



The New Zealand Ecolabelling Trust

Licence criteria for Wool Scouring Services

EC-47-22

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Specification change history

Minor clarifications, corrections or technical changes made since the specification was last reviewed and issued in December 2011.

Date	Version	Change
20/06/2022	June 2022	Specification EC-47-11 rolled over effective 20 June 2022
01/06/2023	June 2023	Environmental Choice New Zealand renamed as Eco Choice Aotearoa and all references in this document amended to reflect the new name. Wording in Section 7 'Use of the Eco Choice Aotearoa Label' updated – the requirement for the label to be accompanied by the specification name is now optional.

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1. INTRODUCTION

Eco Choice Aotearoa (ECA) 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).

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

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

The life cycle approach is used to identify and understand environmental issues (adverse or beneficial impacts) across the whole life of a product or service (within a defined product or service category). This information is evaluated to identify the most significant issues and from those to identify the issues on which it is possible to differentiate environmentally preferable products or services from others available in the New Zealand market. Criteria are then set on these significant and differentiating issues. These must be set in a form and at a level that does differentiate environmentally preferable products or services, is attainable by potential ECA licence applicants and is able to be measured and verified. As a result of this approach, criteria may not be included in an ECA 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 Scoured Wool. Requirements for wool scouring have in the past been part of ECA specification for Wool Pile and Wool-rich Carpets and the ECA specification for Textiles, Skins and Leather. This stand-alone specification for scoured wool allows the ECA label to be applied to scoured wool that may be destined for a range of products including carpets and textiles. ECA specifications for products incorporating scoured wool make reference to this specification.

This specification sets out the requirements that scoured wool will be required to meet in order to be licensed to use the ECA 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 ECA specifications, information made available from and advice from independent environmental scientists.

This specification will be valid for a period of five years from publication. 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

The New Zealand wool industry is a significant player in the international wool markets and especially for scoured wool. The Wool Taskforce report, published in February 2010 reports the following statistics.

New Zealand produces:

- about 14% of the world's wool;
- about 45% of the world's carpet wool; and
- more than 30% of the world's strong wool suitable for floor-coverings, bedding and upholstery.

In 2008, 93% of the New Zealand wool clip was exported. About 89% was exported in a raw form after some early-stage processing as scoured wool or slipe.

The proportion exported to European countries (United Kingdom, Belgium and Italy) has remained steady over the last ten years (26% in 1998 and 25% in 2008) but the proportion exported to Asia (China and India) has markedly increased (28% in 1998 to 40% in 2008).

The New Zealand wool clip comprises:

- 89% strong wool;
- 5% merino or fine wool;
- 4% medium wool; and
- 2% dags.

In New Zealand, wool is produced as either a by-product or co-product of lamb or sheep meat. Limited information is available that is suitable to set environmental criteria to differentiate between wool growers on the basis of environmental performance, other than information about pesticide use and residues on wool. Pesticide use and residues of pesticide on wool fibre can result in environmental impacts on-farm, during processing of wool and at final disposal. Residues on wool can also present human health impacts in the use phase of wool products, particularly clothing. The issues of pesticide use and residue levels are addressed in criteria in this specification.

The production of scoured wool can consume large quantities of water and energy and can result in undesirable discharges to air, particularly strong odours. Scouring effluents can have heavy loadings of grease and other wastes which can remove oxygen from the receiving waters, causing impacts on plant and animal life. The use of detergents (surfactants) in scouring can also cause water quality problems.

Some processes also involve the use of hazardous substances, such as, insecticides. Inappropriate use, handling and disposal of these materials can result in adverse environmental impacts.

Criteria in this specification address the production of scoured wool. The environmental issues addressed include the use of hazardous substances, effluent disposal, water use and energy use.

Based on a review of currently available information, the following product category requirements will produce environmental benefits by reducing discharges, energy and water consumption and the use of potentially hazardous materials. As information and technology change, product category requirements will be reviewed, updated and possibly amended.

3. INTERPRETATION

“ISO” means International Organisation for Standardisation.

“IWTO” means International Wool Textile Organisation

“Label” means the Eco Choice Aotearoa Label.

