The New Zealand Ecolabelling Trust

Licence criteria for Heating and Cooling Products

EC-61-22

The New Zealand Ecolabelling Trust
501 Karangahape Road,
Auckland CBD,
Auckland 1010
New Zealand

Ph: +64 9 845 3330
Email: info@environmentalchoice.org.nz
Website: www.environmentalchoice.org.nz

Specification change history

Minor clarifications, corrections or technical changes made since the specification was issued in October 2022.

Date	Version	Change

Table of contents

1 Introduction

Environmental Choice New Zealand (ECNZ) is an environmental labelling programme which has been created to help businesses and consumers find products and services that ease the burden on the environment. The programme results from a New Zealand Government initiative and has been established to improve the quality of the environment by minimising the adverse and maximising the beneficial environmental impacts generated by the production, distribution, use and disposal of products, and the delivery of services. The programme is managed by the New Zealand Ecolabelling Trust (the Trust).

ECNZ operates to the ISO 14024 standard "Environmental labels and declarations – Type I environmental labelling – Principles and procedures" and the Trust is a member of the Global Ecolabelling Network (GEN) an international network of national programmes also operating to the ISO 14024 standard.

ISO 14024 requires environmental labelling specifications to include criteria that are objective, attainable and verifiable. It requires that interested parties have an opportunity to participate and have their comments considered. It also requires that environmental criteria be set, based on an evaluation of the environmental impacts during the actual product or service life cycle, to differentiate product and services on the basis of preferable environmental performance.

The life cycle approach is used to identify and understand environmental issues (adverse or beneficial impacts) across the whole life of a product or service (within a defined product or service category). This information is evaluated to identify the most significant issues and from those to identify the issues on which it is possible to differentiate environmentally preferable products or services from others available in the New Zealand market. Criteria are then set on these significant and differentiating issues. These must be set in a form and at a level that does differentiate environmentally preferable products or services, is attainable by potential ECNZ licence applicants, and is able to be measured and verified. As a result of this approach, criteria may not be included in an ECNZ specification on all aspects of the life cycle of a product or service. If stages of a product or service life cycle are found not to differentiate environmentally preferable products or services, or to have insufficient data available to allow objective benchmarking in New Zealand, those stages will not generally be included in criteria in the specification. For some issues, however, (such as energy and waste) criteria may be set to require monitoring and reporting. These criteria are designed to generate information for future reviews of specifications.

The Trust is pleased to publish this specification for Heating and Cooling Products. The specification takes into account materials and processes harmful to the environment, energy and waste management, packaging, appropriate use, and efficacy of the products.

This specification sets out the requirements that Heating and Cooling Products will be required to meet in order to be licensed to use the ECNZ Label. The requirements include environmental criteria and product characteristics. The specification also defines the testing and other means to be used to demonstrate and verify conformance with the environmental criteria and product characteristics.

This specification has been prepared based on an overview level life cycle assessment, information from specifications for similar products from other GEN-member labelling programmes, relevant information from other ECNZ specifications, publicly available information, and information provided by interested parties.

This specification will be valid for a period of five years. Twelve months before the expiry date (or at an earlier date if required), the Trust will initiate a review process for the specification.

2 Background

Indoor air quality is important to maintain the health and wellbeing of occupants. Poor indoor environmental quality has become a major concern in homes, schools, and workplaces; it can lead to poor health, learning difficulties, and productivity problems. It is reported, that improved indoor air quality can lead to an improvement in health and productivity within a workplace.

Indoor air quality is a function of many parameters including outdoor air quality, the design of enclosed spaces, the design of the ventilation system, the way this system is operated and maintained and the presence of sources of contaminants and the strength of such sources. Indoor air should not contain contaminants that exceed concentrations known to impair health or cause discomfort to occupants. Such contaminants may comprise: various gases, vapours, micro-organisms, smoke and other particulate matter. These may be introduced from indoor activities, furnishings, building materials, surface coatings and air-handling or air treatment components (if they are poorly designed, operated, or maintained).

Improving indoor air quality can be achieved by:

- Air filtration: air-cleaning filters are designed to trap particulate matter (dirt, dust, and debris) and remove it from indoor air. Air-cleaning filters also reduce pollen and other allergens, which can cause asthmatic attacks and allergic reactions. There are many different types of air filters (HEPA, fibreglass, activated carbon and washable filters) and not all filters are able to remove the same types of contaminants from the air.
- Air purification: air purifiers are designed to eliminate bacteria, moulds and fungus from the air. These contaminants may arise from building materials, furnishings, and household products. The common types of air purifiers include ultraviolet light purifiers (ultraviolet light kills or inactivates microorganisms) and ionising purifiers (electrical current creates negatively and positively charged ions and these attach to airborne micro-organisms).
- Air moisture control: when there's excess moisture in the air, it becomes heavier and often more difficult to breathe. Moist, damp air is the ideal environment for mould to flourish and mould (microscopic fungi) can become dangerous in large quantities, putting occupants' health at risk. Symptoms of mould allergies can include: eye and throat irritation, skin rashes, sneezing, itchy throat and/or coughing, and they may contribute to asthma attacks. Dehumidifiers remove excess moisture from the air and may reduce mould formation. Common types of dehumidifiers include compressor (refrigeration process cools a metal plate on to which moisture from the air condenses) and desiccant (absorb water from the air using a desiccant).
- Dry air can also cause irritation, especially for people with respiratory illnesses. Humidifiers add moisture to the air, making it more comfortable to breathe. Common types of humidifiers include evaporative (releases water vapour into the air through its fan and wick filter) and steam ultrasonic (uses high-frequency sound waves to create water droplets that are released into the air). Steam ultrasonic humidifiers typically do not include a filter.

