



# **The Nordic Ecolabel of Furniture and fitments**

**Draft for public consultation**

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Nordisk Miljømerking

In 1989, the Nordic Council of Ministers decided to introduce a voluntary official ecolabel, the Nordic Ecolabel. These organizations/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 Ecolabel-labelled furniture/fitments?**

The Nordic Ecolabel label is an official label and standard specifying absolute requirements. Nordic Ecolabelled furniture and fitments have the lowest environmentally 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 Ecolabel requirements as to how they can contribute to the development of a sustainable society.

## **Why choose the Nordic Ecolabel label?**

- Nordic Ecolabel-labelling can be viewed as a guide to the work on bringing environmental improvements to the business. With the Nordic Ecolabel label 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 Ecolabel label represents a simple way of communicating a company's environmental commitment to its customers.
- Adopting the Nordic Ecolabel label 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 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 Ecolabel label?**

Furniture, fitments, doors and lamps for indoor use may be Nordic Ecolabel-labelled.

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

Separate criteria have been drafted for outdoor furniture, textiles and panels 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 must be submitted to Nordic Ecolabelling in the country in which the furniture/fitment is produced/will be on sale, see the address list on page 2. The application documents comprise an application form and documentation showing that the requirements are fulfilled. They can be downloaded from the home pages of the national secretariats.

Further information and assistance with the application process is available on the websites of the individual countries or by contacting one of the secretariats.

### Sales in other Nordic countries

Registering the licence in the other Nordic countries allows the Nordic Ecolabel to be used on a larger market. To do so, the following documents must be submitted to the secretariats in the countries in question:

- A completed application form for registration of product

- A copy of the licence in question
- A sample of the consumer information text
- Documentation of national rules, laws and any trade agreements on recycling systems for packaging

Registration is free of charge, but an annual fee based on turnover is payable in accordance with the regulations in force in the individual countries.

### **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 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 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 (R8) 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, R22, R23, R30, R35 and R47.

## **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 the form below 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 weight %. In total the furniture may contain up to 10 weight % of such materials.



Complete the table below based on information on material combinations. The form 1 in appendix 2 must also be completed.

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

Material	Level	Requirement	Form	Quantities	Relevant
Chemical products		R3 – R6	2a,2b and 2c		Yes <input type="checkbox"/> No <input type="checkbox"/>
Wood	General	R7, R8	3a og 3b		Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 10 w/w%	R9	3c		Yes <input type="checkbox"/> No <input type="checkbox"/>
Wood-based panels	General (more than 5 w/w%)	R10-R13	2a and 3.1 in Appendix 1		Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 10 w/w%	R14 – R16	2,3 and 4		Yes <input type="checkbox"/> No <input type="checkbox"/>
Surface treatment of wood and wood-based panels	More than 5 w/w%	R17–R20	2a		Yes <input type="checkbox"/> No <input type="checkbox"/>
Metal	General	R20, R21	5		Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 50 w/w%	R22, R23	5		Yes <input type="checkbox"/> No <input type="checkbox"/>
Surface treatment of metal	More than 5 w/w%	R24, R25	2a and 5		Yes <input type="checkbox"/> No <input type="checkbox"/>
Plastic	General	R26–R29	2a and 6		Yes <input type="checkbox"/> No <input type="checkbox"/>
	More than 10 /W%	R30	6		Yes <input type="checkbox"/> No <input type="checkbox"/>
Padding materials	General	R31–R35	2a and 7		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Synthetic latex and natural latex	R36, R37	7		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Polyurethane	R38	7		Yes <input type="checkbox"/> No <input type="checkbox"/>
Textiles	More than 1 w/w%	R39–R47	8		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Properties in use seating furniture	R48- R54	6.1 and 6.2 in Appendix 1		Yes <input type="checkbox"/> No <input type="checkbox"/>
Glass	Glass	R55	9		Yes <input type="checkbox"/> No <input type="checkbox"/>
	Mirror glass and laminated glass	R56, R57	9		Yes <input type="checkbox"/> No <input type="checkbox"/>
Light sources	Light sources	R58	-		Yes <input type="checkbox"/> No <input type="checkbox"/>
Other requirements	General	R58–R64	10		Yes <input type="checkbox"/> No <input type="checkbox"/>

## 2 Environmental requirements

### 2.1 Chemical products

The requirement includes all chemical products used in the furniture/fitment or used in the factory/production site, including surface treatment. 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. Separate requirements for textiles are included in Chapter 2.8 and exemptions are accordingly granted for the requirements in R3 and R4.

#### R2 Ecolabelled chemical products

Is the chemical product Nordic Ecolabelled? If yes, omit the remainder of the requirements in Chapter 2.1.

Name, manufacturer and licence number for the chemical product.

#### R3 Classification

Chemical products used in the production of Nordic Ecolabelled furniture and fitments must not be classified in accordance with the following table. Requirement R20, quantity of environmentally harmful products applied and in the case of wood-based panels exemptions are granted for classification in the hazard class environmentally harmful.

Table 2. Classification of chemical products

Classification	Associated hazard symbol and R-phrases*
Environmental hazard	N with R50, R50/53, R51/53 and/or R59.
Highly toxic	Tx (T+ in Norway) with R26, R27, R28 and/or R39
Toxic	T with R23, R24, R25, R39 and/or R48
Allergenic if inhaled and sensitising	Xn with R42 or Xi with R43
Carcinogenic	T with R45 or R49. Or Xn with R40
Mutagenic	T with R46 or Xn with R68
Toxic for reproduction	T with R60 and/or R61. Or Xn with R62 and/or R63.

\* A list of R phrases and their meanings can be found in Form 1 of Appendix 2.

The classification applies in accordance with the Dangerous Substances Directive 67/548/EEC as adapted to REACH in accordance with Directive 2006/121/EC and the Dangerous Preparations Directive 1999/45/EC or with subsequent amendments and adaptations. With the transition to GHS (Globally Harmonised System) the requirements applicable to the classification of products may be converted, cf. Form 4b 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.

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.

#### R4 Contents and additives.

The following must not be present in/added to the chemical product or material.<sup>1</sup> In the case of materials and surface treatment the requirement applies if specified in the individual sub-chapters (Chapter 2.3-2.9) of the environmental requirements in Chapter 2.

