



## **Bricks and Blocks (TGL-61-11)**

**Approved on  
25 June 2010**

*Thailand Environment Institute (TEI)  
16/151 Muang Thong Thani, Bond Street, Bangpood, Pakkred, Nonthaburi 11120  
Thailand  
Phone: 0-2503-3333 ext. 521-529  
Fax: 0-2504-4826  
Website: <http://www.tei.or.th/greenlabel>*

## Table of Contents

1	Background	3
2	Scope	3
3	Definitions	3
4	General requirements	4
5	Environmental requirements	5

## Bricks and Blocks

---

### 1. Background

-

### 2. Scope

The product covers concrete bricks and blocks for wall formation.

### 3. Definitions

**Brick** refers a piece of solid or hollow, hollow or hole material, or both are parallel. Clay or shale normally made into a square cube with a sticky state then put in the oven or burned in a stove, used for building walls.

**Concrete blocks for wall formation** refers to an aerated concrete, precast concrete wall panels, and concrete blocks.

**Recycled materials** refers to post-consumer materials or post-industrial materials, or the combination of both

**Lightweight concrete** refers to aerated concrete defined as steel reinforced concrete or non-reinforced steel that is lightweight than general concrete with the same size and small bubbles inserting evenly distributed in the concrete then hardening by steam.

**Precast concrete wall panel** refers to precast concrete wall panel made of mixed mass and materials interlocking, used as a partition wall inside and outside the building.

**Concrete wall block** refers to concrete blocks made of cement, water and various composite materials and whether or not it contains other substances used for building walls or walls.

**Post-consumer materials** refer to materials falling under either of the following categories and which have undergone the required pre-treatment.

(1) Materials or products disposed of after they were used as goods.

(2) Melted slag from municipal garbage.

**Post-industrial materials** refer to materials falling under either of the following categories and which have undergone the required pretreatment.

- (1) Materials or inferior goods generated in the disposal route of the manufacturing process of products. Excluded is reuse of recycled materials generated in the same process (in the same plant).
- (2) Solid materials removed for water purification (sewer sludge, waterworks sludge and sludge at the bottom of a lake or marsh) and construction sludge.

#### 4. General Requirements

4.1 The product shall be certified by Thai Industrial Standard or passed the tests listed in the relevant Thai Industrial Standard for that product type as shown in Table 1 or equivalent national standards, or acceptable national standard such as ASTM, JIS.

**Table 1 Lists of relevant Thai Industrial Standard**

TIS no.	Title
TIS 57	Hollow load-bearing concrete
TIS 58	Hollow non-load bearing concrete
TIS 59	Concrete building brick
TIS 60	Solid load-bearing concrete
TIS 77	Building brick
TIS 102	Structural clay load-bearing tile
TIS 103	Structural clay non-load-bearing tile
TIS 153	Structural clay non-load-bearing screen tile
TIS 167	Calcium silicate faced bricks or sand-lime bricks
TIS 168	Facing bricks
TIS 169	Structural clay facing tiles
TIS 1510	Autoclave aerated reinforced lightweight concrete panel
TIS 1505	Autoclave aerated reinforced lightweight concrete element
TIS 2226	Precast concrete wall panel

#### 5. Product Environmental Requirements

*In the event of any conflict arising, the original criteria in Thai is to be final authority*

5.1 The bricks must be made from used product, residue waste from manufacturing process, and/or agricultural waste not less than 40% of product weight.

**Verification Method**

The manufacturer shall submit a declaration document on the list of raw materials used for the manufacturing of the applicable products made from used product, residue waste from manufacturing process, and/or agricultural waste not less than 40% of product weight. All submit a declaration document shall be signed by the managing director or authorized person of the manufacturer.

5.2 The blocks must be made from used product, residue waste from manufacturing process, and/or agricultural waste not less than 40% of product weight.

Remark: As of 1 January 2014, the requirement no. 5.2 has been changed to 50% by product weight.

**Verification Method**

The manufacturer shall submit a declaration document on the list of raw materials used for the manufacturing of the applicable products made from used product, residue waste from manufacturing process, and/or agricultural waste not less than 40% of product weight. All submit a declaration document shall be signed by the managing director or authorized person of the manufacturer.

5.3 The following chemical substances shall not be used in manufacturing process or presented in finish good product:

5.3.1 Phosphogypsum

5.3.2 Asbestos

**Verification Method**

The manufacturer shall submit a declaration document to declare that phosphogypsum and asbestos are not used in manufacturing process or presented in finish good product. All submit a declaration document shall be signed by the managing director or authorized person of the manufacturer.

### 5.3.3 Heavy metals:

- Allow amount of Cadmium shall be not more than 100 mg /kg.
- Allow amount of Lead, Mercury, Chromium (+6) shall be not more than 1000 mg /kg (each substance)

Remark: As of 1 January 2014, the requirement no. 5.3 shall follow US EPA SW 846 Method 1310

#### **Verification Method**

The manufacturer shall submit a test results of heavy metals refer to requirement no. 5.3. The test shall be conducted by Inductively Coupled Plasma-Atomic Emission Spectrometer (ICP) or atomic absorption spectroscopy (AAS) or other recognized international /national equivalent methods. Tested sample shall be sampling according to the industrial product standard of the product requested or sample to represent the model applying for certification. All submit of test report shall be signed by the managing director or authorized person of the manufacturer.

Remark: 1. Tested sample shall be sampling from the ready-mixed raw materials.

2. As of 1 January 2014, test method in accordance with US EPA SW 846 method 1310 and Inductively Coupled Plasma-Atomic Emission Spectrometer (ICP) or equivalent testing methods such as atomic absorption spectroscopy ( AAS) shall be conducted for testing of finish product.

#### **Note for Testing and Certification**

All tests shall be conducted by the following laboratories.

- Government laboratories
- Private laboratory that is certified for its capability of testing following the requirement of Thai Industry Standard, or laboratory that is certified for competence of testing and calibration according to ISO/IEC 17025.
- Test results shall have been issued no more than 1 year following the application date.

*In the event of any conflict arising, the original criteria in Thai is to be final authority*

