



The New Zealand Ecolabelling Trust

Licence Criteria for

Furniture and Fittings

EC-32-11

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SPECIFICATION CHANGE HISTORY – minor clarifications, corrections or technical changes made since the specification was last reviewed and issued in March 2011.

Date	Version	Change
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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. 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 New Zealand Ecolabelling Trust Board is pleased to publish this proposed revised specification for Furniture and Fittings. The specification has been published to take account of substances harmful to the environment, energy management and consumption of resources.

This proposed specification sets out the requirements that Furniture and Fittings products will be required to meet in order to be licensed to use the Environmental Choice New Zealand 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.

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This proposed revised 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 Environmental Choice New Zealand specifications and experience from licence assessments.

Once finalised, 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

Furniture and fitting products can place a significant burden on the environment. The most important impacts on the environment are related to sourcing and producing the materials that are used to make furniture and fittings. A wide range of materials is used. These materials have different impacts on the environment and present different opportunities to differentiate products on the basis of environmental performance.

Materials used in furniture and fittings may be sourced from natural and renewable resources, for example, wood and natural fibres for textiles. Other materials are sourced from non-renewable resources, for example steel, aluminium and plastic polymers from hydrocarbons. These materials are generally recyclable and supplies of post-consumer recycled materials are readily available in many cases. Wood is commonly used. Harvesting of wood can have significant impacts on forest environmental values and communities. Sourcing wood from sustainably managed forests will help to protect these values. Encouraging reuse and recycling of non-renewal resources will help to reduce the impacts associated with mining and extracting these resources.

Processing of the materials used in furniture and fittings can involve using hazardous substances including a wide range of preservatives, biocides, pesticides, dyes, heavy metal additives, tanning agents, degreasing and cleaning agents, blowing agents, formaldehyde, solvents, adhesives and flame retardants. Some of these substances are carcinogenic, mutagenic, toxic, ecotoxic, harmful to human reproductive systems or can contribute to global warming. Discharges of these from processing operations can have adverse impacts on the environment and people.

Some of the hazardous substances used in manufacturing can become incorporated in the materials and can result in discharges from the finished furniture product. These can have adverse effects on human health during use, for example, from high levels of formaldehyde emissions to air in indoor environments from some wood panels and other products, and emissions of other volatile organic compounds (VOCs).

Hazardous substances incorporated in products can also result in discharges and contaminants when products are disposed to landfill or by incineration. Restricting the use of these hazardous substances will help to reduce the adverse impacts of furniture and fitting products on the environment.

Surface coatings or treatments are applied to many of the materials used in furniture and fittings. These can be important to provide protection, for example from corrosion, heat or fire, and help to prolong the useful life of the product. Surface coatings and treatments involve

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using hazardous substances and restrictions on these will also help to reduce the adverse impacts of these processes on the environment.

A significant potential environmental impact identified in life-cycle information reviewed, results from using adhesives. Controls on adhesives used in manufacturing will help to reduce adverse impacts from furniture and fitting products.

Because the most significant adverse impacts in the life cycle of furniture and fittings result from sourcing and producing the raw materials (including the associated use of hazardous substances), encouraging features that ensure products are durable and have a long life, will help to reduce the overall burden of these products on the environment. Encouraging features that allow for reuse and recycling will also prolong the effective life of the raw materials used in manufacturing. Requirements for product quality (including guarantees) and regarding ease of maintenance (in particular cleaning) and repair will help to prolong the life of the product. Requirements to encourage or enable recycling include those on ease of disassembly and labelling of plastic parts.

Based on a review of currently available information, the following product category requirements will produce environmental benefits by encouraging more sustainable production of raw materials, reducing the use of hazardous substances and their associated discharges and prolonging the useful life of the products and their component parts. As information and technology change, product category requirements will be reviewed, updated and possibly amended.

3. INTERPRETATION

Blowing agent means a substance (gas, liquid) that is able to produce cells in the plastic structure of a foam. This process can vary according to the property of the substance, e.g. a liquid may develop cells when changing into gas and a gas may expand when pressure is released¹.

CFCs means Chlorofluorocarbons

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

Engineered wood products are composites of wood and resin. Examples are medium density fibreboard (MDF), particleboard and plywood.

ISO means International Organisation for Standardisation.

GEN means Global Ecolabelling Network

¹ Published by the German Technical Cooperation – Programme Proklima and commissioned by the German Federal Ministry for Economic Cooperation and Development

Global Warming Potential (GWP) is a measure of how much a gas is estimated to contribute to global warming. It is a relative scale that compares the contribution of the gas to that of the same mass of carbon dioxide (CO₂), which has a GWP of 1, over a defined time frame. E.g. methane has a GWP of 21 (100-year time frame). This means that, over 100 years, methane will be approximately 21 times more heat-absorptive than CO₂ per unit of weight¹.

HCFCs means hydrochlorofluorocarbons

HFCs means hydrofluorocarbons

Label means the Environmental Choice New Zealand Label.

Ozone Depleting Potential is a relative value that indicates the potential of a substance to destroy ozone gas (and thereby damage the Earth's ozone layer) as compared with the impact of a similar mass of chlorofluorocarbon-11 (CFC-11). CFC-11 is assigned a reference value of 1. E.g. a substance with an ODP of 2 is twice as harmful to the ozone layer as CFC-11¹.

Recycled Wood includes:

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-utilisation of materials generated in a process and capable of being reclaimed within the same process that generated it.

Safety Data Sheet 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.

Shall not be added means deliberate additions to a product or its components. This can be verified by declarations and examination of the input material documentation (SDS for steel, nylon or dyes for example).

Shall not be used during the production processes means not used for processes which do not add substance to the final product (for example degreasing, bleaching). This shall apply to the licence applicant/holder and first tier suppliers. This can be verified by declarations and SDS of substances used in production processes.

