

# CONSTRUCTION INDUSTRY COUNCIL

## CIC GREEN PRODUCT CERTIFICATION

### *Assessment Standard*

### *Technical Requirements*

### **Flooring**



**CIC GREEN**  
PRODUCT CERTIFICATION

(Version 2)

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## Flooring

### *Summary of Assessment Criteria*

#### CORE CRITERIA

Criteria	Requirement	Verification	Points		Index
			Basic	+Bonus	
Product Information	<p>Provide following information with delivered products or made accessible to public:</p> <ul style="list-style-type: none"> <li>• Country of origin</li> <li>• Information of product specification</li> <li>• Product composition</li> <li>• Possible toxicity or health hazards imposed by the chemical components</li> <li>• Instructions for installation and maintenance</li> <li>• Instructions for disposal of the product and packaging</li> </ul>	Documentation including but not limited to product catalogue, technical datasheet, webpages	5	-	4.1.1
<b>RESOURCE</b>					
Material Optimisation	<p>Raw Materials:</p> <p><b>i) Artificial Stone:</b> Products whose raw materials or ingredients (by weight) are made from a combination of <math>\geq 30\%</math> recycled materials and/or waste.</p> <p><b>ii) Natural Stone:</b> The extraction efficiency of the main mining or quarry operation shall be higher than or equal to 25%.</p> <p><b>iii) Vinyl materials:</b> Proportion of renewable materials: Polyolefin-based products <math>\geq 85\%</math>.</p> <p><b>iv) Timber and bamboo:</b> <math>\geq 70\%</math> of raw materials are FSC certified wood and bamboo.</p> <p><b>v) Others:</b> <math>\geq 30\%</math> of raw materials are renewable or recycled materials.</p>	Detailed report(s) of the recycled content or the source of natural raw materials with relevant substantiations.	10	-	4.3.1.1
<b>ENVIRONMENT</b>					
Human Toxicity and Ecosystem Impact	<p>Hazardous Substances: Boron (B), toluene and xylene shall be less than 0.1% by weight of the product; <b>AND</b> For Carcinogenic Substances, the product shall be listed in IARC Group 1, 2A and 2B shall be <math>&lt; 0.1\%</math> by weight of the product; <b>AND</b> The product shall also not contain any substances or chemicals that are</p>	Laboratory test report(s), MSDS and any relevant production documentation	5	-	4.4.3.1

Criteria	Requirement	Verification	Points		Index
			Basic	+Bonus	
	classified as Fatal, Toxic, Harmful in accordance with Regulation (EC) No 1272/2008.				
	Heavy Metals: The amount of Pb, Cd, Cr(VI), Hg, As, Cu shall be contained $\leq$ 0.1% by weight of the product respectively.	Laboratory test report(s), MSDS and any relevant production documentation	10	-	4.4.3.2
Volatile Organic Compounds (VOC)	Formaldehyde: The emission limit of formaldehyde from the product shall be: <ul style="list-style-type: none"> <li><math>\leq</math> 1.0 mg/L (Desiccator method); or</li> <li><math>\leq</math> 0.02 mg/m<sup>3</sup> (Chamber method)</li> </ul> <b>OR</b> Product shall not contain formaldehyde content in the product.	Laboratory test report(s), MSDS and production documentation	5	-	4.4.4.1
	VOC Content: <b>Option A</b> The emission limit of the following substances from the product shall be: TVOC: < 0.25 mg/m <sup>3</sup> within 24 hours <b>OR</b> <b>Option B</b> Product shall not contain volatile organic compounds.	Laboratory test report(s), MSDS and production documentation	5	-	4.4.4.2
<b>PERFORMANCE</b>					
Product Life	Serviceability: Carry out at least FOUR of the testing items to demonstrate quality, durability and performance properties of the product. Relevant tests include the followings: <ul style="list-style-type: none"> <li>Wear Resistance</li> <li>Impact Resistance</li> <li>Slip Resistance</li> <li>Chemical Resistance</li> <li>Moisture Resistance</li> <li>Mildew and Fungal Resistance</li> <li>Corrosion Resistance</li> <li>Dimensional Stability</li> </ul>	Laboratory test report(s) for all relevant quality and performance tests	10	-	4.5.1.1
		<b>Subtotal:</b>	50	-	

