The New Zealand Ecolabelling Trust

Licence Criteria for
Packaging and Paperboard Products

EC-10-14

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Specification change history

Minor clarifications, corrections or technical changes made since the specification was last reviewed and issued in October 2014.

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 14024:1999 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 Packaging and Paperboard Products. This specification sets out the requirements that Packaging and Paperboard 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, information made available from existing licence holders and information in publically available paper procurement and paper industry publications.

This specification is 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

Manufacturing and use of paper products can, potentially, result in significant burdens being placed on the environment. These burdens can occur throughout the lifecycle of the paper product, from sourcing of the raw materials and manufacturing the pulp and paper, through to disposal of the end product after use.

Sustainable management of forests is an issue of much concern and debate internationally. A number of schemes have been developed to define principles, criteria and measures of sustainable management and provide processes for Sustainable Forest Management (SFM) to be independently assessed and assured. SFM can be used in native and plantation forests. Unsustainable management of native forests can lead to the destruction of valuable ecosystems and unsustainably managed plantations can result in conversion of native forests or other ecologically valuable land uses, for production of timber. The proposed criteria in this ECNZ specification accommodate the input of virgin fibre by allowing only native fibre which has been legally sourced, and requiring a proportion of the virgin fibre to be from plantations or forests certified as being sustainably managed. The criteria also promote the use of recycled fibre, whilst recognising that fibres can only be recycled a limited number of times. Also, some input of virgin fibre is required in the manufacturing of certain products to achieve required strengths and/or finishes.

In response to concerns over unsustainable management of forests, a range of alternatives to wood fibre are now being used to manufacture paper, including bamboo, hemp, bagasse and minerals. This proposed revised specification includes new criteria which address the environmental impacts associated with these alternatives.

During manufacture, process effluents can contain high concentrations of natural organic materials which deplete oxygen in receiving waters, adversely impacting plant and animal life. Sulphur, organochlorines and other hazardous substances, particularly halogenated organics, used in or resulting from the manufacturing process (e.g. from bleaching or for cleaning of equipment) can be persistent. They can, potentially, bioaccumulate and have toxic effects on the environment if discharged in effluents. Poorly-biodegradable detergents (surfactants) may also accumulate and be toxic or otherwise harmful in the environment if discharged.

This specification addresses the issue of emissions from pulp and paper manufacture. It aims to reduce or eliminate the discharge of toxic and environmentally persistent compounds, such as sulphur compounds, oxygen consuming organic material and organochlorines into the environment.

This specification introduces the best practice approach to criteria for hazardous substances taken in other ECNZ specifications. This approach is based on international best practice and guidance developed by the EU. The criteria include bans or restrictions on chemicals based on their hazardous properties (e.g. carcinogens or ecotoxins). Where necessary and appropriate, substance-specific requirements are included where there are sound technical reasons to address them on an exception basis.

Criteria are also included in this specification regarding waste management, energy efficiency, product stewardship and recyclability of the product. These criteria have been included to address environmental issues across the entire life-cycle of the products.

Based on a review of currently available information, the following product category requirements will produce environmental benefits by reducing fibre use from unsustainable sources; decreasing emissions to air and water; minimising the use of harmful chemicals; managing production waste; and improving energy efficiency. As information and technology change, product category requirements will be reviewed, updated and possibly amended.

3 Interpretation

ADt means Air dry tonne of pulp (ADt) meaning dry solids content of 90 %.

AOX means Absorbable Organic Halogen. A measure of the quantity of chlorine (and other halogens) associated with organic compounds.

APEOs (Alkylphenol ethoxylates) are defined as substances that upon degradation produce alkyl phenols. They include nonylphenol ethoxylates (NPEOs), which degrade to nonylphenol.

Chemical pulp refers to pulp produced using the sulphite or sulphate (Kraft) methods, where wood chips are cooked in pressurised vessels in the presence of bisulphite or sodium hydroxide liquor.

Coating means a substances added to the base paper to give it certain qualities.

COD (Chemical Oxygen Demand) means the mass concentration of oxygen equivalent to the amount of dichromate consumed by dissolved and suspended matter when a water sample is treated with the oxidant under defined conditions.

DIP means de-inked pulp or recycled pulp.

EDTA (ethylene diamine-tetra-acetic acid) is a complexing agents used to bind metals found in raw materials and in process water.

FSC refers to the Forest Stewardship Council.

GEN refers to the Global Ecolabelling Network.

ISO means International Organisation for Standardisation.

Label means the ECNZ Label.

Mechanical pulp refers to pulp produced by grinding wood. It may involve the use of steam or chemicals to soften the wood prior to grinding. It includes stone groundwood, thermo-mechanical pulp (TMP) and chemithermomechanical pulp (CTMP).

NO_x is a joint chemical abbreviation for nitrogen oxides (NO, N_2O and NO_2). In this document NO_x means total NO and NO_2 measured as NO_2 equivalents.

P is the atomic symbol for phosphorus. In this document P means phosphorus discharged to water.

PEFC refers to the Programme for the Endorsement of Forest Certification.

Post-consumer refers to 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 refers to material diverted from the waste stream during a manufacturing process. Excluded is re-utilisation of materials such as rework, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

Readily biodegradable surfactants are those where the average level of biodegradation observed in an aerobic sewage treatment plant is at least 90% during a residence time of not more than 3 hours. In order to meet this requirement the surfactant must either meet the requirement for “readily biodegradable” when determined using one of the five test methods described in the OECD Guidelines for Testing of Chemicals, Test Guidelines 301A-301E OR achieve a biodegradability of at least 80 % when tested by the OECD method, published in the OECD technical report 11 June 1976 on the “Proposed Method for the Determination of the Biodegradability of Surfactants used in Synthetic Detergents”, OR as listed in the Danish Environmental Protection Agency report “Environmental Health Assessment of

Substances in Household Detergents and Cosmetic Detergent Products" (2001), or equivalent test. The pass level of 80 % recognises the inherent experimental variability of the OECD test.

