CONSTRUCTION INDUSTRY COUNCIL
建造業議會

CONSTRUCTION INDUSTRY COUNCIL

CIC GREEN PRODUCT CERTIFICATION

Assessment Standard

Paint and Coating

CIC GREEN
PRODUCT CERTIFICATION

(Version 2.0)

Paint and Coating

Summary of Assessment Criteria

CORE CRITERIA

Criteria	Requirements	Verification	Points		Index
			Basic	+Bonus	
Product Information	Provide following information with delivered products or made accessible to public: • Chemical composition; • Possible toxicity or health hazards imposed by the chemical components; • Instructions for use; • Recommendation on the amount of paint or coating per unit area; • Instructions for cleaning equipment and waste proposal methods for the packaging and any remaining paint or coating; and • Methods of cleaning application equipment.	Documentation including but not limited to product catalogue, technical datasheet, webpages	**5**	-	4.1.1
ENVIRONMENT					
Human Toxicity and Ecosystem Impact	Heavy Metals: Product shall not contain the following heavy metals or their compounds. Concentration of heavy metals or their compounds shall be < 0.01% by weight of the product. • Cadmium • Lead • Chromium VI • Mercury Concentration of Barium (excluding barium sulphate) or its compounds shall be <0.1% by weight of the product.	Laboratory test report(s)	**10**	-	4.4.3.2

Criteria	Requirements	Verification	Points		Index
			Basic	+Bonus	
	Plasticisers: 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) • Benzylbutylphthalate (BBP) • Diisononylphthalate (DINP) • Diisodecylphthalate (DIDP) • Di-n-octylphthalate (DNOP)	Laboratory test report(s)	**10**	-	4.4.3.3
Volatile Organic Compounds (VOC)	Formaldehyde: The formaldehyde content in the product shall be less than 0.01% (by weight of product) **OR** Formaldehyde shall not exceed the emission limits of 0.1 mg per m^3 per hour at 24 hours	Laboratory test report(s)	**10**	-	4.4.4.1
	VOC Content: **For Paint & Coating:** Achieve the limits of volatile organic compound as shown in Table 2 in Section 4.4.4.2 [10 basic] Lower than the limit of volatile organic compounds as shown in Table 2 in Section 4.4.4.2 (+5 / +10 bonus) **For Plastering & Finishing:** VOC content ≤10 g/kg (10 basic) VOC content ≤5 g/kg (10 bonus)	Laboratory test report(s)	**10**	+5/+10	4.4.4.2

Criteria	Requirements	Verification	Points		Index
			Basic	+Bonus	
PERFORMANCE					
Product Life	Serviceability: Quality and durability of the product shall demonstrated through at least **FOUR** testing items which may include, but not limited to the followings: For Paint & Coating: • Adhesion Strength • Weather Resistance • Abrasion Resistance • Impact Resistance • Chemical Resistance • Water Resistance • Thermal Resistance For Plastering & Finishing: • Bond Strength • Compressive Strength • Flexural Strength • Shrinkage • Water Absorption • Crack Resistance • Thermal Stability	Laboratory test report(s) for all relevant quality and performance tests	**5**	-	4.5.1.2
		Subtotal:	**50**	+10	

