers is used, the energy content must be converted to fuel in the same way, but the energy content must be multiplied by 2.5.

Integrated production:

The energy reference values for both paper production and pulp production must be used for integrated production (Tables 4b.2.1 and 4b.3.1). For integrated enterprises which act both as suppliers of market pulp and pumped pulp for ecolabelled products, the reference value for drying the market pulp must be used for the market pulp but not for the pumped pulp.

Energy surplus:

Energy surpluses sold in the form of electricity, steam or heat should be subtracted from the total consumption. The amount of fuel used for producing sold-on electricity or heat is calculated by dividing the sold electricity or heat by 0.8. This corresponds to an average efficiency for the total production of electricity and heat. Alternatively, the actual efficiency of the plant for converting fuel to heat energy may be used, if this can be documented to Nordic Ecolabelling.

4b.2 Energy calculation, paper manufacturer

Energy points for paper production

The energy points $P_{p(\text{electricity})}$ and $P_{p(\text{fuel})}$ for paper manufacture on the paper machine are calculated by the following formulae:

$$P_{p(\text{electricity})} = \frac{\text{Electricity}_{\text{used}}}{\text{Electricity}_{\text{reference}}}$$

and

$$P_{p(\text{fuel})} = \frac{(\text{Fuel}_{\text{used}} - 1.25 \cdot \text{in-house generated electricity})}{\text{Fuel}_{\text{reference}}}$$

Values for $\text{Electricity}_{\text{reference}}$ and $\text{Fuel}_{\text{reference}}$ can be found in Table 4b.2.1.

Table 4b.2.1 Energy for paper production

Processes	Fuel kWh/t Ref. value	Electricity kWh/t Ref. value
FBB (Folding box board)* SBS (Solid bleached sulphate)* SBB (Solid bleached board)* SUB (Solid Unbleached Board)* WLC (White lined chipboard)*	1700	800
News	1700	750
LWC	1700	800
SC	1700	750
Uncoated fine paper	1700	750
Coated fine paper	1700	800

* Only one of the marked processes must be used

- Calculation of points by means of a calculation spreadsheet designed by Nordic Ecolabelling.

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Energy points for a mixture of different pulp types

For a mixture of different pulp types, the following formulae are used for calculating the energy points, $P_{m(\text{electricity})}$ and $P_{m(\text{fuel})}$:

$$P_{m(\text{electricity})} = \sum_{i=1}^n P_{m(\text{electricity})i} \cdot m_i$$

and

$$P_{m(\text{fuel})} = \sum_{i=1}^n P_{m(\text{fuel})i} \cdot m_i$$

in which m_i is the proportion of the individual pulp in the total pulp mix, i.e. tonnes of individual pulp used per tonne of pulp. Due to wastage and differences in water content, the total of m_i may be greater than 1. $P_{m(\text{electricity})i}$ is the energy points for electricity for pulp number i , and $P_{m(\text{fuel})i}$ is the energy points for fuel for pulp number i .

- Calculation of points by means of a calculation spreadsheet designed by Nordic Ecolabelling.

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Total energy points for paper and pulp production

The total points for both electricity and fuel consumption is calculated from the pulp and paper consumption points by weighting the reference values (X= weighting of reference value of pulp or paper production):

$$P_{el} = X_{El,m} \cdot P_{El,m} + X_{El,p} \cdot P_{El,p}$$

where

$$X_{el,m} = \frac{El_{reference,m}}{(El_{reference,m} + El_{reference,p})}$$

$$X_{el,p} = \frac{El_{reference,p}}{(El_{reference,m} + El_{reference,p})}$$

$$P_{fuel} = X_{Fuel,m} \cdot P_{Fuel,m} + X_{Fuel,p} \cdot P_{Fuel,p}$$

where

$$X_{Fuel,m} = \frac{Fuel_{reference,m}}{(Fuel_{reference,m} + Fuel_{reference,p})}$$

$$X_{Fuel,p} = \frac{Fuel_{reference,p}}{(Fuel_{reference,m} + Fuel_{reference,p})}$$

For a mixture of pulps, the reference values for electricity and fuel must be weighted by the proportion of pulp, m_i , in the expressions for X.

