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The Eco-Choice Ecolabel Programme Product Standard

Furniture and Fittings



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Use of This Standard

This voluntary environmental labelling standard may be used by competent environmental assessors to establish product compliance to the Eco-Choice Africa Ecolabel Program. Products that are certified with the mark of conformity, the “Eco-Choice Label” have been independently tested and demonstrate compliance to the environmental and social performance criteria detailed in this standard. The overall goal of environmental labels and declarations is the communication of verifiable and accurate information, which is not misleading, on environmental aspects of products and services. This encourages the demand for, and supply of, those products and services that cause less stress on the environment, thereby stimulating the potential for market-driven continuous environmental improvement.

This standard identifies environmental, quality, regulatory and social performance criteria that products sold on the Australian market can meet in order to be considered as good “environment practice”. Products that have been certified as complying to this standard may gain greater market recognition and a marketing advantage in government and business procurement programs, as well as broad consumer preference.

This standard can be used by South African producers to guide their designs for environment programs by using the environmental criteria as key performance benchmarks to reduce the environmental loads of their product. The standard is necessarily restricted in its identification of environmental loads from the product life-cycle.

Producers should consider other environmental measures along the product cycle, which are not included in this standard, in their environment program designs for and aim for even higher levels of environmental performance where technically possible.

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Eco-Choice Ecolabel Programme

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ECO-CHOICE AFRICA STANDARD

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Abstract

This Standard specifies environmental performance requirements for a range of indoor furniture and fittings products for the Eco-Choice Africa Ecolabel Program. The Eco-Choice Africa Ecolabel Program complies with ISO 14024: "Environmental labels and declarations - Guiding principles" which requires environmental labelling specifications to include criteria that are objective, reasonable and verifiable.

Definitions

Alloy refers to a combination of two or more elements, one of which is a metal. This includes binary, tertiary and quaternary alloys (two, three and four elements, respectively). The result is a metallic substance with properties different from those of its components.

AOX means Absorbable Organic Halogen. A standard measurement of organic halogens used for indication of the environmental influence of bleach plant effluents. Halogen refers to all the five elements fluorine, chlorine, bromine, iodine and astatine. In practice it is a measure of organically bound chlorine.

Bast fibre includes fibre from the phloem of dicotyledonous plants, in particular jute, hemp, flax, ramie and kenaf.

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

Edge Glued Panels: Glued processed timbers, such as small lumbered wood or wood layers, that are formed and pressed into sheet form in the direction of fibre, paralleled each other and bonded with resin. These panels are often known as veneer panels.

Fibre Boards: Boards composed of plant fibres, such as timbers or chaffs. According to the density, they are categorized 'into insulation boards (IB)', 'medium density fibre boards (MDF)' and 'hard boards (HB)'.

Keratin Fibre includes greasy wool from sheep, alpaca, goat, camel and any other mammalian α -keratin source.

Label means the Eco-Choice Africa Label.

Natural Cellulosic Seed Fibre includes cotton and kapok.

Oeko-Tex Standard 100 means the textile testing standard of the International Association for Research and Testing in the Field of Textile Ecology, Zurich, Switzerland.

Organic Tin Catalysts: Organic Tin Catalysts are a prime essential ingredient in the production of flexible polyurethane foam. The Tin catalyst gives the Polyurethane foam its flexible characteristics including shape memory, density. The main Organic Tin Catalysts that are used in the production of Polyurethane are;

- Dibutyl Tin Dilaurate - DBTDL (C₄H₉)₂Sn(OOC(CH₂)₁₀CH₃)₂/C₃₂H₆₄O₄Sn
- Stannous Octoate - Tin 2-Ethylhexanoate [CH₃(CH₂)₃CH(c₂H₅)COO]₂Sn

The impact of both of these catalysts occurs in a residual form during the production stage, i.e. it is left as a residue in machines used in the production of PU flexible foam.

Particle Boards: Boards made from wood fragments (chips or shavings) which are formed and pressed into sheet form and bonded together with resin.

