CONSTRUCTION INDUSTRY COUNCIL
建造業議會

# CONSTRUCTION INDUSTRY COUNCIL

## CIC GREEN PRODUCT CERTIFICATION

## FURNITURE
(Version 1.0a)

## *Assessment Standard*



Last updated: 11 June 2020

# FURNITURE

## *Summary of Assessment Criteria*

**CORE CRITERIA**

<table>
<tr><th rowspan="2">Criteria</th><th rowspan="2">Requirements</th><th rowspan="2">Verification</th><th colspan="2">Points</th><th rowspan="2">Index</th></tr>
<tr><th>Basic</th><th>+Bonus</th></tr>
<tr><td>Raw Material</td><td>○ Wood<table><tr><th>Recycled content</th><th>Sustainable source</th><th>Points</th></tr><tr><td>≥ 80%</td><td>≥ 60%</td><td>10 [basic]</td></tr><tr><td>≥ 90%</td><td>≥ 80%</td><td>+5 (bonus)</td></tr></table>▪ Sustainable source means wood obtained forest management certification such as FSC, PEFC or AFCS<br>○ Metal<table><tr><th colspan="3">Recycled Metal</th></tr><tr><th>Aluminium</th><th>Other metals</th><th>Points</th></tr><tr><td>≥ 50%</td><td>≥ 20%</td><td>10 [basic]</td></tr><tr><td>≥ 80%</td><td>≥ 50%</td><td>+5(bonus)</td></tr></table>○ Plastic<br>▪ Contains no PVC [10 basic]<br>▪ Contains at least 10% of recycled plastics by weight of the product (+5 bonus)<br>○ Glass / Mirror<br>▪ Lead glass, crystal glass and wire reinforced glass shall not be used in the furniture. Glass / mirror used in the furniture shall be readily replaceable if it is damaged or smashed. The metal coating shall not contain lead (Pb) and/or copper (Cu) > 0.2% by weight. [10 basic]<br>▪ contain recycled content (+5 bonus)<br>○ Note:<br>▪ The above criteria would apply to major materials used in the product, i.e. those over 5% by weight<br>▪ In case the product is made of more than one material, the score for this criterion shall be based on the score of the lowest scoring material</td><td>Design specification of the product for all materials and components used; copy of certificate(s) issued by accredited certification body; factory records of the procurement of waste or recycled materials.</td><td>10</td><td>+5</td><td>4.2.1 (page 6)</td></tr>
<tr><td>Formaldehyde</td><td>○ Products shall not exceed the following emission limits:<br>• 0.1 mg per $m^3$ per hour at 24 hours [10 basic]<br>• 0.05 mg per $m^3$ per hour at 24</td><td>Laboratory test report(s)</td><td>10</td><td>+5</td><td>4.3.1 (page 7)</td></tr>
</table>

| | | | | | |
|---|---|---|---|---|---|
| | hours [+5 bonus] | | | | |
| Volatile Organic Compounds | ○ Products shall not exceed the following emission limits:<br>• 0.1 mg per $m^3$ per hour at 24 hours [10 basic]<br>• 0.05 mg per $m^3$ per hour at 24 hours [+5 bonus] | Laboratory test report(s) | **10** | *+5* | *4.3.2 (page 7)* |
| Heavy Metals in Coating | ○ If the coating used on the furniture (both the metal parts or the others parts) contain the following heavy metal or their compounds, the concentration shall meet the requirement of ASTM F963 as stated below.<br>• Cadmium (75 mg/kg)<br>• Lead (90 mg/kg)<br>• Chromium VI (60 mg/kg)<br>• Mercury (60 mg/kg)<br>• Barium (1000 mg/kg) | Laboratory test report(s), MSDS and relevant production documentation. | **10** | | *4.3.3 (page 8)* |
| Flame Retardant | ○ Various flame retardants: polybrominated biphenyls (PBBs), polybrominated diphenyl ethers (PBDEs) and short chain chlorinated paraffin (SCCP) (with chlorine concentration equal to or more than 50%) shall be less than 0.1% by weight in the furniture products respectively. | Laboratory test report(s), MSDS and relevant production documentation. | **10** | | *4.3.4 (page 8)* |
| | | **Subtotal:** | **50** | **+15** | |