- Halogenated organic compounds in general. For example: PVC, chloroparaffins, fluorine compounds, flame-retardants and organic bleaching agents.
- PFOA (perfluorooctanoic acid and salts/esters thereof) and PFOS (perfluorooctane sulfonic acid and compounds thereof)
- bisphenol A compounds
- the biocides chlorophenols (their salts and esters), dimethylphumarate and MIT (2-methyl-4-isothiazoline-3-one)
- alkylphenols, alkylphenolethoxylates or other alkylphenol derivatives<sup>2</sup>
- phthalates
- aziridine and polyaziridines
- carcinogenic, mutagen and reproduction damaging compounds
- 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 w/w%.
- The content of organic solvents in glue<sup>3</sup> must not exceed 5 weight %

<sup>1</sup>*Constituent substances include 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 (0.01w/w %, 100 mg/kg), but no substances added to a raw material or product deliberately and for a purpose, irrespective of quantity.*

<sup>2</sup>*Alkylphenol derivatives are defined as substances that shed alkylphenols during degradation.*

<sup>3</sup>Organic solvents are defined as solvents with a boiling point of <250 °C at 0.013 kPa.

- For each chemical product/raw material present in the furniture or surface treatment must be submitted from the chemical supplier in accordance with Form 2a in Appendix 2.

#### R5 Free formaldehyde

The quantity of free formaldehyde chemical products used in the production of Nordic Ecolabelled furniture/fitments must be up to 0.001 weight % (10 ppm) in unhardened glue. There is an exception for glue products with new produced polymeric, where it is permitted up to 0.1 weight % (1000 ppm) free formaldehyde.

- Declaration in accordance with Form 2a of Appendix 2 by the manufacturer or raw material supplier.

## **R6 Nano particles**

Nano metals, nano minerals, nano carbon compounds and/or nano fluoride compounds must not be actively added to chemical products unless documentation can be provided to show that they would not entail environmental or health problems.

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.

- Declaration in accordance with Form 2a of Appendix 2 from the manufacturer or raw material supplier.
- Documentation on the nano particles used, clearly showing fulfilment of the requirement.

## **2.2 Wood, willow and bamboo**

The requirements in Chapter 2 apply to products made of wood, willow and bamboo. Other corresponding raw materials may be included after questioning the Nordic Ecolabelling.

## **R7 Origin and traceability**

This requirement concerns all product parts containing wood, willow, bamboo or fibre products thereof.

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. 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.
- Old virgin forest and forest with high protective value.
- Genetically modified trees and plants.

- Name (in latin and in a Nordic language), quantity and geographical origin (country/state and region/province/municipality) of the wood and fibre raw materials used. Form 3 may be used. Nordic Ecolabelling may request further documentation in the event of uncertainty about the origin of the raw material. In the event of non-compliance with this requirement Nordic Ecolabelling may revoke the licence.

- A written procedure describing how the requirement is met. The procedures must include an updated list of all suppliers of wood and fibre raw materials used in the product. Form 3 may be used.

## **R8 Biocides**

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](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 3 for each individual product.

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

### **R9 Wood from certified forestry**

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

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

50 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 3.

- Proportion (%) of certified wood used in the applicant’s Nordic Ecolabel-led production on an annual basis.

Description of the system used to secure the traceability of the wood.

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

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 weight %.

### **R10 Swan-labelled panels**

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

- Name, manufacturer and licence number of the panel.

**R11 Non-certified wood**

See R7.

**R12 Chemical products and additives**

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.

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

**R13 Formaldehyde**

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 content of free formaldehyde must not exceed the following limit value determined in accordance with the version of EN-120, the perforator method
- 2) This requirement is identical to the Swedish and Danish special measures specified in Standard EN 120 and is stricter than the general formulation that applies in the other countries, for example Norway and Finland.

**For average values:**  $\leq 5$  mg formaldehyde/100 g dry product for MDF panels and  $\leq 4$  mg/100 g dry product for all other panels.

The requirement must be fulfilled to a confidence interval of 95% of all measurement values.

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: For chipboard panels:  $F = -0.133 H + 1.86$  For MDF:  $F = -0,121 H + 1.78$ .

- 2) Emissions of formaldehyde must not exceed 0.065 mg formaldehyde/m<sup>3</sup> air in testing in accordance with measurement method specified in Section 3.1 of Appendix 1.

- Sampling program incl. measurement methods, measurement results and measurement frequency, see point 3.1 of Appendix 1.  
If alternative 2 is chosen documentation must be provided on how a systematic quality control procedure is used to ensure that panels with a high formaldehyde content are not used before the test results are known.
- In the case of products approved in accordance with the classification system in Finland “Emission Classification of Buildings Materials”, in Class M1, a copy of a valid licence/certificate must be submitted.
- In the case of products certified in accordance with CARB of an approved third party (e.g. SP), a copy of a valid licence/certificate must be submitted.

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

**R14 Panels of solid wood, laminate or plywood**

Must fulfil requirement R9.

☒ See R9.

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

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 (%)	-
B = Proportion of recycled raw material (%)	-
C = Proportion of renewable fuel (%)	-
D = Electricity consumption (kWh/m <sup>2</sup> )	Max 1 kWh/kg
E = Fuel consumption (kWh/m <sup>2</sup> )	Max 3.4 kWh/kg

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 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.  
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 m<sup>3</sup>) produced during the last year.

#### **R16 Emissions to water**

In the case of panel material produced using wet processes (e.g. MDF) COD emissions to water  $\leq 20$  g COD/kg product (unfiltered sample).

- Sampling program including measurement methods, measurement results over the last 12 months and measurement frequency, see Section 3.2 of Appendix 1.

## **2.4 Surface treatment of wood, bamboo and willow**

The requirements in Chapter 2.4 of the criteria document apply to the surface treatment of wood, bamboo and willow 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 weight %. For the purposes of these requirements, laminate is regarded as surface treatment.

#### **R17 Chemical products and additives**

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.

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

#### **R18 Quantity applied and method of application**

The number of coats, quantity applied (g/m<sup>2</sup>) and the method(s) of application must be documented. An exemption from this requirement will be granted if the total quantity of VOC in the applied products is <5 weight %.