- ☒ The calculation of points with part results must be shown in the documentation. It must be clearly stated what starting values were applied for use of fuel and electricity. A calculation spreadsheet designed by Nordic Ecolabelling must be used for the calculation.

Appendix no. _____

4b.3 Energy calculation, pulp manufacturer

The energy points $P_{electricity, mi}$ and $P_{fuel, mi}$ for production of a pulp i should be calculated according to the formulae below:

$$P_{m(electricity)i} = \frac{Electricity_{used}}{Electricity_{reference}}$$

and

$$P_{m(fuel)i} = \frac{(Fuel_{used} - 1.25 \cdot in - housegenerated\ electricity)}{Fuel_{reference}}$$

The values for $Electricity_{reference}$ and $Fuel_{reference}$ are taken from Table 4b.3.1 below.

Table 4b.3.1 Energy for pulp production

Processes	Fuel kWh/t Ref. value	Electricity kWh/t Ref. value
Bleached chemical pulp	3750	750
Dried, bleached chemical pulp	4750	750
Unbleached chemical pulp	3200	550
Dried, unbleached chemical pulp	4500	550
CTMP	n.a	2000
Dried CTMP	1000	2000
DIP	350	500
Dried DIP	1350	600
TMP	n.a	2200
Dried TMP	1000	2200
Slip	n.a	2000
Dried slip	1000	2000

Calculation of points by means of a calculation spreadsheet designed by Nordic Ecolabelling.

Appendix no. _____

4b.4 Heating value

Table 4b.4.1 Effective (lower) heating values for dry substance of fuel

Fuel	Heating value (lower)	Unit
Wood briquettes	10.0	GJ/m ³ loose
Wood pellet	10.0	GJ/m ³ loose
Wood powder	3.80	GJ/m ³ loose
Wood chips	3.55	GJ/m ³ loose
Saw dust	2.90	GJ/m ³ loose
Bark	2.22	GJ/m ³ loose
Lump peat	4.50	GJ/m ³ loose
Milled peat	3.75	GJ/m ³ loose
Sulphate lye	12.7	GJ/kg dry matter
Sulphite lye	14.7	GJ/kg dry matter
Tall oil pitch	36.8	GJ/m ³
Natural gas	38.9	MJ/m ³
Light fuel oil	36.0	GJ/m ³
Heavy fuel oil	38.7	GJ/m ³
LPG	46.1	MJ/kg
Coal	26.5	MJ/kg

4b.5 Energy content of damp fuel

Calculation of energy content of damp fuel

The effective heating value of damp fuel can be calculated with the following formula:

$$Q_{iw} = Q_{ik} * (100 - w)/100 - 2.45 * w/100,$$

where

Q_{iw} = lower heating value of damp fuel expressed in kJ/kg

Q_{ik} = lower heating value of dry substance expressed in kJ/kg

w = water content of damp fuel expressed as water percentage.

Calculation of energy content of wood chips

The energy content of wood chips depends primarily on the water content. The following explains how this can be calculated.

The energy content (lower heating value) of dry wood is stated as 19 MJ/kg.

Energy is required for evaporating the water normally present in wood. This energy demand reduces the wood's heating value. The formula for calculating the relationship between the energy content and the water content can be formulated as follows:

$$19 \text{ MJ} * (100 - \text{water}\%) / 100 - 2.45 * \text{water}\% / 100 = xx \text{ MJ/kg}$$

It is necessary for the water content of the wood to be known.

Immediately after the tree is felled, the water content can be up to 55%. The water slowly evaporates from the wood, first during transport and then when it is cut up and seasoned for use in pulp production etc. During this period, the water content depends on the precipitation during the period. Normally, it will reduce to 20-40%.

For a 40% water content, the energy content can be calculated as:

$$19 \text{ MJ} * (100 - 40\%) / 100 - 2.45 * 40 / 100 = 10.4 \text{ MJ/kg}$$

For a 20% water content, the energy content can be calculated as:

$$19 \text{ MJ} * (100 - 20\%) / 100 - 2.45 * 20 / 100 = 14.7 \text{ MJ/kg}.$$

Form 5 Metals

Form for metals (Chapter 2.6)

Name of product:
Producer/importer/furniture producer:

Can the metal parts be separated from the other materials without the use of special tools?

