



# CONSTRUCTION INDUSTRY COUNCIL

## CIC GREEN PRODUCT CERTIFICATION

### WALL COVERING

#### *Assessment Standard*

(Version 1.0)

Obsolete - for reference only

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## WALL COVERING

### *Summary of Assessment Criteria*

#### CORE CRITERIA

<i>Criteria</i>	<i>Requirements</i>	<i>Verification</i>	<i>Points</i>	<i>Index</i>
			<i>Basic</i>	
Durability	<ul style="list-style-type: none"> <li>○ Provide information to demonstrate the product's properties including:               <ul style="list-style-type: none"> <li>▪ Water resistant</li> <li>▪ Oil resistant</li> </ul> </li> </ul>	Laboratory test report(s) and relevant documentation showing the compliance to EU, US standards on wall covering products.	<b>10</b>	4.1.2 (page 4)
Product Information	<ul style="list-style-type: none"> <li>○ Provide the following product information:               <ul style="list-style-type: none"> <li>▪ Instructions for use</li> <li>▪ Possible toxicity or health hazards imposed by the chemical components</li> <li>▪ Methods of cleaning the application equipment</li> </ul> </li> </ul>	Documentation related to the label and relevant information	<b>5</b>	4.1.3 (page 4)
Volatile Organic Compound (VOC) & Formaldehyde	Limits for VOC & Formaldehyde Content and Emission <ul style="list-style-type: none"> <li>○ Formaldehyde: &lt; 0.05 ppm or &lt; 8 mg/100g</li> <li>○ Total Volatile Organic Compounds: &lt; 0.5 mg/m<sup>3</sup></li> </ul>	Laboratory test report(s), MSDS and production documentation	<b>10</b>	4.3.1 (page 6)
Phthalates	The concentration of phthalate (DEHP, DBP, BBP; DINP; DIDP and DNOP) in the product shall be less than 0.1% by weight of the product.	Laboratory test report(s), MSDS and production documentation	<b>5</b>	4.3.2 (page 7)
Heavy metals	<ul style="list-style-type: none"> <li>○ The heavy metals in the products shall be less than the limits in Table 5.</li> </ul>	Laboratory test report(s), MSDS and production documentation	<b>10</b>	4.3.3 (page 7)
Printing Ink	<ul style="list-style-type: none"> <li>○ Printing ink used for producing wallpaper shall be water soluble.</li> </ul>	Laboratory test report(s), MSDS and production documentation	<b>10</b>	4.4.2 (page 9)
<b>Subtotal:</b>			<b>50</b>	

#### NON-CORE CRITERIA

<i>Criteria</i>	<i>Requirements</i>	<i>Verification</i>	<i>Points</i>	<i>Index</i>
			<i>+Bonus</i>	
Environmental Management System	<ul style="list-style-type: none"> <li>○ Valid certification of ISO14001, the EU Eco-Management and Audit Scheme (EMAS), NSF or Cradle-to-Cradle</li> </ul>	ISO14001, EMAS, NSF or Cradle-to-Cradle certificate issued by	+5	4.1.1 (page 3)