Recycled content refers to post-consumer or pre-consumer material. Purchased broke, and broke generated within the mill is defined as new fibre if the fibre raw material is new fibre, and as recycled fibre if the raw material is recycled fibre.

Renewable energy sources means renewable non-fossil energy sources, e.g. wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogas.

S is the atomic symbol for sulphur. In this document it means gaseous emissions of sulphur to the atmosphere, such as sulphur dioxide and reduced sulphur compounds.

SFM means a Sustainable Forest Management certification scheme.

Ultimately biodegradable means in accordance with the OECD Test Guidelines 302A-302C.

4 Category definition

This category includes all packaging and paperboard products manufactured from virgin or recycled fibre or minerals, as further defined in the sub-categories below.

4.1 Paper mulch mats;

4.2 Products made from or including macerated recycled paper, e.g. padded envelopes;

4.3 Moulded paper products made from recycled paper, e.g. egg cartons, fruit trays, hobby and craft forms; and

4.4 The following paperboard products:

- a Corrugated fibreboard products made by combining one or more fluted mediums with one or more external and/or internal liners. Such products are used in the manufacture of packaging (including cases, boxes, cartons, packing and wrappers).
- b Solid fibreboard products made from multiple laminated piles. Such products are used in the manufacture of picture backs, art board, game board, book covers and packaging (including cases, boxes and cartons);
- c Carton board products made from coated or uncoated folding carton boards (boxboards). These materials are generally manufactured as multi-ply sheets of thickness between 300 and 1000 um, often incorporating fibre of lower quality in the "filer" or interior piles. Such products are used in a variety of applications but predominantly in the manufacture of retail cartons.

Thermal insulation made from paper is excluded from this category as it is addressed in EC-25-12 for Thermal Building Insulants.

The pulps used for the paper product must be one or more of the raw materials in Clauses 5.2.1-5.2.4 (e.g. wood, bamboo, other plant-fibres or minerals). No other pulps can be used.

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

Product Information Required:

Licence applicants must provide the following information to The Trust as part of the assessment process. Licence holders must maintain and update this information and advise The Trust about any changes to this information:

- a product description including a list of fibres/raw materials, their suppliers, material type, geographical origin and % by weight of the finished product (see Table 1 in Appendix A);
- supply chain information (see Table 2 in Appendix A); and
- additives and hazardous substances used in the production of the product (see Table 3 in Appendix A).

Explanatory Notes

Completed tables of information will be attached to and form part of the Applicant's Statement on Compliance, which must be signed by applicants during the licence assessment and confirmed by licence holders during licence supervision assessments.

Changes to information, in particular to fibre inputs and suppliers, will require assessment before they can be confirmed on an ECNZ licence.

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/licence holder. This statement shall be supported by current documentation:

- identifying the applicable regulatory requirements including specific obligations arising from permits, regulations, and regulatory plan rules; and
- demonstrating how compliance is monitored and maintained.

Verification of continued compliance with legal requirements will form part of the Licence Supervision Plan.

Explanatory Notes

The ECNZ licence applicant/holder will need to request information about regulatory compliance from the pulp and paperboard/packaging manufacturers in its supply chain.

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 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).

It is not intended to require licence holders to accept increased legal responsibility or liability for actions that are outside their control.

5.2 Raw Material Source

This section applies to the raw materials used. It does not apply to coatings or other additives as these are addressed in Clause 5.3.

5.2.1 Wood-based fibre

Criteria

Fibre source

a The fibre for each sub-category of packaging and paperboard products shall be as follows:

Product Type	Recycled Content (%)	Post-consumer Recycled (%)
Mulch Mat	85	70
Macerated products	100 20 for liner	80 10 for liner
Moulded products	100	75
Paperboard	No minimum	No minimum

The remaining (non-recycled) fibre may be:

i. sawdust/ wood chips and /or waste wood from wood processing operations, forest harvesting waste (including thinnings) and/or untreated demolition and/or recycled fibrewaste wood sources which meets the requirements of b) below;

ii. virgin fibre which meets the requirements of b) below or

iii. one of the other materials covered by Clauses 5.2.2 – 5.2.4.

b For virgin fibre and waste wood:

i. All waste wood or virgin fibre from native forests must be sourced from forests that are certified under the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC) as sustainably managed (or equivalent certification).

For accepted 3rd party claims, please see the notes section below

ii. All waste wood or virgin fibre from plantations (including from farm forests or woodlots) must be from legally harvested sources.

For accepted 3rd party claims, please see the notes section below.

AND

Reporting

c The licence holder must have and report to The Trust on a fibre procurement programme that has the aims of maximising:

i. the post-consumer component of recycled content;

ii. the percentage of virgin fibre or waste wood that is sourced from sustainably managed forests in accordance with b i.

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 company/licence holder. This statement shall be supported by documentation (as relevant):

- demonstrating the proportion of fibre types included in each product;
- for recycled fibre, demonstrating whether the fibre is pre or post-consumer;
- demonstrating the waste wood source of the fibre;
- recording the supplier, nature and geographical source of all virgin fibre inputs;
- including certificates or other evidence on forest management certification and chain of custody (to confirm the virgin fibre that is used is from a certified sustainably managed source);
- annual reports on the fibre procurement programme; and
- describing management systems in place to ensure that these requirements are consistently met.

Notes

For a): Broke

Broke is not considered recycled fibre/content, unless the raw material generating the broke is recycled fibre.