NON-CORE CRITERIA

<table>
<tr><th>Criteria</th><th>Requirements</th><th>Verification</th><th>Points
+Bonus</th><th>Index</th></tr>
<tr><td colspan="5">CARBON</td></tr>
<tr><td>CFP quantification</td><td>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).</td><td>CFP quantification report
OR
Environmental Product Declaration (EPD)</td><td>+5/+10</td><td>4.2.1</td></tr>
<tr><td colspan="5">RESOURCE</td></tr>
<tr><td rowspan="2">Material Optimization</td><td>Raw Material:
The recycled content shall be higher than the following limits:
<table>
<tr><th>Product Type</th><th>Recycled content limits</th></tr>
<tr><td>Water-Based Paints</td><td>10%</td></tr>
<tr><td>Solvent-Based Paints</td><td>10%</td></tr>
<tr><td>Inorganic Paints</td><td>10%</td></tr>
<tr><td>Waterproof Coatings</td><td>10%</td></tr>
<tr><td>Anti-Corrosive Coatings</td><td>10%</td></tr>
<tr><td>Gypsum Plaster</td><td>30%</td></tr>
<tr><td>Cement Plaster</td><td>30%</td></tr>
<tr><td>Diatomite Plaster</td><td>10%</td></tr>
<tr><td>Lime Plaster</td><td>10%</td></tr>
<tr><td>Specialty Finishing Plasters</td><td>10%</td></tr>
</table></td><td>Material summary report</td><td>+5</td><td>4.3.1.1</td></tr>
<tr><td>Raw Material Utilization Rate:
Raw material consumption per unit product $\leqslant$ 1.015 ton/ton</td><td>Material summary report</td><td>+5</td><td>4.3.1.2</td></tr>
<tr><td>Circularity</td><td>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.</td><td>Documentation on packaging materials used</td><td>+5</td><td>4.3.2.1</td></tr>
<tr><td>Waste Management</td><td>Waste Management Plan:
Implement effective Waste Management Plan detailing the policies, procedures and/or a waste management program covering manufacturing operations.</td><td>Waste management programme</td><td>+5</td><td>4.3.3.1</td></tr>
</table>

Criteria	Requirements	Verification	Points +Bonus	Index
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
	Option B: Energy Management System: Possess valid certificate 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	Hazardous Substances: The following substances shall be less than 0.1% in the product: • Isoaliphates • 1,3 butadiene • Bisphenol A • Toluene and toluene compounds • Epichlorohydrin • N-methyl pyrrolinone • Glycol ethers • Crystalline quartz silica • Alkyl phenolic compounds	Laboratory test report(s) or self-declaration letter	+5	4.4.3.1

Criteria	Requirements	Verification	Points +Bonus	Index
	Ozone Depleting Substances: Ozone depleting substances shall be less than 0.1% by weight of the product.	Laboratory test report(s)	+5	4.4.3.4
PERFORMANCE				
Product Life	Durability: The performance of product shall be maintained for at least 5 years (for interior use) or 10 years (for exterior use).	Documentation and test report(s) related to the product warranty or guarantee performance	+5	4.5.1.1
INNOSMART				
Innovations & Additions	Adopt new practice, technology and strategy; OR Achieve exemplary performance	Narrative with supporting	+5	4.6.1
		Subtotal:	+80	

TABLE OF CONTENTS

1. INTRODUCTION 1
1.1 PURPOSE 1
1.2 BACKGROUND 2
2. SCOPE 2
3. DEFINITIONS 3
4. EVALUATION CRITERIA 5
4.1 BASIC INFORMATION 6
4.1.1 Product Information 6
4.2 CARBON 6
4.2.1 CFP Quantification 6
4.3 RESOURCE 7
4.3.1 Material Optimization 7
4.3.2 Circularity 8
4.3.3 Waste Management 9
4.3.4 Water Management 9
4.3.5 Energy Management 10
4.4 ENVIRONMENT 11
4.4.1 Environmental Management 11
4.4.2 Regional Product 12
4.4.3 Human Toxicity and Ecosystem Impact 12
4.4.4 Volatile Organic Compounds (VOC) 14
4.5 PERFORMANCE 16
4.5.1 Product Life 16
4.6 INNOSMART 18
4.6.1 Innovations & Additions 18
5. SCORING 19

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

Paints, coatings, and plaster and finish products are widely utilized in buildings. They not only provide decorative benefits but also protect various surfaces, contributing to significant environmental advantages by minimizing the resource demands related to repair and maintenance. However, these products can have considerable impacts on the environment and human health throughout their life cycle due to the presence of hazardous substances like heavy metals, solvents, volatile organic compounds (VOCs), and other toxins. Additionally, the manufacturing process can generate substantial hazardous waste and discharges while consuming significant amounts of energy and raw materials.

