

# Guideline for Manufacturer Application of Ecolabel (Common Criteria) for Cement Products



Thailand Green Label :



Singapore Environmental Label :



Eco Label Sri Lanka

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# 1. Introduction

## 1.1 Purpose of the guideline

This guideline has been developed as a reference document for manufacturers intending to apply for environmental labeling (Ecolabel) certification for cement products. It aims to provide a clear understanding of the general (common) criteria and the step-by-step process for ecolabel application in alignment with regional frameworks. The guideline also seeks to support Thai manufacturers in establishing a systematic, transparent, and internationally harmonized certification process. Furthermore, it promotes the competitiveness of Thailand's cement industry in both domestic and international markets by aligning with the ecolabelling schemes of Thailand, Singapore, and Sri Lanka.

## 1.2 Scope

This guideline covers all types of cement products within the certification scope of Type I Ecolabels, as defined under ISO 14024, including:

- Ordinary Portland Cement
- Blended or Mixed Cement
- Hydraulic or Low-Carbon Cement
- Special cement products incorporating recycled or alternative materials

The content of this guideline is based on and harmonized with the frameworks of:

- Thailand Green Label
- Singapore Green Labelling
- Sri Lanka Eco Labelling

The objective is to facilitate mutual alignment and comparability among ecolabelling systems in the Asian region, and to contribute to the development of a potential ASEAN Common Criteria for Ecolabels in the Cement Sector in the future.

## 1.3 Key terms and definitions

For clarity and consistency, the following key terms are used throughout this guideline:

- **Ecolabel:** A mark or symbol indicating that a product has lower environmental impacts compared to other products in the same category, verified through an independent and transparent assessment process.
- **Common Criteria:** A set of environmental performance benchmarks and evaluation principles jointly recognized across multiple ecolabelling systems, used as a shared reference framework for products within the same category (e.g., cement).

- **Certification Body:** An accredited organization responsible for conducting product assessments and issuing certifications in accordance with ISO/IEC 17065 or an equivalent conformity assessment standard.
- **Life Cycle Consideration:** The evaluation of environmental impacts associated with all stages of a product’s life cycle — from raw material extraction, production, and transportation, to use, disposal, and recycling.
- **Cement Product:** A hydraulic binder-based material used in construction, formulated primarily from clinker and supplementary components, and may include additives or recycled materials to improve performance and sustainability.

## 2. Overview of the Ecolabel Scheme

### 2.1 Thailand Green Label



32-years journey towards sustainability

Figure 1 Webpage of Thailand Green Label.



Figure 2 Thailand Green Label logo.

## The Thai Green Label Scheme

The Thai Green Label Scheme was initiated by the Thailand Business Council for Sustainable Development (TBCSD) in October 1993 and was officially launched in August 1994 through the collaboration of the Thailand Environment Institute (TEI), the Ministry of Industry, the Ministry of Natural Resources and Environment, the Thai Industrial Standards Institute (TISI), and other relevant public agencies. It represents Thailand's first national environmental labeling program established through multi-sectoral cooperation among government bodies, the private sector, and technical institutions. Both TISI and TEI serve jointly as the program's secretariats.

The Green Label operates as an independent mechanism that provides impartial and credible information about products and services with lower environmental impacts. It aims to encourage environmentally responsible production and consumption by promoting the use of eco-friendly goods based on life-cycle considerations. Furthermore, the program contributes to environmental quality management by raising public awareness and supporting pollution prevention in a transparent and systematic manner. Through this initiative, the Green Label serves as a key instrument in aligning Thailand's product standards with international principles of sustainable development.

### **Concept**

1. Green label certifies a product which has been assessed and verified that it meets environmental standards in accordance with the product criteria announced by the Green Label Policy and Management Committee.
2. Green label certification is a voluntary based which manufacturer, distributor or service provider who want to show responsibility for the environment.
3. Green label is a tool to build good environmental awareness among consumers by introducing products that have less environmental impact and encourage more consumption of that products.
4. Green label encourage manufacturer industry groups turn to clean technology production that have less environmental impact.
5. Green label encourages the government and the private sector work together to restore and preserve the environment including reduce pollution problems by changing consumption behaviors.

### **Purpose**

The main purpose of the Green label comes from the concept and the need for Thailand sustainable development by adhering to the principles of national economic development in parallel with environmental protection as follows:

1. Reduce overall environmental pollution in the country.

2. Provide unbiased information for consumers about products and services that have less environmental impact compared to products or services that perform the same function.
3. Encourage manufacturers to use clean production technology or methods, low impact on the environment in order to deliver economic returns to the manufacturers in the long term.



Figure 3 Certification Procedure for Thailand Green Label (<https://greenlabel.tei.or.th/green-label-certification-application-process/> : 11/3/2025)

## 2.2 The Singapore Green Labelling Scheme



Figure 4 The Singapore Environment Council logo.

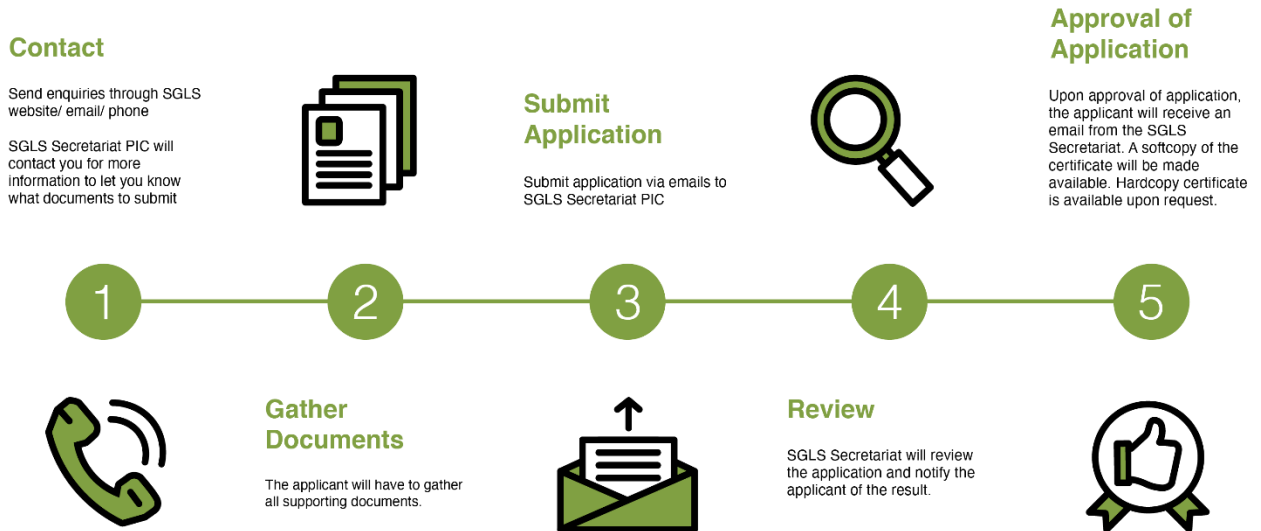


Figure 5 The Greenlabel Singapore logo.

In recent years, the demand for environmentally sustainable products has risen dramatically. Nevertheless, the pursuit of sustainable production and consumption has long been a central concern for environmental policy. Recognizing the importance of early reform, the Singapore Environment Council (SEC) took a pioneering role in advancing the green movement in Singapore in 1992. In collaboration with the National Environment Agency (NEA), SEC established a credible and transparent certification process for environmentally friendly products, fully aligned with the international standard ISO 14024, to ensure the integrity and comparability of product assessments.

In 1994, the Singapore Green Label Scheme (SGLS) became a member of the Global Ecolabelling Network (GEN), positioning Singapore's certification system among globally recognized environmental labels. This membership strengthened the international credibility of the Singapore Green Label and opened new business opportunities across more than 43 countries, including Japan and the United States.

To address the lack of peatland and fire management practices in the pulp and paper industry, the Enhanced Singapore Green Labelling Scheme for Pulp and Paper Products (Enhanced SGLS) was launched in January 2017. The enhanced scheme requires participating companies to implement proper peatland management, establish systems for early fire detection and suppression, and strictly comply with the Zero Burning Policy within their plantation areas. Since 2019, the Enhanced SGLS has been accredited under ISO/IEC 17065, further reinforcing its technical robustness and international recognition in the certification of pulp and paper products.



### Step 1: Before You Apply

Contact the SGLS Secretariat, via the email [greenlabel@sec.org.sg](mailto:greenlabel@sec.org.sg), to check if your product is within the SGLS scope of certification. Relevant information on the categories is also found at <https://www.sgls.sec.org.sg/sgls-standard.php>.

