



## The New Zealand Ecolabelling Trust

Licence Criteria for

# Copying Machines, Printers, Fax Machines and Multifunctional Devices

EC-24-17

The New Zealand Ecolabelling Trust  
P.O. Box 56533  
Dominion Road  
Mt Eden  
Auckland  
New Zealand

Ph + 64-9-845 3330  
Fax + 64-9 845 3331

Email: [info@enviro-choice.org.nz](mailto:info@enviro-choice.org.nz)  
Website: <http://www.enviro-choice.org.nz>

## Specification change history

Minor clarifications, corrections or technical changes made since the specification was last reviewed and issued in April 2017.

Date	Version	Change
02/08/17	August 2017	Update 5.4.1(b), (c), (d) to reflect that EU Standard 67/548/EEC has been superseded by EC 1272/2008. Correct typographical errors in Appendix 1. Correct Appendix 5 to include all criteria that are in addition to Eco Mark criteria.

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# 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.

ECNZ operates to the ISO 14024 standard "Environmental labels and declarations - Guiding principles". This requires environmental labelling specifications to include criteria that are objective, reasonable 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 ECNZ programme is managed by the New Zealand Ecolabelling Trust (the Trust). The Trust is a member of the Global Ecolabelling Network (GEN) an international network of national programmes also operating to the ISO 14024 standard.

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 copying machines, printers, fax machines and multifunctional devices. As a member of the Global Ecolabelling Network, ECNZ is working with other members to harmonise specifications for environmental labels, while still appropriately reflecting local environmental and life cycle issues. Accordingly, the current specification incorporates common criteria for copiers and printer, developed and agreed with the Japan Eco Mark programme. The result of this alignment with the Eco Mark programme is a streamlining of the assessment process, whereby products which hold a current Eco Mark licence will meet the majority of the ECNZ criteria. Evidence that a machine has a current Eco Mark (or in some cases a Blue Angel) licence will be accepted by ECNZ as sufficient to demonstrate compliance with common criteria.

In this specification, ECNZ aligns with the Eco Mark specification for *Imaging Equipment such as Copiers, Printers* (product category 155, version 1.2, July 2016). Products holding Eco Mark licences under the (now expired) categories for Copiers (product category no. 117, expired 30 April 2017) and Printers (product category no. 122, expired 30 April 2017) will be accepted until 30 April 2018 (i.e., 1 year after the expiration of the Eco Mark criteria).

A cross-reference table for the criteria included in this specification and those included in the above versions of the Eco Mark specifications is provided in Appendix 1. Where relevant, other common ECNZ criteria have also been included in this proposed revised specification.

This specification sets out the requirements that copying machines, printers, fax machines and multifunctional devices 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 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 further review process for the specification.

## 2. BACKGROUND

Copiers, printers, fax machines and multifunctional devices are amongst the most extensively used office products in New Zealand. The main environmental impacts of these products occur during their use and disposal phases. Avoiding polluting emissions and waste, minimising resource use, and maximising materials reuse and recycling are important aims of environmental protection. Actions to pursue these aims help to prevent contaminant discharges to the environment, protect resources and save disposal site space.

Based on a review of currently available information, the following product category requirements will produce environmental benefits by:

- reducing energy consumption, air emissions and noise;
- conserving resources and minimising waste through improved durability, reuse and recycling of parts and packaging;
- reducing the environmental impacts associated with the use of hazardous substances.

This proposed revised specification has drawn heavily from criteria and requirements that have been agreed and harmonised by other (GEN) member programmes, in particular with Japan Eco Mark. Mutual recognition criteria devised by Eco Mark, Nordic Swan and Blue Angel, and Common Core Criteria, previously agreed upon by Environmental Choice New Zealand and Eco Mark, have been included in this proposed revised specification, where relevant. Further work on harmonised criteria is planned by GEN members. Environmental Choice New Zealand will continue to monitor this work. As information and technology change, product category requirements will be reviewed, updated and possibly amended.

## 3. INTERPRETATION

Back-side printing means printing on the blank side of a sheet of paper which already has one side printed, for example, by putting the page back into a paper feed tray.

Copolymer means a polymer consisting of two or more types of monomer.

Copy/ Print Speed mean the number of A4 sheets copied/ printed per one minute, given as Pages Per Minute (PPM), Copies Per Minute (CPM) or Impressions Per Minute (IPM). A double-sided copy or print is counted as two sheets. For monochrome printers it is determined in accordance with ISO/IEC 10561:1999. There is no standard for colour printers. For Large Format printers, printing speed is determined by converting the number of sheets printed per minute, using the maximum page size for that printer, to A4 equivalents as follows: 4 times the PPM for A2; 8 times the PPM for A1; and 16 times the PPM for A0.

Double-sided Printing means automatic printing on both sides of a sheet of paper.

Energy Management Programme means a programme of actions to achieve and sustain efficient and effective use of energy.

HFCs mean hydrochlorofluorocarbons.

Homopolymer means a single polymer, or a polymer consisting of one type of monomer.

IPM means Impressions per Minute. See "Copying/Printing Speed" above for further details.

ISO means International Organisation for Standardisation.

Label means the Environmental Choice New Zealand Label.

Large Format Printer/Copier means a printer capable of printing A2 or larger size sheets, or a copier capable of copying A2 or larger size sheets. It includes models that use rolls of paper with a width of 406 mm or greater.

Low Power Mode means the low power consuming condition which the machine automatically switches to after a set period of inactive time.

Multifunctional Device (MFD) means a machine with a printing function as one of its standard features, plus one or more of the additional standard functions of copying, scanning or facsimile.

OECD means Organisation for Economic Co-operation and Development.

Parallel Equipment means marking technology using multiple light sources and photoconductor drums to enhance the maximum speed of colour printing.

Recovery Rate means the mass rate of equipment or consumables which have been put into the recovery process; or the mass rate of all parts that are reused, recycled, energy recovered, converted to oil, processed via gasification, or subject to blast furnace reduction or conversion to chemical materials by a coke oven.

Recycled Plastic means plastic material made from pre or post consumer materials.

Post-Consumer: Material generated by households, or by commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

Pre-Consumer: Material diverted from the waste stream during a manufacturing process. Excluded is re-use of materials such as rework, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

RAL-UZ171 is the Blue Angel specification for *Office Equipment with Printing Function (Printers, Copiers, Multifunction Devices)*.

Recycled Plastic Part means a plastic part that contains recycled plastics.

Reused Part means a part reused in a product, which was previously used in another product.

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.

Serial Equipment means marking technology using one photoconductor drum and using one or multiple light sources to produce multi-colour hard copies.

Sleep Mode means the secondary low power consuming condition which the machine automatically switches to following a set period of inactive time in low power mode.

TVOC means total volatile organic compounds, and is the total of concentrations of identified and unidentified volatile organic compounds, which elute between n-hexane to n-hexadecane (inclusive), during gas chromatographic separation on a nonpolar column, in

## 4. CATEGORY DEFINITION

This category includes the following:

**Copying machines:** a commercially available electrostatic image reproducing unit, the function of which is to produce a duplicate of a graphic original paper copy. The copying machine must as a minimum contain a system for inking paper, an image projecting system and a paper-handling unit.

**Printers:** a commercially available image or text reproducing unit for printing out on paper from single user or network linked computers. The printers encompassed by the criteria may be based on various print technologies such as electrophotographic (laser/LED), thermosensitive, ink jet or matrix technology. Printers that can receive information directly from a memory card or a digital camera are also included.

Ticket vending machines at transport stations, order ticket issuing machines to serve people waiting in a queue, cash registers, and search equipment for use in medical facilities or public libraries are not included in this product category.

**Telefax/fax machines:** a commercially available image-reproducing unit, the function of which is to transmit or receive information. The machine must be capable of producing a duplicate of a graphic original paper copy that has been transferred over the telecommunications network. Similarly, the machine must be capable of transmitting data from a graphic original to other equivalent equipment via the telecommunications network. The fax machines encompassed by this product group may be based on various types of print technology, such as laser, LED, ink jet, matrix or thermal technology.

**Printer/fax combinations:** a commercially available image-reproducing unit which in every respect functions in the same way as a printer (see definition) and telefax machine (see definition).

**Multifunction Devices (MFDs):** a physically integrated electrostatic, inkjet or thermosensitive image reproducing unit or combination of functionally integrated components, the primary function of which is to print, but which is also capable of copying, scanning or of receiving and sending faxes.

**Extra equipment:** the above products also include various consumables, such as OPC kits, photoconductor drums, toner powder and residual toner cartridges. If extra equipment such as desks, sorters, feeders and external scanners are to be included in the product licence, the individual parts must meet the applicable requirements for design, materials, chemical requirements during production, packaging and recycling.

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

Many of the criteria in this specification have equivalent criteria in the applicable Eco Mark specifications for printers, copiers, and MFDs. The criteria in this specification that do not have equivalent criteria in the Eco Mark specifications are listed in Appendix 5. For products that hold a current Eco Mark certification, the Licence applicant must demonstrate conformance with the additional criteria listed in Appendix 5.

## 5. ENVIRONMENTAL CRITERIA

### 5.1 Legal Requirements

*Criteria:* The product must comply with the provisions of all relevant environmental laws and regulations that are applicable during the product's life cycle.

#### *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. This statement shall be supported by documentation identifying the applicable regulatory requirements including specific obligations arising from permits, regulations, and rules, and demonstrating how compliance is monitored and maintained.