## NON-CORE CRITERIA

Criteria	Requirements	Verification	Points	Index
			+Bonus	
<b>CARBON</b>				
CFP Quantification	Provide a 3 <sup>rd</sup> party endorsed life cycle assessment report with the carbon footprint of products (CFP), covering at least A1 to A3 OR provide an Environmental Product Declaration (EPD).	CFP quantification report <b>OR</b> Environmental Product Declaration (EPD)	+10	4.2.1
<b>RESOURCE</b>				
Circularity	Recyclability: Developed a recycling plan for the product and declared options for reuse, recycling, recovery and disposal.	Documentation on recycling plan	+5	4.3.2.1
	Packaging Requirement: The packaging materials shall not contain halogenated plastics; <i>OR</i>  Shall be comprised of 100% recycled materials, readily recyclable materials or decomposable materials; <i>OR</i>  shall not be impregnated, labelled, coated or otherwise treated in a manner, which would prevent or significantly limit recycling.	Documentation on packaging materials used	+5	4.3.2.2
Waste Management	Waste Management Plan: Implement effective waste management plan detailing the policies, procedures and/or a waste management program covering manufacturing operations.	Waste management plan	+5	4.3.3.1
Water Management	Option A: Water Consumption Reporting: Report both potable and non-potable water usage in the production process of the past year.	Water consumption report	+5/ +10	4.3.4.1
	Water Recycling Program: Develop and implement a water recycling program during the manufacturing process.	Documentation on water recycling		4.3.4.2
	Option B: Water Management System: Process valid certificates under ISO 14046: Water footprint Assessment.	ISO 14046 Certificate issued by accredited certification body		4.3.4.3
Energy Management	Option A: Energy Management Plan: Implement effective energy management policies and procedures and/or an energy management programme.	Energy Management Plan	+5/ +10	4.3.5.1

Criteria	Requirements	Verification	Points	Index
			+Bonus	
	Option B: Energy Management System: Possess valid certificates under ISO 50001: Energy management systems – Requirements with guidance for use.	ISO 50001 Certificate issued by accredited certification body		4.3.5.2
<b>ENVIRONMENT</b>				
Environmental Management	Environmental Management System: Possess valid certificate under ISO 14001: Environmental management systems or EU Eco-Management and Audit Scheme (EMAS).	ISO 14001 or EMAS Certificate issued by accredited certification body	+5	4.4.1.1
Regional Product	Regional Manufactured Product: Products that are manufactured within 800km radius of HKSAR by road transportation; within a 1,600km radius by rail transportation; or within a 4,000km radius by sea transportation.	Location Map with distance between manufacturer and HKSAR	+5	4.4.2.1
Human Toxicity and Ecosystem Impact	Radioactivity: External Hazard Index, $H_{ex}$ : $\leq 1.2$ Internal Hazard Index, $H_{in}$ : $\leq 0.9$	Laboratory test report(s) and any production documentation	+5	4.4.3.3
	Plasticisers: Concentration of phthalate in the product below 0.1% by weight of the product. The limited phthalates including the following types: <ul style="list-style-type: none"> <li>• Bis(2-ethylhexyl)phthalate (DEHP)</li> <li>• Dibutyl phthalate (DBP)</li> <li>• Benzylbutyl phthalate (BBP)</li> <li>• Diisononyl phthalate (DINP)</li> <li>• Diisodecyl phthalate (DIDP)</li> <li>• Di-n-octyl phthalate (DNOP)</li> </ul>	Laboratory test report(s), and any relevant production documentation	+5	4.4.3.4
	Flame Retardants: Concentration of the following flame retardants in the product shall be below 0.1% by weight of the product: <ul style="list-style-type: none"> <li>• Polybrominated diphenyl ether (PBDEs)</li> <li>• Polybrominated biphenyls (PBBs)</li> <li>• Short-chained chlorinated paraffin (SCCPs)</li> <li>• Hexabromocyclododecane (HBCD)</li> </ul>	Laboratory test report(s) and any relevant production documentation	+5	4.4.3.5
<b>INNOSMART</b>				
Innovations & Additions	Adopt new practice, technology and strategy; <i>OR</i> Achieve exemplary performance.	Narrative with supporting documents	+5	4.6.1
		<b>Subtotal:</b>	+75	

