CONSTRUCTION INDUSTRY COUNCIL

CIC GREEN PRODUCT CERTIFICATION

Assessment Standard

Flooring

(Version 2.0)

Flooring

Summary of Assessment Criteria

CORE CRITERIA

Criteria	Requirement	Verification	Points		Index
			Basic	+Bonus	
Product Information	Provide 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	Documentation including but not limited to product catalogue, technical datasheet, webpages	**5**	-	4.1.1
RESOURCE					
Material Optimization	Raw Material: **i) Artificial Stone:** Products whose raw materials or ingredients (by weight) are made from a combination of ≥ 30% recycled materials and/or waste. **ii) Natural Stone:** The extraction efficiency of the main mining or quarry operation shall be higher than or equal to 25%. **iii) Vinyl materials:** Proportion of renewable materials: Polyolefin-based products ≥ 85%. **iv) Timber and bamboo:** ≥ 70% of raw materials are FSC certified wood and bamboo. **v) Others:** ≥ 30% of raw materials are renewable or recycled materials.	Detailed report(s) of the recycled content or the source of natural raw materials with relevant substantiations.	**10**	-	4.3.1.1

Criteria	Requirement	Verification	Points		Index
			Basic	+Bonus	
ENVIRONMENT					
Human Toxicity and Ecosystem Impact	Hazardous Substances: Boron (B), toluene and xylene shall be less than 0.1% by weight of the product. ***AND*** For Carcinogenic Substances, the product shall be listed in IARC Group 1, 2A and 2B shall be < 0.1% by weight of the product. ***AND*** The product shall not contain any substances or chemicals that are classified as Fatal, Toxic, and Harmful in accordance with Regulation (EC) No 1272/2008.	laboratory test report(s) or self-declaration letter	**5**	-	4.4.3.1
	Heavy Metals: The amount of Pb, Cd, Cr(VI), Hg, As, Sb shall be contained ≤ 0.1% by weight of the product respectively.	Laboratory test report(s)	**10**	-	4.4.3.2
Volatile Organic Compounds (VOC)	Formaldehyde: Formaldehyde emissions from the product must be ≤ 1.0 mg/L (Desiccator Method) or ≤ 0.02 mg/m³ within 48 hours (Chamber Method); *OR* Product shall be formaldehyde-free.	Laboratory test report(s)	**5**	-	4.4.4.1
	VOC Content: TVOC emissions from the product must be < 0.25 mg/m³ within 24 hours; *OR* Product shall be free of volatile organic compounds.	Laboratory test report(s)	**5**	-	4.4.4.2
PERFORMANCE					
Product Life	Serviceability: Suitability, durability, and functionality of the product shall be demonstrated through at least FOUR testing items including, but not limited to the followings: • Wear Resistance • Impact Resistance • Slip Resistance • Chemical Resistance • Moisture Resistance • Mildew and Fungal Resistance • Corrosion Resistance • Dimensional Stability	Laboratory test report(s) for all relevant quality and performance tests	**10**	-	4.5.1.1
		Subtotal:	**50**		

NON-CORE CRITERIA

Criteria	Requirements	Verification	Points +Bonus	Index
CARBON				
CFP quantification	Provide a life cycle assessment report with the carbon footprint of products (CFP), covering at least A1 to A3 endorsed by a third-party critical review OR provide an Environmental Product Declaration (EPD).	CFP quantification report **OR** Environmental Product Declaration (EPD)	+5/+10	4.2.1
RESOURCE				
Circularity	Recyclability: Developed a recycling plan for the product and declared options for reuse, recycling, recovery and disposal. The plan shall include the following and made available to public.	Recycling plan	+5	4.3.2.1
	Packaging Requirement: The packaging materials shall not contain halogenated plastics; *OR* Shall be comprised of 100% recycled materials, readily recyclable materials or decomposable materials; *OR* 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 programme	+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 water recycling program during the manufacturing process.	Documentation on water recycling		4.3.4.2
	Option B: Water Management System: Process valid certificate 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 +Bonus	Index
	Option B: Energy Management System: Possess valid certificates under ISO 50001: Energy management systems	ISO 50001 Certificate issued by accredited certification body		4.3.5.2
ENVIRONMENT				
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 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	+5	4.4.2.1
Human Toxicity and Ecosystem Impact	Radioactivity: External Hazard Index, Hex ≤ 1.2 Internal Hazard Index, Hin: ≤ 0.9	Laboratory test report(s)	+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: • Bis(2-ethylhexyl)phthalate (DEHP) • Dibutyl phthalate (DBP) • Benzylbutylphthalate (BBP) • Diisononylphthalate (DINP) • Diisodecylphthalate (DIDP) • Di-n-octylphthalate (DNOP)	Laboratory test report(s)	+5	4.4.3.4
	Flame Retardants: Following chemicals shall not be employed ≥ 0.1% by weight in the product: • Polybrominated diphenyl ether (PBDEs) • Polybrominated biphenyls (PBBs) • Short-chained chlorinated paraffin (SCCPs) • Hexabromocyclododecane (HBCD)	Laboratory test report(s)	+5	4.4.3.5
INNOSMART				
Innovation & Additions	Adopt new practice, technology and strategy; *OR* Achieve exemplary performance	Narrative with supporting	+5	4.6.1
		Subtotal:	+75	

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1. INTRODUCTION

1.1 PURPOSE

The CIC Green Product Certification Scheme (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 label 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.