Wood Treatment means biocide, fungicide, insecticide or other preservative.

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

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4. CATEGORY DEFINITION

This category includes:

- indoor and outdoor furniture, including for example chairs, desks, tables, cabinets, book shelves, beds and wardrobes;
- fittings including for example partitions, window frames, doors, wall furniture, skirting strips and shelves;
- panels to be used for making furniture or fittings.

Panels used primarily for interior linings should be licensed under the specification for ***Interior Lining Products for Buildings*** EC-46-11.

The furniture, fitting or panel product must comprise at least 90% by weight of one or more of the materials covered in clauses 5.2 – 5.8 of this specification. No other single material shall comprise more than 5% weight.

To be licensed to use the Label, the furniture 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 at the time of making an application. 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 components, their suppliers, material type and % by weight of the finished product (see Table 1 in Appendix A);
- component and process supplier information (see Table 2 in Appendix A);

NOTES:

1. Completed tables of information will be attached to and form part of the Applicant's Statement on Compliance required to be signed by applicants during the licence assessment and confirmed by licence holders during licence supervision assessments.
2. Changes to information, in particular to products and suppliers, will require assessment before they can be confirmed on an ECNZ licence.

5. ENVIRONMENTAL CRITERIA

5.1 Legal Requirements

Criteria

- a) The product must comply with the provisions of all relevant environmental laws and regulations that are applicable during the product's life cycle.
- b) Significant component manufacturing or processes involved in the production of a furniture or fitting product may not be under the direct control of a licence

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applicant/holder. Where this is the case, the licence applicant/holder must have and implement a formal supplier regulatory compliance management/assurance programme that:

- Includes documented requirements for suppliers to provide components or services compliant with applicable environmental regulatory requirements (for example in supply contract conditions);
- Identifies suppliers, materials or processes that involve, or would be expected to be subject to a high level of regulatory control and/or which present a risk of regulatory non-compliance;
- Includes appropriate requirements (based on the risk assessment) for suppliers to provide assurance to the licence applicant/holder on the supplier's environmental regulatory compliance.

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 and demonstrating how compliance is monitored and maintained.** In cases where there is a high potential risk associated with environmental regulatory compliance and limited assurance provided by the licence applicant/holder's supplier regulatory compliance management programme, The Trust's assessor may require an on-site inspection at the relevant supplier's premises.

Explanatory Notes

Relevant laws and regulations 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
- 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.

Assurance and/or information that licence applicants/holders may require from their suppliers could include:

- 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);

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- 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 Solid Wood

The furniture or fitting product shall meet the requirements for solid wood set in criteria 5.2 if solid wood contributes more than 10 % of the weight of the product.

5.2.1 Sources of solid wood

Criteria

The wood included in the furniture or fitting product must meet either requirement a) or b) below.

- a) The product must be made from recycled wood.

OR

- b) A minimum of 50% by weight of the wood in the furniture or fitting must be from plantations licensed under the Forest Stewardship Council or equivalent schemes;

AND

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

- c) Companies relying on option (b) above must:
- (i) maintain records of the certification of wood used in licensed products; and
 - (ii) have, implement and report on an ongoing programme to review options and increase Forest Stewardship Council or equivalent certified content in 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. **The statement shall be supported by documentation (as relevant):**

- recording the supplier, nature and geographical source of all wood inputs;
- demonstrating the wood is recycled;

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- including certificates or other evidence on forest management certification and chain of custody (to confirm the wood that is used is from a certified sustainably managed source),
- describing management systems in place to ensure that these requirements are consistently met,
- describing the programme to review options and increase FSC or equivalent certified wood content in licensed products, and
- includes annual reports to ECNZ on this procurement programme.

Types of FSC certificates which can be used to demonstrate compliance with the above requirements:

- FSC Pure
- FSC Mixed X % - provided the % is > 50 %
- FSC Mixed Credit – only if the manufacturer can demonstrate that actual FSC material is used for the ECNZ products
- FSC Controlled Wood – does not meet the ECNZ requirements
- FSC Recycled – provided it contains 100% recycled material.

Please note, the above are types of FSC certificates or sales documents. FSC labels use different wording and have different minimum content requirements.

The following certification schemes will be accepted as equivalent to FSC certification:

- Programme for the Endorsement of Forest Certification schemes (PEFC) (<http://www.pefc.org/>)
- Canadian Standards Association (CSA) National Standard for Sustainable Forest Management (<http://www.fpac.ca/>)
- Sustainable Forestry Initiative® (SFI) (<http://www.aboutsfi.org/>).

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.proforest.net/cpet.

NOTE: The Trust intends to monitor levels of forestry certification, with the expectation that the 50 % minimum requirement will be increased when a higher level is attainable.

5.2.2 Wood treatments

Criteria

- a) Wood used in the furniture or fitting product must not be treated with fungicides or insecticides that are classified by the World Health Organisation (WHO) as type 1A (extremely hazardous pesticides) or type 1B (highly hazardous pesticides).
- b) Wood preservatives shall only be used on outdoor furniture or fittings.
- c) Timber that is naturally durable shall not be treated.

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- d) Wood preservatives used on products must not have active substances that are based on organic tin compounds or creosote oil.
- e) For furniture and fitting products that are not permanently outdoors, wood preservatives must not contain active substances, pigments or additives that are based on arsenic, boron or copper.
- f) For furniture and fitting products that are not permanently outdoors, wood preservatives that do not contain biocides must not be classified as ecotoxic, toxic or allergenic by inhalation.
- g) For furniture and fitting products that are not permanently outdoors, the organic solvent content of the wood preservatives used must not exceed 5% by weight. The aromatic content of the solvent must not exceed 5% by weight.