## TABLE OF CONTENTS

<b>1. INTRODUCTION.....</b>	<b>1</b>
<b>1.1 PURPOSE.....</b>	<b>1</b>
<b>1.2 BACKGROUND .....</b>	<b>2</b>
<b>2. SCOPE .....</b>	<b>2</b>
<b>3. DEFINITIONS .....</b>	<b>2</b>
<b>4. EVALUATION CRITERIA .....</b>	<b>4</b>
<b>4.1 BASIC INFORMATION.....</b>	<b>5</b>
<b>4.1.1 Product Information – Core Criteria.....</b>	<b>5</b>
<b>4.2 CARBON .....</b>	<b>5</b>
<b>4.2.1 CFP Quantification – Non-core Criteria .....</b>	<b>5</b>
<b>4.3 RESOURCE .....</b>	<b>6</b>
<b>4.3.1 Material Optimization .....</b>	<b>6</b>
<b>4.3.2 Circularity .....</b>	<b>7</b>
<b>4.3.3 Waste Management .....</b>	<b>8</b>
<b>4.3.4 Water Management .....</b>	<b>8</b>
<b>4.3.5 Energy Management.....</b>	<b>9</b>
<b>4.4 ENVIRONMENT.....</b>	<b>10</b>
<b>4.4.1 Environmental Management .....</b>	<b>10</b>
<b>4.4.2 Regional Product.....</b>	<b>11</b>
<b>4.4.3 Human Toxicity and Ecosystem Impact .....</b>	<b>11</b>
<b>4.4.4 Volatile Organic Compounds (VOC) .....</b>	<b>14</b>
<b>4.5 PERFORMANCE.....</b>	<b>16</b>
<b>4.5.1 Product Life.....</b>	<b>16</b>
<b>4.6 INNOSMART.....</b>	<b>16</b>
<b>4.6.1 Innovations &amp; Additions – Non-core Criteria.....</b>	<b>16</b>
<b>5. SCORING.....</b>	<b>18</b>

## 1. INTRODUCTION

### 1.1 PURPOSE

The CIC Green Product Certification (the “Scheme”) is a green product labelling scheme, owned by the Construction Industry Council (CIC) and implemented by the Hong Kong Green Building Council (HKGBC). The primary goal of the scheme is to support Hong Kong’s transition to a low-carbon economy by encouraging the adoption of environmentally friendly construction practices.

With the Green Product Certification, various stakeholders, including consumers, building professionals, construction practitioners and policymakers, can easily and unequivocally identify environmentally preferable construction materials and building products. This certification serves as a reliable indicator of a product’s sustainability, helping to drive market demand for greener options.

To ensure the credibility and effectiveness of the certification, the CIC and the HKGBC has jointly developed this Technical Assessment Standards (the “Standard”), which sets out the assessment criteria and their benchmarks to govern the application and award of a grade under the Scheme. The comprehensive assessment evaluates the overall sustainability of construction materials and building products across multiple dimensions. These dimensions include environmental impact, resource efficiency, technical performance, and the use of smart manufacturing technologies.

The Standard is divided into two main parts:

- General Requirements (Refer to General Requirements provided in separate document). This part introduces Scheme's framework, outlines the application procedure, and details the grades.
- Technical Requirements (This document refers). This part defines the principles, requirements and guides for quantifying and reporting the products’ carbon footprint (CFP), along with other sustainability assessment criteria and scoring standards.

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.

The Scheme is owned by the Construction Industry Council (CIC), 38/F, COS Centre, 56 Tsun Yip Street, Kwun Tong, Kowloon, Hong Kong; and operated by Hong Kong Green Building Council (HKGBC), 1/F, Jockey Club Environmental Building, 77 Tat Chee Avenue, Kowloon Tong, Hong Kong, Phone: +852 3994 8888, Email: [cicgpc@hkgbc.org.hk](mailto:cicgpc@hkgbc.org.hk).

## 1.2 BACKGROUND

Flooring plays a vital role in building construction, combining functionality with ecological responsibility. It serves as a durable surface for everyday use while also enhancing the aesthetic appeal of interiors. Green flooring options, such as bamboo, recycled materials, and sustainably sourced hardwood, are becoming increasingly popular due to their minimal environmental impact. Innovations in flooring technology promote sustainability through improved manufacturing processes and eco-friendly materials.

The purposes of this Standard for flooring products are, therefore, to minimise the use and subsequent release of harmful substances to the environment and humans throughout the product's life cycle, to conserve resources and energy, and to reduce the amount of waste disposed in landfills. The development of the criteria includes the research and study on relevant eco-labelling schemes and life cycle assessment (LCA) reports.

## 2. SCOPE

The scope of this Standard is applicable to all flooring materials and systems intended for long-term installation indoors, primarily for occupant traffic, protection, or aesthetic purposes. It does not restrict products by composition or raw materials. Examples include, but are not limited to, wood-based or bamboo composite flooring, ceramic or stone tiles, composite panels, recycled plastic or rubber flooring, cork flooring, as well as other innovative environmentally friendly materials. Any flooring designed for long-term indoor use that meets the relevant environmental and performance criteria is covered by this Standard.

The types of raw materials and its source i.e. quarry or mine shall be specified clearly in each application. **ONE** application is only for **ONE** product series with same raw materials and source. All the related products have to be listed on the submitted documents.