There are several kinds of air quality devices to choose from – some are designed to be installed inside the ductwork of a facility's central heating, ventilating, and air conditioning (HVAC) system to clean the air in the whole facility. Other types include portable products, which are designed to be used to improve the air quality in a single room or specific areas and are not intended for complete facility filtration. For added benefits, some air conditioning products combine air purifiers, dehumidifiers and humidifiers with air filtration products.

This specification addresses heating and cooling products that are marketed to improve indoor air quality. In creating this specification, we include criteria not only to ensure the products are properly

designed and maintained, but also criteria to address the effects these products have on climate change. Heating and cooling products contribute to climate change in two respects, through:

i electricity consumption and the greenhouse gas emissions associated with energy generation (indirect emissions) and

ii direct emissions of refrigerants which may have ozone depletion potential (ODP) and global warming potential (GWP).

In addition to refrigerants, blowing agents used to manufacture many insulation products (also used in heating and cooling products) may have a high ODP and/or high GWP.

The use of certain hazardous substances (e.g. in the electroplating of metals, phthalates used in plastics) during the manufacture of heating and cooling products is inevitable and within this specification we have included criteria to manage and minimises risks, as far as possible, which may arise from using these substances.

Consideration has also been given to the consumption of resources e.g. metals and plastic parts and this has been addressed through criteria in the specification on product design and collection and recycling systems.

This specification has drawn heavily from criteria and requirements that have been agreed and published by other GEN-member programmes, in particular with the Nordic Swan Ecolabel programme.

3 Interpretation

🌎 (Environmental Responsibility) means a criterion or sub-clause within the ECNZ specification which addresses an environmental concern.

🧑‍🤝‍🧑 (Social Responsibility) means a criterion or sub-clause within the ECNZ specification which addresses a social concern.

Air conditioner means a device capable of cooling and/or heating indoor air, using a vapour compression cycle driven by an electric compressor, including air conditioners that provide additional functionalities such as dehumidification, air-purification, ventilation or supplemental air-heating by means of electric resistance heating, as well as appliances that may use water (either condensate water that is formed on the evaporator side or externally added water) for evaporation on the condenser, provided that the device is also able to function without the use of additional water, using air only. Air conditioners are typically known as heat pumps in the New Zealand residential market.

Air purifier means a unit which usually consists of a filter, or multiple filters, and a fan that sucks in and circulates air. As air moves through the filter, pollutants and particles are captured and the clean air is pushed back out into the living space. Typically, filters are made of paper, fibre (often fiberglass), or mesh. There are various types of air purifiers: Ultraviolet Air Purifiers, HEPA Air Purifiers, Activated Carbon Air Purifiers, Ionic Air Purifiers, Electronic Air Cleaners, Central Air Cleaners and Air-To-Air Exchangers. Air purifiers are also referred to as 'air cleaners'.

Closed system means a system where the exchange of heat occurs by circulating the heat source side's heat transfer medium inside a closed system.

Dehumidifier means an electrical appliance which reduces and maintains the level of humidity in the air by extracting moisture from the air, usually for health or comfort reasons, or to eliminate musty odour and to prevent the growth of mildew. There are two types – dessicant (blow air through a rotating disk filled with moisture-absorbing material) or compressor (air condenses on a refrigerant coil into water droplets).

Energy management programme means a programme to achieve and sustain efficient and effective use of energy including policies, practices, planning activities, responsibilities and resources that affect the organisation's performance for achieving the objectives and targets of the Energy Policy.

Flame retardants means compounds that when added to manufactured materials, such as plastics, inhibit, suppress, or delay the production of flames to prevent the spread of fire.

GECA means Good Environmental Choice Australia.

GEN means Global Ecolabelling Network.

Global warming potential (GWP) is a measure of how much a gas is estimated to contribute to global warming. It is a relative scale that compares the contribution of the gas to that of the same mass of carbon dioxide (CO_2), which has a GWP of 1, over a defined time frame. e.g. methane has a GWP of 21 (100-year time frame). This means that, over 100 years, methane will be approximately 21 times more heat-absorptive than CO_2 per unit of weight.

HCFC means hydrochlorofluorocarbon.

HFC means hydrofluorocarbon.

HEPA means high efficiency particulate air. A HEPA filter is a type of mechanical air filter; it works by forcing air through a fine mesh that traps harmful particles such as pollen, pet dander, dust mites,

and tobacco smoke. In order to be classified as a HEPA filter, the filter must have efficiency at 99.97% on 0.3 micron and higher particle size.

Heat pump means a device that pulls heat from the cold outdoor air and transfers it indoors, and in warmer months, it pulls heat out of indoor air to cool the room/building (air-source heat pump). Ground-source heat pumps (or geothermal heat pumps) transfer heat between the air inside the room/building and the ground outside.

Humidifier means a device that adds moisture to the air**.** The common types of humidifiers include evaporative (releases water vapour into the air through its fan and wick filter) and steam ultrasonic (uses high-frequency sound waves to create water droplets that are released into the air).

HVAC means heating, ventilation and air conditioning, and this encompasses all of the air input, handling, conditioning and exhaust systems utilized in most industrial, commercial and multi-residential buildings. HVAC system has nine common components - the air filter, air return, blower, coils, compressor, condenser, ducts, electrical elements and exhaust outlets.

ISO means International Organisation for Standardisation.

Indoor air quality means the air quality within and around buildings and structures, especially as it relates to the health and comfort of building occupants.

Label means the Environmental Choice New Zealand Label.