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. **The statement shall be supported by documentation that:**

- identifies all biocides that are used and demonstrates these have been checked against the WHO lists and confirmed not to be on those lists.
- lists all wood preservatives used (including CAS No where available)
- includes Material Safety Data Sheets for wood preservatives and for active substances and additives
- identifies the classifications that apply to each preservative
- demonstrates that the requirements are met for each furniture or fitting product.

Compliance with requirements f) may be demonstrated by providing data indicating that the preservative does not have any of the classifications (or combinations thereof) listed in Table 3 (Appendix B) for toxins, ecotoxins or sensitisers.

5.3 Engineered Wood Products

The furniture or fitting product shall meet the requirements for engineered wood set in criteria 5.3 if engineered wood contributes more than 10 % of the weight of the product.

5.3.1 Sources of wood for engineered wood products

Criteria

- a) Annually, either (i), (ii) or (iii) must be fulfilled:
 - (i) at least 30 % of all wood purchased for the engineered wood components or products must consist of wood from plantations licensed under the Forest Stewardship Council or equivalent schemes².
 - OR
 - (ii) at least 40 % of all wood purchased for the engineered wood components or products must consist of sawdust/ wood chips and /or by-products from wood processing operations, forest harvesting by-products and/or untreated demolition and/or recycled fibre.

² Refer to clause 5.2.1 for information on “equivalent” schemes.

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OR

- (iii) at least 40 % of all wood purchased for the engineered wood components or products must consist of wood from a combination of sources described in (i) and (ii) above.

AND

- (iv) the licensee must ensure that raw materials do not come from forest environments that are protected for biological and/or social reasons.

b) Companies must:

- (i) maintain records of the type and percentage of each wood fibre used in licensed products; and
- (ii) have, implement and report on an ongoing programme to review options and increase recycled/waste/by-product fibre or FSC (or equivalent) certified content in 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. **The Applicant's statement shall be supported by documentation:**

- recording the supplier, nature and geographical source of all wood inputs;
- including certificates or other evidence on forest management and certification,
- describing management systems in place to ensure that these requirements are consistently met,
- describing the programme to review options and increase FSC or equivalent certified wood or recycled/waste fibre content in licensed products, and
- including annual reports to ECNZ on this improvement programme.

NOTE: The Trust intends to monitor levels of forestry certification, with the expectation that the 30% minimum requirement will be increased when a higher level is attainable.

Types of FSC certificates which can be used to demonstrate compliance with the above requirements:

- FSC Pure
- FSC Mixed X %
- FSC Mixed Credit – only if the manufacturer can demonstrate that actual FSC material is used for the ECNZ products
- FSC Controlled Wood – does not meet the ECNZ requirements
- FSC Recycled

Please note, the above are types of FSC certificates or sales documents. FSC labels use different wording and have different minimum content requirements.

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5.3.2 Hazardous substances used in engineered wood products

Criteria

- a) Engineered wood products must not contain substances exceeding 0.5 g/Kg that are classified toxic or allergenic by inhalation. Wood dust (which is physically and chemically bound in the product) is exempt from this requirement.
- b) Engineered wood products must not contain substances exceeding 0.5 g/Kg panel that are classified as ecotoxic.
- c) Where wood-based materials (excluding raw timber) comprise more than 5 % by weight of the furniture or fitting product, the formaldehyde emissions from the wood-based components shall not exceed the following limits:
 - (i) 1.5 mg/l for raw particleboard
 - (ii) 1.0 mg/l for other engineered wood materials(these limits applied as per AS/NZS 1859, ie 95 percentile compliance, Desiccator method).

NOTE: These limits are met by E1 particleboard and MDF or other engineered wood material as defined by AS/NZS 1859.

- d) Licence holders must:
 - Document, implement and report on a programme to monitor resin and manufacturing technology;
 - Develop, maintain, implement and report on an improvement programme to produce lower formaldehyde emission products;
 - Record performance of manufacturing processes (including achieved product emission levels and product reject rates)

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. **The statement shall be supported by documentation that:**

- lists all hazardous substances and products included in each wood panel product used in the furniture or fitting (including CAS No where available);
- includes Material Safety Data Sheets for hazardous substances;
- identifies the classifications that apply to each substance;
- demonstrates that thresholds for groups or individual hazardous substances are not exceeded in each panel product;
- includes test reports for formaldehyde; and
- includes documentation for the implemented formaldehyde emission programmes.

Compliance with the requirements in a) and b) may be demonstrated by providing data indicating that the substance does not have any of the classifications (or combinations thereof) listed in Table 3 (Appendix B) for toxins, ecotoxins and sensitisers.

Compliance with c) (i) and (ii) shall be demonstrated by providing test reports from a competent laboratory using the relevant test method below:

- AS/NZS 4266.16 Reconstituted wood-based panels – Methods of test – Formaldehyde emission – Desiccator method

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- AS/NZS 2098.11 Determination of formaldehyde emission from plywood
- AS/NZS 4357.4 Structural laminated veneer lumber- Part 4 Determination of formaldehyde emissions

5.4 Metals

The furniture or fitting product shall meet the requirements for metals set in criteria 5.4 if metals contribute more than 10 % of the weight of the product.

Criteria

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

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 supported by appropriate documentation of product specifications, production methods and quality controls.**

5.5 Plastics

The furniture or fitting product shall meet the requirements for plastics set in criteria 5.5 if plastics contribute more than 10 % of the weight of the product, unless otherwise specified. Polymers used as padding material and textiles are not to be included in the calculation to determine if plastics make up 10 % by weight of the furniture or fitting product.