For b)i) - Sustainable Forest Management (SFM):

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 accepted by The Trust are those which will ensure that wood from sustainably managed forests, as required by Clause 5.2.1, will be actually present in the final ECNZ-licensed product. These are set out below.

Types of FSC claims[1] which can be used to demonstrate compliance with the above requirements:

- FSC 100 %
- FSC Mix Credit – only if the manufacturer can demonstrate that actual FSC material is used for the ECNZ products.

FSC Controlled Wood cannot be used to meet the FSC certified requirements in Clause 5.2.1 b).

Types of PEFC claims[2] which can be used to demonstrate compliance with the above requirements:

[1] *FSC Chain of Custody Certification – factsheet*. FSC UK, 14 January 2013.

[2] *PEFC Chain of Custody Certifications – The Key to Selling Certified Products*. PEFC, 2012.

- PEFC Certified – Physical Separation method.
- X % PEFC Certified – Volume Credit method – only if the manufacturer can demonstrate that actual PEFC certified material is used for the ECNZ products.

PEFC Controlled Sources material cannot be used to meet the PEFC certified requirements in Clause 5.2.1 b).

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/).
- 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[3] and guidance for preparing Sustainable Management Plans and Annual Logging Plans[4]. 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 will be required to provide detailed information that demonstrates the certification scheme is credible and equivalent. For examples of the type of information required, refer to the UK Central Point of Expertise on Timber Procurement (CPET) assessments of certification schemes available on www.CPET.org.uk

For b) ii) - Legal harvesting:

The following certification schemes will be accepted as sources of information to demonstrate legal harvesting, where certificates and 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)[5] - "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).

[3] *Standards and Guidelines for the Sustainable Management of Indigenous Forests*, Fourth Edition. Ministry of Agriculture and Forestry 2009 (or any more recent edition applicable at the time of application for an ECNZ licence).
[4] *Indigenous Forestry Sustainable Management: A Guide to Preparing Draft Sustainable Forest Management Plans, Sustainable Forest Management Permit Applications and Annual Logging Plans*. Sustainable Programmes, Ministry of Agriculture and Forestry Policy 2009.
[5] The Australian Forest Certification Scheme (AFCS/AFS) is recognised as part of PEFC.

Intention

The Trust will monitor reported fibre composition and procurement information with the intention of increasing the minimum percentages set in these criteria at future reviews when higher levels are attainable.

5.2.2 Bamboo

Criteria

a A minimum of 50 % by weight of the bamboo in the packaging or paperboard product must be from plantations or forests certified as SFM under the Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification schemes (PEFC), or equivalent schemes.

b The ECNZ licence applicant/holder must ensure that all uncertified bamboo comes from legal sources. Bamboo raw material must not be derived from:

i. protected areas, or areas that are under investigation as to their protection status;

ii. areas where ownership or rights of exploitation are unclear; or

iii. illegally harvested fibre.

In addition, the bamboo management must not harm:

iv. natural woodland, biodiversity, special ecosystems and important ecological functions; and

v. social and cultural preservation values.

c Bamboo fibre must not come from bamboo species that appear on the Convention on International Trade in Endangered Species (CITES) list.

d Companies must:

i. maintain records of the certification of bamboo fibre used in licensed products; and

ii. have, implement and report on an ongoing programme to review options and increase FSC or PEFC or equivalent SFM-certified content in ECNZ licensed products.

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 company/licence holder. The statement shall be supported by documentation (as relevant):

- recording the supplier, nature and geographical source of all bamboo inputs to the packaging or paperboard product;
- including certificates or other evidence on forest management, SFM certification and chain of custody;
- describing management systems in place to ensure that these requirements are consistently met;
- describing the programme to review options and increase FSC or PEFC or equivalent SFM-certified bamboo content in ECNZ licensed products; and
- including annual reports to ECNZ on this procurement programme.

Notes:

Legal harvesting:

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

- Forest Stewardship Council – "Certified" or "Controlled Wood"
- Programme for the Endorsement of Forest Certification (PEFC)[6] (http://www.pefc.org/) "Certified" or "Controlled Sources".

Sustainable Forest Management (SFM):

The FSC and PEFC certification schemes each have a range of certificates/labels. Some of these allow for fibre from certified sustainably managed plantations or forests to be mixed with non-certified fibre. Under FSC Mixed Credit or PEFC Volume Credit methods, fibre or products associated with the certification claim or label may or may not actually contain fibre from the certified sustainably managed source. Certifications accepted by The Trust are those which will ensure that the required minimum percentages of fibre from sustainably managed bamboo sources, as required by Clause 5.2.2 a), will be actually present in the final ECNZ-licensed product. These are set out below.

Types of FSC claims[7] which can be used to demonstrate compliance with Clause 5.2.2 a):

- FSC 100 %
- FSC Mix X % - provided the % is > 50 %.
- FSC Mix Credit – only if the manufacturer can demonstrate that actual FSC material is used for the ECNZ products.

FSC Controlled Wood cannot be used to meet the SFM requirements in Clause 5.2.2 a).

Types of PEFC claims[8] which can be used to demonstrate compliance with Clause 5.2.2 a):

- PEFC Certified – Physical Separation method.
- X % PEFC Certified – Average Percentage method, provided the % is > 50 %.
- X % PEFC Certified – Volume Credit method – only if the manufacturer can demonstrate that actual PEFC certified material is used for the ECNZ products.

PEFC Controlled Sources material cannot be used to meet the SFM requirements in Clause 5.2.2 a).

For any other scheme's, such as programmes run by the International Network for Bamboo and Ratten (INBAR) to be considered, the applicant will be required to provide detailed information that demonstrates the certification scheme is credible and equivalent. For examples of the type of information required, refer to the UK Central Point of Expertise on Timber Procurement (CPET) assessments of certification schemes available on www.CPET.org.uk.