“Useful energy” is a term used in relation to a process where the energy used in the process is supplied from an energy source which is subject to some inefficiencies in conversion to a form that is useful in the process. “Useful energy” is defined as equal to (Gross energy) x (Efficiency of conversion to useful heat). In woolscouring the useful energy is that energy that can be usefully used in the process, e.g. for a coal/steam system it is equal to the latent heat of vaporisation and this is related to the gross energy by the relation:

$$\text{Useful Energy} = (\text{Gross Energy of Coal}) \times (\text{Conversion Efficiency to Steam})$$

The Conversion Efficiencies depend on the energy source and the heating system. The following efficiencies shall be used:

Oil or gas fired steam boilers	70%
Coal fired steam boilers	65%
Coal fired hot water boilers	70%
Direct fired natural gas dryers	90%
Direct fired natural gas liquor heaters	85%

4. CATEGORY DEFINITION

This category includes wool scouring services. It includes bleaching or insect resist agent treatment applied during the scouring process. It does not include further processing of scoured wool such as dyeing.

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

5. ENVIRONMENTAL CRITERIA

5.1 Legal Requirements

Criteria

The scouring service must comply with the provisions of all relevant environmental laws and regulations that are applicable to the scouring process.

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.

Explanatory Notes

Relevant laws and regulations could, for example, include those that relate to:

- sourcing, transporting, handling and storing substances used in the scouring processes
- scouring processes
- handling, transporting and disposing of waste products arising from scouring.

The documentation required may include, as appropriate:

- procedures for approving and monitoring suppliers and supplies
- information provided to customers and contractors regarding regulatory requirements.

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

5.2 Pesticide materials balance in the scouring process

Criteria

- (a) The scour owner/operator shall establish, implement and report annually to The Trust, on a programme of testing and analysis that is sufficient to develop an understanding of the materials balance of pesticides in the scouring process. The programme shall include testing on incoming wool, scoured wool, scour effluent, grease and sludge.
- (b) The range of pesticides to be included in testing should reflect the pesticides known or likely to be present on the wool being scoured. As a default, testing should cover the pesticides identified in the table below (based on the European specification, but also including Dicyclanil and Cyromazine). The testing programme should include a rationale for frequency of testing and scope of pesticides included.
- (c) Where appropriate:
 - a. the programme rationale should be informed by information provided by the wool supplier/broker or owner about pesticide use and any testing that may have been carried out by any of those parties;

- b. results for pesticide levels on scoured wool may be reported against GuT, Oeko-Tex 100 or European Ecolabel specification requirements, to assist customers who may wish to obtain GuT, Oeko-Tex, Nordic Swan or EU Flower certification.

Substance	CAS no
<i>Organochlorine Insecticides (OCs)</i>	
γ -hexachlorocyclohexane (Lindane)	319-84-6
α -hexachlorocyclohexane	319-85-7
β -hexachlorocyclohexane	58-89-9
δ -hexachlorocyclohexane	319-86-8
aldrin	309-00-2
dieldrin	60-57-1
endrin	72-20-8
p,p'-DDT	50-29-3
p,p'-DDD	72-54-8
<i>Organophosphorous Insecticides (OPs)</i>	
Propetamphos	31218-83-4
Diazinon	333-41-5
Dichlofenthion	97-17-6
Fenchlorphos	299-84-3
Chlorpyrifos	2921-88-2
Chlorfenvinphos	470-90-6
Ethion	563-12-2
Pirimiphos-Methyl	29232-93-7
<i>Synthetic Pyrethroids (SPs)</i>	
Cyhalothrin	68085-85-8
Cybermethrin	52315-07-8
Deltamethrin	52918-63-5
Fenvalerate	51630-58-1
Flumethrin	69770-45-2
<i>Insect Growth Regulators (IGRs)</i>	
Diflubenzuron	35367-38-5
Triflumuron	64628-44-0
Dicyclanil	112636-83-6
Cyromazine	66215-27-8

Testing shall be carried out using IWTO Draft Test Method 59 *Method for the Determination of Chemical Residues on Greasy Wool* or an equivalent test method.