Where the Licence applicant/holder is not the manufacturer of the copying machines, printers, fax machines or multifunctional devices, information must be provided on environmental regulatory compliance of the manufacturing facility. 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 and disposing of waste products arising from manufacturing;
- transporting products 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; and
- 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).
- Participation by the supplier in the licence applicants/holders 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 Product Design

### 5.2.1 Design Requirements

*Criteria:* Products must meet the following requirements:

- a. Equipment shall meet the requirements included in Appendix 2 "3R Design of Equipment and Consumables".
- b. Plastic casing parts greater than 25 g shall consist of a single material which may be a homo-/copolymer or polymer blend (polymer alloy).
- c. A maximum total of four different types of plastic alloys may be present in the housing and these must be separable from one another.
- d. If labels, markings or stickers are difficult to remove they must be made of the same material as the part to which they are attached and/or must not be impregnated, labelled, coated or otherwise treated in a manner, which would prevent recycling.

#### *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 company. This statement shall be supported by documentation including:

- completed 3R checklist;
- for (b), list of plastic components > 25 g and type of polymer for each;
- for (c), photographs showing plastic parts labelling; and
- information from recyclers indicating that labelling of parts does not prevent recycling.

### 5.2.2 Design and recyclability of plastic and metal parts

#### *Criteria*

Primary plastics (excluding re-used parts) and recycled plastics, with a weight in excess of 25 grams and a flat surface in excess of 200 mm<sup>2</sup> must comply with the following:

- a. Must be identifiable in accordance with ISO 11469:2000(E) "Plastics – General identification and marking of plastic products".
- b. Must be possible to dismantle without special tools.
- c. Must not be painted or varnished in a way that reduces the recyclability of the material.
- d. Must be visibly labelled after the machine has been disassembled.

#### *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 company. This statement shall be supported by documentation including a list of all primary and recycled plastic parts that are greater than 25 grams and surface area 200 mm<sup>2</sup>, if requested by ECNZ and information demonstrating that each of the requirements (a)-(d) are met.

## 5.3 Requirements for Plastic and Metal Materials

### 5.3.1 Recycled or Reused Plastic Parts

#### *Criteria*

- a. At least one part of the product, which is greater than 25 grams in weight, shall be made of reused plastic or recycled plastic.
- b. If recycled plastic parts are used, the following shall be reported:
  - Name/identification of the recycled plastic parts,
  - Weight of the recycled plastic parts; and
  - Percentage of recycled parts used in the product (e.g. X %, X-Y % or >X %)

#### *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 company. This statement shall be supported by documentation including:

- Identification of at least one part with weight greater than 25 grams and demonstrating it is made of reused or recycled plastic; and
- The information requested in part b), if applicable.

### 5.3.2 Additives in Plastic Casing Parts

#### *Criteria*

- a. Polybrominated biphenyl (PBB), polybrominated diphenyl ether (PBDE) or chlorinated paraffins (having a chain of 10 to 13 carbon atoms and a chlorine concentration of more than 50 %) shall not be added to plastic casing parts and printed circuit boards.
- b. Plastic casing parts greater than 25 g shall not be made with polymers containing halogens.
- c. Flame retardants containing organohalogen compounds shall not be added to plastic casing parts.

This criterion does not apply if:

For copiers: the collection rate<sup>1</sup> is greater than 80% and at least 95% of the plastic casing parts collected, which contain brominated flame retardants, are recycled, AND of the total mass of plastic casing parts in a product which contain brominated flame retardants, at least 15% is recycled or reused material collected as part of the manufacturer's take-back system.

OR

For Printers and printer-based MFDs:

at least 95 % of the plastic casing parts collected, which contain brominated flame retardants, are recovered and at least 50% are recycled; AND

one or more of the plastic casing parts that are greater than 50 g and contain brominated flame retardants shall be a recycled plastic part and at least 10% of this part shall comprise recycled material collected as part of the manufacturer's take-back system.

There is no minimum collection rate for laser printers and MFDs whose main function is a printer, however, the collection rate achieved should be reported.

- d. Names and CAS numbers or the code number according to ISO1043-4 shall be reported for all flame retardants used in plastic casing parts greater than 25 g.

- e. Plastic casing parts greater than 25 g shall not contain substances classified, in accordance with Table 3.1 in Appendix VI of Regulation 1272/2008/EC as:
- Carcinogenic: according to Category 1A or 1B,
  - Mutagenic: according to Category 1A or 1B, or
  - Toxic to Reproduction: according to Category 1A or 1B.

Antimony trioxide is excluded from requirement e) for products which meet the exceptions in requirement c).

Criteria (c) – (e) do not apply to:

- Fluoroorganic additives used to improve the physical properties of plastics, provided that they are not present in concentrations greater than 0.5 wt%,
- Fluorinated plastics, e.g. PTFE
- Special plastic parts which are installed in the direct vicinity of heating and fusing units; and
- Large plastic casing parts made of plastics which are demonstrably reused and marked in accordance with ISO11469.

#### *Explanatory Notes*

<sup>1</sup> The collection rate is the rate for a set time period for a group of products (classified as a single category according to indices such as copy speed).

<sup>2</sup> This may be a total for all product groups applying for an Environmental Choice New Zealand licence. Separate reporting for each product group is not required.

#### *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 company. This statement shall be supported by documentation:

- identifying the plastic materials used, and whether polymers containing the prohibited substances in a), b) and e) have been used;
- including the following for requirement c)
  - a. description of collection flow;
  - b. description of treatment flow;
  - c. applicable collection and recycling districts;
  - d. list of collectors and companies handling material recycling.
  - e. provision of information to users via instruction manuals or labels on:
    - i. if users are charged for collection;
    - ii. contact number to request collection; and
    - iii. indication that used products are collected/recycled after use;
  - f. management system:
    - i. tracking of collection and treatment volumes;
    - ii. instructions provided to collection and recycling companies; and
    - iii. management of records.
  - g. description how to determine whether products are of the same product group, and list of products belonging to the same product group;
  - h. results of calculating the collection rate, and the applicable period;
  - i. results of calculating recycling rates; and

- j. total mass of plastic casing parts containing brominated flame retardants which have been recycled or reused as part of the manufacturer's take-back system; and
- listing the name and CAS number of all flame retardants used in plastic casing parts greater than 25 g.

### 5.3.3 Photoconductor Drums

#### Criteria

- a. Photoconductor drums shall not intentionally contain selenium, cadmium, lead, mercury or their compounds.
- b. Systems for collecting and recycling photoconductor drums shall be available.  
Parts which cannot be recycled shall be processed/ disposed of in an environmentally sound manner (i.e. direct disposal to landfill should only be used where more environmentally benign options are not available).

#### 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 company. This statement shall be supported by documentation including:

- the type of photoconductor drums used, for example, product specifications and/or safety data sheets; and
- information about the collection and material recycling system.

### 5.3.4 Chemicals during Production

#### Criteria

- a. The substances listed in Table 1 shall not be used in the end production of the 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		Chlorodifluoroethane
	Dichlorotetrafluoroethane		Chlorofluoroethane
	Chloropentafluoroethane		Hexachlorofluoropropane
Other CFCs	Chlorotrifluoromethane		Pentachlorodifluoropropane
	Pentachlorofluoromethane		Tetrachlorotrifluoropropane
	Tetrachlorodifluoroethane		Trichlorotetrafluoropropane
	Heptachlorofluoropropane		Dichloropentafluoropropane
	Hexachlorodifluoropropane		Chlorohexafluoropropane
	Pentachlorotrifluoropropane		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. For copiers and MFDs, 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.

Parts exempt from the requirements in Clause 5.3.4 b) are listed in Appendix 3.

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

*Verification Required*

Conformance with these requirements shall be stated in writing and signed by Chief Executive Officer or an authorised representative of the applicant company. This statement shall be supported with documentation, including Safety Data Sheets.

## 5.4 Requirements for Toner and Ink Consumables

### 5.4.1 Toner and Ink

*Criteria*

- a. Mercury, lead, cadmium, chromium (VI) and nickel or their compounds must not be included as constituent parts of toners and inks.  
Complex compounds of high molecular weight nickel included as colouring agents are excluded from this requirement.
- b. Toners and inks must not contain components that are required to be labelled with the following hazard statement codes under Regulation (EC) No. 1272/2008 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances:
- H340 may cause genetic defects
  - H341 suspected of causing genetic defects
  - H350 may cause cancer
  - H350i may cause cancer by inhalation
  - H351 suspected of causing cancer
  - H360D may damage the unborn child

H360F may damage fertility  
 H361d suspected of damaging the unborn child  
 H361f suspected of damaging fertility

- c. Toners and inks must not contain substances that would result in the whole product requiring labelling with a hazard pictogram under Regulation (EC) No. 1272/2008.  
 Applicable hazard categories are explosive, oxidising, highly flammable, extremely flammable, toxic, very toxic, harmful, irritant, corrosive and dangerous for the environment.
- d. Toners and inks must not contain substances that would result in the whole product requiring labelling as H317 (may cause an allergic skin reaction) under Regulation (EC) No. 1272/2008.
- e. Azo dyes or pigments which may release one of the amines listed in Table 3 must not be used in toner or inks.
- f. Toner and ink shall give a negative result in the Ames test for mutagenic properties and assumed linked carcinogenic properties.

