Nordic Ecolabelling of Heat pumps

Revision proposal for version 3
12 November 2012

Nordic Ecolabelling

In 1989, the Nordic Council of Ministers decided to introduce a voluntary official ecolabel, the Swan. These organisations/companies operate the Nordic Ecolabelling system on behalf of their own country's government.
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What is a Nordic Ecolabelled heat pump?

The following types of heat pump units can be Nordic Ecolabelled:

- air–air heat pumps,
- air–water heat pumps and
- liquid-water heat pumps

The Nordic Ecolabel imposes requirements with regard to chemicals, materials, energy efficiency, noise, warranty and customer information. The environmental aspect is considered throughout the manufacturing process, from raw materials to production, during operation of the heat pump and at end-of-life.

A Nordic Ecolabelled heat pump:

- has a high energy efficiency and a low contribution to climate change
- imposes stringent environmental requirements both on the production process and on the materials used
- generates a low level of noise
- has the correct dimensions for the property in question
- gives the buyer the option of having the heat pump installed by a competent fitter and receiving relevant information about electricity supply requirements
- provides information on environmentally friendly handling of end-of-life heat pumps

Why choose the Nordic Ecolabel?

- Manufacturers and/or retailers of heat pumps may use the Nordic Ecolabel trademark for marketing purposes. The Nordic Ecolabel is a very well-known and well-reputed trademark in the Nordic region.
- The Nordic Ecolabel is a cost-effective and simple way of communicating environmental work and commitment to customers and suppliers.
- More eco-aware activities often creates scope for lowering costs, such as by cutting the consumption of energy and reducing amounts of packaging and waste.
- More eco-aware operation prepares the heat pump manufacturer for future environmental requirements.
- Environmental issues are complex. It can take a long time to gain an understanding of a specific area. Nordic Ecolabelling facilitates this work and simplifies the decision-making process in connection with purchase.
- The Nordic Ecolabel not only covers environmental issues but also quality requirements, since the environment and quality often go hand in hand. This means that a Nordic Ecolabel licence can also be seen as a mark of quality.

What can carry the Nordic Ecolabel?

The criteria make is possible to Nordic Ecolabel series manufactured, electrically operated heat pumps for space heating, with or without the option of heating water for household use.

Nordic Ecolabelled heat pumps are individual units of the following types:

1. For heating water up to 70 kW:
   a. air-water heat pumps (heat source: outdoor air)
   b. exhaust air heat pump (heat source: indoor air)
   c. liquid-water heat pumps (heat source: geothermal heat, lake water/fresh water or waste heat from e.g. greywater)
2. For heating of air up to 12 kW:
   d. air-air heat pumps (heat source: outdoor air)

There is no lower output limit for Nordic Ecolabelling of heat pumps. The criteria document makes continuous reference to the heat pump type definitions used in European work on the Ecodesign Directive. LOT 1 (product categories of the Ecodesign Directive) contains a suggested Ecodesign and Energy Labelling Regulation for air-water heat pumps and liquid-water heat pumps. The Ecodesign Regulation, (206/2012/EU), and the Energy Labelling Regulation, (626/2011/EU), outline requirements for heat pumps with air-air heat pumps.

The following heat pumps *cannot* be Nordic Ecolabelled:

- Units with an output greater than 70 kW / 12 kW
- Units used solely for cooling
- Gas powered heat pumps
- Heat pumps intended solely for drying
- Heat pumps covered by LOT 2 or ENER LOT 21

How to apply?

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

Icons in the text

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

✉ Enclose documentation with application.

☺ On-site inspection

Application

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

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

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

Sales in the Nordic region

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

On-site inspection

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

Costs

An application fee is charged to companies applying for a licence. There is an additional annual fee based on the sales of the Nordic Ecolabelled heat pump.

Questions

Please contact Nordic Ecolabelling if you have any queries or require further information. See page 2 for addresses.

What is required in order to be Nordic Ecolabelled?

All requirements in sections 1-4 must be met in order to be granted a Nordic Ecolabel licence.

1 Manufacture

R1 Description of manufacturing process and materials

The manufacturing process for the Nordic Ecolabelled heat pump is to be described.