The Trust intends to monitor levels of bamboo certification with the expectation that the minimum percentage requirements will be increased when a higher levels are attainable.

5.2.3 Other plant-sourced fibre

These criteria apply to hemp, kenaf, flax, cotton, linen, mushrooms and waste left over from harvesting an existing agricultural crop (e.g. wheat straw, rice straw, seed flax straw, sorghum stalks, corn stalks, sugar cane bagasse, and rye seed grass straw).

Wood fibre and bamboo are excluded from these criteria as they are addressed in Clauses 5.2.1 and 5.2.2, respectively.

[6] The Australian Forest Certification Scheme (AFCS/AFS) is recognised as part of PEFC.

[7] *FSC Chain of Custody Certification – factsheet*. FSC UK, 14 January 2013.

[8] *PEFC Chain of Custody Certifications – The Key to Selling Certified Products*. PEFC, 2012

Criteria

The ECNZ Licence applicant/holder shall:

a ensure the traceability of all fibre raw materials;

b have a documented procedure regarding procurement of sustainable fibre raw material;

c ensure that all fibre raw materials come from legal sources;

d ensure fibre raw material is not derived from:

i. protected areas, or areas that are under investigation as to their protection status;

ii. areas where ownership or rights of exploitation are unclear; or

iii. illegally harvested fibre.

In addition, the fibre management must not harm:

iv. natural woodland, biodiversity, special ecosystems and important ecological functions; and

v. social and cultural preservation values.

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 company/licence holder. The statement shall be supported by documentation (as relevant):

- traceability system for all fibre raw materials, e.g. a Chain of Custody certificate;
- a documented procedure from the ECNZ licence applicant/holder that describes sustainable procurement of all fibre used; and
- certification, harvesting permits or other information to demonstrate that the fibre is legally harvested and does not come from protected areas or areas where ownership rights are in dispute.

5.2.4 Minerals and mined materials

The criteria below apply to all materials extracted from the ground which are used as the base substrate, including materials which are the main focus of the mine operation, by-products, or mining wastes. They not apply to coatings or other additives as these are addressed in Clause 5.3.

Criteria

a Mined materials must come from mining operations with documented mine remediation programmes.

b The applicant/licensee must ensure that virgin raw materials do not come from environments that are protected for biological and/or social reasons.

c Mines from which materials are obtained for an ECNZ licensed packaging or paperboard product must have and implement management plans including any policies and management procedures to minimise adverse effects from the following potential impacts:

i. noise;

ii. vibration;

iii. dust; and

iv. discharges to surface water, groundwater, oceans or land.

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/licence holder. This statement shall be supported by documentation, including:

- information about the procurement programme for mined materials and records of the supplier, nature and geographical source of all mineral inputs;
- certificates or other evidence of a documented mine remediation programme;
- description of the raw material procurement management systems in place to ensure that the requirement in a) and b) are consistently met;
- copies of the relevant management plans required by c); and
- records demonstrating the management plans are being effectively implemented (including monitoring results).

5.3 Hazardous Substances

5.3.1 General Hazardous substances

Criteria

Substances which are classified as toxic, ecotoxic, carcinogenic, mutagenic or toxic to reproduction in accordance with Table 4 (Appendix B) shall not be added to the product or used during the production process.

The following are exempt from this requirement:

- Chemicals that are 100 % inorganic (e.g. NaOH).
- Biocides are exempt from the ban on ecotoxic substances, as they are specifically addressed in Clause 5.3.5.
- Foam inhibitors are exempt from the ban on ecotoxic substances, as they are specifically addressed in Clause 5.3.4.
- Cationic polymers and dyes are exempt from the ban on ecotoxic substances, if the classification is due to the cationic charge.
- Chemicals whose consumption is less than 0.05 kg/tonne pulp product (0.005 %) at the pulp mill or per paper produced at the paper mill.

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 company/licence holder. This statement shall be supported by documentation, including:

- identifying hazardous substances used in materials and production processes (including CAS numbers and Safety Data Sheets (SDS), where available) identifying the classifications that apply to these substances.
- compliance may be demonstrated by providing data indicating that the substance does not have any of the classifications (or combinations thereof) listed in Table 4 (Appendix B) for toxins, ecotoxins, carcinogens, mutagens and reproductive toxins.

Notes

The requirement above applies to all production chemicals (but not to constituent substances), except where specifically exempt.

Production chemicals include:

- chemicals additives - used to give paper certain characteristics or qualities and usually retained by cellulose fibres.
- auxiliary chemicals – used to increase efficiency and simplify production processes and often released into waste water.
- process chemicals – used to maintain pulp and paper production equipment.

5.3.2 Bleaches

Criteria

The paperboard or packaging product shall not be bleached.

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 company/licence holder. This statement shall be supported by relevant production and quality control documentation.

5.3.3 Dyes, Pigments and Coatings added to the products

Criteria

a No dyes, pigments or coatings shall be used that contain phthalates, mercury, lead, copper, chromium, nickel, aluminium or cadmium as constituent parts. Copper phthalocyanine dyes or pigments may, however, be used.

b The levels of ionic impurities in the dyes and pigments used shall not exceed the following: Ag 100 ppm; As 50 ppm; Ba 100 ppm; Cd 20 ppm; Co 500 ppm; Cr 100 ppm; Cu 250 ppm; Fe 2,500 ppm; Hg 4 ppm; Mn 1,000 ppm; Ni 200 ppm; Pb 100 ppm; Se 20 ppm; Sb 50 ppm; Zn 1,500 ppm.

c Acrylamide monomer must not be present as a constituent part of coatings.

d Azo dyes or pigments which may release one of the amines listed in Table 1 must not be used.

