CONSTRUCTION INDUSTRY COUNCIL

CIC GREEN PRODUCT CERTIFICATION

Assessment Standard

Technical Requirements

Natural Stone

(Version 2)

NATURAL STONE

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: • Nature of stone • Information of product uses • Instructions on the installation and protection of the product • Recommendation on maintenance for the product	Documentation including, but not limited to, product catalogue, technical datasheet, and webpages	**5**	-	4.1.1
RESOURCE					
Material Optimization	Raw Material Utilization Rate: Extraction efficiency of the main mining or quarry operation is greater than or equal to 25%.	Detailed report(s) on the amount of extracted materials and usable materials with proper substantiations	**5**	-	4.3.1.1
ENVIRONMENT					
Environmental Management	Particulate Matters: Air emissions of total particulate matters during the whole manufacturing process is less than 150 ug per m^3.	Detailed report(s) of the air emission of particulate matters	**10**	-	4.4.1.2
	Water Pollutants: Limit the concentration of pollutants in wastewater discharged below the threshold listed: • Suspended solids: < 40 mg/L • Cadmium: < 0.015 mg/L • Chromium (VI): < 0.15 mg/L • Iron: < 1.5 mg/L • Lead: < 0.15 mg/L	Testing report(s) of pollutants concentration in wastewater	**20**	-	4.4.1.3
Human Toxicity and Ecosystem Impact	Radioactivity: External Hazard Index, H_{ex} $\leqslant$ 1.2 and Internal Hazard Index, H_{in}: $\leqslant$ 0.9	Laboratory test report(s)	**10**	-	4.4.3.2
		Subtotal:	**50**	-	

NON-CORE CRITERIA

Criteria	Requirements	Verification	Points +Bonus	Index
CARBON				
CFP Quantification	Provide a 3rd 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 **OR** Environmental Product Declaration (EPD)	+10	4.2.1
RESOURCE				
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; *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 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 +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 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	Hazardous Substances: For Environmentally Hazardous Substances, the product shall be less than 1% by weight of the environmental hazardous substances carrying the following risk phrases: H400, H401, H402, H411, H410, H420 in accordance with Regulation (EC) No 1272/2008. *AND* Limit the Carcinogenic Substances, listed in IARC Group 1, 2A, and 2B, to be below 0.1% by weight of the product.	Laboratory test report(s) or self-declaration letter	+10	4.4.3.1
PERFORMANCE				
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:. • Compressive Strength • Flexural Strength • Water Absorption • Abrasion Resistance • Chemical Resistance • Stain Resistance • Impact Resistance	Laboratory test report(s)	+5	4.5.1.1
INNOSMART				
Innovations & Additions	Adopt new practice, technology, and strategy *OR* Achieve exemplary performance.	Narrative with supporting documents	+5	4.6.1
		Subtotal:	+75	

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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.

1.2 BACKGROUND

Natural stones are commonly used in the construction industry as floor and wall covering materials. Natural stone products mainly induce environmental impacts during its pre-production, production, and use stage. The production cycle of natural stones typically includes quarry operation, raw blocks cutting, polishing, and buffing. Major environmental impacts associated with the production of natural stones include raw materials consumption, human toxicity, and waste discharge.

Natural stones (CEN TC 246) are pieces of naturally occurring rock, and include marble, granite, and other natural stones. Other natural stones here refer to natural stones whose technical characteristics are different from those of marble and granite as defined by CEN/TC 246/N.237 PREN 12670 Natural stones - Terminology. Generally, such stones do not readily take a mirror polish and are not always extracted by blocks: sandstone, quartzite, slate, tuff, schist.

The purpose of assessment criteria developed for natural stone products are, therefore, to minimise the impacts to both the human health and environment throughout the product's life cycle.

2. SCOPE

This Standard covers natural stone products as stated in ASTM C119, which include slate, granite, quartz-based dimension stone, marble, limestone, alabaster, soapstone, and other relevant hard surfacing stone products for interior use but do not carry the structural function. The scope also does not include the support structure or system of the product.

Stone products being used as raw materials, such as aggregates, dolomite, chalk, etc., are not covered in this section for natural stone. This section for natural stones also excludes any hybrid and composite products and those containing materials not directly specified in the scope for natural stone in 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 the same raw materials and source. All the related products have to be listed on the submitted documents.

E.g. Composition of mixed quartz stone and glass fibre plus binding agent A and various colouring is regarded as one application.

Subsequent application is available for the similar products with the same raw materials i.e. quartz and fibre of a labelled product series with different ratio (formulation), which is only eligible for applying within the validity period of the label.

3. DEFINITIONS

Applicant:	Organisation which applies for the label of the CIC Green Product Certification of the Construction Industry Council
ASTM:	American Society for Testing and Materials
Biological Cycle:	The cycle by which materials or parts are released to, and ideally reprocessed in, the environment via composting, biodegradation, nutrient extraction, or other biological metabolic pathways
BS:	British Standards
CIC:	Construction Industry Council
CNALS	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.
Granite:	Granite is generally composed of feldspar, mica, and quartz crystals and is a plutonic igneous rock having visibly crystalline texture of medium to coarse graining
GB:	National Standards of China
HKAS:	Hong Kong Accreditation Service
HKGBC:	The Hong Kong Green Building Council Limited
HOKLAS:	The Hong Kong Laboratory Accreditation Scheme
IARC:	International Agency for Research on Cancer
ISO:	International Organisation for Standardisation
Limestone:	Limestone is composed of mineral calcite (calcium carbonate) and is a sedimentary rock
Marble:	Marble is a hard crystalline metamorphic rock
MSDS:	Material Safety Data Sheets. To qualify as suitable, the MSDS and information therein must not be more than 5-year-old
Natural stones:	Naturally occurring rock, such as marble, granite, sandstone, and limestone