### Step 2: Gathering Supporting Documents

If your product is deemed to be classified under an existing category and meets the assessment criteria, you will need to gather supporting documents stated in the criteria

- All test reports should be from nationally accredited third-party test laboratory (SINGLAS accredited test labs in the case of Singapore).
- All declaration letters required must be signed by the CEO/President/Managing Director or equivalent of the applicant company.

- All manufacturing process documents must be dated and signed off by the technical person-in-charge of the manufacturer i.e. Technical Director/Manager

### **Step 3: Submitting a Formal Application**

Once the test results have been attained and ALL results pass the requirements stated in the criteria, please submit the application via the email [greenlabel@sec.org.sg](mailto:greenlabel@sec.org.sg).

You will need to submit the following supporting documents:

- A detailed description of your product and its composition along with its manufacturing process
- Test reports from nationally accredited third-party test laboratories and supporting documents in accordance to the relevant SGLS product criteria / standards
- Any other documentation as requested by the SGLS Secretariat
- Product Photo

Note: Incomplete applications will not be processed.

### **Step 4: Review of application**

The SGLS Secretariat will review your application and notify you on the outcome within 3-4 weeks. Alternatively, you may contact us for the application status via the email [greenlabel@sec.org.sg](mailto:greenlabel@sec.org.sg). Please note that an invoice will be issued upon commencement of work. Should the applicant wish to expedite the application, the SGLS Secretariat offers optional services which come at an extra cost – Express (~3 working days) at **additional** \$1,000 and Rapid (~7 working days) for an **additional** \$500 on top of the certification fee of \$3,500. Payment term is COD and payment must be made upon submission of the complete set of documents. Status of the completion of documents will be determined by the SGLS Secretariat.

### **Step 5: Awarding of the Singapore Green Label Certificate**

On approval of the application, you will receive an email from the SGLS Secretariat.

## Certification Fees

The average application process takes between 3 to 4 weeks, after submission of all relevant supporting documents in compliance with the Singapore Green Label criterion that the product falls under.

<b>Application</b>	<b>Application Fee</b>	<b>Validity</b>
New application per product	S\$3,500	Two Years
Renewal application per product	S\$2,300	Two Years
Normal processing would take 3-4 weeks		
<b>Express processing fee for an application (3 working days):</b> Additional S\$1,000 on top of the application fee		
<b>Rapid processing fee for an application (7 working days):</b> Additional S\$500 on top of the application fees		

Please note the following:

- Payment will be required after the submission of the complete set of documents. Status of the completion of documents will be determined by the SGLS Secretariat.
- Assessment work will commence upon receipt of Application and first set of supporting documents.

## Documents Required by Singapore **exception** of Thailand.

List	SEC	TGL
· CEO/Technical Director declaration (restricted substances)		
· ISO 14001 of pro-degradant supplier		
· Full manufacturing process documentation		
· Supplier list + evaluation documentation		
· Energy use records + reduction plan		
· Water use records + efficiency plan		
· Waste minimization plan + annual waste data		
· Waste pathway analysis (Singapore-specific)		
· Abiotic degradation test reports (ASTM suite)		
· Heavy metal residual tests (ASTM D3335 / RoHS)		
· Service life test (ASTM D882)		
· Food contact compliance (if applicable)		
· SINGLAS/ISO 17025 lab-issued reports		
· Packaging/service-life printed information		
· QC/QA system documentation (purchasing, receiving, production records)		

**Green** list is mutual verification

## 2.3 The Eco Label Sri Lanka Scheme

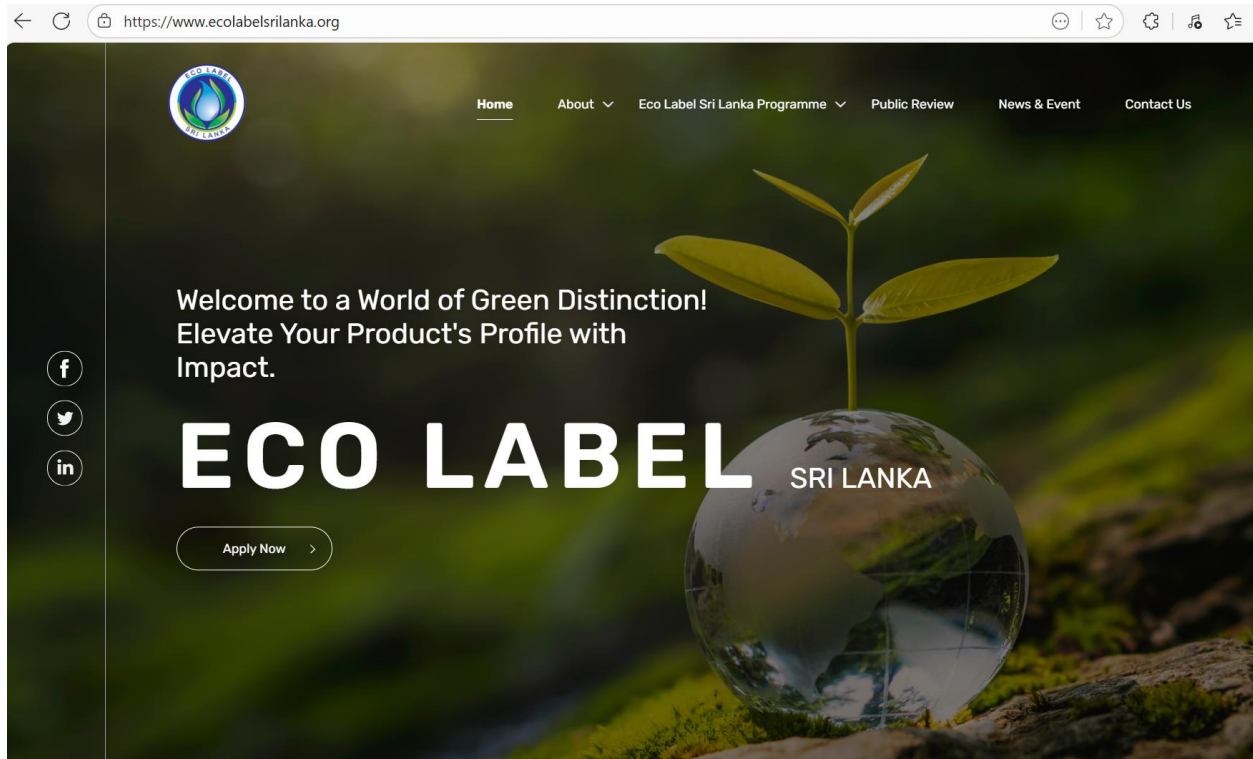


Figure 6 Webpage of The Eco Label Sri Lanka.



Figure 7 The Eco Label Sri Lanka logo.

The National Cleaner Production Centre (NCPC) Sri Lanka Eco Labelling Programme was launched in 2018 under the framework of the 10-Year Framework of Programmes on Sustainable Consumption and Production (10YFP), specifically the initiative on Consumer Information for Sustainable Consumption and Production (CI-SCP), with technical support from the United Nations Environment Programme (UN Environment).

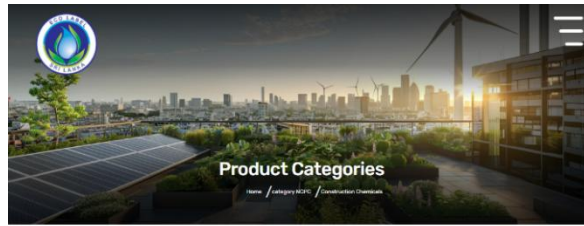
The programme began with a capacity-building workshop involving 25 participants from the NCPC Sri Lanka and various stakeholder organizations. The training focused on developing and implementing a national ecolabelling system, guided by experts from UN

Environment and Eco-mark Japan, who shared international best practices and methodologies for establishing credible environmental standards.

The NCPC Eco Labelling Programme represents Sri Lanka’s first national green product certification system and has emerged as one of the country’s most successful and influential ecolabelling initiatives. Its standards encompass comprehensive sustainability criteria, addressing environmental protection, human health, social responsibility, and product performance. Through this integrated approach, the programme enhances consumer confidence and promotes the transition toward sustainable production and consumption patterns in Sri Lanka.