Table 3: List of Prohibited Amines

Amine	CAS-number
4-amino-biphenyl	92-67-1
Benzidine	92-87-5
4-chloro-toluidine	95-69-2
2-naphtylamine	91-59-8
o-aminoazo-toluene	97-56-3
2-amino-4-nitro-toluene	99-55-8
p-chloroaniline	106-47-8
2,4-diamino-anisol	615-05-4
4,4'-diamino-diphenylmethane	101-77-9
3,3'-dichlorobenzidine	91-94-1
3,3'-dimethoxybenzidine	119-90-4
3,3'-dimethylbenzidine	119-93-7
3,3'-dimethyl-4,4'-diamino-diphenylmethane	838-88-0
p-cresidine	120-71-8
4,4'-methylenebis(2-chloroaniline)	101-14-4
4,4'-oxydianiline	101-80-4
4,4'-thiodianiline	139-65-1
o-toluidine	95-53-4
2,4-toluidinediamine	95-80-7
2,4,5-trimethylaniline	137-17-7
o-anisidinedimethoxyaniline	90-04-0
4-animoazobenzene	60-09-3

#### Verification Required

Conformance with these requirements shall be demonstrated by providing a written statement of compliance, signed by the Chief Executive Officer or other authorised representative of the Applicant company. This statement shall be supported by documentation (as relevant) that:

- identifies the toners or inks used and their ingredients;
- includes SDS (safety data sheets) or other information to demonstrate the risks, if any, assigned to the toners or inks used; and

- a report of the results of the Ames test. The report should include:
  - a. name of the testing institute,
  - b. name of the tested substances,
  - c. exact testing method used,
  - d. testing period,
  - e. strains used, and
  - f. test result.

### *Testing Method*

The Ames test or assay was developed by Dr. Bruce Ames and others in 1975. There are various methods used for the Ames test depending on the substances being tested. Different substances may require the use of either plate incorporation or preincubation methods, may need to be tested with different bacterial strains, or may require specific test conditions. Details of the specific method used should be included in the supporting information to ECNZ.

### 5.4.2 Toner Cartridges, Toner Containers, Ink Cartridges and Ink Ribbon Cartridges

#### *Criteria*

- a. Toner cartridges, toner containers, ink cartridges and ink ribbon cartridges shall meet the requirements on design included in Appendix 2 "3R Design of Equipment and Consumables";
- b. Polybrominated biphenyl (PBB), polybrominated diphenyl ether (PBDE) or short-chained chlorinated paraffin (having a chain of 10 to 13 carbon atoms and a chlorine concentration of 50 % or more) shall not be added to plastic parts of toner cartridges, toner containers, ink cartridges or ink ribbon cartridges.
- c. Collection and recycling systems must be available for toner cartridges, toner containers and ink cartridges.
- d. The reuse and material recycling rate of collected toner cartridge parts shall be more than 50 % of the overall cartridge weight (excluding toner). The recovery rate of collected toner and ink cartridges or toner containers shall be more than 95 % of the overall cartridge/container weight (excluding toner). Parts which cannot be recovered shall be processed or disposed by environmentally sound means (i.e. direct disposal to landfill should only be used where more environmentally benign options are not available).
- e. Plastic parts of toner and ink cartridges, toner containers and ink ribbon cartridges shall consist of a single material which may be a homo-/copolymer or polymer blend (polymer alloy).
- f. If labels, markings or stickers are difficult to remove they must be made of the same material as the part to which they are attached and/or must not be impregnated, labelled, coated or otherwise treated in a manner, which would prevent recycling.
- g. Toner cartridges and toner containers shall be sealed to prevent leakage of toner during storage.

#### *Verification Required*

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

- a completed 3R checklist;
- identifying the plastic materials used, and whether polymers containing the prohibited substances in b) – c) have been used;
- details of the collection system;

- overall cartridge weight (excluding toner), how parts are reused, how parts are recycled, and the recovery system used;
- the recovery rate and any environmentally sound disposal systems used;
- photographs or samples showing labelling and sealing of the toner cartridge; and
- information from recyclers indicating that labelling of parts does not prevent recycling.

## 5.5 Batteries

### Criteria

- Cadmium, mercury, lead or their components shall not be intentionally added to batteries.
- Batteries shall be able to be replaced or removed without removing the circuit board on which the battery is mounted.
- All used batteries must be properly disposed of by the New Zealand supplier and/or distributor in accordance with local and national legislation.

### Verification Required

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

- from the applicant's battery supplier indicating that the prohibited metals are not included;
- photographs etc. which demonstrate that the batteries are easily removable; and
- information on procedures and methods for local disposal of used batteries.

## 5.6 Air Emissions

### Criteria

- The emission of powder dusts and ozone during the operation phase of monochrome equipment and colour equipment shall meet the limits in Table 4 below.
- The emission of total volatile organic compounds (TVOC), styrene and benzene during the operation phase and ready phase of monochrome equipment, and the monochrome and colour operation phases of colour equipment shall meet the limits in Table 4.

The requirements in Table 4 are not applicable to printers or copiers which use rolls of paper and which print over 60 IPM, or to ink jet, wire dot or thermosensitive printers.

If the emission rate during the colour operation phase of colour equipment is below the limits for monochrome copying, emissions tests during the monochrome phase are not required.

Table 4 – Limits for Emissions (mg/h) of Powder Dust, Ozone and VOCs

		≤A3		A2≤ and ≤A0	>A0	
		Monochrome Phase	Colour Phase	Monochrome / colour	Monochrome / colour	
Powder Dust		≤ 4.0	≤ 4.0	≤ 16	≤ 22	
Ozone		≤ 1.5	≤ 3.0	≤ 7.8	≤ 11	
TVOC	Print Phase	≤ 10	≤ 18	≤ 39	≤ 55	
	Ready Phase	Floor-mounted	≤ 2.0	≤ 2.0	≤ 2.0	≤ 2.8
		Tabletop	≤ 1.0	≤ 1.0	≤ 2.0	≤ 2.8
Styrene		≤ 1.0	≤ 1.8	≤ 4.7	≤ 6.6	
Benzene		< 0.05	< 0.05	< 0.2	< 0.3	

- Records shall be kept as follows:

- For ink jet printers, wire dot printers and thermosensitive printers: TVOC emitted during operation
  - For colour ink jet printers, wire dot printers and thermosensitive printers: TVOC during both colour printing and monochrome printing shall be recorded. If the emission rate during the colour printing is  $\leq 10$  mg/h, measurement during the monochrome phase is not required.
  - For large-format copiers or copiers exceeding 70 IPM: dust, ozone and TVOC emissions
- The measurement method used shall be based on that described in Appendix S-M of RAL-UZ-171 or RAL-UZ-205, and on the additional conditions in Table 5, below (if applicable).

Table 5 – Additional Measurement Conditions for Emissions Tests

Printer/Copier Type	Sheet	Test Text
Ink Jet Printers, Large format copiers	A4 or the largest size that can be printed by the product	Use A4 test text or enlarge/compress the A4 text into the largest size that can be printed by the product.
Wire Dot Printers	A4 or the widest size of the stack form	Use A4 test text or enlarge/compress into the size that complies with the widest stack form that can be printed by the product.

*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 company. This statement shall be supported by test reports from a laboratory competent to perform the test methods.

*Testing Method*

RAL-UZ-171 is the Blue Angel criteria document for Office Equipment with Printing Function (Printers, Copiers, Multifunction Devices). The relevant test methods are set out in Appendix S-M of that document. Copies of RAL-UZ-171 can be obtained from the Blue Angel web site [www.blauer.engel.de](http://www.blauer.engel.de). For equipment that was tested before RAL-UZ171 was issued (July 2012), test results according to Appendix 2 of RAL-UZ122 are acceptable. RAL-UZ-205 is also acceptable.

## 5.7 Noise

*Criteria*

Sound power levels in operating mode for copiers, printers and multifunctional devices shall meet the limits set in Table 6 below:

Table 6 – Maximum Noise levels for Copiers, Printers and MFDs.

Equipment Type	Declared A-weighted Sound Power Level ( $L_{WAd}$ ) (B)	
	Monochrome	Colour
Existing licensed products, until 30/04/18:		
Electrophotographic Printers, Thermosensitive Printers, Ink Jet Printers and MFDs	$\leq 0.035 \times S_{bw} + 5.9$ and $\leq 7.5$	Parallel equipment: $\leq 0.03 \times S_{co} + 6.1$ and $\leq 7.5$ . Serial equipment: Submit reference values for $S_{co} < 0.5 S_{bw}$
Wire Dot Printers	$\leq 7.2$	-
New products, and all products after 30/04/18		
Electrophotographic copiers, printers, fax machines and MFD	$\leq 0.35 \times S_{mo} + 59$ and $\leq 75$	Parallel equipment: $L_{WAd} \leq 0.3 \times S_{co} + 61$ and $\leq 75$ . Serial equipment: Submit reference values for $S_{co} < 0.5 S_{mo}$

Equipment Type	Declared A-weighted Sound Power Level ( $L_{WA(d)}$ ) (B)	
	Monochrome	Colour
Impact copiers, printers, fax machines and MFD	$\leq 72$	-
Ink Jet (except large format), high performance ink jet, direct thermal, dye sublimation, solid ink, or thermal transfer copiers, printers, fax machines and MFD	$\leq 0.35 \times S_{mo} + 59$ and $\leq 75$	$\leq 0.3 \times S_{co} + 61$ and $\leq 75$
Ink jet (large format) printers and MFD	$\leq 75$	$\leq 75$
Scanners	$\leq 0.35 \times S_{mo} + 59$ and $\leq 75$	$\leq 0.3 \times S_{co} + 61$ and $\leq 75$

Where:  $S_{bw}$  &  $S_{mo}$  = Operating speed in IPM for monochrome copying/printing;  $S_{co}$  = Operating speed in IPM for colour copying/printing

This requirement is not applicable to products whose  $IPM > 70$  and ink jet Large Format Devices. However, as a reference value, the declared A-weighted sound power level  $L_{WA(d)}$  based on the same method shall be recorded.