MERV means minimum efficiency reporting value of a filter's ability to capture larger particles between 0.3 and 10 microns (μm). MERV ratings indicate an air filter's ability to remove pollutants from the air; the higher MERV rating, the higher its performance.

Ozone depleting potential (ODP) is a relative value that indicates the potential of a substance to destroy ozone gas (and thereby damage the Earth's ozone layer) as compared with the impact of a similar mass of chlorofluorocarbon-11 (CFC-11). CFC-11 is assigned a reference value of 1. e.g. a substance with an ODP of 2 is twice as harmful to the ozone layer as CFC-11.

Refrigerant means the chemical blend that cycles through an air conditioner, changing from a liquid to a gas as it absorbs and releases heat. Types of refrigerants include halocarbons (or 'Freons'), azeotropic refrigerants, zeotropic refrigerants, inorganic refrigerants (e.g. carbon dioxide, ammonia, water and air) and hydrocarbon refrigerants.

Safety Data Sheet (SDS) means a document that describes the properties and uses of a substance, that is, identity, chemical and physical properties, health hazard information, precautions for use and safe handling information in accordance with the New Zealand Chemical Industry Council – Preparation of Safety Data Sheets Code of Practice.

Ventilation: the process of supplying and removing air by natural or mechanical means to and from any space. Such air may or may not be conditioned.

Waste management programme means a programme to achieve and sustain efficient and effective minimisation and disposal of waste including policies, practices, planning activities, responsibilities and resources that affect the organisation's performance for achieving the objectives and targets of the Waste Policy.

4 Category definition

This category includes the following products:

- Air conditioners/ heat pumps with filters or air purification;
- Air purifiers – including Ultraviolet Air Purifiers, HEPA Air Purifiers, Activated Carbon Air Purifiers, Ionic Air Purifiers (bipolar ionisation technology, e.g. Needlepoint Bipolar Ionisation (NPBI) or Dielectric Barrier Discharge (DBD));
- HVAC (encompassing the whole system, including an air purifier);
- Humidifiers (with filters); and
- Dehumidifiers (with filters).

Products may be for domestic or commercial use.

The following products are excluded from this category:

- Heating and cooling products that do not include filtration;
- Ozone generating air purifiers;
- Vehicle air conditioning systems;
- Chiller systems; and
- Cooling towers.

To be licensed to use the Label, a product must meet all of the relevant environmental criteria set out in clause 5 and the product characteristics set out in clause 6.

5 Environmental criteria

5.1 Legal requirements

Criteria

a The applicant/licence holder must demonstrate how applicable environmental legal requirements are met, including that all necessary consents and permits are in place.

b Where the licence holder is not the manufacturer of the product(s), the licence holder must have a documented requirement for the manufacturer to manage its compliance with applicable environmental regulatory requirements (for example, via supply contract conditions).

Verification required

Conformance with this requirement shall be demonstrated by providing a written statement on regulatory compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by current documentation:

- Identifying the applicable regulatory requirements including specific obligations arising from permits, regulations, and plan rules;
- Demonstrating how compliance is monitored and maintained; and
- Copies of wording from supply contract conditions or other documented requirements for contract manufacturers (if applicable).

Verification of continued compliance with legal requirements will form part of the Licence Supervision Plan. This will include requirements, if any, for ongoing supervision assessment of downstream warehousing or other distribution activities.

Explanatory notes

Relevant laws and regulations applicable to the facilities that are manufacturing the ECNZ-licensed product and the licence holder's distribution and sales operations, could, for example, include those that relate to:

- Producing, sourcing, transporting, handling and storing raw materials and components for manufacture;
- Manufacturing processes;
- Handling, transporting, handling and disposing of waste products arising from manufacturing;
- Transporting product within and between countries; and
- Using and disposing of the product.

The documentation required may include, as appropriate:

Procedures for approving and monitoring suppliers and supplies;

- Information provided to customers and contractors regarding regulatory requirements;
- Evidence of a formal certified environmental management system (for example an ISO 14001 certificate) and supporting records on regulatory compliance (for example, copies of regulatory requirements registers, procedures to manage regulatory compliance, monitoring and evaluation reports on regulatory compliance, internal or external audits covering regulatory compliance and management review records covering regulatory compliance);

- Copies of published environmental, sustainability and/or annual reports expressly addressing environmental regulatory compliance (for example verified Environmental Statements prepared under the European EMAS regulations);
- Audit reports completed by independent and competent auditors addressing regulatory compliance (for example, reports for other eco-label licences or reports from regulator audits); and
- Participation by the supplier in the licence applicants/holder's own supplier audit programme.

It is not intended to require licence holders to accept increased legal responsibility or liability for actions that are outside their control. The Trust's intention is to ensure any potential for environmental regulatory non-compliance associated with an ECNZ labelled product is managed to a level that minimises risk of reputation damage to the ECNZ label and programme.

5.2 Modern slavery and social accountability 👭

Criteria

a The applicant/licence holder and aluminium smelting plant operator (if different) must have a policy/policies on human rights, diversity & inclusion, and anti-bullying. At a minimum, it should comprise:

- An explicit commitment to respect all internationally recognized human rights standards in the United Nations International Bill of Human Rights and the International Labour Organization (ILO) Declaration on the Fundamental Principles and Rights at Work (see below);
- Stipulations concerning the company's expectations of personnel, business partners and other relevant parties e.g. a code of conduct; and
- Information on how the company will implement its commitments and monitor compliance with it.

In addition to the above, the applicant/licence holder and aluminium smelting plant operator shall consider:

- Implementing the requirements of Social Accountability International Standard, SA8000.
- Being a Living Wage employer (or equivalent).
- Having a senior member of its organisation responsible for social and environmental sustainability.

b Where an applicant/licence holder and aluminium smelting plant operator has found instances of modern slavery in their business operations and or supply chains in the past two years, they must provide evidence of corrective action.