		accredited certification body																										
Packaging Requirements	<ul style="list-style-type: none"> <li>○ Product packaging shall not contain halogenated plastics</li> <li>○ All packaging materials shall be either comprised of 100% recycled material or readily recyclable</li> </ul>	Documentation on the packaging materials used	+5	4.1.4 (page 4)																								
Raw Materials	<p>For paper, fabric and plastic parts contributing to more than 10 % of the total weight of the product, the material shall meet the following minimum requirements:</p> <ul style="list-style-type: none"> <li>○ Paper <table border="1" style="margin-left: 20px;"> <thead> <tr> <th><i>Recycled content</i></th> <th><i>Bonus Points</i></th> </tr> </thead> <tbody> <tr> <td>≥ 20%</td> <td>+5</td> </tr> <tr> <td>≥ 25%</td> <td>+10</td> </tr> <tr> <td>≥ 30%</td> <td>+15</td> </tr> </tbody> </table> <p style="margin-left: 20px;">OR</p> <ul style="list-style-type: none"> <li>▪ Virgin raw material originated from sustainable sources, e.g. with FSC or cradle-to-cradle certification</li> </ul> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th><i>Sustainable sources content</i></th> <th><i>Bonus Points</i></th> </tr> </thead> <tbody> <tr> <td>≥ 50%</td> <td>+5</td> </tr> <tr> <td>≥ 60%</td> <td>+10</td> </tr> <tr> <td>≥ 70%</td> <td>+15</td> </tr> </tbody> </table> </li> <li>○ Fabric / Plastic <table border="1" style="margin-left: 20px;"> <thead> <tr> <th><i>Recycled content</i></th> <th><i>Bonus Points</i></th> </tr> </thead> <tbody> <tr> <td>≥ 10%</td> <td>+5</td> </tr> <tr> <td>≥ 20%</td> <td>+10</td> </tr> <tr> <td>≥ 30%</td> <td>+15</td> </tr> </tbody> </table> </li> </ul>	<i>Recycled content</i>	<i>Bonus Points</i>	≥ 20%	+5	≥ 25%	+10	≥ 30%	+15	<i>Sustainable sources content</i>	<i>Bonus Points</i>	≥ 50%	+5	≥ 60%	+10	≥ 70%	+15	<i>Recycled content</i>	<i>Bonus Points</i>	≥ 10%	+5	≥ 20%	+10	≥ 30%	+15	Detailed report(s) / production documentation of the raw materials	+5/ +10/ +15	4.2.1 (page 5)
<i>Recycled content</i>	<i>Bonus Points</i>																											
≥ 20%	+5																											
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Carcinogenic Substances	<ul style="list-style-type: none"> <li>○ Substances listed in IARC Group 1, 2A and 2B shall be &lt; 0.1% by weight of the product</li> </ul>	Laboratory test report(s), MSDS and production documentation	+10	4.3.4 (page 8)																								
Hazardous Substances	<ul style="list-style-type: none"> <li>○ The limits of hazardous substances are stated in Section 4.3.5.</li> </ul>	Laboratory test report(s) and production documentation	+5	4.3.5 (page 8)																								
Halogenated Plastics	<ul style="list-style-type: none"> <li>○ The finished product shall not contain halogenated plastics</li> </ul>	Laboratory test report(s) and any production documentation	+5	4.3.6 (page 8)																								
Water Management	<ul style="list-style-type: none"> <li>○ Manufacturer shall prepare a water management plan for the manufacturing process</li> </ul>	Documentation management plan	+5	4.4.1 (page 9)																								
<b>Subtotal:</b>			<b>+50</b>																									

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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 wall coverings 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**

Wall coverings are commonly used for decorating the internal wall of buildings. The production process of wall covering materials emits pollutants, as well as generating adverse impacts to the environment and human health. Wall covering materials such as wallpaper may also cause indoor air pollution by emitting hazardous substances including formaldehyde and aldehydes.

The purposes of this Standard for wall covering are, therefore, to minimise the use and subsequent release of harmful substances to the environment and human throughout the product’s life cycle; to conserve resources and energy, to reduce the amount of waste disposed in landfills. The development of the criteria in this Standard has made references to worldwide relevant eco-labelling schemes and some existing life cycle assessment (LCA) studies.

# **2. SCOPE**

This Standard applies to finish wall covering used in the interiors of building that are aligned not less than 30 degrees from the ceiling and floor. The scope does not include the adhesive or support structure / system of the wall covering. Paint and coating are also excluded from this Standard.

The raw materials for the coating and substrate of the wall covering shall be specified clearly in each application. E.g. Vinyl Coating – Fabric Substrate is regarded as one application.

Raw materials for coating and substrate include:

Coating & Substrate	Vinyl	Fabric	Paper
	Acrylic	Textile	Natural Materials

Subsequent application is also available for similar products with the same raw materials of a labelled product series, which is only eligible for applying within the validity period of the label. Maximum **5 (FIVE)** subsequent applications are allowed for each first application.

### 3. DEFINITIONS

*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

*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

*NSF:* National Sanitation Foundation

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

*Recycled fibres:* Fibres collected from the conversion and consumer stages. Purchased broke and broke from own production is defined as new fibre (if the raw material is new fibre) and as recycled fibre (if the raw material is recycled).

*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.

*Wallpaper:* Finishing materials using paper as base material and being pasted on walls or ceilings, excluding wall blanket and other similar wall hanging.

*Water soluble ink:* Printing ink that uses water as solvent, and its volatile organic contents do not exceed 5% of the total mass of the ink.

## **4. EVALUATION CRITERIA**

A product to be assessed should 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. Extra 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 submission and documentation shall be endorsed by the Chief Executive Officer or other authorised persons of the Applicant to demonstrate conformance to the assessment criteria. 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.

### **4.1 GENERAL REQUIREMENTS**

#### **4.1.1 *Environmental Management System***

##### 5 Points (Non-core Criterion)

Manufacturer of the products shall possess valid certificate of ISO14001, the EU Eco-Management and Audit Scheme (EMAS), National Sanitation Foundation (NSF) or Cradle-to-Cradle. 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<sub>2</sub> emissions, secondary environmental load, waste management, water management, etc.

##### Verification

A valid EMS Certificate, including ISO14001, EMAS, NSF or Cradle-to-Cradle, issued by local or overseas accredited certification bodies.

