

Hong Kong Green Label Scheme

Product Environmental Criteria for Building Products Using Perlite (GL-008-011)



BACKGROUND

The Hong Kong Green Label Scheme (HKGLS) is an independent and voluntary scheme which aims to identify products that are, based on life cycle analysis consideration, more environmentally preferable than other similar products with the same function. The Scheme is organized by the Green Council (GC) with contributions from the HKGLS Advisory Committee and a number of supporting organizations.

The prime objectives of HKGLS are:

- For Consumers: assist in making purchases of products that are less harmful to the environment;
- For Industry: stimulate development and production of environmentally preferable alternatives.

This specification sets out the requirements that building materials made of perlite will be required to meet in order to be licensed to use the HKGLS label. The requirements include environmental criteria and product characteristics. The specification also defines the testing and other means to be used to verify conformance with the environmental criteria and product characteristics.

POTENTIAL ENVIRONMENTAL IMPACTS

Currently, there are three types of materials available in the market used to manufacture fire retardant panels including calcium-silicate, cement based and gypsum board. All three boards are not considered to be highly hazardous towards human health and the environment upon usage, however, their derived and long term environmental and health impacts do exist. Significantly, no test result or information indicates that perlite poses any health risk and is therefore regarded as safe for consumer use.

LABEL OBJECTIVE

The aim of the environmental criteria developed for “Building Products using Perlite” is to:

- promote the use of perlite in building products
- reduce the discharge of toxic, hazardous or otherwise polluting substances, including heavy metals and asbestos, into the environment during production and use of the product

PRODUCT DEFINITION

This document and all product environmental criteria therein apply to building materials and auxiliary building materials that are made of perlite.

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PRODUCT CRITERIA

The product environmental criteria for the product category of “Building Products using Perlite” (GL-008-011) under the Hong Kong Green Label Scheme (HKGLS) are set out in the ensuing table.

Product Environmental Criteria	Verification Methods*
<p>1. The percentage of perlite in the product shall be at least 10% of the product’s net weight.</p>	<p>✓ Inspection of product samples; AND</p> <p>✓ Review of supporting information; AND</p> <p>✓ Performance of on-site factory visit.</p>
<p>2. Hazardous substances shall not be used as an ingredient of the product (whether as a substance or as part of any preparation).</p> <p>The levels of the following hazardous substances as impurities shall not exceed the following:</p> <ul style="list-style-type: none"> • Cadmium: 10 ppm • Lead: 300 ppm • Chromium VI: 10 ppm • Arsenic: 50 ppm • Mercury: 10 ppm • Selenium: 20 ppm 	<p>✓ Review of laboratory test report(s)¹;</p>
<p>3. The gamma radiation shall comply with relevant national regulations on building material the activity index I_r shall less than 1.3 for indoor and less than 2.8 for outdoor use. The I_r index is expressed in accordance with:</p> $I_r = C_{Ra}/370 + C_{Th}/260 + C_K/4200$ <p>In the above mentioned formula C_K, C_{Ra} and C_{Th} signifies respectively the concentration of Potassium-40, Radium-226 and Thorium-232, expressed in bequerel per kilogram (Bq/kg) of the material.</p>	<p>✓ Review of supporting information²</p>
<p>4. The product shall not contain asbestos (white, brown or blue asbestos).</p>	<p>✓ Review of laboratory test report(s);</p>

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Product Environmental Criteria	Verification Methods*
5. E-glass and “475” glass fibres shall not be used for reinforcement.	✓ Review of supporting information;
6. Production processes shall conform to relevant national or local environmental regulations on preventing air pollution and water contamination.	✓ Review of supporting information;
7. Instruction manual(s) shall accompany a product concerning its construction, use, disassembling, and preferably also disposal, and recycling.	✓ Review of supporting information;
8. General packaging requirement (Refer to criteria for packaging materials: GL-Packaging).	✓ Inspection of product samples; AND ✓ Review of supporting information; AND ✓ Interview with relevant personnel.

*Analytical testing should be accredited and performed by laboratories that meet the requirement laid out in the IEC/ISO 17025 or EN45001 standards or any equivalent systems e.g. HOKLAS, CNAS. Under special situation and with the approval from GC, test can be performed by in-house method by the accredited laboratory or manufacturer.

Note:

1. **Test method:**

Lead and Cadmium: USEPA 3051A/7000B

Chromium VI: USEPA 3060A/7196A **Arsenic:** USEPA 3051A/7061A

Mercury: USEPA 3051A/7471B

Selenium: USEPA 3051A/7741A. Equivalent methods are acceptable.

2. A certificate issued by the manufacturer of the product concerning safety with regard to exposure to radioactivity material shall be submitted. A certificate of test results carried out by a third party shall also be submitted if available.