#### *Explanatory Notes*

For Large Format Copiers/Printers, the IPM may be counted on an A4 basis. For ink jet and thermosensitive small format equipment, the IPM (monochrome and colour) may also be counted on an A4 basis.

#### *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 company. This statement shall be supported by documentation of measurements made in accordance with ISO 7779 and declared according to ISO 9296.

#### *Testing Method*

The noise emissions shall be measured in accordance with the method specified in ISO 7779:2010 "Acoustics – Measurement of airborne noise emitted by information technology and telecommunications equipment", and the declared A-weighted sound power level,  $L_{WA(d)}$ , shall be determined in accordance with ISO 9296:1988 "Noise emitted by computer and business equipment, Part 3. Method of determining and verifying declared noise emission values". The mode of operation shall be single-sided printing/copying. These standards should be available through national standards agencies (in New Zealand, Standards New Zealand).

## 5.8 Energy Consumption

### Criteria

- a. Electrophotographic printers and copiers shall comply with the limits in Table 7-1. Recycled electrographic printers and copiers shall comply with the limits in Table 7-2.

Table 7-1 Electrophotographic Printers and Copiers

Monochrome		Colour	
Monochrome speed (IPM)	Maximum TEC (KWh/week)	Monochrome speed (IPM)	Maximum TEC (KWh/week)
$x \leq 15$	$\leq 1.0 \text{ kWh}$	$x \leq 32$	$\leq (0.10 \text{ kWh/IPM}) x + 2.8 \text{ kWh}$
$15 < x \leq 40$	$\leq (0.10 \text{ kWh/IPM}) x - 0.5 \text{ kWh}$	$32 < x \leq 58$	$\leq (0.35 \text{ kWh/IPM}) x - 5.2 \text{ kWh}$
$40 < x \leq 82$	$\leq (0.35 \text{ kWh/IPM}) x - 10.3 \text{ kWh}$	$58 < x$	$\leq (0.70 \text{ kWh/IPM}) x - 26 \text{ kWh}$
$82 < x$	$\leq (0.70 \text{ kWh/IPM}) x - 39 \text{ kWh}$		

Table 7-2 Recycled copiers

Impressions Per Minute (IPM)	kWh/week (Where x = monochrome product speed (IPM))	
	Monochrome Equipment	Colour Equipment
$\leq 12 \text{ IPM}$	$\leq 1.5 \text{ kWh/week}$	$\leq (0.2 \text{ kWh/IPM})x + 2 \text{ kWh}$
$12 < \text{IPM} \leq 50$	$\leq (0.2 \text{ kWh/IPM})x - 1 \text{ kWh}$	
$> 50 \text{ IPM}$	$\leq (0.8 \text{ kWh/IPM})x - 31 \text{ kWh}$	$\leq (0.8 \text{ kWh/IPM})x - 28 \text{ kWh}$

- b. Electrophotographic MFDs shall comply with the limits in Table 8-1. Recycled MFDs shall comply with the limits in Table 8-2.

Table 8-1 Electrophotographic MFDs.

Monochrome		Colour	
Monochrome speed (IPM)	Maximum TEC (KWh/week)	Monochrome speed (IPM)	Maximum TEC (KWh/week)
$x \leq 10$	$\leq 1.5 \text{ kWh}$	$x \leq 26$	$\leq (0.10 \text{ kWh/IPM}) x + 3.5 \text{ kWh}$
$10 < x \leq 26$	$\leq (0.10 \text{ kWh/IPM}) x - 0.5 \text{ kWh}$	$26 < x \leq 62$	$\leq (0.35 \text{ kWh/IPM}) x - 3.0 \text{ kWh}$
$26 < x \leq 68$	$\leq (0.35 \text{ kWh/IPM}) x - 6.0 \text{ kWh}$	$62 < x$	$\leq (0.70 \text{ kWh/IPM}) x - 25.0 \text{ kWh}$
$68 < x$	$\leq (0.70 \text{ kWh/IPM}) x - 30.0 \text{ kWh}$		

Table 8-2 Recycled MFDs

Monochrome		Colour	
Impressions Per Minute (IPM)	kWh/week	Impressions Per Minute (IPM)	kWh/week
$\leq 20 \text{ IPM}$	$\leq (0.2 \text{ kWh/IPM})x + 2 \text{ kWh}$	$\leq 32 \text{ IPM}$	$\leq (0.2 \text{ kWh/IPM})x + 5 \text{ kWh}$
$20 < \text{IPM} \leq 69$	$\leq (0.44 \text{ kWh/IPM})x - 2.8 \text{ kWh}$	$32 < \text{IPM} \leq 61$	$\leq (0.44 \text{ kWh/IPM})x - 2.8 \text{ kWh}$
$> 69 \text{ IPM}$	$\leq (0.8 \text{ kWh/IPM})x - 28 \text{ kWh}$	$> 61 \text{ IPM}$	$\leq (0.8 \text{ kWh/IPM})x - 25 \text{ kWh}$

Where x = monochrome product speed (IPM)

- c. Larger format copiers, large format printers and large format MFDs shall comply with the limits in Table 9-1. Large format copiers/printers/MFDs shall comply with the limits in Table 9-2

Table 9-1 – Maximum default delay times to sleep mode and power consumption in sleep mode and standby (W) for Large Format Copiers, Large Format Printers and Large Format MFDs

Monochrome product speed (IPM)	Maximum default delay time to Sleep Mode (min)	Sleep Mode (W)		Standby (W)
		Large format printers	Large format MFDs	
0 < IPM ≤ 30	≤30	≤ 14	≤ 30	≤ 1
IPM > 30	≤60			

Table 9-2 Recycled large format copiers and large format MFDs

Monochrome product speed (IPM)	Maximum default delay time to Sleep Mode (min)	Standby (W)
0 < IPM ≤ 30	≤30	58
IPM ≥ 31	≤60	

- d. Small format colour printers shall comply with the limits in Table 10.

Table 10– Maximum default delay times to sleep mode and power consumption in sleep mode and standby (W) for electrophotographic small format colour printers

Monochrome product speed (IPM)	Maximum default delay time to Sleep Mode (minutes)	Sleep Mode (W)	Standby (W)
0 < IPM ≤ 10	≤ 5	≤ 9	≤ 1
10 < IPM ≤ 20	≤ 15		
20 < IPM ≤ 30	≤ 30		
IPM > 30	≤ 60		

- e. Ink jet printers and ink jet MFDs shall comply with the limits in Table 11.

Table 11 - Maximum default delay times to Sleep mode, power consumption in sleep mode and power consumption in Standby mode for Ink Jet Printers, and Ink Jet MFDs

Colour Impact printers, Monochrome Impact printers:

Monochrome product speed Impressions Per Minute (IPM)	Sleep Mode Delay Time (minutes)	Power Consumption in Sleep Mode (W)	Power Consumption During Standby
≤ 10 IPM	≤ 5	≤ 4.6	≤ 1
10 < IPM ≤ 20	≤ 15		
30 < IPM ≤ 30	≤ 30		
> 30 IPM	≤ 60		

Colour IJ MFD and printers, Monochrome IJ MDF and printers:

Monochrome product speed (IPM)	Sleep Mode Delay Time (minutes)		Power Consumption in Sleep Mode (W)	Power Consumption During Standby
	Printer	MFD		
≤ 10 IPM	≤ 5	≤ 15	≤ 1.4	≤ 1
10 < IPM ≤ 20	≤ 15	≤ 30		
30 < IPM ≤ 30	≤ 30	≤ 60		
> 30 IPM	≤ 60	≤ 60		

f. Large Format Ink Jet printers and MFDs shall comply with the limits in Table 12.

Table 12 – Maximum default delay times to Sleep mode and power consumption in Sleep mode for Large Format MFDs

Colour DS, Colour TT, DT, Monochrome DS, Monochrome EP, Monochrome TT, SI

Monochrome colour speed (IPM)	Sleep Mode Delay Time (minutes)	Sleep (W)	Standby (W)
0 < IPM ≤ 30	≤ 30	≤ 30	≤ 1
IPM > 30	≤ 60		

Colour IJ, Monochrome IJ

Monochrome colour speed (IPM)	Sleep Mode Delay Time (minutes)	Sleep (W)	Standby (W)
0 < IPM ≤ 30	≤ 30	≤ 15	≤ 1
IPM > 30	≤ 60		

g. Power consumption of printers and MFDs shall not exceed 2 W when switched off.

*Explanatory Notes for Tables 10, 11 and 12*

For products that meet the Sleep mode power consumption requirements in Table 10 when in Ready mode, no further automatic power reductions are required to meet the Sleep mode criteria.

All products must be shipped with a maximum machine delay time (inactive time after which the machine switches to sleep mode) not in excess of 4 hours, which is only adjustable by the manufacturer. This maximum machine delay time cannot be influenced by the user and typically cannot be modified without internal, invasive product manipulation. The default delay time settings may be user adjustable.