Sandstone:	Sandstone is a clastic sedimentary rock composed of sand sized grains set in a matrix of silt or clay. It is generally united by silica, iron oxide, or calcium carbonate
Slate:	Slate is a fine-grained metamorphic rock derived from shale-type sedimentary rock. It is composed of clay or volcanic ash through low grade metamorphism
Technical Cycle:	The cycle by which a product's materials or parts are reprocessed for a new product use cycle via recycling, repair, refurbishment, remanufacturing, or reuse
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
Usable Materials	The materials or substances produced from natural resources. The usable materials are suitable for further processing and use; all materials destined for disposal are not defined as usable materials.

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 suppling the following information with the product or made available to the public to help users using the products in a sustainable manner:

- Nature of stone
- Information of product uses
- Instructions on the installation and protection of the product
- Recommendation on maintenance for the product

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, GB/T 24025-2009 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 3rd party fulfilling the above requirements.

4.3 RESOURCE

4.3.1 Material Optimization

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

4.3.1.1 Raw Material Utilization Rate – Core Criteria

Requirements

5 Basic Points for the extraction efficiency of the main mining or quarry operation that is greater 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:

$$Extraction\ \ Efficiency = \frac{\text{Usable Materials } (\text{m}^3)}{\text{Total Extracted Materials } (\text{m}^3)} \times 100\%$$

Verification

Detailed report(s) on the amount of extracted materials and usable materials with proper 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, and 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 minimizing 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.

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 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 plan detailing the above, supported by organisational policy or other equivalent documents.

4.3.4 Water Management

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

The Applicant 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 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 an 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; 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 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 certificates 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 35 Points under this section.

The Applicant is required to achieve 30 Basic Points under this section. Additionally, 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_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.

4.4.1.2 Particulate Matters – Core Criteria

Requirements

10 Basic Points for limiting air emissions of total particulate matters during the whole manufacturing process below 150 ug per m^3.

Verification

Detailed report(s) of the air emission of total particulate matters shall be compiled according to the National and International test methods including but not limited to EN 12341. Other related testing methods are also acceptable with justification provided by the Applicant.

4.4.1.3 Water Pollutants – Core Criteria

Requirements

20 Basic Points for limiting the concentration of pollutants in wastewater discharged below the threshold listed in Table 2:

Table 2: Limit of Specific Pollutants in Wastewater

Emission	***Limit (mg/L)***
Suspended Solids	< 40
Cadmium	< 0.015
Chromium (VI)	< 0.15
Iron	< 1.5
Lead	< 0.15

Verification

Test report(s) of the amount of pollutants in wastewater discharged from the manufacturing plant. Test report(s) shall be compiled according to the National and International test methods including but not limited to ISO 5667-17 or APHA 2540D for suspended solids, ISO 8288 for lead and cadmium, ISO 11083 for hexavalent chromium, and ISO 6332 for iron.

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 20 Points under this section.

The Applicant is required to achieve 10 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

10 Bonus Points for meeting the requirements as below:

The product shall contain 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.

4.4.3.2 Radioactivity – Core Criteria

Requirements

10 Basic 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}:

[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

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

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

Laboratory report(s) shall be provided.

4.5 PERFORMANCE

4.5.1 Product Life

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

4.5.1.1 Serviceability - Non-core Criteria

Requirements

5 Bonus Points for demonstrating the product quality, durability and performance properties through at least **FOUR** testing items which may include, but are not limited to, the following:

- Compressive Strength
- Flexural Strength
- Water Absorption
- Abrasion Resistance
- Chemical Resistance
- Stain Resistance
- Impact Resistance

Table 3: Standards for Natural stone

Testing items	Standards
Compressive Strength	ASTM C170, GB/T 9966, GB/T 44178, TCECS 10051-2019
Flexural Strength	ASTM C880, GB/T 9966, GB/T 44178, TCECS 10051-2019
Water Absorption	ASTM C97, GB/T 9966, GB/T 44178, TCECS 10051-2019
Abrasion Resistance	ASTM C1353, GB/T 9966, GB/T 44178, TCECS 10051-2019
Chemical Resistance	ASTM C650, GB/T 9966, GB/T 44178, TCECS 10051-2019
Stain Resistance	ASTM C1378, GB/T 9966, GB/T 44178, TCECS 10051-2019
Impact Resistance	ASTM D2794, GB/T 9966, GB/T 44178, TCECS 10051-2019

Verification

Laboratory test report(s) and any production documentation for all relevant quality, durability 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 the proposed Smart and Innovative Technologies; and

Include 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 4: 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 Material Utilization Rate [CORE]	5	-	
	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	
		Particulate Matters [CORE]	10	-	
		Water Pollutants [CORE]	20	-	
	Regional Product	Regional Manufactured Product	-	+5	MW 8
	Human Toxicity and Ecosystem Impact	Hazardous Substances	-	+10	
		Radioactivity [CORE]	10	-	
Performance	Product Life	Serviceability	-	+5	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
- MW 8: Regional Materials
- MW 9: Use of Green Products
- Innovations and Additions