## 3. DEFINITIONS

<i>Applicant:</i>	Organisations which apply for the label of the CIC Green Product Certification of the Construction Industry Council
<i>AFCS:</i>	Australian Forest Certification Scheme. <a href="http://www.forestrystandard.org.au/home">http://www.forestrystandard.org.au/home</a>
<i>ASTM:</i>	American Society for Testing and Materials
<i>BS:</i>	British Standards
<i>CCA:</i>	Carbon Credit Accounting
<i>CIC:</i>	Construction Industry Council
<i>CNAS:</i>	China National Accreditation Service for Conformity Assessment

<i>Chamber Method:</i>	Method to test VOC emissions by placing a material inside a sealed chamber with controlled temperature, humidity, and airflow. VOCs released from the material are measured in the chamber air over time to determine emission rates, helping evaluate the material’s impact on indoor air quality.
<i>Desiccator Method:</i>	Method to measure the amount of volatile compounds in a sample by heating it to evaporate the VOCs, then cooling it in a desiccator to prevent moisture absorption before weighing. The weight loss after heating and cooling represents the total volatile content, helping to quantify VOC emissions from materials accurately.
<i>EMAS:</i>	Eco-Management and Audit Scheme (EMAS) is an environmental management tool which enables organisations to assess, manage and continuously improve their environmental performance.
<i>FSC:</i>	Forest Stewardship Council. <a href="http://ic.fsc.org/">http://ic.fsc.org/</a>
<i>GB:</i>	National Standards of China
<i>HKAS:</i>	Hong Kong Accreditation Service
<i>HKGBC:</i>	The Hong Kong Green Building Council Limited
<i>HOKLAS:</i>	The Hong Kong Laboratory Accreditation Scheme
<i>IARC:</i>	International Agency for Research on Cancer
<i>ISO:</i>	International Organization for Standardization
<i>MDF and hardboard:</i>	Medium density fibreboard and hardboard are made the same way as particleboard except that the wood particles are further refined into even smaller particles to provide a smooth edge to the panel
<i>MSDS:</i>	Material Safety Data Sheets. To qualify as suitable, the MSDS and information therein must not be more than 5-year-old
<i>Particleboard:</i>	Particleboard is made from small wood particles pressed together with glue under extreme heat and pressure to make a solid panel
<i>PEFC:</i>	Programme for the Endorsement of Forest Certification schemes. <a href="http://www.pefc.org/">www.pefc.org/</a>
<i>Post-consumer recycled content</i>	Consumer waste, generated by end-users and can no longer be used for its intended purpose. Examples include construction and demolition debris, materials collected through recycling programs, discarded products (e.g., furniture, cabinetry, decking), and landscaping waste (e.g., leaves, grass clippings, tree trimmings).

- Pre-consumer recycled content* Recycled content comes from process waste that is used to make a different product.
- Raw materials:* Materials used in the manufacturing of plant-based fibre composite products
- SFI:* Sustainable Forestry Initiative. <http://www.sfiprogram.org/>
- 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 101.3kPa or a vapour pressure of more than 0.1mm Hg measured at 25°C
- Wood waste:* Wood waste means sawdust, timber offcuts, wooden crates, wooden packaging, wooden pallets, wood shavings and similar materials, and includes any mixture of those materials, but does not include wood treated with chemicals such as copper chrome arsenate (CCA), high temperature creosote (HTC), pigmented emulsified creosote (PEC) and light organic solvent preservative (LOSP)

#### 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) grade under the Scheme. Bonus points may be awarded if the product meets the “Non-core Criteria”. “Bronze”, “Silver”, “Gold” or “Platinum” grade will be awarded according to the total points accumulated, as shown in Table 1.

*Table 1 Benchmarks for grading*

Points achieved	Grade to be awarded
90 or above	Platinum
80 – 89	Gold
70 – 79	Silver
60 – 69	Bronze
50 – 59	Green
Below 50	No grade

All submissions and documentations shall be endorsed by the Chief Executive Officer or other authorised persons of the Applicant to demonstrate conformance to the assessment criteria. All certification, laboratory reports, and documentation must be valid during the assessment process and labelling period. The date of issue of all laboratory reports and documentation shall be within 5 years from the first application submission date.

If the certification expires during the labelling period or upon renewal, the applicant is required to provide an updated and valid certification. Failure to resubmit the required certification will result in the revocation of CIC Green Product Certificate without compensation.

The chemical tests should be conducted by either a third party or the manufacturer, providing that they have obtained ISO 17025 certification or relevant national accreditations, such as HOKLAS or CNAS.

## **4.1 BASIC INFORMATION**

### ***4.1.1 Product Information – Core Criteria***

*The Applicant is required to achieve 5 Basic Points under this section.*

#### Requirements

5 Basic Points for providing following information with delivered products or made accessible to public:

- Country of origin
- Information of product specification
- Product composition
- Possible toxicity or health hazards imposed by the chemical components
- Instructions for installation and maintenance
- Instructions for disposal of the product and packaging

#### Verification

Documentation showing the product information and instructions including, but not limited to, product catalogue, technical datasheet, webpages, and/or any other information freely accessible by customers.