For products equipped with functions (such as network connections), the allowances for each function in Appendix 4, should be added to the figure for power consumption in Sleep mode in Tables 10, 11 or 12. The total value for the base product with applicable “functional adders” should be used. Manufacturers may apply no more than 3 Primary functional adders to each product model, but may apply as many Secondary adders as are present (with Primary adders in excess of 3 included as Secondary adders). Interfaces on products with more than one interface are considered to be unique and separate. However, interfaces that perform more than one function count as only one interface.

*Testing Methods*

Definitions, benchmarks, notes and test procedures are as stipulated in ENERGY STAR Program Requirement for Imaging Equipment, Version 1.0.

*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 company. This statement shall be accompanied by documentation including:

- test documentation showing the energy consumption of each product;
- details of delay times to Sleep mode, where applicable; and
- a list of the primary and secondary adders used for each product.

## 5.9 Energy Management

### *Criteria*

- a. The licence applicant must have effective energy management policies and procedures and/or an energy management programme.
- b. Licence holders must report annually to The Trust on their energy management, including:
  - total energy use;
  - breakdown of total energy use to types of energy used;
  - energy use related to distribution;
  - initiatives taken to reduce energy use and improve energy efficiency; and
  - initiatives taken to calculate and reduce CO<sub>2</sub> emissions associated with energy use.

The annual report shall also include information on energy management during production and/or whole of life energy use, where that information is available from the equipment manufacturer or supplier.

### *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 company. This statement shall be accompanied by documentation that:

- describes the energy management policies, procedures and programmes; and
- includes annual reports on energy use and management.

## 5.10 Packaging Requirements

### *Criteria*

- a. Plastic materials used for packaging products shall not use the specific 5 main CFCs, other CFCs, carbon tetrachloride, trichloroethane, or HCFCs listed in Table 1 (see Clause 5.3.4 for Table 1).
- b. Plastic materials used for packaging shall not be composed of halogen-containing polymers or organohalogen compounds.
- c. When choosing packaging materials, consideration shall be given to resource conservation and ease of reuse or recycling.
- d. Primary packaging must have a plastic resin identification code and be made of plastics that (as far as is possible) are able to be recycled in New Zealand.
- e. Primary packaging must not be impregnated, labelled, coated or otherwise treated in a manner, which would prevent recycling (i.e. PVC sleeves, metallic labels).

### *Verification Required*

Conformance with these criteria shall be stated in writing and signed by the Chief Executive Officer or other authorised representative of the applicant company. This statement shall be supported with the following documentation and evidence.

Conformance with criteria a) and b) shall be supported by documentation from the packaging manufacturer verifying that it does not contain any of the prohibited substances.

Conformance with criterion c) shall be supported by samples of packaging, details of resource conservation methods, and reuse and recycling considerations.

Conformance with criteria d) and e) shall be demonstrated by providing samples of all plastic packaging and component, and shall be supported by documentation from The Recycling Operators of New Zealand (RONZ) verifying the packaging is recyclable.

## 5.11 Repair and Maintenance Systems

### *Criteria*

- a. Repair subcontract systems shall be provided, and repairs carried out as requested by users.
- b. Customers shall be provided with the following information:
  - Repair services are available; and
  - Details of services, repair time, costs and how services are provided to users, etc
- c. Maintenance of equipment shall only be undertaken by persons who have undergone training or persons with the required technical expertise.
- d. The applicant shall ensure that all spare parts are available for 5 years following the termination of production.

### *Verification Required*

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or an authorised representative of the applicant company. This statement shall be accompanied by documentation including:

- details of the repair service offered;
- details of training or technical expertise required of repair technicians;
- sample training records, if applicable; and
- details of availability of spare parts.

## 5.12 Collection and Recycling Systems

### *Criteria*

Systems must be available for collecting used products and consumables, and reusing parts and/or recycling materials.

Parts which cannot be reused or recycled shall be processed/disposed of in an environmentally sound manner (i.e. direct disposal to landfill should only be used where more environmentally benign options are not available).

### *Verification Required*

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or an authorised representative of the applicant company. This statement shall be accompanied by documentation including details of the collection and recycling systems used by the applicant.

## 5.13 Waste Management

### *Criteria*

- a. The licence applicant must have effective waste management policies and procedures and/or a waste management programme covering their operations.
- 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; and
- initiatives taken to reduce waste generation and improve recovery/recycling of waste.

#### *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 company. This statement shall be accompanied by documentation that:

- describes the waste management policies, procedures and programmes; and
- includes annual reports to Environmental Choice New Zealand on waste generation, minimisation and management.

## 6. PRODUCT CHARACTERISTICS

### 6.1 Duplex Copying/Printing

#### *Criteria*

Copiers, electrophotographic printers and MFDs must fulfil the following requirements for duplexing as shown in Table 13.

This requirement does not apply to any Large Format Printers/Copiers, printers that use stack form, or to thermosensitive, ink jet or wire dot printers. Equipment that does not permit duplex printing shall be able to reduce paper consumption by compressed printing, back-side printing, or otherwise.

Table 13 – Duplexing by Monochrome Equipment

Monochrome Product Speed (IPM)		Duplex requirement
Monochrome	Colour	
≤ 24 IPM	≤ 19 IPM	None required
25 < IPM ≤ 44	20 < IPM ≤ 39	Duplexing may be a standard or optional function
> 45 IPM	> 40 IPM	Duplexing must be a standard function

#### *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 company. This statement shall be accompanied by relevant product specification information.

### 6.2 Paper

#### *Criteria*

- Copiers, printers, fax machine and MFDs must be able to use recycled paper made from 100% waste paper.
- Use of recycled paper shall not void the unit's warranty.

These requirements do not apply printers supporting stack form, large format printers and printers accepting only photo paper/postcards

#### *Verification Required*

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or an authorised representative of the applicant company. This statement shall be supported by documentation demonstrating that use of recycled paper will not void the warranty.

## 6.3 Consumer Information

### *Criteria*

- a. User information on the following shall be provided in the product documentation:
  - instructions on the installation / positioning of the machine;
  - how and where used and decommissioned products/parts can be returned for refilling, recycling and/or disposal;
  - collection, reuse, material recycling, recovery or disposal of used OPC kit/photoconductor drums, toner containers and cartridges, ink and ink ribbon cartridges, and batteries;
  - that used batteries should be disposed of in accordance with local legislation;
  - print capacity (impressions per minute.
  - functioning of the energy management system;
  - use of duplex printing/copying. (For equipment that does not support duplex printing/copying information on the function(s) which enable paper consumption to be reduced should be provided).
- b. The product documentation shall provide the following information in relation to toner cartridges, toner containers, ink cartridges or ink ribbon cartridges, as applicable:
  - a safety data sheet (SDS) for the toner or ink;
  - proper handling and use;
  - that toner modules should not be forced open;
  - measures to be taken if the toner or ink is accidentally spilt on clothes or skin, ingested, or gets into eyes; and
  - that the toner module, ink cartridge or ink ribbon cartridge must be kept out of the reach of children.
- c. Product information shall indicate that products satisfy the criteria in Clause 5.6 on powder dust, ozone, TVOC, styrene and benzene emissions. This shall include information on the test conditions (e.g. tested in accordance with Appendix S-M of RAL-UZ-171), and a statement that the test was performed during the copying phase, using a type of toner recommended by the manufacturer.
- d. Product documentation shall contain information encouraging users to provide proper ventilation for long term use in poorly ventilated rooms or for mass copying. Similar wording to that below shall be used.

“Extended use in poorly ventilated rooms or mass copying increases the odour of ozone, which may cause discomfort in the office environment. Furthermore, proper ventilation should be ensured during mass copying because chemical substances are emitted.”
- e. The user’s manual must be available in English.

### *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 company. This statement shall be supported by copies of relevant sections from manuals and other information available by other means (web page, brochures, product specifications etc).

## 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 type of products covered by the licence and the level of sampling appropriate to provide confidence in ongoing compliance with criteria. 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 production 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 Environmental Choice New Zealand 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 ECNZ 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 'Copying Machines, Printers, fax Machines and Multifunctional Devices' and by the Licence Number e.g. 'licence No1234'.

The Label must be reproduced in accordance with the ECNZ programmes 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 ECNZ Label and advertising could result in the Licence being withdrawn.

