CONSTRUCTION INDUSTRY COUNCIL
建造業議會

# CONSTRUCTION INDUSTRY COUNCIL

## CIC GREEN PRODUCT CERTIFICATION

## *Assessment Standard*

## Cable & Wire

CIC GREEN
PRODUCT CERTIFICATION

(Version 2.0)

# CABLE & WIRE

***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:<br>• Country of origin<br>• Basic product specifications<br>• Installation method<br>• Instructions for consumer product disposal<br>• Operation & Maintenance Manual | Documentation including but not limited to product catalogue, technical datasheet, webpages | **5** | - | 4.1.1 |
| **RESOURCE** | | | | | |
| Circularity | Recyclability:<br>Develop 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 | **15** | - | 4.3.1.1 |
| Energy Management | Energy Management Plan:<br>Implement effective energy management policies and procedures and/or an energy management programme. | Energy management plan | **5** | - | 4.3.4.1 |
| **ENVIRONMENT** | | | | | |
| Human Toxicity and Ecosystem Impact | Hazardous Substances:<br>Compliance of the maximum allowed levels of restricted substances of product components as specified in Section 4.4.3.1. | Laboratory test report(s) | **15** | - | 4.4.3.1 |
| | Heavy Metals:<br>The amount of heavy metal per kg of insulation shall be within the limit as specified in Section 4.4.3.2. | Laboratory test report(s) | **10** | +5 | 4.4.3.2 |
| | | **Subtotal:** | **50** | +5 | |

## 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 | 4.2.1 |
| **RESOURCE** | | | | |
| Circularity | Recyclability:<br>Recycling of drums and conductor waste generated in the manufacturing site is 100%. | Recycling plan | +10 | 4.3.1.1 |
| | Packaging Requirement:<br>The packaging materials shall not contain halogenated plastics;<br><br>*OR*<br><br>Shall be comprised of 100% recycled materials, readily recyclable materials or decomposable materials;<br><br>*OR*<br><br>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 | 4.3.1.2 |
| Waste Management | Waste Management Plan:<br>Implement effective Waste Management Plan detailing the policies, procedures and/or a waste management program covering manufacturing operations. | Waste management programme | +5 | 4.3.2.1 |
| Water Management | Option A:<br>Water Consumption Reporting:<br>Report both potable and non-potable water usage in the production process of the past year. | Water consumption report | +5 | 4.3.3.1 |
| | Water Recycling Program:<br>Develop and implement water recycling program during the manufacturing process. | Documentation on water recycling | +5 | 4.3.3.2 |
| | Option B:<br>Water Management System:<br>Process valid certificate under ISO 14046: Water Footprint Assessment | ISO 14046 Certificate issued by accredited certification body | +10 | 4.3.3.3 |

| Criteria | Requirements | Verification | Points +Bonus | Index |
|---|---|---|---|---|
| Energy Management | Energy Management System:<br>Possess valid certificate under ISO 50001: Energy management systems. | ISO 50001 Certificate issued by accredited certification body | +5 | 4.3.4.1 |
| **ENVIRONMENT** | | | | |
| Environmental Management | Environmental Management System:<br>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 Equipment:<br>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 | Low Smoke in Case of Fire:<br>Light transmittance of the product shall be greater than 60%. | Laboratory report(s) | +5 | 4.4.3.3 |
| | Halogen Input or pH and Conductivity of Combustion Gases:<br>The Product shall fulfil the limit of Fluoride and Chloride input ≤ 0.5% of the finished product<br><br>*OR*<br><br>The combustion gas emitted in case of fire shall be limited as below:<br>• pH of combustion gases: ≥ 4.3<br>• Conductivity of combustion gases: ≤ 10 μS/mm | Laboratory test report(s) | +5 | 4.4.3.4 |
| **INNOSMART** | | | | |
| Innovations & Additions | Incorporating various smart technologies to improve efficiency, reduce energy consumption, and optimize performance | Narrative with supporting | +5 | 4.5.1 |
| | | **Subtotal**: | +65 | |

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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

Electrical cable and wire are mainly composed of copper cords and insulation. One major concern is that the production of copper cords should produce minimal amount of copper waste. Besides, the production, use and disposal of the materials for insulation may also lead to some critical environmental issues. The assessment should thus concentrate on these two aspects.

The purposes of the assessment criteria developed for cable and wire are, therefore, to minimise the use and subsequent release of harmful substances to the environment and to ensure human health throughout the product's life cycle.

