**Environmental Choice[M] Program**

# CERTIFICATION CRITERIA DOCUMENT

**CCD-033**

## Product: Office Furniture and Panel Systems

### Preamble

Pursuant to paragraph 54 (1)(*b*) of the *Canadian Environmental Protection Act, 1999*, the Minister of the Environment is pleased to publish the following national guideline on ***office furniture and panel systems*** under the auspices of the Environmental Choice[M] Program.

The Environmental Choice Program is designed to support a continuing effort to improve and/or maintain environmental quality by reducing energy and materials consumption and by minimizing the impacts of pollution generated by the production, use and disposal of goods and services available to Canadians.

Office furniture includes chairs and other types of seating, desks, tables, filing and storage cabinets, and their associated components and accessories. Office panel systems are flat or curved surfaces, which control or define space, provide privacy, and may provide a means for hanging components. Remanufactured office furniture and panel systems have been completely upgraded to an "as new" condition.

Office furniture and panel systems are made using any one or a variety of materials including gypsum-board, metal, wood and wood-based products, plastic, and fabric. Various environmental issues must be taken into consideration as a result of the different materials used during manufacture.

The design and manufacture of office furniture and panel systems can affect resource utilization, air and water pollution, and factory workers' health and safety. Waste generated as a result of the manufacture and disposal of office furniture and panel systems can be minimized through reuse, remanufacturing and recycling.

Materials used in office furniture and panel systems may emit volatile organic compounds (VOCs) when installed, with impacts on indoor air quality. Binding agents used in composite wood products, such as urea formaldehyde resin (UF), can emit formaldehyde affecting indoor air quality. Low-emitting UF-bonded board products or phenol-bonded products can be used. In addition, the use of veneers, coatings and laminates can help to minimize formaldehyde emissions. The use of low-VOC content, or water-based liquid surface coatings or adhesives, can also reduce harmful emissions.

Materials used in the manufacturing, treatment, installation, and final cleaning of fabrics can contain VOCs and other potentially harmful substances. VOCs may be absorbed by furniture fabrics, which later become secondary sources of VOC emissions.

The main environmental concerns associated with plastic and foam are product recycling and disposal and the agents used in the foaming process, such as CFCs and HCFCs. CFCs and HCFCs are substances which are known to destroy stratospheric ozone, and as such are controlled under the Montreal Protocol.

Based on a review of currently available life cycle information, the product category requirements will produce an environmental benefit through **resource conservation**, **a reduction in disposal, and a reduction in VOC emissions.**

Life cycle review is an ongoing process. As information and technology change, the product category requirements will be reviewed and possibly amended.

Environment Canada anticipates that manufacturers or importers of ***office furniture and panel systems*** which conform to this guideline will apply to the Environmental Choice Program for verification and subsequent authority to label the qualifying products with the Environmental Choice EcoLogo[M].

## Notice

Any reference to a standard means to the latest edition of that standard.

The Environmental Choice Program reserves the right to accept equivalent test data for the test methods specified in this guideline.

### Notice of Intent

It is the intent of the Environmental Choice Program to consider incorporating the following requirements when the guideline is next reviewed:

- a minimum content of post-consumer material or other recycled materials in textile coverings;
- the use of high-efficiency surface coating application systems; and,
- the use of low-VOC emitting resins in composite wood panel products.

### Interpretation

1. In the following guideline:

**"ANSI"** means American National Standards Institute;

**"BIFMA"** means Business and Institutional Furniture Manufacturer's Association;

**"CFC"** means chlorofluorocarbon;

**"CGSB"** means Canadian General Standards Board;

**"chair"** means a seating product. It includes non-adjustable and stacking chairs, and chairs with adjustable seat heights, seat angles and backs;

**"component-bearing panel"** means a panel that provides support for workstation components, and may divide space and/or provide visual or acoustical separations;

**"demountable partition**" means a fully or partially prefabricated gypsum board based unit whose primary functions are to restrict vision, sound, and passage. It can be attached to both flooring and ceiling assemblies and can be completely demounted and re-erected using all original components. It does not necessarily have the capability to support furniture systems;

**"desk"** means a work surface with a flat top for writing or storage. It may include drawers for storage, either attached or mobile. It includes credenzas and tables;

**"filing cabinet"** means a free-standing cabinet containing drawers for the storage and retrieval of

documents;

**"free-standing panel"** means a prefabricated unit whose primary functions are to restrict vision and, to a lesser extent, sound and passage. It may stand alone, or be mechanically fastened to adjacent panels to form an interconnected panel system;

**"glazed panel"** means a panel with a transparent or translucent material as its major surface;

**"HCFC"** means hydrochlorofluorocarbons;

**"modular systems furniture"** means modular furniture made up of an independent work surface and storage units with panels used at ends or as space dividers. Includes all modular furniture components that collectively are required to complete a work station;

**"OSHA"** means United States Occupational Safety and Health Administration;

**"office furniture"** means new or remanufactured freestanding or systems furniture designed for use in industrial, commercial, institutional or residential offices. It includes chairs and other types of seating, shelves, desks, tables, filing and storage cabinets, and components and accessories thereof;