Recycled Content 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 reutilisation of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it.

STEL (Exposure Standard - Short Term Exposure Limit): A 15 minute TWA exposure which should not be exceeded at any time during a working day even if the eight-hour TWA average is within the TWA exposure standard. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times per day. There should be at least 60 minutes between successive exposures at the STEL (National Occupational Health and Safety Commission (NOHSC)).

Sufficiently Biodegradable in this standard means that the substance passes any or all of the following test methods:

- *At least 70 % degradation within 28 days:* OECD 301 A, OECD 301 E, ISO 7827, OECD 302 A, ISO 9887, OECD 302 B or ISO 9888.
- *At least 60 % degradation within 28 days:* OECD 301 B, ISO 9439, OECD 301 C, OECD 302 C, OECD 301 D, ISO 10707, OECD 301 F, ISO 9408, ISO 10708 or ISO 14593.
- *At least 80 % degradation within 28 days:* OECD 303 or ISO 11733

Timber / Wood: Includes wood sourced from raw (virgin) forest timbers, timbers sourced from sustainable forestry, or waste wood materials including particle boards, fibre boards and edge-glued panels. Also includes used timber/wood.

TOC means Total Organic Carbon – A measure of the concentration of organic carbon in water, determined by oxidation of the organic matter into carbon dioxide (CO₂)

TWA (Exposure Standard - Time-Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week (National Occupational Health and Safety Commission (NOHSC)).

Used Timber / Wood: Also known as salvaged or reclaimed timber/wood. Includes materials sourced from old (pre-loved) furniture, demolitions, and other relevant sources.

Veneer Panels: See Edge-Glued Panels.

VOC (Volatile Organic Compound) as defined by EC Directive 1999/13/EC, is any organic compound having a vapour pressure of 0.01kPa or more, at 20°C (293.15K). For organic solvents this definition corresponds to a boiling point or initial boiling point below 250°C.

Waste Wood: Residual products generated by thinning out timbers, cutting out branches and processing timber and to withdrawn timbers after use, excluding withered or dead trees.

1 INTRODUCTION

1.1 Purpose

This Standard seeks to define good environmental performance benchmarks for indoor furniture and fittings products. The voluntary environmental labelling standard implemented by Eco-Choice Africa (ECA) as part of the Eco-Choice Africa Ecolabel program specifies environmental performance criteria for a range of textile products including textiles for use in clothing, bedding, decorative applications and fittings.

This standard stipulates the environmental load of such products throughout the major aspects of their life cycle.

1.2 Background

This Standard defines good environmental performance benchmarks for home and office furniture and fittings. The standard specifies environmental performance criteria for home and office furniture including chairs, sofas, couches, recliners, stools, computer chairs, tables, coffee tables, computer desks, desks, office desks and variations thereof including fittings.

Home/office furniture and fitting products form a significant proportion of items manufactured for use within residential, commercial and government environments and form a major manufacturing sector in South Africa. This standard stipulates the environmental load of home/office furniture and fitting products throughout their entire life cycle.

Home/office furniture and fitting products pose a significant environmental burden during their manufacture, use and disposal. These environmental impacts include but are not limited to the raw materials used for their manufacture, coatings (paints, lacquers, and varnishes), textiles, adhesives, joinery, hazardous treatments, energy and water use during production and their disposal, among others. Developments in timber, alloy and metal (steel, aluminium) and plastic recycling have encouraged innovation in furniture and fitting design and manufacture, encouraging the production of products that both readily incorporate recycled materials, and those with constituents that can be recycled into new products at end of life. These products often equal and surpass traditional products in all aspects of strength, durability and consumer expectation.

The primary purpose of this standard is to define environmental performance criteria for a broad range of home/office furniture and fitting products. Home/office furniture and fitting products made from recycled materials or those sourced from sustainable resources are environmentally preferable because they reduce the demand for virgin timber, raw steel/aluminium/alloy materials and virgin plastics and when recycled, reduce the amount of waste going to landfill. The standard refers to the manufacture of the products and their constituent materials, the period of actual use and disposal, and packaging materials used for their transport.