## Appendix 1 – Cross reference of criteria in ECNZ and Eco Mark specifications

EC-24-17 Copying machines, printers, fax and multifunctional devices		Eco Mark 117 Copiers	Eco Mark 122 Printers Criteria A	Eco Mark 122 Printers Criteria B	Eco Mark 155 v1.2
Introduction	1	1	1	1	
Background	2	1	1	1	
Interpretation	3	3	3	3	
Category Definition	4	2	2	2	
Legal Requirements	5.1	4-1-16 (46)	4-1-14 (37)	4-1-15 (45)	4-1-3 (28)
Design Requirements	5.2.1 a)	4-1-1 (1)	4-1-1 (1)	4-1-1 (1)	4-1-1 (1)
	5.2.1 b)	4-1-1 (2)	4-1-1 (2)	4-1-1 (2)	4-1-1 (3)
	5.2.1 c)	4-1-1 (3)	4-1-1 (3)	4-1-1 (3)	4-1-1 (3)
	5.2.1 d)	4-1-1 (3)	4-1-1 (3)	4-1-1 (3)	4-1-1 (14) Appx 1 (B10)
Design and recyclability of plastic and metal parts	5.2.2 a)	4-1-2 (9)	4-1-2 (9)	4-1-2 (9)	4-1-1 (14) Appx 2[7]
	5.2.2 b)	3R checklist Must 3	3R checklist Must 3	3R checklist Must 3	4-1-1 (14) Appx 1 (A4)
	5.2.2 c)	3R checklist Must 10	3R checklist Must 10	3R checklist Must 10	4-1-1 (14) Appx 1 (B4)
	5.2.2 d)	N/E	N/E	N/E	N/E
Recycled or reused plastic parts	5.3.1 a)	4-1-2 (5)	4-1-2 (5)	4-1-2 (5)	4-1-1 (4)
	5.3.1 b)	4-1-2 (5)	4-1-2 (5)	4-1-2 (5)	4-1-4 (14) Appx 2
Additives in plastic casing parts	5.3.2 a)	4-1-2 (4)	4-1-2 (4)	4-1-2 (4)	4-1-3 (18)
	5.3.2 b)	4-1-2 (6)	4-1-2 (6)	4-1-2 (6)	4-1-3 (16)
	5.3.2 c)	4-1-2 (6)	4-1-2 (6)	4-1-2 (6)	4-1-3 (16)
	5.3.2 d)	4-1-2 (7)	4-1-2 (7)	4-1-2 (7)	4-1-3 (16)
	5.3.2 e)	4-1-2 (8)	4-1-2 (8)	4-1-2 (8)	4-1-3 (17)
	c) - e) do not apply to...	4-1-2 (6) (7) (8)	4-1-2 (6) (7) (8)	4-1-2 (6) (7) (8)	4-1-3 (16)
Photoconductor drums	5.3.3 a)	4-1-9 (36)	N/A	4-1-8 (35)	4-1-3 (22)
	5.3.3 b)	4-1-9 (37)	N/A	4-1-8 (35)	4-1-1 (13)
Chemicals during production	5.3.4 a)	4-1-16 (45)	4-1-13 (36)	4-1-15 (44)	4-1-3 (28)
	Table 1	Table 3	Table 3	Table 3	-
	5.3.4 b)	4-1-17 (47)	1-15(38)	4-1-16(b)	4-1-3 (18)
	Table 2	Table 7	4-1-15 (38)	4-1-16(46)	Table 2
Toner and Ink	5.4.1 a)	4-1-4 (12)	4-1-4 (12)	4-1-4 (12)	4-1-3 (25)
	5.4.1 b)	4-1-4 (14)a	4-1-4 (14)a	4-1-4 (14)a	4-1-3 (24)
	5.4.1 c)	4-1-4 (14)c	4-1-4 (14)b	4-1-4 (14)c	4-1-3 (24)
	5.4.1 d)	4-1-4 (14)d	4-1-4 (14)c	4-1-4 (14)d	4-1-3 (24)
	5.4.1 e)	4-1-4 (13)	4-1-4 (13)	4-1-4 (13)	4-1-3 (26)
	Table 3	Table 1	Table 1	Table 1	Table 5
	5.4.1 f)	4-1-4 (15)	4-1-4 (15)	4-1-4 (15)	4-1-3 (24)
Toner Cartridges, Toner Containers, Ink Cartridges and Ink Ribbon Cartridges	5.4.2 a)	4-1-5 (17)	4-1-5 (17)	4-1-5 (17)	4-1-1 (2)
	5.4.2 b)	4-1-5 (18)	4-1-5 (18)	4-1-5 (18)	4-1-3(18)
	5.4.2 c)	4-1-5 (19)	4-1-5 (19)	4-1-5 (19)	4-1-1 (5)
	5.4.2 d)	4-1-5 (20) (21)	4-1-5 (20) (21)	4-1-5 (20) (21)	4-1-1 (6) (7)
	5.4.2 e)	4-1-5 (24)	4-1-5 (23)	4-1-5 (24)	4-1-1 (1) Appx 1 (B1)
	5.4.2 f)	4-1-5 (24)	4-1-5 (23)	4-1-5 (24)	4-1-1 (1) Appx 1 [B1]
	5.4.2 g)	4-1-5 (25)	N/A	4-1-5 (25)	4-1-3 (23)
Batteries	5.5 a)	4-1-3 (10)	4-1-3 (10)	4-1-3 (10)	4-1-3 (29)
	5.5 b)	4-1-3 (11)	4-1-3 (11)	4-1-3 (11)	4-1-1 (1) Appx 1 [C5]
	5.5 c)	N/E*	N/E*	N/E*	-
Air Emissions	5.6 a)	4-1-6 (26) (27)	N/A	4-1-6 (26) (27)	4-1-3 (19)
	5.6 b)	4-1-6 (30)	N/A	4-1-6 (28)	4-1-3 (19)
	Table 4	Table 2	N/A	Table 2	Table 3
	5.6 c)	4-1-6 (26) (27) (28)	4-1-6 (24)	4-1-6 (29)	4-1-3 (19)

EC-24-17 Copying machines, printers, fax and multifunctional devices	Eco Mark 117 Copiers	Eco Mark 122 Printers Criteria A	Eco Mark 122 Printers Criteria B	Eco Mark 155 v1.2	
	Table 5	Table 2-1	Table 2	Table 2-1	
Noise	5.7	4-1-13 (43)	4-1-11 (33)	4-1-12 (41)	
	Table 6	Table 4	Table 4	Table 4	
Energy Consumption	5.8 a)	4-1-12 (41)a	4-1-10 (31)	4-1-101(39)	
	Table 7-1	Table A	Table A	Table A	
	Table 7-2	Table a	-	-	
	5.8 b)	4-1-12 (41)	4-1-10 (31)	4-1-11 (39)	
	Table 8-1	Table B	Table B	Table B	
	Table 8-2	Table b-1			
	Table 8-3	Table b-2			
	5.8 c)	4-1-12 (41)	4-1-9 (31)	4-1-11 (39)	
	Table 9	Table C	Table C-1	Table C	
	5.8 d)	N/A	N/A	4-1-11 (39)	
	Table 10	N/A	Table C-2	Table D	
	5.8 e)	N/A	4-1-10 (31)	N/A	
	Table 11	N/A	Table C-3	N/A	
	5.8 f)	N/A	4-1-10 (31)	N/A	
	Table 12	N/A	Table C-5, C6	N/A	
5.8 g)	N/E	4-1-10 (32)	4-1-11 (40)		
Energy Management	5.9 a)	N/E*	N/E*	N/E*	
	5.9 b)	N/E*	N/E*	N/E*	
Packaging Requirements	5.10 a)	4-1-11(38)	4-1-9 (28)	4-1-10 (36)	
	5.10 b)	4-1-11(39)	4-1-9 (29)	4-1-10 (37)	
	5.10 c)	4-1-11(40)	4-1-9 (30)	4-1-10 (38)	
	5.10 d)	N/E*	N/E*	N/E*	
	5.10 e)	N/E*	N/E*	N/E*	
Repair and Maintenance Systems	5.11 a)	4-1-8 (32)	4-1-8 (26)	4-1-8 (32)	
	5.11 b)	4-1-8 (32)	4-1-8 (26)	4-1-8 (32)	
	5.11 c)	4-1-8 (33)	N/E	N/E	
	5.11 d)	4-1-8 (34)	4-1-8 (27)	4-1-8 (33)	
Collection and recycling systems	5.12	4-1-9 (35)	N/E	N/E	
Waste Management	5.13 a)	N/E*	N/E*	N/E*	
	5.13 b)	N/E*	N/E*	N/E*	
Duplex Copying	6.1	4-1-14 (43)	4-1-14 (34)	4-1-13 (42)	
	Table 13	Tables 5 & 6	N/A	Tables 5 & 6	
Paper	6.2	N/E	N/E	N/E	
Consumer Information	6.3 a)	4-1-15 (44)	4-1-13 (35)	4-1-14 (43)	
	6.3 b)	4-1-4 (16) & 4-1-5 (23)	4-1-5 (22)	4-1-5 (23)	
	6.3 c)	4-1-6 (29)	N/A	4-1-6 (29)	
	6.3 d)	4-1-6 (30)	N/A	4-1-6 (30)	
	6.3 e)	N/E*	N/E*	N/E*	
Appendices	Appx 1	N/E	N/E	N/E	
	Appx 2	Attachment 2	Attachment 2	Attachment 2	
	Appx 3	Reference to source document: Annex III RoHS Directive 2011/65/EU			
	Appx 4	Table C	-	Table C & D Annex	

N/E no equivalent criteria; N/A not applicable to this product group; \* criteria common to ECNZ specifications or specific to the New Zealand market

## Appendix 2 – Checklist for 3R Design of Equipment and Consumables

### Items

The checklist consists of the following three requirement groups:

- Structure and Connection Technology
- Material Selection and Marking
- Longevity

### Applicable Scope

The requirements apply to certain sub-assemblies of basic unit of equipment and consumables:

Modules	consist at least two components linked by power or design
Case parts	protect the built in parts from environmental effects and user from getting into contact with moving, radiating, or current carrying components.
Electronic modules (and parts)	include at least one electric or electronic component.
Mechanical parts	are not contained in electronic modules. Their functions are either mechanical or optical (except for case and chassis).
Toner modules	toner cartridges and toner containers. Toner modules contain, in addition to the toner container, one or more functional elements, such as, for example, charging unit, cleaning unit, residual toner container, respectively.

### Category Classification

Any requirements are classified as either "M" or "S".

M Requirement	Requirements which must be met
S Requirement	Requirements which should be met

### Compliance with 3R Design

It is determined that equipment and consumables comply with the 3R design requirements if they meet the items listed in the checklist.