**"office panel system"** means a flat or curved surface which controls or defines space, provides privacy, and may be completely demounted and re-located using all original components. It may be new or remanufactured. It includes both free-standing and component-bearing panels, but does not include demountable partitions;

**"panel"** means a flat or curved surface which controls and/or defines space, provides privacy and a means for hanging components;

**"panel-supported systems furniture"** means individually connected panels and work surfaces, filing, storage and shelving components and accessories which receive their primary support from the panels and which, when combined, form complete work stations;

**"refurbish"** means the repainting and/or reupholstering of a customer's office furniture or panel systems such that they are free of major defects and blemishes, and meet customer requirements;

**"remanufacture"** means the complete upgrading of used office furniture or panel systems whereby components are inspected, disassembled, where necessary to their individual elements, damaged pieces are repaired or replaced, and the office furniture or panel system is re-upholstered and repainted as required, to an "as new" condition;

**"systems furniture"** means panel-supported systems furniture and modular systems furniture;

**"volatile organic compound"** or **"VOC"** in ambient air means any organic compound which participates in atmospheric photochemical reactions. It excludes those organic compounds which the ECP designates as having negligible photochemical reactivity. VOC in indoor air refers to any volatile carbon containing compound, excluding carbon dioxide ($CO_2$) and carbon monoxide (CO), that may or may not participate in photochemical reactions; and,

**"WHMIS"** means Workplace Hazardous Materials Information System.

**Category Definition**

2. This category includes all ***office furniture and panel systems***, as further defined in the subcategories in this section. The subcategories are:

(a) new office furniture and panel systems; and

(b) remanufactured office furniture and panel systems.

**General Requirements**

3. To be authorized to carry the EcoLogo ***office furniture and panel systems*** must:

(a) meet or exceed all applicable governmental and industrial safety and performance standards; and

(b) be manufactured and transported in such a manner that all steps of the process, including the disposal of waste products arising therefrom, will meet the requirements of all applicable governmental acts, by laws and regulations including, for facilities located in Canada, the *Fisheries Act* and the *Canadian Environmental Protection Act* (CEPA).

**Product Specific Requirements**

4. To be authorized to carry the EcoLogo, all ***office furniture and panel systems*** must:

(a) be accompanied by readily available information that actively promotes to the customer the option of remanufacturing once the product has served its end-use. Customers may be informed of remanufacturing options by means such as: sales literature, product catalogues, tagging of product, packaging inserts, customer information kits, or electronic media;

Note: The remanufacturing option need not be offered for products for which product liability and safety issues are unresolved, e.g. some types of seating.

(b) not emit VOCs which will result in an indoor air concentration of greater than 0.5 $mg/m^3$ when tested in accordance with the State of Washington *Environmental Chamber Protocol for the Measurement of Pollutant Outgassing from Office Furniture* based on ASTM D5116-90 *Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products*, or through extrapolation from the above test results for components or similar products using computer modelling;

(c) not emit formaldehyde which will result in an indoor air concentration of greater than 0.5 $mg/m^3$, when tested in accordance with the State of Washington *Environmental Chamber Protocol for the Measurement of Pollutant Outgassing from Office Furniture* as based on ASTM D5116-90 *Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products*, or through extrapolation from the above test results for components or similar products using computer modelling;

(d) be manufactured in such a manner that liquid surface coatings are stored in controlled storage areas, as per WHMIS or OSHA requirements;

(e) not contain or be manufactured with plastic foam that is manufactured or formulated using CFCs or HCFCs;

(f) include stamps on all new rigid major molded plastic components with an unexposed surface area large enough to incorporate a legible code, indicating the composition code to facilitate future recycling efforts. These stamps must be added as new furniture parts are designed or old equipment is replaced. For example, the stamps must be added to all new dies, moulds, and extrusion equipment used for plastic manufacturing;

(g) if incorporating new wood components, be manufactured only from woods, either in solid or veneer form, that have been harvested or traded in accordance with the Convention on International Trade in Endangered Species (CITES), where applicable;

(h) comply with the applicable performance requirements of office furniture and panel systems standards issued by CGSB or ANSI/BIFMA;

Note: A list of acceptable standards for each sub-category is available from the Environmental Choice Program.

(i) be manufactured at a facility that has carried out a solid waste audit, prepared a waste reduction action plan, and instituted a means to track progress towards waste reduction and diversion from disposal of materials such as metals, plastics, fabrics, wood, leather, fibreglass, and glass. Note: The above requirement applies to the manufacturing process waste as a minimum; and

(j) be accompanied by information describing procedures for repairing or replacing worn parts and for ordering replacement parts and, indicating where parts and service may be obtained following the discontinuation of the product line. This information may be provided in the form of sales literature, product catalogues, tagging of product, packaging inserts, customer information kits, or electronic media.

5. To be authorized to carry the EcoLogo, the office furniture and panel systems must also meet the criteria specific to its subcategory.