This standard also specifies requirements for the finishing restrictions of certain treatment or coatings that would restrict further recycling and the provision of plastic type information to allow for further post-consumer recycling.

This standard does not apply to exterior furniture items.

2 STANDARD CATEGORY SCOPE

This standard is applicable to the following range of ready-to-use home and office furniture products:

- 2.1 Office Chairs**
Commercial indoor contract chairs and seats including computer chairs, stools, school chairs, footrests and variations thereof;
- 2.2 Office Desks & Tables**
Commercial indoor desks and tables including computer desks, boardroom tables, office coffee tables, free-standing cabinets and shelving units, coat-racks, and variations thereof;
- 2.3 Domestic Chairs**
Recreational indoor chairs and seats including computer chairs, collapsible / foldable chairs, stools, recliners, couches, sofas, footrests and variations thereof. This excludes mattresses;
- 2.4 Domestic Desks & Tables**
Indoor recreational desks and tables including kitchen tables, coffee tables, computer desks, dining tables, bedside tables, free-standing wardrobes, lamp-tables, free-standing cabinets and shelving units, and variations thereof;
- 2.5 Bedroom Furniture**
Indoor bedroom furniture including bed-frames, free-standing wardrobes, bedside-tables and variations thereof, excluding bedding and mattresses.
- 2.6 Bespoke Furniture**
Furniture pending finishing (e.g. upholstery) to allow different client requirements.
- 2.7 Fittings**
Partitions, window fittings, shelving, and wall furniture.
- 2.8 Ceilings**
Ceiling linings and ceiling panel products.

Other environmentally innovative furniture and fittings products that do not fit the above categories may be considered for certification provided the product fulfills the requirements of any relevant sections of this Standard. Other categories may be added later.

3 ENVIRONMENTAL PERFORMANCE CRITERIA

3.1 Fitness for Purpose

Certified products should be good performers in their intended application. Certain standards of quality and durability are implicit in the Label and the manufacturer must ensure that the product is fit for its intended purpose and:

3.1.1 Applicable Standards

The product meets or exceeds the requirements of the relevant South African Standard, or the product meets the applicable and accepted standard in its target market if it is to be exported. If there is no relevant South African Standard for the product type, the product can demonstrate sufficient quality by providing testing reports from an independent organisation or case studies demonstrating market suitability and quality.

If there is no relevant South African Standard, the product can demonstrate sufficient quality by providing testing reports from an independent organisation or case studies from installations demonstrating market suitability and quality,

3.1.2 Warranty

The manufacturer shall offer a commercial guarantee of five years on the quality of the product – or the prescribed period as defined in the national Consumer Protection Act, provided the product is used according to its intended use. The guarantee shall be valid from the date of delivery to the consumer.

3.2 Material Requirements

The requirements in this section apply to each type of material contained in the finished product that contributes 10 % or more to the weight of the product.

3.2.1 Timber and Other Natural Materials

3.2.1.1 Controversial Sources

Fibre may be sourced from any combination of FSC or equivalent certified fibre, plantation wood fibre, cellulose fibre, return fibre, cotton fibre, crop residue or other waste fibre. Any sources that are not certified under a recognised certification scheme (e.g., FSC) as being sustainably managed shall not originate from:

- a. *Illegal harvesting*
Illegally harvested wood and natural materials are those that are harvested, traded or transported in a way that is in breach with applicable national regulations (such regulations can for example address CITES species, money laundering, corruption and bribery, and other relevant national regulations).