Table **1**

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

Amine	CAS-number
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-toluilenediamine	95-80-7
2,4,5-trimethylaniline	137-17-7
o-anisidinedimethoxyaniline	90-04-0
2,4-xylidine	95-68-1
4,6 – xylidine	87-62-7
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/licence holder. This statement shall be supported by documentation (as relevant) that:

- identifies the dyes, pigments and coatings used;
- SDS (safety data sheets) or other information to demonstrate the level of impurities in dyes and pigments; and
- demonstrates that no acrylamide monomer is used.

5.3.4 Surfactants and Foam inhibitors

Criteria

a Where surfactants are used for de-inking recycled paper input, these surfactants shall be readily biodegradable.

b Foam inhibitors used in manufacturing processes must meet either (i) or (ii) below:

i. not be assigned at the time of assessment any of the ecotoxicity classifications in Table 4 (Appendix B);

ii. 95 % by weight of the constituent substances that have a foam inhibiting or retarding effect must be either readily or ultimately biodegradable.

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/licence holder. This statement shall be supported by documentation (as relevant) that:

- identifies any surfactants or foam inhibitors used;
- SDS (safety data sheets); and
- test reports provided by laboratories competent to perform the relevant tests.

Test methods shall be those nominated below or equivalents. If an equivalent method is to be used, Environmental Choice may require details of the method and its validation.

Test Methods

The surfactant must either meet the requirement for "readily biodegradable" when determined using one of the five methods described in the OECD Guidelines for testing of chemicals, Test Guidelines 301A-301E or achieve a biodegradability of at least 80 % when tested by OECD method published in the OECD technical paper report of 11 June 1976, or as listed in the Danish Environmental Protection Agency report "Environmental Health Assessment of Substances in Household Detergents and Cosmetic Detergent Products" (2001), or equivalent test. Alternatively, the foam inhibitor may meet the requirement for ultimate biodegradability in accordance with the OECD Test Guidelines 302A-302C.

5.3.5 Cleaning Solvents and Biocides

Criteria

a Solvents used in the cleaning of production/manufacturing equipment must not contain halogenated hydrocarbons, alkylphenol ethoxylates (APEOs) or other alkylphenol derivatives as constituent parts.

b The active components in biocides or biostatic agents used to counter slime-forming in pulp and paper production shall not bioaccumulate or be potentially bio-accumulative.

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/licence holder. This statement shall be supported by documentation (as relevant) that:

- identifies the cleaning solvents and biocides used;
- SDS (safety data sheets) which show that the biocide is not boiaccumulative or potentially bioaccumulative. A substance is considered to be potentially bioaccumulative if the Log K_{ow} (log octanol/water partition coefficient) ≥3.0 (unless the experimentally determined BCF ≤100; and
- test reports for bioaccumulability of biocides or biostatic agents and/or data sheets in accordance with European Union Directive 91/155/EEC, or equivalent standard, with sufficient data and references to test methods.

5.3.6 Adhesives in padded envelopes and mulch mat

Criteria

a Adhesives in envelopes must not be classified as harmful to health, corrosive, irritant, sensitising, explosive, oxidizing, or flammable in accordance with Table 5 (Appendix C).

b Only polyvinyl acetate polymer or similar inherently biodegradable glues may be used for the manufacture of paper mulch mat.

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 company/licence holder. This statement shall be supported by information (including SDS) on the adhesives used and relevant production and quality control documentation.

5.4 Process Emissions

5.4.1 Emissions of CO_2

Criteria

The combined emissions of CO_2 from both pulp and paper production (apportioned to the product being licensed) shall not exceed:

a 1000 kg of CO_2 per tonne of De-Inked Pulp (DIP)/recycled paper produced;

b 900 kg of CO_2 per tonne of chemical pulp paper produced; or

c 1500 kg of CO_2 per tonne of mechanical pulp paper produced.

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 company/licence holder. This statement shall be supported by documentation that includes:

- test reports;
- calculations and
- production and quality control information.

Test reports must be from laboratories competent to perform the relevant tests. If an equivalent method is to be used, The Trust may require details of the method and its validation.

Notes

- The above limits include emissions from purchased electricity and use of fossil fuels, but exclude emissions from renewable sources. Renewable energy sources means renewable non-fossil energy sources, e.g. wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogas.
- For paperboard/packaging comprising a mixture of recycled, chemical and mechanical pulp, a weighted limit should be calculated, based on the proportion of each pulp type used. The total pulp emissions from the pulps should then be added to that from the paper making.

- For recycled fibre sources, emissions arising from the original production of recycled paper shall not be included in the calculations.
- CO_2 from surplus energy sold as electricity, steam or heat may be subtracted from the total CO_2 emissions.
- The amount of energy from renewable sources, purchased and used for the production processes, should not be included in the calculation.
- The energy used for converting the paper into a product and transport in distributing this product, pulps or other raw materials shall not be include in the calculations.

5.4.2 Emissions of AOX

Criteria

The weighted average value of AOX released from pulps used must not exceed:

a 0.17 kg per tonne of paper produced; and

b 0.25 kg per tonne for each individual pulp.

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 company/licence holder. This statement shall be supported by documentation that includes:

- test reports;
- calculations and
- production and quality control information.

Test reports must be from laboratories competent to perform the relevant tests. If an equivalent method is to be used, The Trust may require details of the method and its validation.

Notes

The requirements for AOX are not applicable to processes which do not use chlorine for bleaching the pulp.

Test method

AOX ISO 9562, or an equivalent test method, should be used.

5.4.3 Other emissions to air and water

This Clause covers the following emissions:

- emissions to air of sulphur (S) and nitrogen oxides (NO_x); and
- emissions to water of Chemical Oxygen Demand (COD) and phosphorus (P).