The description must, as a minimum, contain the following details:

- A summary of all the parts in the heat pump, stating the type and materials. The weight of plastic parts must be stated (see R6).
- A description of the manufacturing process for the heat pump, stating the different stages of the process. The production technology and environmental purification schemes for surface treatment and metal plating of parts is to be stated.
- Name and location of:
    - factory/factories for final assembly of the heat pump.
    - subcontractors producing core components (e.g. compressor unit, heat exchangers, accumulator tank if applicable and pipework, frame, etc.). Provide information on what the relevant subcontractors supply.
    - subcontractors for surface treatment and metal plating.
- Copy of environmental licence/permit or control reports/documents from environmental authorities for final assembly, if applicable.

Final assembly of heat pumps relates to assembly of core components (such as compressor unit, heat exchanger, accumulator tank if applicable, pipework, frame and cabinet) into a finished heat pump unit. Final assembly does not refer to production of inputs such as metals, insulation materials, plastic parts, electro technology or electronics.

✉ A material description of the heat pump's parts, a description of the heat pump's manufacturing process and subcontractors, plus a copy of the environmental licence/permit in line with the requirement.

R2 Chemical products, classification

The manufacturer must compile a list of the chemicals used in final assembly of heat pumps and in surface treatment. The safety data sheet for the chemical products is to be submitted.

Chemical products, such as cleaning products, paints, lacquers, adhesives and sealants that are used in the final manufacture of heat pumps and for surface treatment of parts must not be classified in line with the risk phrases in Table 1 below.

An exemption to the requirement applies to metal plating of parts. The terms of requirement in R4 must be met when metal plating of parts.

Table 1: Classification of chemical products. Note that for lacquers and paints there is also a ban on classification of environmental toxicity risk phase R51/53.

Classification	EU classification until 1 December 2010*	EU classification after 1 December 2010*
Toxic to the environment, paints	N with R50, R50/53, R51/53, R52/53 or R59	Aquatic 1 with H400 Chronic 1/2/3 with H410, H411, H412, EUH 059.
Toxic to the environment, other chemical products	N with R50, R50/53, R52/53, or R59	Aquatic 1 with H400 Chronic 1/3 with H410, H412, EUH 059.
Very toxic	T x (T+ in Norway) with R26, R27, R28, R39	Acute Tox. 1/2 with H330, H310, H300, STOT SE 1 with H370
Toxic	T with R23, R24, R25, R39, R48	Acute Tox. 2/3 with H331, H330, H301 STOT SE 1 with H370 STOT RE 1 with H372
Allergenic	Xn with R42, Xi with R43	Resp sens 1 with H334 or Skin sens 1 with H317
Carcinogenic	Xn with R40 or T with R45, R49	Carc 1A/1B/2 with H350, H350i and/or H351
Mutagenic	T with R46 or Xn R68	Mut 1B/2 with H340 and/or H341
Toxic for reproduction	T with R60 and/or R61. Or Xn with R62 and/or R63	Repr 1A/1B/2 with H360F, H360D, H361f, H361d, H360FD, H361fd, H360Fd, H360Df Lact with H362

**The classification applies under Directive 67/548/EEC and Directive 1999/45/EC (until 1 December 2010 and during transition period 2010-2015) or Regulation 1272/2008/EC (from 1 December 2010). The requirement also covers combinations of the above risk phrases, e.g. T+ R26/27/28.*

✉ List of chemical products used in final assembly of heat pumps and surface treatment.

Safety data sheet/product data sheet in line with prevailing legislation in the country of application, e.g. Annex II to REACH (Regulation 1907/2006/EEC) for each product.

R3 Chemical products, dangerous substances

The following substances must not be actively added* to chemical products, for example, cleaning products, paints, lacquers, adhesives or sealants used in final assembly of heat pumps and surface treatment:

- lead (Pb), mercury (Hg), hexavalent chromium (Cr^{VI}), cadmium (Cd) and their compounds
- halogenated organic substances
- alkylphenols, alkylphenol ethoxylates or other substances that may form alkyphenols or alkylphenol ethoxylates
- phthalates, listed in R8
- volatile aromatic compounds (VAH) at more than 1% by weight.
- volatile organic compounds (VOC**) at more than 5% by weight in surface treatment agents
- nano particles (from nano materials***)

An exemption to the requirement applies to metal plating of parts. The terms of requirement in R4 must be met when metal plating of parts.