### Fee Structure

Fee (LKR)		
<b>Certification audits</b>	<b>Application processing fee</b>	<b>90,000 + tax</b>
	<b>Audit fee</b>	<b>120,000 + tax</b>
	<b>Annual certification fee</b>	<b>290,000 + tax</b>
	<b>Total</b>	<b>500,000 + tax</b>
<b>Recertification</b>	<b>Audit fee</b>	<b>120,000 + tax</b>
	<b>Annual certification fee</b>	<b>290,000 + tax</b>
	<b>Total</b>	<b>410,000 + tax</b>
<b>1st surveillance audit</b>	<b>Audit fee</b>	<b>120,000 + tax</b>
	<b>Annual certification fee</b>	<b>290,000 + tax</b>
	<b>Total</b>	<b>410,000 + tax</b>
<b>2nd surveillance audit</b>	<b>Audit fee</b>	<b>120,000 + tax</b>
	<b>Annual certification fee</b>	<b>290,000 + tax</b>
	<b>Total</b>	<b>410,000 + tax</b>



-  Dairy Products
-  Tea Products
-  Construction Chemicals
-  Textile & Clothing



## Criteria

### Certification Criteria for Tea Products

 **FM-PC-01**  
Certification Criteria for Tea Products

### Application Form

 **FM-PC-01**  
Application Form

### Pre-Verification questionnaire

 **FM-PC-01**  
Pre-Verification questionnaire

### Sample PDF

 **Sample pdf**  
Sample PDF

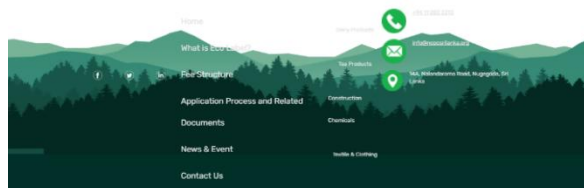


Figure 8 The product categories of Sri Lanka Ecolabel

## 4. Common Criteria Framework

No.	Element	Criteria Items of Standard (*)			Remarks
		TGL-99-R2-25	SGLS 22 v7.1	CC-EL-09	
1	Extraction of Raw Materials	Environmental Impact Assessment (EIA); National Environmental Quality Promotion and Conservation Act B.E. 2535	Environmental Protection and Management Act (EPMA)	The National Environmental Act (No. 47 of 1980 with subsequent amendments in Act No. 56 of 1988 and Act No. 53 of 2000)	<b>Common criteria</b> Based on National Regulations
2	Social Responsibility	Occupational health and safety management systems according to ISO 9001, 14001, and 45001	Occupational health and safety management systems according to ISO 9001, 14001, and 45001	Worker Rights and Fair Wages (ILO standards), Encourages corporate social responsibility (CSR) and Occupational Health and Safety and Responsible Chemicals Management	<b>Common criteria</b>
3	Use of Alternative Raw Materials	At least 10%	At least 10%	Not defined	<b>Not Common criteria</b> only for TGL and SGLS
4	Energy management	Implement Energy efficiency management policies and procedures	Use of alternative fuels for kiln/furnace	Energy Resource Consumption and Conservation	<b>Common criteria</b> only for TGL, NCPC→SGLS applied

No.	Element	Criteria Items of Standard (*)			Remarks
		TGL-99-R2-25	SGLS 22 v7.1	CC-EL-09	
5	Control of Air Pollutants	Ministry of Industry on Ventilation Value from Cement Factories, B.E. 2549  CO < 200 mg/Nm <sup>3</sup> NO <sub>x</sub> < 800 mg/Nm <sup>3</sup> SO <sub>2</sub> < 500 mg/Nm <sup>3</sup> (for Grey cement), < 80 mg/Nm <sup>3</sup> (for White cement) PM < 50 mg/Nm <sup>3</sup>	Environmental Protection and Management (Air Impurities) Regulations (No. S 595/2000)  CO < 600 mg/Nm <sup>3</sup> NO <sub>x</sub> < 700 mg/Nm <sup>3</sup> SO <sub>2</sub> < 500 mg/Nm <sup>3</sup>  PM < 100 mg/Nm <sup>3</sup> (Compliance with National Regulations per ISO 14001)	The Gazette of the Democratic Socialist Republic of Sri Lanka  CO < 200 mg/Nm <sup>3</sup> (new) CO < 400 mg/Nm <sup>3</sup> (old) NO <sub>x</sub> < 1000 mg/Nm <sup>3</sup> SO <sub>2</sub> < 270 mg/Nm <sup>3</sup> (new) SO <sub>2</sub> < 540 mg/Nm <sup>3</sup> (old) PM < 200 mg/Nm <sup>3</sup> (new) PM < 400 mg/Nm <sup>3</sup> (old)	<b>Common criteria</b> The common limit as CO < 200 mg/Nm <sup>3</sup> NO <sub>x</sub> < 700 mg/Nm <sup>3</sup> SO <sub>2</sub> < 500 mg/Nm <sup>3</sup> (for Grey cement) PM < 50 mg/Nm <sup>3</sup>  Refer test method to US EPA
6	Control of Water Pollutants	Wastewater Quality Specification B.E 2560  Arsenic < 0.01 ppm Cadmium < 0.01 ppm Hexavalent chromium < 0.05 ppm Lead < 0.1 ppm Mercury < 0.005 ppm	NEA's Allowable Limits for Trade Effluent Discharge to Watercourse or Controlled Watercourse, Environmental Protection and Management Act 1999 Arsenic < 0.01 ppm Cadmium < 0.003 ppm Hexavalent chromium < 0.05 ppm Lead < 0.1 ppm Mercury < 0.001 ppm	General Standards and Criteria for the Discharge of Industrial Effluent into Inland Surface Waters  Arsenic < 0.2 ppm Cadmium < 0.1 ppm Hexavalent chromium < 0.1 ppm Lead < 0.005 ppm	<b>Common criteria</b> The common limit as  Arsenic < 0.01 ppm, Cadmium < 0.003 ppm Hexavalent chromium < 0.05 ppm Lead < 0.005 ppm

No.	Element	Criteria Items of Standard (*)			Remarks
		TGL-99-R2-25	SGLS 22 v7.1	CC-EL-09	
		Selenium < 0.01 ppm	Selenium < 0.01 ppm (Compliance with National Regulations per ISO 14001)	Mercury < 0.1 ppm Selenium < 0.05 ppm	Selenium < 0.01 ppm  Refer test method to AWWA method 3120B
7	Control of Waste	Waste management policies and procedure comply ISO 14001	Waste management policies and procedure comply ISO 14001	Waste management policies and procedure comply ISO 14001	<b>Common criteria</b>
8	GHG reduction and Carbon Footprint product	Implement GHG reduction measure Limit CO2 emission by product type calculation method refer to ISO 14064-1 (GHG inventories) and ISO 14067 (Carbon Footprint of Products)	NA	GHG Emission Management refer to Science-Based Targets Initiative (SBTi) and alignment of emission reduction targets	<b>Not Common criteria</b>
9	Hazardous Substances	Concentration of heavy metals from Toxicity Characteristics Leaching Procedure (TCLP) Arsenic <2 mg/L Cadmium <1 mg/L Lead <2 mg/L Mercury <0.2 mg/L	Concentration of heavy metals from Toxicity Characteristics Leaching Procedure (TCLP) Arsenic <5 mg/L Cadmium <1 mg/L Lead <5 mg/L Mercury <0.2 mg/L	No heavy metals  (eg: mercury, lead, cadmium, hexavalent chromium, arsenic & antimony) and release of solvents	<b>Common criteria</b>  The common limit applies where the test results are non-detectable (ND)  Refer test method to US EPA, Evaluating Solid Waste,

No.	Element	Criteria Items of Standard (*)			Remarks
		TGL-99-R2-25	SGLS 22 v7.1	CC-EL-09	
		Hexavalent chromium <2 mg/L Selenium <1 mg/L	Hexavalent chromium <5 mg/L Selenium <1 mg/L		Physical/Chemical Methods (SW-846) Test Methods 1311
10	Packaging	Instructions for managing the packaging after use	Instructions for managing the packaging after use	Instructions for managing the packaging after use	<b>Common criteria</b>
11	Packaging	NA	Primary packaging paperboard ≥70% recycled content	Encourage use of recycled materials of more than 20%	<b>Not Common criteria</b>
12	Packaging	Limit contamination from heavy metal and its compound of Cadmium, Hexavalent chromium, Mercury, and Lead in compliance with RoSH directive	NA	Limit contamination from heavy metal in compliance with national standards by the Consumer Affairs Authority (CAA)	<b>Not Common criteria</b>

## 4.1 Cross-cutting requirements applicable to signed partners

### 4.1.1. Extraction of Raw Materials

- **Description of the Requirement**

Cement manufacturers must ensure that the extraction and sourcing of raw materials—such as limestone, clay, gypsum, and alternative raw materials—are conducted in accordance with each country’s environmental legislation. All mining or quarrying activities must undergo an Environmental Impact Assessment (EIA) and obtain approval prior to the commencement or expansion of operations. Manufacturers are required to implement appropriate mitigation measures to minimize environmental impacts

- **Legal Framework (By Country)**

In **Thailand**, the use of alternative raw materials is regulated by the **Ministry of Industry** and the **Department of Primary Industries and Mines (DPIM)**, which promote safe reuse of industrial by-products under the *Circular Material Management* framework. In **Singapore**, relevant provisions under the **Environmental Protection and Management Act (EPMA)** and the **Resource Sustainability Act (RSA)** encourage the utilization of recycled materials such as slag and fly ash to reduce landfill waste. In **Sri Lanka**, while no specific regulation exists, the **National Cleaner Production Centre (NCPC)** advocates for resource efficiency and cleaner production practices, emphasizing waste reduction and material recovery.