The following degrees of effectiveness<sup>1</sup> 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%*

☒ Number of coats and quantity applied per coat per m<sup>2</sup> of surface area.

### **R19 Quantity of organic solvents applied**

The quantity applied will be shown in the calculations in R18 and the quantity of organic solvent is calculated using Form 2a or an equivalent (e.g. 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 weight %.

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

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

<sup>1</sup> Organic solvents are defined as solvents with a boiling point <250 °C at 0.013 kPa.

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

<sup>3</sup> 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.

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

- ☒ A separate calculation showing the values in  $\text{g/m}^2$  within the applicable product groups. The basis for calculation is provided in requirement R18 and Form 2a.

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.

## **R20 Quantity of environmentally harmful products applied**

The quantity of products applied as surface treatment classified as environmentally harmful with or without N in accordance with regulations on classification must be less than  $14 \text{ g/m}^2$  surface.

- ☒ Separate calculation showing the total quantity of environmentally harmful substances as  $\text{g/m}^2$ . The basis for calculation is provided in requirement R18 and Form 2a.

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 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 Metals, separability and recycling**

### **R21 Recycling of materials**

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.

### **Requirements where the product contains more than 50 weight % metal**

An exemption applies in the case of requirements R22 and R23 to metal parts weighing less than 50 grams.

#### **R22 Aluminium**

At least 50 weight % of the metal in the product must be recycled metal. Alternatively, the smelting plant that supplies the metal must on an annual basis use at least 50% recycled metal in its production.

- ☒ Declaration from the furniture manufacturer or declaration from the smelting plant, Form 5.

### **R23 Other metals**

At least 20 weight % of the metal in the product must be recycled metal.  
Alternatively, the smelting plant that supplies the metal must on an annual basis use at least 20% recycled metal in its production.

- Declaration from the furniture manufacturer or declaration from the smelting plant, Form 5.

## **The surface treatment of metals**

### **R24 Chemical products and additives**

Chemical products and additives used in the pre-treatment and surface treatment of metals must fulfil requirements R3 and R4 in Chapter 2.1, with the exception of additives of nickel sulphate in the process bath. Documentation is specified in Chapter 2.1 and Form 2a.

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

### **R25 Coating**

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 or for parts that require tight connections (for example gas lifts, table legs and chair legs). The exception will not include parts that are designed to come into frequent contact with skin, 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

- Declaration from the furniture manufacturer or supplier of surface treated metals, Form 5.
- 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.
  - A test report in accordance with Section 5 of Appendix 1 and a declaration that parts coated with chrome, nickel or zinc are recyclable must be attached.
  - If Zinc 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.

## 2.6 Plastic and rubber

Polymer materials used as padding materials and textiles (Chapters 2.7 and 2.8) must not be included in the weight % limit on plastic materials and are not encompassed by the requirements applicable to plastic. An exemption applies in the case of the requirements in Chapter 2.6 to plastic and rubber parts weighing less than 50 grams.

### **R26 Description of material and labelling of plastic**

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.

Report on plastic parts in accordance with Form 6 of Appendix 2.

### **R27 Additives**

Additives in plastic and rubber must satisfy the requirement R4 in Chapter 2.1. Documentation is provided in Chapter 2.1 and Form 2a.

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

### **R28 Nitrosamines in rubber**

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.

### **R29 Surface treatment**

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 R27.

Declaration from the furniture manufacturer and documentation showing that the surface treatment does not impact on the possibility for recycling and that the surface treatment fulfils the requirements in R27.

## **Requirements where the product contains more than 10 weight % plastic**

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

### **R30 Recycled/recovered materials**

The plastic materials used in furniture and fitments must consist of at least 50 weight % recycled materials. 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. See Appendix 2b.

- Declaration from the plastic supplier that the raw material is recycled and the proportion of recycled plastic material, Form 6.
- The manufacturer of production of off-cuts must document that the off-cut/waste is used for recycling and is not incinerated.

## **2.7 Padding materials**

### **R31 Ecolabelled padding materials (mattresses)**

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 2.7.

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

### **R32 Chemical products and additives**

Chemical products and additives used in the production of padding materials must fulfil requirements R3 and R4 in Chapter 2.1. Documentation is provided in Chapter 2.1 and Form 2a.

Isocyanate compounds are exempted from this requirement since they constitute a significant component in the production of polyurethane.

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

### **R33 Dyes**

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 Chapter 2.1 must not be used.

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

### **R34 Formaldehyde**

Formaldehyde emissions must be less than 20 ppm in the case of padding materials. Alternatively, evaporation must not exceed 0.005 mg/m<sup>3</sup> measured in climate chamber testing, Section 4 of Appendix 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.

### **R35 Recycling**

A minimum of 90% of all production waste from the production of padding materials must be recycled.

- Description from the manufacturer of padding materials of how production waste is recycled.

## **Synthetic latex (SBR) and natural latex**

### **R36 Butadiene content**

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.

### **R37 Nitrosamines**

The concentration of N-nitrosamines must not exceed 0.0005mg/m<sup>3</sup> 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.

## **Polyuretane**

### **R38 Blowing agents and isocyanate compounds**

CFC, HCFC, HFC, methylene chloride and halogenated organic compounds must not be used as blowing agents. The use of isocyanate compounds must be declared in accordance with Form 7 in Appendix 2.

- Declaration in accordance with Form 7 in Appendix 2.

## **2.8 Requirements as regards textiles**

Textiles encompass synthetic materials, natural fibres, hide and leather. In the case of textiles that make up more than 1 weight % of the furniture, at least 80 weight % of the fibre material in the textiles must fulfil the requirements (this means that if a fibre mix comprises 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 requirements are exempted from the general chemical requirements (R3 – R5) in Chapter 2.1. Only the requirements in this chapter and Form 9 need be fulfilled.

### **R39 Ecolabelled textile**

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 2.8.

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

**R40 Hide and leather**

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

Is the hide or leather Nordic Ecolabelled?

If no, are the requirements in the latest criteria document “The Nordic Ecolabelling of textiles, skins and leather” fulfilled?

- 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.

**R41 Flame retardants and impregnation**

The textile must not contain halogenated flame retardants or impregnations containing fluoride.

- Declaration from the textile manufacturer in accordance with Form 8.