## **4.2 CARBON**

### ***4.2.1 CFP Quantification – Non-core Criteria***

*The Applicant can achieve maximum 10 Bonus Points under this section.*

#### Requirements

10 Bonus Points for providing life cycle assessment report for quantifying and reporting the carbon footprint of products (CFP), covering at least A1 (raw material supply), A2 (transport) and A3 (manufacturing process). This can be achieved by either of the following:

Conduct CFP study report in accordance with ISO 14067:2018, GB/T 24067-2024 or equivalent.

**OR**

10 Bonus Points for Providing the product’s CFP value from a product level EPD issued in accordance with ISO 14025:2006, ISO 14067:2018, BS EN 15804:2012, ISO 21930:2017 or GB/T 24067-2024.

Verification

Either of the following documents shall be provided for verification.

CFP quantification report endorsed by a third-party critical review, in accordance with ISO 14067:2018, GB/T 24067-2024 or equivalent.

**OR**

Environmental Product Declaration issued by a third-party fulfilling the above requirements.

**4.3 RESOURCE**

**4.3.1 Material Optimization**

*The Applicant is required to achieve 10 Basic Points under this section.*

**4.3.1.1 Raw Materials – Core Criteria**

Requirements

10 Basic Points for the achieving the following thresholds for raw materials content:

**i) For Artificial Stone:**

Products whose raw materials or ingredients (by weight) are made from a combination of  $\geq 30\%$  recycled materials and/or waste.

**ii) For Natural Stone:**

The extraction efficiency of the main mining or quarry operation that is greater or equal to 25%.

Applicants shall report the total amount of extracted materials and usable materials per annum. The extraction efficiency can be calculated by the following formula:

$$\text{Extraction efficiency} = \frac{\text{Usable materials (m}^3\text{)}}{\text{Total extracted materials (m}^3\text{)}}$$

**iii) For Vinyl materials**

Proportion of renewable materials:  
Polyolefin-based products  $\geq 85\%$ .

**iv) For Timber and bamboo:**

≥ 70% of raw materials shall be FSC certified wood and bamboo.

**v) For Others:**

≥ 30% of raw materials shall be renewable or recycled materials.

Verification

Detailed report(s) of the recycled content or the source of natural raw materials with relevant substantiations.

**4.3.2 Circularity**

*The Applicant can achieve maximum 10 Bonus Points under this section.*

**4.3.2.1 Recyclability – Non-core Criteria**

Requirements

5 Bonus Points for demonstrating that the manufacturer has developed a recycling plan for the product and declared options for reuse, recycling, recovery and disposal. The plan shall include the following and be made available to public:

- Designate all homogeneous materials in the product as being intended for technical and/or biological cycles and define the intended cycling pathway(s) for each material; and
- Identify potential partners for product reuse, recycling, recovery in accordance with the intended cycling pathway(s); and
- For products and materials intended for municipal recycling, the product and/or material must be compatible for municipal cycling systems (e.g., painted plastics and plastic laminated paper are not currently compatible for municipal recycling); and
- Instructions for how to cycle the product shall be made publicly available.

Verification

Documentation of recycling plan, including, but not limited to product catalogue, MSDS, and written declaration.

**4.3.2.2 Packaging Requirement – Non-core Criteria**

Requirements

5 Bonus Points for minimising the wastage from all primary packaging materials. The packaging materials shall achieve either of the following:

The packaging materials shall not contain halogenated plastics;

**OR**

The packaging materials shall be comprised of 100% recycled materials, readily recyclable materials or decomposable materials;

**OR**

The packaging shall not be impregnated, labelled, coated or otherwise treated in a manner, which would prevent or significantly limit recycling.

Verification

Documentation describing the packaging materials used as well as their chemical composition (if any and where applicable), treatment process, and recyclability.

**4.3.3 Waste Management**

*The Applicant can achieve maximum 5 Bonus Points under this section.*

**4.3.3.1 Waste Management Plan – Non-core Criteria**

Requirements

5 Bonus Points for implementing an effective Waste Management Plan detailing the policies, procedures, and/or a waste management program covering manufacturing operations. The waste management plan should include, but should not be limited to, the following information:

- Initiatives taken to reduce waste generation and improve recovery/recycling of waste; and
- Initiatives implemented for recovery of post-consumer and/or pre-consumer waste that can be re-introduced into the manufacturing process; and
- Other environmental benefits or constraints associated with waste minimisation objectives and processes.

Verification

Documentation of waste management programme management plan detailing the above, supported by organizational policy or other equivalent documents.