The purposes of the assessment criteria developed for paint and coating are, therefore, to minimise the use and subsequent release of harmful substances to the environment throughout the product's life cycle, to conserve resources and energy consumption, and to encourage reuse, recycling and responsible disposal of unwanted paint and coating, as well as packaging.

2. SCOPE

Paint & Coating

This Standard applies to paints and coatings used in building construction for interior and exterior surfaces.

Product Categories:

- Water-Based Paints: Includes paints where water is the primary solvent, such as primers and finishes.
- Solvent-Based Paints: Includes paints that use organic solvents for enhanced durability.
- Inorganic Paints: Encompasses mineral-based paints used in construction applications.
- Waterproof Coatings: Coatings formulated to provide water resistance on building surfaces.
- Anti-Corrosive Coatings: Coatings designed for protection of structural materials from corrosion.

Plastering & Finishing

This Standard applies to plastering and finishing materials used on building surfaces for leveling and finishing in both internal and external applications.

Product Categories:

- Gypsum Plaster: Gypsum-based materials used for surface preparation and finishing.
- Cement Plaster: Cement-based materials used for building surfaces.

- Diatomite Plaster: Plasters containing diatomaceous earth.
- Lime Plaster: Lime-based plasters used for surface finishing.
- Specialty Finishing Plasters: Includes decorative plasters such as Venetian plaster and stucco.

Note:

The product category shall not be changed once the application is submitted.

The ingredient contains 1% or more (by weight) in the product shall be indicated in the documentation, such as product information or MSDS.

3. DEFINITIONS

Applicant:	Organisations which apply for the label of the CIC Green Product Certification of the Construction Industry Council
ASTM:	American Society for Testing and Materials
BS:	British Standards
CAS:	Chemical Abstract Service. Unique CAS numbers are assigned to chemical compounds as a means of identification
CIC:	Construction Industry Council
CNAS:	China National Accreditation Service for Conformity Assessment
Coating:	A pigmented resin that is converted to a solid adherent film after application to a substrate as a thin layer having protective, decorative or specific technical properties (e.g. modifying light and heat radiation characteristics of the substrate)
Halogenated solvent:	Any volatile organic compound incorporating halogens including fluorine, chorine, bromine and iodine
HKAS:	Hong Kong Accreditation Service
HKGBC:	The Hong Kong Green Building Council Limited
HOKLAS:	The Hong Kong Laboratory Accreditation Scheme
ISO:	International Organization for Standardization
MSDS:	Material Safety Data Sheet. To qualify as suitable, the MSDS and information therein must not be more than 5 years old
Ozone depleting substances:	The "scheduled substances" defined in Ozone Layer Protection Ordinance (Chapter 403).

Paint:	A pigmented liquid that is designed for application in single or multiple layers on surfaces to form a continuous film with protective, decorative or specific technical properties. It also includes varnishes and stains
Plastering & Finishes:	Plastering refers to the process of applying a mixture of lime, cement, sand, and water to walls and ceilings to create a smooth, durable surface. It serves both functional and aesthetic purposes, providing insulation, fire resistance, and a base for paint or other finishes. Finishes encompass the final treatments applied to surfaces after plastering. This includes painting, wallpapering, tiling, or applying decorative elements. The purpose of finishes is to enhance the appearance and protect the underlying materials, contributing to the overall design and ambiance of a space.
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.
Stain:	A transparent, semitransparent or opaque mixture of colouring matter (dyes and/or pigments) designed to colour and/or protect a surface by penetration, leaving practically no surface film
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
Varnish:	A liquid composition that is converted to a transparent or translucent, continuous film after application
VOC:	Volatile organic compounds refer to any organic compound (compound which contains carbon) with either a boiling point below 250°C measured at 101.3 kPa or a vapour pressure of more than 0.1 mm Hg measured at 25°C

4. EVALUATION CRITERIA

A product to be assessed shall meet all the minimum requirements of the "Core Criteria" in order to be awarded a "Green" (i.e. a "pass" grade) Label under the Scheme. Bonus points may be awarded if the product meets the "Non-core Criteria". "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 the product or made available to the public to help the users to use the paint or coating products in a sustainable manner:

- Chemical composition;
- Possible toxicity or health hazards imposed by the chemical components;
- Instructions for use;
- Recommendation on the amount of paint or coating per unit area;
- Instructions for cleaning equipment and waste proposal methods for the packaging and any remaining paint or coating; 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.