**NON-CORE CRITERIA**

| ***Criteria*** | ***Requirements*** | ***Verification*** | ***Points*** / ***+Bonus*** | ***Index*** |
|---|---|---|---|---|
| Environmental Management System | ○ Valid certification of ISO14001 or the EU Eco-Management and Audit Scheme (EMAS) | ISO14001 or EMAS Certificate issued by accredited certification body. | *+5* | *4.1.1 (page 4)* |
| Design for Disassembly | The product shall be designed in a way that can be readily separated into recyclable / re-useable units as well as easily disassembled without using special tools | Instructions and diagram showing how to disassemble the product by means of commonly available tools | *+5* | *4.1.2 (page 4)* |

| | | | | |
|---|---|---|---|---|
| Durability | The product shall comply with the requirements stipulated in BS 4875, Level 2 or ANSI/BIFMA standards on the durability of the product | Laboratory test report(s) on the performance of the product | *+5* | *4.1.3 (page 4)* |
| Packaging Requirements | ○ Chlorinated or halogenated plastics shall not be used in packaging; or<br>○ Environmental friendly packaging shall be used; or<br>○ Plastic identification symbol shall be used on plastic | Documentation on the packaging materials used | *+5* | *4.1.4 (page 5)* |
| Multi-functional Design | The design of the furniture shall enable it to be flexible or multi-functional in order to achieve sustainable use in terms of:<br>- Saving domestic space;<br>- Using less material;<br>- Be adaptable in shape, etc. | Product instruction or description that demonstrate its capability of being multi-functional with an aim to achieve sustainable use | *+5* | *4.1.5 (page 5)* |
| Hazardous Substances | The following substances shall be less than 0.1% (by weight of the product) present in the final product:<br>○ Phenols;<br>○ Potentially explosive chemicals;<br>○ Hazardous substances listed in the International Agency for Research on Cancer's (IARC) Groups 1, 2A and 2B Classifications<br>○ Any substances classified as harmful – R20, 21 or 22, toxic – R23, 24 or 25, or very toxic – R26, 27, in accordance Commission Directive 2001/59/EC, Directives 2011/65/EU and 1272/2008/EC. | Laboratory test report(s), MSDS, self-declaration letter and production documentation | *+5* | *4.3.5 (page 9)* |
| Recyclability | ○ All plastic parts weighing more than 50 g shall be marked / stamped / embossed with appropriate resin identification code<br>○ The product shall not be impregnated, labelled, coated or otherwise treated in a manner which would prevent recycling in Hong Kong or in the country where the product is manufactured.<br>○ End-of-life advice and recommendations for typical disassemble procedures for the product shall be provided | Documentation of product specifications and other supporting documents related to recyclability | *+5* | *4.4.1 (page 9)* |
| | | **Subtotal:** | **+35** | |

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# 1. INTRODUCTION

## 1.1 PURPOSE

The CIC Green Product Certification *(formerly known as HKGBC Green Product Accreditation and Standards [HK G-PASS])* (herein after referred as the "Scheme") is an environmental labelling scheme owned by the Construction Industry Council (CIC) and implemented by the Hong Kong Green Building Council (HKGBC) which aims to help consumers, building professionals and policy makers identify environmentally preferable building materials and products. This Assessment Standard (hereafter referred as the "Standard") sets out the assessment criteria and their benchmarks for extruded aluminium products to govern the application and award of a label under the Scheme. The Standard also defines the verification methods to determine which labelling grade should be awarded to the product according to the assessment criteria.