# 2. SCOPE

The scope of this Standard is applicable to electrical and electronic flexible cords and capture cords (hereafter referred to as cords) insulated with compound which are used in the buildings. This Standard is mainly concerned with materials used in manufacturing electrical cables and wires for low voltage and extra low voltage and other general requirements as to the environmental friendliness product. Cable and wire used in the utilities and other kind of electrical power distribution devices, such as busbars are excluded in this Standard.

Each application shall specify the voltage range and the material used for insulation (e.g. Polyvinyl chloride (PVC), Fire resistant (FR), Low smoke zero halogen (LSZH), Mineral-insulated copper-clad (MICC)). All the related products is required be listed on the submitted documents.

E.g. LSZH cable for 600/1000 is regarded as one application, while LSZH cable for 1900/3300 will be regarded as another separate application.

*Table 1: Types of LV cable*

| **Types of LV cable** | | **Material classification** | | | |
|---|---|---|---|---|---|
| | | **PVC** | **FR** | **LSZH** | **MICC** |
| Voltage Range (V) | 450/750 | Armoured and/or non-armoured | Armoured and/or non-armoured | Armoured and/or non-armoured | Armoured and/or non-armoured |
| | 600/1000 | | | | |
| | 1900/3300 | | | | |

Note:

**ONE** application is only eligible for **ONE** product series. All the related products have to be listed on the submitted documents. Each application should specify the product code / serial number.

# 3. DEFINITIONS

| | |
|---|---|
| *Applicant:* | Organisations which apply for the label of the CIC Green Product Certification of the Construction Industry Council |
| *Cable and wire:* | Flexible cords and cabtyre cords with insulation materials |
| *CIC:* | Construction Industry Council |
| *CNAS:* | China National Accreditation Service for Conformity Assessment |
| *Conductibility:* | The ability of a material to transmit energy |
| *Halogen elements:* | A series of non-metal elements from group 7 of the periodic table |
| *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 |
| *Light transmittance:* | The fraction of incident light at a specified wavelength that passes through a sample |
| *MSDS:* | Material safety data sheet. To qualify as suitable, MSDS and information therein must not be more than 5-years old |
| *Smoke density:* | The ratio of the smoke emitted by a burning material to the smoke emitted by a standard material |
| *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 |

# 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" and a "Bronze", "Silver", "Gold" or "Platinum" Label will be awarded according to the total points accumulated, as shown in Table 2.

*Table 2 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 INFOMATION

### *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
- Basic product specifications
- Installation method
- Instructions for consumer product disposal
- Operation & Maintenance Manual

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/ EPD Report – Non-core Criteria*

*The Applicant can achieve maximum 5 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). This can be achieved by either of the following:

Conduct CFP study report in accordance with ISO 14067:2018, CIBSE TM 65 or equivalent

**OR**

Provide the product's CFP value from a product level EPD issued in accordance with ISO 14067:2018, ISO 21930:2017, GB/T 24067-2024 or BS EN 15804:2012+A2:2019.

Verification

CFP quantification report endorsed by a third-party critical review or Environmental Product Declaration fulfilling the above requirements

## 4.3 RESOURCE

### *4.3.1 Circularity*

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

#### *4.3.1.1 Recyclability – Core Criteria*

Requirements

15 Basic Points if the manufacturers develop a recycling plan to encourage and facilitate the recycling of conductor and wooden and/or metal drums.

10 Bonus Points are awarded if the recycling of drums and conductor waste generated in the manufacturing site is 100%.

Verification

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

#### *4.3.1.2 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.

### *4.3.2 Waste Management*

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

#### *4.3.2.1 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; and
- Initiatives implemented for recovery of post-consumer and/or pre-consumer waste that can be re-introduced into the manufacturing process; and
- Other environmental benefits or constraints associated with waste minimisation objectives and processes.

Verification

Documentation of waste management programme.