5.1 Remanufactured office furniture and panel systems must:

(a) be completely upgraded to an "as new" condition, by undergoing the following steps:

(*i*) inspection of components;

(*ii*) disassembling, where necessary, of components to their original elements;

(*iii*) repair or replacement, where necessary, of damaged pieces; and

(*iv*) re-upholstery and repainting as required; and

(b) where electrical components are incorporated, be manufactured in such a manner that all used electrical wiring, wiring harnesses, plug adaptors, outlets, and power entries are removed and replaced with new electrical components.

**Verification**

6. To verify a claim that a product meets the criteria listed in the guideline, the Environmental Choice Program will require access, as is its normal practice, to relevant quality control and production records and the right of access to production facilities on an announced basis.

7. Compliance with section 3(b) shall be attested to by a signed statement of the Chief Executive Officer or the equivalent officer of the manufacturer. The Environmental Choice Program shall be advised in writing immediately by the licensee of any noncompliance which may occur during the term of the license. On the occurrence of any noncompliance, the license may be suspended or terminated as stipulated in the license agreement.

**Conditions for EcoLogo Use**

8. The EcoLogo may appear on wholesale or retail packaging, or on the product itself, provided that the product meets the requirements in this guideline.

8. It is recommended that a criteria statement appear with the EcoLogo whenever the EcoLogo is used in association with the ***office furniture and panel system(s)***. The intent of this statement is to provide clarification as to why the product was certified and to indicate constraints to which the certification is limited. This is to ensure no ambiguity over, or misrepresentation of, the reason(s) for certification.

   The criteria statement must be specific to the product's sub-category. For sub-category 2(a), the recommended criteria statement is "*New office furniture and panel system*" and for sub-category 2(b), the recommended criteria statement is "*Remanufactured office furniture and panel system*".

   The licensee may propose other wording for the criteria statement, but any such proposed wording must be approved by the Environmental Choice Program.

9. All licensees and authorized users must comply with the Environmental Choice Program's *Guide to Proper Use of the EcoLogo*$^{M}$ regarding the format and usage of the EcoLogo.

10. Any accompanying advertising must conform with the relevant requirements stipulated in this guideline, the license agreement and the Environmental Choice Program's *Guide to Proper Use of the EcoLogo*$^{M}$.

***For additional copies of this guideline or for more information about the Environmental Choice Program, please contact: TerraChoice Environmental Services Inc., 1280 Old Innes Road, Suite 801, Ottawa, Ontario, K1B 5M7 Telephone: (613) 247-1900, Facsimile: (613) 247-2228, Email: ecoinfo@terrachoice.ca***

# EcoLogo[M] Program Interpretation Document

## Equivalent Testing Methodologies for VOC / Formaldehyde Emissions

Interpretation:

The EcoLogo[M] certification criteria documents for demountable partitions (CCD-032) and office furniture and panel systems (CCD-033) include limits on volatile organic compounds and formaldehyde emissions concentrations when tested in accordance with the State of Washington *"Environmental Chamber Protocol for the Measurement of Pollutant Outgassing from Office Furniture"* based on ASTM D5116-90 *"Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products",* or through extrapolation from the above test results for components or similar products using computer modeling.

ASTM D6670-01, *"Standard Practice for Full-Scale Chamber Determination of Volatile Organic Emissions from Indoor Materials/Products"* is an alternative method to the State of Washington protocol based on ASTM D5116-90 that can be used to provide results acceptable for EcoLogo[M] evaluation.

Additionally, any reference to ASTM D5116-90 should be replaced with ASTM D5116-06.

Basis for Interpretation:

EcoLogo[M] reserves the right to accept test data for equivalent test methods to those specified in a particular criteria document. Equivalency is determined through a review and comparison of:

- the methodology and procedures themselves;
- the reliability, repeatability and reproducibility of the methods;
- the materials, equipment and test conditions required;
- the requirements for reporting of data and test results; and
- the consideration of peer and expert review of the methodologies.

Small chambers have limitations in that they test only samples of larger materials and are not necessarily applicable for testing complete assemblages (such as furniture). Large (or full-scale) chambers may be more appropriate for many of these applications. Upon initial release of CCD-032 and CCD-032, there was no ANSI American National Standard available for large chamber testing of furniture. Therefore, these criteria documents cited the State of Washington Protocol in conjunction with ASTM D5116-90.

ASTM D6670-01 and the State of Washington Environmental Chamber Protocol are both full-scale chamber testing methodologies used for measuring the level of volatile organic compound and other chemical compound emissions. In addition, ASTM D6670 and ASTM D5116-06 both describe the basis for the testing, focus on chamber construction and materials, and refer to mass balance principles.

Note that the EcoLogo[M] requirements for volatile organic compound and formaldehyde emissions concentrations remain the same.

Affected EcoLogo[M] Criteria Documents:

CCD-032 "Demountable Partitions"; and
CCD-033 "Office Furniture and Panel System"

Additional Notes:

Copies of the above certification criteria documents can be found at www.ecologo.org

Direct inquiries or comments to TerraChoice Environmental Marketing Inc.
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