**R42 Dyes, pigments and auxiliary chemicals**

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.
- 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.
- 

**R43 Chrome mordant dyeing**

Chrome mordant dyeing is not permitted.

- Declaration from the textile supplier in accordance with Form 8.

**R44 Metal complex dyes based on copper, chromium or nickel**

The use of metal complex dyes is not permitted.

- Declaration from the textile supplier in accordance with Form 8.

**R45 Auxiliary chemicals**

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.

**R46 Formaldehyde**

Emissions of formaldehyde must not exceed 20 ppm. Alternatively, evaporation must not exceed 0.005 mg/m<sup>3</sup> measured in a climate chamber test, Section 4 of Appendix 1.

- Analysis report showing occurrence measured in accordance with Section 4 of Appendix 1.

**R47 Wastewater discharges from wet processing**

- 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 on page 2 of Appendix 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.

**2.8.1 The properties of the textile**

These requirements apply only to seating. The documentation requirements for all requirements in 2.8.1 are specified below, and reference is made to Section 4.2 of Appendix 1 for standards.

**R48 Durability**

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.

**R49 Pilling**

The furniture textile must have a pilling resistance factor of at least 4.

**R50 Dimensional changes**

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.

**R51 Colour fastness**

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 so labelled), to white products or products that are neither dyed nor printed, or to non-washable furniture textiles.

**R52 Wet rubbing**

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.

**R53 Dry rubbing**

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.

**R54 Colourfastness to light**

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.

## 2.9 Glass/mirror glass and laminated glass

**R55 Glass**

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.

**R56 Mirror glass**

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 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.

**R57 Laminated glass**

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.
- Declaration from a recycling plant that laminated glass can be recycled and a description of how this is done.

## 2.10 Lighting sources in furniture and fitments

### R58 Lighting sources

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.

## 3 Other requirements applicable to ecolabelled products

### 3.1 Waste minimization

#### R59 Recycling systems for products and packaging

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.

### 3.2 Packaging

#### R60 Plastic materials containing chlorine

Plastic materials containing chlorine must not be used in the packaging.

- The furniture manufacturer must provide a description of the materials used in transports and sales packaging.
- Declaration from the manufacturer of the plastic packaging.

### 3.3 Fitness for use

#### R61 Fitness for use

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.

Furniture must meet the following strength, safety and stability requirements (the requirement does not apply to doors for indoor use):

- Min. level 3 for private use
- Min. level 4 for normal contract use
- Min. level 5 for tough contract use

The requirements as to strength, safety and stability must primarily form 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 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 5. Requirements applicable to various furniture groups

<b>Seating</b>	Seat and arm rests	Requirement level 2
<b>Storage units</b>	External horizontal surfaces (up to 1.25 m), shelves and bases	Requirement level 3
<b>Table tops</b>	Private use and normal contract use	Requirement level 4
	Tough contract use (restaurants/cafes)	Requirement level 5
<b>Kitchens</b>	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

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.

A general rule for selection of products for testing shall be based on the test standard. Save as otherwise described, tests shall be conducted within the product family to which the product belongs. 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.

**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.

### 3.4 Instructions

#### R62 Instructions

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 Ecolabel-led low-energy light bulbs or other low-energy light bulbs with a low mercury content in the fitting be used.

Instructions

### 3.5 The requirements of the authorities as to safety, working environment and the external environment

#### R63 The requirements of the authorities

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.

### 3.6 Environmental and quality assurance

#### R64 Environmental and quality assurance

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:

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.

### 3.7 Marketing

#### R65 Marketing

Marketing of ecolabelled products shall be carried out in accordance with these ecolabelling criteria and "Regulations for Nordic Ecolabelling of Products".

The producer of padded furniture and mattresses must offer a standard assortment of textiles that fulfil the requirements in Chapter 2.7. The producer shall give information on this in marketing the furniture. If the ecolabelled furniture is on display (for instance in a store, fair or the like), the furniture on display shall be padded with textile that fulfils the requirements.



- Declaration that the persons marketing the ecolabelled are familiar with "Regulations for Nordic Ecolabelling of Products". (Form 10).
- Description of the distribution of responsibility with regard to the marketing of ecolabelled products.
- A declaration from the applicant stating that furniture and mattresses are marketed in accordance with Form 10.

## Registration

The following will be documented and checked by the ecolabelling organization in connection with the registration of the licence in other participating Nordic countries:

- Application form for registration
- Copy of licence
- Instructions for use in the appropriate language
- Information on systems for recycling of used products operated by the manufacturer or membership of official recycling systems.

## The design of the ecolabel

The ecolabel and the allocated ID number (shown as x31-000) shall have the following design:



x31

000

The ecolabel shall be affixed to the packaging or the product itself.

## **The validity of the criteria document (must be updated)**

This criteria document was adopted by the Nordic Ecolabelling Board on X. X 200X and will remain in force up to and including X. X 20xx. 19 March 2007.

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.

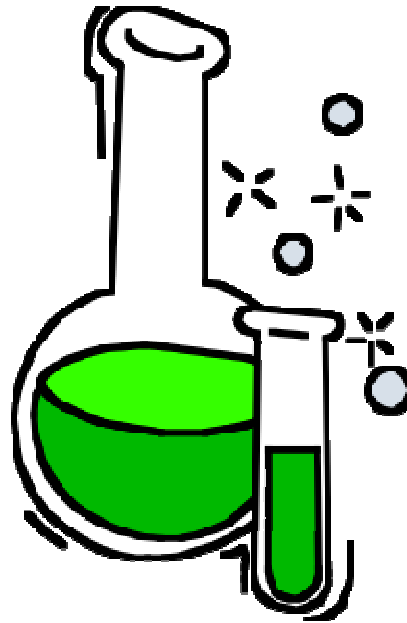
## **Future criteria (to be updated)**

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

- New requirements aimed at reducing climate and energy effects
- Emissions of VOC at factory level
- Transport requirements

# 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 ISO 9002 or
- 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. A suitable chamber method is to be used for correlation of emission potential (EN 120) expressed as mg/100g, with emission level expressed in ppm or mg/m<sup>3</sup>.