Verification Required

Compliance with these requirements shall be stated in writing by the Chief Executive or authorised representative of the applicant company. This statement shall be supported by information about and annual reports to The Trust on the testing programme.

5.3 Effluent from Scours

Criteria

- a) Discharges of effluent (and/or sludge) to the natural environment (natural water bodies, ocean or land) shall be of a quality that can be demonstrated to result in an acceptable and environmentally sustainable level of impact on the quality of the receiving environment.
- b) Licence holders must:
 - develop, document and implement an ongoing continual improvement programme to reduce the environmental load and impacts resulting from effluent generation and disposal;
 - record and report on the improvement programme, including effluent and waste volumes and quality, in-process controls, treatment processes and relevant production information (including volumes and quality of wool scoured, grease removal, energy use, water use).

Verification Required

Compliance with these requirements shall be stated in writing by the Chief Executive or authorised representative of the applicant company. **This statement shall be supported by:**

- an independent assessment of the discharge quality and its impacts on the receiving environment completed by a person or agency competent to complete such an assessment. This assessment may be based on the quality of discharge:
 - from the point at which the discharge from the scour or any relevant combined or municipal waste collection and treatment system discharges to the natural environment; or
 - from the scour in situations where;
 - the scour discharge is mixed with other organisations' waste streams; and
 - the combined waste stream and its treatment before it is discharged to the natural environment is outside the control of the scour or licence applicant; and
 - suitable information is not available on the quality of the combined discharge.
- annual reports to Eco Choice Aotearoa on the continual improvement programme.

Intention

Eco Choice Aotearoa will monitor reported continual improvement programmes and data, with the intention of considering setting specific performance requirements for production processes at a future review, if this is deemed appropriate to differentiate environmental performance.

5.4 Water Use

Criteria

- a) The total water use measured at the water intake shall not exceed 30,000 l/tonne of greasy wool scoured. Measurement of water use shall be continuous.
- b) Licence holders must report annually to The Trust on water use and any measures planned or implemented to reduce water used per tonne of wool scoured. Reports should include information to relate water use to different wool types and conditions (including levels of dirt on incoming wool and the quality of the scoured wool).

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:

- records of water use and production, and calculations to demonstrate the limit is met; and
- an annual report to The Trust.

5.5 Total Useful Energy

Criteria

The total useful energy use shall not exceed 4.0 GJ/tonne of greasy wool scoured.

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 production methods, calculations and quality controls.

5.6 Detergents & Bleaching

Criteria

Wool destined for carpet for which an Eco Choice Aotearoa licence is sought shall not be:

- a) scoured with alkyl phenol-based detergents; or
- b) bleached in the scour with chlorinated agents.

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:

- copies of MSDS or other technical information for detergents or bleaches used; and
- information on production process controls and records to demonstrate the detergents and bleaches identified are those that are used on ECA licensed scourments.

5.7 Insect Resist Treatment

Criteria

Wool destined for carpet for which an Eco Choice Aotearoa licence is sought may be treated with insect resist agents during the scouring process provided the following requirements are met.

- a) The scourer must provide information with the scoured wool destined for an ECA-licensed carpet that is sufficient for a total factory effluent to be calculated for the carpet product.

NOTE: The relevant requirement for wool or wool-rich carpets is that: *“If permethrin or bifenthrin insect resist agents are used, the levels of these agents in total factory effluent shall not exceed:*

- 5 g permethrin/tonne of wool treated
- 0.25 g bifenthrin /tonne of wool treated

Total factory effluent includes effluent from the scour and effluent from the dye baths and other wet processes.”

- b) Any insect resist agent used, other than permethrin or bifenthrin must not be classified as toxic, carcinogenic, mutagenic or a reproductive/developmental toxins, as identified using any of the classifications (or combinations thereof) listed in the table below.

European Risk Phrases	New Zealand HSNO Classes	Globally Harmonised System
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
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 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

European Risk Phrases	New Zealand HSNO Classes	Globally Harmonised System
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 wool scouring 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.

