



Green Label Product Portland Cement and Hydraulic Cement (TGL-99-15)

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Table of Contents

1. Background.....	3
2. Scope.....	3
3. Definitions.....	3
4. General requirements.....	3
5. Product environmental requirements.....	4
6. Testing and certification	5

TGL-99-15

Portland Cement and Hydraulic Cement

1 Background

Cement is important in the public utility and construction sector. Currently, it is mainly used as construction materials for buildings, houses, roads, bridges and barrage. Cements are categorized according to its property and use. Proper environmental management of cement is needed in order to prevent environmental impacts.

Therefore, in order to promote environmental management, the Green Label criteria for Portland Cement and Hydraulic Cement was developed. The criteria focuses on reducing environmental impacts and consumer safety by controlling emissions of greenhouse gases and other substances in production process as well as limiting the use of heavy metals used in ink or pigments for packaging. Moreover, the criteria promotes recyclable packaging and proper disposal of packaging.

2 Scope

The criteria covers Portland Cement under TIS 15¹, part 1, and Hydraulic Cement under TIS 2594².

3 Definitions

3.1 Portland cement refers to a product made from grinding clinker with calcium sulphate into a powder.

3.2 Clinker refers to crystals made from sintering many substances together. Its major component is hydraulic calcium silicates.

3.3 Hydraulic cement refers to cement that sets and hardened after it has been mixed with water or when it is under water.

3.4 Certificate refers to a document issued by a certification body, which has been accredited by the Nation Accreditation Council (NAC) or other accreditation body under the IAF (International Accreditation Forum) agreement.

4 General requirements

4.1 The product shall be certified with Thai Industrial Standard TIS 15, part 1 for Portland Cement or TIS 2594 for Hydraulic Cement.

<u>Verification method</u>

The applicant shall submit a certificate for TIS 15, part 1 or TIS 2594.
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1 TIS 15, volume 1: Portland Cement, part 1 specification

2 TIS 2594: Hydraulic Cement

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4.2 Environmental management shall comply with national laws and regulations as specified in the environmental impact assessment report.

Verification method

The applicant shall submit a report to declare results for reducing environmental impacts and environmental monitoring and evaluation in accordance with national laws and regulations for the past 2 consecutive years.

4.3 Manufacturing, transportation and post-industrial waste disposal shall comply with national laws and regulations or the manufacturer shall be accredited by ISO14001.

Verification method

Applicant shall submit one of the following documents:

1. License or evidences to prove that manufacturing, transportation, and post-industrial waste disposal complies with national laws and regulations.
2. Certification of ISO14001 from the manufacturer.

5 Product environmental requirements

5.1 The greenhouse gas emission during manufacturing process shall not exceed 800 kg CO_{2e} per tonnes of product.

Remarks: The IPCC 2006 was used as a reference for the calculation of greenhouse gas emission, while the emission factors are referenced from Thailand Greenhouse Gas Management Organization (Public Organization).

Verification method

The applicant shall submit one of the following documents:

1. A third-party certified results of greenhouse gas emission value calculation (third-party must be registered with Thailand Greenhouse Gas Management Organization)
2. Certification of Carbon Reduction Label or Carbon Footprint Reduction.

5.2 Instructions for paper and plastic recycling and disposal shall be displayed on the packaging or invoice.

Verification method

The applicant shall submit a declaration letter ensuring the existence of instructions for recycling and disposal on paper and plastic packaging as well as declaring a picture of the instruction or evidence of clear instructions on the packaging.

5.3 Ink or pigments used for printing or labels on packaging shall not contain heavy metals and heavy metal compounds. Heavy metals (lead, mercury, and chromium hexavalent) due to impurities or traces deriving from raw materials in packaging shall not exceed 0.01 % (≤ 100 mg/kg) by weight.

Verification method

The applicant shall submit one of the following documents:

1. A declaration letter from ink manufacturer or supplier, which includes test results for lead, mercury, cadmium and chromium hexavalent in color ink or pigments for printing or labels on package (test methods shall be in accordance with number 2).
2. Test results for lead, mercury, cadmium, and chromium hexavalent shall use test methods according to the following standards:
 - 1) For mercury, ISO 3856-7 or ASTM D 3624 or IEC 62321 or other equivalent standards.
 - 2) For lead, ISO 3856-1 or ASTM D 3335 IEC 62321 or other equivalent standards
 - 3) For cadmium, ISO 3856-4 or ASTM D 3335 IEC 62321 or other equivalent standards.
 - 4) For chromium hexavalent, ISO 3856-5 IEC 62321 or other equivalent standards.

6. Testing and certification**6.1 Testing**

6.1.1 The laboratory shall be operated by the government or under governmental control as defined by clause 5 of the Industrial Standard Act B.E. 2511 (and its addenda) or certified by TIS. 17025³ or ISO/IEC 17025⁴.

6.1.2 Test results

6.1.2.1 Test results shall comply with testing methods defined in this document.

6.1.2.2 If “comparable test methods” are submitted, the following documents shall be submitted with the test results:

- (1) Declaration letter from the laboratory verifying that the test methods are comparable to the methods defined in this document.
- (2) Method validation documents which enable unequivocal scientific verification that the testing methods and requirements defined in this document have been met.

6.1.2.3 Test results shall be issued no more than 1 year following the Green Label application date.

6.2 Declaration letter to verify compliance with Green label requirements

6.2.1 Shall have been issued no more than 1 year following the application date.

6.2.2 Shall be signed by the authorized directors and have the company seal affixed (if relevant).

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TIS 17025 General Requirements for the Competence of Testing and Calibration Laboratories.

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ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories.

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