Explanatory note

Information on the United Nations International Bill of Human Rights and the ILO Declaration on the Fundamental Principles and Rights at Work is provided in Appendix B.

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or other authorised representative of the applicant/licence holder company. This statement shall be supported by the following documentation:

- Copies of the relevant policies, procedures and plans.

- Records demonstrating the plans are being effectively implemented (including monitoring results).

5.3 Product Design

5.3.1 Description of manufacturing process and materials

Criteria

Applicants/licence holders must provide the following information to the Trust as part of the assessment process:

a Information on all of the parts in the final product, stating the material type and the supplier (see Table A1 in Appendix A). Plastic and rubber parts weighing < 25 grams are exempt from the requirement;

b A description of the manufacturing process for the product including:

- the different stages of the process
- the production technology and environmental purification schemes for surface treatment and metal plating of parts.

c Supply chain information including material type, suppliers and geographical origin type (see Table A2 in Appendix A);

d Hazardous substances used in the production of the product and in surface treatment (see Table A3 in Appendix A).

Licence holders must maintain and update this information if it changes.

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer, or other authorised representative, of the applicant/licence holder company. This statement shall be supported by providing completed Tables A1-3.

5.3.2 Filters

Criteria

Products with filters must be designed so as not to prevent the use of high efficiency (MERV 13+) particulate air (HEPA) filters, either within the product itself or in the wider system (if the product is designed for use as part of a larger HVAC, air conditioner/heat pump, dehumidifier and air purification product).

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer, or other authorised representative, of the applicant/licence holder company. This statement shall be supported with documentation on the types of filter that can be used with the product.

5.3.3 Design and recyclability of plastic parts

Criteria

Primary plastics (excluding cables and re-used parts) and recycled plastics in the product(s), with a weight in excess of 25 grams and a flat surface in excess of 200 mm^2, must comply with the following:

a A maximum total of four different types of plastic alloys may be present in the housing and these must be separable from one another.

b Plastic casing parts greater than 25 grams shall consist of a single material which may be a homo-/copolymer or polymer blend (polymer alloy).

c Plastic parts must be identifiable in accordance with ISO 11469:2016 “Plastics – General identification and marking of plastic products”.

d It must be possible to dismantle plastic parts from other parts without special tools.

e Plastic parts must not be painted or coated in a way that reduces the recyclability of the material.

f Plastic parts must be visibly labelled after the product has been disassembled.

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer, or other authorised representative, of the applicant/licence holder company. This statement shall be supported with documentation including a list of all primary and recycled plastic parts that are greater than 25 grams and surface area 200 mm^2, if requested by ECNZ, and information demonstrating that each of the requirements (a)-(f) are met.

5.3.4 Design and recyclability of metal parts

Criteria

The product(s) shall meet the requirements for metals if metals contribute more than 5% of the weight of the product.

a It must be possible to separate the metal from other materials in the product without the use of special tools. This requirement does not apply to metals used in surface treatments.

b Metals must not be painted or coated in a way that reduces the recyclability of the material.

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer, or other authorised representative, of the applicant/licence holder company. This statement shall be supported by appropriate documentation of product specifications, production methods and quality controls.

5.3.5 Chemicals during production

Criteria

a The substances listed in Table 1 shall not be used in the end production of the products/machines, final supply stage of products or circuit boards, or during cleaning of parts for reuse.

Table 1: List of Prohibited CFCs and HCFCs

Main 5 CFCs	Trichlorofluoromethane	**HCFCs**	Chlorotrifluoroethane
	Dichlorodifluoromethane		Dichlorofluoroethane
	Trichlorotrifluoroethane		Chlorodiflouroethane
	Dichlorotetrafluoroethane		Chlororfluoroethane
	Chloropentafluoroethane		Hexachlorofluoropropane
Other CFCs	Chlorotrifluoromethane		Pentachlorodifluoropropane
	Pentachlorofluoromethane		Tetrachlorotrifluoropropane
	Tetrachlorodifluoroethane		Trichlorotetrafluoropropane
	Heptachlorofluoropropane		Dichloropentafluoropropane
	Hexachlorodifluoropropane		Chlorohexafluoropropane
	Pentachlorortrifluoropropane		Pentachlorofluoropropane
	Tetrachlorotetrafluoropropane		Tetrachlorodifluoropropane
	Trichloropentafluoropropane		Trichlorotrifluoropropane
	Dichlorohexafluoropropane		Dichlorotetrafluoropropane
	Chloroheptafluoropropane		Chloropentafluoropropane
	Carbon Tetrachloride		Tetrachlorofluoropropane
	1,1,1-Trichloroethane		Trichlorodifluoropropane
HCFCs	Dichlorofluoromethane		Dichlorotrifluoropropane
	Chlorodifluoromethane		Chlorotetrafluoropropane
	Chlorofluoroethane		Trichlorofluoropropane
	Tetrachlorofluoroethane		Dichlorodifluoropropane
	Trichlorodifluoroethane		Chlorotrifluoropropane
	Dichlorotrifluoroethane		Dichlorofluoropropane
	Chlorotetrafluoroethane		Chlorodifluoropropane
	Trichlorofluoroethane		Chlorofluoropropane
	Dichlorodifluoroethane		

b The content of lead, mercury, cadmium and their compounds, hexavalent chromium compounds, polybrominated biphenyl (PBB), and polybrominated diphenyl ether (PBDE) in the product shall not be greater than the limits in Table 2.