## Annex1 Materials, preparations and components that are to be handled selectively

At least the following materials, preparations and components must be removed from separately collected used electronic equipment.

- PCB containing (PCB: polychlorinated biphenyls) capacitors according to Directive 96/59/EC on the removal of polychlorinated biphenyl and polychlorinated terphenyl compounds (PCB/PCT)
- Mercury-containing components like lamps for background lighting:
- Batteries:
- Printed circuit boards if the surface of the printed circuit board is larger than 10 square centimetres:
- Toner modules, powdery, paste-like and liquid toners including colour toners:
- Plastic parts that contain brominated flame retardants:
- Liquid crystal displays ( with the casing, where applicable) with a surface of more than 100 square centimeters:
- External electric power lines:
- Electrolyte capacitors that contain critical materials (height: >25mm: diameter: >25mm or similar proportionate volumes):

These materials, preparations and components are to be disposed of or recycled in accordance with Article 4 of Directive 75/442/EEC

Checklist for 3R design of equipment/consumables

"M"-requirements, which must be met

Requirement group	No.	Requirement	Applies to subassembly(ies)	Compliance?	Remarks	Purpose
	1	Components made of materials incompatible with each other are connected separably or via separation aids.	Case parts, chassis, electric modules, toner modules	Yes / No		Promoting reuse and recycling
	2	Electronic modules are easily traceable and removal.	Entire unit, including lumps	Yes / No		Facilitating parts search
	3	Disassembly for recycling can be done with universal tools exclusively	Case, chassis, electric modules	Yes / No	"Universal tools" refers to widely used, commercially available tools. This requirement does not apply to connections where legal regulations have influenced the choice of joining technique.	Facilitating disconnection
	4	Necessary points of application and working space for disassembly tools have been taken into consideration?	Case parts, chassis electric modules	Yes / No		Facilitating disconnection
	5	Screwed connections between modules can be separated with no more than three tools.	Case parts, chassis, electric modules	Yes / No	Tools can be distinguished by drive type (for example, cross-head slots) and drive size (for example, tool size).	Facilitating disconnection
	6	Disassembly can be done by a single person.	Entire unit	Yes / No	For example, if an undercut angle is 90 degrees or greater, any number of snap-fit joints that snap-fit in the same direction can be fit together simultaneously, but disconnecting them is not always possible. This requirement is considered not satisfied if three or more snap-fit joints cannot be simultaneously disconnected.	Facilitating dismantling
	7	Case parts are free from electronic modules. Control element attached to the case and case parts which simultaneously perform the functions of the chassis are not considered as case parts.	Case parts	Yes / No		Promoting reuse and recycling
	8	The manufacturer did a trial disassembly(e.g. according to 1-7 and prepared a test report focusing on the weak-points	Entire unit	Yes / No		
	9	The variety of materials forming plastic components performing comparable functions are limited to one material. This requirement shall not apply to parts that have been reused as can be proved.	Case parts (> 25 g), chassis, machine parts	Yes / No	For instance, "similar functions" refer to impact resistance and abrasion resistance.	Promoting reuse and recycling
	10	(a) The coating of plastic components has been limited to the minimum necessary. Laser-produced labelings shall not be considered as printings. This requirement shall not apply to parts that have been reused as can be proved.	Case parts, toner modules	Yes / No	Coating includes layers of paint, vacuum-deposited layers and print.	Promoting reuse and recycling
		(b) The paints which shall not prevent recycling has been used. Coating works have been conducted with considerations for occupational safety and health and reducing environmental burden.	Case parts, toner modules	Yes / No	"Paints not to prevent recycling" refers to the paints that have the following characteristics: it possesses compatibility with materials of coated parts, and does not prevent high-level material recycling (horizontal recycling for in-house products). "Considerations for occupational safety and health" includes ventilation/air emission and worker' wearing protective equipment. "Considerations for reducing environmental burden" includes the measures to control VOC emission into the air, such as the removal equipment, the devices in coating process, or replacement by low-VOC paint.	
If "Yes" in (a) or (b), it is considered to conform this requirement.						

	11	Materials can be reused as materials, and materials are assembled such that they can be separated.	Case parts, chassis, case parts of toner modules	Yes / No	"Can be reused as materials" means that recycled material identical to the starting material can be manufactured. (It can be used as if it were the original material.) This item asks the intention and purpose upon designing and does not ask whether recycling is actually conducted.	Promoting reuse and recycling
	12	The proportional use of recycled material is permitted	Case parts, chassis, toner modules	Yes / No	"Permitted" means the use of recyclable material is permitted as long as such material meets the requirements provided in the specifications and is available. "Proportional" means some available plastic components are appropriate. (This does not require all available components.)	Promoting reuse and recycling
	13	Components and materials under Annex 1 can be easily exchanged	Entire unit	Yes / No		Promoting reuse and recycling
	14	Plastic parts > 25g and > 200mm <sup>2</sup> (flat area) are marked in accordance with ISO11469:2000(corresponding standard JIS K6999:2004).	Entire unit	Yes / No		Promoting reuse and recycling
	15	Material selection according to 10-14 has been done and recorded in writing.	Case parts, chassis, toner modules	Yes / No		
	16	At least 50% of the components* of the device, except for standard parts, are identical in design to those in other devices of the same manufacturer and the same performance category and generation.	Entire unit	Yes / No		Promoting commonization of parts
Longevity	17	The use of reprocessed modules or components is possible and permissible.	Entire unit	Yes / No	Referring to that spare/ETN(Equivalent to new) parts must be prepared for reuse under manufacturer's responsibility	Promoting reuse and recycling
	18	Toner modules can be reproduced	Toner modules, except containers	Yes / No	Reuse should not be prevented by constructive measures.	Promoting reuse and recycling

"S"-requirements, which should be met

Requirement group	No.	Requirement	Applies to subassembly(-ies)	Compliance?	Remarks (placed only if necessary)	Purpose
Structure and Connection Technology	1	Separable connections are easily traceable. If they are hidden the product should bear corresponding notes (e.g. laser labeling or injection moulded.)	Case parts, chassis, toner modules	Yes / No		Facilitating parts search
	2	All connection elements to be separated for recycling purposes are axially accessible	Case parts, chassis, electric modules	Yes / No		Facilitating disconnection and taking out of parts
	3	At least 50% of the separable connections between plastic components are plug/snap connections.	Case parts	Yes / No		Facilitating disconnection
Material Selection and Marking	4	The supporting surface can be maintained during the entire disassembly work	Unit to be handled	Yes / No	The supporting surface refers to the product surface for wrecking company to work on. This requirement enables to indirectly check whether or not there is hierarchical structure. Unit to be handled refers to the unit which exceeds 5 kg, or can be turned over in case of less than 5kg.	Facilitating dismantling
	5	Components made of the same sort of plastics are dyed uniformly or compatibly. Integrated control elements shall be exempt from this requirement. It is enough for toner modules to have colour integrity/compatibility.	Case parts, toner modules	Yes / No	"Compatible dyeing" stands for different shades of one colour (e.g. grey and anthracite). The colours for dyeing of toner modules are limited due to shade purpose and the integrity with case parts of entire unit is not required.	Promoting reuse and recycling
	6	Does recycled material account for at least 5% of the total plastic weight?	Case parts, cases of toner module	Yes / No	Total plastic weight means the total weight of all applicable plastic parts. "Recycled material" means recycled plastic pellets, not plastic parts that include recycled plastics. The source of recycled pellets does not matter. In other words, the recycled plastic does not have to be from recycled pellets obtained from parts used in printers or copiers; it can be from other products on the market.	Reducing environmental burden
Longevity	7	Toner modules of individual colours can be exchanged separately	Toner modules	Yes / No		Promoting reuse and recycling

### Appendix 3 – Parts not required to comply with the limits in Table 2

- 1) Mercury in compact fluorescent lamps not exceeding 5 mg per lamp
  - 2) Mercury in straight fluorescent lamps for general purposes not exceeding :
    - halophosphate 10 mg
    - triphosphate with normal lifetime 5 mg
    - triphosphate with long lifetime 8 mg
  - 3) Mercury in straight fluorescent lamps for special purposes
  - 4) Mercury in other lamps not specifically mentioned in this Annex B
  - 5) Lead in glass of cathode ray tubes, electronic components and fluorescent tubes
  - 6) Lead as an alloying element in steel containing up to 0.35 wt% lead, aluminium containing up to 0.4 wt% lead and as a copper alloy containing up to 4 wt% lead
  - 7) Lead stated below :
    - Lead in high melting temperature type solders (i.e. tin-lead solder alloys containing more than 85 % lead by weight)
    - Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunication
    - Lead in electronic ceramic parts (e.g. piezoelectronic devices)
  - 8) Cadmium plating except for applications banned under Directive 91/338/EEC<sup>2)</sup> amending Directive 76/769/EEC<sup>1)</sup> relating to restrictions on the marketing and use of certain dangerous substances and preparations
- NOTE<sup>1)</sup> For 76/769/EEC, see OJ L186, 12.7.1991, P.59 (OJ, Official Journal). Council Directive 91/339/EEC of 18 June 1991 amending for the 11<sup>th</sup> time Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations
- NOTE<sup>2)</sup> For 91/338/EEC, see OJ L262, 27.9.1976, P.201 (OJ, Official Journal). Council Directive 76/769/EEC of 27 July 1976 on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations

- 9) Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators
- 10) Decabrominated diphenyl ether for the purpose of polymers
- 11) Lead as an alloying element of lead/bronze used for bearing-shells and bushes
- 12) Lead used for compliant-pin connector systems
- 13) Lead as a coating material for thermal conduction module C ring
- 14) Lead and cadmium in optical and filter glass
- 15) Lead in solders consisting of two or more elements for the connection between the pins and the package of microprocessors with a lead content of exceeding 80 wt% but less than 85 wt%
- 16) Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit package (Flip Chips)
- 17) Lead in tin whisker resistant coatings for the following applications :
  - lead included in plating of printed circuit board to be connected with a connector of a narrow pitch (not exceeding 1 mm)
  - Lead included in plating of electronic component having lead frame of a narrow pitch (not exceeding 1 mm)
  - Lead included in plating of lead-wire terminals of FPC, FFC and connector
- 18) Solder including lead or cadmium used for the following specific purposes :
  - Solder used for connection between alumina substrate and copper heat sink in high frequency power amplifier module of business radio system
  - Low-melting-point solder alloys used for thermal cut-off and thermal element of heat sensor
- 19) Hexavalent chromium passivation coatings for the following specific purpose :
  - Rust preventive treatment of non-electrolytic nickel plated components
  - Rust preventive treatment of black galvanized components
- 20) Lead included in lead-oxide glass for plasma display panel and SED flat panel
- 21) Lead included in rare earth magnetic garnet crystal used for such optical devices as optical isolator, optical circulator, optical switch
- 22) Lead included in sealing glass for moisture proof of sheathed heater
- 23) Cadmium included in sulphide photo cells
- 24) Lead and cadmium used for thermosensor of thermal fuses
- 25) Lead included in amalgam used for discharge lamps

#### Appendix 4 – Functional Added Allowances for Maximum Power Consumption in Sleep Mode

Type	Details	Functional Adder Allowances (W)	
		Primary	Secondary
Interfaces	A. Wired < 20 MHz	0.3	0.2
	A physical data- or network-connection port present on the imaging product that is capable of a transfer rate < 20 MHz. Includes USB 1.x, IEEE488, IEEE 1284/Parallel/Centronics, RS232, and/or fax modem.		
	B. Wired ≥ 20 MHz and < 500 MHz	0.5	0.2
	A physical data- or network-connection port present on the imaging product that is capable of a transfer rate ≥ 20 MHz and < 500 MHz. Includes USB 2.x, IEEE 1394/FireWire/i.LINK, and 100Mb Ethernet.		
	C. Wired ≥ 500 MHz	1.5	0.5
	A physical data- or network-connection port present on the imaging product that is capable of a transfer rate ≥ 500 MHz. Includes 1G Ethernet.		
	D. Wireless	3.0	0.7
	A data- or network-connection interface present on the imaging product that is designed to transfer data via radio-frequency wireless means. Includes Bluetooth and 802.11.		
	E. Wired card/camera/storage	0.5	0.1
	A physical data- or network-connection port present on the imaging product that is designed to allow the connection of an external device, such as flash memory-card/smart-card readers and camera interfaces (including PictBridge).		
G. Infrared	0.2	0.2	
A data- or network-connection interface present on the imaging product that is designed to transfer data via infrared technology. Includes IrDA.			
Other	Storage	—	0.2
	Internal storage drives present on the imaging product. Includes internal drives only (e.g., disk drives, DVD drives, Zip drives), and applies to each separate drive. This adder does not cover interfaces to external drives (e.g., SCSI) or internal memory.		
	Scanners with CCFL lamps or non-CCFL lamps	—	0.5
	The presence of a scanner that uses Cold Cathode Fluorescent Lamp (CCFL) technology or a technology other than CCFL, such as Light-Emitting Diode (LED), Halogen, Hot-Cathode Fluorescent Tube (HCFT), Xenon, or Tubular Fluorescent (TL) technologies. This adder is applied only once, regardless of the lamp size or the number of lamps/bulbs employed.		
	PC-based system (cannot print/copy/scan without use of significant PC resources)	—	-0.5
	This adder applies to imaging products that rely on an external computer for significant resources, such as memory and data processing, to perform basic functions commonly performed by imaging products independently, such as page rendering. This adder does not apply to products that simply use a computer as a source or destination for image data.		
	Cordless handset	—	0.8
	The capability of the imaging product to communicate with a cordless handset. This adder is applied only once, regardless of the number of cordless handsets the product is designed to handle. This adder does not address the power requirements of the cordless handset itself.		
	Memory	—	1.0 W per 1 GB
	The internal capacity available in the imaging product for storing data. This adder applies to all volumes of internal memory and should be scaled accordingly. For example, a unit with 2.5 GB of memory would receive an allowance of 2.5 W while a unit with 0.5 GB would receive an allowance of 0.5 W.		

Appendix 5: EC-24 criteria that are in addition to Eco Mark criteria

Licence applicants or holders of ECNZ licences for printers, copiers and MFDs that hold current Eco Mark approvals under 122A, 122B, 117, or 155, must provide evidence to demonstrate compliance with the following criteria in this specification, in addition to evidence that an Eco Mark licence is current for the products:

No.	Requirement
5.1	The product must comply with the provisions of all relevant environmental laws and regulations that are applicable during the product's life cycle.
5.5(c)	All used batteries must be properly disposed of by the New Zealand supplier and/or distributor in accordance with local and national legislation.
5.9(a)	The licence applicant must have effective energy management policies and procedures and/or an energy management programme.
5.9(b)	Licence holders must report annually to The Trust on energy management, including: <ul style="list-style-type: none"> <li>- total energy use;</li> <li>- breakdown of total energy use to types of energy used;</li> <li>- energy use related to distribution;</li> <li>- initiatives taken to reduce energy use and improve energy efficiency; and</li> <li>- initiatives taken to calculate and reduce CO2 emissions associated with energy use.</li> </ul>
5.10(d)	Primary packaging must have a plastic resin identification code and be made of plastics that (as far as is possible) are able to be recycled in New Zealand.
5.10(e)	Primary packaging must not be impregnated, labelled, coated or otherwise treated in a manner, which would prevent recycling (i.e. PVC sleeves, metallic labels).
5.13(a)	The licence applicant must have effective waste management policies and procedures and/or a waste management programme covering their operations.
5.13(b)	Licence holders must report annually to The Trust on waste management, including: <ul style="list-style-type: none"> <li>- quantities and types of waste recovered for reuse internally and externally;</li> <li>- quantities and types of waste recycled internally and externally;</li> <li>- quantities and types of waste disposed of to landfill;</li> <li>- quantities and types of waste burned internally for energy recovery;</li> <li>- waste generation related to production; and</li> <li>- initiatives taken to reduce waste generation and improve recovery/recycling of waste.</li> </ul>
6.2(a)	Copiers, printers, fax machine and MFDs must be able to use recycled paper made from 100% waste paper.
6.2(b)	Use of recycled paper shall not void the unit's warranty.
6.3(e)	The user's manual must be available in English

Licence applicants or holders of ECNZ licences for printers, copiers and MFDs that hold current Eco Mark approvals under 155 only must provide evidence to demonstrate compliance with the following criteria in this specification, in addition to the criteria above:

No.	Requirement
5.3.2(c)	Flame retardants containing organohalogen compounds shall not be added to plastic casing parts. This criterion does not apply if: <p>For copiers:</p> <ul style="list-style-type: none"> <li>- the collection rate<sup>1</sup> is greater than 80% and at least 95% of the plastic casing parts collected, which contain brominated flame retardants, are recycled, AND</li> <li>- of the total mass of plastic casing parts in a product which contain brominated flame retardants, at least 15% is recycled or reused material collected as part of the manufacturer's take-back system.</li> </ul> <p>For Printers and printer-based MFDs:</p>

	<ul style="list-style-type: none"> <li>- at least 95 % of the plastic casing parts collected, which contain brominated flame retardants, are recovered and at least 50% are recycled; AND</li> <li>- one or more of the plastic casing parts that are greater than 50 g and contain brominated flame retardants shall be a recycled plastic part and at least 10% of this part shall comprise recycled material collected as part of the manufacturer's take-back system.</li> </ul> <p>There is no minimum collection rate for laser printers and MFDs whose main function is a printer, however, the collection rate achieved should be reported.</p>
5.4.1(c)	<p>Toners and inks must not contain substances that would result in the whole product requiring labelling with a hazard pictogram under Regulation (EC) No. 1272/2008.</p> <p>Applicable hazard categories are explosive, oxidising, highly flammable, extremely flammable, toxic, very toxic, harmful, irritant, corrosive and dangerous for the environment.</p>
5.4.1(d)	<p>Toners and inks must not contain substances that would result in the whole product requiring labelling as H317 (may cause an allergic skin reaction) under Regulation (EC) No. 1272/2008.</p>

Licence applicants or holders of ECNZ licences for printers, copiers and MFDs that hold current Eco Mark approvals under 122A or 122B only must provide evidence to demonstrate compliance with the following criteria in this specification, in addition to the criteria above:

No.	Requirement
5.11(c)	Maintenance of equipment shall only be undertaken by persons who have undergone training or persons with the required technical expertise.
5.12	<p>Systems must be available for collecting used products and consumables, and reusing parts and/or recycling materials.</p> <p>Parts which cannot be reused or recycled shall be processed/disposed of in an environmentally sound manner (i.e. direct disposal to landfill should only be used where more environmentally benign options are not available).</p>