This Standard neither modifies nor supersedes laws and regulations. Compliance with this Standard is not a substitute for, and does not assure, compliance with any applicable laws or regulations. Compliance with all applicable laws and regulations is a prerequisite for the manufacturing and marketing of the product.

## 1.2 BACKGROUND

Domestic and office furniture products can place a significant burden on the environment, from raw material extraction to potential health hazards in the use phase. With increasing environmental claims of furniture products in the market, a more comprehensive and systematic approach to assess the environmental impacts of the furniture products shall be developed. The aim of this Standard is to help designers and end-users choosing greener products by conserving resources, reducing the amount of waste disposal in landfills and reducing the impact to human health throughout the life cycle of the furniture products. The development of the assessment criteria in this Standard has made references to worldwide relevant eco-labelling schemes and some existing life cycle assessment (LCA) studies.

# 2. SCOPE

The scope of this Standard is applicable to domestic and office furniture for interior use, including tables, chairs, beds, desks, dressers, cupboards, cabinets, book shelves, and wardrobes. Other products such as mattress, mirror, curtains, recreational outdoor furniture, and furniture made with leather and textile (e.g. sofa) are excluded from this Standard. Domestic and office furniture for interior use that contain glass or mirror as part of their functions are also included in this Standard.

Option A – function use:
The type of domestic and office furniture for interior use, including tables, chairs, beds, desks, dressers, cupboards, cabinets, book shelves, and wardrobes, shall be specified clearly in each application.
Subsequent application is also available for similar or new products with same raw materials and function of a labelled product series, which is only eligible for applying within the validity period of the label.

Option B – tailor-made product:
The raw materials used and room types shall be specified clearly in each application. All related products have to be listed on the submitted documents.
E.g. Wood panel A – Metal B – Living room is regarded as one application

Room types include:

| | | | |
|---|---|---|---|
| Living room | Dining room | Bedroom | Study room |
| Kitchen | Bathroom | Studio | |

Subsequent application is also available for similar products with same raw materials of a labelled product series, but not for the same room types, which is only eligible for applying within the validity period of the label.

## 3. DEFINITIONS

*AFCS:* Australian Forest Certification Scheme

*Applicant:* Organisations which apply for the label of the CIC Green Product Certification of the Construction Industry Council

*CIC:* Construction Industry Council

*CNAS:* China National Accreditation Service for Conformity Assessment

*COD:* Chemical oxygen demand

*Design for disassembly:* A characteristic of product's design that enables the product be taken apart at the end of its useful life so as to allow components and parts to be reused, recycled, recovered for energy or, in some other ways, diverted from the waste stream (according to definition 7.2.1 of ISO 14021)

*FSC:* Forest Stewardship Council

*HKAS:* Hong Kong Accreditation Service

*HKGBC:* The Hong Kong Green Building Council Limited

*HOKLAS:* The Hong Kong Laboratory Accreditation Scheme

*IARC:* International Agency for Research on Cancer

*ISO:* International Organisation for Standardisation

*MSDS:* Material safety data sheet. To qualify as suitable, MSDS and information therein must not be more than 5-years old

*PEFC:* Programme for the Endorsement of Forest Certification

*Third-party:* An entity without any financial interest or stake in the sales of the product or service being evaluated or other conflict of interest

*VOC:* Volatile organic compounds refer to any organic compound (compound which contains carbon) with either a boiling point below 250°C measured at 101.3 kPa or a vapour pressure of more than 0.1 mm Hg measured at 25°C

# 4. EVALUATION CRITERIA

A product to be assessed shall meet all the minimum requirements of the "Core Criteria" in order to be awarded a "Green" (i.e. a "pass" grade) Label under the Scheme. Bonus points may be awarded if the product meets the "Non-core Criteria" and a "Bronze", "Silver", "Gold" or "Platinum" Label will be awarded according to the total points accumulated (see Section 5 for details). All submissions and documentation shall be endorsed by the Chief Executive Officer or other authorised persons of the Applicant to demonstrate conformance to the assessment criteria. All certifications, laboratory reports and documentations must be valid during the assessment process and labelling period. All laboratory reports and documentation shall be within 5 years from the date of issue. The chemical tests should be conducted by either a third party or the manufacturer who has received the ISO17025 certification or relevant national accreditation systems, e.g. HOKLAS, CNAS, etc. CIC or an appointed third party would conduct a random check of the labelled product during the period of validity of the label, through laboratory test to verify the compliance with the criteria as stated in the Standard. Manufacturer shall bear the cost of the laboratory test.