- **Cross-cutting Relevance**

All participating countries require compliance with national environmental laws and mandate the preparation and approval of an EIA prior to raw material extraction. This ensures that environmental and social risks are identified and mitigated from the outset. Raw material extraction represents the **first stage of the product life cycle (Life Cycle Stage 1)**, directly influencing the carbon footprint and long-term sustainability of cement production. Establishing this as a common criterion provides a harmonized foundation for sustainable resource management across the region and enhances the mutual recognition of ecolabel standards among countries participating in the Eco Advance initiative.

### 4.1.2. Social Responsibility

- **Description of the Requirement**

Manufacturers are also encouraged to implement Corporate Social Responsibility (CSR) activities that contribute to local communities, such as environmental education, public participation in mitigating environmental impacts, community development projects, and transparent communication with stakeholders. These actions reinforce

corporate accountability, promote positive industry–community relations, and support long-term sustainable development.

- **Legal Framework (By Country)**

In **Thailand**, social responsibility and labor protection are governed by the **Labour Protection Act B.E. 2541 (1998)**, the **Labour Relations Act B.E. 2518 (1975)**, and the **Occupational Safety, Health, and Environment Act B.E. 2554 (2011)**. The Ministry of Industry also promotes responsible business practices through the **Industrial CSR Guidelines**, which provide a framework for ethical and sustainable industrial operations. In **Singapore**, the **Employment Act** and the **Workplace Safety and Health Act (WSH Act)** regulate fair employment practices, occupational safety, and risk prevention from hazardous substances. The Ministry of Manpower (MOM) encourages enterprises to adopt ISO-based management systems to strengthen corporate governance and sustainability performance. In **Sri Lanka**, labor and safety practices are regulated under the **Factories Ordinance Act**, the **Shop and Office Employees Act**, and the provisions of the **National Institute of Occupational Safety and Health (NIOSH)**. These regulations require workplaces to conduct regular risk assessments, annual medical examinations, and implement preventive safety measures in industrial operations.

- **Cross-cutting Relevance**

All three participating countries share the same fundamental principles of labor protection, occupational health, and responsible business conduct as a foundation for sustainable industrial development. The integration of ISO 9001, ISO 14001, and ISO 45001 across all national schemes ensures a consistent management approach that encompasses quality, environmental, and occupational safety aspects. This cross-cutting requirement supports the objective of the Eco Advance Programme in positioning the cement industry as a socially and environmentally responsible sector. It also enhances the ecolabel assessment framework by incorporating social dimensions—aligned with the International Labour Organization (ILO) standards and the United Nations Sustainable Development Goals (SDGs)—to promote inclusive and sustainable industrial practices in the region.

#### **4.1.3. Use of Alternative Raw Materials**

- **Description of the Requirement**

Cement manufacturers are encouraged to utilize alternative or supplementary raw materials—such as fly ash, slag, and industrial by-products—to reduce the consumption of natural resources and minimize environmental impacts. Both Thailand and Singapore require the use of alternative materials equivalent to at least 10% of total raw materials,

while Sri Lanka promotes the use of recycled and renewable resources in cement production without specifying a fixed percentage.

- **Legal Framework (By Country)**

In **Thailand**, the use of alternative raw materials is regulated by the **Ministry of Industry** and the **Department of Primary Industries and Mines (DPIM)**, which promote safe reuse of industrial by-products under the *Circular Material Management* framework. In **Singapore**, relevant provisions under the **Environmental Protection and Management Act (EPMA)** and the **Resource Sustainability Act (RSA)** encourage the utilization of recycled materials such as slag and fly ash to reduce landfill waste. In **Sri Lanka**, while no specific regulation exists, the **National Cleaner Production Centre (NCPC)** advocates for resource efficiency and cleaner production practices, emphasizing waste reduction and material recovery.

- **Cross-cutting Relevance**

All three countries share a common policy direction promoting the use of alternative raw materials to enhance resource efficiency and reduce environmental impacts. This practice aligns with circular economy principles and represents a “soft common criterion” that may evolve into a harmonized regional standard under the Eco Advance Programme in the future.

#### 4.1.4. Energy management

- **Description of the Requirement**

Cement manufacturers must establish a systematic energy management policy and framework to enhance energy efficiency, reduce operational costs, and minimize greenhouse gas emissions. Key measures include regular monitoring of energy consumption, improving the efficiency of major equipment such as kilns and motors, utilizing alternative fuels such as biomass or RDF (Refuse-Derived Fuel), and recovering waste heat from production processes for reuse.

- **Legal Framework (By Country)**

In **Thailand**, energy management is governed by the **Energy Conservation Promotion Act B.E. 2535 (1992)**, which requires designated factories to appoint an Energy Manager and submit annual energy performance reports. In **Singapore**, the **Energy Conservation Act (ECA)** mandates large industrial facilities to appoint a certified Energy Manager and implement energy efficiency improvement measures approved by the **National Environment Agency (NEA)**. In **Sri Lanka**, the **Sri Lanka Sustainable Energy Authority (SLSEA)** oversees national initiatives to promote industrial energy efficiency through **Energy Audits**, **Benchmarking**, and **Energy Management Training** programmes.

- **Cross-cutting Relevance**  
All three countries emphasize systematic energy management to improve production efficiency and reduce carbon emissions. This requirement aligns with ISO 50001 (Energy Management System) and supports global sustainability objectives under SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action). Consequently, energy management represents a key common criterion within the Eco Advance Programme, reinforcing the transition toward low-carbon and energy-efficient cement production in the region.

#### 4.1.5. Control of Air Pollutants

- **Description of the Requirement**  
Air pollutant control is a fundamental requirement for the cement industry, which generates emissions and dust from key production processes such as raw material grinding, clinker burning, and material handling. Manufacturers are required to install and maintain effective air pollution control systems such as Bag Filters, Electrostatic Precipitators (ESP), or Scrubbers, and to conduct continuous emissions monitoring (CEMS) to ensure compliance with national air quality standards.
- **Legal Framework (By Country)**  
Thailand, air emissions are regulated under the *Ministerial Notification on Ventilation Standards from Cement Factories B.E. 2549 (2006)*, In Singapore, the *Environmental Protection and Management (Air Impurities) Regulations – No. S 595/2000* prescribe emission limits for industrial facilities. In Sri Lanka, the standards specified in *The Gazette of the Democratic Socialist Republic of Sri Lanka* define emission limits for new and existing cement plants.
- **Cross-cutting Relevance**  
All three countries have established regulations to control the release of key air pollutants—namely carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), sulphur dioxide (SO<sub>2</sub>), and particulate matter (PM)—from cement manufacturing operations. Emission testing and verification should follow US EPA Test Methods to ensure consistency and international comparability.

#### 4.1.6. Control of Water Pollutants

- **Description of the Requirement**  
Water pollution control is an essential requirement for cement manufacturing facilities to prevent contamination of natural water bodies and surrounding ecosystems. Manufacturers must install and maintain an effective wastewater treatment system to ensure effluent quality meets national discharge standards. The monitoring and control system must specifically target heavy metals and toxic compounds that may originate from raw materials, kiln dust, or process water. Regular water quality

monitoring and reporting to regulatory authorities are required to demonstrate compliance and support cleaner production practices.

- **Legal Framework (By Country)**

**In Thailand**, effluent standards are regulated under the *Ministerial Notification on Industrial Effluent Standards B.E. 2560 (2017)*, which defines the maximum allowable concentrations of key heavy metals as follows:

- Arsenic (As) < 0.01 ppm
- Cadmium (Cd) < 0.01 ppm
- Hexavalent Chromium (Cr<sup>6+</sup>) < 0.05 ppm
- Lead (Pb) < 0.1 ppm
- Mercury (Hg) < 0.005 ppm
- Selenium (Se) < 0.01 ppm

**In Singapore**, discharge limits are prescribed in the *Environmental Protection and Management Act (EPMA) – Trade Effluent Discharge Standards*, with stricter thresholds such as Cd < 0.003 ppm and Hg < 0.001 ppm.

**In Sri Lanka**, industrial effluent discharge is governed by the *National Environmental (Protection and Quality) Regulations*, which specify general standards for discharging wastewater into inland surface waters and require licensed monitoring of industrial effluents.