4.2 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 can achieve maximum 10 Bonus Points under this section.

4.3.1.1 Raw Material – Non-core Criteria

Requirements

- Includes paints where water is the primary solvent, such as primers and finishes.
- Includes paints that use organic solvents for enhanced durability.
- Encompasses mineral-based paints used in construction applications.

This Standard applies to paint and coatings materials used on building surfaces for leveling and finishing in both internal and external applications.

For Water-Based Paints:
5 Bonus Points for raw materials containing at least 10% recycled content.

For Solvent-Based Paints:
5 Bonus Points for raw materials containing at least 10% recycled content.

For Inorganic Paints:
5 Bonus Points for raw materials containing at least 10% recycled content.

For Waterproof Coatings:
5 Bonus Points for raw materials containing at least 10% recycled content.

For Anti-Corrosive Coatings:
5 Bonus Points for raw materials containing at least 10% recycled content.

For Gypsum Plaster:
5 Bonus Points for at least 30% of gypsum comes from recycled content.

For Cement Plaster:
5 Bonus Points for at least 30% by weight cement plastering is recycled content.

For Diatomite Plaster:
5 Bonus Points for raw materials containing at least 10% recycled content.

For Lime Plaster:
5 Bonus Points for raw materials containing at least 10% recycled content.

For Specialty Finishing Plasters:
5 Bonus Points for raw materials containing at least 10% recycled content.

Verification

Material summary with detailed breakdown of the raw materials used in the manufacture process. The summary shall include at least the following information:

- Material type with quantity
- Source of recycled content, support by purchase order, declaration letter from suppliers or other equivalent documents
- Calculation of recycled materials percentage

4.3.1.2 Raw Material Utilization Rate – Non-core Criteria

Requirements

5 Bonus Points for raw material consumption per unit product $\leqslant$ 1.015 ton/ton

Verification

Material summary with detailed breakdown of the raw materials used in the manufacture process. The summary shall include at least the following information:

- Quantity and source of raw materials, support by purchase order, declaration letter from suppliers or other equivalent documents
- Quantity of qualified products produced support by manufacturing record or other equivalent documents
- Calculation of utilization rate of raw materials

4.3.2 Circularity

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

4.3.2.1 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.

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 ISO14001 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 20 Basic Points under this section. Additionally, the Applicant can achieve maximum 10 Bonus Points under this section.

4.4.3.1 Hazardous Substances – Non-core Criteria

Requirements

5 Bonus Points for demonstrating that the product shall NOT contain the following hazardous substances which are equal to or higher than 0.1% by weight of product:

- Isoaliphates
- 1,3 butadiene
- Bisphenol A
- Toluene and toluene compounds
- Epichlorohydrin
- N-methyl pyrrolinone
- Glycol ethers
- Crystalline quartz silica
- Alkyl phenolic compounds

Verification

Laboratory test report(s) or self-declaration letter. The tests shall be performed in accordance with relevant international standards.

4.4.3.2 Heavy Metals – Core Criteria

Requirements

10 Basic Points for demonstrating that the heavy metal element content of the product needs to meet the following requirements:

Product shall not contain the following heavy metals or their compounds.

Concentration of heavy metals or their compounds shall be less than 0.01% by weight of the product.

- Cadmium
- Lead
- Chromium VI
- Mercury

Concentration of Barium (excluding barium sulphate) or its compounds shall be less than 0.1% by weight of the product.