- b. *Genetically modified organisms*
Wood and natural materials from genetically modified organisms are those which have been induced by various means to include genetic structural changes. Traditional breeding programs do not constitute genetic modification.
- c. *Recently established plantations impacting primary ecosystems*
The plantation or agricultural land use must have been established prior to 2000 and not have impacted primary ecosystems at the time of establishment. Establishment includes the logging or destruction of primary forest followed by the establishment of the plantation.
- d. *Uncertified high conservation value communities*
High Conservation Value communities are those that possess one or more of the following attributes:
- Communities containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia); and/or large landscape level communities, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance.
 - Communities that are in [constitute] or contain rare, threatened or endangered ecosystems.
 - Communities fundamental to meeting basic needs of locally indigenous human populations (e.g. subsistence, health) and/or critical to these people's traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

For materials sourced from outside Australia, please refer to credible lists detailing threatened species, threatened communities and areas of cultural significance in the respective countries.

3.2.1.2 Salvaged & Reclaimed Timbers

Salvaged or reclaimed timbers may be used in certified furniture. Salvaged and reclaimed timbers include timbers legally sourced as pre-cut waste timber or deadwood from cityscape, urban and rural gardens, demolition sites, and waste wood from certified tree loppers / doctors.

Salvaged and reclaimed timbers must satisfy the requirements of the ECA Standard No. 32 - Recycled and Reclaimed Timber.

3.2.1.3 Treatment

Wood and natural materials used in furniture products must not be treated or impregnated with fungicides and insecticides that are classified due to their hazardous nature by the IARC as Type 1 or 2A. Refer to: <http://monographs.iarc.fr/ENG/Classification/index.php>

3.2.1.4 Glues in Plywood and Laminated Wood

The content of free formaldehyde in glues for plywood or other engineered wood products must not exceed 1.0 % w/w.

3.2.1.5 Air Emissions

Products made from wood and other natural products that contain formaldehyde-based additives, shall be subject to the following air emission limits for formaldehyde as measured using the Air Chamber, Desiccator or Perforator test methods. Raw timber and natural materials is exempt from this criterion.

Particleboard, MDF, plywood or timber veneer must conform to formaldehyde testing outlined in Australian Standard - AS 1859. This requires particleboard and MDF panels to be tested using the Desiccator method. These panels shall demonstrate a level below 1.0 mg/L. Veneer and plywood must be tested following an internationally accepted test method (Table 1). These panels shall demonstrate a level below 1.0 ppm (mg/L).

Table 1: Limit values for formaldehyde emissions from wood components

Internationally Accepted Test Method		Perforator	Chamber	Gas Analysis	Desiccator	Desiccator	Chamber
Standard		EN120	DIN EN717-1	DIN EN717-2	JIS A 1460	JAS 233	JIS A 1901
Units		mg/100g	mg/m ³	mg/m ² h	mg/L	mg/L	mg/m ² h
Engineered Wood Type	MDF	9.0	0.12	3.5	1.0	1.0	120
	Particleboard	6.0	0.12	3.5	1.0	1.0	120
	Plywood	6.0	0.12	3.5	1.0	1.0	120
	Veneer	6.0	0.12	3.5	1.0	1.0	120

Compliance to this criterion can be demonstrated in one of two ways: either by testing the overall emissions of the final product using the Air Chamber, Desiccator or Perforator test methods, or by testing the emissions of each component material and calculating the total emissions of the final product based on the quantity of individual components in the respective product.

3.2.2 Plastics

3.2.2.1 Resin Identification Codes

Certified products must mark each individual plastic product or component weighing greater than 100g with an appropriate resin identification code.

Exemptions may be made for products where the nature of the manufacturing process or the size and shape of the product restrict the application of the plastics resin identification code on the product. Exempt products will ensure that appropriate information describing disposal methods for the product, including the relevant resin identification code, are provided at the time of sale of the product to encourage further recycling.

3.2.2.2 Padding Material

Latex containing 1.3 butadiene shall be at levels not less than 1mg/kg latex.

The total amount of discharges (measured as COD or TOC) from the production of foam rubber shall be treated and decreased by 90% in on-site or external sewage treatment works prior to emissions into waterways.

3.2.2.3 Polyurethane Padding Requirements

- CFC, HCFC, HFC or Methylene Chloride shall not be used.
- Aniline based amines, and pigments and catalysis based on mercury, lead, cadmium, and chromium must not be added to the padding material.
- Where Organic Tin Catalysts are used in the production of flexible polyurethane, the manufacturer must have in place a contract with a licensed or registered hazardous waste disposal company who is responsible for the correct disposal of the hazardous waste.