- **Cross-cutting Relevance**

All three countries regulate wastewater discharge through comparable frameworks emphasizing the control of major pollutants, including As, Cr<sup>6+</sup>, Pb, Se, Cd, and Hg, which are persistent and hazardous to aquatic environments. Based on comparative analysis, a common baseline criterion can be established following the stricter thresholds applied in Thailand and Singapore, particularly for cadmium and mercury. The recommended testing method for all countries is AWWA Method 3120B, ensuring consistency and international reliability of test results.

#### 4.1.7. Control of Waste

- **Description of the Requirement**

Cement manufacturers must establish an integrated waste management system covering segregation, storage, transportation, recovery, and proper disposal in compliance with national regulations. Emphasis should be placed on waste minimization at the source and resource recovery, such as reusing kiln dust, clinker residues, or production waste as raw materials or alternative fuels. Implementation under ISO 14001 Environmental Management System is encouraged to ensure systematic monitoring and continual improvement.

- **Legal Framework (By Country)**

**In Thailand**, waste management is regulated under the *Factory Act B.E. 2535 (1992)* and the *National Environmental Quality Act B.E. 2535*

(1992), requiring factories to report and safely dispose of industrial waste. In **Singapore**, the *Environmental Public Health Act (EPHA)* and the *Resource Sustainability Act (RSA)* govern waste minimization, recycling, and waste-to-resource initiatives under the supervision of the **National Environment Agency (NEA)**. In **Sri Lanka**, waste management is overseen by the **Central Environmental Authority (CEA)** under the *National Environmental Act*, requiring proper licensing for waste collection, transport, and disposal.

- **Cross-cutting Relevance**  
All three countries emphasize safe waste handling, recycling, and reduction at the source, aligned with Circular Economy principles and the requirements of ISO 14001. This element represents a key common criterion under the Eco Advance Programme, supporting efficient resource use and minimizing the environmental footprint of cement manufacturing.

#### 4.1.8. GHG reduction and Carbon Footprint product

- **Description of the Requirement**  
Greenhouse gas (GHG) reduction and carbon footprint assessment are key components of sustainable cement manufacturing, supporting the transition toward **carbon neutrality**. Manufacturers should develop a **GHG inventory** and implement mitigation measures such as using alternative fuels, improving energy efficiency, and increasing the proportion of low-carbon materials. Product-level carbon footprint assessments should follow international standards such as **ISO 14064-1 (GHG Inventories)** and **ISO 14067 (Carbon Footprint of Products)** to quantify emissions and demonstrate environmental performance for ecolabel or carbon label certification.
- **Legal Framework (By Country)**  
In **Thailand**, GHG management is promoted by the **Thailand Greenhouse Gas Management Organization (TGO)** through the *Carbon Footprint for Organization (CFO)* and *Carbon Footprint for Product (CFP)* programmes, based on ISO standards and IPCC guidelines. In **Singapore**, under the **Energy Conservation Act (ECA)** and guidance from the **National Environment Agency (NEA)**, large industrial facilities are required to report their GHG emissions and are encouraged to align reduction targets with the **Science-Based Targets Initiative (SBTi)** framework. In **Sri Lanka**, the **Climate Change Secretariat (CCS)** under the Ministry of Environment oversees national GHG management and promotes organizational inventories and mitigation actions in line with the country's **Nationally Determined Contributions (NDCs)** under the **Paris Agreement**.
- **Cross-cutting Relevance**

Although the level of implementation varies among the three countries, all share a common policy direction emphasizing GHG emission reduction and carbon footprint assessment in the industrial sector. These measures support the global transition to a **low-carbon economy** and align with international commitments under the **Paris Agreement** and **Sustainable Development Goal 13 (Climate Action)**. Accordingly, this element is considered a **soft common criterion** under the **Eco Advance Programme**, reflecting a shared commitment among Thailand, Singapore, and Sri Lanka to promote low-carbon cement production and strengthen regional cooperation on climate action.

#### 4.1.9. Hazardous Substances

- **Description of the Requirement**

Cement manufacturers must monitor and control the presence of **hazardous substances and heavy metals** that may occur in raw materials, products, or process residues. These include **arsenic (As)**, **cadmium (Cd)**, **lead (Pb)**, **mercury (Hg)**, **hexavalent chromium (Cr<sup>6+</sup>)**, and **selenium (Se)**, all of which pose potential risks to human health and the environment. Testing should be conducted using standardized analytical methods such as the **Toxicity Characteristic Leaching Procedure (TCLP)** under the **US EPA SW-846 Method 1311**. The concentrations of all tested heavy metals must be reported as “**Not Detected (ND)**” or below the respective regulatory thresholds defined by each country.

- **Legal Framework (By Country)**

In **Thailand**, hazardous substance management is regulated under the *Ministerial Notification on Industrial Hazardous Waste Control* and the *Department of Industrial Works (DIW) testing procedure for heavy metals (WET/TCLP)*, which references the **US EPA** methodology. In **Singapore**, the *Environmental Protection and Management (Hazardous Substances) Regulations* govern the handling, storage, and disposal of hazardous chemicals and mandate monitoring of heavy metal concentrations in products and waste streams. In **Sri Lanka**, hazardous substances are regulated by the **Central Environmental Authority (CEA)** under the *National Environmental (Hazardous Waste) Regulations*, which prohibit the use or release of toxic heavy metals such as mercury, lead, and hexavalent chromium in industrial operations.

- **Cross-cutting Relevance**

All three countries share consistent regulatory approaches to controlling hazardous substances, particularly toxic heavy metals that threaten both the environment and human health. The requirement that heavy metal concentrations be “**Not Detected (ND)**” under the **TCLP (US EPA SW-846 Method 1311)** represents a universally recognized and enforceable benchmark. This forms a key **common criterion** under the **Eco Advance Programme**, establishing a unified regional testing standard and

supporting the long-term goal of **Zero Toxic Release** within the cement industry.

#### 4.1.10. Packaging

- **Description of the Requirement**

Cement manufacturers must manage product packaging responsibly throughout their life cycle, ensuring both **material safety** and **post-use management**. Packaging materials should be designed for reuse, recycling, or environmentally sound disposal, and must be free from contamination by heavy metals such as cadmium (Cd), lead (Pb), mercury (Hg), and hexavalent chromium (Cr<sup>6+</sup>). Manufacturers are required to provide clear instructions on packaging regarding **proper handling, return, recycling, or disposal** to minimize environmental impact and support sustainable material use.

- **Legal Framework (By Country)**

In **Thailand**, packaging management is regulated under the *Ministerial Notification on Hazardous Packaging Waste Management* and guided by the **Extended Producer Responsibility (EPR)** framework, which requires manufacturers to take responsibility for post-consumer packaging collection and recycling. In **Singapore**, packaging is governed by the *Environmental Protection and Management Act (EPMA)* and policies enforced by the **National Environment Agency (NEA)**, mandating producers and importers to participate in packaging recovery and recycling programmes. In **Sri Lanka**, the **Consumer Affairs Authority (CAA)** and the **Central Environmental Authority (CEA)** oversee packaging standards, promoting the use of recyclable materials and restricting the presence of heavy metals in packaging, while discouraging single-use plastics.

- **Cross-cutting Relevance**

All three countries share a common objective of reducing packaging waste and promoting recycling, emphasizing the **producer's responsibility** across the product life cycle. Manufacturers are required to ensure packaging safety, provide post-use management instructions, and minimize the use of hazardous materials. This represents a **common criterion** under the **Eco Advance Programme**, advancing the principles of **Circular Economy** and **Sustainable Consumption and Production (SCP)** within the cement sector. It reinforces the long-term vision of environmentally responsible and resource-efficient packaging practices across the region.

## 4.2 Product-specific add-on criteria

In addition to the cross-cutting requirements that apply to all participating countries, each national ecolabelling scheme has developed **Product-Specific Add-on Criteria** to address unique environmental, industrial, and policy contexts within its own country. These add-on criteria serve as **supplementary requirements** for cement products, reflecting country-specific priorities such as raw material sourcing, energy use, carbon performance, and packaging standards. They also provide a technical foundation for future harmonization under the **Eco Advance Programme**.