Verification

Laboratory test report(s). Test report(s) shall be compiled according to the National and International test methods including but not limited to ISO 3856-1 or ASTM D3335 for lead, ISO 3856-4 or ASTM D3335 for cadmium, ISO 3856-5 for hexavalent chromium, ISO 3856-7 or ASTM D3624 for mercury, and ISO 3856-3 for barium.

4.4.3.3 Plasticisers – Core Criteria

Requirements

10 Basic Points for demonstrating that 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)
- 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, including but not limited to Standard Operating Procedure for Determination of Phthalates (CPSC-CH-C1001-09.3).

4.4.3.4 Ozone Depleting Substances – Non-core Criteria

Requirements

5 Bonus Points for demonstrating that any ozone depleting substances regulated in "the Montreal Protocol on Substances that Deplete the Ozone Layer" shall not be contained in the product and not exceed 0.1% by weight of the product.

Verification

Laboratory test report(s). The test shall be performed by "Gas chromatography–mass spectrometry (GC-MS)" testing method in accordance with, but not limited to, ISO 17895 and ISO 11890 and ASTM 17895.

4.4.4 Volatile Organic Compounds (VOC)

The Applicant is required to achieve 20 Basic Points under this section. Additionally, the Applicant can achieve maximum 10 Bonus Points under this section.

4.4.4.1 Formaldehyde – Core Criteria

Requirements

10 Basic Points for demonstrating formaldehyde meet one of the following requirements:

- The formaldehyde content in the product shall be less than 0.01% (by weight of product). The chemical shall be analysed according to National or International standards including but not limited to ASTM D5910.

OR

- The formaldehyde emission shall not exceed 0.1 mg per m^3 per hour at 24 hours. The testing shall be conducted according to National or International standards including but not limited to GB 50325 Appendix B Measurement of content of formaldehyde and VOC emission using environmental test chamber.

Verification

Laboratory test report(s).

4.4.4.2 VOC Content – Core Criteria

Requirements

For Paint & Coating

10 Basic Points for the total content of volatile organic compounds (VOC) in the product not exceeding the levels stated in Table 2 These amounts include water and tints / colourants.

5 – 10 Bonus Points will be awarded if less VOC is recorded.

Table 2 : Limits of volatile organic compounds and associated points

	Points			***Points***		
	10 Basic	**+5 Bonus**	**+10 Bonus**	**10 Basic**	**+5 Bonus**	**+10 Bonus**
Paint & Coating	***Interior***			***Exterior***		
	VOC limit (g/L) (include water and tints/colourants)					
Matt (≤ 10 gloss units)	50	25	10	50	30	15
Low sheen (10 – 15 gloss units)	60	30	10	60	30	15
Semi-gloss / gloss (≥ 15 gloss units)	80	40	10	100	50	20
Fillers / primers	80	40	15	80	40	15
Sealers / undercoats	90	60	30	100	60	30
Stains / varnishes	100	60	30	100	60	30

Note: (i) where a paint/coating may fit into more than one category (e.g. sealer-primer), it shall comply with the category with the lower VOC limit (e.g. primer); (ii) where a coating may be for interior or exterior use, it shall comply with the interior VOC limit.

For Plastering & Finishing

10 Basic points for demonstration that the VOC content shall not exceed 10 g/kg.

10 Bonus points for demonstration that the VOC content shall not exceed 5 g/kg.

Verification

Laboratory test report(s) and relevant production documentation. Products shall be tested in accordance including but not limited to ISO 11890-1. Other related testing methods are also acceptable with justification provided by the applicant. Calculation method of VOC content of paints and coating in a 'ready to use' condition shall be calculated by the following formula.

$$VOC = (100 - NV - Ww) \times \rho s \times 10$$

where

VOC: is the VOC content, in grams per litre, of the product "ready for use"

NV: is the non-volatile-matter content, as a percentage by mass

Ww: is the water content, as a percentage by mass

ρ s: is the density, in grams per millilitre, of the sample at 23 °C

10: is a conversion factor to convert to grams per litre

To calculate VOC g/kg of material excluding water and exempt solvents, use the following formula to determine the VOC mass fraction (%):

VOC = (100 − NV – w) ×10

VOC = VOC content (% by mass)

NV = Non-volatile content (% by mass)

w = Moisture content (% by mass)

PERFORMANCE

4.4.5 Product Life

The Applicant is required to achieve 5 Basic Points under this section. Additionally, the Applicant can achieve maximum 5 Bonus Points under this section.