### *4.3.3 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:***

#### *4.3.3.1 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.

#### *4.3.3.2 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:***

#### *4.3.3.3 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.

### *4.3.4 Energy Management*

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

#### *4.3.4.1 Energy Management Plan – Core Criteria*

Requirements

5 Basic 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.

#### *4.3.4.2 Energy Management System – Non-core Criteria*

Requirements

5 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 is required to achieve 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, CO2 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 Regionally Manufactured Equipment – 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 25 Basic Points under this section. Additionally, the Applicant can achieve maximum 15 Bonus Points under this section.*

#### *4.4.3.1 Hazardous Substance – Core Criteria*

Requirements

15 Basic Points for complying with the maximum allowed levels of restricted substances of product components:

- Polybrominated Biphenyls (PBB): < 1000 ppm
- Polybrominated Diphenyl Ethers (PBDE): < 1000 ppm
- Bis(2-Ethylhexyl) phthalate (DEHP): < 1000 ppm
- Benzyl butyl phthalate (BBP): < 1000 ppm
- Dibutyl phthalate (DBP): < 1000 ppm
- Diisobutyl phthalate (DIBP): < 1000 ppm

Verification

Laboratory test report(s).

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

Requirements

Points are awarded for limiting the amount of heavy metals per kilogram of insulation materials in cables and wires, as referenced in Table 3.

*Table 3: Maximum limit on heavy metal concentration and associated points*

| Points | Metal concentration (mg/kg) | |
|---|---|---|
| | Cadmium (Cd) | Lead (Pb), Mercury (Hg), Chromium(VI) (Cr(VI)) |
| 10 Basic + 5 Bonus | 20 | 100 |
| 10 Basic | 100 | 1000 |

Verification

Laboratory test report(s).

#### *4.4.3.3 Low Smoke in case of Fire – Non-core Criteria*

Requirements

5 Bonus Points will be awarded for demonstrating that the light transmittance of the product is greater than 60% on the scene of fire.

For safety reason, neither electrical nor electronic cables are expected to emit large amount of smoke in case of fire. The less amount of the smoke emitted, the higher the light transmittance on the scene of fire is and hence a higher possibility of enabling building occupants to escape.

Verification

Laboratory test report(s) of the light transmittance in case of fire. The tests shall be in accordance with the methods stipulated in the IEC 61034-2 or equivalent international standards.

#### *4.4.3.4 Halogen Input or pH and Conductibility of Combustion Gas – Non-core Criteria*

Requirements

5 Bonus Points for meeting one of the following requirements.

Halogen input shall be limited as below:

- Fluoride, Chloride input: ≤ 0.5% of the finished product, respectively

**OR**

The combustion gas emitted in case of fire shall be limited as below:

- pH of combustion gases: ≥ 4.3
- Conductivity of combustion gases: ≤ 10 μS/mm

Verification

Laboratory test report(s) showing the chloride and fluoride input as stated above. The assessment of the halogen input shall be conducted in accordance with the methods stipulated in IEC 60754-1 or equivalent international standards. Likewise, Laboratory test report(s) of the pH and the conductibility of combustion gas should be provided.

*(Notes: pH and Conductibility of Combustion Gas and Halogen Input are two alternative criteria. When the product fulfils the former Criterion, it does not fulfil the Criterion for the latter, vice versa.)*

## 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**

Incorporating various smart technologies to improve efficiency, reduce energy consumption, and optimize performance as, exemplified by the following examples:

- Energy Efficiency in Production
- Enhanced Product Design
- Smart Technology Integration
- Sustainable Material

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 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/ EPD Report | | - | +5 | MW 10 |
| Resource | Circularity | Recyclability [CORE] | 15 | +10 | |
| | | Packaging Requirement | - | +5 | |
| | Waste Management | Waste Management | - | +5 | |
| | Water Management | Water Consumption Reporting | - | +5/+10 | |
| | | Water Recycling Program | | | |
| | | Water Management System | | | |
| | Energy Management | Energy Management Plan [CORE] | 5 | - | |
| | | Energy Management System | - | +5 | |
| Environment | Environmental Management | Environmental Management System | - | +5 | |
| | Regional Product | Regionally Manufactured Equipment | - | +5 | MW 8 |
| | Human Toxicity and Ecosystem Impact | Hazardous Substance [CORE] | 15 | - | |
| | | Heavy Metal [CORE] | 10 | +5 | |
| | | Low Smoke in case of Fire | - | +5 | |
| | | Halogen Input or pH and Conductibility of Combustion Gas | - | +5 | |
| InnoSmart | Innovations & Additions | | - | +5 | IA |
| | | **Total:** | **50** | **+70** | |

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

- MW 8: Regional Materials
- MW 10: Life Cycle Assessment
- MW 9: Use of Green Products
- Innovations & Additions