- **Alternative and Recycled Material Content**
  - **Thailand (TGL):** Requires the use of at least **10% alternative materials** by total weight of raw materials, including fly ash, slag, and cement kiln dust.
  - **Singapore (SGLS):** Applies the same 10% minimum requirement, emphasizing quality-assured recycled inputs free from hazardous contaminants.
  - **Sri Lanka (NCPC):** No specific percentage requirement but encourages voluntary use of industrial by-products and recycled materials.
- **GHG Reduction and Carbon Footprint Assessment**
  - **Thailand:** Encourages manufacturers to prepare product carbon footprint reports (CFP) in accordance with **ISO 14067** for ecolabel and carbon label certification.
  - **Singapore:** Does not include carbon footprinting in the ecolabel criteria but have Environmental Protection and Management Act: EPMA for conquering the carbon footprint in environmental.
  - **Sri Lanka:** Promotes GHG reduction at the organizational level through **Nationally Determined Contributions (NDCs)**.
- **Use of Alternative and Renewable Energy**
  - **Thailand:** Promotes the use of renewable and alternative fuels such as **biomass** and **RDF (Refuse-Derived Fuel)** in clinker production.
  - **Singapore:** Focuses on improving energy efficiency and waste heat recovery systems.
  - **Sri Lanka:** Encourages pilot projects adopting renewable energy in industrial processes.
- **Recycled Packaging Material**
  - **Sri Lanka:** Requires packaging to contain at least **20% recycled content**.
  - **Thailand and Singapore:** No specific percentage set, but both promote recyclable and low-impact packaging designs under circular economy principles.
- **Supplier Environmental Certification**
  - **Thailand:** Requires raw material suppliers to hold environmental management certification (e.g., **ISO 14001** or **Thai Green Label**).
  - **Singapore / Sri Lanka:** Not yet specified as a formal requirement.

## 5. Eligibility and Pre-Application Preparation

### 5.1. Eligibility Conditions

Manufacturers, importers, distributors, and other business entities intending to apply for certification under the **Eco Advance Programme** must meet the following eligibility requirements:

- **Manufacturers:**  
Must be legally registered in Thailand and operate manufacturing facilities with established quality or environmental management systems in accordance with recognized standards such as ISO 9001, ISO 14001, Eco Factory, or EMS-DIW (Level 2 or above).
- **Importers:**  
Must hold official authorization from foreign manufacturers and provide valid test reports issued by laboratories accredited under ISO/IEC 17025 or equivalent international standards.
- **Small and Medium Enterprises (SMEs):**  
Eligible if they can demonstrate practical environmental initiatives such as waste reduction, resource efficiency, cleaner production, or other sustainable business practices, even if formal certification systems are not yet in place.
- **Distributors or Authorized Representatives:**  
Must submit a letter of appointment from the manufacturer and maintain clear procedures for product quality control, customer complaint handling, and after-sales service.

### 5.2. Documentation Required

Applicants are required to submit the following documentation when applying for certification.

#### 5.2.1. Legal and Business Documents

- Company registration certificate or business license issued in Thailand.
- Factory operating license.
- Trademark registration certificate or proof of application.

#### 5.2.2. Product Technical Information

- Detailed product description, raw material composition, and production process flow.
- Product specifications and relevant technical standards.

#### 5.2.3. Environmental Management Systems

- Valid certification of ISO 14001, Eco Factory, EMS-DIW, or other equivalent systems.
- Internal environmental performance reports or monitoring records.

#### 5.2.4. Product Test Reports

- Test results issued by accredited laboratories (ISO/IEC 17025) within the validity period of 1 to 3 years as specified for each product category.

- Evidence of product conformity with applicable Thai Green Label or Eco Advance criteria.

### **5.3. Pre-Screening Checklist for Self-Assessment**

Before submitting the application, organizations are encouraged to conduct a self-assessment to verify their readiness and compliance with the Eco Advance requirements. The pre-screening checklist should include the following considerations:

- Is the product category already covered under existing Eco Advance or Green Label criteria?
- Are the production processes aligned with environmental requirements on energy, emissions, and resource efficiency?
- Are valid test reports and supporting documents readily available?
- Is there an internal quality assurance system with accessible records and traceability?
- Have responsible staff been assigned for environmental management and certification coordination?

Conducting a self-assessment helps applicants identify gaps, minimize non-conformities, and streamline the evaluation process.

### **5.4. Recommended Internal Preparation Steps**

To enhance readiness and efficiency during the application process, organizations are advised to undertake the following preparatory actions:

#### **5.4.1. Gap Analysis**

Compare existing production practices, management systems, and documentation with the relevant Eco Advance criteria to identify areas requiring improvement.

#### **5.4.2. Staff Assignment**

Appoint a dedicated project coordinator or focal person responsible for documentation, liaison with the certification body, and follow-up on audit requirements.

#### **5.4.3. Record-Keeping System**

Establish a structured documentation and data management system for storing environmental records, product test results, and quality assurance documents to facilitate audit verification.

#### **5.4.4. Audit Readiness and Communication**

Provide internal training for staff involved in the certification process, prepare production sites for inspection, and ensure transparent access to relevant information during audits.

## 6. Application Process

### Comparative Step-by-Step Application Procedure for Ecolabel Certification

Step	Thailand Green Label (TGL)	Singapore Green Labelling Scheme (SGLS)	Sri Lanka – NCPCEco Label
Registration of intent	Applicants express their intent by contacting the Thailand Environment Institute (TEI) or downloading the application package from the official Green Label website. The applicant identifies the relevant product category and prepares preliminary documentation	Applicants contact the SGLS Secretariat under the Singapore Environment Council (SEC) to confirm product eligibility and category. They receive the official application form and guidelines for document submission.	Applicants either download the application form from the Ecolabel Sri Lanka website/ contact NCPCE Sri Lanka to obtain the Eco Label Application Form (FM-EL-01 / FM-EL-02) and general programme information prior to submission.
Submission of documents	The applicant submits the completed application form, supporting technical documentation, product specifications, and test reports in accordance with the product criteria	Applicants submit all supporting documents, including accredited laboratory test reports, product composition data, and a declaration form endorsed by senior management.	The applicant submits the completed form, relevant technical documentation, and evidence of compliance with the product-specific certification criteria to Ecolabel Division of the NCPCE Sri Lanka
Payment of fees (if applicable)	Application is voluntary; no publicly available fee schedule is specified. Any applicable administrative charges are informed directly by TEI during submission.	Application and processing fees are required once the Secretariat verifies that the documentation is complete and compliant with the SGLS procedural requirements.	Applicants pay the prescribed fees according to the official <i>Eco Label Fee Structure (RP-EL-04)</i> , which varies by product category and assessment level.
Pre-evaluation by certification body	TEI conducts a preliminary review of all documents to verify completeness and eligibility before moving to product evaluation.	The SGLS Secretariat performs an initial document screening to ensure completeness prior to initiating product assessment and verification.	NCPCE Sri Lanka conducts a pre-evaluation in line with its <i>Rules and Procedures for Eco Labelling (RP-EL-06)</i> before scheduling a

Step	Thailand Green Label (TGL)	Singapore Green Labelling Scheme (SGLS)	Sri Lanka – NCPC Eco Label
			detailed assessment.
Product testing & verification (independent laboratory, accredited body)	Product testing must be conducted by an accredited independent laboratory recognized by TEI. The test results must comply with the Thai Green Label product criteria.	SGLS accepts only test reports issued by SINGLAS-accredited laboratories. Internal testing is not accepted.	Testing and verification are conducted by independent, accredited laboratories recognized by NCPC to ensure impartiality and technical reliability.
Site audit (where required)	Site audits are conducted only for specific product categories or when deemed necessary by TEI to verify production consistency and environmental management practices.	Site audits may be required for selected product categories, particularly where process control or traceability is essential to compliance.	NCPC Sri Lanka performs an on-site audit to confirm that production processes and management systems align with documentation and certification criteria.
Review and decision-making process	The technical results are reviewed by the Green Label Certification Sub-Committee, which approves or rejects applications based on TEI's recommendations.	The SGLS Secretariat compiles the evaluation report and submits it for approval. Successful applicants are awarded the Singapore Green Label Certificate.	NCPC Sri Lanka's expert panel reviews the assessment outcomes and submits recommendations to the Certification Committee and Finally to NCPC Board of Directors, which makes the final certification decision.

## 7. Awarding and Use of the Ecolabel

Certified companies are permitted to use the ecolabel logo in accordance with the logo usage and communication guidelines established by each ecolabelling authority. The use of the ecolabel logo is considered a privilege and must strictly comply with design, placement, and communication standards.

Country	Logo Usage Conditions	Prohibited Uses
Thailand	Logo can be displayed on certified products, packaging, brochures, and promotional materials following TEI's Logo Usage Manual.	Alteration of logo design, colour, or proportions; use on uncertified products; misleading claims.
Singapore	Must follow the official <i>SGLS Brand Guidelines</i> . Logo can be used only on certified products and approved marketing materials.	Unauthorized use, false claims, or use on corporate documents (e.g., business cards) not related to certified products.
Sri Lanka	Logo may be used only for certified product categories and must adhere to NCPC's <i>Eco Label Marking Rules</i> .	Misrepresentation of certification, use beyond approved scope, or absence of valid certification.