4.4.5.1 Durability – Non-Core Criteria

Requirement

5 Bonus Points for demonstrating that the performance of product shall be maintained for at least 5 years (for interior use) or 10 years (for exterior use).

Verification

Documentation related to the product warranty or guarantee performance shall be submitted, including but not limited to product catalogue, self-declaration.

4.4.5.2 Serviceability – Core Criteria

Requirement

5 Basic Points for demonstrating the product quality and durability through at least **FOUR** testing items which may include, but not limited to the followings:

For Paint & Coating:

- Adhesion Strength
- Weather Resistance
- Abrasion Resistance
- Impact Resistance
- Chemical Resistance
- Water Resistance
- Thermal Resistance

For Plastering & Finishing:

- Bond Strength
- Compressive Strength
- Flexural Strength
- Shrinkage
- Water Absorption
- Crack Resistance
- Thermal Stability

Table 3: Standards for Paint & Coating

Testing items	Standards
• Adhesion Strength	ASTM D3359, GB/T 9286, GB/T 35602-2017, TCECS 10039-2019
• Weather Resistance	ASTM G154, GB/T 23987, GB/T 35602-2017, TCECS 10039-2019
• Abrasion Resistance	ASTM D4060, GB/T 1768, GB/T 35602-2017, TCECS 10039-2019
• Impact Resistance	ASTM D2794, GB/T 1732, GB/T 35602-2017, TCECS 10039-2019
• Chemical Resistance	ASTM D1308, GB/T 9274, GB/T 35602-2017, TCECS 10039-2019
• Water Resistance	ASTM D870, GB/T 35602-2017, TCECS 10039-2019
• Thermal Resistance	ASTM D2485, GB/T 9278, GB/T 35602-2017, TCECS 10039-2019

Table 4 Plastering & Finishing

Testing items	Standards
• Bond Strength	ASTM C952, GB/T 25181, GB/T 44177, GB/T 35602-2017, TCECS 10039-2019
• Compressive Strength	ASTM C472, GB/T 17671, GB/T 44177, GB/T 35602-2017, TCECS 10039-2019
• Flexural Strength	ASTM C348, GB/T 17671, GB/T 44177, GB/T 35602-2017, TCECS 10039-2019
• Shrinkage	ASTM C472, GB/T 17671, GB/T 44177, GB/T 35602-2017, TCECS 10039-2019
• Water Absorption	ASTM C472, GB/T 17671, GB/T 44177, GB/T 35602-2017, TCECS 10039-2019
• Crack Resistance	ASTM C472, GB/T 17671, GB/T 44177, GB/T 35602-2017, TCECS 10039-2019
• Thermal Stability	ASTM C472, GB/T 17671, GB/T 44177, GB/T 35602-2017, TCECS 10039-2019

Verification

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

4.5 INNOSMART

4.5.1 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 5: 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	-	+5	MW 6
		Raw Material Utilization Rate	-	+5	
	Circularity	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	-	+5	
		Heavy Metals [CORE]	10	-	
		Plasticisers [CORE]	10	-	
		Ozone Depleting Substances	-	+5	MW 7
	Volatile Organic Compounds (VOC)	Formaldehyde [CORE]	10	-	
		VOC Content [CORE]	10	+5/+10	HWB 8
Performance	Product Life	Durability	-	+5	MW 4
		Serviceability [CORE]	5	-	
InnoSmart	Innovations & Additions		-	+5	IA
		Total:	**50**	**+90**	

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 7 : Ozone Depleting Substances
- MW 8: Regional Materials
- MW 10: Life Cycle Assessment
- MW 9: Use of Green Products
- HWB 8: Indoor Air Quality
- Innovations & Additions