Yes No

Describe how: _____

How large a proportion of the metal raw material consists of recycled material?

Aluminium: _____

Other metals (e.g. steel): _____

Attach: Report from the smelting plant documenting the proportion of recycled material.

Appendix no. _____

Is the metal part plated with cadmium, chromium, nickel and their compounds?

Yes No

If yes, does the plating occur in a closed system?

Yes No

Give a short description of the process: _____

Is the metal part plated with Zn and/or its compounds?

Yes No

If yes, is the Zn emission from surface treatment less than or equal to 0,5 mg/l?

Yes No

Result, Zn emission (submit analysis report): _____

Test method for zink: EN ISO 11885

Sampling frequency: Emissions to water are calculated as a yearly mean value and based on minimum one representative daily sample per week.

Signature of producer/importer/furniture producer:

Date	Name of company
Signatory	Telephone

Form 6 Plastics and rubber

Form for plastics and rubber (Chapter 2.7)

Name of product and chemical name of plastic material:

Producer/supplier: _____

Note: For additives in plastics and rubber and/or surface treatment of plastics, Form 2a must also be completed.

Does the plastic material contain PVC?

Yes No

Which types of plastic does the plastic material contain and in what quantities?

Does the plastic material contain fillers and/or reinforcement?

Yes No

If yes, which types and in what quantities? _____

Are plastic parts that weigh more than 50 g labelled for recycling in accordance with ISO 11 469?

Yes No

If no, state which equivalent standard has been used: _____

Does the rubber contain nitrosamines?

Yes No

If yes, which types and in what quantities? _____

Has the surface of the plastic part been coated?

Yes No

Does the surface treatment interfere with recycling of the plastic?

Yes No

If no, submit documentation to support this.

Appendix no. _____

If the plastic represents > 10% weight of the furniture/fitment, answer the following:

How large a proportion of the plastic material is recycled/recovered material (fillers or reinforcement must be deducted)?

Specify proportion per plastic type:

Recycled/recovered plastic means plastic from used products or used packaging (for PP, PE and PET). For other types of plastic production waste from external supplier is also accepted.

Report from producer/supplier documenting the proportion of recovered material.

Appendix no. _____

Signature of producer:

Date	Company name
Signatory	Telephone

Form 7 Padding materials

Form for requirements applicable to padding materials (Chapter 2.8)

Name and description of type of padding material:

Producer/importer: _____

Does the product contain dyes?

Yes No

If yes:

Are the dyes used solely to distinguish between different qualities within the same type of padding material?

Yes No

Are metal complex dyes used?

Yes No

State which dyes are used:

Name:

CAS No:

Polyuretane

Are CFC, HCFC, HFC, methylene chloride or halogenated organic compounds used as blowing agents?

Yes No

Describe the expansion process: _____

Are isocyanates used in a closed process, is the prescribed protective equipment used and are requirements from authorities regarding the use of isocyanates followed?

Yes No

If no, please explain: _____

Signature of producer:

Date	Company name
Signatory	Telephone

Form 8 Textile

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Form for requirements applicable to textiles (Chapter 2.10)

Name and description of type of textile:

Producer/importer: _____

Does the product contain, or is the products surface treated with, halogenated flame retardants, biocides or halogenated treatments?

Yes No

If yes, state chemical name and CAS No:

Name: _____ CAS No: _____

Does the product/raw material contain nano-metals, -minerals, -carbon compounds and/or -flourine compounds?

Yes No

If yes, state chemical name and CAS No:

Name: _____ CAS No: _____

Are dyes, pigments, flame retardants or auxiliary chemicals classified in accordance with the table below?