** Substances that are not actively added by the chemical manufacturer or its subcontractors and that appear in quantities of less than 100 ppm are excluded from the requirement.*

***VOCs are defined as organic compounds that at 293.15 K have a steam pressure of 0.01 kPa or more.*

**** The definition of a nano material follows the European Commission's definition of nano materials from 18 October 2011, with the exception of the limit for particle size distribution, which is reduced to 1%: A nano material is a natural, incidental or purposely manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for at least 1% of the particles in the number size distribution, one or more external dimensions is in the size range 1-100 nm. This definition applies to the whole material, including particles exceeding the interval of 1-100 nm, as long as 1% of the material is particles of 1-100 nm. The definition applies to nano particles both in an unbound and in a bound state.*

✉ Declaration or other equivalent certification (documentation) from the chemical manufacturer/supplier. Appendix 2 may be used.

R4 Metal plating of parts

Metal parts may not be coated with cadmium, hexavalent chromium, nickel, zinc or their compounds.

Parts may only be coated with trivalent chromium, nickel or compounds of these where this is necessary on the grounds of chemical or mechanical wear or on the grounds of another specific technical need.

Any chrome plating and nickel plating processes must be carried out with the help of purification technology/waste water treatment technology such as ion replacement membrane technology or similar technology in order to ensure the greatest possible recovery of the metals. The process water shall be captured for recycling or destruction. The system must be closed.

✉ Specification of any need for metal plating from the heat pump manufacturer. Declaration from the manufacturer that the metal plating requirement is fulfilled. Including a statement as to what cleaning technology has been used, if applicable. Appendix 3 may be used.

R5 The RoHS Directive

All materials in the heat pump must meet the requirements of the RoHS Directive (2011/65/EU).

✉ Heat pump manufacturer's declaration, see Appendix 8.

R6 Marking of plastic parts

Plastic parts that weight 25 grams or more must be marked in accordance with ISO 11469.

Cables or rubber parts are excluded from the requirement. Plastic parts with a smooth surface of less than 200 mm^2 are also excluded from the requirement.

✉ Declaration from the heat pump manufacturer that the requirements are met or that the smooth surface on plastic parts is smaller than 200 mm^2.

R7 Flame retardants in plastic and rubber parts

a) Hexabromocyclododecane (HBCDD), tetrabromobisphenol A (TBBP-A) and highly chlorinated short-chain and medium-chain chloroparaffins must not be added.

b) Other halogenated organic flame retardants and flame retardants that have been given one or several of the following risk phrases must not be added.

- R45 (H350) (may cause cancer)
- R46 (H340) (may cause inherited genetic harm)
- R60 (H360F) (may impair fertility)
- R61 (H360D) (may cause harm to the unborn child)

An exemption from requirement b) may be given for halogenated flame retardants:

- In cases where these are required for electrical or fire safety reasons under the Low Voltage Directive 73/23/EEC or standard EN 60335-1
- Printed circuit boards, PCBs
- Plastic and rubber parts weighing < 25 grams that are integral to electronic parts

The exemption does not apply to the flame retardants governed by a) that are prohibited under the RoHS Directive (2011/65/EU).

✉ Duly completed declaration from the manufacturer/supplier of the plastic and rubber parts, see Appendix 4.

R8 Phthalates in plastic and rubber parts

The following phthalates must not be added to plastic or rubber materials:

- Di(2-ethylhexyl) phthalate (DEHP)
- Dibutyl phthalate (DBP)
- Butyl benzyl phthalate (BBP)
- Dicyclohexyl phthalate (DCHP)
- Diisobutyl phthalate (DIBP)
- Diisooctyl phthalate (DIOP)
- Diisononyl phthalate(DINP)
- Diisodecyl phthalate (DIDP)
- Di-n-octyl phthalate (DNOP)
- Diethyl butyl phthalate (DEBP)
- Di-n-hexyl phthalate (DnHP)
- Di-n-decyl phthalate (DnDP)

Printed circuit boards and plastic and rubber parts weighing < 25 g that are integral to electronic parts are exempt from the requirement.