As a suitable chamber method for plates and boardss of wood and mineral wool, the European Standard: ENV 717 – 1 is recommended. To be followed by the EN standard applicable from time to time for reference determination of emission value. The method used must be reported.

The test method for analysis of emissions for classification M1 and M2 is given in "Emission Classification of Building Material" ([http://www.rts.fi/emission\\_classification\\_of\\_building\\_materials.htm](http://www.rts.fi/emission_classification_of_building_materials.htm)). See requirements in Chapter 2.2.

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 boardss (COD)**

- Test method: When measuring oxygen demanding organic material to water 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 which have the same chemical content and have been subjected to the same chemical treatment, but which differ in design, one sample for analysis is

#### **1.3 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 emissions from padding materials and textiles

Formaldehyde emissions are determined using the analysis method in EN ISO 14184.

#### **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.
- Pilling is determined using the EN ISO 12945, or an equivalent standard.
- Dimensional change is determined using ISO 6333, ISO 5077 and ISO 3759.
- Colour fastness is determined using the following methods:
  - To water: ISO 105-E01 Colour fastness to water
  - To rubbing, dry and wet: ISO 105 X12 Colour fastness to rubbing.
- Colour fastness to light is determined by ISO 105-C06

## 4.3 Emissions to water (COD and TOC), textiles

Test methods: When measuring oxygen demanding organic material to water 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.

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 Free formaldehyde in adhesives

To determine the free formaldehyde emissions from liquid adhesive, the proposed CEN standard for “Adhesives/determination of free formaldehyde in amino- and aminoformaldehyde condensate. No 131. Technical Committee Working Group 1” must be employed, until the CEN standard comes into force.

## 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.

<b>Furniture category:</b>	<b>Standard for strength:</b>	<b>Standard for safety:</b>	<b>Standard for stability:</b>
<b>Seating</b>	EN 15373 level 1	ENV 12520	EN 1022
<b>Tables</b>	EN 1730	ENV 12521	ENV 12521 EN 1730
<b>School furniture (chairs/tables)</b>	EN 1729	EN 1729	EN 1729
<b>Storage furniture</b>	EN 14073 EN 14074 ISO 7170	EN 14073	EN 14073 ISO 7171
<b>Beds</b>	EN 1957 EN 1725	EN 1725	EN 1725
<b>Bunk beds</b>	EN 747	EN 747	EN 747

## 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 levels					
			1	2	3	4	5	6
Requirement category		Test methods						
Water	1	EN12720	6h	16h	16h	24h	24h	24h
Grease	1	EN12720	24h	24h	24h	24h	24h	24h
Alcohol 48%	1	EN12720				1h	1h	1h
Coloured liquid (coffee)	1	EN12720			1h (horizontal surfaces)	1h	1h	1h
Heat dry 85°C	1	EN12722				15 min - 70°C	15 min - 70°C	
Heat/humid 85°C	1	EN12721						15 min - 85°C
Heat worktop close to stove 180°C	1	EN12722						15 min - 180°C
Heat at edge 85°C	1	NS 8061						15 min - 85°C
Perspiration (armrests only)	1	EN12720 - ISO 105-E04		1h				
Water at edge (Kitchen only)	1	NS 8062/ DS 2175/ SS 839120			1h (cabinet doors and drawers)			1h

- \*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.

2. Example: Becker Acromas testprotokoll for overflaters motstandskraft

Motståndskraft Provningmetoder	Referens	Kravkategori						Provnings- resultat (skala 1-5) <sup>a)</sup>
		1	2	3	4	5	6	
Vatten	SS EN 12720	6 h	16 h	16 h	24 h	24 h	24 h	4
Fett	SS EN 12720	24 h	24 h	24 h	24 h	24 h	24 h	5
Fett på repad yta	SS 83 01 22				24 h / 3N			5
Repning	SS 83 01 17		3N	3N	3N	5N	5N	<0,5 mm <sup>b)</sup> mm <sup>b)</sup>
Alkohol	SS EN 12720				1 h	1 h	1 h	3
Kaffe	SS EN 12720		1 h*	1 h	1 h	1 h	1 h	5
Värme	SS EN 12722				70°C	70°C	180°C	5
Värme + fukt	SS EN 12721						85°C	
Värme mot kanter	NS 8061						85°C	
Vatten mot kant	SS 83 91 20			1 h***			1 h	
Svett	SS EN 12720 ISO 105-E04		1 h**					
Övrigt:								
Acelon 2 min	SS EN 12720							
Slag mot yta 25 mm	SS 83 91 23							
Slag mot kant 25 mm								
Anmärkning:								
Anmärkning:								
Uppfyller krav enligt kategori:								
<sup>a)</sup> Bedömningsskala provningsresultat - Resultat 4 godtagas om annat ej anges <sup>b)</sup> Godkänd repbredd: <0,5 mm								
5. Inga synliga förändringar, ingen skada. 4. Svag glansändring, synlig endast när kuskullen speglar sig i provytan på eller helt nära vinkel och faller mot betraktarens öga, eller några enslaka knappt synliga ränder när ytan belyses på djupa vinkel. 3. Svagt märke synligt i flera betraktningsvinklingar, tex ring eller märke eller hela randellen. 2. Kraftigt märke, ytans struktur dock i huvudsak oförändrad. 1. Kraftigt märke, ytans struktur förändrad eller ytmaterialet helt eller delvis avlägsnat efter flötpapper sittande kvar.								
<b>Samtliga/öfverallt tillgängliga</b> <b>Kategori 1:</b> Sittmöbler; underredan (ben och säger); Bord; Underredan (ben och säger); Föremål; Underredan (ben och säger); Färdvägsmöbler; Invändiga ytor i lärboliner <b>Kategori 2:</b> Sittmöbler; Stolar; ryggstolar; armstolar; Hyggmöbler; Övriga ytor och underredan; Färdvägsmöbler; Invändiga ytor <b>Kategori 3:</b> Bord; Bordstolar <b>Kategori 4:</b> Bordstolar; avsedda för restauranger, kaféer etc (endast öfverallt tillgängliga)		<b>Kärlständeringar</b> <b>Kategori 1:</b> Invändiga ytor och lädskåp, och hyllor och bänkar <b>Kategori 2:</b> Utvändiga ytor, hyllor och bänkar <b>Kategori 3:</b> Bänkar * Gäller förvägsmöbler, utvändiga höft bänkar ytor ≤ 1250 mm över golvet ** Gäller armstolar *** Gäller stolar och lädskåpen						