5.5.1 Plastic materials

Criteria

- a) Plastic parts in the product shall be documented with type of plastics and portion of filler and/or reinforcement.
- b) Information shall be provided to ECNZ at application and thereafter reported annually on **all** PVC and/or phthalates used in the furniture or fitting product. This should include information from production records and/or suppliers on:
 - (i) the percentages by weight of recycled and virgin PVC;
 - (ii) the particular production processes (membrane cells, non asbestos diaphragms, modified diaphragms, graphite anodes, mercury cells, closed-lid production etc) used to produce chlorine and VCM for the PVC being used in an ECNZ-licensed furniture and fitting product (including the locations of the production);
 - (iii) information, where available, on waste disposal, wastewater treatment and emissions to air (occupational exposure, emissions from the factory and emissions from the final PVC resin);
 - (iv) information on any Environmental Management System (EMS) for the production process, including requirements for waste, water, air and product-related requirements;
 - (v) the types of stabilisers used;
 - (vi) the types and amounts of any phthalate plasticisers present in recycled content of the PVC (if that information is available) and/or added when manufacturing PVC;
 - (vii) research and initiatives implemented on substitutes for phthalates identified as of concern by regulators; and
 - (viii) any product stewardship arrangements for the PVC

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NOTE: Regulators have identified the following phthalates to be of concern – dibutyl phthalate (DBP), diisobutyl phthalate (DIBP), butyl benzyl phthalate (BBP), di-*n*-pentyl phthalate (DnPP), di(2-ethylhexyl) phthalate (DEHP), di-*n*-octyl phthalate (DnOP), diisononyl phthalate (DINP) and diisodecyl phthalate (DIDP). These phthalates may be prohibited by the Hazardous Substances criteria in clause 5.9.

- (c) Licence holders must:
- (i) maintain records of the types and percentages of recycled plastic used in licensed products; and
 - (ii) have and implement an ongoing programme to review options and increase recycled plastic content in licensed products until an optimal level is achieved, as determined by the required performance characteristics and availability of recycled materials.

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 supported by appropriate documentation of product specifications, strength/durability test results for parts with recycled content, production methods, calculations and quality controls including:**

- records of the types of plastics used
- initial and ongoing annual reports to ECNZ on PVC and plasticisers used

NOTE: The Trust intends to monitor recycled plastic availability and content in licensed products with the expectation that a minimum recycled content limits will be set in future.

5.5.2 Recycling of plastics

Criteria

- a) Plastic parts that are recyclable or reusable must be able to be separated from other materials in the furniture or fitting product without the use of special tools.
- b) Plastic parts > 100 g shall be labelled in accordance with ISO 11469 or a similar standard to indicate the plastic type. Exemptions may be made for products where the nature of the manufacturing process or the size and shape of the product prevent or restrict labelling. Where a product or component is exempt, information about the plastic types and recyclability shall be available to those purchasing, using or disposing of the product.
- c) Plastic parts must not be treated or coated in a way that would prevent recycling or reuse.

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 supported by appropriate documentation of product specifications, production methods, information provided to consumers and quality controls.**

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5.6 Leather and Textiles

The furniture or fitting product shall meet the requirements for leather and textiles set in criteria 5.6 if leather and textiles contribute more than 10 % of the weight of the product.

Criteria

Leather and textiles must meet the relevant ECNZ requirements for Textiles, Skins and Leather in EC-31-06 (or any more recent version).

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. **The statement shall be supported by a copy of the Environmental Choice certificate or assessment report demonstrating compliance for the textiles used.**

5.7 Glass

The furniture or fitting product shall meet the requirements for glass set in criteria 5.7 if glass contributes more than 10 % of the weight of the product.

Criteria

- a) No lead glazing, crystal glass, mirror glass, wire reinforced glass or laminated glass shall be used.
- b) Glass parts of the furniture or fitting product must be able to be easily replaced.

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 supported by appropriate documentation of product specifications, production methods and quality controls.**

5.8 Padding Materials

5.8.1 Hazardous materials in paddings

The furniture or fitting product shall meet the requirements for padding materials set in criteria 5.8 if padding materials contribute more than 10 % of the weight of the product.

Criteria

- a) Paddings shall not be manufactured using blowing agents with a global warming potential (GWP) of more than 140, measured over a 100 year time frame.
- b) Blowing agents must have an ozone depleting potential (ODP) of zero.
- c) Chlorophenols, PCB or organic tin compounds must not be used during storage or transport of padding materials.
- d) Chloro-organic bleaching agents must not be used in production of padding materials.
- e) No aniline based amines or pigments dispersed in alkyl phenols are to be added to polyurethane foams used in furniture or fittings.

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f) Dyes may only be used for distinguishing between different qualities within the same range of padding materials.

g) Azo dyes shall not be used that may cleave (or bind) to any one of the following aromatic amines:

4-aminodiphenyl	(92-67-1)
Benzidine	(92-87-5)
4-chloro-o-toluidine	(95-69-2)
2-naphthylamine	(91-59-8)
o-amino-azotoluene	(97-56-3)
2-amino-4-nitrotoluene	(99-55-8)
p-chloroaniline	(106-47-8)
2,4-diaminoanisol	(615-05-4)
4,4'-diaminodiphenylmethane	(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'-diaminodiphenylmethane	(838-88-0)
p-cresidine	(120-71-8)
4,4'-methylene-bis-(2-chloraniline)	(101-14-4)
4,4'-oxydianiline	(101-80-4)
4,4'-thiodianiline	(139-65-1)
o-toluidine	(95-53-4)
2,4-diaminotoluene	(95-80-7)
2,4,5-trimethylaniline	(137-17-7)
4-aminoazobenzene	(60-09-3)
o-anisidine	(90-04-0)
2,4-Xylidine	(87-62-7)
2,6-Xylidine	(95-68-1)

h) Organic tin catalysts may be used in the production of flexible polyurethane if the manufacturer has in place a contract with a hazardous waste disposal company for the disposal of the waste and can demonstrate that the hazardous waste is correctly disposed of.