✉ Duly completed declaration from the manufacturer/supplier of the plastic and rubber parts, see Appendix 4.

R9 Foaming agents

Foaming agents used in insulation must have an ozone depletion potential (ODP value) equal to 0 and a global warming potential (GWP_{100} value) < 15 (calculated in CO_2 equivalents over a period of 100 years).

The foaming agent may not contain halogenated organic compounds.

✉ List of foaming agents used plus declaration from producer/supplier of the foaming agents showing that the requirement is fulfilled. Use Appendix 5.

R10 Refrigerants, greenhouse gas effect

The GPW_{100} value of the refrigerant and its contents may not be > 2,000.

If a refrigerant with a GWP_{100} value >100 has been used, the unit shall be constructed in a way that prevents leakage. One such construction is system units that have undergone factory pressure testing.

The types of refrigerant and the filling quantity (kg) shall also be stated in connection with or on the nameplate pursuant to EN 14511-4. See R14

The refrigerant and its contents shall be classified and labelled pursuant to EU Directive 67/548/EC and EN 1999/45/EC, or alternatively pursuant to European Regulation CLP (EC) 1272/2008.

If refrigerants with a GWP_{100} value <150 are used, a lower energy efficiency level may be acceptable, see R11.

✉ Nameplate copy. Information about the refrigerant used with GWP_{100} value, see Appendix 6.

2 Operation of the Nordic Ecolabelled heat pump

R11 Energy efficiency

The heat pump's energy efficiency classification shall, at least, correspond to the requirements pursuant to energy classes in Table 2 that refer to the EU's Energy Labelling Regulation (626/2011/EU) for air-air heat pumps and suggestions for the Energy Labelling Regulation for air/liquid-water heat pumps in LOT 1. Note that the heat pump must meet requirements for both climate zone A and C.

Table 2 Energy class requirement

	Climate zone A, "Average" refers to the climate in Strasbourg			**Climate zone C, "Colder" refers to the climate in Helsinki**		
Heat pump type	air/liquid-water*	air/liquid-water* low temperature	air-air	air/liquid-water*	air/liquid-water* low temperature	air-air
Refrigerant GWP_{100} > 150	A++	A+++	A+	A+	A++	A
Refrigerant GWP_{100} ≤ 150	A+	A++	A	A	A+	B

** Energy labelling requirements for liquid-water and air-water heat pumps are expected to be established in 2012. For the time being, the suggested energy labelling requirements can be found under LOT 1.*

The heat pump's efficiency shall be tested and calculated based on EN 14511 and EN 14825. The laboratories conducting testing and calibration shall be accredited to EN ISO/IEC 17025. The heat pump manufacturer shall also supply a minimum of technical data in the installation guide and technical information. See R14.

✉ Certificate from an accredited laboratory pursuant to Appendix 1 showing the applicable SCOP value (Seasonal Coefficient of Performance) and energy label pursuant to the Energy Labelling Regulation (626/2011/EU) for air-air heat pumps for climate zones A and C. Or η_s value (seasonal space heating energy efficiency) and energy label according to the suggestions for Energy Labelling Regulation in LOT 1 for climate zones A and C.

R12 Noise

The sound power level for air/air, liquid/water and air/water heat pumps may not exceed the values stated in Tables 3 and 4.

Table 3. Requirement for air/air heat pump maximum sound power level (LWA)

Output < 6 kW		**6 < Output < 12 kW**	
Sound power level Indoor part dB(A)	Sound power level Outdoor part dB(A)	Sound power level Indoor part dB(A)	Sound power level Outdoor part dB(A)
55	60	60	65

Table 4. Requirement for liquid/water and air/water heat pump maximum sound power level (LWA)

Output ≤ 6 (kW		**Output > 6 kW and ≤ 12 kW**		**Output > 12 kW and ≤ 30 kW**		**Output > 30 kW and ≤ 70 kW**	
Indoor part dB(A)	Outdoor part dB(A	Indoor part dB(A)	Outdoor part dB(A	Indoor part dB(A)	Outdoor part dB(A	Indoor part dB(A)	Outdoor part dB(A
55	60	60	65	65	70	75	80

✉ The sound power level shall be tested and reported to Nordic Ecolabelling. The sound power level shall be tested when the heat pump is operating at maximum air flow. Test pursuant to EN 12-102. Further test requirements are stated in Appendix 1.