#### **4.1.2 Durability**

##### 10 Points (Core Criterion)

The properties of the wall covering to enhance its durability including water resistance and oil resistance should be demonstrated.

##### Verification

The Applicant shall assess the durability in accordance with relevant ISO, ASTM test methods including but not limited to ISO 18935, ASTM D779 and ASTM D6686-01, other related testing methods are also acceptable with justifications provided by the applicant. Relevant documentation or laboratory test report(s) on durability or demonstrate the wall covering products comply with European Standards or Federal Specification in United States shall be submitted.

#### **4.1.3 Product Information**

##### 5 Points (Core Criterion)

The following information shall be supplied with the product or made available to the public to help users using the products in a sustainable manner:

- Possible toxicity or health hazards imposed by the chemical components;
- Instructions for use; and
- Methods of cleaning application equipment.

##### Verification

Documentation related to the product labels, care instructions and other information provided with the product, material safety data sheets (MSDS), web pages and any other information shall be freely available to customers or the public.

#### **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:

- Not contain halogenated plastics; and
- Be comprised of 100% recycled material or be readily recyclable, decomposable, or contain no coatings, impregnated chemicals or other materials that would prevent recycling or decomposition.

### Verification

Documentation describing the packaging materials used as well as their chemical composition and recyclability shall be submitted.

## 4.2 RESOURCE CONSUMPTION

### 4.2.1 *Raw Materials*

#### 5 / 10 / 15 Points (Non-core Criterion)

For paper, fabric and plastic parts contributing to more than 10 % of the total weight of the product, the material shall meet the following minimum requirements, unless otherwise specified.

#### Paper

Either one of the requirements (recycled content or sustainable sources) shall be fulfilled:

- i) The finished product shall be made of recycled paper with recycled content equal to or more than 20%. Up to 15 bonus points will be awarded if the recycled content of the paper wall covering is equal to or more than 30% (Table 1).

*Table 1: Requirements of recycled content of paper used for different types of wall covering and associated points*

<b>Recycled content of paper</b>	<b>Points</b>
≥ 20%	+5 (bonus)
≥ 25%	+10 (bonus)
≥ 30%	+15 (bonus)

OR

- ii) Any virgin raw materials used shall be with content equal to or more than 50% originated from sustainable source with certification, e.g. Chain of Custody Certification of Forest Stewardship Council (FSC); cradle-to-cradle certification, etc.

*Table 2: Requirements of raw materials from sustainable sources used for different types of wall covering and associated points*

<b>Raw materials from sustainable sources</b>	<b>Points</b>
≥ 50%	+5 (bonus)
≥ 60%	+10 (bonus)
≥ 70%	+15 (bonus)

### Fabric / Plastic

The finished product shall contain recycled fabric / plastic with equal to or more than 10% to reach the minimum requirement. Up to 15 bonus points will be awarded if the recycled content of fabric or plastic wall covering is equal to or more than 30% (Table 3).

Table 3: Requirements of recycled content of fabric / plastic used for different types of wall covering and associated points

<b>Recycled content of fabric / plastic</b>	<b>Points</b>
≥ 10%	+5 (bonus)
≥ 20%	+10 (bonus)
≥ 30%	+15 (bonus)

Note:

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

### Verification

Detailed report(s) of the raw materials of wall covering products with substantiations and any relevant production documentation; certification documents of raw materials.

## **4.3 HUMAN TOXICITY**

### **4.3.1 Volatile Organic Compound (VOC) & Formaldehyde**

#### 10 points (Core Criterion)

The finished wall covering products shall not exceed the following air emission or content limits. Products should be tested in accordance with either ASTM D 5116-10: Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials / Products or the California Department of Public Health (CDPH) standard method.

Table 4: Limits for VOC & Formaldehyde Content and Emission

<b>VOC &amp; Formaldehyde</b>	<b>Emission limits or content limits</b>
Formaldehyde	< 0.05 ppm or < 8 mg/100g
Total volatile organic compounds (VOCs)	< 0.5 mg/m <sup>3</sup>

Parameters for the emission testing: temperature: 23°C ± 2°C; relative humidity: 50% ± 5%; air exchange rate: n=1; chamber loading ratio: 0.4 – 1.0 m<sup>2</sup>/m<sup>3</sup>; air velocity: 0.1 m/s – 0.3 m/s.

#### Verification

The Applicant shall submit relevant laboratory test report(s) on formaldehyde and VOCs emission and/ or documentations (including relevant laboratory test report(s), MSDS and any production documentation) of formaldehyde and VOCs in the final product.

#### **4.3.2 Phthalates**

##### 5 points (Core Criterion)

The concentration of phthalates in the product shall be less than 0.1% by weight of the product.