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. **The statement shall be supported by documentation that:**

- identifies the hazardous substances, dyes and products used in production of padding (including CAS No where available);
- includes Material Safety Data Sheets for relevant hazardous substances and dyes;
- identifies the blowing agents used and their GWPs and ODPs; and
- includes records of disposal of hazardous waste from the use of organic tin

GWP and ODP of common blowing agents are given in Appendix C. For determining the ODP and GWP of substances not included in Appendix C, reference should be made to one of the following:

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- Daniel, J.S., and G.J.M. Velders (Lead Authors), A.R. Douglass, P.M.D. Forster, D.A. Hauglustaine, I.S.A. Isaksen, L.J.M. Kuijpers, A. McCulloch, and T.J. Wallington, Halocarbon scenarios, ozone depletion potentials, and global warming potentials, Chapter 8 in Scientific Assessment of Ozone Depletion: 2006, Global Ozone Research and Monitoring Project—Report No. 50, 572 pp., World Meteorological Organization, Geneva, Switzerland, 2007.
http://www.wmo.ch/pages/prog/arep/gaw/ozone_2006/ozone_asst_report.html
- US EPA Ozone Depleting Substances website
<http://www.epa.gov/ozone/science/ods/index.html>
- Forster, P., V. Ramaswamy, P. Artaxo, T. Berntsen, R. Betts, D.W. Fahey, J. Haywood, J. Lean, D.C. Lowe, G. Myhre, J. Nganga, R. Prinn, G. Raga, M. Schulz and R. Van Dorland, 2007: Changes in Atmospheric Constituents and in Radiative Forcing. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
<http://ipcc-wg1.ucar.edu/wg1/wg1-report.html>

If alternative reference sources are used, Environmental Choice will require full details of the reference source or a copy of the document, if it is not readily and freely available.

5.8.2 Recycled content and recycling of foam padding materials

Criteria

- a) A minimum of 90% of total waste from production of the padding materials is to be recyclable.
- b) Licence holders must maintain records of waste from production processes for licensed products. These records must include information on each waste component's ability to be recycled and volumes of waste that are recycled.
- c) Licence holders must have, implement and report on an ongoing programme to maximise the proportion of waste from production of padding materials that is recycled.

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 supported by appropriate documentation including:**

- details of production waste and its recyclability;
- volumes of wastes recycled; and
- waste recycling programme.

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5.9 Hazardous Substances

5.9.1 General hazardous substances

Criteria

These criteria apply to all materials in the furniture and fitting product and all related processes used by the licence applicant/holder, their component suppliers and sub-contractors, unless otherwise specified.

The following are exempt from clause 5.9.1:

- Small parts such as screws, hinges, locks, bolts etc. unless they are parts that are intended to come in frequent contact with skin.
- Trace levels (<0.1 % by weight) of substances reported in MSDS to be potentially present as contaminants or impurities in raw materials or component substances
- Recycled content that may have been treated or produced with the prohibited substances during its previous lifecycle

a) The following substances shall not be added to the furniture or fitting product or used during the production processes:

- Arsenic
- Cadmium
- Chromium VI compounds
- Copper
- Lead
- Mercury

Pigments, additives, catalysts and stabilisers are included in these requirements.

Small parts, such as keys, which are intended to come into frequent contact with skin may be made from free-machining brass containing lead but must be designed to minimise skin contact.

The following are exempt from this clause:

- PVC (which is specifically controlled by requirements in 5.5.1(b))
- copper that is included in a metal alloy, or in electrical components (if included in a furniture or fitting product)
- furniture that is permanently stored and used outdoors is exempt from restrictions in (a) on pigments containing lead, cadmium, chromium VI, mercury or their compounds.

NOTE: The Trust intends to monitor information on PVC obtained from 5.5.1 b) and may in future remove this exemption for PVC.

b) No substances shall be added to furniture or fitting products or used during the production processes that are classified as carcinogenic, harmful to the reproductive system or genetically harmful.

The following are exempt from this clause:

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- wood dust (which is physically and chemically bound in the product)
- formaldehyde (which is specifically controlled by requirements in 5.5.2 5.11.2 and 5.12)
- aziridine and polyaziridines used in furniture that is permanently stored and used outdoors

NOTE: Under current HSNO, GHS classifications or EU Risk phrases, this clause will preclude the use of certain phthalates including DEHP and DBP, certain aziridine compounds, certain powder coating preparatory treatments and certain plastics.

- c) Halogenated organic substances or solvents, including methylene chloride, binding agents and flame retardants, shall not be added to furniture or fitting products or used during the production processes.

The following are exempt from this clause:

- Furniture that is permanently stored and used outdoors
- Foam blowing agents (which are specifically controlled by requirements in 5.8.1).

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. **The statement shall be supported by documentation that:**

- identifies hazardous substances used in materials and production processes (including CAS numbers and Material Safety Data Sheets, where available)
- identifies the classifications that apply to these substances, confirming all meet criteria b)
- includes information (which may include supplier declarations and supporting evidence) demonstrating no banned substance is added or used
- includes relevant test reports.

Compliance with the requirements in b) may be demonstrated by providing data indicating that the substance does not have any of the classifications (or combinations thereof) listed in Table 3 (Appendix B) for carcinogens, mutagens and reproductive toxins.

5.9.2 Surface treatment of metals

The criteria below apply to each metal type (e.g. anodised aluminium or powdercoated steel) which amounts to more than 5 % by weight in the finished product.

Criteria

- a) Preparatory treatment and surface treatment chemicals must not be classified as toxic or allergenic by inhalation.
- b) Surface treatment chemicals for furniture which is intended to be stored or used outdoors must not be classified as ecotoxic.
- c) Metals must not be coated with cadmium, chrome, nickel or tin or their compounds.