R13 Warranty

A warranty of at least five years, for normal use, shall be issued for the heat pump. A further seven-year warranty shall be issued for the compressor, but shall not necessarily cover the cost of work associated with compressor changes.

✉ The warranty period shall be stated in the operation and maintenance instructions.

3 Customer information

R14 Installation guide and technical information

The installation guide and/or available technical information shall contain the below information and shall, as a minimum requirement, be easily accessible on the manufacturer and/or subcontractor website(s).

Information about:

- liquid-water heat pumps and air-water heat pumps also being suitable for heating water for household use pursuant to the Energy Labelling Regulation's suggestions in LOT 1.
- what type of water-borne heating system a liquid-water heat pump or air-water heat pump is intended for (floor/wall or radiator) pursuant to the definition for low temperature heat pumps in the Energy Labelling Regulation's suggestions in LOT 1
- annual energy consumption in kWh, nominal heating capacity, operation limit temperature (T_{OL}) and SCOP for air-air heat pumps categorised pursuant to and based on the Ecodesign Regulation (206/2012/EU)
- annual energy consumption in kWh and rated heat output (P_{ratedh}) in kW for liquid-water heat pumps and air-water heat pumps and information on what climate zone the heat pump is intended for
- how to find the average annual temperature for your location or the nearest weather station corresponding to your climate zone
- what refrigerant the heat pump contains and the filling weight. what refrigerant the heat pump contains and the filling quantity (kg) This information shall also be stated on the nameplate according to EN 14511-4
- the importance of installation being performed correctly by competent staff and that dimensions/planning should be conducted in accordance with EN 15450.
- indoor and outdoor sound intensity level in dB(A)
- suitable positioning of outdoor part taking into consideration noise, cleaning and de-icing.
- that air-air heat pumps with an indoor part require open plan spaces or rooms and open stairs between levels in order to be able to heat the whole house
- that local regulatory authorities shall be contacted when installing geo thermal heat pumps.

✉ A copy of the nameplate, the installation manual with technical information or the installation manual and technical information.

✉

R15 Operation and maintenance instructions

The manufacturer shall ensure that operation and maintenance instructions are enclosed with the heat pump, including the following information:

- information about the need for regular cleaning and de-icing
- the warranty content and validity period (number of years) shall be stated. The warranty must meet the requirements outlined in R13
- what refrigerant the heat pump contains and the filling quantity (kg).

The manufacturer should inform the retailer of the importance of giving the customer access to the installation guide and operation and maintenance instructions.

✉ A copy of the operation and maintenance instructions.

4 Information for retailers and fitters

R16 Fitter/geo driller expertise

The manufacturer/retailer should inform the buyer of the need to select:

- a fitter with certified expertise
- a geo driller with certified expertise

✉ Declaration that the requirement is fulfilled.

R17 Dimensions and design of the heating system

The manufacturer shall ensure that the fitter has access to data on approved heat transfer fluids, relevant calculation programmes and other relevant information required for meeting the Nordic Ecolabelling requirements.

✉ Declaration that the requirement is fulfilled.

5 Quality and environmental management requirements and regulatory requirements

To ensure that the Nordic Ecolabel's requirements are fulfilled, the following procedures must be implemented.
If the manufacturer has an environmental management system that is certified to ISO 14 001 or EMAS and the following procedures are applied, it is sufficient if the accredited auditor certifies compliance with the requirements.

R18 Laws and regulations (regulatory requirements)

The licensee shall ensure compliance with all applicable local laws and provisions at all production facilities for the Nordic Ecolabelled product, e.g. with regard to safety, working environment, environmental legislation and site specific requirements/concessions.

✉ Declaration from the licensee that the requirement is fulfilled, plus a report to the regulatory authority, see Appendix 7.

R19 Licence administrators

The company shall appoint an individual responsible for ensuring the fulfilment of Nordic Ecolabel requirements, and a contact person for communications with Nordic Ecolabelling.