## 4.1 GENERAL REQUIREMENTS

### *4.1.1 Environmental Management System*

5 Points (Non-Core Criterion)
Manufacturer of the product shall possess valid certificate of ISO14001 or the EU Eco-Management and Audit Scheme (EMAS). Targets shall be set to reduce the environmental impacts during the manufacturing process which include but not limited to the reduction of hazardous substance emissions, energy consumption, $CO_2$ emissions, secondary environmental load, waste management, water management, etc.

Verification
A valid ISO14001 or EMAS Certificate issued by local or overseas accredited certification bodies.

### *4.1.2 Design for Disassembly*

5 Points (Non-Core Criterion)
The product shall be designed in a way that can be readily disassembled into reusable or recyclable parts. Explanatory statement shall be supplemented to specify the components or parts to be reused, recycled, recovered for energy or, in some other ways, diverted from the waste stream. The Applicant shall refer to the definition and qualifications as stated in Section 7.4 of ISO 14021 Environmental Labels and Declarations – Self-declared Environmental Claims (Type II Environmental Labelling).

Verification
Instructions showing how disassembly can be achieved with commonly available tools.

### *4.1.3 Durability*

5 Points (Non-Core Criterion)
The product should comply with the requirements stipulated in BS 4875 Level 2 or ANSI/BIFMA standards on the durability of the product.

Verification
Laboratory test report(s) on performance according to BS 4875 or ANSI/BIFMA standard shall be submitted.

### *4.1.4 Packaging Requirements*

The packaging requirements are relevant to all primary packaging materials, i.e. those being used to envelop the product and hold it. The primary packaging materials are

usually in direct contact with the contents and shall be in the minimal amount of distribution and/or use as they may eventually be disposed by the consumers.

5 Points (Non-Core Criterion)
The packaging materials shall:

- Chlorinated or halogenated plastics shall not be used in packaging; or
- Environmental friendly packaging shall be used; or
- Plastic identification symbol shall be used on plastic containers by each program to facilitate recycling activities and returnable can shall be provided by the manufacturer.

Verification

Documentation that describes the packaging and the materials used.

### *4.1.5 Multi-functional Design*

5 Points (Non-Core Criterion)
The design of furniture cannot only help to fulfil the need of comfort, but can also increase the flexibility of the furniture and enable it to be multi-functional, e.g. bed combo with storage shelves, etc. Embedding innovation into the design of furniture helps to achieve sustainable use in space and reduce the consumption of material.

The design of the furniture shall enable it to be flexible or multi-functional in order to achieve sustainable use in terms of:

- Saving domestic space;
- Using less material;
- Be adaptable in shape or functions, etc.

Verification
Product instruction or description that demonstrate its capability of being multi-functional with an aim to achieve sustainable use, such as saving the domestic space and material, etc. should be submitted.

## 4.2 RESOURCE CONSUMPTION

Typical domestic and office furniture are composed of different materials, while the design and material requirements are usually based on client's specifications. Therefore, all major materials used in a product (i.e. more than 5% by weight) shall fulfil the requirements of the material criteria. However, the following material criteria shall not apply to small accessories such as screws, dowels, bolts, hinges, etc. In case the product is made of more than one material, the ultimate score for this criterion shall be based on the score of the lowest scoring material.