Table 2: Limits for Specific Chemical Substances

Chemical Substance	**Allowable content wt.%**
Lead and its compounds	≤ 0.1
Mercury and its compounds	≤ 0.1
Cadmium and its compounds	≤ 0.01
Hexavalent Chromium compounds	≤ 0.1
Polybrominated biphenyl (PBB)	≤ 0.1
Polybrominated diphenyl ether (PBDE)	≤ 0.1
Bis(2-ethylhexyl) phthalate (DEHP)	≤ 0.1

Butyl benzyl phthalate (BBP)	≤ 0.1
Dibutyl phthalate (DBP)	≤ 0.1
Diisobutyl phthalate (DIBP)	≤ 0.1

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer, or other authorised representative, of the applicant/licence holder company. This statement shall be supported with documentation including Safety Data Sheets.

5.4 Requirements for Plastic and Metal Materials

5.4.1 Electroplating of metal parts 🌎 👭

Criteria

a Metal parts may not be coated with cadmium or hexavalent chromium (also known as chromium trioxide) or their compounds.

b 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.

Verification Required

Conformance with these requirements shall be stated in writing and signed by the Chief Executive Officer or an authorised representative of the applicant/licence holder company. This statement shall be supported by documentation including:

- Details of any need for metal plating from the machine/product manufacturer; and
- Declaration from the manufacturer that the metal plating requirement is fulfilled.

5.4.2 Polyvinyl Chloride (PVC) 🌎 👭

The product shall meet the requirements below for plastics if plastics contribute more than 5 % of the weight of the product, unless otherwise specified.

Criteria

Information shall be provided to ECNZ at application and thereafter reported annually on PVC and/or phthalates used in the product(s). This should include information from production records and/or suppliers on:

a the percentages by weight of recycled and virgin PVC;

b the particular production processes (membrane cells, non-asbestos diaphragms, modified diaphragms, graphite anodes, mercury cells, closed-lid production etc) used to produce chlorine and vinyl chloride monomer (VCM) for the PVC being used in an ECNZ-licensed product (including the locations of the production);

c information, where available, on waste disposal, wastewater treatment and emissions to air (occupational exposure, emissions from the factory and emissions from the final PVC resin);

d information on any Environmental Management System (EMS) for the production process, including requirements for waste, water, air and product-related requirements;

e the types of stabilisers used;

f the types and amounts of any phthalate plasticisers present in recycled content of the PVC (if that information is available) and/or added when manufacturing PVC;

g research and initiatives implemented on substitutes for phthalates identified as of concern by regulators; and

h any product stewardship arrangements for the PVC.

NOTE: Regulators have identified the following phthalates to be of concern – dibutyl phthalate (DBP), diisobutyl phthalate (DIBP), butyl benzyl phthalate (BBP), di-n-pentyl phthalate (DnPP), di(2-ethlyhexyl) phthalate (DEHP), di-n-octyl phthalate (DnOP), diisononyl phthalate (DINP) and diisodecyl phthalate (DIDP). These phthalates may be prohibited by the Chemicals during production criteria in clause 5.2.5.

Verification Required

Conformance with these requirements shall be stated in writing and signed by the Chief Executive Officer or an authorised representative of the applicant/licence holder company. This statement shall be supported by appropriate documentation of product specifications and initial and ongoing annual reports to ECNZ on PVC and plasticisers used.

5.4.3 Flame retardants in plastic parts 🌎 👨‍👩‍👧

Criteria

a Hexabromocyclodecane (HBCDD), tetrabromobisphenol A (TBBP-A), tris(2-chloroethyl)phosphate (TCEP) 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:

- H350 may cause cancer
- H350i may cause cancer by inhalation
- H340 may cause genetic defects
- H360D may damage the unborn child
- H360F may damage fertility
- H360Df may damage the unborn child. Suspected of damaging fertility
- H360Fd may damage fertility. Suspected of damaging the unborn child

Exempt from this requirement are: plastic parts with a weight less than 25 grams, circuit boards, electronic components (for example resistors, capacitors, transformers and fans) and cable insulation material.

Verification Required

Conformance with these requirements shall be stated in writing and signed by the Chief Executive Officer or an authorised representative of the applicant/licence holder company. This statement shall be supported by documentation including listing the name and CAS number of all flame retardants used in plastic parts greater than 25 grams.

5.5 Refrigerants

Criteria

If present, refrigerants must have an ozone depleting potential (ODP) of zero and a global warming potential (GWP) of 10 or less.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant/licence holder company. The statement shall be supported by information identifying the refrigerants used and their ODPs and GWPs.

5.6 Blowing agents in insulation materials

Criteria

a Insulation materials shall not be manufactured using blowing agents with a global warming potential (GWP) of more than 25, measured over a 100-year timeframe.

b Blowing agents must have an ozone depleting potential (ODP) of zero.

c Blowing agents may not contain halogenated organic compounds.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant/licence holder company. The statement shall be supported by documentation identifying the blowing agents used and their ODPs and GWPs.

5.7 Noise

Criteria

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

Table 4.

Table 3: Requirements for air/air heat pump maximum sound power level (LWA)

Output < 6 kW		**6 < Output < 12 kW**	
Indoor part	Outdoor part	Indoor part	Outdoor part
50 dB	60 dB	55 dB	65 dB

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

Rated heat output ≤ 6 kW		**Rated heat > 6 kW and ≤ 12 kW**		**Rated heat > 12 kW and ≤ 30 kW**		**Rated heat > 30 kW and ≤ 70 kW**	
Sound power level (L_{WA}) Indoor part	Sound power level (L_{WA}) Outdoor part	Sound power level (L_{WA}) Indoor part	Sound power level (L_{WA}) Outdoor part	Sound power level (L_{WA}) Indoor part	Sound power level (L_{WA}) Outdoor part	Sound power level ($_{WA}$) Indoor part	Sound power level (L_{WA}) Outdoor part
55 dB	60 dB	60 dB	65dB	65 dB	70 dB	75 dB	80 dB

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant/licence holder company. The statement shall be supported by documentation showing the sound power level.