In exceptional cases, metal surfaces may be treated with chromium or nickel where this is necessary on the grounds of heavy physical wear or in the case of parts that require

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particularly tight connections (e.g. gaslifters, table and chair legs). Such chromium plating should not use chromium VI compounds.

Small parts such as screws, hinges, locks, bolts etc are exempt from the requirements in c) unless they are parts that are intended to come into frequent contact with skin.

- d) The content of organic solvents in treatment substances must not exceed 5 % w/w of which the content of aromatic solvent must not exceed 1 % w/w.

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. **The statement shall be supported by documentation that:**

- lists all hazardous substances and products included in each surface treatment of the furniture or fitting product (including CAS No where available);
- includes Material Safety Data Sheets for hazardous substances;
- identifies classifications that apply to each substance; and
- demonstrates that thresholds for groups or individual hazardous substances are not exceeded.

Compliance with the requirements in a) and b) may be demonstrated by providing data indicating that the surface treatment does not have any of the classifications (or combinations thereof) listed in Table 3 (Appendix B) for toxins, ecotoxins or sensitisers.

5.9.3 Surface treatment of wood and engineered wood products

The criteria below apply to each wood type (e.g. solid pine or MDF) which amounts to more than 5 % by weight in the finished product.

Criteria

- a) The surface treatment products must not be classified as toxic or allergenic by inhalation.

- b) The surface treatment process must meet either (i) or (ii).

(i) Content and classification of the surface treatment agents:

The treatment substances must not:

- be classified ecotoxic; and
- contain more than 7% by weight x efficiency of organic solvents (boiling point <250 °C)

OR

(ii) Calculation of applied quantity of ecotoxic and organic solvent substances:

- The furniture or fitting product may be treated with a maximum of 14 g/m² of substances that are classified as ecotoxic; and
- The amount of organic solvent (boiling point <250 °C) added in the surface treatment must not exceed 35 g/m².

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NOTE: these options are to provide greater flexibility in the choice of surface treatment systems. It should not be interpreted that (b)(i) is for non-ecotoxic substances and (b)(ii) is for ecotoxic substances.

- c) The content of aromatic solvent in products used on indoor furniture must not exceed 1 % w/w and for outdoor furniture must not exceed 5 % w/w.
- d) Where a surface treatment is applied and the treatment substance or preparation contains formaldehyde, formaldehyde emissions from the treated component shall not exceed 1.0 mg/l. (For surface laminations onto a wood-based panel, the substrate edges must be sealed for testing).

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. **The statement shall be supported by documentation that:**

- identifies the surface treatment products used in the furniture or fittings (including CAS No where available);
- includes Material Safety Data Sheets for the treatment substances;
- identifies classifications that apply to each substance;
- demonstrates that thresholds for groups or individual hazardous substances are not exceeded; and
- demonstrates the formaldehyde levels are met

Compliance with the requirements in a) and b) may be demonstrated by providing data indicating that the surface treatment does not have any of the classifications (or combinations thereof) listed in Table 3 (Appendix B) for toxins, ecotoxins or sensitisers.

For b), the following efficiency figures are to be used:

Spray coating without recycling	50%
Spray coating with recycling	70%
Spray coating, electrostatic	65%
Spraying, bell/disc	80%
Roller coating	95%
Curtain coating	95%
Vacuum coating	95%
Dipping	95%
Rinsing	95%

For example for spray coating without recycling, the organic solvent content limit will be $7/100 \times 50\% = 3.5\%$.

Test Methods

Compliance with d) shall be demonstrated by providing test reports from a competent laboratory using the relevant test method below:

- AS/NZS 4266.16 Reconstituted wood-based panels – Methods of test – Formaldehyde emission – Desiccator method
- AS/NZS 2098.11 Determination of formaldehyde emission from plywood
- AS/NZS 4357.4 Structural laminated veneer lumber- Part 4 Determination of formaldehyde emissions

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5.9.4 Adhesives

Criteria

- a) No adhesives that are classified toxic shall be used in the furniture or fitting.
- b) If there is more than 50 g (wet adhesive) in the finished product, the adhesive must not be classified ecotoxic.
- c) The adhesives may contain a maximum of 5 % organic compounds with boiling point <260 °C.
- d) The adhesive must not be formulated with alkylphenolethoxylates, alkylphenols or halogenated solvents.
- e) The content of free formaldehyde in adhesives used in the furniture or fitting product shall not exceed 0.5 % by weight of the adhesive.

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. **The statement shall be supported by documentation that:**

- identifies the adhesive products used (including CAS No where available);
- includes Material Safety Data Sheets for the adhesives;
- identifies classifications that apply to each adhesive;
- demonstrates that thresholds for groups or individual hazardous substances are not exceeded in each adhesive product; and
- includes composition data and calculations for formaldehyde in adhesives.

Compliance with the requirements in a) and b) may be demonstrated by providing data indicating that the adhesive does not have any of the classifications (or combinations thereof) listed in Table 3 (Appendix B) for toxins and ecotoxins.

5.10 Energy Management

Criteria

- a) The furniture and fitting licence applicant/holder, and manufacturer or first tier suppliers must have effective energy management policies and procedures and/or an energy management programme.

The licence applicant/holder must identify the major energy users amongst the first tier suppliers listed in Appendix A, Table 2.

NOTE: if the first tier suppliers are ECNZ licence holders, they are deemed to comply.

- b) The licence holder, manufacturer and first tier suppliers identified in (a), must report annually to ECNZ on energy management including:
 - total energy use;
 - breakdown of total energy use to types of energy used;
 - energy use related to production;
 - initiatives taken to reduce energy use and improve energy efficiency;

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- initiatives taken to calculate and reduce CO₂ emissions associated with energy use; and
- 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 relevant documentation that:**

- describes the energy management policies, procedures and programmes;
- describes how any applicable first tier suppliers were identified; and
- includes annual reports to ECNZ on energy use and management.