**4.3.4 Water Management**

*The Applicant can achieve maximum 10 Bonus Points under this section.*

*The Applicants can select one of the options below and comply with any or all the requirements under that option to achieve the associated points.*

***Option A:***

***4.3.4.1 Water Consumption Reporting – Non-core Criteria***

Requirements

5 Bonus Points for reporting both potable and non-potable water usage in the production process of the past year.

Verification

Water consumption report, supported by water usage data acquired from water meter, water sub-meter, water bill or other equivalent documents.

***4.3.4.2 Water Recycling Program – Non-core Criteria***

Requirements

5 Bonus Points for developing and implementing water recycling program during the manufacturing process.

Verification

Documentation demonstrating the implementation of water recycling program, supported by drawings, water usage data acquired from water sub-meter or other equivalent documents.

***Option B:***

***4.3.4.3 Water Management System – Non-core Criteria***

Requirements

10 Bonus Points for possessing valid certificates under ISO 14046: Environmental management – Water footprint – Principles, requirements and guidelines.

ISO 14046 is a framework for assessing the water footprint of products, processes, and organizations. It provides principles, requirements, and guidelines for conducting and reporting water footprint assessments. It helps organizations evaluate and improve their water management practices.

Verification

A valid ISO 14046 Certificate issued by accredited certification bodies.

***4.3.5 Energy Management***

*The Applicant can achieve maximum 10 Bonus Points under this section.*

*The Applicants can select one of the options below and comply with any or all the requirements under that option to achieve associated points.*

***Option A:***

***4.3.5.1 Energy Management Plan – Non-core Criteria***

Requirements

5 Bonus Points for implementing effective energy management policies and procedures and/or an energy management programme, including but not limited to the following items:

- Energy efficiency initiatives: Manufacturer should undertake specific initiatives to reduce energy use and improve energy efficiency throughout their operations. This could include upgrading to more efficient equipment, optimising production processes, or implementing energy-saving technologies; and
- Supplier requirements: Manufacturers should extend their energy management efforts to their supply chain by establishing requirements or initiatives for suppliers and contract manufacturers to improve their energy performance where possible.

Verification

Documentation of Energy Management Plan detailing the above, supported by organisational policy or other equivalent documents.

***Option B:***

***4.3.5.2 Energy Management System – Non-core Criteria***

Requirements

10 Bonus Points for possessing valid certificates under ISO 50001: Energy management systems — Requirements with guidance for use.

ISO 50001 provides a framework for organisations to establish, implement, maintain, and improve an Energy Management System. The goal is to help organisations improve their energy performance, increase energy efficiency, and reduce energy costs and greenhouse gas emissions. By achieving ISO 50001 certification, manufacturers can demonstrate their commitment to energy efficiency and sustainability.

Verification

A valid ISO 50001 Certificate issued by accredited certification bodies.

**4.4 ENVIRONMENT**

***4.4.1 Environmental Management***

*The Applicant can achieve maximum 5 Bonus Points under this section.*

#### **4.4.1.1 Environmental Management System – Non-core Criteria**

##### Requirements

5 Bonus Points for possessing valid certificate under ISO 14001: Environmental management systems — Requirements with guidance for use or EU Eco-Management and Audit Scheme (EMAS).

The target of the environmental management system shall be set to reduce the environmental impacts during the manufacturing process which include, but are not limited to, the reduction of hazardous substance emissions, energy consumption, CO<sub>2</sub> emissions, secondary environmental load, waste management, water management, etc.

ISO 14001 is the international standard which provides an outline of how to meet the environmental policy and objectives for the business of the applicant.

Eco-Management and Audit Scheme (EMAS) is an environmental management tool which enables organisations to assess, manage, and continuously improve their environmental performance.

##### Verification

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

#### **4.4.2 Regional Product**

*The Applicant can achieve maximum 5 Bonus Points under this section.*

##### **4.4.2.1 Regional Manufactured Product – Non-core Criteria**

##### Requirements

5 Bonus Points for products that are manufactured within 800km radius of HKSAR by road transportation; within a 1,600km radius by rail transportation; or within a 4,000km radius by sea transportation. The distance is measured by the direct distance, not by actual travel distance.

##### Verification

Documents demonstrating the location of the manufacturer and a map showing the distance between the manufacturer and HKSAR.

#### **4.4.3 Human Toxicity and Ecosystem Impact**

*The Applicant can achieve maximum 30 Points under this section.*

*The Applicant is required to achieve 15 Basic Points under this section. Additionally, the Applicant can achieve maximum 15 Bonus Points under this section.*

#### **4.4.3.1 Hazardous Substances – Core Criteria**

##### Requirements

5 Basic Points if the concentration of boron (B), toluene and xylene is below 0.1% by weight of the product.

##### **AND**

The product shall be less than 1% by weight of any environmental hazardous substances carrying the following risk phrases: H400, H401, H402, H411, H410, H420 in accordance with Regulation (EC) No 1272/2008 of the European Parliament and of the Council<sup>1</sup>.