In applying certification of Eco label Sri Lanka

The criteria document comprises **83 requirements**, categorized into three groups:

1. **Mandatory requirements** (M) (13 items),
2. **Critical requirements** (C) (37 items), and
3. **Non-critical requirements** (NC) (33 items).

A total of 284 marks is allocated across the criteria, calculated as follows:

- Critical requirements:  $37 \times 5 = 185$  marks
- Non-critical requirements:  $33 \times 3 = 99$  marks

To successfully obtain Eco-Label certification, applicants must achieve **at least 70%** of the total score (i.e., 198 marks or above).

### Management of Non-Conformities

- **Mandatory Requirements:**

These must be fully complied with. Any non-compliance identified during the adequacy or certification audit constitutes a *major non-conformity*, which must be rectified within **two months**.

- **Critical Requirements:**

Any deviation is treated as a *minor non-conformity*, which must also be addressed within **two months**.

- **Non-Critical Requirements:**

Non-compliance is recorded as an *observation for improvement*, and corrective actions will be assessed during the subsequent surveillance audit.

No marks shall be released to the Governing Council, and certification shall not be granted until all non-conformities have been fully resolved.

### **Guidelines for Marks Allocation**

Marks are awarded based on the extent of implementation and the sufficiency of supporting evidence:

1. **Full Marks (100%)** – Requirement fully implemented with sufficient evidence.
2. **80% of Marks** – Fully implemented, but evidence is incomplete or insufficient.
3. **50–60% of Marks** – Partially implemented with adequate evidence.
4. **20–30% of Marks** – Partially implemented, but evidence is lacking.
5. **0 Marks (Critical Requirement)** – Requirement not implemented; recorded as a non-conformity.
6. **0 Marks (Non-Critical Requirement)** – Requirement not implemented; recorded as an observation.

### **Audit and Assessment Process**

Marks are determined through a collaborative review by the auditing team, considering findings from:

- Documentation reviews
- On-site observations
- Interviews
- Any other relevant sources of verification

The discussion among auditors ensures accuracy, fairness, and consistency in scoring, thereby enhancing the overall reliability and integrity of the evaluation process.

# Summary List – Sri Lanka (NCPC-SL) Additional Requirements

## 0. Over all

- Mining documents (EPL/EIA, hydrological study, dust/noise test, restoration plan, maps)
- Transportation environmental performance records
- Water & energy baselines, targets, metering, reduction evidence
- SVHC, VOC (EN 16516), Formaldehyde, heavy metal
- Radiation safety, medical check-ups, PPE, training
- SLS certification + CAA monitoring
- Wastewater (CEA), solid waste (CEA), hazardous waste license
- GHG: footprint, offsetting, SBTi alignment
- Packaging recycled content/biodegradable documentation
- GPS tracking, transport plan
- Take-back programme & end-of-life measures.
- Biodiversity offsets, monitoring, restoration

## 1. Raw Material Extraction & Mining

- Environmental Protection License (EPL), Environmental Impact Assessment (EIA), and Environmental Clearance of quarry sites.
- Quarry Rehabilitation / Reinstatement Plan
- Topographic and satellite maps of mining area
- Hydrological survey report (groundwater table)
- Confirmation of non-encroachment into protected / high conservation value areas
- Noise & dust monitoring records at quarry; community complaint log
- Supplier environmental conformance certificates and site-visit records

## 2. Raw Material Transportation

- Fuel consumption logs and annual vehicle emission test reports.
- Transportation route plan, optimisation records, and safety procedures
- Contractor Safety Management Directive (CSMD) and sustainable transport policy
- Emergency prepared documentation for transport operations.

## 3. Water Management

- Complete metering system (main + sub-metering) with daily/monthly records
- Water distribution system diagram (plumbing layout)
- 2–3 year water baseline, benchmarks, and annual reduction targets

- Rainwater harvesting records ( $\geq 5\%$  annual consumption)
- Water footprint calculation and monitoring reports

#### **4. Energy Management**

- Sub-metering for electricity and thermal energy with 2–3 year records
- Specific energy consumption baseline and annual reduction targets
- Documentation of biomass/WDF usage and waste-heat recovery systems
- Energy management policy/EnMS records and periodic review reports

#### **5. Chemical & Material Requirements**

- Batch-wise raw material logs and full chemical inventory.
- SDS
- SVHC declaration final product heavy metal test
- Formaldehyde and VOC (EN 16516 – 28-day test) reports
- Chemical storage inspection evidence

#### **6. Occupational Health & Safety / Social Responsibility**

- Emergency response & fire safety plans + drill records
- Radiation safety documents for XRF/XRD, Geiger calibration, radiation monitoring
- Worker medical examinations

#### **7. Product Quality**

- Sri Lanka Standards (SLS) certification
- Consumer Affairs Authority (CAA) inspection reports
- Sri Lanka-specific quality control documentation

#### **8. Wastewater & Solid Waste**

- CEA-compliant wastewater test reports and WWTP layout
- Baseline of wastewater discharge per ton of product
- Hazardous waste management license (CEA) and third-party disposal agreements
- Comprehensive solid-waste management plan & innovation records

#### **9. Air Emissions**

- Biomass/boiler emission reports
- Dust-control plan documentation.

#### **10. GHG Management**

- GHG reduction targets, carbon offsetting evidence
- Participation/Alignment with Science-Based Targets (SBTi)
- Periodic GHG monitoring reports.

#### **11. Packaging & Distribution**

- Evidence of packaging recyclability, biodegradable content, or  $\geq 30\%$  recycled content
- MSDS for packaging materials; records of avoiding over-packaging.
- Transport management plan and GPS-based tracking system for product distribution.

#### **12. End-of-Life & Biodiversity**

- Takeback/recycling programme documentation.
- Customer recycling guidance
- Biodiversity offset activities, post-remediation monitoring, and quarry restoration plan.

In comparison with the Thailand Green Label requirements, the Sri Lanka Eco Label application process entails additional supporting documents as detailed below.

Criteria	Document	Factor
Phase 03: Raw Material Transport to the Factory	<ul style="list-style-type: none"> <li>• The records on oil/fuel consumption for transportation are maintained.</li> <li>• Emission test reports of the vehicles</li> <li>• Pre-planning of transportation to avoid unnecessary movements.</li> <li>• Green practices such as two mode transportation and etc.</li> <li>• Details of the safety precautions taken during transportation, photographic evidence</li> <li>• Details of Emergency Preparedness</li> </ul> <p>Or If the material transportation is carried out by a third party.</p> <ul style="list-style-type: none"> <li>• Copy of Signed Agreement</li> <li>• A sustainable transportation procurement policy</li> <li>• Details of the projects implemented and the efforts are taken to minimize dust emission/material spillage reduction due to transportation</li> <li>• Details of the safety precautions taken during transportation, and photographic evidence.</li> <li>• Details of Emergency Preparedness</li> <li>• Contractor Safety Management Directive (CSMD)</li> </ul>	C
Phase 04: Manufacturing Process, 4.2 Water Resource Consumption and Conservation	<p>water usage for industrial processes and other purposes</p> <ul style="list-style-type: none"> <li>• Water supply metering and/or submetering facilities established in the organization</li> <li>• Water consumption records are maintained on a daily/monthly basis</li> </ul>	C
	<p>The water distribution system/Plan</p> <ul style="list-style-type: none"> <li>• Plumbing Layout of the factory</li> </ul>	NC
	Organization benchmark/baseline for water consumption	NC

Criteria	Document	Factor
	<ul style="list-style-type: none"> <li>• Details of annual production, annual water consumption &amp; Specific water consumption for at least 2 years</li> <li>• Details of organization benchmarks including comparisons with the previous two years or national and international benchmarks</li> </ul>	
	<p>Organization should set a annual target based on the baseline performace (Reduction in specific water consumption <math>\geq 5</math>, <math>\geq 10</math>, and <math>\geq 15\%</math> = 1, 2 and 3marks)</p> <ul style="list-style-type: none"> <li>• Details of annual production, annual water consumption &amp; Specific water consumption for 3 years</li> </ul>	C
	<p>Water conservation techniques and technologies</p> <ul style="list-style-type: none"> <li>• Site inspection regarding the implementation of Water conservation techniques and technologies,</li> </ul>	NC
	<p>At least 5% of the total annual water consumption should be derived from the harvested rain water</p> <ul style="list-style-type: none"> <li>• Factory observations of the operating rain water harvesting system</li> <li>• Quantitative information on the rain water collected monthly/ annually</li> </ul>	NC
	<p>Organizational/product water footprint should be calculated, recorded, and maintained</p> <ul style="list-style-type: none"> <li>• The transparent and verifiable calculation method is available</li> </ul>	NC
	<p>A Method must be introduced and implemented for continuous monitoring and measuring the progress of the water management programmes and analysing water consumption/conservation</p> <ul style="list-style-type: none"> <li>• Progress report</li> <li>• Impact/water Assessment Reports</li> <li>• Management review meeting minutes, etc</li> </ul>	C
Phase 04: 4.3 Energy Resource Consumption and Conservation	<p>Effective Energy Management System (EnMS) or policies, procedures, and energy management programmes</p> <ul style="list-style-type: none"> <li>• Valid EnMS Certificate</li> <li>• Records on Energy management Policy, procedures, and energy management programmes are maintained</li> </ul>	NC
	<p>A Method should be introduced and implemented for continuous monitoring and measuring the progress of the energy management programmes and analysing energy</p> <ul style="list-style-type: none"> <li>• Progress report</li> </ul>	C

