

Good Environmental Choice Australia Ltd.
Managers of the Australian Ecolabel Program

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The Australian Ecolabel Program

Australian Voluntary Environmental Labelling Standard

Polymer and Polymer Rich Broadloom Carpets



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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 Australian Ecolabel Program. Products that are certified with the mark of conformity, the “Good Environmental 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, through communication of verifiable and accurate information, that is not misleading, on environmental aspects of products and services, to encourage 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 best “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 and broad consumer environmental preference.

This standard can be used by Australian producers to guide their design for environment programs by using the environmental criteria as key performance benchmarks that reduce the environmental impacts and effects of their product. The standard is necessarily restricted in its identification of environmental impacts and effects from the product life cycle. Producers should consider other environmental improvement along the product cycle not included in this standard for their design for environment programs and aim for even higher levels of environmental performance where technically possible.

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Voluntary Environmental Labelling Standard

Polymer and Polymer Rich Carpets

Abstract

This Standard specifies environmental performance requirements for polymer and polymer rich carpets to the Australian Ecolabel Program. The program generally complies to ISO 14024: "Environmental labels and declarations - Guiding principles" which requires environmental labelling specifications to include criteria that are objective, reasonable and verifiable.

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Definitions:

"ACCS" means the Australian Carpet Classification Scheme. (see <http://www.carpetinstitute.com.au>)

"ISO" means International Organisation for Standardisation.

"Label" means the Australian Good Environmental Choice Label.

"Rapidly renewable" means materials that are from an organic origin that can be grown and harvested through natural harvesting or agricultural systems and are inherently biodegradable.

"Recycled Content" includes:

"Post-Consumer": Material generated by households, or by commercial, industrial and institutional facilities in their role as end-users of a 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 such as rework, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

1.0 Introduction To The Environmental Impacts and effects of Polymer Carpets

The purpose of this standard is to define the environmental load reduction requirements for polymer carpet floor coverings on the Australian market and to define the benchmark for use of the label. All polymer based carpets are of a petrochemical origin and hence from a non-renewable resource. Material efficiencies and options for recycling and re-use are an important consideration for minimising the environmental footprint of these flooring systems. In addition many production stages and additives also determine the overall environmental performance of these carpet systems.

Nylon is the most commonly used synthetic fiber for carpets. It is durable, can be easily cleaned, is lightweight, and has a good texture. Two closely related forms of nylon (nylon 6 and nylon 6,6) are used in carpet facing. From an environmental standpoint, nylon requires high amounts of energy to produce, and its production involves the

precursors benzene for nylon 6 and hydrogen cyanide gas for nylon 6,6. The manufacturing of nylon releases volatile organic compounds (VOCs), nitrogen oxides and ammonia.

The impact on the environment from polymer carpets primarily comes from the different types of raw materials used in the overall product including backings, products used in surface treatment, adhesives and from energy used during manufacturing. In addition, environmental impacts can occur during use and maintenance and when the floor covering reaches the end of its useful life and becomes waste to be recycled/reused/reprocessed or disposed of.

This standard identifies the key environmental impacts and effects of polymer carpets. The specific requirements of the standard include product performance, material content, adhesives, emissions during production and post-installation, and energy use and waste. The prolonging of the carpet life by attributes such as stain blockers, soil resistance and colour fastness is an important impact in an LCA analysis.

2.0 Product Category Scope

This category includes polymer fiber carpets which include nylon and nylon blends, olefin (polypropylene), polyester (PET), and acrylic delivered to market as:

- Broad loom residential and commercial carpets.

3.0 Environmental Performance Criteria

3.1 Fitness for Purpose

Certified products should be high quality performers in their intended application. It is implied that high standards of product performance are implicit in the label. Certified product must ensure that:

- 3.1.1 The product meets or exceeds the performance requirements of the relevant Australian Carpet Classification Scheme (ACCS) technical specifications for its intended application and is rated at a minimum level of contract heavy duty; or
- 3.1.2 The product meets or exceeds other pertinent internationally accepted standard if it is to be exported;

Certified products hence must meet the requirements of the Australian Carpet Classification Scheme (ACCS). Where carpets have not been classified under this scheme they may prove their fitness for purpose performance characteristics in compliance to the testing and performance requirements of the ACCS.