Criteria

The emissions to air and/or water from the pulp and paperboard production shall be expressed in terms of points (P_{COD}, P_S, P_P, P_{NOx}), according to the following:

a $P_{total} = P_{COD} + P_S + P_P + P_{NOx}$ must not exceed 4.0; and

b The individual point score for P_{COD}, P_S, P_P, P_{NOx} must not exceed 1.5.

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 company/licence holder. This statement shall be supported by documentation that includes:

- test reports;
- calculations and
- production and quality control information.

Test reports must be from laboratories competent to perform the relevant tests. If an equivalent method is to be used, The Trust may require details of the method and its validation.

Notes

- Emissions should be calculated in accordance with the example below for COD.
    - For each pulp "i" used, the measured COD emissions ($COD_{pulp,\,i}$) should be multiplied by the proportion of pulp in the furnish ($pulp_i$, in ADt of pulp), and added together with the results for the other pulps. The total emissions for the pulps should then be added to the measured emissions from the paper production ($COD_{papermacine}$) to give a total COD emission (COD_{total}).
    - The proportional COD reference value for each pulp should be calculated in the same manner, and added together with the reference value for the paper production to give a total COD reference value ($COD_{ref\ total}$).
    - The total COD emissions should then be divided by the total COD reference value as follows:

$$P_{COD} = \frac{COD_{total}}{COD_{ref\ total}} = \frac{\sum_{i=1}^{n}(pulp_i \times COD_{pulp,i}) + COD_{papermachine}}{\sum_{i=1}^{n}(pulp_i \times COD_{ref\ pulp,i}) + COD_{ref\ papermachine}}$$

Pulp type ($pulp_i$) or paper	Emissions (kg/ADt)			
	COD_{ref}	S_{ref}	$NO_{x\ ref}$	P_{ref}
Bleached chemical pulp (sulphate (Kraft) and other pulps)	18.0	0.6	1.6	0.045*
Bleached chemical pulp (sulphite)	25.0	0.6	1.6	0.045
Unbeached chemical pulp	10.0	0.6	1.6	0.04
CTMP	15.0	0.2	0.3	0.01
TMP/groundwood	3.0	0.2	0.3	0.01
DIP/recycled fibre	2.0	0.2	0.3	0.01
Board Production (non-integrated mills)	1	0.3	0.8	0.01
Board Production (other mills)	1	0.3	0.7	0.01

* Exemption from this level, up to a level of 0.1 shall be given were it can be demonstrated that the higher level of P is due to P naturally occurring in the wood pulp, e.g. eucalyptus.

- Emissions from the pulp and paper mills should be apportioned to the pulp/paper included in the ECNZ-licensed products before they are included in the equation above.
- Emissions from surplus energy that is sold on in the form of electricity, steam or heat, can be subtracted from the total emissions for S and NO_x.
- In the case of co-generation of heat and electricity at the same plant, emissions of S and NO_x from electricity generation can be deducted from the total emissions in order to avoid double counting. The following equation can be used to calculate the share of emissions from the electricity generation:

$$\frac{2 \times MWh_{electricity}}{\left(2 \times MWh_{electricity}\right) + MWh_{heat}}$$

  Where "electricity" and "heat" are the net values delivered from the power plant to the pulp/paper production, and do not include the working electricity/heat used at the power plant to generate the energy.
- Emissions should be measured as kg/tonne 90 % pulp as ADt pulp usually contains 90 % solids and 10 % water.
- Results should be reported as:
  - COD: kg O_2/tonne 90 % pulp or paper
  - P: kg P/tonne 90 % pulp or paper
  - S: kg S/tonne 90 % pulp or paper
  - NO_x: kg NO_2/tonne 90 % pulp or paper

Test Methods

The following test methods, or equivalents, should be used:

- For COD – ISO 6060 2nd ed. 1989
- For P – EN ISO 6878
- For S(oxid) – EPA no. 8, S(red.) – EPA no. 16A. The S emissions related to the heat energy generation from oil, coal and other external fuels with known S content may be calculated instead of measured.
- For NO_x – ISO 11564

5.5 Contaminants in Soil

Criteria

Metal content in paper mulch mat shall not exceed the following limits:

	mg/kg (dry weight)
Copper	1.31
Chromium	1.54
Cadmium	0.012
Lead	1.56

Zinc	5.87

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 company. This statement shall be supported by test results for total metal content.

Test method

Total metal content shall be established at trace level, using Total Recoverable Digest USEPS 200.2 method or equivalent. If an equivalent method is used, The Trust may require details of the test method and its validation.

Explanation

The mulch mat is left in the soil and there is potential for any contaminants that may be in the product to be released or build up in the soil. Paper used to make the mulch mat is likely to be printed. Ink products used in New Zealand may contain low levels of copper. Ink products used overseas and which may be found on printed materials imported to New Zealand may contain chromium, cadmium, lead or zinc. Adverse effects on the environment are likely if levels of these materials exceed natural background levels in soils. The limit levels in this criterion have been set at 10 % of the arithmetic mean background levels for non-volcanic soils in the Auckland Region (reference: Background Concentrations of Inorganic Elements in Soils for the Auckland Region. Auckland Regional Council Technical Publication 153, October 2001 and reprinted April 2002, ISSN 1175 205X). The 10 % level has been set on the basis that more than 90 % of the mulch mass could be lost (e.g. by decomposition and transpiration) without a net increase in metal concentration in the soil.

5.6 Energy management

Criteria

a The paper manufacturer(s), packaging or paperboard product manufacturer and licence applicant/holder must have effective energy management policies and procedures and/or an energy management programme.

b Licence holders must report annually to The Trust on energy management, this should include:

i. total energy use;

ii. breakdown of total energy use to types of energy used;

iii. energy use related to production;

iv. initiatives taken to reduce energy use and improve energy efficiency; and

v. initiatives taken to calculate and reduce CO_2 emissions associated with energy use.

