

**Hong Kong Green Label Scheme**  
**Product Environmental Criteria for**  
**Fibre Reinforced Home Décor Product (GL-008-006)**



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## **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 “Fibre Reinforced Home Décor Product” will be required to meet in order to be licensed to use the HKGLS label. The requirements cover product environmental criteria.

## **POTENTIAL ENVIRONMENTAL IMPACTS**

Fibre Reinforced Home Décor Products are composites comprising a thermosetting resin matrix in conjunction with reinforcing fibres, and in some cases fillers and pigments. Major environmental impacts of such products relate to the toxicity of materials used in the production.

The fibres used for reinforcement are most commonly glass fibres. Special-purpose glass fibres such as E-glass and ‘475’ glass fibres are listed by the International Agency for Research on Cancer (IARC) as Class 2B “possibly carcinogenic to humans”. Other materials which may be used for reinforcing include carbon fibres, synthetic fibres such as acrylic and polyester, metallic and non-metallic, and polyamide fibres.

Another important health concern arises from resins, the most commonly used being unsaturated polyester resins (representing about 75% of the total resins used in the composites industry in the US), epoxy and vinyl ester resins. The resins used in the manufacturing process may give off vapors, which may be both harmful to health and flammable over a given range of concentrations, as shown below.

- Unsaturated polyester resins and vinyl esters, dissolved in a reactive monomer such as styrene, evolve styrene vapor before and during initial curing. The IARC has listed styrene as Class 2B “possibly carcinogenic to humans.”
- Molding compounds containing melamine, phenolic, or acetyl resins are capable of releasing formaldehyde when subjected to heat and/or pressure in the molding process.
- Some epoxy resin hardeners can cause dermatitis and /or asthma, and may cause sensitization in susceptible individuals.

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Adhesive, which may contain environmentally hazardous substances, and organic solvent, may be used for bonding purposes of home décor products. The most common adhesives are acrylics, epoxies and urethanes.

All these environmental health issues need to be properly addressed. However, Fibre Reinforced Home Décor Products are not expected to pose waste management problems due to their long useful life.

### **LABEL OBJECTIVE**

The aim of the product environmental criteria developed for “Fibre Reinforced Home Décor Product” is to :

- Prohibit the use of hazardous fibres in the production of such Products.
- Limit the use of toxic substances, especially resins, during the production of the product, and reduce VOCs from the use of adhesives and surface coatings, as well as contents of formaldehyde in relation to surface treatment.
- Prohibit substances based on lead, cadmium, mercury, chromium VI or their compounds in chemical substances used in the surface treatment of the products.

### **PRODUCT DEFINITION**

This document and all product environmental criteria therein apply to all “Fibre Reinforced Home Décor Product”.

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**PRODUCT ENVIRONMENTAL CRITERIA**

The product performance and environmental criteria for the product category of “Fibre Reinforced Home Décor Product” (GL-008-006) under the Hong Kong Green Label Scheme (HKGLS) are set out in this criteria document in the ensuing table.

<b>Product Environmental Criteria</b>	<b>Verification Methods*</b>
<b>PRODUCT PERFORMANCE CRITERIA</b>	
1. The quantity of resin used in the manufacturing process shall not more than 50% of the total weight of raw materials. Chlorine-based resin shall not be used as raw materials.	<ul style="list-style-type: none"> <li>✓ Review of supporting information; AND</li> <li>✓ Interview with relevant personnel.</li> </ul>
2. E-glass and ‘475’glass fibres shall not be used for reinforcement.	<ul style="list-style-type: none"> <li>✓ Review of supporting information; AND</li> <li>✓ Interview with relevant personnel.</li> </ul>
3. Surface treatment of product: Regarding chemical substances used in the surface treatment of the product: <ul style="list-style-type: none"> <li>• The content of formaldehyde shall not exceed 10mg/kg (10ppm).</li> <li>• Substances based on lead, cadmium, mercury, chromium VI or their compounds shall not be used.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Review of laboratory test report(s).<sup>1</sup></li> </ul>
4. Production processes shall conform to relevant national or local environmental regulations on preventing air and waste pollution	<ul style="list-style-type: none"> <li>✓ Review of supporting information; AND</li> <li>✓ Interview with relevant personnel.</li> </ul>
5. Packaging requirements: <ul style="list-style-type: none"> <li>• Packaging materials shall not contain chlorine-based plastics.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Inspection of product samples; AND</li> <li>✓ Review of supporting information</li> </ul>
6. Consumer information The manufacturer/supplier of the product shall preferably inform the consumer as to the best way to use and maintain the product.	<ul style="list-style-type: none"> <li>✓ Inspection of product samples; AND</li> <li>✓ Review of supporting information</li> </ul>

\*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.

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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

Formaldehyde: ASTM D6191 or equivalent

Cadmium & Lead: ASTM D3335 or equivalent

Chromium VI: ISO3856 or equivalent

Mercury: ASTM D3624 or equivalent