5.8 Energy consumption of air conditioners/heat pumps

Criteria

The energy rating of the air conditioner/heat pump product shall be 6 stars or above (for heating rating) at the time of the application and verification.

Verification Required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or other authorised representative of the applicant/licence holder company. This statement shall be accompanied by documentation showing the Minimum Energy Performance Standards (MEPS) or Energy Star rating for each product.

5.9 Energy management

Criteria

a The applicant/licence holder and product manufacturer must have effective energy management policies and procedures and/or an energy management programme for their operations.

b Licence holders must report annually to the Trust on energy management, including:
- Total energy use;
- Breakdown of total energy use to types of energy used;
- Energy use related to production (i.e. the embodied energy of a product);
- Initiatives taken to reduce energy use and improve energy efficiency;
- Initiatives taken to calculate and reduce CO_2 emissions associated with energy use;
- Initiatives taken to calculate CO_2 emissions per product (i.e. the embodied CO_2 of a product); and
- Initiatives or requirements for suppliers or contract manufacturers.

c Licence holders must have improvement objectives and targets for reduction of energy use related to production of ECNZ-licensed products, and associated CO_2 emissions, over time. Any divergence from objectives or targets should be explained in the annual report.

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer, or other authorised representative, of the applicant/licence holder company. This statement shall be supported by documentation (as relevant) that:

- Describes the energy management policies, procedures and programmes.
- Includes annual reports to the Trust on energy use and management.
- Details of performance against improvement objectives and targets relating to the reduction of energy use related to production of ECNZ-licensed products, and associated CO_2 emissions, over time.

Where an applicant/licence holder is a wholesale or retail supplier of the product(s), evidence that the manufacturer holds a current ECNZ-licence covering the relevant product(s) will be sufficient to demonstrate compliance with these requirements.

5.10 Waste management 🌎 👩‍👩‍👧

Criteria

a The applicant/licence holder and product manufacturer must have effective waste management policies and procedures and/or a waste management programme.

b Licence holders must report annually to the Trust on waste management including:
- Quantities and types of waste recovered for reuse internally and externally;
- Quantities and types of waste recycled internally and externally;
- Quantities and types of waste disposed of to landfill;
- Quantities and types of waste burned internally for energy recovery;
- Waste generation related to production;
- Initiatives taken to reduce waste generation and improve recovery/recycling of waste; and
- Initiatives or requirements for suppliers or contract manufacturers.

c Licence holders must have improvement objectives and targets for reduction of waste generation, and the increase of reuse and recycling rates over time, where practical. Any divergence from objectives or targets should be explained in the annual report.

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer, or other authorised representative, of the applicant/licence holder company. This statement shall be supported by documentation (as relevant) that:

- Describes the waste management policies, procedures and programmes;
- Includes annual reports to the Trust on waste generation, minimisation and management; and
- Details the improvement objectives and targets relating to the reduction of waste generation and the increase of reuse and recycling rates.

Where an applicant/licence holder is a wholesale or retail supplier of the product(s), evidence that the manufacturer holds a current ECNZ-licence covering the relevant product(s) will be sufficient to demonstrate compliance with these requirements.

5.11 Consumer information

Criteria

a The operation and instruction manual and installation guide must be available in English and supplied with the product, or available on the manufacturer's website.

b Information provided with the product must include:

- instructions on the installation / positioning of the product;
- information on the need for regular cleaning (e.g. of air filter and / or air-purifying filter);
- expected life of replaceable parts;
- disposal and replacement of used filters;
- disposal of the product at its end of life; and
- product stewardship arrangements, if any.

c For any environmental or health claims included on the product label, the licence holder must provide sufficient evidence to substantiate the claim.

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer, or other authorised representative, of the applicant/licence holder company.

- For part a and b, this statement shall be supported with a copy of the operation and maintenance manual, installation guide or other information (e.g. webpage, brochures, product specifications etc).
- For part c this statement shall be supported by evidence sufficient to substantiate the claim being made.

5.12 Packaging requirements

Criteria

a All primary packaging must be made of plastics that are able to be recycled in the country where the product is sold;

b Primary packaging must not be impregnated, labelled, coated or otherwise treated in a manner, which would prevent recycling (i.e. PVC sleeves, metallic labels);

c All plastic packaging must have a plastic resin identification code clearly visible on each item weighing more than 25 grams;

d Primary cardboard packaging shall consist of any combination of:

- Packaging approved under EC-60;

OR

- Recycled content;

AND/OR

- Waste wood or virgin fibre from native forests provided the forests are certified under the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC) as sustainably managed (or equivalent certification);

AND/OR

- Waste wood or virgin fibre from plantations (including from farm forests or wood lots), provided the plantations are legally harvested.

NOTE: Please see notes below for details of acceptable certifications for certified sustainable forest management and legally harvested wood.

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer, or other authorised representative, of the applicant/licence holder company. This statement shall be supported with the following documentation and evidence:

- Conformance with criterion (a) shall be supported by documentation verifying the packaging is recyclable;
- Conformance with criteria (b and c) shall be demonstrated by providing samples of all plastic containers and components, and information on their constituent parts and their recyclability; and
- Conformance with criterion (d) shall be supported by documentation from the packaging manufacturer verifying the source of all fibre in the cardboard packaging or by providing evidence that the packaging is covered by an Environmental Choice New Zealand Licence.