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/licence holder. This statement shall be accompanied by documentation that:

- describes the energy management policies, procedures and programmes; and

- includes annual reports to The Trust on energy use and management.

5.7 Waste management

Criteria

a The paper manufacturer(s), packaging or paperboard product manufacturer and licence applicant/holder 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, this should include:

i. quantities and types of waste recovered for reuse internally and externally;
ii. quantities and types of waste recycled internally and externally;
iii. quantities and types of waste disposed of to landfill;
iv. quantities and types of waste burned internally for energy recovery;
v. waste generation related to production; and
vi. 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/licence holder. This statement shall be accompanied by documentation that:

- describes the waste management policies, procedures and programmes; and
- includes annual reports to The Trust on waste generation, minimisation and management.

5.8 Recyclability of the finished product

Criteria

a The product must not be impregnated, labelled, coated or otherwise treated in a manner, which would prevent recycling. This includes the adhesive used.

b Appropriate recycling facilities must be available nationwide in New Zealand or widely available in the country where the product is sold.

c If the packaging or paperboard is made from a raw material other than wood-pulp or has a special coating or finish, information must be provided to customers about how it should be recycled and recycling routes which must be avoided, especially if the product can't be recycled via the traditional paper/cardboard recycling stream.

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/licence holder. This statement shall be accompanied by documentation that:

- documentation verifying that the product is recyclable;
- information about the availability of recycling facilities; and
- information about appropriate recycling options for non-wood pulp products or products which special coatings or finishes.

5.9 Product Stewardship

Criteria

Licence holders must report annually to The Trust on product stewardship, including:

i. availability, feasibility, and involvement in product take back schemes;
ii. initiatives taken to promote or implement take back schemes;
iii. initiatives taken to make products more recyclable; and
iv. initiatives or requirements for suppliers or contract manufacturers.

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:

- includes information which demonstrates that the product can be recycled;
- describes the product stewardship scheme, including initiative, procedures and programmes; and
- includes annual reports on product stewardship.

6 Product characteristics

Criteria

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

b Clear information must be provided to customers where packaging or paperboard products are unsuitable for some conventional uses due to the alternative fibres/minerals they contain, special inks or coatings, or any other reason, e.g. packaging/paperboard which is not suitable for common printing techniques.

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 company/licence holder. This statement shall be supported by documentation:

- identifying the applicable standards and or consumer/customer requirements;
- demonstrating how compliance is monitored and maintained;
- records of customer feedback and complaints; and
- examples of information provided to customers about suitable or unsuitable uses of the product.

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 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 Packaging and Paperboard 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 ECNZ Label and advertising could result in the Licence being withdrawn.

Appendix A: Product Description Tables

Table 1- Fibre/Raw Material Table

Complete one table for each similar product type; use a second page if necessary.

Product description including name/number:							
Fibre/ raw material name (in English and Latin, where appropriate)	Weight in final product	Fibre/raw material as a % of finished product weight					
		Wood-based fibre (%)	Bamboo (%)	Agricultural waste/residue (%)	Minerals (%)	Other *(please specify)* (%)	Other *(please specify)* (%)
Total % by material type:							
Total %:							

Table 2- Supply Chain Information

Include each fibre/raw material and subcontracted processing operation, e.g. fibre, pulp supplier/making, paper making, board supplier etc.

Note: information about additives and hazardous substances should not be included. These are covered in Table 3.

Fibre/raw material or process	Supplier name	Supplier address and contact details, include: • all manufacturing locations • geographical origin (country/state and region/province) for each manufacturing location	Certifications held (e.g. FSC, PEFC, ISO 14001 etc)

Table 3- Additives and Hazardous Substances Description Table

Complete one table for each paper type. Furnish name/code:

Type of Chemical	ECNZ Clause	Trade Name	Chemical Name	Supplier	CAS Number	SDS		HSNO/Risk phrases/GHS	% added by weight
						Issue date	Copy attached (*v*)		
Dyes, pigments and coatings	5.3.1 5.3.3								
Surfactants and foam inhibitors	5.3.1 5.3.4								
Cleaning solvents and biocides	5.3.1 5.3.5								
Adhesives	5.3.1 5.3.6								
Other chemicals and additives used in the production of	5.3.1								

Type of Chemical	ECNZ Clause	Trade Name	Chemical Name	Supplier	CAS Number	SDS		HSNO/Risk phrases/GHS	% added by weight
						Issue date	Copy attached (*v*)		
the paper product.									

Appendix B: Hazardous Substances Classifications

Table 4- Hazardous Substance Classifications prohibited by Clause 5.3.1

European Risk Phrases*	New Zealand HSNO Classes	Globally Harmonised System**
Toxins		
R26 very toxic by inhalation	6.1A or 6.1B	Acute Tox. 1 and 2; H330
R27 very toxic in contact with skin	6.1A	Acute Tox. 1; H310
R28 very toxic if swallowed	6.1A or 6.1B	Acute Tox. 2; H300
Ecotoxins		
R50 very toxic to aquatic organisms	9.1A	Aquatic Acute 1; H400
R51 toxic to aquatic organisms	9.1B	
R50/53 very toxic to aquatic life with long lasting effects	9.1A	Aquatic Acute 1 Aquatic Chronic 1; H400, H410
R51/53 toxic to aquatic life with long lasting effects	9.1B	Aquatic Chronic 2; H411
Carcinogens, mutagens and reproductive toxins		
R40 limited evidence of a carcinogenic effect	6.7B	Carc. 2; H351
R45 may cause cancer	6.7A	Carc. 1A and 1B; H350
R46 may cause heritable genetic damage	6.6A	Muta. 1A and 1B; H340
R49 may cause cancer by inhalation	6.7A	Carc. 1A and 1B; H350
R60 may impair fertility	6.8A	Repr. 1A and 1B; H360
R61 may cause harm to the unborn child	6.8A	Repr. 1A and 1B; H360
R62 possible risk of impaired fertility	6.8B	Repr 2; H361
R63 possible risk of harm to the unborn child	6.8B	Repr 2; H361d
R68 possible risk of irreversible effects	6.6B	Muta. 2; H341

* R-phase and GHS equivalents to HSNO classifications are taken from *Assigning a Product to a HSNO Approval*, Environmental Protection Authority, (Revised August 2013).