Warranty Protection

- 3.1.3 Certified products must carry a minimum two-year warranty for color fastness.
- 3.1.4 Residential carpets shall offer a minimum product warranty of 5 years.
- 3.1.5 Commercial carpets shall offer a minimum product warranty of 12 years.

3.2 Environmental Requirements for Broadloom Carpets

3.2.1 – Adhesives.

All adhesives used in the installation of the carpet must pass this requirement. They include latex multi-purpose floor adhesive, pressure-sensitive floor adhesive, vinyl-backed floor adhesive, latex seam adhesive, vinyl-backed seam sealer, cove base adhesive, "tackless" cushion adhesive and contact adhesive.

The manufacturers recommended adhesives for installation shall be Water based, pressure sensitive, low VOC adhesives. Adhesives certified to the GECA 1 – Adhesives 2005 Standard are compliant. Adhesives compliant to the Carpet and Rug Institute's Green plus Air Emissions Label qualify if the emission levels of 4-Phenylcyclohexane are **<0.05mg/m²/hr**.

3.2.1.1 The total VOC of the adhesives must be a maximum of 5% by weight of the final product excluding water.

3.2.2 – Air Emissions. Certified products must demonstrate compliance to the following air emission limits.

Priority Chemical Emission	Maximum Emission Rate:
Fomaldehyde	<0.05mg/m ² /hr
Acetaldehyde	<0.05mg/m ² /hr
Benzene	<0.05mg/m ² /hr
Caprolactam	<0.05mg/m ² /hr
2 – Ethylhexanoic Acid	<0.05mg/m ² /hr
1 – Methyl – 2 Pyrroldinone	<0.05mg/m ² /hr
Naphthalene	<0.05mg/m ² /hr
Nonanal	<0.05mg/m ² /hr
Octanal	<0.05mg/m ² /hr
4 – Phenylcyclohexene	<0.05mg/m ² /hr
Styrene	<0.05mg/m ² /hr
Toluene	<0.05mg/m ² /hr
Vinyl Acetate	<0.05mg/m ² /hr

- 3.2.3 Certified products shall not use Inorganic ammonium phosphates (diammonium phosphates, ammonium polyphosphates etc.), boron compounds (boric acid, borates) or Polybrominated diphenyl ethers as flame retardants. Antimony oxides shall not be used in product manufacture.
- 3.2.4 Azo-based dyes that shed carcinogenic aryl amines (listed below) must not be used.

	CAS no.
4-Aminobiphenyl	92-67-1
Benzidine	92-87-5
4-Chloro-o-toluidine	95-69-2
2-Naphthylamine	91-59-8
o-Aminoazotoluene	97-56-3
5-Nitro-o-toluidine	99-55-8
p-Chloroaniline	106-47-8
4-Methoxy-m-phenylenediamine	615-05-4
4,4.-Methylenedianiline	101-77-9
3,3.-Dichlorobenzidine	91-94-1
3,3.-Dimethoxybenzidine	119-90-4
3,3.-Dimethylbenzidine	119-93-7
4,4.-Methylenedi-o-toluidine	838-88-0
6-Methoxy-m-toluidine	120-71-8
4,4.-Methylenebis(2-chloroaniline)	101-14-4
4,4.-Oxydianiline	101-80-4
4,4.-Thiodianiline	139-65-1
o-Toluidine	95-53-4
4-Methyl-m-phenylenediamine	95-80-7
2,4,5-Trimethylaniline	137-17-7
O-anisidine	90-04-0

3.3 Waste Minimisation and Management

3.3.1 Manufacturers of certified products must have either:

- an existing product stewardship program offering product take back at end of life for the certified product range or
- an active program to implement such a system throughout its Australian markets.