### *4.2.1 Raw Material*

10 Basic + 5 Bonus Points (Core Criterion)

For wood, metal, plastic and glass/ mirror parts contributing to over 5 % of the total weight of the product, the material shall meet the following minimum requirements, unless otherwise specified:

*Wood*

- The product shall be made from at least 80% recycled wood or at least 60% forest management certification, such as FSC, PEFC, SFI, or AFCS certified wood; and
- 5 bonus points will be awarded if the product is made of at least 90% recycled wood or at least 80% forest management certification, such as FSC, PEFC, SFI, or AFCS certified wood.

*Metal*

- For aluminium, at least 50% by weight of the aluminium used in the product shall be from recycled aluminium. 5 bonus points will be awarded if the aluminium components are made of 80% (by weight of total aluminium) of recycled aluminium.
- For other metals (excluding aluminium): at least 20% by weight of the metal in the product shall be recycled metal. 5 bonus points will be awarded if the metal components are made of 50% (by weight of total metal) of recycled metal.

*Plastic*

- The product shall not contain any plastic parts which are made of PVC.
- 5 bonus points will be awarded if the product is made of at least 10% of recycled plastics by weight of the product.

*Glass / Mirror*

- Lead glass, crystal glass and wire reinforced glass shall not be used in the furniture. Glass / mirror used in the furniture shall be readily replaceable if it is damaged or smashed. The metal coating used in glass / mirror shall not contain lead (Pb) and/or copper (Cu) in excess of 0.2% by weight.
- 5 bonus points will be awarded if glass / mirror contain recycled content.

Verification

Design specification of the product for all materials and components used; copy of certificate(s) issued by an accredited certification body according to local or national accreditation services (i.e. HKAS, CNAS); factory records of the procurement of waste or recycled materials.

## 4.3 HUMAN TOXICITY

### *4.3.1 Formaldehyde*

10 Basic + 5 Bonus Points (Core Criterion)

Products shall not exceed the following emission limits:

- 0.1 mg per $m^3$ per hour at 24 hours [10 basic]
- 0.05 mg per $m^3$ per hour at 24 hours [+5 bonus]

Note:
Please refer to the following procedures for sample collection.

- **Manufacturing Date**

Date product comes off of final manufacturing line

- **Sample Collection**

Same as Manufacturing Date

- **Shipment to Laboratory**

Within 24 hours of sample collection

- **Arrival at Laboratory**

Not to exceed 7 days of shipment date

- **Testing Date**

Not to exceed 10 days after arrival and product acceptance at laboratory

Verification

Laboratory testing report(s) on formaldehyde emissions according to ANSI/BIFMA M7.1-2011 Test Method for determining VOC Emissions. Other related testing methods are also acceptable with justification provided by the applicant.

### *4.3.2 Volatile Organic Compounds*

10 Basic + 5 Bonus Points (Core Criterion)

Products shall not exceed the following emission limits:

- 0.1 mg per m3 per hour at 24 hours [10 basic]
- 0.05 mg per m3 per hour at 24 hours (+5 bonus)

Note:
Please refer to the following procedures for sample collection.

- **Manufacturing Date**

Date product comes off of final manufacturing line

- **Sample Collection**

Same as Manufacturing Date

- **Shipment to Laboratory**

Within 24 hours of sample collection

- **Arrival at Laboratory**

Not to exceed 7 days of shipment date

- **Testing Date**

Not to exceed 10 days after arrival and product acceptance at laboratory

Verification

Laboratory testing report(s) on VOC emissions according to ANSI/BIFMA M7.1-2011 Test Method for determining VOC Emissions. Other related testing methods are also acceptable with justification provided by the applicant.

### *4.3.3 Heavy Metals in Coating*

10 Points (Core Criterion)

Coating used on the furniture shall not contain the following heavy metals or their compounds.

If the coating used on the furniture (both the metal parts or the others parts) contain the following heavy metal or their compounds, the concentration shall meet the requirement of ASTM F963 as stated below.