** (EC) No 1272/2008, Annex VII (Amended 10 July 2012)

NOTE: There are different classification systems for hazardous substances that are used internationally. As the ECNZ specifications need to consider products that are manufactured in New Zealand and overseas, it is necessary to consider the equivalence of hazardous property classification systems in different jurisdictions. The table above shows the (broadly) equivalent European Risk Phrases, New Zealand HSNO Classifications and the United Nations' Globally Harmonised System of Classification and Labelling of Chemicals (GHS) classifications. The EU has implemented the GHS into EU law, replacing the

Risk Phrases, and all “substances” (single compounds) have now been transferred to the new classification system. Mixtures must be classified under the GHS by 31 May 2015.

It is important to note that the Risk Phrases, HSNO Classifications and GHS are classification frameworks and the particular classifications applied to a substance may vary between jurisdictions (for example Europe, the United States and New Zealand each have their own agency with responsibility for assessing and classifying hazardous substances). Differences between classifications can be due to the weight placed on particular toxicity studies (i.e. a jurisdiction may consider that a study is flawed) or in the event that new information becomes available (i.e. differences in the timing of the classification or re-classification of a substance).

Where there is a discrepancy between the classifications applied to specific substances in the different schemes, The Trust’s appointed technical advisors will review supporting information regarding the classifications on a case-by-case basis to determine and recommend to The Trust how these discrepancies should be managed within the life cycle context of the relevant product category. Where appropriate, technical clarifications and changes, with accompanying explanation, will be included in the relevant specification.

Appendix C: Prohibited Classifications for Adhesives

Table 5- Additional Hazardous Substance Classifications prohibited by Clause 5.3.6 for adhesives

European Risk Phrases*	New Zealand HSNO Classes	Globally Harmonised System**
Toxins		
R20 harmful by inhalation	6.1C or 6.1D	Acute Tox. 4; H332
R21 harmful in contact with skin	6.1D	Acute Tox. 4; H312
R22 harmful if swallowed	6.1D	Acute Tox. 4; H302
Irritants and Sensitisers		
R36 irritating to eyes	6.4A	Eye Irrit. 2; H319
R37 irritating to respiratory system	6.1E	STOT SE 3; H335
R38 irritating to skin	6.3A	Skin Irrit. 2; H315
R41 risk of serious damage to eyes	8.3A	Eye Dam. 1; H318
R42 May cause sensitisation by inhalation	6.5A	Resp. Sens. 1; H334
R43 May cause sensitisation by skin contact	6.5B	Skin. Sens. 1; H317
Corrosiveness		
R34 causes burns	8.2B or 8.2C (skin corrosive) or 8.3 A (eye corrosive)	Skin Corr. 1B; H314
R35 causes severe burns	8.3A (skin corrosive) or 8.3 A (eye corrosive)	Skin Corr. 1A; H314
Explosive, Oxidising and Flammable		
R2 risk of explosion R3 extreme risk of explosion	1	
R11 highly flammable R12 extremely flammable R15 contact with water liberates extremely flammable gas R17 spontaneously flammable in air	2	H224, H225 H220, H221, H224, H242 H250
R7 may cause fire R8 contact with combustible material may cause fire R9 explosive when mixed with combustible material	5 oxidising	H242 H270 H271

* R-phase and GHS equivalents to HSNO classifications are taken from *Assigning a Product to a HSNO Approval*, Environmental Protection Authority, (Revised August 2013).

** (EC) No 1272/2008, Annex VII (Amended 10 July 2012)

NOTE: There are different classification systems for hazardous substances that are used internationally. As the ECNZ specifications need to consider products that are manufactured in New Zealand and overseas, it is necessary to consider the equivalence of hazardous property classification systems in different jurisdictions. The table above shows the (broadly) equivalent European Risk Phrases, New

Zealand HSNO Classifications and the United Nations' Globally Harmonised System of Classification and Labelling of Chemicals (GHS) classifications. The EU has implemented the GHS into EU law, replacing the Risk Phrases, and all “substances” (single compounds) have now been transferred to the new classification system. Mixtures must be classified under the GHS by 31 May 2015.

It is important to note that the Risk Phrases, HSNO Classifications and GHS are classification frameworks and the particular classifications applied to a substance may vary between jurisdictions (for example Europe, the United States and New Zealand each have their own agency with responsibility for assessing and classifying hazardous substances). Differences between classifications can be due to the weight placed on particular toxicity studies (i.e. a jurisdiction may consider that a study is flawed) or in the event that new information becomes available (i.e. differences in the timing of the classification or re-classification of a substance).

Where there is a discrepancy between the classifications applied to specific substances in the different schemes, The Trust’s appointed technical advisors will review supporting information regarding the classifications on a case-by-case basis to determine and recommend to The Trust how these discrepancies should be managed within the life cycle context of the relevant product category. Where appropriate, technical clarifications and changes, with accompanying explanation, will be included in the relevant specification.