3.2.3 Fabrics

All fabric comprising more than 10 % of the total weight of the product must be certified by a competent authority or the EU Flower label or the Nordic Swan label or satisfy the requirements of ECSA-F01-Textiles Standard.

3.2.4 Glass

Lead glazing, crystal glass, mirror glass, wire reinforced glass or laminated glass must not be used in furniture or fittings. Colouring agents or other additives containing lead, cadmium, mercury, chromium, arsenic or selenium must not be used.

3.2.5 Adhesives

With the exception of Section 3.2.1.4, adhesives must be certified by the EU Flower label or the Nordic Swan label or other competent authority..

3.3 Hazardous Materials

The requirements in this section apply to all materials in the finished product regardless of weight.

3.3.1 Overall Loads

In order to promote the reduction of pollutant hazards in the disposal, landfill and/or incineration of end of life furniture, the following substances shall not be added to eco-labelled products during manufacture:

- Arsenic
- Cadmium
- Copper
- Lead
- Mercury
- Fluorine
- Elemental Chlorine

- Pentachlorophenol (PCP)
- Tar oils (benzo (a) pyrene)

3.3.2 Prohibited Substances

Furniture or fittings shall not contain carcinogenic substances in categories 1 or 2A as classed by the International Agency for Research on Cancer - <http://monographs.iarc.fr/ENG/Classification>

The following compounds, their functional derivatives or in-situ precursors shall not be added to finished products, their component parts or be used at any stage of the manufacturing process, including as preparatory agents, cleaners or degreasers in the production facility:

- Halogenated organic substances or solvents (e.g., binding agents).
- Aniline based amines.
- The phthalates DEHP, DBP, DAP or BBP.
- Aziridine or polyaziridines.
- Pigments and additives that contain lead, tin, arsenic, cadmium, mercury or their compounds.
- Polybrominated diphenyl ethers, or short-chain chlorinated organic flame retardants.

The coating of metal gas lifts may be exempt from this criterion. In exceptional cases, 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 particularly tight connections. *This exemption does not include parts that are intended to come into frequent contact with skin.*

3.4 Post Consumption Recycling and Labelling

3.4.1 Separability

Certified products shall be easily disassembled to facilitate the recovery and recycling of constituent materials.

The following materials shall be easily separated without the need for special tools or expertise:

- Aluminium, if it composes s 5% by weight of the product,
- Steel, if it composes s 10% by weight of the product,
- Glass, if it composes s 10% by weight of the product,
- Plastic, if it composes s 20% by weight of the product.

3.4.2 Custodianship

If the product is not recyclable (or separable into recyclable parts) in mainstream local recycling systems, the manufacturer shall accept their product without additional cost (excluding transportation costs) for further recycling, or have arrangements with a local recycler to accept the product, or have an established product stewardship program. Products collected under the scheme shall not be disposed of in landfill or by incineration.

3.4.3 Coatings and Treatments

Furniture and fittings products (or components) must not be impregnated, labelled, coated or otherwise treated in a manner which would prevent post consumer recycling. Exemption may be made for products with a long product life where a coating or treatment would further extend the useful life of the product.

3.4.4 Spares and Replacement Parts

For those parts of a product which are subject to wear (e.g., hinges, locks, table leaves), functionally compatible replacements shall be guaranteed for a period of at least five years. The manufacturer must make individual replacement parts available to consumers.

3.4.5 Recycled furniture

Recycled furniture can be licensed in conformation to this standard providing that the furniture has not been refinished or coated with any materials except for the purpose of cleaning.

3.4.6 Recycled Content Requirements

Ceiling tiles must contain a minimum of 50% recycled content by weight.

3.4.7 Packaging Requirements

Chlorinated or halogenated plastics must not be used in product packaging. Used packaging shall be able to be recycled by local recycling systems.