- Cadmium (75 mg/kg)
    - Lead (90 mg/kg)
- Chromium VI (60 mg/kg)
- Mercury (60 mg/kg)
- Barium (1000 mg/kg)

Verification

Laboratory test report(s), MSDS and any relevant production documentation. Test report(s) shall be compiled according to the National and International test methods including but not limited to ISO 3856-4 or ASTM D3335 for cadmium, ISO 3856-1 or ASTM D3335 for lead, ISO 3856-7 or ASTM D3624 for mercury

### *4.3.4 Flame Retardant*

10 Points (Core Criterion)

Various flame retardants: polybrominated biphenyls (PBBs), polybrominated diphenyl ethers (PBDEs) and short chain chlorinated paraffin (SCCP) (with chlorine concentration equal to or more than 50%) shall be less than 0.1% by weight in the furniture products respectively.

Verification
Laboratory test report(s), MSDS and relevant production documentation.

### *4.3.5 Hazardous Substances*

5 Points (Non-Core Criterion)
The following substances shall be less than 0.1% (by weight of the product) present in the final product:

- Phenols;
- Potentially explosive chemicals;
- Hazardous substances listed in the International Agency for Research on Cancer's (IARC) Groups 1, 2A and 2B Classifications (details can be found in website: http://monographs.iarc.fr/ENG/Classification/)
- Any substances classified as harmful – R20, 21 or 22, toxic – R23, 24 or 25, or very toxic – R26, 27, in accordance Commission Directive 2001/59/EC, Directives 2011/65/EU and 1272/2008/EC.

Verification
Laboratory test report(s), MSDS, self-declaration letter and production documentation.

## 4.4 ECOSYSTEM IMPACT

### *4.4.1 Recyclability*

5 Points (Non-Core Criterion)

- All plastic parts weighing more than 50g shall be marked / stamped / embossed with appropriate resin identification code in compliance with ISO 11469.
- The product shall not be impregnated, labelled, coated or otherwise treated in a manner which would prevent recycling in Hong Kong or in the country where the product is manufactured.
- The end-of-life advice and recommendations for typical disassemble procedures of the product shall be given. Options for re-using, recycling, recovery and disposal for the product / material shall be provided.

Verification
Documentation of product specifications and other relevant information shall be provided.

# 5. SCORING AND GRADING

The points for meeting each criterion stated in Section 4 are summarised in Table 1.

*Table 1: Points to be awarded under the assessment criteria of this Standard*

| ***Evaluation criteria*** | ***Points*** | |
|---|---|---|
| | ***Basic*** | ***+Bonus*** |
| 4.1.1 Environmental Management System | | +5 |
| 4.1.2 Design for Disassembly | | +5 |
| 4.1.3 Durability | | +5 |
| 4.1.4 Packaging Requirements | | +5 |
| 4.1.5 Multi-functional Design | | +5 |
| 4.2.1 Raw Material [CORE] | **10** | +5 |
| 4.3.1 Formaldehyde [CORE] | **10** | +5 |
| 4.3.2 Volatile Organic Compounds [CORE] | **10** | +5 |
| 4.3.3 Heavy Metals in Coating [CORE] | **10** | |
| 4.3.4 Flame Retardant [CORE] | **10** | |
| 4.3.3 Hazardous Substances | | +5 |
| 4.4.1 Recyclability | | +5 |
| | **50** | **+50** |
| **Total:** | **100** | |

The minimum requirement to be awarded a "Green" Label under this product category is to obtain 50 points by meeting all minimum requirements laid down in the "Core Criteria".

*Table 2: Benchmarks for grading furniture*

| ***Grade to be awarded*** | ***Points required*** |
|---|---|
| Platinum | 90 or above |
| Gold | 80 - 89 |
| Silver | 70 - 79 |
| Bronze | 60 - 69 |
| Green | 50 - 59 |
| No Label | Below 50 |