Criteria	Document	Factor
	<ul style="list-style-type: none"> <li>• Impact/Energy Assessment Reports, Management review meeting minutes</li> </ul>	
Phase 04: 4.4 Raw Material Consumption	<p>Input/Raw materials must be non-toxic</p> <ul style="list-style-type: none"> <li>• Records on Raw material consumption</li> <li>• Product Sample test report</li> <li>• Product certificates</li> </ul>	C
	<p>The amount of raw materials acquired locally should be 5% or more than that out of the total raw material consumption to produce a unit of product</p> <ul style="list-style-type: none"> <li>• Records of total and local raw material content, source/location of material acquired/Purchased</li> </ul>	NC
	<p>Asbestos must not be added to products or used during manufacture</p> <ul style="list-style-type: none"> <li>• Final Products test reports</li> </ul>	C
	<p>The final product shall not contain substances of very high concern (SVHC).</p> <ul style="list-style-type: none"> <li>• Records of all supplied chemicals and materials used in the manufacture of cement</li> <li>• Test Reports (do not contain more than 0.1% by weight of substances of very high concern.)</li> <li>• The declaration in this direction shall be supported by the safety data sheets (SDS) of chemicals and materials or appropriate documents obtained from their suppliers.</li> </ul>	C
	<p>The following substances or their compounds must not be added to the product intentionally during the production process: Cadmium, Lead, Chromium VI, Arsenic, Mercury, Selenium</p> <ul style="list-style-type: none"> <li>• Final Products test reports (Treshold levels should be below 2ppm)</li> </ul>	C

Criteria	Document	Factor												
	<p>VOC-containing compounds</p> <table border="1" data-bbox="922 304 1536 643"> <thead> <tr> <th></th> <th>Limits (after 28 days)</th> <th>Method</th> </tr> </thead> <tbody> <tr> <td>Total VOC</td> <td>300 µg/m<sup>3</sup></td> <td rowspan="4">EN 16516</td> </tr> <tr> <td>Formaldehyde</td> <td>10 µg/m<sup>3</sup></td> </tr> <tr> <td>R-Value</td> <td>&lt; 1</td> </tr> <tr> <td>Carcinogenic 1A and 1B VOCs listed in Annex H of EN 16516:2017 (excluding formaldehyde and acetaldehyde)</td> <td>1 µg/m<sup>3</sup> per individual substance</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>• Test certificates as per the standards specified complying with the limits</li> <li>• Safety Data Sheets</li> </ul>		Limits (after 28 days)	Method	Total VOC	300 µg/m <sup>3</sup>	EN 16516	Formaldehyde	10 µg/m <sup>3</sup>	R-Value	< 1	Carcinogenic 1A and 1B VOCs listed in Annex H of EN 16516:2017 (excluding formaldehyde and acetaldehyde)	1 µg/m <sup>3</sup> per individual substance	C
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R-Value	< 1													
Carcinogenic 1A and 1B VOCs listed in Annex H of EN 16516:2017 (excluding formaldehyde and acetaldehyde)	1 µg/m <sup>3</sup> per individual substance													
	<p>Eliminate exposure to Free formaldehyde.</p> <ul style="list-style-type: none"> <li>• Test reports or certificates confirming the absence/level of formaldehyde</li> </ul>	C												
Phase 04: 4.6 Product Quality	<p>Sri Lanka Standards Institution (SLSI) and are monitored by the Consumer Affairs Authority (CAA).</p> <ul style="list-style-type: none"> <li>• SLS certification for cement products issued by SLSI.</li> <li>• Inspection and monitoring reports from the CAA and/or SLSI.</li> <li>• Documentation of quality control processes, including test results and corrective actions for non-compliance.</li> <li>• Records of compliance with labeling, packaging, and distribution requirements as mandated by the CAA</li> </ul>	M												
Phase 04: 4.7 Waste Water Management	<p>Untreated wastewater must not be discharged into nearby streams, paddy fields or other sensitive ecosystems</p> <ul style="list-style-type: none"> <li>• Onsite verification</li> <li>• Plan of wastewater treatment plant</li> <li>• Certifications from the authorized body (Ex: CEA)</li> </ul>	C												

Criteria	Document	Factor
Phase 04: 4.8 Solid Waste Management	<p>Effective waste management policies and programmes/plans must be documented for hazardous and Non-Hazardous solid waste</p> <ul style="list-style-type: none"> <li>• Copy of Waste Management policy and waste management Plan/Programmes.</li> <li>• The waste management plan should cover the following attributes as necessary Assigning a responsible person for managing waste on site.</li> </ul>	C
Phase 04: 4.10 GHG Emission Management	<p>The processing unit should calculate, record, and maintain the Carbon footprint of the organization or the product.</p> <ul style="list-style-type: none"> <li>• A transparent and verifiable method for calculating the carbon footprint.</li> <li>• The calculation method should adhere to recognized standards like ISO standards.</li> <li>• The documents on calculating methods should be available for review to ensure transparency and accuracy.</li> </ul>	NC
	<p>The processing unit should establish clear and achievable targets for reducing greenhouse gas (GHG) emissions.</p> <ul style="list-style-type: none"> <li>• Documents on established targets for GHG emission reduction.</li> <li>• Records on regular monitoring and assessment of progress towards the set targets.</li> <li>• The records on implementation of corrective actions and continuous improvement initiatives</li> </ul>	NC
Phase 04: 4.11 Packaging & Labelling	<p>Product Packaging should be complied with at least one of the following to reduce the ecological impact of the packaging stage of the product life cycle.</p> <ul style="list-style-type: none"> <li>• MSDS of packing materials</li> <li>• Records relevant to the packaging material procurement and consumption</li> </ul>	NC
	<p>Advertisements on the product</p> <ul style="list-style-type: none"> <li>• Observations on the product advertisements (leaflets/booklets, Organization profile, tv/radio advertisement, etc</li> </ul>	NC
Phase 04: End Products Distribution	<p>Efficient transport modes/ plans should be used for finished product distribution to reduce related environmental impacts.</p> <ul style="list-style-type: none"> <li>• The transport management plan/Product distribution plan is maintained and implemented.</li> <li>• Details of the projects implemented, and the efforts taken to minimize dust emission/material spillage due to transportation.</li> <li>• Details of the safety precautions taken during transportation, photographic evidence.</li> </ul>	NC

Criteria	Document	Factor
	<ul style="list-style-type: none"> <li>• Details of agreement with third parties and evidence on how it is practiced,</li> <li>• Sustainable Transportation Procurement Policy of the Organization and proofs for itsImplementation</li> </ul>	
	<p>A real-time digital tracking/monitoring system (GPS)</p> <ul style="list-style-type: none"> <li>• Onsite verification of the digital tracking/monitoring system of the organization</li> </ul>	NC
Phase 05: Consideration of the End-of-life phase	<ul style="list-style-type: none"> <li>• Description and proof of initiatives taken to reduce impact from usage and/or end-of-life phase of the product</li> </ul>	NC
Phase 07: Biodiversity Conservation Initiatives	<p>biodiversity offset programs</p> <ul style="list-style-type: none"> <li>• Reports on biodiversity conservation initiatives, including reforestation projects</li> </ul>	NC
	<p>Strategies must be implemented to monitor post-remediation period</p> <ul style="list-style-type: none"> <li>• Details of the monitoring plan and bioassays conducted</li> <li>• Photographic evidence of the corrective actions taken</li> <li>• Hydrological survey report for water table management</li> <li>• Documentary evidence such as study reports, photo graphs for restoration of spent mines and Green Belt development</li> </ul> <p>If the supplier is beyond the control of the manufacturer due to reasonable facts</p> <ul style="list-style-type: none"> <li>• Certificates of environmental conformance received from the supplier.</li> <li>• Site visit records by the manufacturer</li> <li>• Photographs of the site visits conducted</li> <li>• Agreements with the supplier (Refer the clauses relate to environmental aspects)</li> </ul>	C