5.11 Waste Management

Criteria

- a) The furniture and fitting licence applicant/holder, and manufacturer or first tier suppliers must have effective waste management policies and procedures and/or a waste management programme.

The licence applicant/holder must identify the major waste generators amongst the first tier suppliers listed in Appendix A Table 2.

NOTE: if the first tier suppliers are ECNZ licence holders, they are deemed to comply.

- b) Licence holders and those organisations identified in (a), must report annually to ECNZ on waste management including:
- quantities and types of waste recovered for reuse internally and externally;
 - quantities and types of waste recycled internally and externally;
 - quantities and types of waste disposed of to landfill;
 - quantities and types of waste burned internally for energy recovery;
 - waste generation related to production;
 - initiatives taken to reduce waste generation and improve recovery/recycling of waste; and
 - initiatives or requirements for suppliers or contract manufacturers.

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;
- describes how any applicable first tier suppliers were identified; and
- includes annual reports to ECNZ on waste generation and management.

5.12 Consumer Information

Criteria

Information shall be provided to purchasers and users of the furniture or fitting products, including instructions on:

- intended use (e.g. domestic, commercial)

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- assembly and correct use (e.g. ergonomics if relevant)
- cleaning, maintenance and repair (including availability of parts)
- disassembly and appropriate reuse, recycling or disposal.

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 supported by appropriate documentation setting out the required information and means for it to be made available.**

5.13 Product Stewardship

Criteria

- a) The furniture and fittings product must not be impregnated, coated or otherwise treated in a manner which would prevent recycling in New Zealand or in the country where the product is used.
- b) Licence holders must report annually to Environmental Choice New Zealand on product stewardship, including:
 - availability, feasibility, and involvement in product takeback schemes;
 - initiatives taken to promote or implement takeback schemes;
 - initiatives taken to make products more recyclable; and
 - initiatives or requirements for suppliers or contract manufacturers.

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

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

6. PRODUCT CHARACTERISTICS

6.1 Fitness for Purpose

Criteria

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

Verification Required

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

- identifying the applicable standards and/or consumer/customer requirements;
- demonstrating how compliance is monitored and maintained (including quality control and assurance procedures); and
- records of customer feedback and complaints.

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6.2 Wearing Parts

Criteria

All parts subject to wear are to be guaranteed for at least five years from sale.

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 supported by appropriate documentation setting out the guarantee arrangements.**

7. REQUIREMENTS AND NOTES FOR LICENCE HOLDERS

Monitoring Compliance

Prior to granting a licence, Environmental Choice 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, Environmental Choice 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 Environmental Choice 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.

Environmental Choice New Zealand 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 "Furniture and Fittings" and by the Licence Number e.g. 'licence No1234'.

The Label must be reproduced in accordance with the Environmental Choice 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.

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

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Appendix A

Table 1- Product Description Table

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

Use % ranges where appropriate, eg Metal: 55% -65%.

Product description including model name/number:									
Component description	Weight	Component material as a % of finished product weight							Supplier to the licence applicant /holder
		Wood %	Wood-based panels %	Metal %	Plastic %	Leather & textiles %	Glass %	Padding materials %	
Total % by material type:									Total %:

Do **not** include small parts such as screws, nuts, washers etc.

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Example Table 1- Product Description Table

Complete one table for each similar product type .

Use % ranges where appropriate, e.g. Metal: 55% -65%.

Product description including model name/number: <i>Office Chair Model XYZ62</i>									
Component description	Weight	Component material as a % of finished product weight							Supplier to the licence applicant /holder
		Wood %	Wood-based panels %	Metal %	Plastic %	Leather & textiles %	Glass %	Padding materials %	
<i>Upholstery</i>	<i>100g</i>					<i>5%</i>			<i>Supplier A</i>
<i>Padding</i>	<i>100g</i>							<i>5%</i>	<i>Supplier B</i>
<i>Seat base</i>	<i>300g</i>		<i>15%</i>						<i>Supplier C</i>
<i>Frame</i>	<i>500g</i>			<i>25%</i>					<i>Supplier C</i>
<i>Arms</i>	<i>140g</i>				<i>7%</i>				<i>Supplier C</i>
<i>Base</i>	<i>240g</i>				<i>12%</i>				<i>Supplier C</i>
<i>Wheels</i>	<i>160g</i>				<i>8%</i>				<i>Supplier C</i>
<i>Levers etc</i>	<i>100g</i>				<i>5%</i>				<i>Supplier C</i>
<i>Gas lift</i>	<i>200g</i>			<i>10%</i>					<i>Supplier C</i>
Total % by material type:			<i>15%</i>	<i>35%</i>	<i>40%</i>	<i>5%</i>		<i>5%</i>	Total %: 100%

Do **not** include small parts such as screws, nuts, washers etc.

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Example Table 2- Component/Process Supplier Information

Include each component and subcontracted processing operation

Tier 1 suppliers: supply products, components or services directly to the licence applicant/holder

Tier 2 suppliers: supply products or components to the Tier 1 suppliers

STOP this drill down when a raw material supplier is reached. A raw material supplier is one who supplies material in a minimally processed state, eg steel rod, uncoated aluminium extrusions, timber, plywood, MDF, plastic resin manufacturers, plate glass manufacturers.