Yes No

Submit MSDS according to regulations in the country of the application

Appendix no. _____

Classification	Associated hazard symbol and R-phrases*	CLP-regulation 1272/2008*
Environmental hazard	N with R50, R50/53, R51/53 and/or R59	H400 Very toxic to aquatic life, Category 1 acute; H410 Very toxic to aquatic life with long-lasting effects, Category 1 chronic; H411 Toxic to aquatic life with long-lasting effects, Category 2 chronic; and/or EUH059 hazardous to the ozone layer
Highly toxic	Tx (T+ in Norway) with R26, R27, R28 and/or R39	H330 Fatal to inhale, Category 1 and 2; H310 Fatal in contact with skin, Category 1 and 2; H300 Fatal if swallowed, Category 1 and 2; and/or H370 Causes damage to organs, Category 1
Toxic	T with R23, R24, R25, R39 and/or R48	H330 Fatal to inhale, with Category 2; H331 Toxic if inhaled, Category 3; H311 Toxic in contact with skin, Category 3; H301 Toxic if swallowed, Category 3; H370 Causes damage to organs, Category 1; and/or H372 causes damage to organs through prolonged or repeated exposure, Category 1
Carcinogenic	T with R45 or R49. Or Xn with R40	H350 May cause cancer, Category 1A/1B; H350i May cause cancer by inhalation, Category 1B; Or H351 Suspected to cause cancer, Category 2
Mutagenic	T with R46 or Xn with R68	H340 May cause genetic defects, Category 1A/1B; H341 Suspected to causing genetic defects, Category 2
Reproductive toxicity	T with R60 and/or R61. Or Xn with R62 and/or R63.	H360F May damage fertility, Category 1A/1B and/or H360D May damage the unborn child, Category 1A/1B H361f Suspected to damaging fertility, Category 2 and/or H361d Suspected to damaging the unborn child, Category 2

**Classification in accordance with the EU Dangerous Substances Directive 67/548/EEC with subsequent amendments and adjustments and/or CLP regulation 1272/2008 with subsequent amendments and adjustments. In the transition period until the 1st of June 2015, the classification can be according to EU Substance Directive or according to CLP. After the transition period, only classification according to CLP is valid. A list of R-sentences and their meaning is given in form 2b in appendix 2. Please note that the producer is responsible for correct classification.*

Is chrome mordant dyeing used? Yes No

Are metal complex dyes used? Yes No

If yes, are emissions of Cu, Cr and Ni to the discharge water ≤:
75 mg/kg (Cu); 50 mg/kg (Cr); 75 mg/kg (Ni) after treatment? Yes No

Do preparations or formulations with which the textile comes into contact contain the following?

- | | | |
|---|------------------------------|-----------------------------|
| Alkylphenoethoxylates (APEO)? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Alkylbenzenesulphonates (LAS)? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Dimethylbis (hydrogenated tallow) ammoniumchloride (DHTDMAC)? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Distearyldimethylammoniumchloride (DSDMAC)? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Ditallowalkyldimethyl-ammoniumchloride (DTDMAC)? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Ethylene diamine tetraacetate (EDTA) ? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| Diethylene triamine pentaacetic acid (DTPA)? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

If wet processes are used in the textile production, calculations for average COD discharge shall be submitted along with COD analysis reports.

Result: _____g COD/kg textile

State the formaldehyde concentration (ppm) measured in the textile and submit analysis report.

Result: _____ppm formaldehyde

R52 Example of calculation for waste water discharged from wet process

500,000 litres of water is used per 40,000 m of textile during dyeing. The average weight of the substance is 500 grams per metre (depending on the quality).
 In other words, 40,000m x 0.5 kg/m = 20,000 kg textile.
 500,000 litres of water/20,000 kg textile = 25.00 water/kg textile.

Since the average annual value for COD is 0.25 g/l water, the calculation will be as follows:

25 l water/kg textile x 0.25 g COD/l water = **6.25 g COD/ kg textile, i.e. the requirement has been fulfilled.**

Signature of producer:

Date	Company name
Signatory	Telephone

Form 9 Glass/mirror glass and laminated glass

Form for requirements applicable to glass, mirror glass and laminated glass (Chapter 2.11)

Name of metal coating product:

Producer/importer of chemical product:

Does the metal coating used for the mirror glass contain lead (Pb)?

Yes No

If yes, state quantities (% by weight): _____

Specify test method: _____

Test report

Appendix no. _____

Does the metal coating used in mirror glass contain copper (Cu)?

Yes No

If yes, state quantity (% by weight): _____

Specify test method: _____

Test report

Appendix no. _____

Signature of producer:

Date	Name of company
Signatory	Telephone