Demonstration of an active program must include documentation considering at a minimum potential material flows for carpet collected at end of life and internal documentation confirming the establishment and function of a take back research program.

3.4 Compliance to Environmental Regulations

The applicant is required to comply with relevant environmental legislation and government orders at the Local, State and Commonwealth level, if these have been issued. An applicants compliance with this criteria may be established by undertaking a series of random checks and gathering samples of applicant operational procedures and documents by approved assessors as evidence to support compliance during the verification and /or a statement of self declaration by an executive officer of the applicant organisation. Where an applicant is from an overseas jurisdiction, that jurisdictions environmental regulations apply.

Where the applicant has been found guilty of an environmental offence in a Court of Law suitable corrective actions must have been completed.

3.5 Compliance to Labour, Anti-Discrimination and Safety Regulations

An applicant shall demonstrate that all employees are covered by a Federal or State award or a certified industrial agreement or a registered workplace agreement as determined by the Industrial Relations Commission, the Employment Advocate or a State or Territory Workplace Relations Agency.

An applicant shall demonstrate general compliance to the terms of State or Territory Legislation concerning Occupational, Health and Safety and/or the *Commonwealth Safety, Rehabilitation and Compensation Act 1988* where applicable. Where the applicant is subject to a breach order by a government agency or a guilty verdict by an Australian Court within the last 24 months on the basis of a breach of State, Territory or Commonwealth Occupational, Health and Safety Legislation there must be evidence of corrective action.

The applicant shall demonstrate general compliance to the requirements of the *Racial Discrimination Act 1975*, *Sex Discrimination Act 1984*, *Disability Discrimination Act 1992*, *Equal Opportunity for Women in the Workplace Act 1999* and complementary State Legislation. Applicants cannot be in the list of 'named' or non-compliant employers under the *Equal Opportunity for Women in the Workplace Act 1999*. Where the applicant is subject to a breach order by a government agency or a guilty verdict by an Australian Court in the last 24 months on the basis of a breach of these Acts there must be evidence of corrective action.

Where an applicant is from an overseas jurisdiction, the applicant shall demonstrate general compliance to that jurisdictions 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 compensations regulations there must be evidence of corrective action.

An applicants compliance with these criteria may be established by undertaking a series of random checks and gathering samples of applicant operational procedures and documents by approved assessors as evidence to support compliance during the verification and /or a statement of self declaration by an executive officer of the applicant organization.

4.0 Compliance Testing

Conformance with this standard shall be demonstrated by undertaking an assessment to the above criteria by an approved assessor following the certification and verification procedures detailed in the Good Environmental Choice Australia Ltd Documented Quality Management System which generally follows the environmental auditing requirements of ISO 14 010 and 14 011.

The Australian Ecolabel Program classifies approved assessors as:

1. Assessors registered by Good Environmental Choice Australia Ltd as environmental professionals that hold expertise relevant for an assessment and which have undertaken training in the procedures of the Australian Ecolabel Program, or
2. Environmental auditors accredited with the Quality Society of Australasia (RABQSA) following the principles of ISO 14 010;

New testing shall be undertaken by a laboratory accredited by the National Association of Testing Authorities (NATA) or similar overseas accreditation to carry out the relevant tests and/or documentation detailing environmental performance against the key indicators for this standard. The tests results should be presented on NATA endorsed reports or from a laboratory acceptable to the Australian Environmental Labelling Association.

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:

- 1) Technical specification of the product.
- 2) Obvious characteristics of the product from examination.
- 3) Scientific and test results and reports.
- 4) Environmental management system and audit reports and results.
- 5) Life cycle assessment of each stage of the product life cycle via a physical audit and examination.
- 6) Life cycle assessment via scientific testing.
- 7) A statement of confirmation by an executive officer.
- 8) An assessment of company or government records.
- 9) Other material that can be considered objective evidence.
- 10) Test data provided through The Carpet Institute of Australia.

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