✉ Organisational chart showing who is responsible for the above.

R20 Documentation

The licensee must be able to present a copy of the application and factual and calculation data supporting the documents submitted with the application (including test reports, documents from suppliers and suchlike).

☺ On-site inspection.

R21 Heat pump quality

The licensee must guarantee that the quality of the Nordic Ecolabelled heat pump is maintained throughout the validity period of the licence.

✉ Procedures for collating and, where necessary, dealing with claims and complaints regarding the quality of the Nordic Ecolabelled heat pump.

R22 Planned changes

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

✉ Procedures detailing how planned product and marketing changes are handled.

R23 Unforeseen non-conformities

Unforeseen non-conformities that affect Nordic Ecolabel requirements must be reported to Nordic Ecolabelling in writing and logged.

🕮 Procedures detailing how unforeseen non-conformities are handled.

R24 Traceability

The licensee must have a traceability system for the production of the Nordic Ecolabelled heat pump.

✉ Description of/procedures for fulfilment of the requirement.

R25 Recycling/Take-back system

Relevant national regulations, legislation and/or agreements within the sector regarding recycling systems for products and packaging shall be met in all the Nordic countries where the Nordic Ecolabelled heat pumps are marketed.

✉ Declaration from the applicant regarding affiliation to existing recycling/take-back agreements.

R26 Marketing

Marketing of Nordic Ecolabelled heat pumps must comply with the "Regulations for the Nordic Ecolabelling of Products" dated 22 June 2011 or later versions.

✉ Duly completed Appendix 9.

Marketing

The Nordic Ecolabel is a very well-known and well-reputed trademark in the Nordic region. Nordic Ecolabelled heat pumps may be marketed using the Nordic Ecolabel so long as the associated licence is valid.

The label must be positioned so that there is no doubt as to what the label refers and so that it is clear that the machine is ecolabelled.

More information on marketing can be found in “Regulations for the Nordic Ecolabelling of Products” dated 22 June 2011 or later versions.

Design of the Nordic Ecolabel

The design of the Nordic Ecolabel is as follows:



Licence number

Each licence has a unique six-digit licence number that must be displayed along with the label.

More information on the design of the label can be found in “Regulations for the Nordic Ecolabelling of Products” dated 22 June 2011 or later versions.

Appendix 1 Testing and laboratory requirements

Testing

The heat pump shall undergo efficiency and noise testing. The heat pumps energy efficiency shall be tested pursuant to EN 14511, both for testing and cooling (if relevant), including in cases where carbon dioxide is used as the refrigerant. prEN 14 825 shall be used to test various loads and calculate the average annual coefficient of performance.

The average annual coefficient of performance factor (SCOP) shall be calculated based on the relevant climate zone pursuant to the definitions in the Ecodesign and Energy Labelling Regulation in LOT 1 and the Ecodesign Regulation 206/2012 EU and the Energy Labelling Regulation 626/2011 EU. The calculation programme used must meet the requirements stipulated by the aforementioned directives.
Noise is tested pursuant to ENV 12 102.

Test laboratories

The applicant shall select a test laboratory that meets the general requirements stipulated by standard EN ISO 17 025. The laboratory shall be accredited for testing pursuant to the relevant EN standard for heat pump efficiency.

Heat pump manufacturers may conduct noise tests if they are monitored by the stated reporting bodies pursuant to the Noise Directive 2002/14/EC.

The applicant shall cover the costs of testing.

The laboratory shall create a complete test report stating:

- selected test method
- results from all tests
- a clear heat pump definition
- that the test was performed in accordance with the stated method, with the exception of any stated deviations
- verification that the used calculation programme complies with the requirements of the Ecodesign and Energy Labelling Regulation in LOT 1 and the Ecodesign Regulation 206/2012 EU and Energy Labelling Regulation 626/2011 EU.
- that the laboratory meets the quality and independence requirements stated above.