##### **AND**

The product shall not contain any carcinogenic substances or chemicals that are classified as Group 1, 2A or 2B according to International Agency for Research on Cancer (IARC)<sup>2</sup>. 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 to demonstrate the conformance to the requirements stated above.

#### **4.4.3.2 Heavy Metals – Core Criteria**

##### Requirements

10 Basic Points for limiting concentration of heavy metals below 0.1% by the weight of the product.

- Mercury (Hg)
- Lead (Pb)
- Cadmium (Cd)
- Hexavalent Chromium (Cr(VI))
- Arsenic (As)
- Copper (Cu)

##### Verification

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

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<sup>1</sup> [Regulation - 1272/2008 - EN - clp regulation - EUR-Lex](#)

<sup>2</sup> [Agents Classified by the IARC Monographs, Volumes 1–137 – IARC Monographs on the Identification of Carcinogenic Hazards to Humans](#)

#### 4.4.3.3 Radioactivity – Non-core Criteria

##### Requirements

5 Bonus Points for demonstrating the following:

The effective concentration of potassium isotope  $K_{40}$  ( $C_K$ ), radium isotope  $Ra_{226}$  ( $C_{Ra}$ ) and thorium isotope  $Th_{232}$  ( $C_{Th}$ ) shall satisfy the following requirements:

External Hazard Index,  $H_{ex}$ :

$$H_{ex} = \frac{C_K}{4200} + \frac{C_{Ra}}{370} + \frac{C_{Th}}{260}$$

Internal Hazard Index,  $H_{in}$ :

$$H_{in} = \frac{C_{Ra}}{200}$$

where  $H_{ex}$  shall be  $\leq 1.2$  and  $H_{in}$  shall be  $\leq 0.9$ .

Products shall be tested based on the requirement as stated in GB 6566-2010 (or latest version); other related testing methods are also acceptable with justification provided by the Applicant.

GB 6566-2010 specifies the limits and natural radionuclides in building materials radionuclide radium-226, thorium-232, potassium-40 Test Method for radioactivity. This standard applies to the radionuclide limits have required local non-metallic.

##### Verification

Laboratory report(s) meeting the above requirements shall be provided.

#### 4.4.3.4 Plasticisers – Non-core Criteria

##### Requirements

5 Bonus Points for demonstrating that the concentration of phthalate in the product shall be below 0.1% by weight of the product. The requirement is applicable to products using rubber as raw materials.

The limited phthalates include 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) shall be compiled according to the National and International test methods, including, but not limited to, Standard Operating Procedures for Determination of Phthalates (CPSC-CH-C1001-09.3).

#### **4.4.3.5 Flame Retardants – Non-core Criteria**

### Requirements

5 Bonus Points for demonstrating that concentration of the flame retardants in the product shall be below 0.1% by weight of the product. The restricted flame retardants include the following types:

- Polybrominated diphenyl ether (PBDEs)
- Polybrominated biphenyls (PBBs)
- Short-chained chlorinated paraffin (SCCP)
- Hexabromocyclododecane (HBCD)

Product shall be tested based on the requirement, such as BS EN 62321:2023 (or later version); other related testing methods are also acceptable with justification provided by the Applicant.

### Verification

Laboratory test report(s) meeting the above requirements.

#### **4.4.4 Volatile Organic Compounds (VOC)**

*The Applicant is required to achieve 10 Basic Points under this section.*

##### **4.4.4.1 Formaldehyde – Core Criteria**

### Requirements

5 Basic Points are awarded for meeting one of the following requirements:

#### **Option A**

The formaldehyde emissions from the plant-based composite product shall be below the following limits:

- $\leq 1.0$  mg/L using the Desiccator Method; or
- $\leq 0.02$  mg/m<sup>3</sup> within 48 hours<sup>^</sup> using the Chamber Method

**OR**

#### **Option B**

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<sup>^</sup> The length of testing time is not restricted but depends on the testing standard used.

Product shall not contain formaldehyde content.

Verification

**Option A**

The emission tests in laboratories shall be conducted in accordance with, including but not limited to, *AS/NZS 4266.16 Reconstituted Wood-based Panels – Methods of Test – Formaldehyde Emission – Desiccator Method* or *ASTM D 5116-10: Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials*. Other related testing methods are also acceptable with justification provided by the Applicant.

**Option B**

Product shall be tested in accordance with *CARB Method 310*. Other related testing methods are also acceptable with justification provided by the Applicant.

**4.4.4.2 VOC Content – Core Criteria**

Requirements

5 Basic Points for meeting the requirement on VOC emission of the product through one of the following options:

**Option A**

The emission limit of total volatile organic compounds (TVOC) from the product shall be < 0.25 mg/m<sup>3</sup> within 24 hours.