3.4.8 Labelling and Product Information

The manufacturer must provide written information to the consumer clearly stating:

- The intended use of the product.
- Instructions for correct use and storage so as to maximise the product lifetime.
- Maintenance instructions, if required. Maintenance instructions must not specify the use of any chemical or coating limited by any part of this standard.
- Recycling instructions for the product end-of-life.

4 COMPLIANCE TO ENVIRONMENTAL REGULATIONS

The applicant is required to comply with relevant environmental legislation and government orders at the Local, National, and International levels, if these have been issued. An applicant's compliance with these criteria may be established by undertaking a series of random checks; and/or by gathering samples of applicant operational procedures and documents from approved assessors as evidence to support compliance during the verification. Where an applicant is from an overseas jurisdiction, that jurisdiction's environmental regulations apply. Where the applicant is subject to a guilty verdict by a legally constituted court in the last 24 months on the basis of a breach of any environmental legislation or permits, there must be evidence of corrective action.

5 COMPLIANCE TO LABOUR, ANTI-DISCRIMINATION AND SAFETY REGULATIONS

An applicant shall demonstrate that all employees are covered by national labour standards, or a certified industrial agreement or a registered workplace agreement as determined by relevant local legislation.

An applicant shall demonstrate general compliance to the Occupational, Health and Safety Act. Where the applicant is subject to a breach order by a government agency, or a guilty verdict by a South African Court within the last 24 months, on the basis of a breach of the Occupational, Health and Safety Act, there must be evidence of corrective action.

Where an applicant is from an overseas jurisdiction, the applicant shall demonstrate general compliance to that jurisdiction's anti-discrimination, occupational health and safety, and workers' compensations regulations. Where the applicant is subject to a breach order by a government agency, or a guilty verdict by a legal court in their respective country within the last 24 months on the basis of a the breach of anti-discrimination, occupational health and safety, and workers' compensation regulations, there must be evidence of corrective action.

An applicant's compliance with these criteria may be established by undertaking a series of random checks; gathering samples of applicant operational procedures and documents from approved assessors; and/or by providing a self-declaration document signed by an executive officer of the applicant organisation as evidence to support compliance during verification.

6 COMPLIANCE TESTING

6.1 Audit Methodology

Conformance with this standard shall be demonstrated by undertaking an assessment under the above criteria by an approved assessor, following the certification and verification procedures detailed in the Eco-Choice Africa Documented Quality Management System, which generally follows the environmental auditing requirements of ISO 19 011.

6.2 Assessor Competency

The Eco-Choice Africa Ecolabel Program classifies approved assessors as:

- a. Assessors registered by Eco-Choice Africa Ltd as environmental professionals that hold expertise relevant for an assessment, and who have undertaken training in the procedures of the Eco-Choice Africa Ecolabel.
- b. Environmental auditors accredited with SAACTA

6.3 Suitable Sources

Audit evidence should be of such a quality and quantity that competent environmental auditors, working independently of each other, will reach similar audit findings from evaluation of the same audit evidence against the same audit criteria.

Suitable sources of information to establish compliance may be, but are not limited to:

- I. Technical specification of the product.
- II. Obvious characteristics of the product under examination.
- III. Scientific test results and reports.
- IV. Environmental management system and audit reports and results.
- V. Life-cycle assessment of each stage of the product life-cycle via a physical audit and examination.
- VI. Life-cycle assessment via scientific testing.
- VII. A statement of confirmation by an executive officer.
- VIII. An assessment of company or government records.
- IX. Other material that can be considered objective evidence.

6.4

Laboratory Testing

New testing shall be undertaken by a laboratory accredited by the National Laboratory Association (NLA), or similar overseas accreditation agents who can conduct the relevant tests and/or provide documentation detailing environmental performance against the criteria of this standard. The test results should be presented on NLA-endorsed reports or from a laboratory acceptable to Eco-Choice Africa Ltd.

If test results or environmental auditing results are not available, and/or there is insufficient data to establish full compliance with the criteria required by this standard, then certification cannot be awarded.