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 assessment standard for flooring products 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 reducing 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

This standard applies 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

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

EMAS:	Eco-Management and Audit Scheme (EMAS) is an environmental management tool which enables organisations to assess, manage and continuously improve their environmental performance.
FSC:	Forest Stewardship Council. http://ic.fsc.org/
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 Organization for Standardization
MDF and hardboard:	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
MSDS:	Material Safety Data Sheets. To qualify as suitable, the MSDS and information therein must not be more than 5-year-old
Particleboard:	Particleboard is made from small wood particles pressed together with glue under extreme heat and pressure to make a solid panel
PEFC:	Programme for the Endorsement of Forest Certification schemes. www.pefc.org/
Post-consumer recycled content	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. 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

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) Label under the Scheme. Bonus points may be awarded if the product meets the "Non-core Criteria". "Bronze", "Silver", "Gold" or "Platinum" Label 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 label

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 report and documentation must be valid during the assessment process and labelling period. The validity of all laboratory report 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, 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 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.

4.2 CARBON

4.2.1 CFP quantification – Non-core Criteria

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

Requirements

5 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).

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, ISO 21930:2017, GB/T 24067-2024 or BS EN 15804:2012.

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 or equivalent

OR

Environmental Product Declaration 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 Material – 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 ≥ 30% recycled materials and/or waste

ii) For Natural Stone:

The extraction efficiency of the main mining or quarry operation shall be higher than 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:

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

iii) For Vinyl materials

Proportion of renewable materials:
Polyolefin-based products ≥ 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 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.
- Identify potential partners for product reuse, recycling, recovery in accordance with the intended cycling pathway(s).
- 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).
- 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 minimizing the wastage from all primary packaging materials. The packaging materials shall achieve either of the followings.

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.

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.

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 effective waste management plan detailing the policies, procedures and/or a waste management program covering manufacturing operations. The waste management plan should include but not limited to the following information:

- Initiatives taken to reduce waste generation and improve recovery/recycling of waste
- 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.

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 associated points. Each option is eligible for a maximum 10 Bonus 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, support 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, support 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 certificate 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 body.

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, optimizing production processes, or implementing energy-saving technologies
- 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 organizational policy or other equivalent documents.

Option B:

4.3.5.2 Energy Management System – Non-core Criteria

Requirements

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

ISO 50001 provides a framework for organizations to establish, implement, maintain, and improve an Energy Management System. The goal is to help organizations 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 body.

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 not limited to the reduction of hazardous substance emissions, energy consumption, CO_2 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 ISO 14001 or EMAS certificate issued by accredited certification body

4.4.2 Regional Product

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

4.4.2.1 Regional 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 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 are less than 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[1].

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)[2]. 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) or self-declaration letter.

[1] Regulation - 1272/2008 - EN - clp regulation - EUR-Lex
[2] Agents Classified by the IARC Monographs, Volumes 1–137 – IARC Monographs on the Identification of Carcinogenic Hazards to Humans

4.4.3.2 Heavy Metals – Core Criteria

Requirements

10 Bonus Points for limiting the heavy metal element content of the product to meet the following requirements:

The amount of Pb, Cd, Cr(VI), Hg, As, Sb shall be contained ≤ 0.1% by weight of the product respectively.

Verification

Laboratory test report(s). Test report(s) shall be complied according to the National or International test methods.

4.4.3.3 Radioactivity – Non-core Criteria

Requirements

5 Bonus Points for 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 ≤ 1.2 and H_{in} shall be ≤ 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.

Verification

A detail laboratory report(s) shall be provided.

4.4.3.4 Plasticisers – Non-core Criteria

Requirements

5 Bonus Points for concentration of phthalate in the product below 0.1% by weight of the product. The limited phthalates including the following types:

- Bis(2-ethylhexyl)phthalate (DEHP)
- Dibutyl phthalate (DBP)
- benzylbutylphthalate (BBP)
- Diisononylphthalate (DINP)
- Diisodecylphthalate (DIDP)
- Di-n-octylphthalate (DNOP)

Verification

Laboratory test report(s). Test report(s) shall be compiled according to the National and International test methods.

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 including the following types:

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

Verification

Laboratory test report(s).

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;
- ≤ 0.02 mg/m^3 within 48 hours (Chamber Method)

OR

Product shall not contain formaldehyde content.

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^3 within 24 hours.

Option B

Product shall not contain volatile organic compounds content.

Verification for 4.4.4.1 and 4.4.4.2

Option A

The emission tests in laboratories shall be conducted in accordance to 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. The length of testing time is not restricted but depends on the testing standard used.

Option B

Product shall be tested in accordance to *CARB Method 310*. Other related testing methods are also acceptable with justification provided by the applicant. The detection limit is based on the equipment of Laboratory.

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 not limited to the followings:

- 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 test 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, outline the objectives, solution and evaluation of the performance achieved by proposed Smart and Innovative Technologies.

AND

Include attachments that provide evidence of implementation, along with relevant technical specification 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		-	+5/+10	MW 10
Resource	Material Optimization	Raw Material [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 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	-	HWB 8
Performance	Product Life	Serviceability [CORE]	10	-	MW 4
InnoSmart	Innovations & Additions		-	+5	IA
		Total:	**50**	**+75**	

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
- MW6: Recycled Materials
- MW 8: Regional Materials
- MW 10: Life Cycle Assessment
- MW 9: Use of Green Products
- HWB 8: Indoor Air Quality
- Innovations & Additions