Tier		Supplier name	Supplier address and contact details (include all manufacturing locations)	Component or process supplied
1	2			
1		Supplier A	Address A NZ	Upholstery textiles
1		Supplier B	Address B NZ	Padding
1		Supplier C	Address C China	Chair without upholstery
	2	Supplier D	Address C Malaysia	Seat base
	2	Supplier E	Address C China	Metal frame and gas lift
	2	Supplier F	Address C Taiwan	Plastic arms, base and back
	2	Supplier G	Address C China	Plastic wheels and levers
1		Supplier H	Address H NZ	Powder coating

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Appendix B

Table 3- Hazardous Substance Classifications

European Risk Phrases	New Zealand HSNO Classes	Globally Harmonised System
Toxins		
R23 toxic by inhalation	6.1B or 6.1C	Acute Tox. 2 and 3 H330, H331
R24 toxic in contact with skin	6.1B	Acute Tox. 3 H311
R25 toxic if swallowed	6.1B	Acute Tox. 3 H301
R26 very toxic by inhalation	6.1A	Acute Tox. 2 and 3 H330
R27 very toxic in contact with skin	6.1A	Acute Tox. 1 H310
R28 very toxic if swallowed	6.1A	Acute Tox. 2 H300
Ecotoxins		
R50 very toxic to aquatic organisms	9.1A	Aquatic Acute 1 H400
R51 toxic to aquatic organisms	9.1D or 9.1B	
R52 harmful to aquatic organisms	9.1D or 9.1C	
R53 may cause long-term adverse effects in the aquatic environment	9.1D	Aquatic Acute 4 H413
R50/53 very toxic to aquatic life with long lasting effects	9.1A	H410
R51/53 toxic to aquatic life with long lasting effects	9.1B	H411
R52/53 toxic to aquatic life with long lasting effects	9.1C	H412
Sensitisers		
R42 May cause sensitisation by inhalation	6.5A	Resp. Sens. 1 H334
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. 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	6.8A	Repr. 1A and 1B

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European Risk Phrases	New Zealand HSNO Classes	Globally Harmonised System
unborn child		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

NOTE: Where there is a discrepancy between the classifications applied to specific substances in the different schemes, The Trust's appointed assessors will review supporting information regarding the classifications on a case-by-case basis to determine whether the particular substance should be considered to have the identified hazardous characteristic. In reaching this decision, the assessors will be cognisant of the original source of the bans and limitations (which were based on the European risk phrases), and any specific information that is in particular relevant to the risks associated with the substance in a furniture or fitting product and in the New Zealand environmental context. The evaluation will consider issues such as exposure routes, biodegradability and persistence of the particular hazardous substance. The Trust will make information about any such decisions made by The Trust's appointed assessors available on request.

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Appendix C

Physical and Environmental Properties of Major Blowing Agents

Ref: UNEP (2007): 2006 Report of the Flexible and Rigid Foams Technical Options Committee – 2006 Assessment. Nairobi: UNEP/Ozone-Secretariat. Available online: http://ozone.unep.org/teap/Reports/FTOC/ftoc_assessment_report06.pdf [Accessed May 2010]

Table 4: Fluorinated Blowing Agents

	CFC-11	CFC-12	HCFC-22	HCFC-142b	HCFC-141b	HFC-134a	HFC-152a	HFC-245fa	HFC-365mfc	HFC-227ea
Chemical Formula	CFCl_3	CCl_2F_2	CHClF_2	CH_3CClF_2	CCl_2FCH_3	CH_2FCF_3	CHF_2CH_3	$\text{CF}_3\text{CH}_2\text{CHF}_2$	$\text{CF}_3\text{CH}_2\text{CF}_2\text{CH}_3$	$\text{CF}_3\text{CHFCF}_3$
Molecular Weight	137	121	86	100	117	102	66	134	148	170
Boiling Point (°C)	24	-30	-41	-10	32	-27	-25	15.3	10.2	-16.5
Gas Conductivity (mW/m°K at 10 °C)	7.4	10.5	9.9	8.4	8.8	12.4	14.3 ⁿ	12.5 [*]	10.6 [*]	11.6
Flammable limits in air (vol. %)	none	none	none	6.7-14.9	7.3-16.0	none	3.9-16.9	none	3.8-13.3	none
TVL or OEL (ppm) (USA)	1000	1000	1000	1000	500	1000	1000	n/a	n/a	1000
GWP (100 yr.) ^{**}	4000	8500	1700	2000	630	1300	140	820	840	2900
ODP	1.0	1.0	0.055	0.065	0.11	0	0	0	0	0

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Table 5: Non-fluorinated Blowing Agents

	Methylene Chloride	Trans-1,2-dichloroethylene	Isopentane	Cyclopentane	n-pentane	Carbon Dioxide	Isobutane	n-butane	Methyl Formate (Ecomate®)
Chemical Formula	CH ₂ Cl ₂	C ₂ H ₂ Cl ₂	CH ₃ CH(CH ₃)CH ₂ CH ₃	(CH ₂) ₅	CH ₃ (CH ₂) ₃ CH ₃	CO ₂	C ₄ H ₁₀	C ₄ H ₁₀	CH ₃ (HCOO)
Molecular Weight	84.9	97	72.1	70.1	72.1	44	58.1	58.1	60
Boiling Point (°C)	40	48	28	49.3	36	-139	-11.7	0.5	31.5
Gas Conductivity (mW/m°K at 10 °C)	n/a	n/a	13.0	11.0	14.0	14.5	15.9	13.6***	10.7"
Flammable limits in air (vol. %)	none	6.7-18	1.4-7.6	1.4-8.0	1.4-8.0	none	1.8-8.4	1.8-8.5	5.0-23.0
TVL or OEL (ppm) (USA)	35-100	200	1000	600	610	n/a	800	800	100
GWP (100 yr.)**	n/a	<25	<25	<25	<25	1	<25	<25	<25
ODP	0	0	0	0	0	0	0	0	0

“ **Measured at 25 °C**
 * **Measured at 24 °C**
 ** **IPCC-Report 1996**
 *** **Measured at 0 °C**

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