Explanatory notes for 5.11 d)

This Clause requires details of forest management certifications, chain-of-custody certifications, and physical controls for SFM certified wood through the supply chain from the forest to the manufacturer. It does not require that the finished product carry a FSC or PEFC (or equivalent) label, nor does it require any information about FSC or PEFC credits generated in the supply chain or assigned to the finished products.

Legal harvesting – for fibre and waste wood from plantations:

The following will be accepted as sources of information to demonstrate legal harvesting, where chain of custody evidence is available for virgin fibre sources:

- Forest Stewardship Council – “Certified” or “Controlled Wood” (www.fsc.org).
- Programme for the Endorsement of Forest Certification (PEFC) - “Certified” or “Controlled Sources” (www.pefc.org).

- SGS Timber Legality & Traceability Verifications service (TLTV) Verification of Legal Compliance certification (TVTL-VLC) (http://www.sgs.com/en/Public-Sector/Monitoring-Services/Timber-Traceability-and-Legality.aspx).
- Rainforest Alliance SmartWood Verification of Legal Compliance (VLC) certification (http://www.rainforest-alliance.org/forestry/verification/legal).
- System Verifikasi Legalitas Kayu - Timber Legality Verification System (SVLK) certified, or SVLK/PHPL (Pengelolaan Hutan Produksi Lestari – Sustainable Production Forest Management) certified (http://liu.dephut.go.id/).
- Sustainable Forest Management Plans (supported with Annual Logging Plans) that have been prepared and approved under the New Zealand Forests Act 1949 (amended in 1993).
- Evidence of legal harvesting from the Global Forest Registry (www.globalforestregister.org).

Sustainable Forest Management (SFM) – for fibre from native forests:

The FSC and PEFC certification schemes each have a range of certificates/labels. Some of these allow for wood/fibre from certified sustainably managed plantations or forests to be mixed with non-certified wood/fibre. Under FSC Mixed Credit or PEFC Volume Credit methods, wood/fibre or products associated with the certification claim or label may or may not actually contain wood/fibre from the certified sustainably managed source. Certifications for fibre from native sources accepted by The Trust are those which will ensure that fibre from sustainably managed native forests will be actually present in the final packaging used for ECNZ-licensed products. These are set out below.

Types of FSC claims on invoices or packing slips which can be used to demonstrate compliance with the SFM requirements:

- FSC 100 %;
- FSC Mix X % - Transfer or Percentage system (rolling average or batch); and
- FSC Mix Credit – only if the manufacturer can demonstrate that fibre from SFM is actually present in the ECNZ products.

FSC Controlled Wood does not demonstrate SFM.

Types of PEFC claims which can be used to demonstrate compliance with the SFM requirements:

- PEFC Certified – Physical Separation method;
- X % PEFC Certified – Average Percentage method; and
- X % PEFC Certified – Volume Credit method – only if the manufacturer can demonstrate that fibre from SFM is actually present in the ECNZ products.

PEFC Controlled Sources does not demonstrate SFM**.**

The following certification schemes will be accepted as equivalent to FSC or PEFC certification of SFM:

- Pengelolaan Hutan Produksi Lestari – Sustainable Production Forest Management certified (PHPL) (http://liu.dephut.go.id/); and
- Sustainable Forest Management Plans, supported with Annual Logging Plans, that have been prepared and approved under the New Zealand Forests Act 1949 (amended in 1993). These Plans must be prepared in accordance with Standards and Guidelines for the Sustainable Management of Indigenous Forests and guidance for preparing Sustainable Management Plans and Annual Logging Plans. Wood sourced from New Zealand indigenous forests covered by approved plans will be accepted as equivalent to FSC sustainably managed forest certification

provided compliance with the approved plans is demonstrated through independent on-site assessment.

For any other schemes to be considered, the applicant/licence holder will be required to provide detailed information that demonstrates the certification scheme is credible and equivalent.

6 Product characteristics

6.1 Product performance 🌎 👩‍👩‍👧‍👧

Criteria

The product must be fit for its intended use and conform, as appropriate, to relevant product performance standards.

Verification required

Conformance with this requirement shall be demonstrated by providing a written statement of compliance, signed by the Chief Executive Officer or other authorised representative of the applicant/licence holder company.

Conformance shall be supported by a statement and/or the following documentation:

- Demonstrating how compliance is monitored and maintained (including quality control and assurance procedures); and
- Records of customer feedback and complaints.

Test methods

- ANSI/ASHRAE Standard 55-2020 Thermal environmental conditions for human occupancy
- AS/NZS 3823 Performance of electrical appliances — Air conditioners and heat pumps:
  - Part 1.1: Non-ducted air conditioners and heat pumps - Testing and rating for performance
  - Part 1.2: Ducted air conditioners and air-to-air heat pumps - Testing and rating for performance
  - Part 1.4: Multiple split-system air conditioners and air-to-air heat pumps - Testing and rating for performance
  - Part 1.5: Non-ducted portable air-cooled air conditioners and air-to-air heat pumps having a single exhaust duct
  - Part 2: Energy labelling and minimum energy performance standards (MEPS) requirements
  - Part 3.1: Interaction of demand response enabling devices and electrical products - Operational instructions and connections for air conditioners.
  - Part 4.1: Air-cooled air conditioners and air-to-air heat pumps - Testing and calculating methods for seasonal performance factors - Cooling seasonal performance factor
  - Part 4.2: Air-cooled air conditioners and air-to-air heat pumps - Testing and calculating methods for seasonal performance factors - Heating seasonal performance factor
  - Part 4.3: Air-cooled air conditioners and air-to-air heat pumps - Testing and calculating methods for seasonal performance factors - Annual performance factor.
- ISO 5149:2014 Refrigerating systems and heat pumps (parts 1 – 4)