**OR**

**Option B**

Product shall not contain volatile organic compounds content.

Verification

**Option A**

The emission tests in laboratories shall be conducted in accordance with, including but not limited to, *AS/NZS 4266.16 Reconstituted Wood-based Panels – Methods of Test – Formaldehyde Emission – Desiccator Method* or *ASTM D 5116-10: Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials*. Other related testing methods are also acceptable with justification provided by the applicant.

**Option B**

Product shall be tested in accordance with *CARB Method 310*. Other related testing methods are also acceptable with justification provided by the applicant.

## 4.5 PERFORMANCE

### 4.5.1 Product Life

*The Applicant is required to achieve 10 Basic Points under this section.*

#### 4.5.1.1 Serviceability – Core Criteria

##### Requirements

10 Basic Points for demonstrating the product suitability, durability, and functionality through at least **FOUR** testing items which may include, but are not limited to, the following:

- Wear Resistance
- Impact Resistance
- Slip Resistance
- Chemical Resistance
- Moisture Resistance
- Mildew and Fungal Resistance
- Corrosion Resistance
- Dimensional Stability

*Table 2: Standards for Flooring*

Testing items	Standards
Wear Resistance	ASTM D4060, GB/T 8624-2012, GB/T 35601-2017
Impact Resistance	ASTM F1265, EN 13329, GB/T 35601-2017
Slip Resistance	ASTM C1028, T/CECS 10336-2023, GB/T 35601-2017
Chemical Resistance	ASTM F925-13, GB/T 18102-2007, GB/T 35601-2017
Moisture Resistance	ASTM F2199, GB/T 29499-2013, GB/T 35601-2017
Mildew and Fungal Resistance	ASTM G21-15, GB/T 35469-2017, JC/T 2039-2010, GB/T 35601-2017
Corrosion Resistance	ASTM D5034, GB/T 35601-2017
Dimensional Stability	ASTM F925, GB/T 35601-2017

##### Verification

Laboratory report(s) for all relevant quality and performance tests.

## 4.6 INNOSMART

### 4.6.1 Innovations & Additions – Non-core Criteria

*The Applicant can achieve maximum 5 Bonus Points under this section.*

### Requirements

5 Bonus Points for achieving significant, measurable environmental performance using new practices, technology and strategy not addressed in this Standard.

### **OR**

Demonstrating exemplary performance in any of the existing assessment criteria.

The benefits of environmental performance can be achieved throughout the lifecycle of the products, covering the product, construction process, use and end of life stage. Examples of innovative and smart technologies are shown below:

- Implementing technologies that significantly reduce resource consumption across various aspects.
- Adopting intelligent production methods that leverage automation, data analytics, and innovative design techniques.

### Verification

Report with a maximum length of 1,000 words, outlining the objectives, solution and evaluation of the performance achieved by the proposed Smart and Innovative Technologies; and

Including attachments that provide evidence of implementation, along with relevant technical specifications that support the claims made in the report.

## 5. SCORING

The points for meeting each criterion stated in this Standard are summarized below.

*Table 3: Points to be awarded under the assessment criteria of this Standard*

Label	Evaluation Criteria		Points		Related BEAM Plus Credits	
			Basic	+Bonus		
	Product Information [CORE]		5	-		
Carbon	CFP Quantification		-	+10		
Resource	Material Optimization	Raw Materials [CORE]	10	-	MW 6	
	Circularity	Recyclability	-	+5		
		Packaging Requirement	-	+5		
	Waste Management	Waste Management Plan	-	+5		
	Water Management	Water Consumption Reporting	-	+5/+10		
		Water Recycling Program				
		Water Management System				
	Energy Management	Energy Management Plan	-	+5/+10		
Energy Management System						
Environment	Environmental Management	Environmental Management System	-	+5		
	Regional Product	Regional Manufactured Product	-	+5	MW 8	
	Human Toxicity and Ecosystem Impact	Hazardous Substances [CORE]		5	-	
		Heavy Metals [CORE]		10	-	
		Radioactivity		-	+5	
		Plasticisers		-	+5	
		Flame Retardants		-	+5	
	Volatile Organic Compounds (VOC)	Formaldehyde [CORE]		5	-	
VOC Content [CORE]		5	-			
Performance	Product Life	Serviceability [CORE]	10	-	MW 4	
InnoSmart	Innovations & Additions		-	+5	IA	
<b>Total:</b>			<b>50</b>	<b>+75</b>		

Related BEAM Plus Credits refer to these relevant credits under BEAM Plus New Buildings Version 2.0, as listed below.

- MW 4: Design for Durability and Resilience
- MW 6: Recycled Materials
- MW 8: Regional Materials
- MW 9: Use of Green Products
- Innovations and Additions