# Appendix 2

## Forms

**Skjema for krav til trebaserte plater**  
**Erklæring om forbudte innholdstoffer og aromatiske løsningsmidler**

Det hjemleie produktets navn \_\_\_\_\_  
Produsent/importør av hjemisk produkt \_\_\_\_\_

• Er produktet tilsatt halogenerede organiske bindemidler?	<input type="checkbox"/> ja	<input type="checkbox"/> nei
• Er produktet tilsatt halogenerede organiske fargestoffer?	<input type="checkbox"/> ja	<input type="checkbox"/> nei
• Er produktet tilsatt polyklorerede bifenyler?	<input type="checkbox"/> ja	<input type="checkbox"/> nei
• Er produktet tilsatt alkylfenoler?	<input type="checkbox"/> ja	<input type="checkbox"/> nei
• Er produktet tilsatt ftalater?	<input type="checkbox"/> ja	<input type="checkbox"/> nei
• Er produktet tilsatt pigment/løsningsstoffer basert på bly, tinn, kadmium, krom(VI) og kvikksølv og deres forbindelser?	<input type="checkbox"/> ja	<input type="checkbox"/> nei
• Er produktet tilsatt aromatiske løsningsmidler? Hvis ja, angi innhold i vekt %: _____	<input type="checkbox"/> ja	<input type="checkbox"/> nei
• Er produktet tilsatt alkylfenolektylster eller andre alkylfenolderivater som erstatte alkylfenoler ved reaktivering? Hvis ja, angi innhold i vekt %: _____ Oppgi testmetoder og testresultater: _____	<input type="checkbox"/> ja	<input type="checkbox"/> nei

Produsentens underskrift \_\_\_\_\_ (firmanavn)  
(dato) \_\_\_\_\_ (telefon)

(ansvarlig saksbehandler) \_\_\_\_\_

**Bemerk:** Innhold av klassifiserte stoffer dokumenteres separat ved sikkerhetsdatablad/leverandørbruksanvisning, og ved utfylling av Vedlegg 4.



## Form 1 Overview of materials

Form for overview of materials (Chapter 1)

Producer:	Signatory
Product	Total weight in kg

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

## Form 2a Requirements applicable to chemical products

### Form for requirements applicable to chemical products (Chapter 2.1)

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

---

Manufacturer of the chemical product  or supplier of raw material

---

#### Classification of chemical products

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

Classification	Associated hazard symbol and R-phrases
Environmental hazard	N with R50, R50/53, R51/53 and/or R59.
Highly toxic	Tx (T+ in Norway) with R26, R27, R28 and/or R39
Toxic	T with R23, R24, R25, R39 and/or R48
Allergenic if inhaled and sensitising	Xn with R42 or Xi with R43
Carcinogenic	T with R45 or R49. Or Xn with R40
Mutagenic	T with R46 or Xn with R68
Toxic for reproduction	T with R60 and/or R61. Or Xn with R62 and/or R63.

*The classification applies in accordance with the Dangerous Substances Directive 67/548/EEC as adapted to REACH in accordance with Directive 2006/121/EC and the Dangerous Preparations Directive 1999/45/EC or with subsequent amendments and adaptations. With the transition to GHS (Globally Harmonised System) the requirements applicable to the classification of products may be converted, cf. Form 4b in Appendix 2.*

*Please note that the producer is responsible for correct classification.*

Is the product/raw material classified in accordance with the above table? Yes  No

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 constituent substances.

Constituent substances 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 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.

Does the product/raw material contain free formaldehyde? Yes  No

If yes, specify quantity in weight %

---

---

Does the product/raw material contain volatile aromatic compounds (VAC)? Yes  No

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

---

---

Does the product/raw material contain volatile organic compounds (VOC)? Yes  No

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

---

---

Does the product/raw material contain nano particles? Yes  No

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

---

---

Is the product an adhesive containing organic solvents? Yes  No

Is the requirement fulfilled? Yes  No

**Are the following constituent substances added to the product:**

- Halogenated organic compounds in general. For example PVC, chloroparaffins, fluorine compounds, flame-retardants and organic bleaching chemicals? Yes  No
- PFOA, PFOS or compounds thereof? Yes  No
- Bisphenol A compounds? Yes  No
- Biocidene: chlorophenols (their salts and esters) dimethylfumarates and MIT (2-methyl-4-isothiazolin-3-one)\* Yes  No
- Phthalates? Yes  No
- Azidirine and polyazidirine? 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

*\* Also applies in the case of transportation and storage of products and semi-manufactures*

**Example of calculation of quantity of VOC applied in R18:**

The manufacturer has disclosed consumption of varnish of 120 g/m<sup>2</sup> and spraying equipment with recycling as the means of application. Form 5 states that the varnish contains 5% organic solvents.

The calculation will be:  $(120/0.7) \times 0.05 = 10.3 \text{ g/m}^2$  organic solvents.

Signature of manufacturer or raw material producer:

Date	Company name
Signatory	Telephone

## **Form 2b GHS classification**

### **Converting requirements to GHS classification**

This form specifies which requirements will apply to the classification of products and constituent substances when GHS (Globally Harmonised System) enters into force. These classifications may be used when GHS has been implemented and enters into force in the EU. During the transitional period, when according to the legislation both systems may be used, this criteria document provides for freedom of choice as to which of the two applicable classification systems are used.

Since there as yet are no official designations for use in the Nordic countries with regard to GHS, reference is made to the English terms.