7 Requirements and notes for licence holders

Monitoring compliance

Prior to granting a licence, the Trust will prepare a plan for monitoring ongoing compliance with these requirements. This plan will reflect the number and types of products covered by the licence and the level of documentation appropriate to provide confidence in ongoing compliance with criteria. The plan will also reflect the nature of the licence holder (whether a manufacturer and supplier, a wholesale/retail supplier with contract manufacturing, or involved in other arrangements with contract manufacturing and brand ownership). It will specifically provide for supervision of the licence holder's contractual or other explicit arrangements with suppliers, customers or other agents/parties to ensure all relevant requirements of this specification and Licence Conditions are met (including those related to legal requirements, packaging and labelling, information about products, product claims and use of the Label). This plan will be discussed with the licence applicant and when agreed will be a condition of the licence.

As part of the plan, the Trust will require access to relevant quality control and production records and the right of access to manufacturing facilities. Relevant records may include formal quality management or environmental management system documentation (for example, ISO 9001 or ISO 14001 or similar).

The monitoring plan will require the licence holder to advise the Trust immediately of any noncompliance with any requirements of this specification which may occur during the term of the licence. If a non-compliance occurs, the licence may be suspended or terminated as stipulated in the Licence Conditions. The licensee may appeal any such suspension.

The Trust will maintain the confidentiality of identified confidential information provided and accessed during verification and monitoring of licences.

Using the Environmental Choice Label

The Label may appear on the wholesale and retail packaging for the product, provided that the product meets the requirements in this specification and in the Licence Conditions.

Wherever it appears, the Label must be accompanied by the words 'Heating and Cooling Products' and by the Licence Number e.g. 'licence No 1234'.

The Label must be reproduced in accordance with the ECNZ programme's keyline art for reproduction of the Label and the Licence Conditions.

Any advertising must conform to the relevant requirements in this specification, in the Licence Conditions and in the keyline art.

Failure to meet these requirements for using the Environmental Choice NZ Label and advertising could result in the Licence being withdrawn.

Appendix A: Tables

Table A1- Product description table

Product description including model name/number:									
Component description	**Weight**	**Component material as a % of finished product weight**							**Supplier to the licence applicant /holder**
		Metal %	**Plastic %**	***Other (please specify) %***	***Other (please specify) %***	***Other (please specify) %***	***Other (please specify) %***	***Other (please specify) %***	
e.g. Outer casing	*500 g*		*25 %*						*Supplier X*
Total % by material type:									**Total %:**

Complete one table for each similar product type;
Use % ranges where appropriate, e.g. Metal: 55 – 65 %
Do **not** include small parts such as screws, nuts, washers, etc.

Table A2- Component/process supplier information

Supplier name	Supplier address and contact details (include all manufacturing locations)	Component or process supplied
e.g. Supplier A	*Address Wiri, Auckland*	*Compressor*

Include each component and subcontracted processing operation.

Table A3- Hazardous Substances Description Table

Process/Type of Chemical	Trade Name	Chemicals Name	Supplier	Safety Data Sheet (SDS)		% added by weight
				Issue date	Copy provided to ECNZ (√)	
e.g. Adhesive						

Please complete one table for each heating or cooling product

Appendix B: Modern slavery and social accountability

B1 International Bill of Human Rights

In December 1948, the United Nations General Assembly adopted the Universal Declaration of Human Rights (UDHR). In December 1966, the UN General Assembly adopted two international treaties that would further shape international human rights: the International Covenant on Economic Social and Cultural Rights (ICESCR), and the International Covenant on Civil and Political Rights (ICCPR). These are often referred to as "the International Covenants." Together, the UDHR and these two Covenants are known as the International Bill of Human Rights.

The ICESCR and the ICCPR set out the civil, political, economic, social and cultural rights that everyone is entitled to:

ICESCR	**ICCPR**
• Freedom from discrimination • Right to equality between men and women • Right to life • Freedom from torture • Freedom from slavery • Right to liberty and security of person • Right to be treated with humanity in detention • Freedom of movement • Freedom of non-citizens from arbitrary expulsion • Right to fair trial • Right to recognition before the law • Right to privacy • Freedom of religion and belief • Freedom of expression • Right of peaceful assembly • Freedom of association • Right to marry and found a family • Right of children to birth registration and a nationality • Right to participate in public affairs • Right to equality before the law • Minority rights	• Freedom from discrimination • Right to equality between men and women • Right to work • Freedom to choose and accept work • Right to just and favourable conditions at work • Right to form trade unions • Right to strike • Right to social security • Right of mothers to special protection before and after birth • Freedom of children from social and economic exploitation • Right to an adequate standard of living • Freedom from hunger • Right to health • Right to education • Freedom of parents to choose schooling for their children • Right to take part in cultural life • Right to enjoy benefits of science • Right of authors to moral and material interests from works • Freedom to undertake scientific research and creative activity

B2 ILO Declaration

From ILO Declaration on the Fundamental Principles and Rights at Work, there are the following core labour standards:

Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87)

Right to Organise and Collective Bargaining Convention,1949 (No. 98)

Forced Labour Convention, 1930 (No. 29)

Abolition of Forced Labour Convention, 1957 (No. 105)

Minimum Age Convention, 1973 (No. 138)

Worst Forms of Child Labour Convention, 1999 (No. 182)

Equal Remuneration Convention, 1951 (No. 100)

Discrimination (Employment and Occupation) Convention, 1958 (No. 111)