Appendix 2 Dangerous substances in chemical products declaration

To be completed by the chemicals manufacturer

Name of chemical product:
Chemical manufacturer:

Chemical substances

The following requirement is fulfilled: ☐Yes ☐No

The following substances must not be actively added* to chemical products such as cleaning products, paints, lacquers, adhesives, sealants used in final assembly of heat pumps and surface treatment:

- lead (Pb), mercury (Hg), hexavalent chromium (Cr^{VI}), cadmium (Cd) and their compounds
- halogenated organic substances
- alkylphenols, alkylphenol ethoxylates or other substances that may form alkyphenols or alkylphenol ethoxylates
- phthalates, di-2-ethylhexyl phthalate (DEHP), dibutyl phthalate (DBP), benzyl butyl phthalate (BBP), dicyclohexyl phthalate (DCO), diisobutyl phthalate (DIBP), diisooctyl phthalate (DIOP), diisononyl phthalate (DINP), diisodecyl phthalate (DIDP), di-n-octylphthalate (DNOP), diethyl butyl phthalate (DEBP), dihexyl phthalate (DHP) and di-n-decyl phthalate (DNDP).
- volatile organic compounds at more than 1% by weight %.
- volatile organic compounds (VOC) at more than 5% by weight % in surface treatment agents
- nano particles (from nano materials***)

** Substances that are not actively added by the chemical manufacturer or its subcontractors and that appear in quantities of less than 100 ppm are excluded from the requirement.*
***VOCs are defined as organic compounds that at 293.15 K have a steam pressure of 0.01 kPa or more.*
**** The definition of a nano material follows the European Commission's definition of nano materials from 18 October 2011, with the exception of the limit for particle size distribution, which is reduced to 1%: A nano material is a natural, incidental or purposely manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for at least 1% of the particles in the number size distribution, one or more external dimensions is in the size range 1-100 nm. This definition applies to the whole material, including particles exceeding the interval of 1-100 nm, as long as 1% of the material is particles of 1-100 nm. The definition applies to nano particles both in an unbound and in a bound state.*

An exemption to the requirement applies to metal plating of parts.

Chemical manufacturer/supplier, signature:

Date	Chemical manufacturer/supplier
Responsible	Phone
Responsible (name in BLOCK CAPITALS)	E-mail

Appendix 3 Parts metal plating declaration

To be completed by the heat pump manufacturer and/or subcontractor, if applicable.

Component:
Manufacturer/subcontractor:

No lead, mercury, cadmium, hexavalent chromium or nickel has been added to the above component.
☐Yes ☐No

The above component has been coated with trivalent chromium, nickel or compounds of these on the grounds of chemical or mechanical wear or another specific technical need.
☐Yes ☐No

In cases where parts are plated with trivalent chromium or nickel, please document the reason for this:

Statement outlining what purification/waste water technologies are used, if applicable.

Heat pump manufacturer/subcontractor signature:

Date	Company name
Responsible	Phone
Responsible (name in BLOCK CAPITALS)	E-mail

Appendix 4 Declaration on flame retardants and phthalates in plastic and rubber parts

Completed by the subcontractor(s) supplying plastic and rubber parts for the heat pump

Component:
Manufacturer/subcontractor:

Flame retardant

The following requirement is fulfilled: ☐Yes ☐No

a) Hexabromocyclododecane (HBCDD), tetrabromobisphenol-A (TBBP-A) and highly chlorinated short-chain and medium-chain chloroparaffins have not been added to plastic and/or rubber parts.

b) Other halogenated organic flame retardants and flame retardants that have been given or may be given the following risk phrases have not been added to plastic and/or rubber parts.
- R45 (H350) (may cause cancer)
- R46 (H340) (may cause inherited genetic harm)
- R60 (H360F) (may impair fertility)
- R61 (H360D) (may cause harm to the unborn child)

An exemption from requirement b) may be given for halogenated flame retardants:
- In cases where these are required for electrical or fire safety reasons under the Low Voltage Directive 73/23/EEC or standard EN 60335-1
- Printed circuit boards, PCBs
- Plastic and rubber parts weighing < 25 grams that are integral to electronic parts

The exemption does not apply to flame retardants regulated by a) or that are banned pursuant to the RoHS Directive

Phthalates

The following requirement is fulfilled: ☐Yes ☐No

The following phthalates must not be added to plastic or rubber materials:

- Di(2-ethylhexyl) phthalate (DEHP)
- Dibutyl phthalate (DBP)
- Butyl benzyl phthalate (BBP)
- Dicyclohexyl phthalate (DCHP)
- Diisobutyl phthalate (DIBP)
- Diisooctyl phthalate (DIOP)
- Diisononyl phthalate(DINP)
- Diisodecyl phthalate (DIDP)
- Di-n-octyl phthalate (DNOP)
- Diethyl butyl phthalate (DEBP)
- Di-n-hexyl phthalate (DnHP)
- Di-n-decyl phthalate (DnDP)

The following are exempted from the requirement:

- Printed circuit boards, PCBs
- Plastic and rubber parts weighing < 25 g that are integral to electronic parts

All parts are made from PCB or that weigh < 25 g and are integral to electronic parts.
☐Yes ☐No

Manufacturer/supplier of plastic and rubber parts, signature:

Date	Company name
Responsible	Phone
Responsible (name in BLOCK CAPITALS)	E-mail

Appendix 5 Declaration on foaming agents used in insulation materials

To be completed by the subcontractor supplying insulation materials for the heat pump

Insulation material supplier:
Component used to insulate:

The following requirement is fulfilled: ☐Yes ☐No

Foaming agents used in insulation foam have an ozone depletion potential (ODP) of 0 and a global warming potential (GWP_{100}) < 15.

Insulation material manufacturer/supplier:

Date	Company name
Responsible	Phone
Responsible (name in BLOCK CAPITALS)	E-mail

Appendix 6 Refrigerant declaration

To be completed by the subcontractor supplying refrigerants for the heat pump

Refrigerant name and type:
Manufacturer:
Importer:

Has the refrigerant been classified using risk phrases pursuant to EU directives 67/548/EEC or 1999/45/EC, alternatively CLP nr 1272/2008? ☐Yes ☐No

NB!
Enclose safety data sheet pursuant to the applicable legislation, e.g. Appendix II of REACH (regulation 1907/2006/EEC).

Refrigerant manufacturer/importer:

Company	Responsible (name in BLOCK CAPITALS)
Phone	E-mail
Date	Signature

Appendix 7 Declaration of compliance with applicable laws and provisions in production (R20)

Completed by licensee

Product name:
Manufacturer:

The following requirement is fulfilled: ☐Yes ☐No

The licensee shall ensure compliance with all applicable local laws and provisions at all production facilities for the Nordic Ecolabelled product. e.g. with regard to safety, working environment, environmental legislation and site specific requirements/concessions.

Details of the local regulatory authority that is responsible for supervision:

…….

Licensee, signature:

Date	Company name
Responsible	Phone
Responsible (name in BLOCK CAPITALS)	E-mail

Appendix 8 RoHS Directive compliance declaration

Heat pump name:
Manufacturer:

We hereby certify that all materials used in the heat pump meet the regulations of the European Parliament and Council relating to the restriction of the use of certain hazardous substances in electrical and electronic equipment (2011/6595/EU RoHS).

Heat pump manufacturer, signature:

Date	Company name
Responsible	Phone
Responsible (name in BLOCK CAPITALS)	E-mail

Appendix 9 Marketing of Nordic Ecolabelled heat pumps

We hereby certify that we are well acquainted with the regulations governing the use of the Nordic Ecolabel, as detailed in "Regulations for the Nordic Ecolabelling of Products" dated 22 June 2011 or later versions. We agree to follow these regulations when marketing the Nordic Ecolabelled heat pump.

Further, we confirm that we are familiar with the content of the criteria document regarding the Nordic Ecolabelling of heat pumps.

We undertake to advise those individuals within the company involved in marketing the Nordic Ecolabelled heat pumps of the criteria for the Nordic Ecolabelling of heat pumps and the "Regulations for the Nordic Ecolabelling of Products" dated 22 June 2011 or later versions.

_____ _____
Place and date Company

_____
Signature, contact person

_____ _____
Name (BLOCK CAPITALS) Phone

_____
Signature, marketing manager

_____ _____
Name (BLOCK CAPITALS) Phone

In the event of a change in personnel, a new declaration must be submitted to Nordic Ecolabelling.