### **R3 (Classification of the product) in accordance with GHS**

The product must not be classified/labelled in any of the following GHS classes:

- Ecotoxicity Acute Category 1
- Ecotoxicity Chronic Category 1
- Ecotoxicity Chronic Category 2
- Ecotoxicity Chronic Category 3
- Ecotoxicity Chronic Category 4
- Acute Toxicity Category 1
- Acute Toxicity Category 2
- Acute Toxicity Category 3
- Acute Toxicity Category 4
- Aspiration Hazard Category 1
- Specific Target Organ Toxicity after Single Exposure Category 1
- Specific Target Organ Toxicity after Single Exposure Category 2
- Specific Target Organ Toxicity after Single Exposure Category 3
- Specific Target Organ Toxicity after Repeated Exposure Category 1
- Specific Target Organ Toxicity after Repeated Exposure Category 2
- Skin Corrosion/Irritant Category 1A
- Skin Corrosion/Irritant Category 1B
- Skin Corrosion/Irritant Category 1C

- Respiratory Sensitisation Category 1
- Skin Sensitisation Category 1
- Carcinogenicity Category 1A
- Carcinogenicity Category 1B
- Carcinogenicity Category 2
- Germ Cell Mutagenicity Category 1A
- Germ Cell Mutagenicity Category 1B
- Germ Cell Mutagenicity Category 2
- Reproductive Toxicity Category 1A
- Reproductive Toxicity Category 1B
- Reproductive Toxicity Category 2
- Reproductive Toxicity Additional Labelling for Effect on or via Lactation
- Organic Peroxides Type A
- Organic Peroxides Type B
- Self-reactive substances and Mixtures Type A
- Self-reactive substances and Mixtures Type B
- Oxidising Gases Category 1
- Oxidising Liquid Category 1
- Oxidising Solid Category 1
- Oxidising Solid Category 2
- Oxidising Solid Category 3
- Flammable Gases Category 1
- Flammable Aerosols Category 1
- Flammable Liquids Category 1

The content of any substance in GHS category 'Skin Sensitisation Category 1' and/or 'Respiratory Sensitisation Category 1' must be less than 0.10 %.

#### **R4 (Classification of ingoing chemical substances) in accordance with GHS) etter GHS**

The product must not contain chemical substances that shed or might shed any substances classified according to one or more of the following GHS classes:

- Carcinogenicity Category 1A
- Carcinogenicity Category 1B
- Carcinogenicity Category 2
- Germ Cell Mutagenicity Category 1A
- Germ Cell Mutagenicity Category 1B
- Germ Cell Mutagenicity Category 2
- Reproductive Toxicity Category 1A
- Reproductive Toxicity Category 1B
- Reproductive Toxicity Category 2
- Reproductive Toxicity Additional Labelling for Effect on or via Lactation

Formaldehyde is exempted from this requirement. A separate requirement for formaldehyde is provided in R5.

No ingoing chemical substance must be allotted the following GHS 'hazard statements' or combinations thereof:

- 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
- H362: May cause harm to breast-fed children
- H370: Causes damage to organs (or state all organs affected, if known) (state route of exposure if it is conclusively proven that no other exposure cause the hazard)
- H371: May cause damage to organs (or state all organs affected, if known) (state route of exposure if it is conclusively proven that no other exposure cause the hazard)
- H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled

- H372: Causes damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other exposure
- H373: May cause damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other exposure cause the hazard)
- H335: May cause respiratory irritation
- H336: May cause drowsiness and dizziness

Exemption from this requirement as to GHS 'hazard statements' applies to preservatives used to preserve the product and present in quantities of less than 1000 ppm (0.1 weight %, 1000 mg/kg) and not covered by any of the following GHS 'hazard statements' or combinations thereof:

- H362: May cause harm to breast-fed children
- H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H335: May cause respiratory irritation
- H336: May cause drowsiness and dizziness

Ingoing chemical substances in GHS class:

- 'Ecotoxicity Chronic Category 1' must not be present in quantities in excess of 0.10 weight %
- 'Ecotoxicity Chronic Category 2' must not be present in quantities in excess of 0.0 weight %
- 'Ecotoxicity Acute Category 1', 'Ecotoxicity Chronic Category 3', and/or 'Ecotoxicity Chronic Category 4' may each individually be present in a quantity of no morer than 2.0 weeigh %.

The total of chemical substances in GHS classes 'Ecotoxicity Acute Category 1', 'Ecotoxicity Chronic Category 1', 'Ecotoxicity Chronic Category 2', 'Ecotoxicity Chronic Category 3', and/or 'Ecotoxicity Chronic Category 4', must not be present in quantities in excess of 4.0 weight %.

## **Form 2c Overview of R-phrases**

### **Overview of R-phrases and associated names**

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

R59: Dangerous for the ozone layer

R26: Very toxic by inhalation

R27: Very toxic in contact with skin

R28: Very toxic if swallowed

R39: Danger of very serious irreversible effects

R23: Toxic by inhalation

R24: Toxic in contact with skin

R25: Toxic if swallowed

R48: Danger of serious damage to health by prolonged exposure

R68: Possible risk of irreversible effects

R42: May cause sensitisation by inhalation

R43: May cause sensitisation by skin contact

R45: May cause cancer

R49: May cause cancer by inhalation

R40: Limited evidence of a carcinogenic effect

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

## Form 3a Wood raw material (supplier)

### Description of wood raw material (supplier)

Supplier:
Product:
Producer/supplier:

For documenting the wood raw material:

- Type of wood and geographical origin (country/state and region/province/municipality):
- Copy of certificate of forestry certification:
- Proportion (%) wood from certified forestry in product:

In the event of multiple products per supplier, the following table may be used:

Wood raw material	Type of wood	Geographical origin	Forestry standard	Prop. (%) wood from certified forestry in product

Supplier's signature:

Date	Company name
Signatory	Telephone

## Form 3b Wood raw material (summary)

### Description of wood raw material (summary)

**Table 1: Wood materials used (use table as required)**

Wood raw material	Supplier	Type of wood	Geographical origin

**Table 2: Wood from certified forestry**

Wood	Supplier	Quantity	Prop. (%) wood from certified forestry	Quantity wood from certified forestry
<b>Total</b>				

**% wood from certified forestry =**

**Quantity wood from certified forestry/total quantity wood in products**

= \_\_\_\_\_

Supplier'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 4 Calculation of energy consumption

Page 1 (2)

### 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 the chipboard plates and boards:

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

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

= 0+2+3.2+2+2.5= 9.7 => The chipboard plates and boards 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 4

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 <sup>1</sup>	Theoretical energy content MWh/m <sup>3</sup> <sup>2</sup>	Energy content GJ/unit <sup>3</sup>	Tons CO <sub>2</sub> per ton energy raw material	Ton CO <sub>2</sub> per m <sup>3</sup> <sup>4</sup>	Ton CO <sub>2</sub> 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/fm<sup>3</sup>) and Natural Gas which is in kg per standard cubic meter (kg/Sm<sup>3</sup>).*