- c) Any insect resist agent used, other than permethrin or bifenthrin, must be a Wools of New Zealand (WNZ) approved agent that has lower *Daphnia magna* toxicity equivalent than permethrin, based on the rate of the insecticide(s) used discharged per tonne of wool treated, calculated in accordance with the following method.

For permethrin:

- AW (grams active in factory effluent / tonne of wool treated) must be less than 5 g/tonne of wool treated
- LC₅₀ for *Daphnia magna* (96 hour) = 0.6 µg/L

Therefore AW/LC₅₀ (permethrin) = 8.3 $\frac{\text{grams active, / tonne of wool treated}}{\mu\text{g active, / litre effluent}}$

For an alternative insect resist agent:

- i) Calculate AW (grams active in factory effluent / tonne of wool treated) using the following formula:

$$AW \text{ (insect resist agent)} = \frac{AE \times E/W}{1000}$$

Where:

- AE (mg/L) = Concentration of active in effluent from the factory
- E/W (L/tonne) = Effluent discharged from the factory (L) / tonne of wool treated

- ii) Calculate AW/LC₅₀ for the insect resist agent.
 iii) The AW/LC₅₀ for the insect resist agent must be less than or equal to 8.3.

- d) Where insect resist treatment is applied in the scour, the scour shall monitor its use, completing testing to understand and report on the mass balance of the insect resist agent in the process.

Verification Required

Conformance with these requirements 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 the following information and documentation:

- for (a) a protocol for testing scour effluent and template for reporting information on the insect resist agent used and agent levels in effluent/tonne of wool scoured to the purchaser/owner of the scoured wool; and records (including test reports and calculations) for any scourments that have been treated;
- for (b) copies of MSDS and/or other technical information on the insect resist agent being used, sufficient to demonstrate it does not have any of the identified classifications;
 - for (c) information confirming WNZ approval, calculations required and source information for the value of LC50 *Daphnia magna* (96 hour) used;
 - for (d) records of monitoring completed and mass balances calculated.

5.8 Energy Management

Criteria

- a) The wool scourer 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, 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; and
 - initiatives taken to calculate and reduce CO₂ 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. 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.

5.9 Waste Management

Criteria

- a) The wool scourer must have effective waste (including packaging such as wool bales and woolpacks) management policies and procedures and/or a waste management programme covering scouring operations.
- b) Licence holders must report annually to The Trust on waste management, including:
 - quantities and types of waste recovered for reuse internally and externally;
 - quantities and types of waste recycled internally and externally;
 - quantities and types of waste disposed of to landfill;
 - quantities and types of waste burned internally for energy recovery;
 - waste generation related to production; and
 - initiatives taken to reduce waste generation and improve recovery/recycling of waste.

Verification Required

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

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

6. PRODUCT CHARACTERISTICS

Criteria

The scoured wool shall be fit for its intended use and conform to relevant product performance standards, including International Wool Textile Organisation (IWTO) standards, including, as appropriate:

- IWTO 19 Determination of the Wool Base and Vegetable Matter Base of Core Wool Samples of Raw Wool
- IWTO 33 Determination of Oven-Dry Mass and Calculated Invoice Mass of Scoured or Carbonised Wool;
- IWTO 56 Method for the Measurement of Colour of Raw Wool.

The scoured wool shall meet the following limits:

- residual grease on the scoured wool must not exceed 0.30% by weight;
- ash on the scoured wool must be less than 1% by weight;
- Delta Y (dY) should not exceed a level of 4 (for crossbred wools).

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;
- test reports and results for testing required by the applicable standards;
- demonstrating how compliance is monitored and maintained (including quality control and assurance procedures); and
- records of customer feedback and complaints.

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.

Use of Eco Choice Aotearoa Label

The Licence holder shall supply information on the proposed use of the label on products or promotional material.

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 Licence Number e.g. 'licence No1234'. It is optional to include the spec name.

The Label must be reproduced in accordance with:

- the licence conditions; and
- the Eco Choice Aotearoa Programme's brand kit which includes examples of keyline art for reproduction of the Label.

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 Eco Choice Aotearoa Label and advertising could result in the Licence being withdrawn