The limited phthalates including the following types:

- bis(2-ethylhexyl)phthalate (DEHP),
- dibutyl phthalate (DBP),
- benzylbutyl phthalate (BBP);
- Diisononyl phthalate (DINP);
- Diisodecyl phthalate (DIDP),
- Di-n-octyl phthalate (DNOP),

#### Verification

Laboratory test report(s), MSDS and any relevant production documentation shall be provided. The phthalate content shall be analysed according to National or International standards such as CPSC-CH-C1001-09.3.

#### **4.3.3 Heavy metals**

##### 10 Points (Core Criterion)

The heavy metals in the products shall be less than the following limits.

Table 5: *The limits for heavy metals*

<b><i>Heavy metals (Symbol)</i></b>	<b><i>Limits (mg/kg)</i></b>
Arsenic (As)	25
Barium (Ba)	500
Cadmium (Cd)	25
Chromium (Cr)	60
Lead (Pb)	90
Mercury (Hg)	20

#### Verification

Laboratory test report(s), MSDS and any relevant production documentation shall be provided.

#### **4.3.4 Carcinogenic Substances**

##### 10 Points (Non-core Criterion)

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/>) shall be avoided during the production process or present in the final product. Any such carcinogens which are known to be present as contaminants shall be less than 0.1% by weight of the product.

##### Verification

Laboratory test report(s), MSDS and any relevant production documentation shall be provided.

#### **4.3.5 Hazardous Substances**

##### 5 Points (Non-core Criterion)

The following substances in the products shall be less than the below limits (% by weight of the product):

- i) Chlorofluorocarbons (CFCs): 0.1%;
- ii) Polybrominated biphenyls (PBBs), polybrominated diphenyl ethers (PBDEs) and short-chained chlorinated paraffin (SCCP): 0.1%;
- iii) Chlorophenols: 20 µg/kg of fibre in textile materials;
- iv) Extractable organic halogens (EOX): 3 mg/kg fibre in textile materials; and
- v) Release of vinyl chloride monomer: 1 mg/kg.

The following substances shall not be added in the manufacturing process:

- i) Sodium hexafluorosilicate;
- ii) N-(a-(1-nitroethyl)benzyl)-ethylene diamine
- iii) Mixture of tris-(hydroxymethyl)-nitromethane, 5-chloro-2-methyl-4-Isothiazoline-3-on and 2-methyl-4-isothiazoline-3-on
- iv) Tetramethylthiuram disulphide
- v) Chemicals for bleaching including chlorine, halogenated chemicals or hardly biodegradable complexing agents, such as ethylenediaminetetraacetic acid (EDTA) and diethylenetriaminepentaacetic acid (DTPA)

##### Verification

Laboratory test report(s) and any relevant production documentation to demonstrate the compliance with the criteria mentioned above.

#### **4.3.6 Halogenated Plastics**

##### 5 Points (Non-core Criterion)

The finished product shall not contain halogenated plastics.

Verification

Laboratory test report(s) and any relevant production documentation shall be submitted to demonstrate the composition of the product.

**4.4 ECOSYSTEM IMPACTS**

**4.4.1 *Water Management***

5 Points (Non-core Criterion)

Manufacturer shall prepare a water management plan for the manufacturing process. The followings shall be submitted as support:

- Initiatives taken to reduce water use and improve water efficiency;
- Initiatives or requirements for suppliers or contract manufacturers.

Verification

Detailed water management plan.

**4.4.2 **Printing Ink****

10 Points (Core Criterion)

Printing ink used for producing wallpaper shall be water soluble.

Verification

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

Obsoleter for reference only

## 5. SCORING AND GRADING

The points for meeting each criterion stated in Section 4 are summarised in Table 6.

Table 6: Points to be awarded under the assessment criteria of this Standard

<i>Evaluation criteria</i>	<i>Points</i>	
	<i>Basic</i>	<i>+Bonus</i>
4.1.1 Environmental Management System		+5
4.1.2 Durability [CORE]	<b>10</b>	
4.1.3 Product Information [CORE]	<b>5</b>	
4.1.4 Packaging Requirements		+5
4.2.1 Raw Materials		+5/+10/+15
4.3.1 Volatile Organic Compound (VOC) & Formaldehyde [CORE]	<b>10</b>	
4.3.2 Phthalates [CORE]	<b>5</b>	
4.3.3 Heavy Metals [CORE]	<b>10</b>	
4.3.4 Carcinogenic Substances		+10
4.3.5 Hazardous Substances		+5
4.3.6 Halogenated Plastics		+5
4.4.1 Water Management		+5
4.4.2 Printing Ink [CORE]	<b>10</b>	
<b>Total:</b>	<b>50</b>	<b>+50</b>
	<b>100</b>	

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 7: Benchmarks for grading wall covering

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