*2 All figures in MWh/ m<sup>3</sup>, except for Natural Gas which is given in kWh/Sm<sup>3</sup> and Coal, Coke, Wood Fuel, Waste liquer and Waste wood which are given in MWh/ ton.*

*3 All figures in GJ/ m<sup>3</sup> except for Coal, Coke, Waste liquer and Waste wood which are in GJ/ ton, Natural Gas which is given in GJ/ ton and Wood Fuel in GJ/fm<sup>3</sup>.*

*4 Natural Gas in kg/Sm<sup>3</sup>.*

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:

$0.12 \text{ kg adhesive/ kg panel} \times 15 \text{ MJ/ kg adhesive} = 1.8 \text{ MJ/ kg panel.}$

Conversion to kWh per kg panel:  $(1.8 \text{ MJ/kg panel})/3.6 = 0,5 \text{ kWh/kg panel}$

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

## Form 5 Metals

### Form for metals (Chapter 2.5)

Name of product: \_\_\_\_\_

Producer/importer: \_\_\_\_\_

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.

Is the metal part plated with cadmium, chromium, nickel,

zinc and their compounds?

Yes  No

Emission of Zn from surface treatment must not exceed 0,5 mg/l

Emission of Zn: \_\_\_\_\_

Test report in accordance with Appendix 1 "Testing and control" and declaration that parts plated with chromium, nickel or zinc can be recycled.

Signature of producer:

Date	Name of company
Signatory	Telephone

## Form 6 Plastics

### Form for plastics (Chapter 2.6)

Name of product and chemical name of plastic material: \_\_\_\_\_

Producer/supplier: \_\_\_\_\_

Which types of plastic does the plastic material contain? Yes  No

If yes, which types 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: \_\_\_\_\_

\_\_\_\_\_

Has the surface of the plastic part been coated? Yes  No

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

Recycled/recovered plastic means plastic from used products or used packaging.

Attach a report of the origins of the recovered plastic.

Attach: Report from producer/supplier documenting the proportion of recycled material.

Signature of producer:

Date	Company name
------	--------------

Signatory	Telephone
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## Form 7 Padding materials

Page 1

### Form for requirements applicable to padding materials (Chapter 2.7)

Name and description of type of padding material: \_\_\_\_\_

Producer/importer: \_\_\_\_\_

Does the product contain dyestuffs? Yes  No

If yes:

Are the dyestuff 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 dyestuffs 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? Yes  No

Is the prescribed protective equipment used and are the requirements  
of the authorities relating to the use of icocyanates followed? Yes  No

Signature of producer:

Date	Company name
------	--------------

Nordic Ecolabelling  
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Draft for public consultation

Signatory	Telephone
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## Form 8 Textile

Page 1(2)

### Form for requirements applicable to textiles (Chapter 2.8)

Name and description of type of textile: \_\_\_\_\_

Producer/importer: \_\_\_\_\_

Does the product contain halogenated flame retardants or fluorine compounds? Yes  No

State which flame retardants or fluorine compounds are used:

Name:

CAS No:

\_\_\_\_\_  
\_\_\_\_\_

Are dyestuffs used in the product?

Yes  No

If yes:

Are dyes, pigments, flame retardants or auxiliary chemicals classified

in accordance with Table 2 of requirement R3 in Chapter 2.1 used?

Yes  No

Is chrome mordant dyeing used?

Yes  No

Do the dyestuffs contain one or more of the pigments in Table A?

Yes  No

If yes, state which \_\_\_\_\_

\_\_\_\_\_

Are metal complex dyestuffs used?

Yes  No

If yes, state which \_\_\_\_\_

\_\_\_\_\_

## Form 8

Page 2(2)

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

- |                                                               |                                                          |
|---------------------------------------------------------------|----------------------------------------------------------|
| Alkylphenolethoxylates (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"/> |

**Table A**

<b>Pigment</b>
C.I.Basic Red 9
C.I.Disperse Blue 1
C.I.Acid Red 26
C.I.Basic Violet 14
C.I.Disperse Orange 11
C.I.Direct Black 38
C.I.Direct Blue 6
C.I.Direct Red 28
C.I.Disperse Yellow 3

### **K47 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 Mirror glass

### Form for requirements applicable to mirror glass (Chapter 2.9)

Name of chemical product: \_\_\_\_\_

Producer/importer of chemical product: \_\_\_\_\_

Does the metal coating used for the mirror glass contain lead (Pb)?      Yes  No

If yes, state quantities (weight %): \_\_\_\_\_

Specify test method: \_\_\_\_\_

      Test report

Does the metal coating used in mirror glass contain copper (Cu)?      Yes  No

If yes, state quantity (weight %): \_\_\_\_\_

Specify test method: \_\_\_\_\_

      Test report

Signature of producer:

Date	Name of company
Signatory	Telephone

## Form 10 Marketingg

### The marketing of ecolabelled products (Chapter 3.7)

We hereby confirm that we are familiar with the rules governing the use of the Nordic Ecolabelling as described in “Regulations on the Nordic ecolabelling of products”.

We hereby undertake that the marketing of the product will be in accordance with the aforementioned regulations.

We also confirm that we are familiar with the criteria governing furniture and fitments.

We undertake to ensure that the personnel within our company responsible for marketing the ecolabelled products will receive information on the criteria governing the ecolabelling of furniture and fitments and “Regulations on the Nordic ecolabelling of products”.

Date	Company name
Authorised signatory	Telephone
Person responsible for marketing	Telephone

In the event of changes in personnel a new version of this form must be filed with the ecolabelling organisation.

### Producers of upholstered furniture and mattresses:

As a producer of upholstered furniture and mattresses we undertake to offer a standard range of textiles that fulfil the environmental requirements of the criteria for furniture. We undertake to provide information on this in our marketing of the furniture. If ecolabelled furniture is used for display purposes in stores, trade fairs etc., it will be our responsibility to ensure that the display product is upholstered with textiles that fulfil the requirements.

Date	Company name
Authorised signatory	Telephone
Person responsible for marketing	Telephone